

Statičko rutiranje

Predmet: Mrežni servisi

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UVOD

Statičko rutiranje predstavlja proces u kome administrator mreže vrši ručnu konfiguraciju ruta na ruteru, pri čemu precizno određuje koje rute će biti korišćene za prosleđivanje mrežnog saobraćaja.

Za razliku od dinamičkog rutiranja, gde ruteri automatski razmenjuju informacije i ažuriraju rute na osnovu promena u mrežnoj topologiji, u slučaju statickog rutiranja svaka promena u mreži zahteva direktnu intervenciju administratora.

Uprkos svojoj jednostavnosti, ovaj pristup ima određena ograničenja koja postaju izraženija u velikim i složenim mrežnim okruženjima.

ZADATAK

Potrebno je formirati mrežnu infrastrukturu prikazanu na slici ispod. Infrastruktura se sastoji od četiri nezavisne mreže:

192.168.1.0/25

192.168.1.128/25

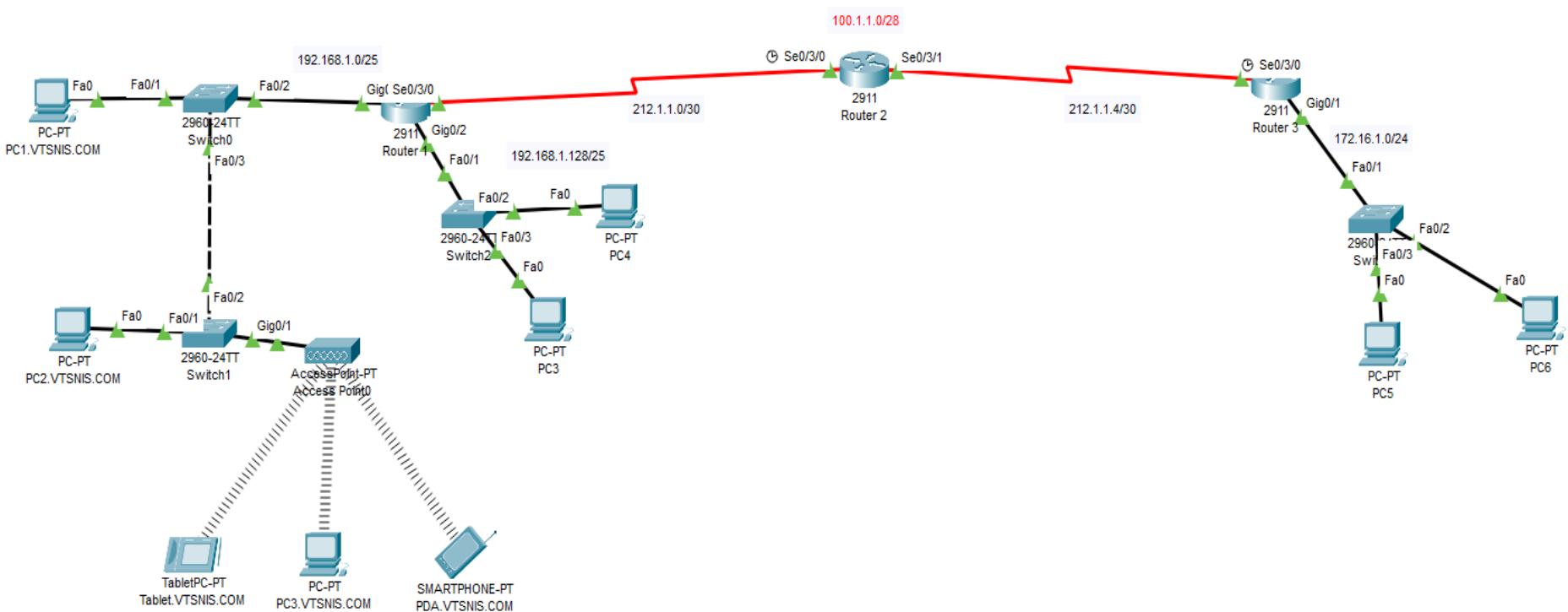
100.1.1.0/28

172.16.1.0/24

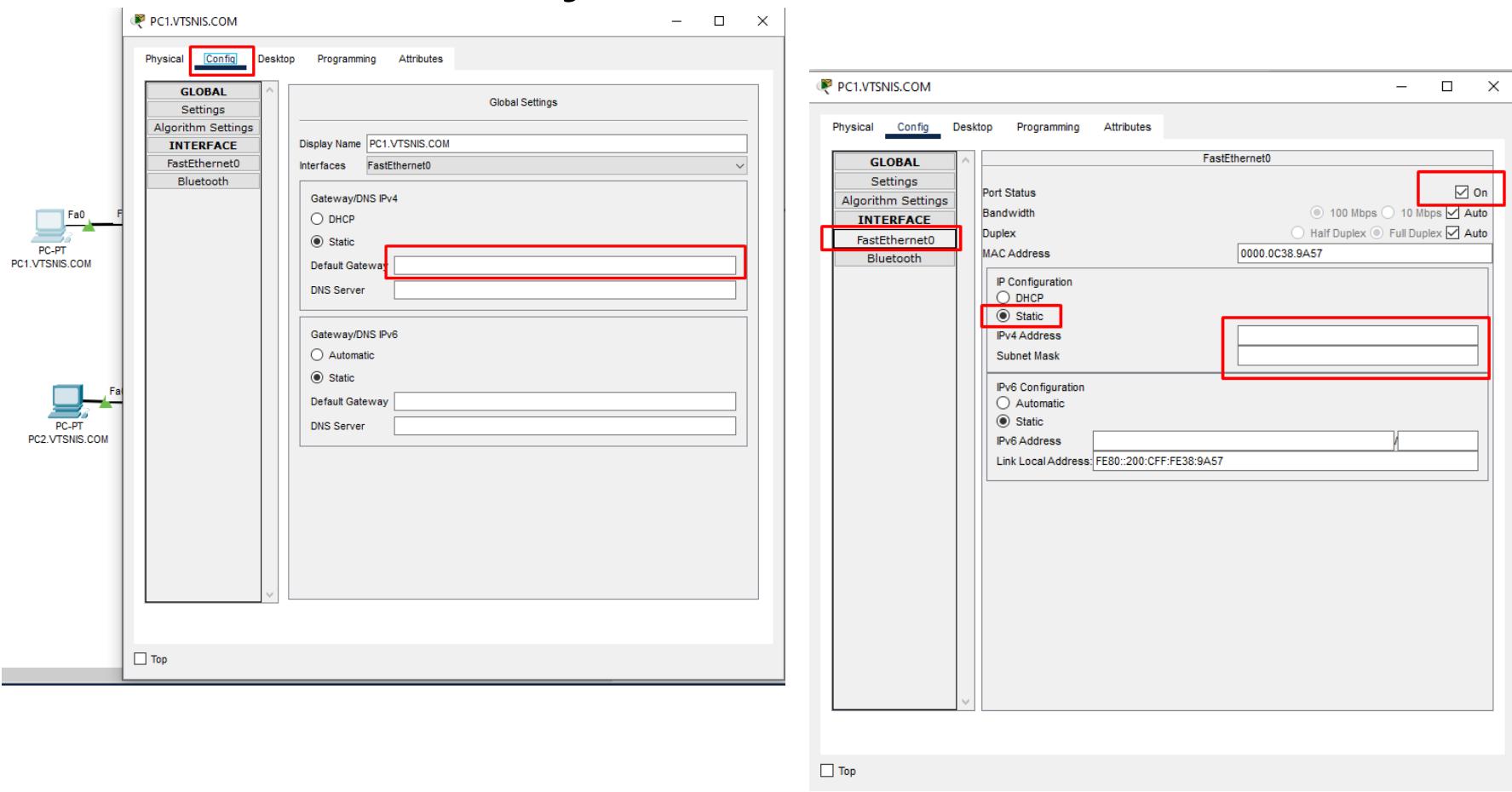
Komunikacija se obavlja preko tri ruteri koji su međusobno povezani. Konfigurišite statičke rute tako da različiti segmenti mreže mogu besprekorno komunicirati.

