Prijelaz rutiranja sa RIPv1 na IGRP Routing protocol

Standardno rutiranje sa RIP-om i IGRP-om
(Default Routing with RIP and IGRP)

U ovom tutorialu pokušat ću pojasniti i predočiti kako se određeni Ruteri koji su bili konfigurirani sa RIPv1 Routing protokolom vrlo brzo mogu preorijentirati na IGRP Routing protokol.
Isto tako bit će uključeno i konfiguriranje standardnih ruta (Default Route)

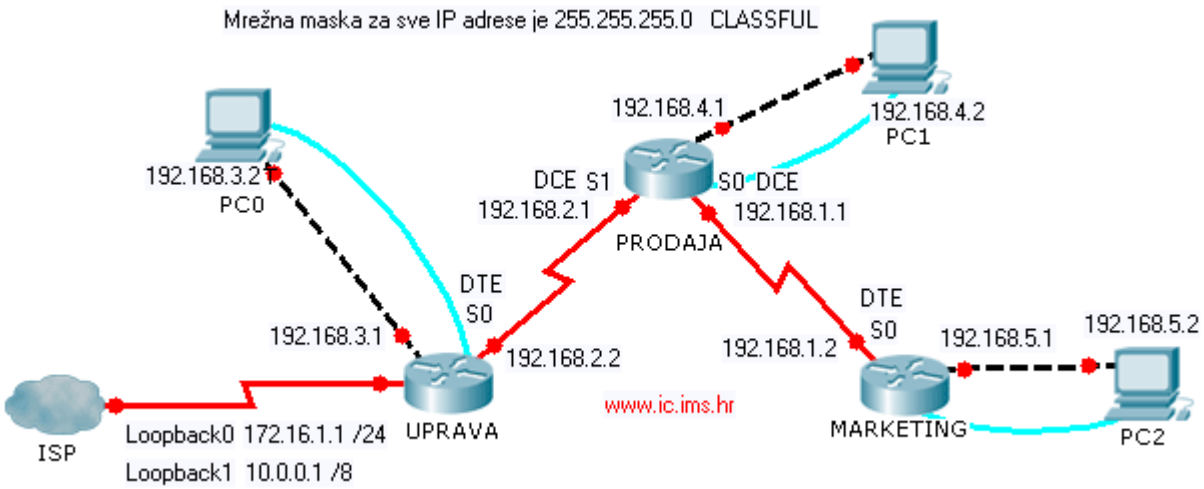
Default route bit će konfigurirana sa RIPv1. a isti će propagirati default rutu na druge Rutere. Nakon završene konfiguracije Rutera sa RIPv1. rekonfigurirat ću Rutere sa IGRP Routing protokolom.
U tutorail će biti uključene i **LOOPBACK IP** (http://www.cisco.com/en/US/tech/tk39/tk48/technologies_tech_note09186a00800c93c4.shtml#loop) adrese koje će simulirati konekciju sa ISP-om (Internet Service Provider).

Što je Loopback IP adresa.?

Laički rečeno, to je virtualna IP adresa koju možemo također pingati.

Sve što vidite odrađeno je na Simulatoru, na Ruteru serije 1700 (1721)
Podrazumijeva se, ako ovo radite na pravom uređaju tada pomoću console kabla morate se spojiti na console port Rutera i pomoću npr: Hyper Terminal (http://www.ic.ims.hr/forum/viewtopic.php?t=413) , programa pristupiti IOS-u Rutera.

Slika 1. Shema mreže



Korak 1
S obzirom na shemu mreže idemo konfigurirati sve Rutere prema postavljenoj mreži.
Prvo ćemo Rutere konfigurirati sa osnovnom konfiguracijom. Za detalje osnovne konfiguracije Rutera pogledaj **Basic configuring Router** (http://www.ic.ims.hr/forum/viewtopic.php?t=413)

