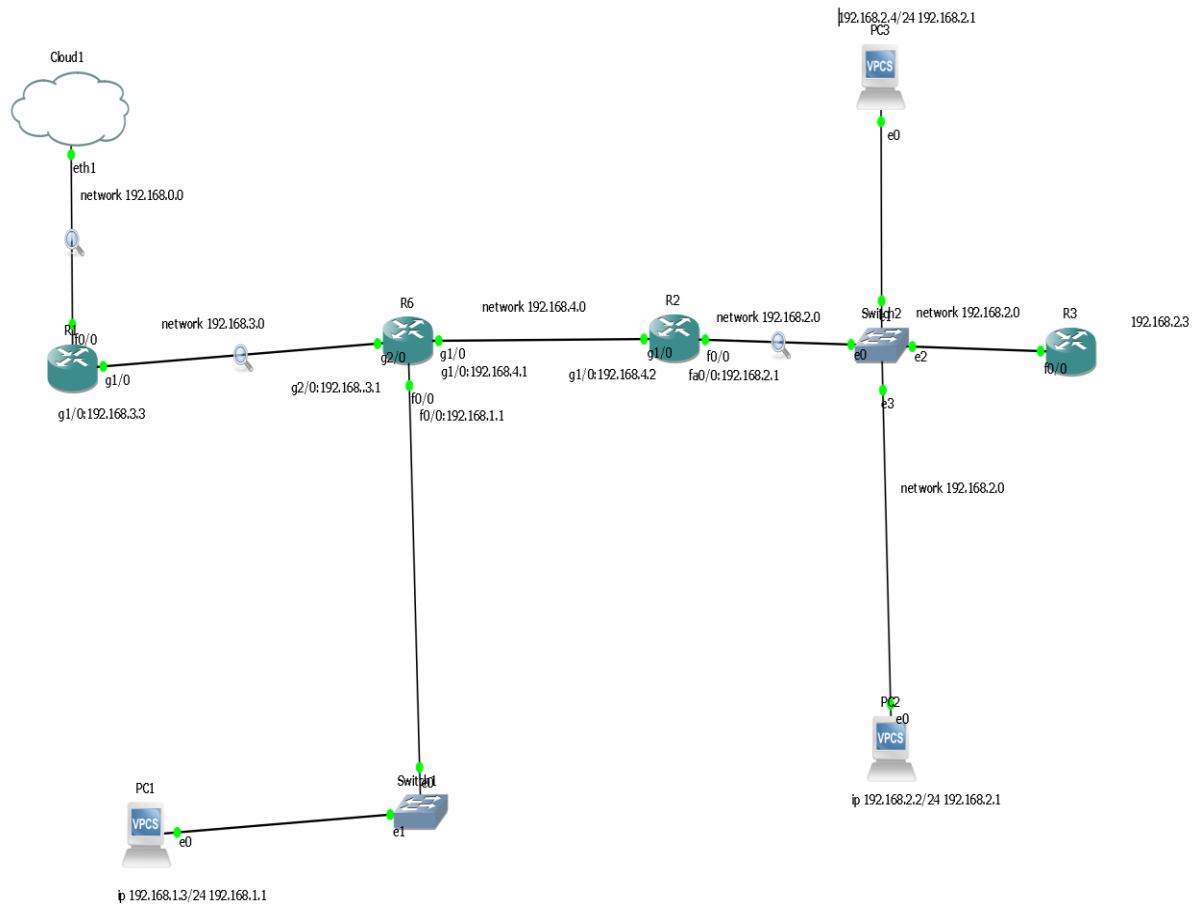


Technologie Sieciowe Sprawozdanie Lista 4

Topologia:



Ustawienie rutera R5:

