

Nama : Panji Iman Baskoro

NRP : 171111023

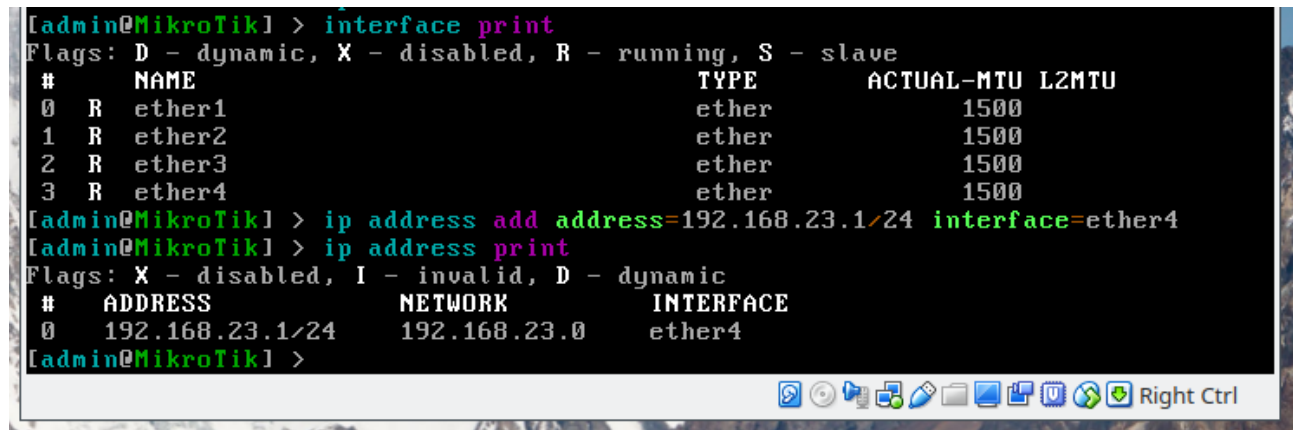
1. Buatlah pengaturan router, jaringan dari WiFi Lab Jaringan berada pada **Ether 2** dan jaringan yang menghubungkan virtual machine Windows 7 dengan RouterOS berada pada **Ether 4**.

Tambahkan IP address pada **Ether 4** sebagai berikut. (10)

Address : **192.168.XXX.1/24**

Network : **192.168.XXX.0**

XXX : 3 digit NRP terakhir (151111011 = 11, 171221007 = 7, 171111103 = 103). Jika 3 digit terakhir adalah 000, maka diganti dengan 1.



```
[admin@MikroTik] > interface print
Flags: D - dynamic, X - disabled, R - running, S - slave
#   NAME      TYPE      ACTUAL-MTU  LZMTU
0   R ether1    ether      1500
1   R ether2    ether      1500
2   R ether3    ether      1500
3   R ether4    ether      1500
[admin@MikroTik] > ip address add address=192.168.23.1/24 interface=ether4
[admin@MikroTik] > ip address print
Flags: X - disabled, I - invalid, D - dynamic
#   ADDRESS      NETWORK      INTERFACE
0   192.168.23.1/24  192.168.23.0  ether4
[admin@MikroTik] >
```

2. Buatlah konfigurasi berikut sehingga virtual machine Windows 7 dapat terhubung melalui internet.

a. DHCP Server pada **Ether 4**. (10)

```
RouterOS [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
0 ether2 yes yes requesting...
[admin@MikroTik] > ip dhcp-client print
Flags: X - disabled, I - invalid, D - dynamic
# INTERFACE USE ADD-DEFAULT-ROUTE STATUS ADDRESS
0 ether2 yes yes bound 33.33.32.20/24
[admin@MikroTik] > ip dhcp-server setup
Select interface to run DHCP server on

dhcp server interface: ether4
Select network for DHCP addresses

dhcp address space: 192.168.23.0/24
Select gateway for given network

gateway for dhcp network: 192.168.23.1
Select pool of ip addresses given out by DHCP server

addresses to give out: 192.168.23.2-192.168.23.254
Select DNS servers

dns servers: 33.33.32.1,192.168.3.1
Select lease time

lease time: 10m
[admin@MikroTik] > ip dhcp-server print _
```

```
[admin@MikroTik] > ip dhcp-server print
Flags: D - dynamic, X - disabled, I - invalid
# NAME INTERFACE RELAY ADDRESS-POOL LEASE-TIME ADD-ARP
0 dhcp2 ether4 dhcp_pool1 10m
[admin@MikroTik] > ip pool print
# NAME RANGES
0 dhcp_pool1 192.168.23.2-192.168.23.254
[admin@MikroTik] > _
```