KONFIGURACIJA RUTERA UPRAVA

```
Router>
Router>enable
Router#configure terminal
Router(config)#hostname Uprava

Uprava(config)#line console 0
```

```
Uprava(config-line)#password cisco
Uprava(config-line)#login
Uprava(config-line)#exit

Uprava(config)#line vty 0 4
Uprava(config-line)#password cisco
Uprava(config-line)#login
Uprava(config-line)#exit

Uprava(config)#enable password cisco
Uprava(config)#enable secret class

Uprava(config)#ip host Prodaja 192.168.2.1

Uprava(config)#interface serial 0
Uprava(config-if)#ip address 192.168.2.2 255.255.255.0
Uprava(config-if)#no shutdown
Uprava(config-if)#exit

Uprava(config)#interface fastethernet 0
Uprava(config-if)#ip address 192.168.3.1 255.255.255.0
Uprava(config-if)#no shutdown
Uprava(config-if)#exit

Uprava(config)#router rip
Uprava(config-router)#network 192.168.3.0
Uprava(config-router)#network 192.168.2.0
Uprava(config-router)#exit
Uprava(config)#exit

Uprava#copy running-config startup-config
```

Kod:

```
Uprava#show running-config
Building configuration...
no service password-encryption
!
hostname Uprava
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Prodaja 192.168.2.1
!
interface Serial0
 ip address 192.168.2.2 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0
 ip address 192.168.3.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router rip
 network 192.168.3.0
 network 192.168.2.0
!
ip classless
no ip http server
```

```
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

KONFIGURACIJA RUTERA PRODAJA

```
Router>
Router>enable
Router#configure terminal
Router(config)#hostname Prodaja

Prodaja(config)#line console 0
Prodaja(config-line)#password cisco
Prodaja(config-line)#login
Prodaja(config-line)#exit

Prodaja(config)#line vty 0 4
Prodaja(config-line)#password cisco
Prodaja(config-line)#login
Prodaja(config-line)#exit

Prodaja(config)#enable password cisco
Prodaja(config)#enable secret class

Prodaja(config)#ip host Uprava 192.168.2.2
Prodaja(config)#ip host Marketing 192.168.1.2

Prodaja(config)#interface serial 1
Prodaja(config-if)#ip address 192.168.2.1 255.255.255.0
Prodaja(config-if)#clock rate 64000 // postavljanje DCE
Prodaja(config-if)#no shutdown
Prodaja(config-if)#exit

Prodaja(config)#interface serial 0
Prodaja(config-if)#ip address 192.168.1.1 255.255.255.0
Prodaja(config-if)#clock rate 64000 // postavljanje DCE
Prodaja(config-if)#no shutdown
Prodaja(config-if)#exit

Prodaja(config)#interface fastethernet 0
Prodaja(config-if)#ip address 192.168.4.1 255.255.255.0
Prodaja(config-if)#no shutdown
Prodaja(config-if)#exit

Prodaja(config)#router rip
Prodaja(config-router)#network 192.168.2.0
Prodaja(config-router)#network 192.168.4.0
Prodaja(config-router)#network 192.168.1.0
Prodaja(config-router)#exit
```

Prodaja(config)#exit

Prodaja#copy running-config startup-config

Kod:

```
Prodaja#show running-config
Building configuration...
no service password-encryption
!
hostname Prodaja
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Uprava 192.168.2.2
ip host Marketing 192.168.1.2
!
interface Serial0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 clock rate 64000
!
interface Serial1
 ip address 192.168.2.1 255.255.255.0
 no ip directed-broadcast
 clock rate 64000
!
interface FastEthernet0
 ip address 192.168.4.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router rip
 network 192.168.2.0
 network 192.168.4.0
 network 192.168.1.0
!
ip classless
no ip http server
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

KONFIGURACIJA RUTERA MARKETING

Router>
Router>enable
Router#configure terminal

```
Router(config)#hostname Marketing

Marketing(config)#line console 0
Marketing(config-line)#password cisco
Marketing(config-line)#login
Marketing(config-line)#exit

Marketing(config)#line vty 0 4
Marketing(config-line)#password cisco
Marketing(config-line)#login
Marketing(config-line)#exit

Marketing(config)#enable password cisco
Marketing(config)#enable secret class

Marketing(config)#ip host Prodaja 192.168.1.1

Marketing(config)#interface serial 0
Marketing(config-if)#ip address 192.168.1.2 255.255.255.0
Marketing(config-if)#no shutdown
Marketing(config-if)#exit

Marketing(config)#interface fastethernet 0
Marketing(config-if)#ip address 192.168.5.1 255.255.255.0
Marketing(config-if)#no shutdown
Marketing(config-if)#exit

Marketing(config)#router rip
Marketing(config-router)#network 192.168.1.0
Marketing(config-router)#network 192.168.5.0
Marketing(config-router)#exit
Marketing(config)#exit

Marketing#copy running-config startup-config
```

