

KOMMRE FOR DUMMIES

1.ZADATAK (ne znam jel treba kaj provjeravati u immunes ali ja sam samo ovak napisal i tjt)

ABC znamenke jmbag

a)B000+1

b)B000+1+1500

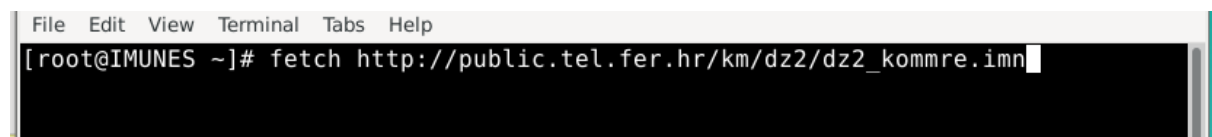
C)A000 %(MODUL) 1500

(ako je $a000 \% 1500 = 0$, onda pisemo 15000)

2.ZADATAK

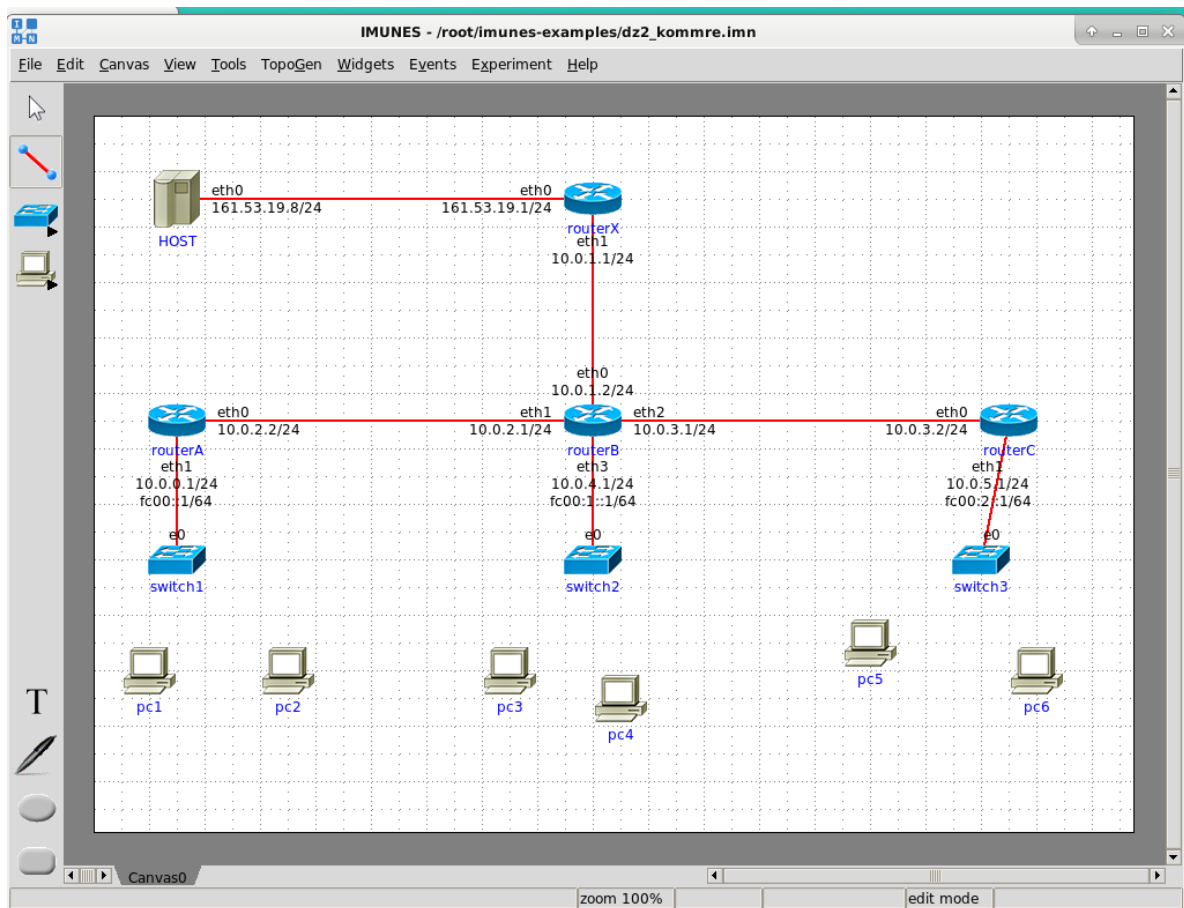
Nakon izracuna onih podmreza preko jmbaga :

