

Laporan Praktikum 12

Pengantar Open Source dan Aplikasi

“Jaringan di Linux”



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Modul XIII Jaringan di Linux

A. Tujuan

1. Mampu menjelaskan cara memberi alamat IP statis, dinamis, pengaturan route, dan DNS resolver.
2. Mampu mengubah setting jaringan dengan perintah - perintah.
3. Mampu mengubah setting jaringan di desktop.

B. Teori Singkat

Menurut saya teori singkat mengenai modul ini, yaitu :

Pada setiap komputer jika ingin menggunakan jaringan harus mengatur network card atau kartu jaringan supaya komputer tersebut dapat terbaca oleh anggota jaringan yang lain seperti mengatur IP Address, IP Gateway, dan DNS Resolver.

Pada jaringan di linux kita dapat mengaturnya dengan menggunakan command line ataupun desktop. Jika menggunakan command line maka diperlukan perintah – perintah seperti ifconfig, dhclient, route, ping, nslookup. Jika menggunakan desktop dapat menggunakan Connection Information dan Edit Connections.

C. Langkah – langkah Praktikum

1. Konfigurasi jaringan menggunakan command line

- Menampilkan konfigurasi kartu jaringan yang aktif

\$ ifconfig

Ada 3 kartu jaringan pada komputer ini yaitu enp1s0, lo, dan wlp2s0.

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig  
enp1s0    Link encap:Ethernet  HWaddr dc:0e:a1:61:23:60  
          UP BROADCAST MULTICAST  MTU:1500  Metric:1  
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:65536  Metric:1  
          RX packets:3152 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:3152 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:346213 (346.2 KB)  TX bytes:346213 (346.2 KB)  
  
wlp2s0    Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
          inet addr:192.168.6.204  Bcast:192.168.6.255  Mask:255.255.255.0  
          inet6 addr: fe80::91a7:5d96:5800:9a01/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:27133 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:14510 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:10329380 (10.3 MB)  TX bytes:1785701 (1.7 MB)  
  
mazharrasyad@Mazharrasyad:~$
```

- Menampilkan konfigurasi kartu jaringan baik yang aktif maupun yang tidak aktif

\$ ifconfig -a

Hanya ada 3 kartu jaringan pada komputer ini dan tidak ada yang tidak aktif.

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig -a  
enp1s0    Link encap:Ethernet  HWaddr dc:0e:a1:61:23:60  
          UP BROADCAST MULTICAST  MTU:1500  Metric:1  
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:65536  Metric:1  
          RX packets:3156 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:3156 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:346825 (346.8 KB)  TX bytes:346825 (346.8 KB)  
  
wlp2s0    Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
          inet addr:192.168.6.204  Bcast:192.168.6.255  Mask:255.255.255.0  
          inet6 addr: fe80::91a7:5d96:5800:9a01/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:27350 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:14525 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:10355454 (10.3 MB)  TX bytes:1787007 (1.7 MB)  
  
mazharrasyad@Mazharrasyad:~$
```

- Menampilkan konfigurasi kartu jaringan tertentu

\$ ifconfig eth0

eth0 merupakan kartu jaringan ethernet seperti enp1s0 hanya saja berbeda nama

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig eth0  
eth0: error fetching interface information: Device not found  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig enp1s0  
enp1s0    Link encap:Ethernet  HWaddr dc:0e:a1:61:23:60  
          UP BROADCAST MULTICAST  MTU:1500  Metric:1  
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)  
  
mazharrasyad@Mazharrasyad:~$
```

\$ ifconfig lo

lo merupakan kartu jaringan untuk local loopback

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig lo  
lo      Link encap:Local Loopback  
        inet addr:127.0.0.1  Mask:255.0.0.0  
        inet6 addr: ::1/128 Scope:Host  
        UP LOOPBACK RUNNING  MTU:65536  Metric:1  
        RX packets:3162 errors:0 dropped:0 overruns:0 frame:0  
        TX packets:3162 errors:0 dropped:0 overruns:0 carrier:0  
        collisions:0 txqueuelen:1000  
        RX bytes:347842 (347.8 KB)  TX bytes:347842 (347.8 KB)  
  
mazharrasyad@Mazharrasyad:~$
```

- Menonaktifkan kartu jaringan

\$ sudo ifconfig eth0 down

“Catatan : eth0 diganti dengan enp1s0”

Kartu jaringan enp1s0 dinon-aktifkan dengan option down

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo ifconfig enp1s0 down  
[sudo] password for mazharrasyad:  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo ifconfig enp1s0 down  
[sudo] password for mazharrasyad:  
mazharrasyad@Mazharrasyad:~$ ifconfig  
lo      Link encap:Local Loopback  
        inet addr:127.0.0.1  Mask:255.0.0.0  
        inet6 addr: ::1/128 Scope:Host  
        UP LOOPBACK RUNNING  MTU:65536  Metric:1  
        RX packets:3162 errors:0 dropped:0 overruns:0 frame:0  
        TX packets:3162 errors:0 dropped:0 overruns:0 carrier:0  
        collisions:0 txqueuelen:1000  
        RX bytes:347842 (347.8 KB)  TX bytes:347842 (347.8 KB)  
  
wlp2s0  Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
        inet addr:192.168.6.204 Bcast:192.168.6.255 Mask:255.255.255.0  
        inet6 addr: fe80::91a7:5d96:5800:9a01/64 Scope:Link  
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
        RX packets:28494 errors:0 dropped:0 overruns:0 frame:0  
        TX packets:14787 errors:0 dropped:0 overruns:0 carrier:0  
        collisions:0 txqueuelen:1000  
        RX bytes:10472863 (10.4 MB)  TX bytes:1811824 (1.8 MB)  
  
mazharrasyad@Mazharrasyad:~$
```

- Mengaktifkan kartu jaringan

\$ sudo ifconfig eth0 up

Kartu jaringan enp1s0 diaktifkan

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo ifconfig enp1s0 up
mazharrasyad@Mazharrasyad:~$ ifconfig
enp1s0      Link encap:Ethernet  HWaddr dc:0e:a1:61:23:60
            UP BROADCAST MULTICAST  MTU:1500  Metric:1
            RX packets:0 errors:0 dropped:0 overruns:0 frame:0
            TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo          Link encap:Local Loopback
            inet addr:127.0.0.1  Mask:255.0.0.0
            inet6 addr: ::1/128 Scope:Host
            UP LOOPBACK RUNNING  MTU:65536  Metric:1
            RX packets:3162 errors:0 dropped:0 overruns:0 frame:0
            TX packets:3162 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:347842 (347.8 KB)  TX bytes:347842 (347.8 KB)

wlp2s0      Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a
            inet addr:192.168.6.204  Bcast:192.168.6.255  Mask:255.255.255.0
            inet6 addr: fe80::91a7:5d96:5800:9a01/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:28552 errors:0 dropped:0 overruns:0 frame:0
            TX packets:14829 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:10480590 (10.4 MB)  TX bytes:1815474 (1.8 MB)

mazharrasyad@Mazharrasyad:~$
```

- Mengubah setting ip address suatu kartu jaringan

\$ sudo ifconfig eth0 192.168.100.1

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo ifconfig enp1s0 192.168.100.1
mazharrasyad@Mazharrasyad:~$
```

\$ sudo ifconfig eth0 192.168.100.1 netmask 255.255.255.0

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo ifconfig enp1s0 192.168.100.1 netmask 255.255.255.0
mazharrasyad@Mazharrasyad:~$
```

Hasilnya akan berubah pada kartu jaringan enp1s0 di inet addr dan Mask

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig  
enp1s0    Link encap:Ethernet  HWaddr dc:0e:a1:61:23:60  
          inet addr:192.168.100.1  Bcast:192.168.100.255  Mask:255.255.255.0  
          UP BROADCAST MULTICAST  MTU:1500  Metric:1  
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:65536  Metric:1  
          RX packets:3178 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:3178 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:349927 (349.9 KB)  TX bytes:349927 (349.9 KB)  
  
wlp2s0    Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
          inet addr:192.168.6.204  Bcast:192.168.6.255  Mask:255.255.255.0  
          inet6 addr: fe80::91a7:5d96:5800:9a01/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:28756 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:14985 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:10504048 (10.5 MB)  TX bytes:1829397 (1.8 MB)  
  
mazharrasyad@Mazharrasyad:~$
```

- Mendapatkan ip address secara dinamis melalui dhcp server

\$ sudo dhclient -r

Perintah dhclient dengan option -r untuk menghentikan program dhcp client dan menghapus konfigurasi saat ini

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo dhclient -r  
[sudo] password for mazharrasyad:  
mazharrasyad@Mazharrasyad:~$
```

