

ADMINISTRASI SISTEM JARINGAN

MEMBANGUN ROUTER PADA DEBIAN

Khoirunnisa Fitria Aldira

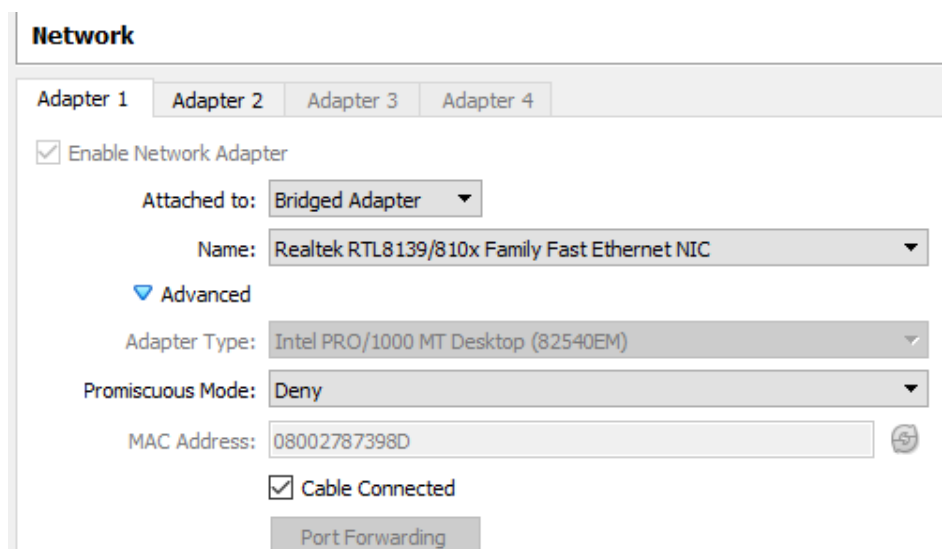
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1) Alat dan bahan :

- Virtual Box v 6.0
- Router (Debian 8)
- Client (Windows XP)

2) Langkah Kerja :

1. Setting network pada debian menjadi bridged adapter dan jangan lupa beri tanda check pada opsi cable connected lalu klik OK



2. Jalankan lalu Login debian dengan memasukkan username dan password yang sesuai

```
Debian GNU/Linux 8 debian-dira tty1
debian-dira login: root
Password: _
```

3. Klik perintah (dhclient eth0) untuk mendapat IP secara dhcp (auto)

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@debian8:~# dhclient eth0
root@debian8:~# ifconfig
```

- Gunakan perintah `ifconfig` untuk melihat konfigurasi IP dhcp

```
root@debian8:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:87:39:8d
          inet addr:192.168.221.153  Bcast:192.168.221.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fe87:398d/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:434 errors:0 dropped:0 overruns:0 frame:0
          TX packets:20 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:40042 (39.1 KiB)  TX bytes:2506 (2.4 KiB)

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:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

- Masukkan perintah `nano /etc/network/interfaces` untuk mengkonfigurasi IP lalu klik Enter

```
root@debian-dira:~# nano /etc/network/interfaces_
```

- Ketikkan konfigurasi manual pada menu teks Nano lalu klik CTRL-O lalu Enter lalu CTRL-X untuk menyimpan konfigurasi sekaligus keluar dari menu teks Nano

```
GNU nano 2.2.6      File: /etc/network/interfaces

# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet static
    address 192.168.221.219
    netmask 255.255.255.0
```

- Ketikkan `/etc/init.d/networking restart` untuk merestart konfigurasi lalu klik Enter

```
root@debian8:~# /etc/init.d/networking restart
[ ok ] Restarting networking (via systemctl): networking.service.
root@debian8:~#
```

- Ketikkan `ifconfig` untuk melihat konfigurasi, setelah direstart tentunya konfigurasi akan diperbarui seperti pada gambar

```
root@debian8:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:87:39:8d
          inet addr:192.168.221.219  Bcast:192.168.221.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fe87:398d/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4136 errors:0 dropped:0 overruns:0 frame:0
          TX packets:50 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:304749 (297.6 KiB)  TX bytes:9931 (9.6 KiB)

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:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

root@debian8:~# _
```

9. Konfigurasi ulang pada nano dengan mengetikkan perintah seperti gambar lalu klik Enter

```
root@debian-dira:~# nano /etc/network/interfaces_
```

10. Setting ulang menu teks Nano dengan memasukkan IP Gateway lalu klik CTRL-O lalu Enter lalu CTRL-X untuk menyimpan konfigurasi sekaligus keluar dari menu teks Nano

```
# The loopback network interface
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet static
    address 192.168.221.219
    netmask 255.255.255.0
    gateway 192.168.221.1
```