1. Skinut immunes file preko cmda

A screenshot of a terminal window with a menu bar at the top containing 'File', 'Edit', 'View', 'Terminal', 'Tabs', and 'Help'. The terminal text shows a root prompt at a machine named 'IMUNES' in the home directory, followed by the command 'fetch http://public.tel.fer.hr/km/dz2/dz2_kommre.imn' with a cursor at the end of the line.

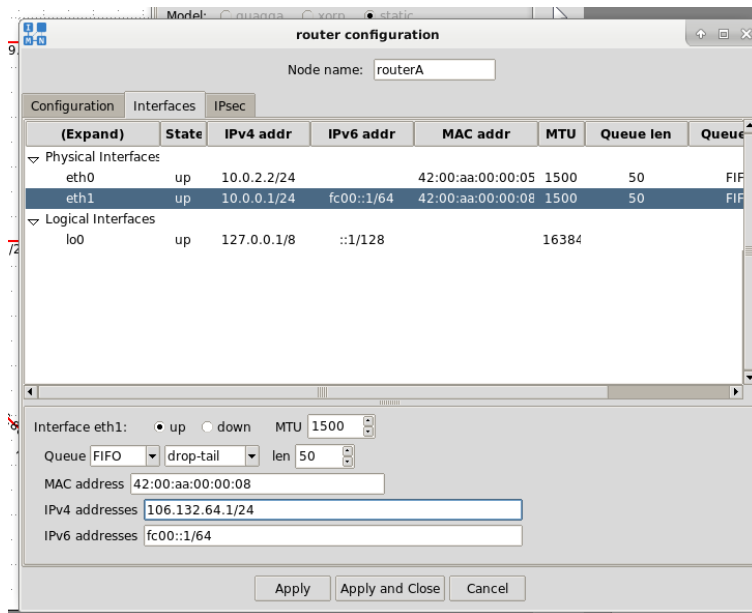
```
File Edit View Terminal Tabs Help
[root@IMUNES ~]# fetch http://public.tel.fer.hr/km/dz2/dz2_kommre.imn
```