Requires reboot.

b. DHCP Client pada **Ether 2.** (5)

```
[admin@MikroTik] > ip dhcp-client add interface=ether2
[admin@MikroTik] > ip address print
Flags: X - disabled, I - invalid, D - dynamic
# ADDRESS NETWORK INTERFACE
0 192.168.23.1/24 192.168.23.0 ether4
[admin@MikroTik] > ip dhcp-client enable 0 !
syntax error (line 1 column 25)
[admin@MikroTik] > ip dhcp-client enable 0
[admin@MikroTik] > ip address print
Flags: X - disabled, I - invalid, D - dynamic
# ADDRESS NETWORK INTERFACE
0 192.168.23.1/24 192.168.23.0 ether4
[admin@MikroTik] > ip address print
Flags: X - disabled, I - invalid, D - dynamic
# ADDRESS NETWORK INTERFACE
0 192.168.23.1/24 192.168.23.0 ether4
[admin@MikroTik] > ip dhcp-client print
Flags: X - disabled, I - invalid, D - dynamic
# INTERFACE USE ADD-DEFAULT-ROUTE STATUS ADDRESS
0 ether2 yes yes requesting...
[admin@MikroTik] > ip dhcp-client print
Flags: X - disabled, I - invalid, D - dynamic
# INTERFACE USE ADD-DEFAULT-ROUTE STATUS ADDRESS
0 ether2 yes yes bound 33.33.32.20/24
[admin@MikroTik] >
```

c. NAT. (5)

```
[admin@MikroTik] > ip firewall nat add chain=srcnat action=masquerade src-address=
192.168.23.0/24
[admin@MikroTik] > ip firewall nat print
Flags: X - disabled, I - invalid, D - dynamic
0 chain=srcnat action=masquerade src-address=192.168.23.0/24
[admin@MikroTik] >
```

3. Lakukan proses pemblokiran terhadap :

a. Alamat URL : **ebelajar.stiki.ac.id.** (10)

Firewall Rule <114.4.32.179>

General Advanced Extra Action Statistics

Chain: forward

Src. Address:

Dst. Address: 114.4.32.179

Protocol: 6 (tcp)

Src. Port:

Dst. Port:

Any. Port:

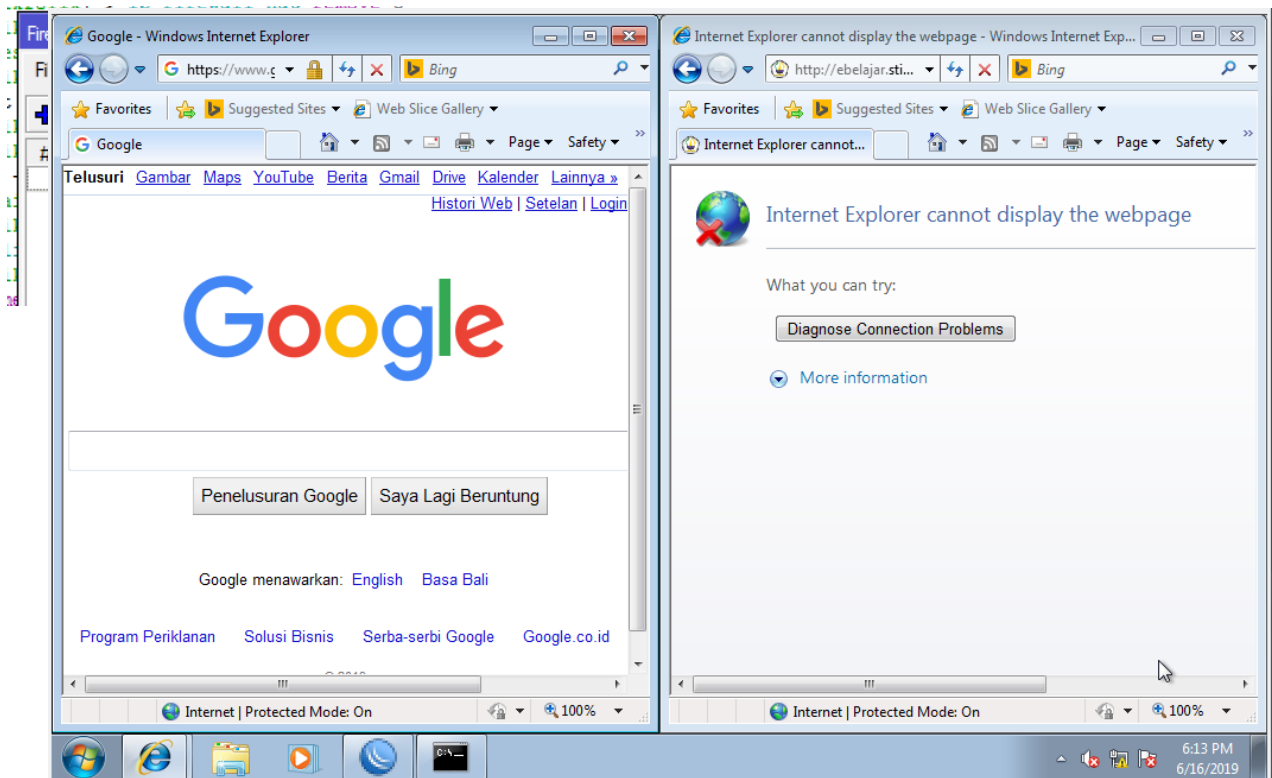
In. Interface:

Out. Interface:

In. Interface List:

Out. Interface List:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters



b. Block semua alamat IP kecuali ke **8.8.8.8**. (10)

```
[admin@MikroTik] > ip firewall filter add chain=forward action=drop src-address=!8.8.8.8 out-interface=ether4 protocol=icmp
[admin@MikroTik] > ip firewall filter print
Flags: X - disabled, I - invalid, D - dynamic
0 chain=forward action=drop protocol=tcp dst-address=114.4.32.179 log=no log-prefix=""

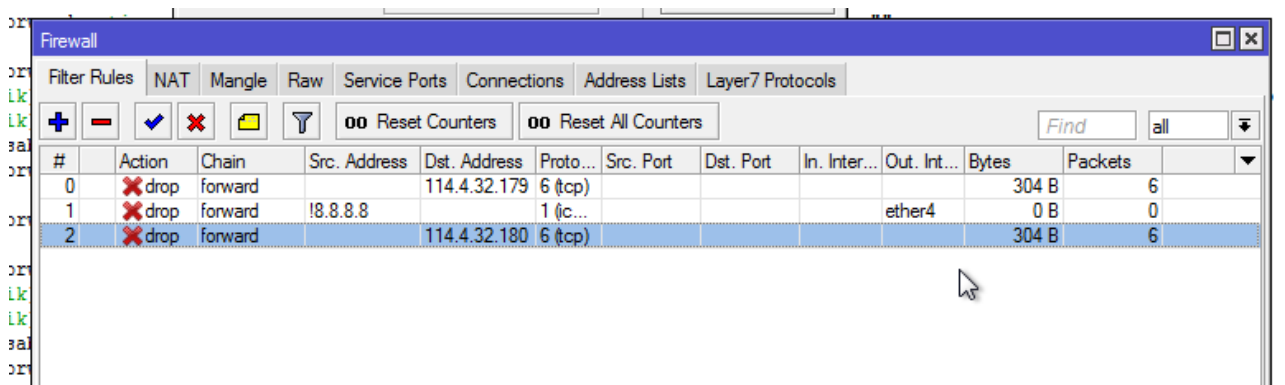
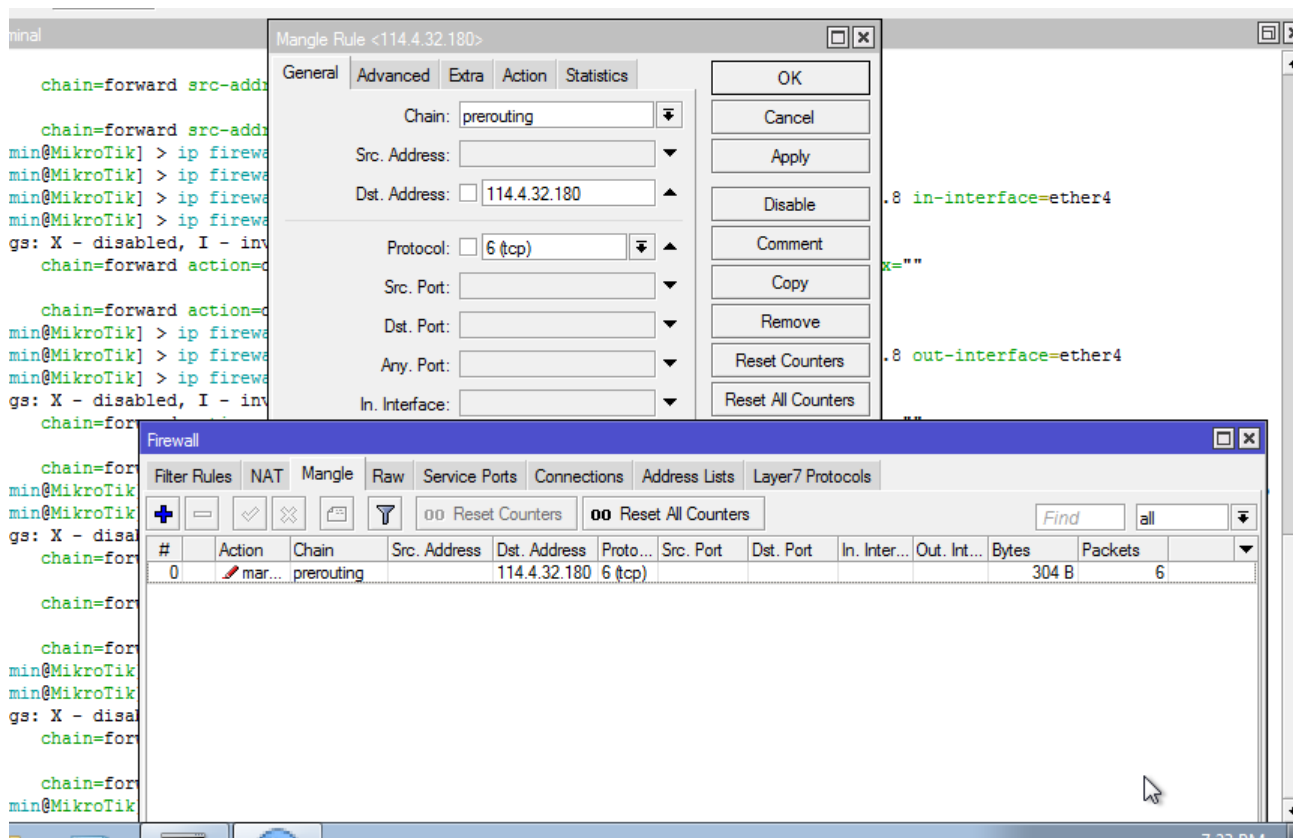
1 chain=forward action=drop protocol=icmp src-address=!8.8.8.8 out-interface=ether4 log=no log-prefix=""

2 chain=forward action=drop protocol=icmp src-address=!8.8.8.8 out-interface=ether4
[admin@MikroTik] > ip firewall filter remove 1
[admin@MikroTik] > ip firewall filter print
Flags: X - disabled, I - invalid, D - dynamic
0 chain=forward action=drop protocol=tcp dst-address=114.4.32.179 log=no log-prefix=""

1 chain=forward action=drop protocol=icmp src-address=!8.8.8.8 out-interface=ether4
[admin@MikroTik] >
```