Conf t

Ip domain-lookup

Ip name-server 8.8.8.8

Int fa0/0

Ip address dhcp

Ip nat outside

No shut

Int g1/0

Ip add 192.168.3.3 255.255.255.0

Ip nat inside

No shut

Router rip

Version 2

No auto-summary

Network 192.168.0.0

Network 192.168.3.0

Default-information originate

end

Przykładowe ping między urządzeniami w sieci:

```
PC2> ping 192.168.1.3

84 bytes from 192.168.1.3 icmp_seq=1 ttl=62 time=52.182 ms
84 bytes from 192.168.1.3 icmp_seq=2 ttl=62 time=40.860 ms
84 bytes from 192.168.1.3 icmp_seq=3 ttl=62 time=35.605 ms
84 bytes from 192.168.1.3 icmp_seq=4 ttl=62 time=38.332 ms
84 bytes from 192.168.1.3 icmp_seq=5 ttl=62 time=36.537 ms
```

```
R1#ping 192.168.2.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 60/63/64 ms
R1#
```

"ping" z urządzenia w sieci wirtualnej na zewnętrzny adres:

```
PC1> ping www.google.com
www.google.com resolved to 216.58.209.4

84 bytes from 216.58.209.4 icmp_seq=1 ttl=54 time=42.750 ms
84 bytes from 216.58.209.4 icmp_seq=2 ttl=54 time=39.883 ms
84 bytes from 216.58.209.4 icmp_seq=3 ttl=54 time=40.493 ms
84 bytes from 216.58.209.4 icmp_seq=4 ttl=54 time=42.047 ms
84 bytes from 216.58.209.4 icmp_seq=5 ttl=54 time=41.014 ms
```

```
R2#ping www.google.com
Translating "www.google.com"...domain server (8.8.8.8) [OK]

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 216.58.209.4, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 44/51/56 ms
```

przechwycone komunikaty dla zapytania wyslanego z komputera PC2: 'ping google.com':

Cloud - R1

5	37.560475	192.168.2.2	8.8.8.8	DNS	74 Standard query 0x6e48 A www.google.com
6	37.572350	8.8.8.8	192.168.2.2	DNS	90 Standard query response 0x6e48 A www.google.com A 172.217.16.4
7	37.633686	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3d4a, seq=1/256, ttl=61 (reply in 8)
8	37.644134	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3d4a, seq=1/256, ttl=56 (request in 7)
9	38.702217	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3e4a, seq=2/512, ttl=61 (reply in 10)
10	38.712586	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3e4a, seq=2/512, ttl=56 (request in 9)
11	39.626486	ca:01:45:b9:00:00	CDP/VTP/DTP/PagP/UDL	CDP	366 Device ID: R1 Port ID: FastEthernet0/0
12	39.776764	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3f4a, seq=3/768, ttl=61 (reply in 13)
13	39.787549	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3f4a, seq=3/768, ttl=56 (request in 12)
14	40.001696	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
15	40.847296	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x404a, seq=4/1024, ttl=61 (reply in 16)
16	40.857968	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x404a, seq=4/1024, ttl=56 (request in 15)
17	41.594342	10.0.3.15	193.70.94.182	NTP	90 NTP Version 4, client
18	41.605578	193.70.94.182	10.0.3.15	NTP	90 NTP Version 4, server
19	41.913300	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x414a, seq=5/1280, ttl=61 (reply in 20)
20	41.923868	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x414a, seq=5/1280, ttl=56 (request in 19)
21	46.606239	PcsCompu_16:a4:6a	RealtekU_12:35:02	ARP	42 Who has 10.0.3.2? Tell 10.0.3.15
22	46.606318	RealtekU_12:35:02	PcsCompu_16:a4:6a	ARP	60 10.0.3.2 is at 52:54:00:12:35:02
23	50.003712	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
24	60.004225	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
25	66.594576	10.0.3.15	162.159.200.1	NTP	90 NTP Version 4, client
26	66.608046	162.159.200.1	10.0.3.15	NTP	90 NTP Version 4, server
27	69.998605	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
28	71.694258	PcsCompu_16:a4:6a	RealtekU_12:35:02	ARP	42 Who has 10.0.3.2? Tell 10.0.3.15
29	71.694410	RealtekU_12:35:02	PcsCompu_16:a4:6a	ARP	60 10.0.3.2 is at 52:54:00:12:35:02
30	79.997323	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
31	90.003329	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
32	92.255946	ca:01:45:b9:00:00	CDP/VTP/DTP/PagP/UDL	CDP	366 Device ID: R1 Port ID: FastEthernet0/0
33	99.996883	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply
34	110.002808	ca:01:45:b9:00:00	ca:01:45:b9:00:00	LOOP	60 Reply

