

RAČUNALNE MREŽE

Djelovanje u mrežnom sloju

Vježba 9: Konfiguracija RIPv1 protokola

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PRIPREMA ZA VJEŽBU

1. Koje su karakteristike protokola RIPv1?

To je protokol otvorenog standarda što znači da radi na usmjerivačima različitih proizvođača. Radi na većini usmjerivača

klasičan protokol usmjeravanja.

Ažuriranja se emitiraju.

Nije pouzdan.

Njegova metrika je broj skokova, a maksimalni broj skokova je 15.

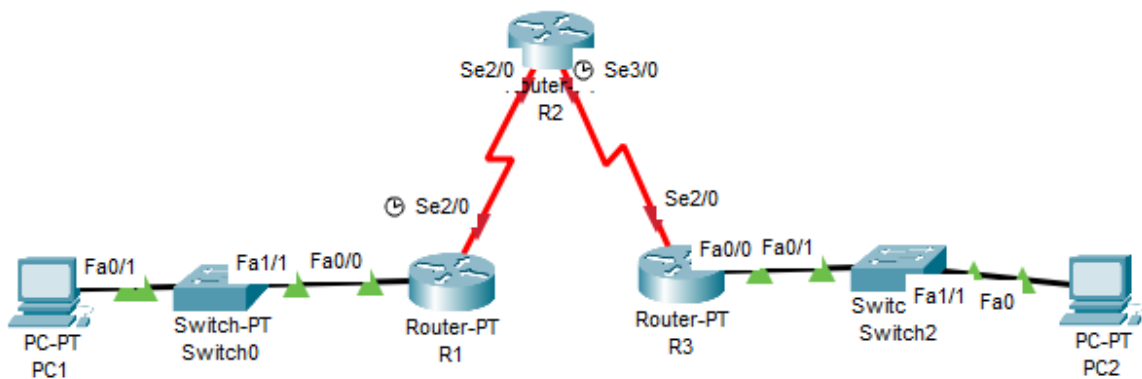
tablice usmjeravanja se ažuriraju svakih 30 sekundi.

To je jedan od najsporijih protokola.

Jednostavan za konfiguriranje, statički usmjerivač je složen.

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).



IOS Command Line Interface

```
Enter configuration commands, one per line. End with CNTL/Z.
Router
Router(config)#interface serial 2/0
Router(config-if)#ip address 192.168.2.2 255.255.255.0
Router(config-if)#clock rate 64000
Router(config-if)#no shutdown
Router(config-if)#interface serial 2/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#clock rate 64000
Router(config-if)#no shutdown
Router(config-if)#Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#
Router(config)#
Router(config)#router rip
Router(config-router)#
Router(config-router)#end
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#
%SYS-5-CONFIG_I: Configured from console by console

Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
```

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.2.1
% Incomplete command.
Router(config-if)#ip address
% Incomplete command.
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#ip address
% Incomplete command.
Router(config-if)#ip address
% Incomplete command.
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#
Router(config-if)#
```

```
Router>enable
Router#config
Configuring from terminal, memory, or network [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-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interface serial 3/0
Router(config-if)#ip address 192.168.3.2 255.255.255.0
Router(config-if)#clock rate 46000
Unknown clock rate
Router(config-if)#clock rate 64000
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
```

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

```
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.
Request timed out.
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. Pinging 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<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms 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

PC1 - Serijsko sučelje 2/0 usmjernika R2

```
C:\>ping 192.168.2.2

Pinging 192.168.2.2 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 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

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

```
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
```

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
```

```

Router#
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

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

```

b) Na R2:

```
R2(config)#router rip
```

```
R2(config-router)#network 192.168.2.0
```

```
R2(config-router)#network 192.168.3.0
```

```

Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 192.168.2.0
Router(config-router)#network 192.168.3.0
Router(config-router)#
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

```

c) Na R3:

```
R3(config-router)#router rip
```

```
R3(config-router)#network 192.168.3.0
```

```
R3(config-router)#network 192.168.4.0
```

```
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.3.0
Router(config-router)#network 192.168.2.0
Router(config-router)#
```

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