\$ sudo dhclient eth0

Mendapatkan ip address secara otomatis melalui perintah dhclient untuk kartu jaringan wlp2s0

“Catatan : kartu jaringan eth0 diganti dengan wlp2s0 dikarenakan komputer menggunakan WiFi”

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo dhclient wlp2s0  
mazharrasyad@Mazharrasyad:~$
```


- Menampilkan tabel routing

\$ route

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ route
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
default          192.168.6.1     0.0.0.0          UG    0      0      0 wlp2s0
default          192.168.6.1     0.0.0.0          UG    600    0      0 wlp2s0
link-local       *               255.255.0.0      U     1000   0      0 wlp2s0
192.168.6.0      *               255.255.255.0    U     600    0      0 wlp2s0
192.168.100.0    *               255.255.255.0    U     0      0      0 enp1s0
mazharrasyad@Mazharrasyad:~$
```

\$ route -n

Menampilkan tabel routing dengan option -n untuk menampilkan alamat dan format numerik

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ route -n
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
0.0.0.0          192.168.6.1     0.0.0.0          UG    0      0      0 wlp2s0
0.0.0.0          192.168.6.1     0.0.0.0          UG    600    0      0 wlp2s0
169.254.0.0      0.0.0.0         255.255.0.0      U     1000   0      0 wlp2s0
192.168.6.0      0.0.0.0         255.255.255.0    U     600    0      0 wlp2s0
192.168.100.0    0.0.0.0         255.255.255.0    U     0      0      0 enp1s0
mazharrasyad@Mazharrasyad:~$
```

- Menghapus gateway default

\$ sudo route del default

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ route
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
default          192.168.1.254   0.0.0.0          UG    600    0      0 wlp2s0
link-local       *               255.255.0.0      U     1000   0      0 wlp2s0
192.168.1.0      *               255.255.255.0    U     600    0      0 wlp2s0
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo route del default
[sudo] password for mazharrasyad:
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ route
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
link-local       *               255.255.0.0      U     1000   0      0 wlp2s0
192.168.1.0      *               255.255.255.0    U     600    0      0 wlp2s0
mazharrasyad@Mazharrasyad:~$
```


- Menambahkan gateway default

\$ sudo route add default gw 192.168.2.1

“Catatan : gateway 192.168.2.1 diganti dengan 192.168.1.2 dikarenakan jaringan yang digunakan tidak mendukung”

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo route add default gw 192.168.2.1  
SIOCADDRT: Network is unreachable  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo route add default gw 192.168.1.2  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ route  
Kernel IP routing table  
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface  
default          192.168.1.2      0.0.0.0          UG    0      0        0 wlp2s0  
link-local       *                255.255.0.0      U      1000   0        0 wlp2s0  
192.168.1.0      *                255.255.255.0    U      600    0        0 wlp2s0  
mazharrasyad@Mazharrasyad:~$
```

- Cek koneksi jaringan

\$ ping 192.168.2.1

Mengecek koneksi jaringan dengan packets tanpa batas

IP berikut tidak dapat terkoneksi karena tidak terdaftar pada gateway

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ping 192.168.2.1  
PING 192.168.2.1 (192.168.2.1) 56(84) bytes of data.  
From 192.168.1.107 icmp_seq=1 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=2 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=3 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=4 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=5 Destination Host Unreachable  
^C  
--- 192.168.2.1 ping statistics ---  
14 packets transmitted, 0 received, +5 errors, 100% packet loss, time 13166ms  
pipe 10  
mazharrasyad@Mazharrasyad:~$
```

IP berikut juga tidak dapat terkoneksi karena tidak dapat koneksi dari jaringan yang digunakan

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ping 192.168.1.2  
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.  
From 192.168.1.107 icmp_seq=1 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=2 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=3 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=4 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=5 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=6 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=7 Destination Host Unreachable  
^C  
--- 192.168.1.2 ping statistics ---  
12 packets transmitted, 0 received, +7 errors, 100% packet loss, time 11158ms  
pipe 7  
mazharrasyad@Mazharrasyad:~$
```

\$ ping -c5 192.168.2.1

Cek koneksi dengan 5 packets.

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ping -c5 192.168.2.1  
PING 192.168.2.1 (192.168.2.1) 56(84) bytes of data.  
From 192.168.1.107 icmp_seq=1 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=2 Destination Host Unreachable  
--- 192.168.2.1 ping statistics ---  
5 packets transmitted, 0 received, +2 errors, 100% packet loss, time 4046ms  
pipe 4  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ping -c5 192.168.1.2  
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.  
From 192.168.1.107 icmp_seq=1 Destination Host Unreachable  
From 192.168.1.107 icmp_seq=2 Destination Host Unreachable  
--- 192.168.1.2 ping statistics ---  
5 packets transmitted, 0 received, +2 errors, 100% packet loss, time 4098ms  
pipe 4  
mazharrasyad@Mazharrasyad:~$
```

- Query nama domain
\$ nslookup detik.com

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ nslookup detik.com  
Server:      127.0.1.1  
Address:     127.0.1.1#53  
  
Non-authoritative answer:  
Name:   detik.com  
Address: 203.190.242.211  
Name:   detik.com  
Address: 103.49.221.211  
  