2. Nakon toga dodati switheve i PC-eve i povezati sa zicom router i switch da dobijemo rutu eth1

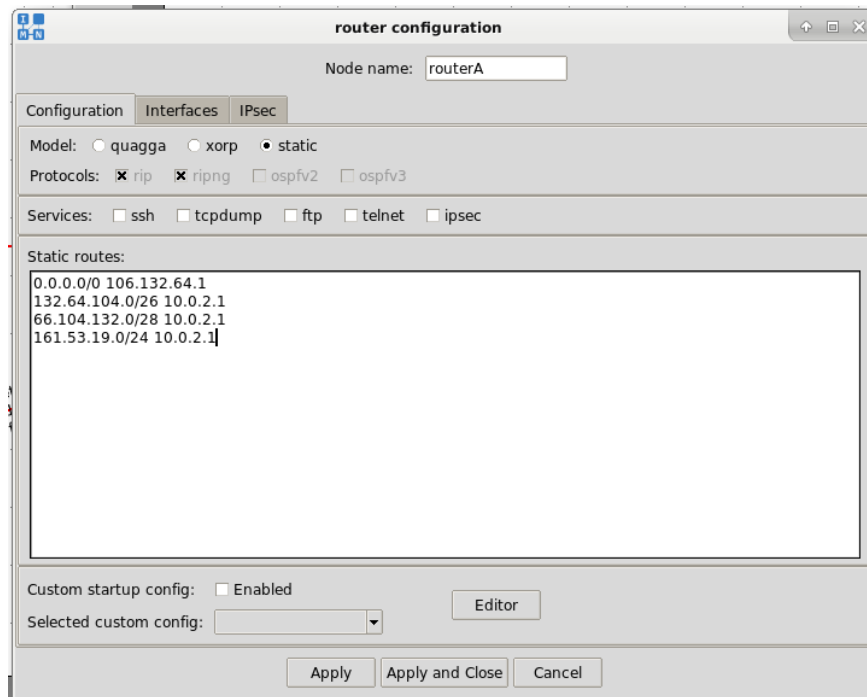


3. Podesiti sve routere i PC IP-ove.

ROUTER A



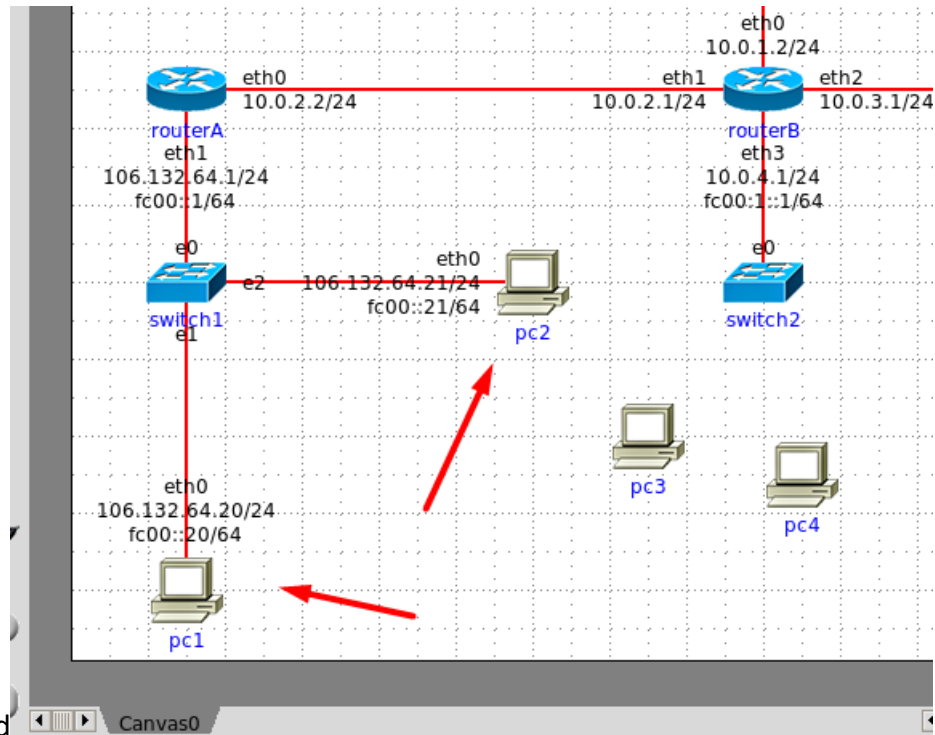
(Prvo postaviti IP za eth1 koji povezuje switch)



(Postaviti rute za povezanost sa ostalim routerima)

(ova IP 161.53.19.0 je od routerax)

- Zatim povežemo zicama PC1 i PC2 i postavimo ih kao x.x.x.254 i x.x.x.253



pc configuration

Node name: pc1

Configuration Interfaces

(Expand)	State	IPv4 addr	IPv6 addr	MAC addr
Physical Interfaces				
eth0	up	106.132.64.20	fc00::20/64	42:00:aa:00:00:0b
Logical Interfaces				
lo0	up	127.0.0.1/8	::1/128	

Interface eth0: ☒ up ☐ down MTU 1500

Queue FIFO drop-tail len 50

MAC address 42:00:aa:00:00:0b

IPv4 addresses 106.132.64.253/24

IPv6 addresses fc00::20/64

Apply Apply and Close Cancel

5. Isto radimo za routerB , routerC , routerX , za PC3 ,PC4,PC5,PC6 samo povežemo zice i odma se namjesti IP (ne znam ni jel treba u prvom postavljat na 253, 254 zadnje al radi tak)