> Frame 5: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface -, id 0
> Ethernet II, Src: ca:01:45:b9:00:00 (ca:01:45:b9:00:00), Dst: RealtekU_12:35:02 (52:54:00:12:35:02)
> Internet Protocol Version 4, Src: 192.168.2.2, Dst: 8.8.8.8
> User Datagram Protocol, Src Port: 39594, Dst Port: 53

0000 52 54 00 12 35 02 ca 01 45 b9 00 00 08 00 45 00 RT=5... E....E-
0010 00 3c 4a 3d 00 00 3d 11 60 ba c0 a8 02 02 08 08 <J)=... ..
0020 00 08 9a aa 00 35 00 28 95 14 6e 48 01 00 00 015(..nH....
0030 00 00 00 00 00 00 03 77 77 77 06 67 6f 67 6cW www googl
0040 65 03 63 6f 6d 00 00 01 00 01 e:cm....

R1-R6

1	0.000000	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
2	3.265526	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply
3	5.163148	192.168.3.1	224.0.0.9	RIPv2	106 Response
4	10.001212	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
5	13.262537	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply
6	16.918122	192.168.3.3	224.0.0.9	RIPv2	66 Response
7	20.002557	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
8	21.527870	ca:01:45:b9:00:1c	CDP/VTP/DTP/PagP/UDL	CDP	369 Device ID: R1 Port ID: GigabitEthernet1/0
9	23.261837	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply
10	29.995979	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
11	33.262143	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply
12	33.772866	ca:05:52:04:00:38	CDP/VTP/DTP/PagP/UDL	CDP	369 Device ID: R6 Port ID: GigabitEthernet2/0
13	34.765744	192.168.3.1	224.0.0.9	RIPv2	106 Response
14	37.444482	192.168.2.2	8.8.8.8	DNS	74 Standard query 0x6e48 A www.google.com
15	37.475744	8.8.8.8	192.168.2.2	DNS	90 Standard query response 0x6e48 A www.google.com A 172.217.16.4
16	37.517743	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3d4a, seq=1/256, ttl=62 (reply in 17)
17	37.549005	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3d4a, seq=1/256, ttl=55 (request in 16)
18	38.585781	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3e4a, seq=2/512, ttl=62 (reply in 19)
19	38.617045	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3e4a, seq=2/512, ttl=55 (request in 18)
20	39.660270	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x3f4a, seq=3/768, ttl=62 (reply in 21)
21	39.692479	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x3f4a, seq=3/768, ttl=55 (request in 20)
22	40.001534	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
23	40.730810	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x404a, seq=4/1024, ttl=62 (reply in 24)
24	40.762720	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x404a, seq=4/1024, ttl=55 (request in 23)
25	41.796883	192.168.2.2	172.217.16.4	ICMP	98 Echo (ping) request id=0x414a, seq=5/1280, ttl=62 (reply in 26)
26	41.828630	172.217.16.4	192.168.2.2	ICMP	98 Echo (ping) reply id=0x414a, seq=5/1280, ttl=55 (request in 25)
27	43.268570	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply
28	43.734386	192.168.3.3	224.0.0.9	RIPv2	66 Response
29	49.994711	ca:01:45:b9:00:1c	ca:01:45:b9:00:1c	LOOP	60 Reply
30	53.266263	ca:05:52:04:00:38	ca:05:52:04:00:38	LOOP	60 Reply

> Frame 14: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface -, id 0
> Ethernet II, Src: ca:05:52:04:00:38 (ca:05:52:04:00:38), Dst: ca:01:45:b9:00:1c (ca:01:45:b9:00:1c)
> Internet Protocol Version 4, Src: 192.168.2.2, Dst: 8.8.8.8
> User Datagram Protocol, Src Port: 39594, Dst Port: 53
> Domain Name System (query)

0000 53 01 45 b9 00 1c ca 05 52 04 00 38 08 00 45 00 bER--8...E-
0010 00 3c 4a 3d 00 00 3e 11 5f ba c0 a8 02 02 08 08 <J)=... ..
0020 00 08 9a aa 00 35 00 28 95 14 6e 48 01 00 00 015(..nH....
0030 00 00 00 00 00 00 03 77 77 77 06 67 6f 67 6cW www googl
0040 65 03 63 6f 6d 00 00 01 00 01 e:cm....