mazharrasyad@Mazharrasyad:~$
```

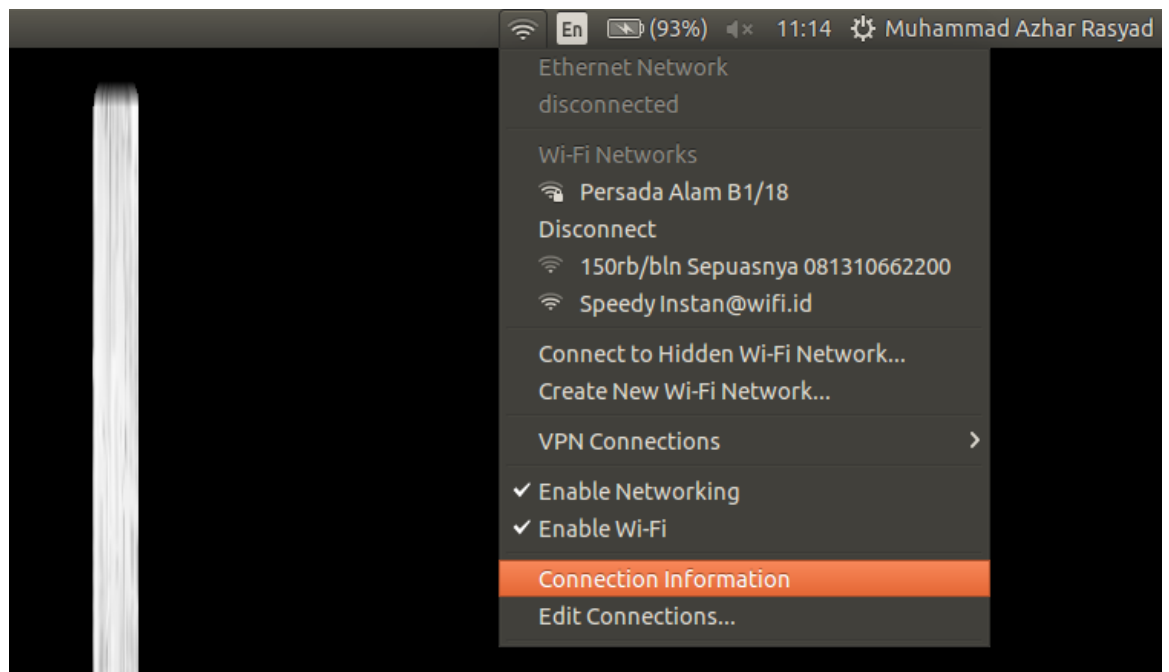
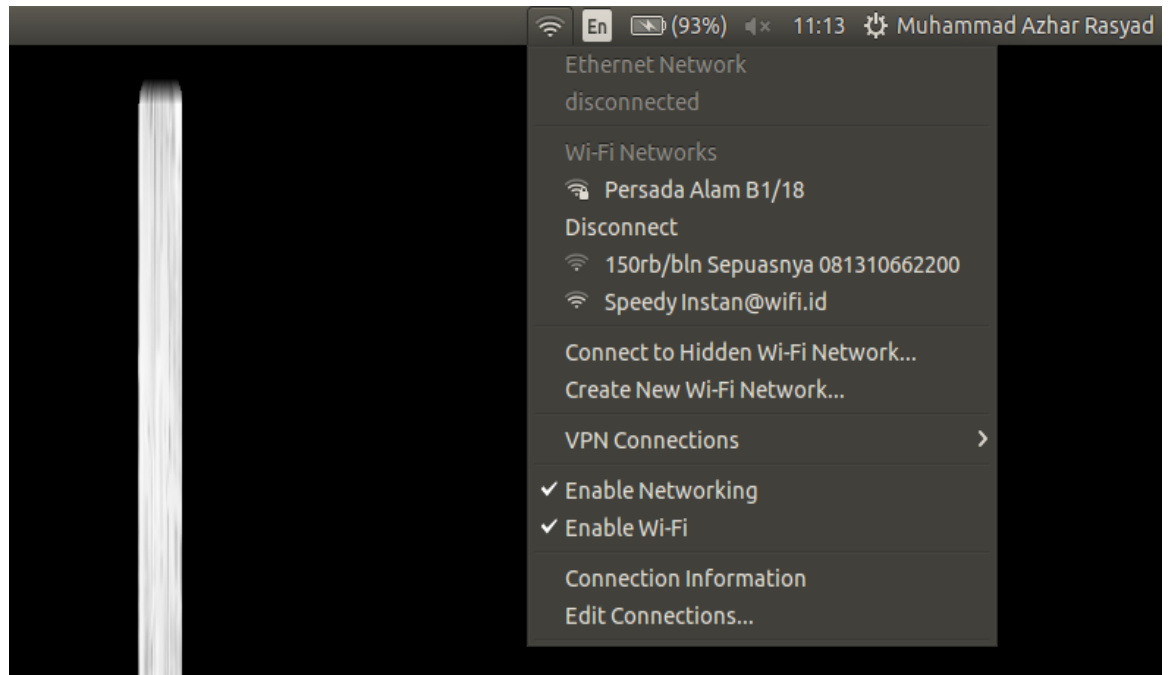
\$ nslookup detik.com 8.8.8.8

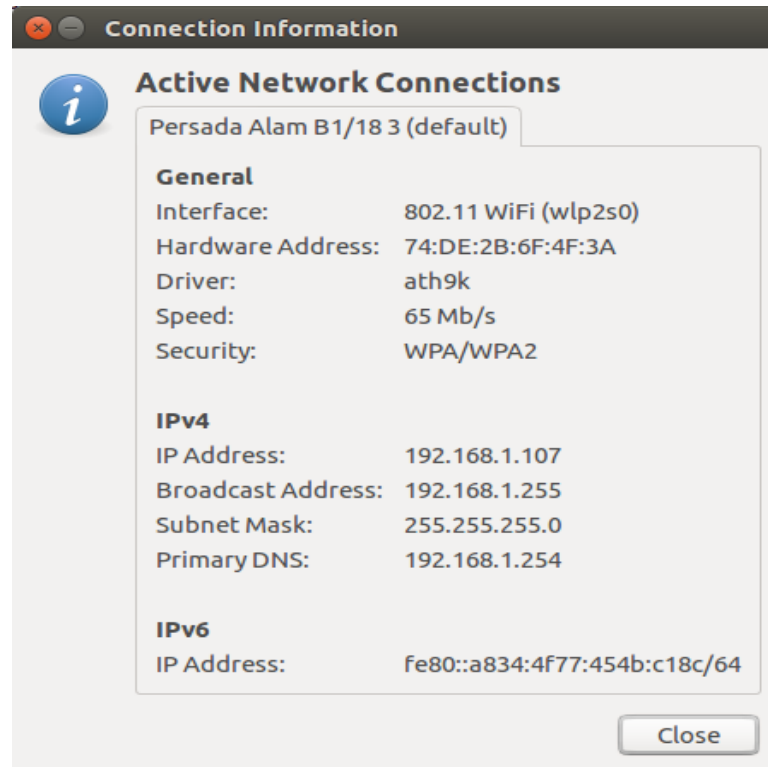
```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ nslookup detik.com 8.8.8.8  
;; connection timed out; no servers could be reached  
  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ nslookup 8.8.8.8  
Server:      127.0.1.1  
Address:     127.0.1.1#53  
  
Non-authoritative answer:  
8.8.8.8.in-addr.arpa    name = google-public-dns-a.google.com.  
  
Authoritative answers can be found from:  
  
