TEHNIČKA ŠKOLA
RUĐERA BOŠKOVIĆA
Zagreb, Getaldićeva 4

Nastavni predmet	**RAČUNALNE MREŽE**
Naslov cjeline	USMJERNIK I USMJERNIČKI PROTOKOLI
Naslov jedinice	Konfiguracija RIPv1 protokola

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PRIPREMA ZA VJEŽBU

1. Koje su karakteristike protokola RIPv1?

-Prednosti RIP v1:

Jednostavnost implementacije

Nizak zahtjev za resursima

Uobičajena kompatibilnost

Automatska razmjena ruta

-Nedostaci RIP v1

Ne podržava subnetiranje

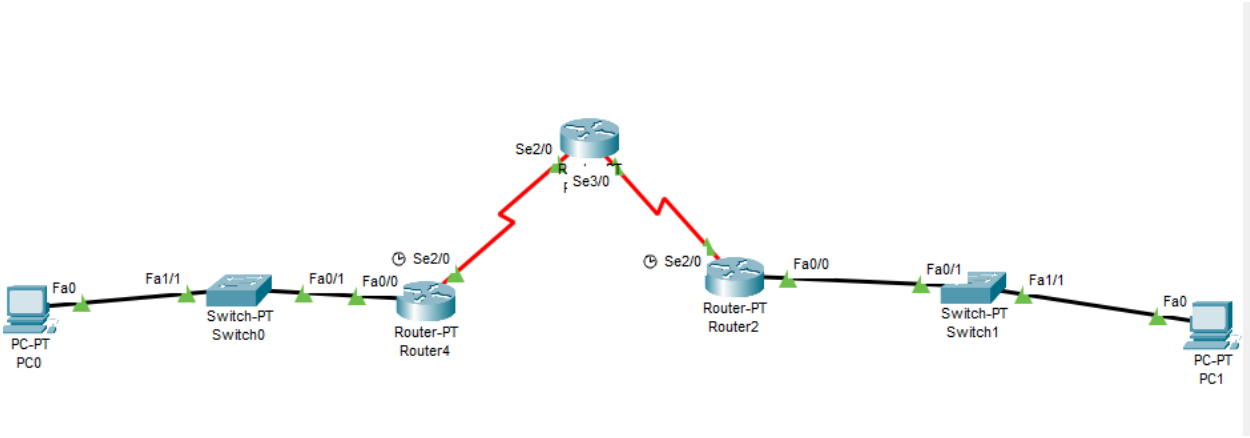
Broadcast umjesto multicast

Nedostatak autentifikacije

Nije optimalan za velike mreže

IZVOĐENJE VJEŽBE

Topologija:



Tablica adresa

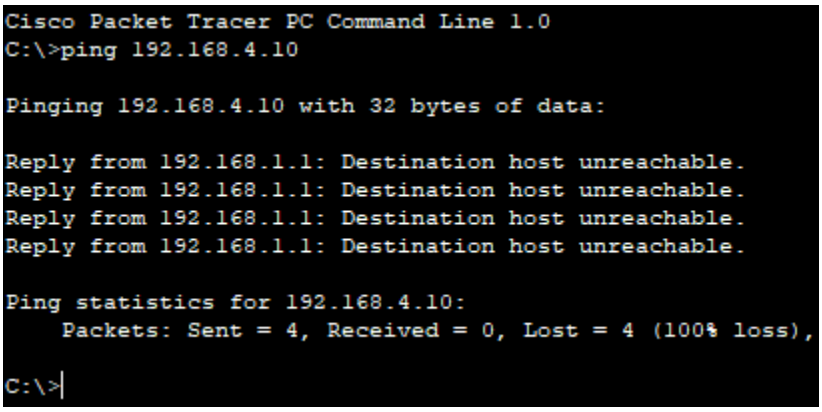
Ruter	Adresa Fastethernet sučelja	Mrežna maska	Oznaka ser. sučelja	Tip ser. sučelja	Adresa serijskog sučelja	Mrežna maska	Default gateway
R1	192.168.1.1	255.255.255.0	S2/0	DCE	192.168.2.1	255.255.255.0	
R2			S2/0	DTE	192.168.2.2	255.255.255.0	
R2			S3/0	DTE	192.168.3.1	255.255.255.0	
R3	192.168.4.1	255.255.255.0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

Zadaci:

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).

3. Pinganjem provjeri da li postoji povezanost između PC1 i PC2. Obrazloži zašto je tako.



Razlog je to što nema konfiguriranih ruta između ova dva računala

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 = 1ms, Average = 0ms
```

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 = 1ms, Average = 0ms
```

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),
```

Itd.

Obrazloži rezultat pinganja.

Povezanost postoji samo između elemenata svake mreže posebno.

5. Naredbom show ip route na usmjerniku R1 provjeri stanje usmjerničke tablice. Ispiši koje su mreže navedene u tablici.

```
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
```

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:

a) Na R1:

R1(config)#router rip

R1(config-router)#network 192.168.1.0

R1(config-router)#network 192.168.2.0

b) Na R2:

R2(config)#router rip

R2(config-router)#network 192.168.2.0

R2(config-router)#network 192.168.3.0

c) Na R3:

R3(config-router)#router rip

R3(config-router)#network 192.168.3.0

R3(config-router)#network 192.168.4.0

Naredbom show ip route na svim usmjernicima provjeri stanje ruting tablica. Ispiši koje su mreže navedene u tablici.

R1

```
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
R    192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:15, Serial2/0
R    192.168.4.0/24 [120/2] via 192.168.2.2, 00:00:15, Serial2/0
```

R2

```
Gateway of last resort is not set

R    192.168.1.0/24 [120/1] via 192.168.2.1, 00:00:27, Serial2/0
C    192.168.2.0/24 is directly connected, Serial2/0
C    192.168.3.0/24 is directly connected, Serial3/0
R    192.168.4.0/24 [120/1] via 192.168.3.2, 00:00:11, Serial3/0
```

R3

```
Gateway of last resort is not set

R    192.168.1.0/24 [120/2] via 192.168.3.1, 00:00:20, Serial2/0
R    192.168.2.0/24 [120/1] via 192.168.3.1, 00:00:20, Serial2/0
C    192.168.3.0/24 is directly connected, Serial2/0
C    192.168.4.0/24 is directly connected, FastEthernet0/0
```

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=2ms TTL=125
Reply from 192.168.4.10: bytes=32 time=14ms 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 = 14ms, Average = 6ms
```