The screenshot shows the 'router configuration' window for 'routerB'. The 'Configuration' tab is active. The 'Node name' is 'routerB'. Under 'Model', 'static' is selected. Under 'Protocols', 'rip' and 'ripng' are checked. Under 'Services', 'ssh', 'tcpdump', 'ftp', 'telnet', and 'ipsec' are unchecked. The 'Static routes' section contains a list of routes: 0.0.0.0/0 134.64.104.1, 106.132.64.0/24 10.0.2.2, 66.104.132.0/28 10.0.3.2, and 161.53.19.0/24 10.0.1.1. At the bottom, there are buttons for 'Apply', 'Apply and Close', and 'Cancel'.

router configuration

Node name: routerB

Configuration Interfaces IPsec

Model: ☐ quagga ☐ xorp ☒ static

Protocols: ☒ rip ☒ ripng ☐ ospfv2 ☐ ospfv3

Services: ☐ ssh ☐ tcpdump ☐ ftp ☐ telnet ☐ ipsec

Static routes:

```
0.0.0.0/0 134.64.104.1
106.132.64.0/24 10.0.2.2
66.104.132.0/28 10.0.3.2
161.53.19.0/24 10.0.1.1
```

Custom startup config: ☐ Enabled

Selected custom config:

Editor

Apply Apply and Close Cancel

The screenshot shows the 'router configuration' window for 'routerB' with the 'Interfaces' tab active. It displays a table of interfaces, including physical and logical ones. The 'eth3' interface is highlighted. Below the table, there are configuration options for 'Interface eth3', including 'up/down' status, MTU, queue type, drop-tail, and IP addresses.

router configuration

Node name: routerB

Configuration Interfaces IPsec

(Expand)	State	IPv4 addr	IPv6 addr	MAC addr	MTU	Queue len
Physical Interfaces						
eth0	up	10.0.1.2/24		42:00:aa:00:00:03	1500	50
eth1	up	10.0.2.1/24		42:00:aa:00:00:04	1500	50
eth2	up	10.0.3.1/24		42:00:aa:00:00:06	1500	50
eth3	up	134.64.104.1/26	fc00:1::1/64	42:00:aa:00:00:09	1500	50
Logical Interfaces						
lo0	up	127.0.0.1/8	::1/128		16384	

Interface eth3: ☒ up ☐ down MTU 1500

Queue FIFO drop-tail len 50

MAC address 42:00:aa:00:00:09

IPv4 addresses 134.64.104.1/26

IPv6 addresses fc00:1::1/64

Apply Apply and Close Cancel

router configuration

Node name: routerC

Configuration

Interfaces

IPsec

Model:
☐ quagga
☐ xorp
☒ static

Protocols:
☒ rip
☒ ripng
☐ ospfv2
☐ ospfv3

Services:
☐ ssh
☐ tcpdump
☐ ftp
☐ telnet
☐ ipsec

Static routes:

0.0.0.0/0 66.104.132.1
106.132.64.0/24 10.0.3.1
161.53.19.0/24 10.0.3.1
134.64.104.0/26 10.0.3.1

Custom startup config: ☐ Enabled

Editor

Selected custom config:

Apply

Apply and Close

Cancel

router configuration

Node name: routerC

Configuration

Interfaces

IPsec

(Expand)	State	IPv4 addr	IPv6 addr	MAC addr	MTU	Queue len
Physical Interfaces						
eth0	up	10.0.3.2/24		42:00:aa:00:00:07	1500	50
eth1	up	10.0.5.1/24	fc00:2::1/64	42:00:aa:00:00:0a	1500	50
Logical Interfaces						
lo0	up	127.0.0.1/8	::1/128		16384	

Interface eth1:
☒ up
☐ down
MTU

Queue

len

MAC address

IPv4 addresses

IPv6 addresses

router configuration

Node name:

Configuration **Interfaces** IPsec

Model: ☐ quagga ☐ xorp ☒ static

Protocols: ☒ rip ☒ ripng ☐ ospfv2 ☐ ospfv3

Services: ☐ ssh ☐ tcpdump ☐ ftp ☐ telnet ☐ ipsec

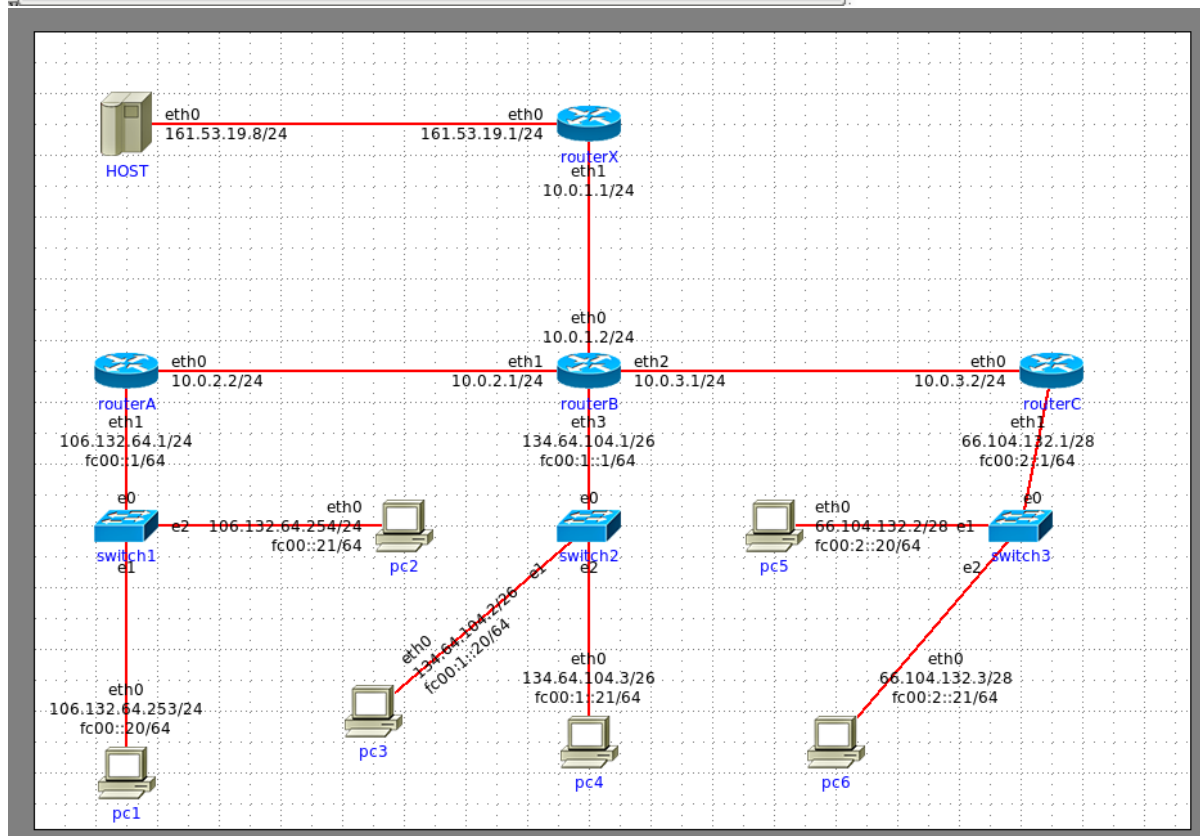
Static routes:

```
106.132.64.0/24 10.0.1.2
134.64.104.0/26 10.0.1.2
66.104.132.0/28 10.0.1.2
```