mazharrasyad@Mazharrasyad:~$
```

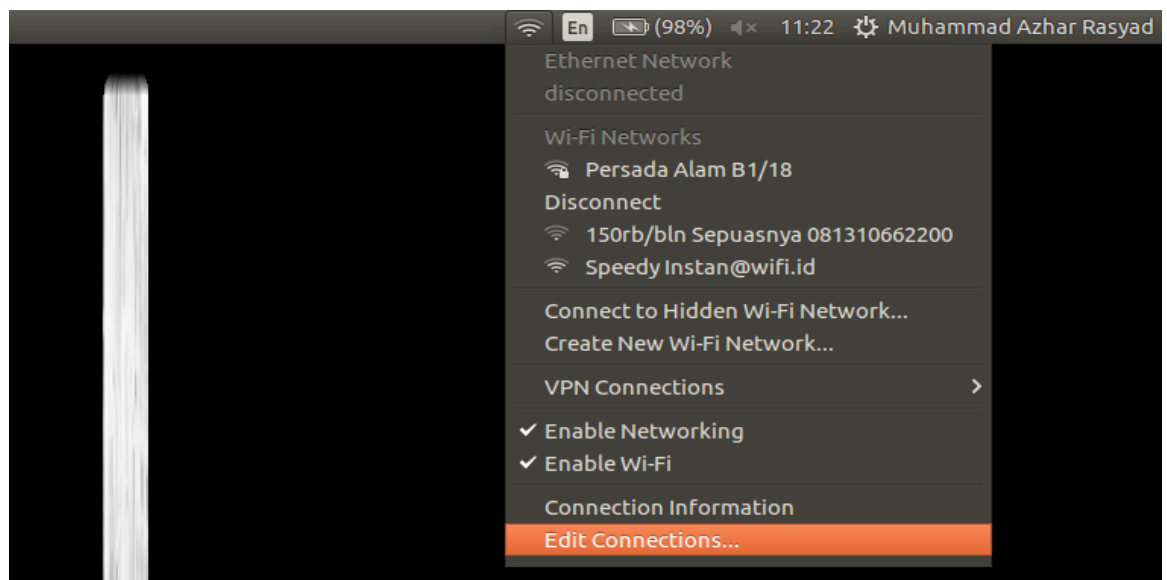
2. Konfigurasi Jaringan di Desktop

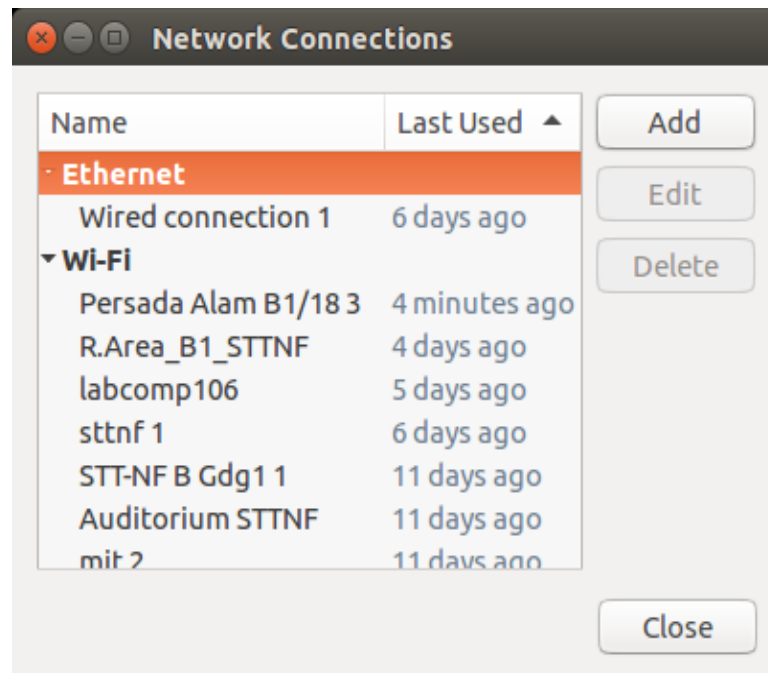
- Menampilkan konfigurasi jaringan
 - Klik ikon Network yang ada di menu bar kemudian pilih Connection Information



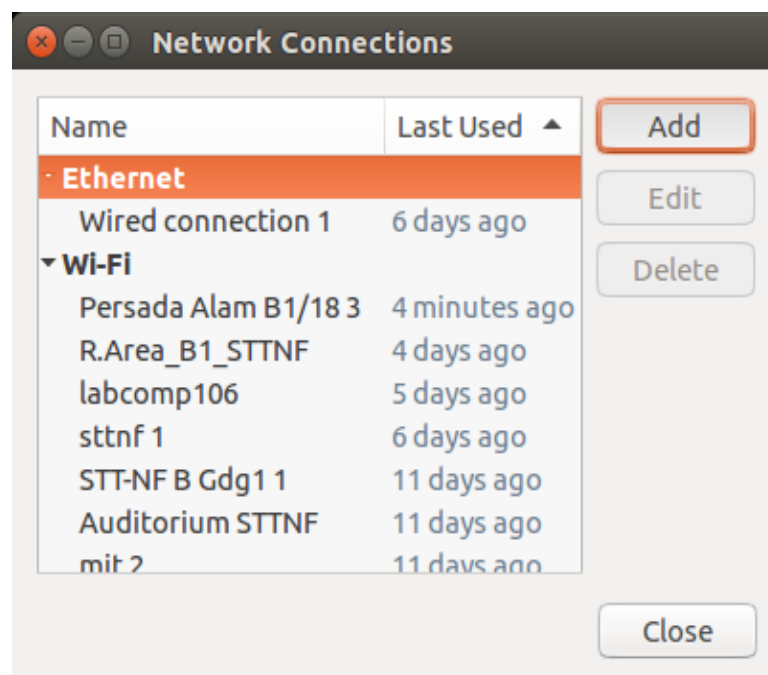


- **Mengubah / menambah konfigurasi jaringan**
- Klik ikon Network yang ada di menu bar kemudian pilih Edit Connection...

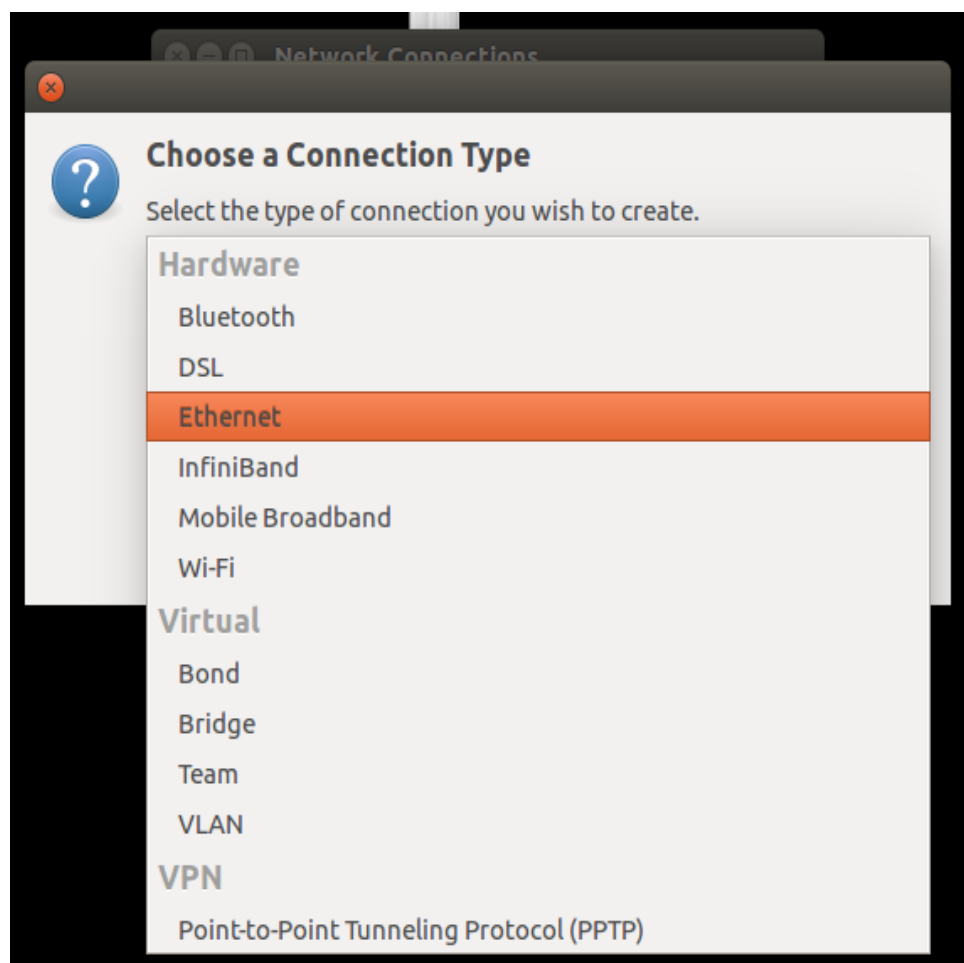
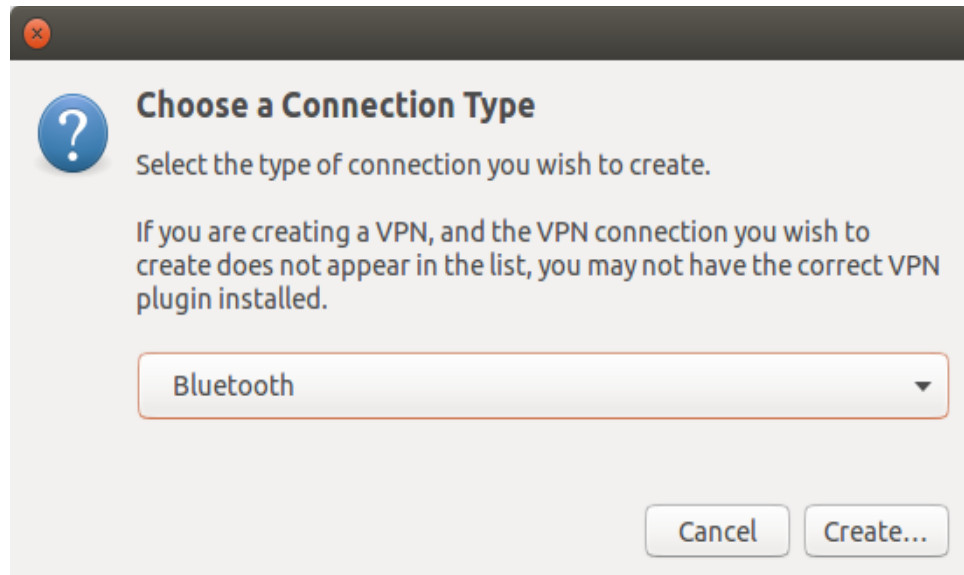




- Pada window Network Connections, klik tombol Add



- Pada dialog Choose a connection type pilih Ethernet kemudian klik tombol Create...



?

Choose a Connection Type

Select the type of connection you wish to create.

If you are creating a VPN, and the VPN connection you wish to create does not appear in the list, you may not have the correct VPN plugin installed.

Ethernet

Cancel

Create...

Editing Ethernet connection 1

Connection name: Ethernet connection 1

General

Ethernet

802.1x Security

DCB

IPv4 Settings

IPv6 Settings

Device:

Cloned MAC address:

MTU:

automatic

-

+

bytes

Wake on LAN:

☒ Default

☐ Phy

☐ Unicast

☐ Multicast

☐ Ignore

☐ Broadcast

☐ Arp

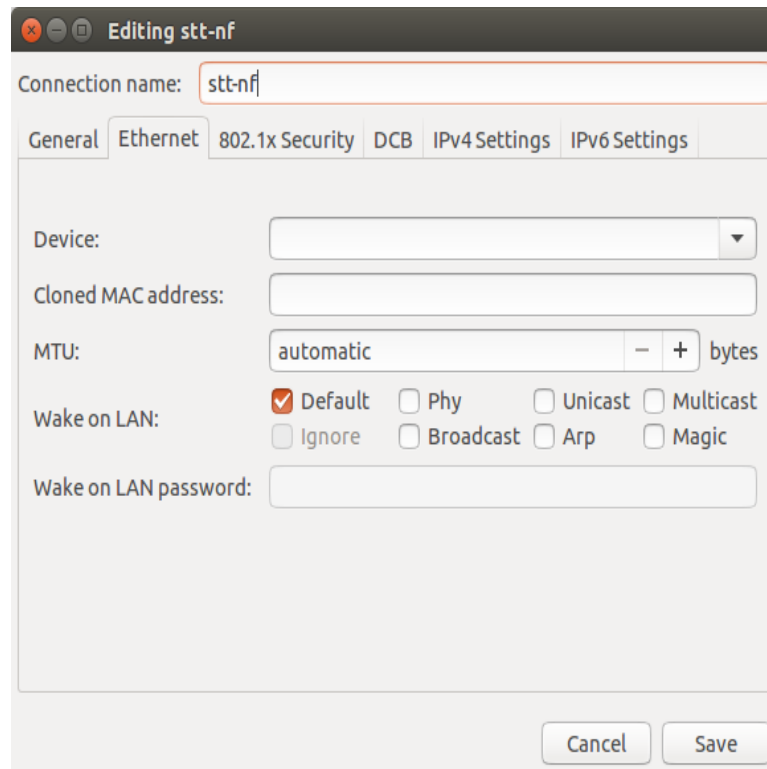
☐ Magic

Wake on LAN password:

Cancel

Save

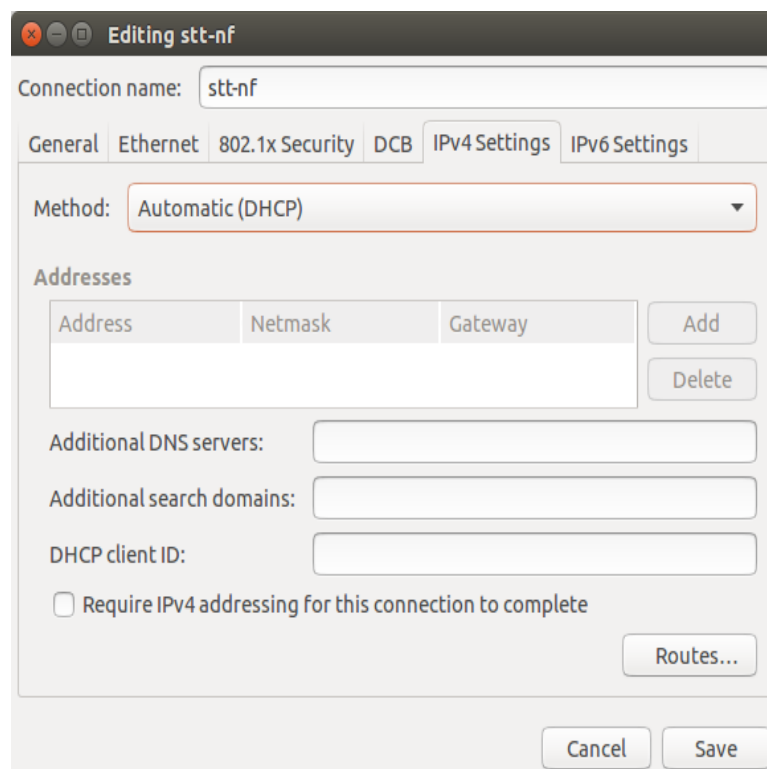
- Pada kolom Connection name ketik 'stt-nf', kemudian klik tab IPv4 Settings



The screenshot shows a window titled "Editing stt-nf". At the top, the "Connection name:" field contains "stt-nf". Below this are several tabs: "General", "Ethernet", "802.1x Security", "DCB", "IPv4 Settings", and "IPv6 Settings". The "Ethernet" tab is currently selected. It contains the following fields and options:

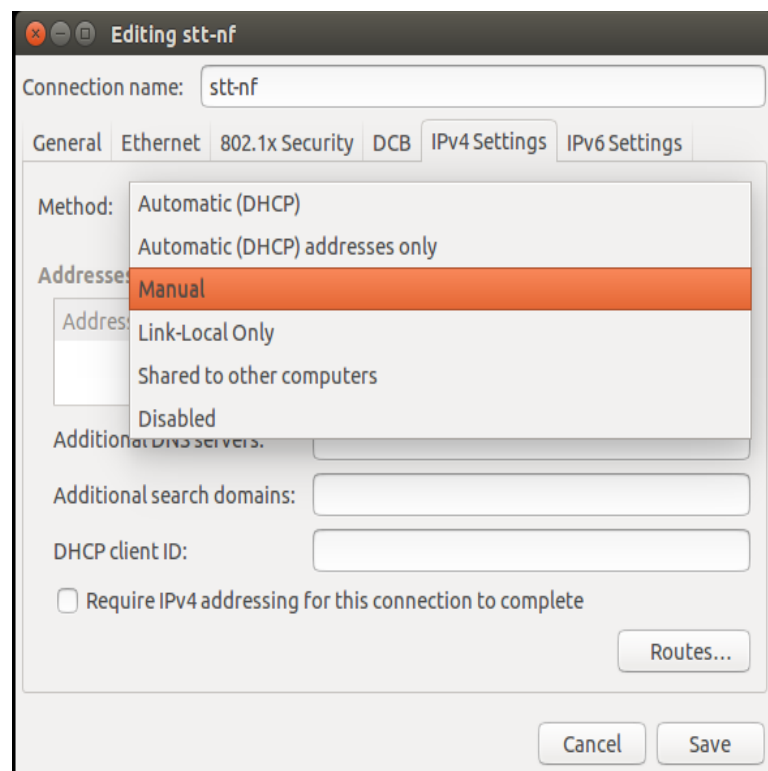
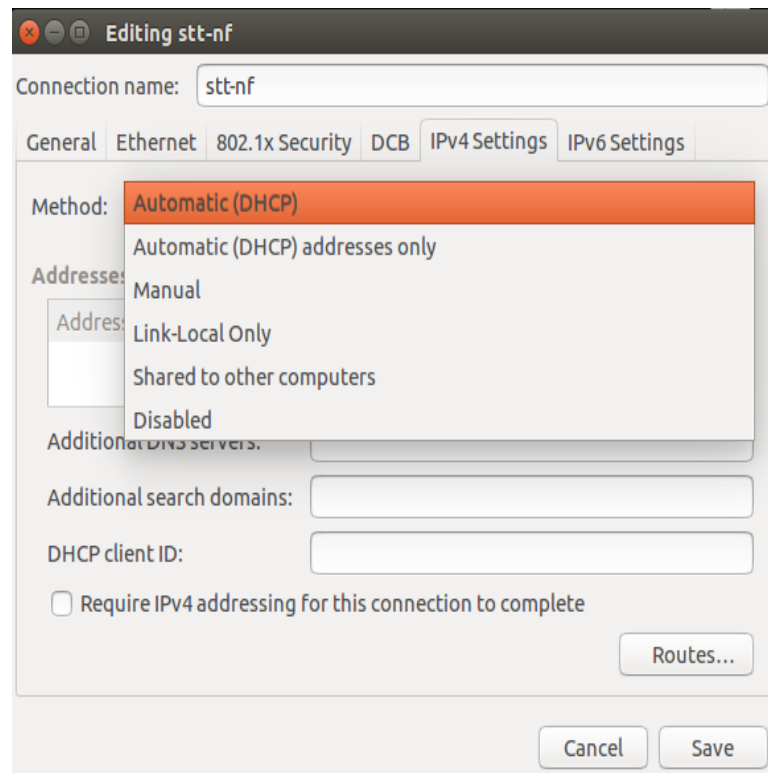
- Device:** A dropdown menu.
- Cloned MAC address:** A text input field.
- MTU:** A dropdown menu set to "automatic", with minus and plus buttons and the unit "bytes".
- Wake on LAN:** A section with several checkboxes:
 - ☒ Default
 - ☐ Phy
 - ☐ Unicast
 - ☐ Multicast
 - ☐ Ignore
 - ☐ Broadcast
 - ☐ Arp
 - ☐ Magic
- Wake on LAN password:** A text input field.

At the bottom right of the window are "Cancel" and "Save" buttons.



The screenshot shows the same "Editing stt-nf" window, but now the "IPv4 Settings" tab is selected. The "Connection name:" field still contains "stt-nf". The "Method:" dropdown menu is set to "Automatic (DHCP)". Below this is a section titled "Addresses" which contains a table with three columns: "Address", "Netmask", and "Gateway". There are "Add" and "Delete" buttons next to the table. Below the table are three text input fields for "Additional DNS servers:", "Additional search domains:", and "DHCP client ID:". At the bottom of this section is a checkbox labeled "Require IPv4 addressing for this connection to complete" and a "Routes..." button. "Cancel" and "Save" buttons are at the bottom right of the window.

- Pada menu drop down Method, pilih Manual kemudian klik tombol Add



Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

- Ketikkan 192.168.30.x (ganti x dengan nomor urut absen) pada kolom Address

Editing stt-nf

Connection name: stt-nf

General | Ethernet | 802.1x Security | DCB | **IPv4 Settings** | IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway

Add

Delete

IP addresses identify your computer on the network. Click the "Add" button to add an IP address.

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing stt-nf