Kod:

```
Marketing#show running-config
Building configuration...
no service password-encryption
!
hostname Marketing
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Prodaja 192.168.1.1
!
interface Serial0
 ip address 192.168.1.2 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0
 ip address 192.168.5.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router rip
 network 192.168.1.0
 network 192.168.5.0
```

```
!
ip classless
no ip http server
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

Korak 2

Idemo provjeriti pingove sa svakog PC-a koji imitira mrežu.

Pinganje sa PC-0

Kod:

```
ping 192.168.3.1 => prolazi
ping 192.168.2.2 => prolazi
ping 192.168.2.1 => prolazi
ping 192.168.4.1 => prolazi
ping 192.168.4.2 => prolazi
ping 192.168.1.1 => prolazi
ping 192.168.1.2 => prolazi
ping 192.168.5.1 => prolazi
ping 192.168.5.2 => prolazi
```

Dakle svi pingovi prolaze a i u suprotnom smjeru (neću ih sve navoditi), što znači da su Ruteri konfigurirani pravilno a i RIPv1 Routing protokol.

S obzirom da sam konfigurirao IP HOST TABLE idemo provjeriti pingove pomoću naziva Rutera

Pinganje sa Routera PRODAJA

Kod:

```
Prodaja#ping Uprava
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.2, timeout is 2 seconds:
!!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms

Prodaja#ping Marketing
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.2, timeout is 2 seconds:
!!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

Korak 3

Idemo vidjeti naš IP Protokol

Ruter UPRAVA

Kod:

```
Uprava#show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 10 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is
  Incoming update filter list for all interfaces is
  Redistributing:   rip
  Default version control: send version 1, receive any version
    Interface       Send  Recv   Key-chain
    Serial0          1    1 2
    FastEthernet0    1    1 2
  Routing for Networks:
    192.168.3.0
    192.168.2.0
  Routing Information Sources:
    192.168.2.1          120      00:00:03
  Distance: (default is 120)
```

Ruter PRODAJA

Kod:

```
Prodaja#show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 29 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is
  Incoming update filter list for all interfaces is
  Redistributing:   rip
  Default version control: send version 1, receive any version
    Interface       Send  Recv   Key-chain
    Serial0          1    1 2
    Serial1          1    1 2
    FastEthernet0    1    1 2
  Routing for Networks:
    192.168.2.0
    192.168.4.0
    192.168.1.0
  Routing Information Sources:
    192.168.2.2          120      00:00:06
    192.168.1.2          120      00:00:06
  Distance: (default is 120)
```

Ruter MARKETING

Kod:

```
Marketing#show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 3 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is
  Incoming update filter list for all interfaces is
  Redistributing:   rip
```

```
  Default version control: send version 1, receive any version
    Interface         Send  Recv   Key-chain
    Serial0           1     1 2
    FastEthernet0     1     1 2
  Routing for Networks:
    192.168.1.0
    192.168.5.0
  Routing Information Sources:
    192.168.1.1           120      00:00:03
  Distance: (default is 120)
```

Korak 4

Idemo vidjeti Routing tablice

Router UPRAVA

Kod:

```
Uprava#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
       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, * - candidate default
       U - per-user static route
Gateway of last resort is not set

C    192.168.3.0 is directly connected, FastEthernet0
C    192.168.2.0 is directly connected, Serial0
R    192.168.4.0 [120/1] via 192.168.2.1, 00:04:29, Serial0
R    192.168.1.0 [120/1] via 192.168.2.1, 00:09:32, Serial0
R    192.168.5.0 [120/2] via 192.168.2.1, 00:09:33, Serial0
```

Router PRODAJA

Kod:

```
Prodaja#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
       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, * - candidate default
       U - per-user static route
Gateway of last resort is not set

C    192.168.2.0 is directly connected, Serial1
C    192.168.4.0 is directly connected, FastEthernet0
R    192.168.3.0 [120/1] via 192.168.2.2, 00:03:42, Serial1
C    192.168.1.0 is directly connected, Serial0
R    192.168.5.0 [120/1] via 192.168.1.2, 00:06:26, Serial0
```