Osigurajte da klijenti iz svake mreže mogu razmenjivati podatke bez prepreka, stvarajući time stabilno i funkcionalno mrežno okruženje.

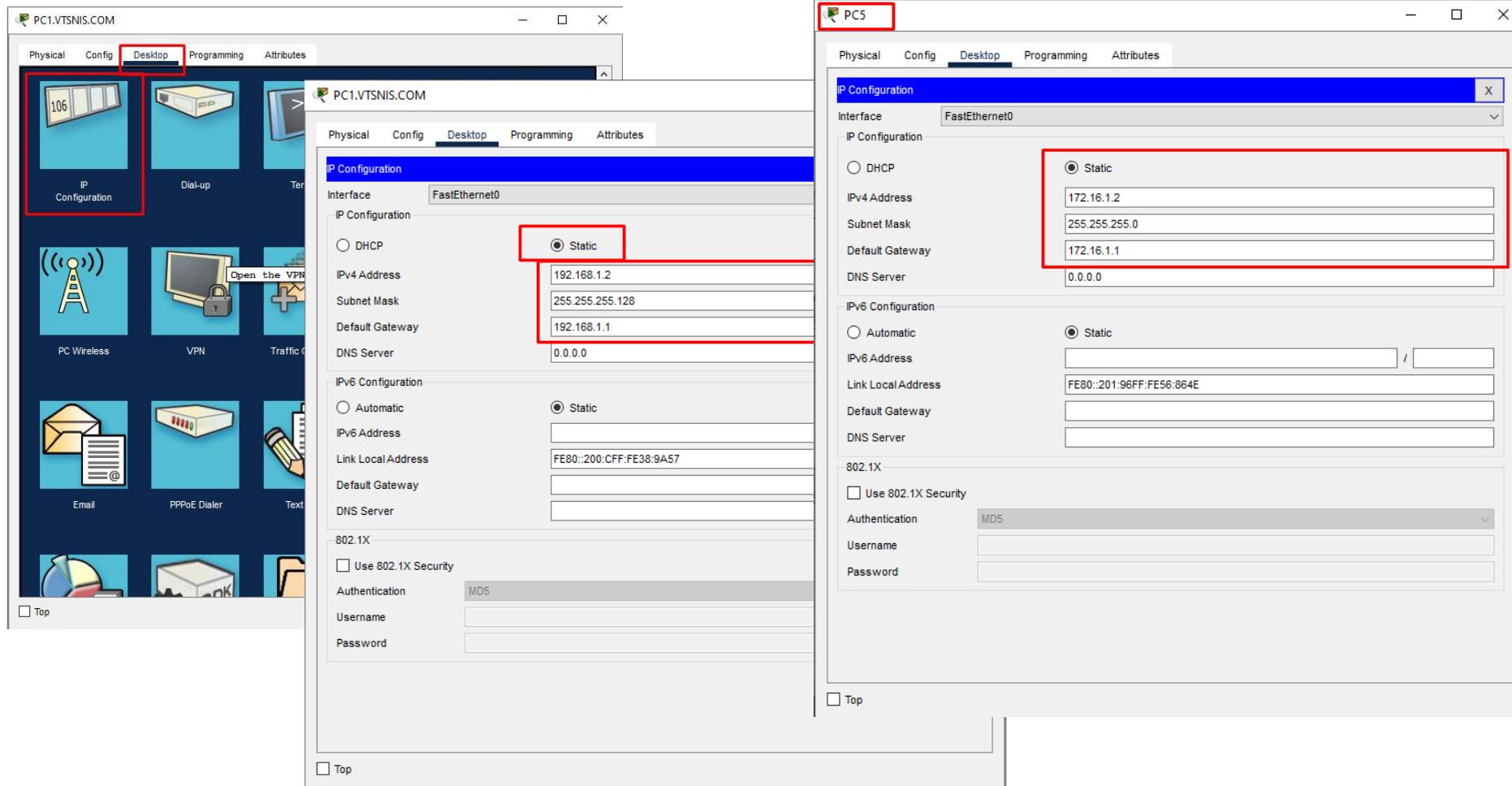
Mrežna infrastruktura



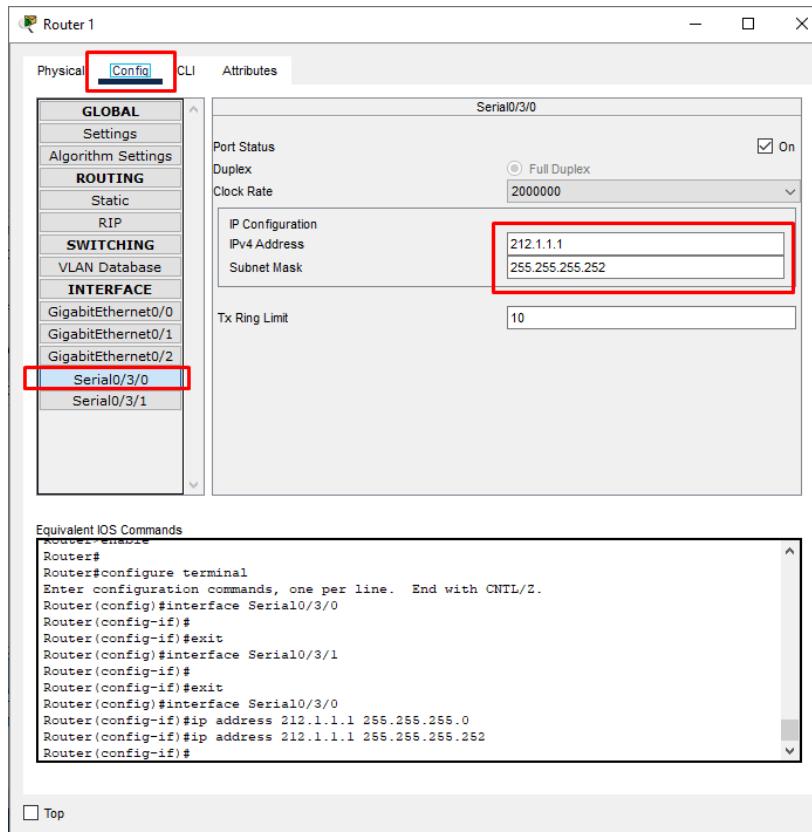
Dodeljivanje statickih mrežnih parametara klijent računarima