4. Lakukan konfigurasi marking (mangle) sebagai berikut :

- a. Marking paket yang berasal dari **sakti.stiki.ac.id**. (5)
- b. Drop paket yang telah di-mark pada firewall (5)



6. Lakukan konfigurasi hotspot pada MikroTik dengan ketentuan sebagai berikut :

- Buatlah hotspot dengan 2 profil user yang berbeda bandwidth limit **(10)**
 Dosen : Bandwidth down 2Mbps, bandwidth up 1Mbps.
 Mahasiswa : Bandwidth down 128Kbps, bandwidth up 384Kbps
- Buat minimal 2 user hotspot dengan profile yang berbeda **(10)**
 Username = Nama Depan Anda, Password = NRP_anda, Profile = Dosen
 Username = Nama Akhir Anda, Password = NRP_anda, Profile = Mahasiwa
- DNS hotspot = labjarkom.nrp.net **(10)**
- Buktikan bandwidth limit dengan mengunduh file dari praktikum.stiki.ac.id **(10)**

a.

```
[admin@MikroTik] > ip hotspot user profile add name=dosen rate-limit=2048k/1024k
[admin@MikroTik] > ip hotspot user profile add name=mahasiswa rate-limit=128k/384k
[admin@MikroTik] > ip hotspot user profile print
Flags: * - default
 0 * name="default" idle-timeout=none keepalive-timeout=2m status-autorefresh=1m shared-users=1 add-mac-cookie=yes
    mac-cookie-timeout=3d address-list="" transparent-proxy=no

 1 name="dosen" idle-timeout=none keepalive-timeout=2m status-autorefresh=1m shared-users=1 add-mac-cookie=yes
    mac-cookie-timeout=3d rate-limit="2048k/1024k" address-list="" transparent-proxy=no

 2 name="mahasiswa" idle-timeout=none keepalive-timeout=2m status-autorefresh=1m shared-users=1 add-mac-cookie=yes
    mac-cookie-timeout=3d rate-limit="128k/384k" address-list="" transparent-proxy=no
[admin@MikroTik] >
```

b.

```
[admin@MikroTik] > ip hotspot user add profile=dosen name=panji password=171111023
[admin@MikroTik] > ip hotspot user add profile=mahasiswa name=baskoro password=171111023
[admin@MikroTik] > ip hotspot user print
Flags: * - default, X - disabled, D - dynamic
#  SERVER          NAME          ADDRESS          PROFILE          UPTIME
0  * ;;: counters and limits for trial users
   default-trial
1  panji            dosen         0s
2  baskoro          mahasiswa     0s
[admin@MikroTik] >
```









c & d

The screenshot shows a web browser window with the address bar displaying `http://labjarkom.171111023.net/status`. The browser's address bar also shows the text `mikrotik hotspot > status`. The main content area of the browser displays a welcome message for the user 'panji' and a table with the following data:

IP address:	192.168.23.2
bytes up/down:	0 B / 0 B
connected:	0s
status refresh:	1m

Below the table, there is a button labeled `log off`.

Index of /

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Multimatics Certification/	2018-01-08 09:45	-	
 eccouncil/	2017-12-18 15:58	-	
 index.php.save	2017-12-14 09:05	99	
 jarkom/	2017-10-05 14:22	-	
 sistemoperasi/	2019-03-27 09:24	-	
 softwares/	2019-03-21 10:01	-	
 test/	2017-12-12 09:03	-	
 workshop/	2019-04-04 16:02	-	

Apache/2.4.7 (Ubuntu) Server at praktikum.stiki.ac.id Port 80