Router MARKETING

Kod:

```
Marketing#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
        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, * - candidate default
        U - per-user static route
    Gateway of last resort is not set

    C    192.168.1.0 is directly connected, Serial0
    C    192.168.5.0 is directly connected, FastEthernet0
    R    192.168.2.0 [120/1] via 192.168.1.1, 00:04:42, Serial0
    R    192.168.4.0 [120/1] via 192.168.1.1, 00:06:14, Serial0
    R    192.168.3.0 [120/2] via 192.168.1.1, 00:05:25, Serial0
```

Korak 5

U ovom koraku ću simulirati konekciju sa ISP-om (Internet Service Provider).
Na Ruteru UPRAVA konfigurirat ću LOOPBACK IP adresu koja će simulirati konekciju prema ISP-u.

```
Uprava#configure terminal
Uprava(config)#interface loopback0
Uprava(config-if)#ip address 172.16.1.1 255.255.255.0
Uprava(config-if)#exit
Uprava(config)#exit
```

Pinganje Loopback IP adresa sa Rutera na kojem je konfigurirana je uspješno, ali sa Rutera PRODAJA ping je neuspješan, jer se ruta za tu IP adresu ne nalazi u Routing tablici Rutera Prodaja.

Kod:

```
Uprava#ping 172.16.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.1, timeout is 2 seconds:
!!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

Kod:

```
Prodaja#ping 172.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.168.1.1, timeout is 2 seconds:
..... Success rate is 0 percent (0/5), round-trip min/avg/max = 1/2/4 ms
```

Korak 6

Da bi ostali Ruteri imali pristup Loopback IP adresi koja simulira ISP potrebno je konfigurirati **Default Route** (Standardna ruta) na Ruteru na kojem je ista Loopback konfigurirana. Default route se naziva i "QUAD ZERO"
Slijedeća naredba konfigurira statičku Default routu. Ista dozvoljava promet prema mrežama koje nisu u Routing table ostalih Rutera.

```
Uprava#configure terminal
Uprava(config)#ip route 0.0.0.0 0.0.0.0 loopback0
Uprava(config)#exit
```

U Cisco IOS-u verzije 12.0 i kasnije, RIP ne oglašava Default Route . To ovisi o verziji IOS-a. U tom slučaju za propagiranje Default route potrebno je na Ruteru izdati naredbu #default-information originate

```
Uprava#configure terminal
Uprava(config)#router rip
Uprava(config-router)#default-information originate
Uprava(config-router)#exit
```

Kod:

```
Uprava#show running-config
Building configuration...
no service password-encryption
!
hostname Uprava
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Prodaja 192.168.2.1
!
interface Loopback0
 ip address 172.16.1.1 255.255.255.0
 no ip directed broadcast
!
interface Serial0
 ip address 192.168.2.2 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0
 ip address 192.168.3.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
!
router rip
 default-information originate
 network 192.168.3.0
 network 192.168.2.0
!
ip classless
no ip http server
!
ip route 0.0.0.0 0.0.0.0 loopback0
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

Korak 7

Idemo provjeriti Routing tablice za svaki Ruter

Ruter UPRAVA

Kod:

```
Uprava#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

C    192.168.3.0 is directly connected, FastEthernet0
C    192.168.2.0 is directly connected, Serial0
R    192.168.4.0 [120/1] via 192.168.2.1, 00:01:23, Serial0
R    192.168.1.0 [120/1] via 192.168.2.1, 00:08:29, Serial0
R    192.168.5.0 [120/2] via 192.168.2.1, 00:03:43, Serial0
     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Loopback0
S*   0.0.0.0 [1/0] via loopback0
```

Ruter PRODAJA

Kod:

```
Prodaja#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is not set

C    192.168.2.0 is directly connected, Serial1
C    192.168.4.0 is directly connected, FastEthernet0
R    192.168.3.0 [120/1] via 192.168.2.2, 00:04:12, Serial1
C    192.168.1.0 is directly connected, Serial0
R    192.168.5.0 [120/1] via 192.168.1.2, 00:04:18, Serial0
R*   0.0.0.0 [120/1] via 192.168.2.2, 00:03:21, Serial1
```

Ruter MARKETING

Kod:

```
Marketing#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is not set

C    192.168.1.0 is directly connected, Serial0
C    192.168.5.0 is directly connected, FastEthernet0
R    192.168.2.0 [120/1] via 192.168.1.1, 00:08:25, Serial0
R    192.168.4.0 [120/1] via 192.168.1.1, 00:01:14, Serial0
R    192.168.3.0 [120/2] via 192.168.1.1, 00:03:26, Serial0
```

```
R*   0.0.0.0 [120/2] via 192.168.1.1, 00:05:33, Serial0
```

Iz gornjih Output-a možemo uočiti Defaultnu rutu na Ruterima (Prodaja, Marketing) koja je sada naučena preko RIP-a a također uočite Metriku za ove rute, tako da sav promet sada može ići prema ISP-u.