Dodeljivanje statickih mrežnih parametara klijent računarima

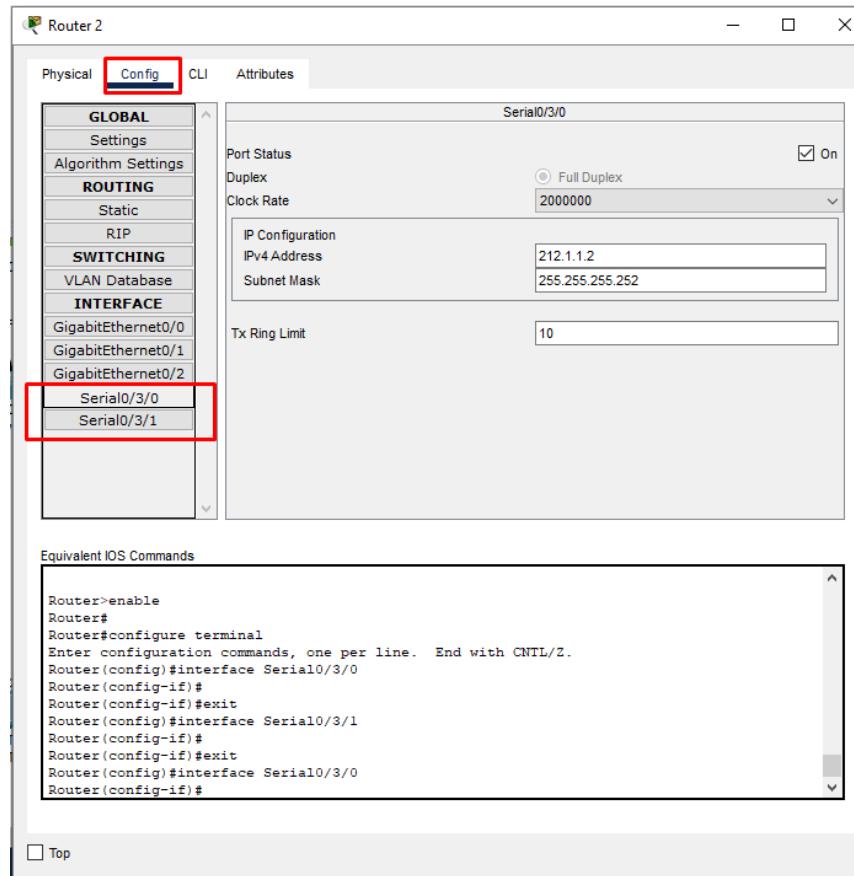


Konfiguracija rutera R1



Na portu **Serial0/3/0**, koji je u povezan
sa ruterom **Router2** potrebno je
dodeliti:
IP adresu: 212.1.1.1
Subnet Mask: 255.255.255.252

Konfiguracija rutera R2



port **Serial0/3/0** je povezan sa Router1 i radi u mreži 212.1.1.0/30, pa je potrebno podešiti:

IP adresu: 212.1.1.2

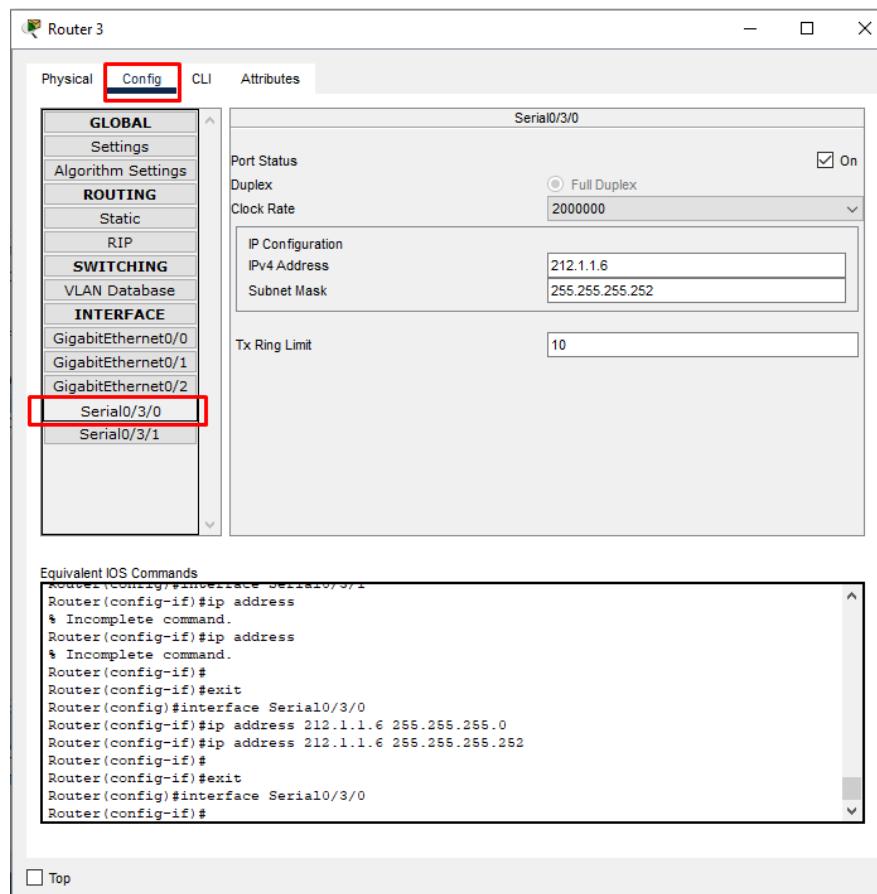
Subnet Mask: 255.255.255.252

port **Serial0/3/1** je povezan sa Router3 i radi u mreži 212.1.1.4/30, pa je potrebno podešiti:

IP adresu: 212.1.1.5

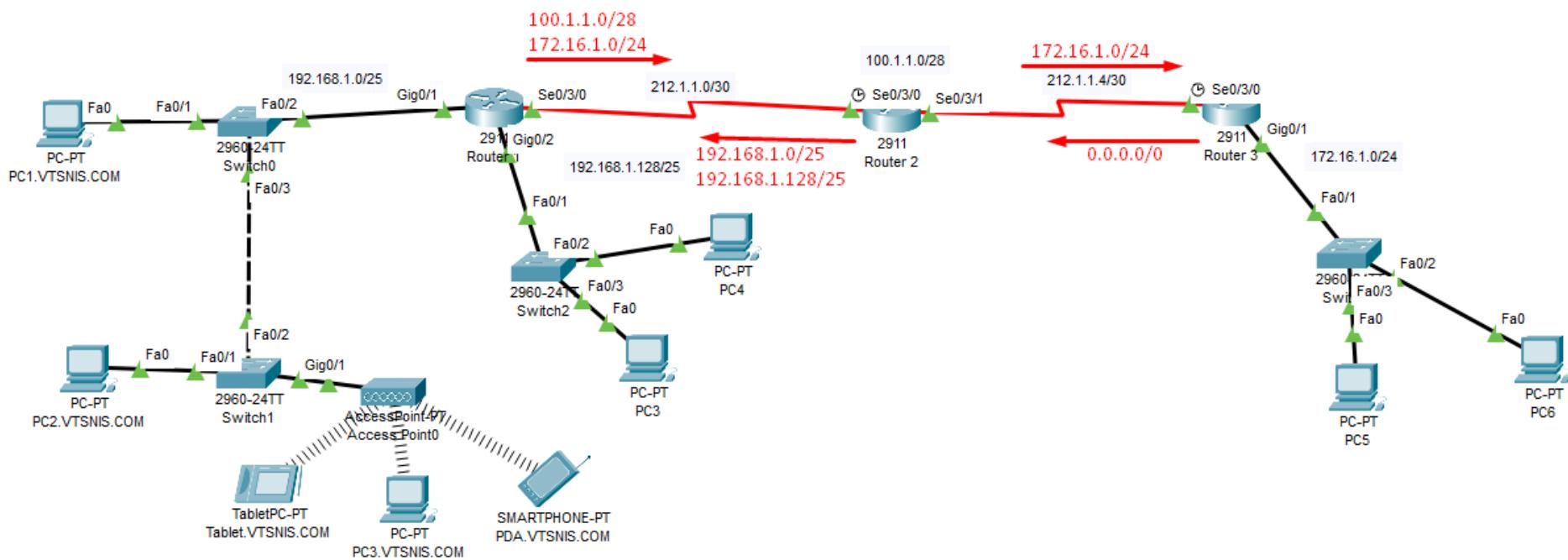
Subnet Mask: 255.255.255.252

Konfiguracija rutera R3



Ruter **Router3** radi u mreži 212.1.1.4/30 i potrebno je na portu **Serial0/3/0** podesiti:
IP adresu: 212.1.1.6
Subnet Mask: 255.255.255.252

Statičke rute



Konfiguracija skokova na ruterima

The image displays three windows from a network configuration tool, each representing a router (Router 1, Router 2, and Router 3). Each window has tabs for Physical, Config (which is selected), CLI, and Attributes.