Connection name: stt-nf

General | Ethernet | 802.1x Security | DCB | **IPv4 Settings** | IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.30.29		

Add

Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

- Ketikkan 255.255.255.0 atau 24 pada kolom Netmask

Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.30.2		

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.30.2	255.255.255.0	

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

- Ketikkan 192.168.30.1 pada kolom Gateway

Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.30.29		

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing stt-nf

Connection name: stt-nf

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.30.29	192.168.30.1	

Add Delete

DNS servers:

Search domains:

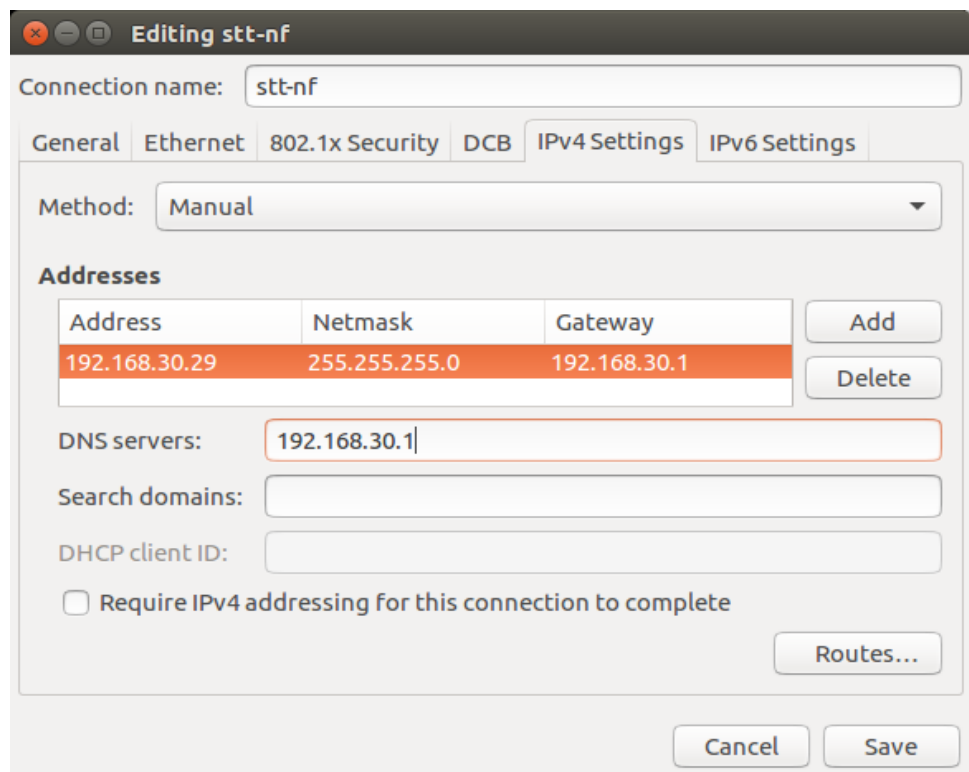
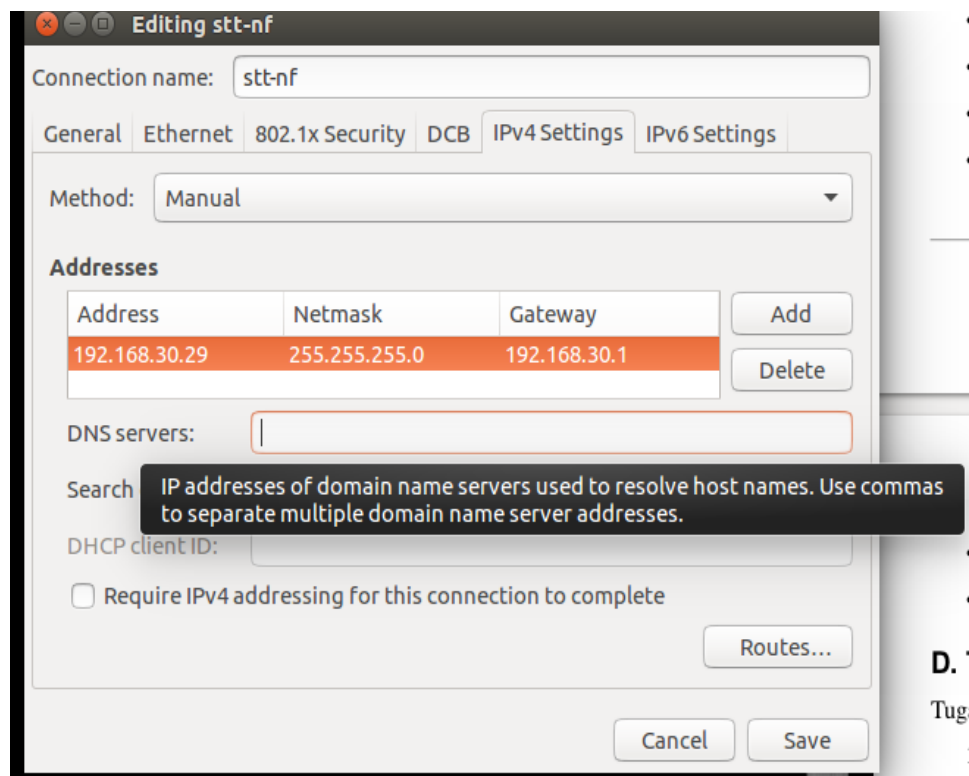
DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

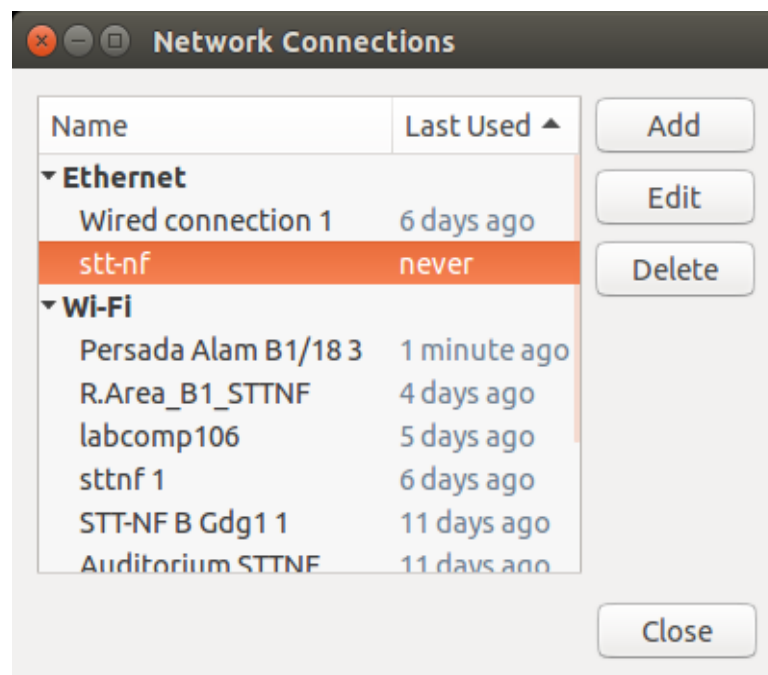
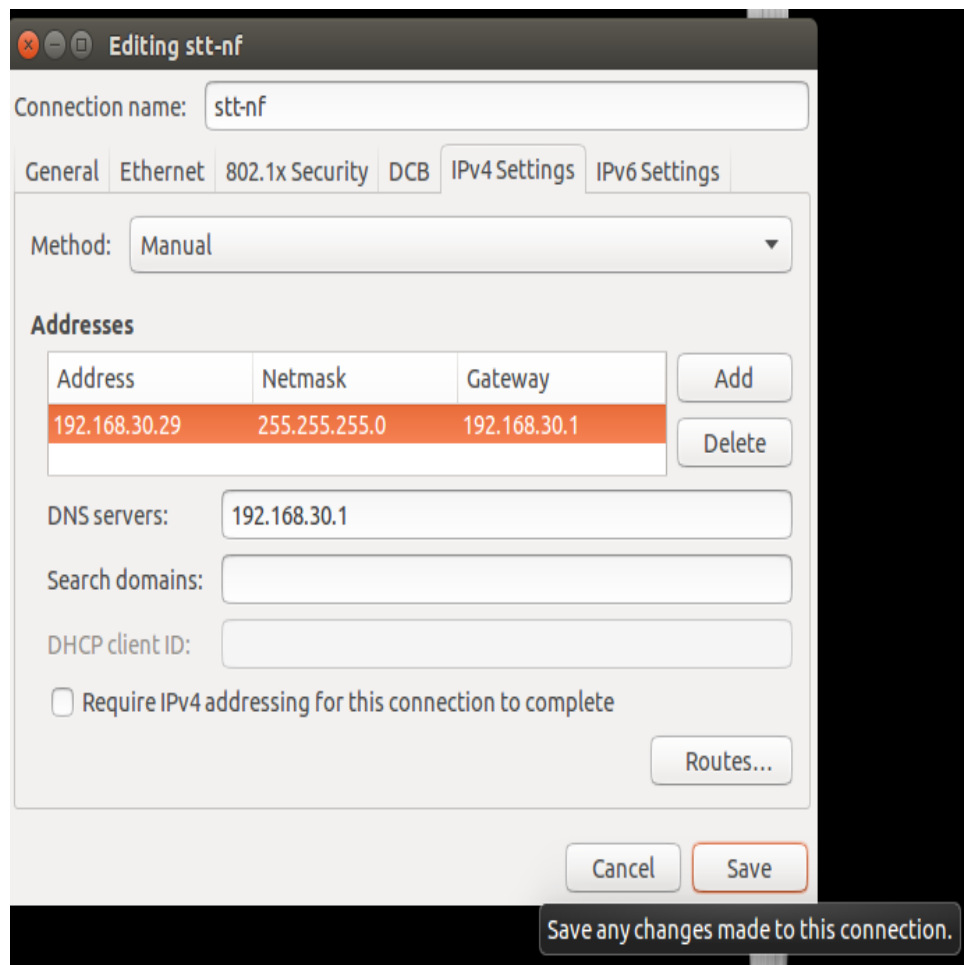
Routes...

Cancel Save

- Ketikkan 192.168.30.1 pada kolom DNS Servers



- Klik tombol Save... untuk mengakhiri konfigurasi.



D. Tugas

1. Ubahlah konfigurasi kartu jaringan eth0 komputer anda menjadi sbb:

IP Address : 192.168.20.100

Netmask : 255.255.255.128

Gateway : 192.168.20.1

Kemudian tampilkan hasilnya apakah konfigurasi yang dilakukan sudah berhasil atau belum.

Tuliskan perintah apa saja yang harus digunakan untuk kegiatan di atas!

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig wlp2s0  
wlp2s0    Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
          inet addr:192.168.1.107  Bcast:192.168.1.255  Mask:255.255.255.0  
          inet6 addr: fe80::a834:4f77:454b:c18c/64  Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:158570 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:130544 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:100074896 (100.0 MB)  TX bytes:20254323 (20.2 MB)  
  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ route -n  
Kernel IP routing table  
Destination      Gateway         Genmask         Flags Metric Ref    Use Iface  
0.0.0.0          192.168.1.254  0.0.0.0         UG    600    0      0 wlp2s0  
169.254.0.0      0.0.0.0        255.255.0.0     U     1000    0      0 wlp2s0  
192.168.1.0      0.0.0.0        255.255.255.0   U     600    0      0 wlp2s0  
  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo ifconfig wlp2s0 192.168.20.100 netmask 255.255.255.128  
[sudo] password for mazharrasyad:  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ sudo route add default gw 192.168.20.1  
mazharrasyad@Mazharrasyad:~$
```

```
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ ifconfig wlp2s0  
wlp2s0    Link encap:Ethernet  HWaddr 74:de:2b:6f:4f:3a  
          inet addr:192.168.20.100  Bcast:192.168.20.127  Mask:255.255.255.128  
          inet6 addr: fe80::a834:4f77:454b:c18c/64  Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:158791 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:130726 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:100111175 (100.1 MB)  TX bytes:20273432 (20.2 MB)  
  
mazharrasyad@Mazharrasyad:~$  
  
mazharrasyad@Mazharrasyad: ~  
mazharrasyad@Mazharrasyad:~$ route -n  
Kernel IP routing table  
Destination      Gateway          Genmask         Flags Metric Ref    Use Iface  
0.0.0.0          192.168.20.1    0.0.0.0         UG    0      0      0 wlp2s0  
192.168.20.0     0.0.0.0         255.255.255.128 U      0      0      0 wlp2s0  
  
mazharrasyad@Mazharrasyad:~$
```