Naučene Defaultne rute sa AD i Metrikom

Kod:

```
Uprava => S*   0.0.0.0 [1/0] via loopback0 => AD = 1, metric = 0
Prodaja => R*   0.0.0.0 [120/1] via 192.168.2.2, 00:03:21, Serial1 => RIP AD = 120,
metric = 1
Marketing => R*   0.0.0.0 [120/2] via 192.168.1.1, 00:05:33, Serial0  => RIP AD = 120,
metric = 2
```

Uočite da i dalje Ruteri PRODAJA i MARKETING u svojim Routing tablicama nemaju rutu za mrežu 172.16.0.0 ali ping prema istoj prolazi.

Korak 8

Sve prethodno je bilo u vezi konfiguracije RIPv1 Routing protokola. Sada ćemo umjesto RIPv1 Routing protokola konfigurirati IGRP Routing protokol.

Idemo prvo isključiti RIPv1 Routing protokol, na svim Ruterima

```
Uprava#configure terminal
Uprava(config)#no router rip
Uprava(config)#exit

Prodaja#configure terminal
Prodaja(config)#no router rip
Prodaja(config)#exit

Marketing#configure terminal
Marketing(config)#no router rip
Marketing(config)#exit
```

Nakon ove naredbe u konfiguraciji više nema Routing protokola.
Sada kada smo uklonili Routing protokol RIPv1, konfigurirat ćemo na svim Ruterima IGRP sa AS (Autonomus System) 100.

```
Uprava#configure terminal
Uprava(config)#router igrp 100
Uprava(config-router)#network 192.168.2.0
Uprava(config-router)#network 192.168.3.0
Uprava(config-router)#exit
Uprava(config)#exit

Prodaja#configure terminal
Prodaja(config)#router igrp 100
Prodaja(config-router)#network 192.168.1.0
Prodaja(config-router)#network 192.168.2.0
Prodaja(config-router)#network 192.168.4.0
Prodaja(config-router)#exit
Prodaja(config)#exit

Marketing#configure terminal
```

```
Marketing(config)#router igrp 100
Marketing(config-router)#network 192.168.1.0
Marketing(config-router)#network 192.168.5.0
Marketing(config-router)#exit
Marketing(config)#exit
```

Nakon konfiguracije IGRP Routing protokola, svi pingovi prolaze. (nemojte brinuti o pinganju 172.16.1.1 Loopback IP adrese)

Sada konfiguracija Rutera izgleda ovako

Ruter UPRAVA

Kod:

```
Uprava#sh run
Building configuration...
no service password-encryption
!
hostname Uprava
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Prodaja 192.168.2.1
!
interface Loopback0
 ip address 172.16.1.1 255.255.255.0
 no ip directed broadcast
!
interface Serial0
 ip address 192.168.2.2 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0
 ip address 192.168.3.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router igrp 100
 network 192.168.2.0
 network 192.168.3.0
!
ip classless
no ip http server
!
ip route 0.0.0.0 0.0.0.0 loopback0
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

Ruter PRODAJA

Kod:

```
Prodaja#show running-config
no service password-encryption
!
hostname Prodaja
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Uprava 192.168.2.2
ip host Marketing 192.168.1.2
!
interface Serial0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 clock rate 64000
!
interface Serial1
 ip address 192.168.2.1 255.255.255.0
 no ip directed-broadcast
 clock rate 64000
!
interface FastEthernet0
 ip address 192.168.4.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router igrp 100
 network 192.168.1.0
 network 192.168.2.0
 network 192.168.4.0
!
ip classless
no ip http server
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

Ruter MARKETING

Kod:

```
Marketing#show running-config
no service password-encryption
!
hostname Marketing
```

```
enable secret 5 $sdf$6978yhg$jnb76sd
enable password cisco
!
ip subnet-zero
ip host Prodaja 192.168.1.1
!
interface Serial0
 ip address 192.168.1.2 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0
 ip address 192.168.5.1 255.255.255.0
 no ip directed-broadcast
 bandwidth 100000
!
router igrp 100
 network 192.168.1.0
 network 192.168.5.0
!
ip classless
no ip http server
!
line con 0
 login
 transport input none
 password cisco
line aux 0
line vty 0 4
 login
 password cisco
!
no scheduler allocate
end
```