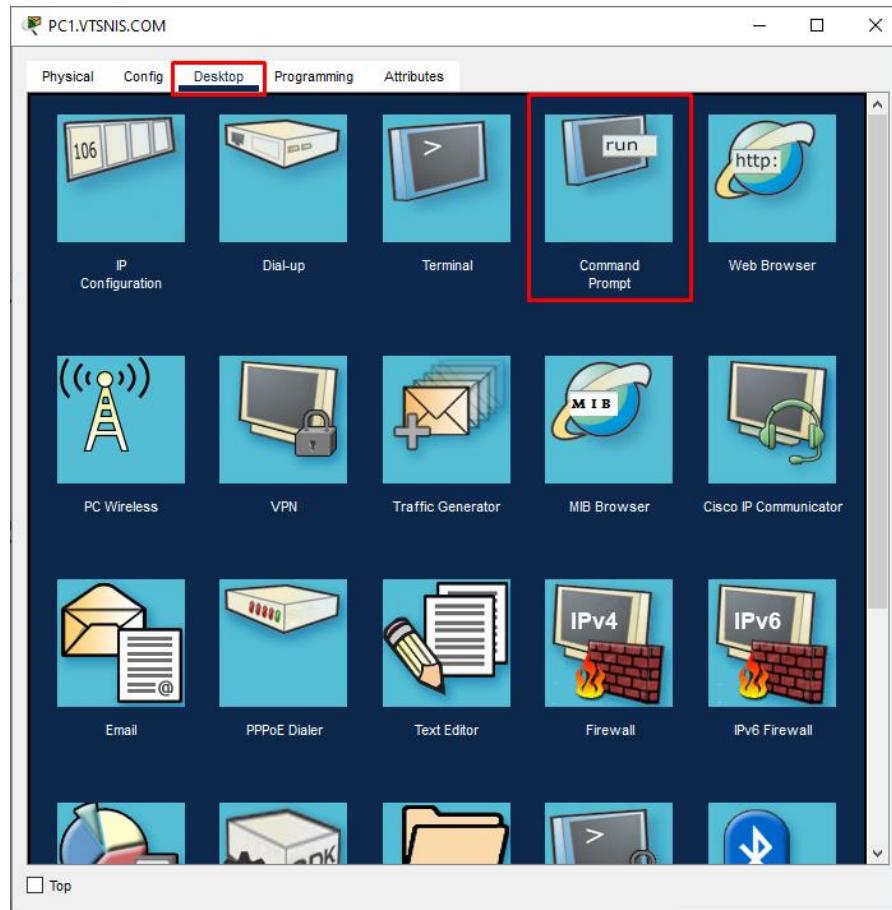
- Router 1 Configuration:**
 - ROUTING > Static:** A static route is configured with Network 172.16.1.0, Mask 255.255.255.0, and Next Hop 212.1.1.2.
 - ROUTING > Static (under Router 2):** A static route is configured with Network 192.168.1.128, Mask 255.255.255.128, and Next Hop 212.1.1.1.
 - Equivalent IOS Commands:**

```
Router(config)#ip route 172.16.1.0 255.255.255.0 212.1.1.2
Router(config)#ip route 192.168.1.128 255.255.255.128 212.1.1.1
```
- Router 2 Configuration:**
 - ROUTING > Static:** A static route is configured with Network 192.168.1.128, Mask 255.255.255.128, and Next Hop 212.1.1.1.
 - ROUTING > Static (under Router 3):** A static route is configured with Network 0.0.0.0, Mask 0.0.0.0, and Next Hop 212.1.1.5.
 - Equivalent IOS Commands:**

```
Router(config)#ip route 192.168.1.128 255.255.255.128 212.1.1.1
Router(config)#ip route 0.0.0.0 0.0.0.0 212.1.1.5
```
- Router 3 Configuration:**
 - ROUTING > Static:** A static route is configured with Network 0.0.0.0, Mask 0.0.0.0, and Next Hop 212.1.1.5.
 - Equivalent IOS Commands:**

