LV08: Konfiguracija RIP

Priprema za vježbu:

1) Koje su karakteristike protokola RIPv1?

RIPv1 je klasificirani usmjernički protokol koji ne šalje mrežnu masku (ne podržava VLSM i CIDR)
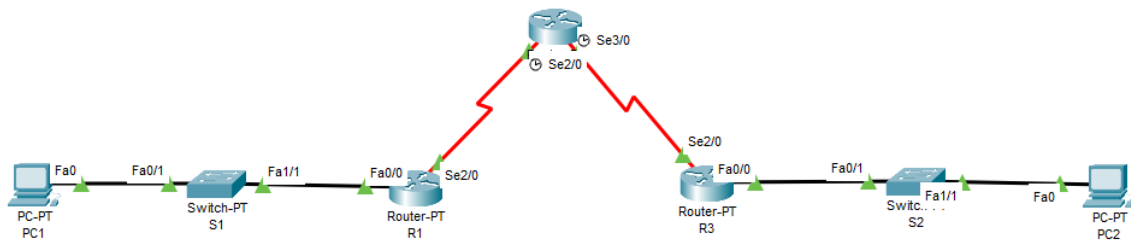
U paketima za razmjenu informacija koristi se i broadcast adresa

Koristi Distance vector protokole

Koriste razdvojeni horizont i triggered updates ažuriranja

Najveća udaljenost do odredišta je 15 (16 označava nedostupnu mrežu)

Izvođenje vježbe:

Ruter	Adresa Fastethernet sučelja	Mrežna maska	Oznaka ser. sučelja	Tip ser. sučelja	Adresa serijskog sučelja	Mrežna maska	Default gateway
R1	192.168.1.1	255.255.255.0	S2/0	DCE	192.168.2.1	255.255.255.0	
R2			S2/0	DTE	192.168.2.2	255.255.255.0	
R2			S3/0	DTE	192.168.3.1	255.255.255.0	
R3	192.168.4.1	255.255.255.0	S3/0	DCE	192.168.3.2	255.255.255.0	
PC1	192.168.1.10	255.255.255.0					192.168.1.1
PC2	192.168.4.10	255.255.255.0					192.168.4.1

1) U PT-u spoji uređaje prema zadanoj topologiji i izvrši temeljnu konfiguraciju usmjernika, koristeći tab CLI.

2) Konfiguriraj sučelja na usmjernicima R1, R2 i R3, koristeći priloženu tablicu adresa i zabilješke s prethodnih vježbi (voditi računa da su IP adrese izmijenjene).

Usmjernik R1:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
```

```
Router(config)#interface serial 2/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
```

Usmjernik R2:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#ip address 192.168.2.2 255.255.255.0
Router(config-if)#no shutdown
```

```
Router(config-if)#exit
Router(config)#interface serial 3/0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#no shutdown
```

Usmjernik R3:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 192.168.4.1 255.255.255.0
Router(config-if)#no shutdown
```

```
Router(config)#
Router(config)#interface serial 3/0
Router(config-if)#ip address 192.168.3.2 255.255.255.0
Router(config-if)#no shutdown
```

3) Pinganjem provjeri da li postoji povezanost između PC1 i PC2.

```
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.4.10

Pinging 192.168.4.10 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.4.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

4) Pinganjem provjeri do koje razine postoji povezanost:

PC1 – Fastethernet sučelje 0/0 usmjernika R1

```
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PC1 – Serijsko sučelje 2/0 usmjernika R1

```
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PC1 - Serijsko sučelje 2/0 usmjernika R2

```
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

5) Naredbom show ip route na usmjerniku R1 provjeri stanje usmjerničke tablice.

```
Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, Serial2/0

Router>
```

6) Konfiguriraj dinamičku rutu koja će omogućiti povezanost mreža 192.168.1.0/24 i 192.168.4.0/24, korištenjem RIPv1 protokola, kako slijedi:

Usmjernik R1:

```
Router(config)#router rip
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
```

```
Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, Serial2/0

Router>
```

Usmjernik R2:

```
Router(config)#router rip
Router(config-router)#network 192.168.2.0
Router(config-router)#network 192.168.3.0
```

```
Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    192.168.1.0/24 [120/1] via 192.168.2.1, 00:00:26, Serial2/0
C    192.168.2.0/24 is directly connected, Serial2/0

Router>
```

Usmjernik R3:

```
Router(config)#router rip
Router(config-router)#network 192.168.3.0
Router(config-router)#network 192.168.4.0
```

```
Router>show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.4.0/24 is directly connected, FastEthernet0/0

Router>
```

7) Pinganjem provjeri povezanost PC1 i PC2.

```
C:\>ping 192.168.4.10

Pinging 192.168.4.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.4.10: bytes=32 time=2ms TTL=125
Reply from 192.168.4.10: bytes=32 time=10ms TTL=125
Reply from 192.168.4.10: bytes=32 time=2ms TTL=125

Ping statistics for 192.168.4.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 10ms, Average = 4ms

C:\>
```