Custom startup config: ☐ Enabled Editor

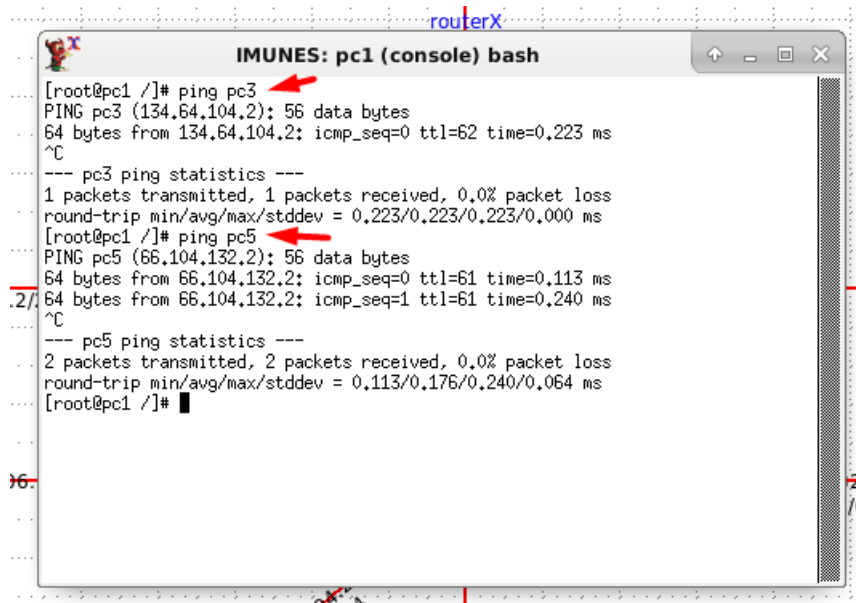
Selected custom config:

Apply Apply and Close Cancel



Izgled gotove i povezane mreze.

Provjera jel radi sve pingamo s PC1 , PC3/4 i PC5/6



```
IMUNES: pc1 (console) bash
[root@pc1 /]# ping pc3
PING pc3 (134.64.104.2): 56 data bytes
64 bytes from 134.64.104.2: icmp_seq=0 ttl=62 time=0.223 ms
^C
--- pc3 ping statistics ---
1 packets transmitted, 1 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 0.223/0.223/0.223/0.000 ms
[root@pc1 /]# ping pc5
PING pc5 (66.104.132.2): 56 data bytes
64 bytes from 66.104.132.2: icmp_seq=0 ttl=61 time=0.113 ms
64 bytes from 66.104.132.2: icmp_seq=1 ttl=61 time=0.240 ms
^C
--- pc5 ping statistics ---
2 packets transmitted, 2 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 0.113/0.176/0.240/0.064 ms
[root@pc1 /]#
```

Ak vam i dalje ne radi , pogledaj jel su sve konfiguracije ruter i eth dobro napisane , onda na PC konfiguraciji treba na router pod rute pisat IP eth s kojim se spaja na router , treba izgledat kao nesto .. x.x.x.1 , a greska zna bit ako je napisana adresa pod mreze u obliku x.x.x.0

3.ZADATAK

Ak vam u imunnesu ne radi probajte na windows cmdu

Provjera jel imate openssl instaliran (a trebal bi bit) preko cmd

```
λ openssl version
OpenSSL 1.1.1h 22 Sep 2020
```

Generiranje privatnog ključa (2 naredba) private.pem , generiranje public key iz privatnog ključa spremljen ko jmbag.pem

```
C:\Users\...\Desktop
λ openssl dgst -sha256 003c... .imn > hash

C:\Users\...\Desktop
λ openssl genrsa -out private.pem 2048
Generating RSA private key, 2048 bit long modulus (2 primes)
.....+++++
.....+++++
e is 65537 (0x010001)

C:\Users\...\Desktop
λ openssl rsa -in private.pem -outform PEM -pubout -out 003c...2.pem
writing RSA key
```


Potpisivanje naseg imn fajla koji smo spremili u hash pomocu privatnog kljuka .

Provjera jel nam hash potpisa (jmbag.sig) jednak kad radimo preko komande zadnje

```
C:\Users\██████\Desktop
λ openssl rsautl -sign -inkey private.pem -keyform PEM -in hash > 0036██████.sig 3.

C:\Users\██████\Desktop
λ openssl rsautl -verify -inkey 0036██████.pem -pubin -keyform PEM -in 0036██████.sig 4.
SHA256(0036██████.imn)= 4ecd facf8d4bebc4ea5dca37886eb2a6e984e1730cfefe502f294415caaa065c

C:\Users\██████\Desktop
λ openssl sha256 0036██████.imn
SHA256(0036██████.imn)= 4ecd facf8d4bebc4ea5dca37886eb2a6e984e1730cfefe502f294415caaa065c
```

(sha256..)