11. Ketikkan /etc/init.d/networking restart untuk merestart konfigurasi lalu klik Enter

```
root@debian8:~# /etc/init.d/networking restart
[ ok ] Restarting networking (via systemctl): networking.service.
root@debian8:~#
```

12. Jika perlu untuk mengganti nama hostname masukkan perintah seperti gambar di bawah lalu masuk pada menu teks Nano dan klik Enter

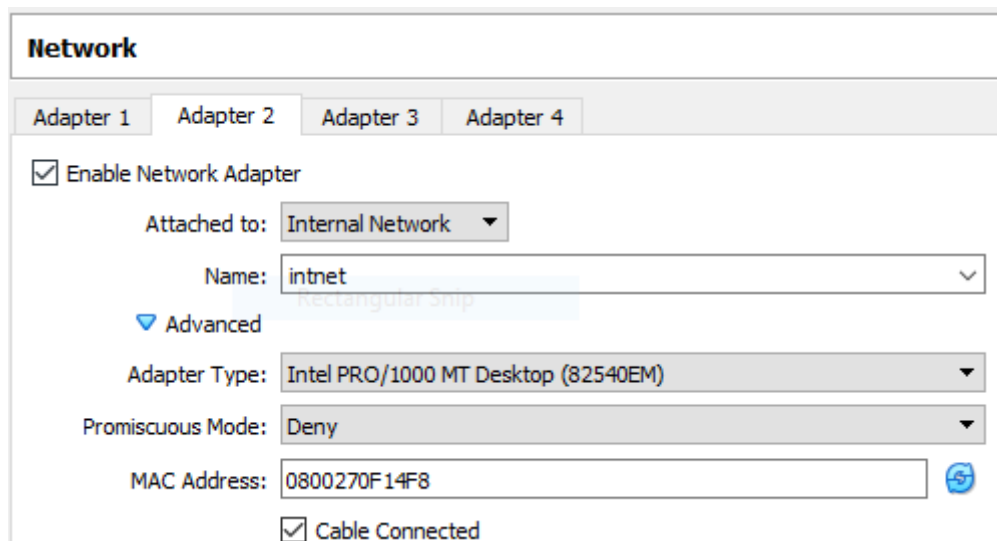
```
root@debian8:~# hostname debian-dira
root@debian8:~# nano /etc/hostname
```

13. Ganti nama pada menu teks Nano sesuai yang diinginkan

```
GNU nano 2.2.6 File: /etc/hostname

debian-dira
```

14. Setting ulang pada network dengan menambah adapter 2 menjadi intnet agar terhubung dengan client



Network

Adapter 1 Adapter 2 Adapter 3 Adapter 4

☒ Enable Network Adapter

Attached to: Internal Network

Name: intnet

Advanced

Adapter Type: Intel PRO/1000 MT Desktop (82540EM)

Promiscuous Mode: Deny

MAC Address: 0800270F14F8

☒ Cable Connected

15. Konfigurasi IP ulang dengan memasukkan perintah nano /etc/network/interfaces lalu klik Enter. Beri input tambahan eth1 seperti gambar di bawah lalu klik CTRL-O lalu Enter lalu CTRL-X untuk menyimpan konfigurasi sekaligus keluar dari menu teks Nano

```
GNU nano 2.2.6      File: /etc/network/interfaces

# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet static
    address 192.168.221.219
    netmask 255.255.255.0
    gateway 192.168.221.1
auto eth1
iface eth1 inet static
    address 172.20.19.1/24_
```

16. Ketikkan /etc/init.d/networking restart untuk merestart konfigurasi lalu klik Enter

```
root@debian8:~# /etc/init.d/networking restart
[ ok ] Restarting networking (via systemctl): networking.service.
root@debian8:~#
```

17. Masukkan perintah seperti gambar lalu klik Enter

```
root@debian-dira:~# nano /etc/sysctl.conf _
```

18. Hilangkan pagar pada kalimat net.ipv4.ip_forward=1 untuk mengaktifkan settingan IP V4 lalu klik CTRL-O lalu Enter lalu CTRL-X untuk menyimpan konfigurasi sekaligus keluar dari menu teks Nano

```
# Uncomment the next line to enable TCP/IP SYN cookies
# See http://lwn.net/Articles/277146/
# Note: This may impact IPv6 TCP sessions too
#net.ipv4.tcp_syncookies=1

# Uncomment the next line to enable packet forwarding for IPv4
net.ipv4.ip_forward=1
```