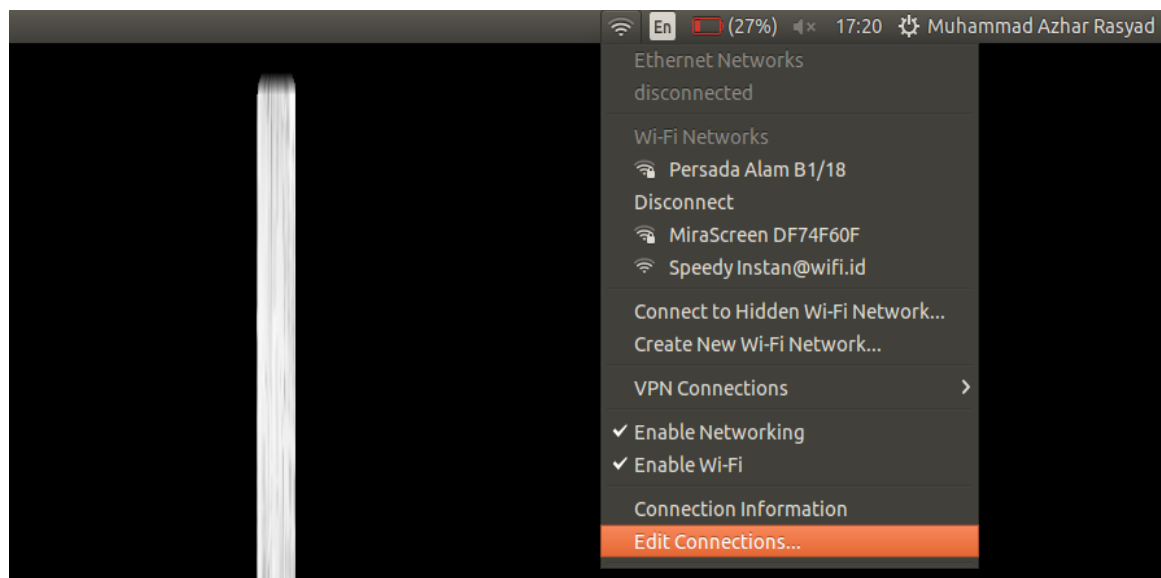
2. Tuliskan langkah-langkah untuk menambahkan konfigurasi jaringan kabel dengan nama koneksi 'kampus' menggunakan ip statis melalui desktop dengan konfigurasi sebagai berikut:

IP address : 192.168.50.x (ganti x dengan nomor urut absen)

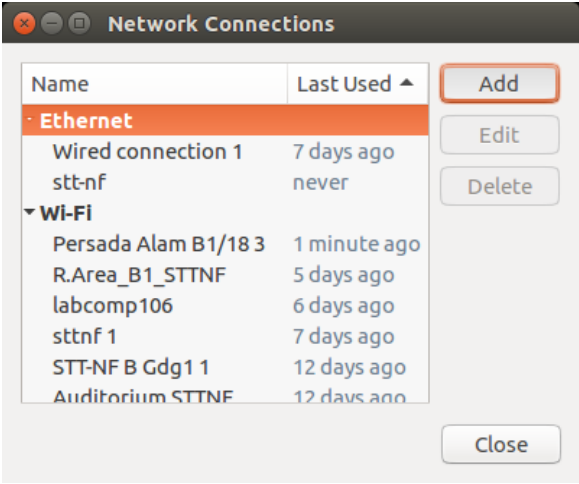
Netmask : 255.255.255.0

Gateway : 192.168.50.1

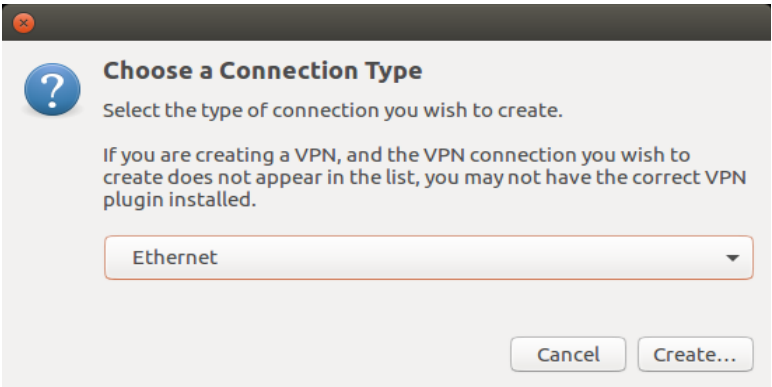
DNS Server : 8.8.8.8



Klik tombol Add



Pilih Connection Type Ethernet



Editing Ethernet connection 1

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Device:

Cloned MAC address:

MTU: bytes

Wake on LAN: ☒ Default ☐ Phy ☐ Unicast ☐ Multicast
☐ Ignore ☐ Broadcast ☐ Arp ☐ Magic

Wake on LAN password:

Editing kampus

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Device:

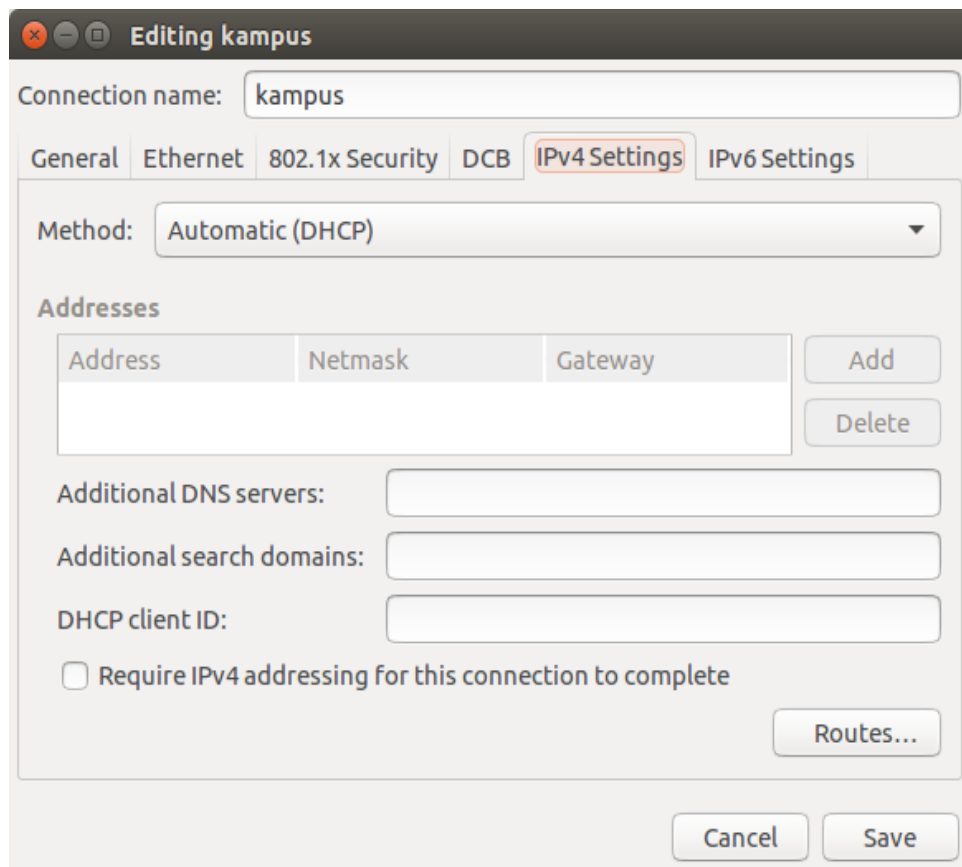
Cloned MAC address:

MTU: bytes

Wake on LAN: ☒ Default ☐ Phy ☐ Unicast ☐ Multicast
☐ Ignore ☐ Broadcast ☐ Arp ☐ Magic

Wake on LAN password:

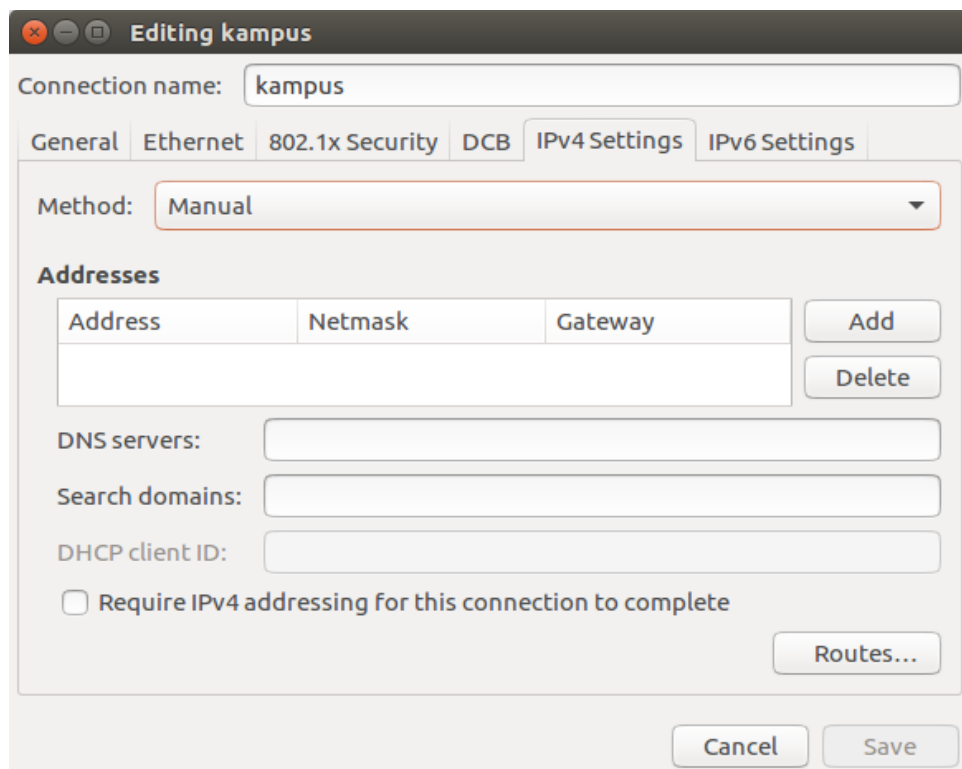
Pilih Menu Bar IPv4 Settings



The screenshot shows a window titled "Editing kampus" with a connection name of "kampus". The "IPv4 Settings" tab is selected and highlighted with a red box. The "Method" is set to "Automatic (DHCP)". Below this, there is a section for "Addresses" with a table for IP configuration. The table has columns for "Address", "Netmask", and "Gateway". To the right of the table are "Add" and "Delete" buttons. Below the table are fields for "Additional DNS servers:", "Additional search domains:", and "DHCP client ID:". There is also a checkbox for "Require IPv4 addressing for this connection to complete" and a "Routes..." button. At the bottom are "Cancel" and "Save" buttons.

Address	Netmask	Gateway

Pilih Method Manual



This screenshot is similar to the previous one, but the "Method" is now set to "Manual". The "Addresses" table and other fields remain the same. The "Require IPv4 addressing for this connection to complete" checkbox is still unchecked. The "Routes..." button is also present. The "Cancel" and "Save" buttons are at the bottom.

Address	Netmask	Gateway

Editing kampus

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method:

Addresses

Address	Netmask	Gateway
192.168.50.29		

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing kampus

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method:

Addresses

Address	Netmask	Gateway
192.168.50.29	255.255.255.0	

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing kampus

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method:

Addresses

Address	Netmask	Gateway
192.168.50.29	255.255.255.0	192.168.50.1

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Editing kampus

Connection name:

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method:

Addresses

Address	Netmask	Gateway
192.168.50.29	255.255.255.0	192.168.50.1

Add Delete

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Klik Tombol Save

The screenshot shows the 'Editing kampus' window with the 'IPv4 Settings' tab selected. The 'Connection name' is 'kampus'. The 'Method' is set to 'Manual'. Under the 'Addresses' section, a table lists the IP configuration:

Address	Netmask	Gateway
192.168.50.29	255.255.255.0	192.168.50.1

Below the table, the 'DNS servers' field contains '8.8.8.8'. The 'Search domains' and 'DHCP client ID' fields are empty. A checkbox for 'Require IPv4 addressing for this connection to complete' is unchecked. At the bottom right, the 'Save' button is highlighted with an orange border.

The screenshot shows the 'Network Connections' window. It contains a table with two columns: 'Name' and 'Last Used'. The 'kampus' connection is highlighted in orange.

Name	Last Used
Ethernet	
Wired connection 1	7 days ago
stt-nf	never
kampus	never
Wi-Fi	
Persada Alam B1/18 3	1 minute ago
R.Area_B1_STTNF	5 days ago
labcomp106	6 days ago
sttnf 1	7 days ago
STT-NF B Gdn1 1	12 days ago

Buttons for 'Add', 'Edit', 'Delete', and 'Close' are visible on the right side of the window.

Kesimpulan

Jadi pada setiap komputer jika ingin menggunakan jaringan harus mengatur network card atau kartu jaringan supaya komputer tersebut dapat terbaca oleh anggota jaringan yang lain seperti mengatur IP Address, IP Gateway, dan DNS Resolver. Pada jaringan di linux kita dapat mengaturnya dengan menggunakan command line ataupun desktop. Jika menggunakan command line maka diperlukan perintah – perintah seperti ifconfig, dhclient, route, ping, nslookup. Jika menggunakan desktop dapat menggunakan Connection Information dan Edit Connections.