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#ip route 0.0.0.0 0.0.0.0 212.1.1.5
```

Testiranje rute



The screenshot shows the Cisco Packet Tracer Command Prompt window. The title bar says "PC1". The window contains the following text output from the command line:

```
C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

Request timed out.
Reply from 172.16.1.2: bytes=32 time=25ms TTL=125
Reply from 172.16.1.2: bytes=32 time=24ms TTL=125
Reply from 172.16.1.2: bytes=32 time=26ms TTL=125

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 24ms, Maximum = 26ms, Average = 25ms

C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

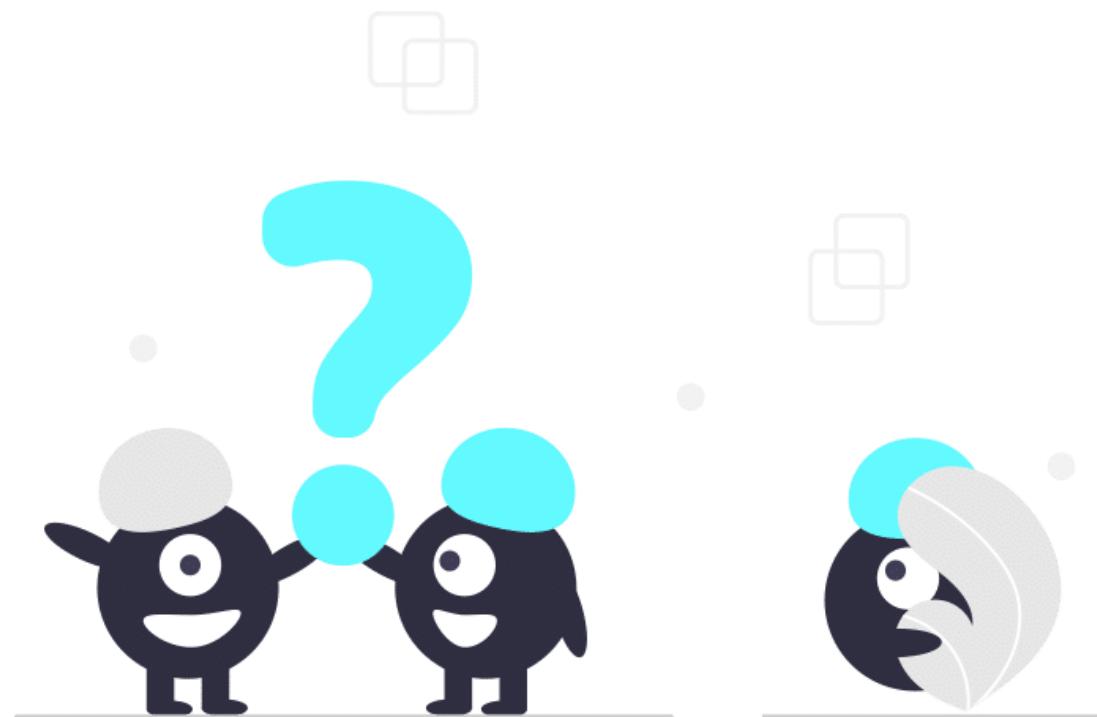
Reply from 172.16.1.2: bytes=32 time=22ms TTL=125
Reply from 172.16.1.2: bytes=32 time=22ms TTL=125
Reply from 172.16.1.2: bytes=32 time=23ms TTL=125
Reply from 172.16.1.2: bytes=32 time=27ms TTL=125

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 22ms, Maximum = 27ms, Average = 23ms

C:\>
```

At the bottom left of the window, there is a "Top" button.

Hvala na pažnji.



PITANJA?!