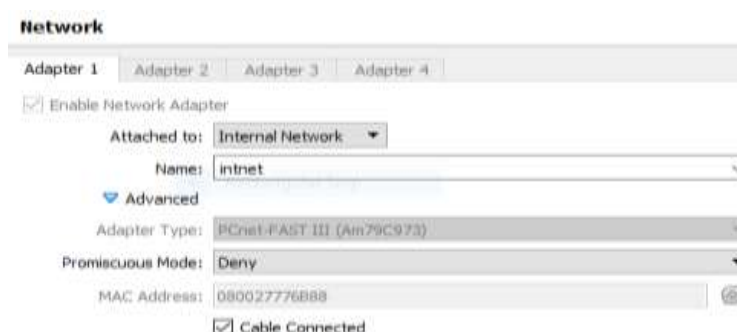
19. Masukkan perintah seperti gambar untuk memastikan bahwa konfigurasi Nano di atas telah berhasil

```
root@debian-dira:~# sysctl -p
net.ipv4.ip_forward = 1
root@debian-dira:~#
```

20. Ketikkan perintah seperti gambar di bawah untuk mengkoneksikan router dengan client

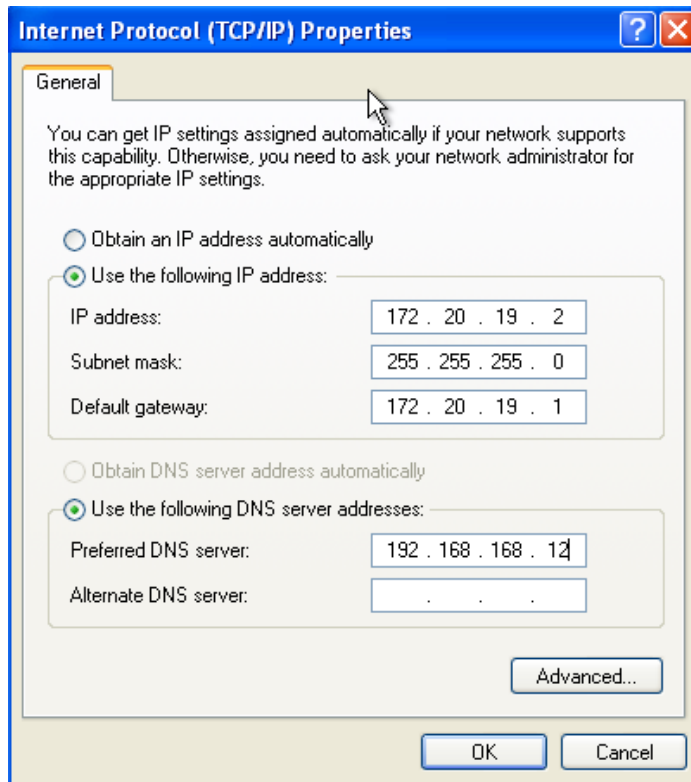
```
root@debian-dira:~# iptables -t nat -A POSTROUTING -o eth0 -j MASQUERADE
root@debian-dira:~#
```

21. Setting pada network client dengan menambah adapter menjadi intnet agar terhubung dengan router



22. Setting IP pada client XP

- IP address 172.20.19.2
- netmask 255.255.255.0
- IP gateway 172.20.19.1 (IP router di eth1)
- DNS Server 192.168.168



23. Test ping ke router (172.20.19.1) , server (192.168.168.16), dan ke modul2.ict.gk

```
C:\> Command Prompt

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\admin>ping 172.20.19.1

Pinging 172.20.19.1 with 32 bytes of data:

Reply from 172.20.19.1: bytes=32 time<1ms TTL=64
Reply from 172.20.19.1: bytes=32 time<1ms TTL=64
Reply from 172.20.19.1: bytes=32 time<1ms TTL=64
Reply from 172.20.19.1: bytes=32 time<1ms TTL=64

Ping statistics for 172.20.19.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

C:\Documents and Settings\admin>ping 192.168.168.16

Pinging 192.168.168.16 with 32 bytes of data:

Reply from 192.168.168.16: bytes=32 time=1ms TTL=61
Reply from 192.168.168.16: bytes=32 time=1ms TTL=62
Reply from 192.168.168.16: bytes=32 time=1ms TTL=62

Ping statistics for 192.168.168.16:
    Packets: Sent = 3, Received = 3, Lost = 0 (0% loss),
```

```
C:\Documents and Settings\admin>ping modul2.ict.gk
Pinging ns.ict.gk [192.168.168.5] with 32 bytes of data:
Reply from 192.168.168.5: bytes=32 time=1ms TTL=62
Reply from 192.168.168.5: bytes=32 time=1ms TTL=62
Reply from 192.168.168.5: bytes=32 time=1ms TTL=62
Reply from 192.168.168.5: bytes=32 time=1ms TTL=62
Ping statistics for 192.168.168.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

24. Konfigurasi selesai