R2-Switch

4	11.811904	192.168.2.1	224.0.0.9	RIPv2	126	Response
5	15.057918	ca:04:4a:32:00:00	CDP/VTP/DTP/PagP/UDL	CDP	366	Device ID: R3 Port ID: FastEthernet0/0
6	19.906303	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
7	29.907502	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
8	34.004135	Private_66:68:01	Broadcast	ARP	64	Who has 192.168.2.1? Tell 192.168.2.2
9	34.018720	ca:02:26:dc:00:00	Private_66:68:01	ARP	60	192.168.2.1 is at ca:02:26:dc:00:00
10	34.019587	192.168.2.2	8.8.8.8	DNS	74	Standard query 0x6e48 A www.google.com
11	34.092297	8.8.8.8	192.168.2.2	DNS	90	Standard query response 0x6e48 A www.google.com A 172.217.16.4
12	34.092872	192.168.2.2	172.217.16.4	ICMP	98	Echo (ping) request id=0x3d4a, seq=1/256, ttl=64 (reply in 13)
13	34.165659	172.217.16.4	192.168.2.2	ICMP	98	Echo (ping) reply id=0x3d4a, seq=1/256, ttl=53 (request in 12)
14	35.166692	192.168.2.2	172.217.16.4	ICMP	98	Echo (ping) request id=0x3e4a, seq=2/512, ttl=64 (reply in 15)
15	35.234123	172.217.16.4	192.168.2.2	ICMP	98	Echo (ping) reply id=0x3e4a, seq=2/512, ttl=53 (request in 14)
16	36.235333	192.168.2.2	172.217.16.4	ICMP	98	Echo (ping) request id=0x3f4a, seq=3/768, ttl=64 (reply in 17)
17	36.309537	172.217.16.4	192.168.2.2	ICMP	98	Echo (ping) reply id=0x3f4a, seq=3/768, ttl=53 (request in 16)
18	37.309778	192.168.2.2	172.217.16.4	ICMP	98	Echo (ping) request id=0x404a, seq=4/1024, ttl=64 (reply in 19)
19	37.379762	172.217.16.4	192.168.2.2	ICMP	98	Echo (ping) reply id=0x404a, seq=4/1024, ttl=53 (request in 18)
20	38.379924	192.168.2.2	172.217.16.4	ICMP	98	Echo (ping) request id=0x414a, seq=5/1280, ttl=64 (reply in 21)
21	38.445297	172.217.16.4	192.168.2.2	ICMP	98	Echo (ping) reply id=0x414a, seq=5/1280, ttl=53 (request in 20)
22	39.992096	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
23	40.510125	192.168.2.1	224.0.0.9	RIPv2	126	Response
24	49.906339	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
25	58.605989	ca:02:26:dc:00:00	CDP/VTP/DTP/PagP/UDL	CDP	366	Device ID: R2 Port ID: FastEthernet0/0
26	59.999169	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
27	68.408005	192.168.2.1	224.0.0.9	RIPv2	126	Response
28	69.996487	ca:02:26:dc:00:00	ca:02:26:dc:00:00	LOOP	60	Reply
> Frame 10: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface -, id 0 > Ethernet II, Src: Private_66:68:01 (00:50:79:66:68:01), Dst: ca:02:26:dc:00:00 (ca:02:26:dc:00:00) > Internet Protocol Version 4, Src: 192.168.2.2, Dst: 8.8.8.8 > User Datagram Protocol, Src Port: 39594, Dst Port: 53 > Domain Name System (query)						
0000	ca 02 26 dc 00 00 00 50	79 66 68 01 08 00 45 00	...&....P yfh...E..			
0010	00 3c 4a 3d 00 00 40 11	5d ba c0 a8 02 02 08 08	...<J...@].....			
0020	08 08 9a aa 00 35 00 28	95 14 6e 48 01 00 00 015-(.nH....			
0030	00 00 00 00 00 03 77 77	77 77 06 67 6f 6f 67 6cw ww googl			
0040	65 03 63 6f 6d 00 00 01	00 01	e:com.....			