Korak 9

Idemo pogledati kako izgledaju Routing tablice na svakom Ruteru

Ruter UPRAVA

Kod:

```
Uprava#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

C    192.168.3.0 is directly connected, FastEthernet0
C    192.168.2.0 is directly connected, Serial0
     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Loopback0
S*   0.0.0.0 [1/0] via loopback0
I    192.168.1.0 [100/651] via 192.168.2.1, 00:04:41, Serial0
I    192.168.4.0 [100/651] via 192.168.2.1, 00:08:13, Serial0
I    192.168.5.0 [100/1040] via 192.168.2.1, 00:05:29, Serial0
```

Ruter PRODAJA

Kod:

```
Prodaja#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is not set

C    192.168.2.0 is directly connected, Serial1
C    192.168.4.0 is directly connected, FastEthernet0
C    192.168.1.0 is directly connected, Serial0
I    192.168.3.0 [100/651] via 192.168.2.2, 00:02:39, Serial1
I    192.168.5.0 [100/651] via 192.168.1.2, 00:08:14, Serial0
```

Ruter MARKETING

Kod:

```
Marketing#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
       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, * - candidate default
       U - per-user static route

Gateway of last resort is not set

C    192.168.1.0 is directly connected, Serial0
C    192.168.5.0 is directly connected, FastEthernet0
I    192.168.2.0 [100/651] via 192.168.1.1, 00:08:19, Serial0
I    192.168.4.0 [100/651] via 192.168.1.1, 00:08:19, Serial0
I    192.168.3.0 [100/1040] via 192.168.1.1, 00:03:32, Serial0
```

S obzirom da nareba #default-information originate nije raspoloživa u IGRP Routing protokolu, propagiranje Default route ćemo izvesti naredbom #ip default-network

```
Uprava#configure terminal
Uprava(config)#router igrp 100
Uprava(config-router)#network 172.16.0.0
Uprava(config-router)#exit
Uprava(config)#ip default-network 172.16.0.0
```

Možemo kreirati drugu Loopback IP adresu i provjeriti ping sa Rutera Prodaja i Marketing. Pingovi su uspješni.

I na kraju idemo pogledati protokole

Ruter UPRAVA

Kod:

```
Uprava#show ip protocol
```

```
Routing Protocol is "igrp 100"
  Sending updates every 90 seconds, next due in 50 seconds
  Invalid after 270 seconds, hold down 280, flushed after 630
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  IGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  IGRP maximum hopcount 100
  IGRP maximum metric variance 1
  Redistributing: igrp 100
  Routing for Networks:
    172.16.0.0
    192.168.3.0
    192.168.2.0
  Routing Information Sources:
    192.168.2.1         100      00:00:03
  Distance: (default is 100)
```

Ruter PRODAJA

Kod:

```
Prodaja#show ip protocol
Routing Protocol is "igrp 100"
  Sending updates every 90 seconds, next due in 33 seconds
  Invalid after 270 seconds, hold down 280, flushed after 630
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  IGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  IGRP maximum hopcount 100
  IGRP maximum metric variance 1
  Redistributing: igrp 100
  Routing for Networks:
    192.168.1.0
    192.168.2.0
    192.168.4.0
  Routing Information Sources:
    192.168.2.2         100      00:00:00
  Distance: (default is 100)
```

Ruter MARKETING

Kod:

```
Marketing#show ip route
Marketing#show ip protocol
Routing Protocol is "igrp 100"
  Sending updates every 90 seconds, next due in 84 seconds
  Invalid after 270 seconds, hold down 280, flushed after 630
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  IGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  IGRP maximum hopcount 100
  IGRP maximum metric variance 1
```

```
    Redistributing: igrp 100
    Routing for Networks:
      192.168.1.0
      192.168.5.0
    Routing Information Sources:
    Distance: (default is 100)
```

Nadam se da ste shvatili kako se prelazi sa RIPv1 Routing protokola na IGRP Routing protokol. Ako niste upišite se na CISCO Academy

ako želite pogledati više tutoriala posjetite link:

http://www.ic.ims.hr/forum/viewforum.php?f=27