

LAPORAN AKHIR PRAKTIKUM

Mata Praktikum : Pemograman Jaringan

Kelas : 4IA02

Praktikum ke- : 1

Tanggal : 07/04/2023

Materi : IP Static, DNS Dan DHCP

NPM : 56419075

Nama : Sinatra Kusuma

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Paraf Asisten :

Nama Asisten :

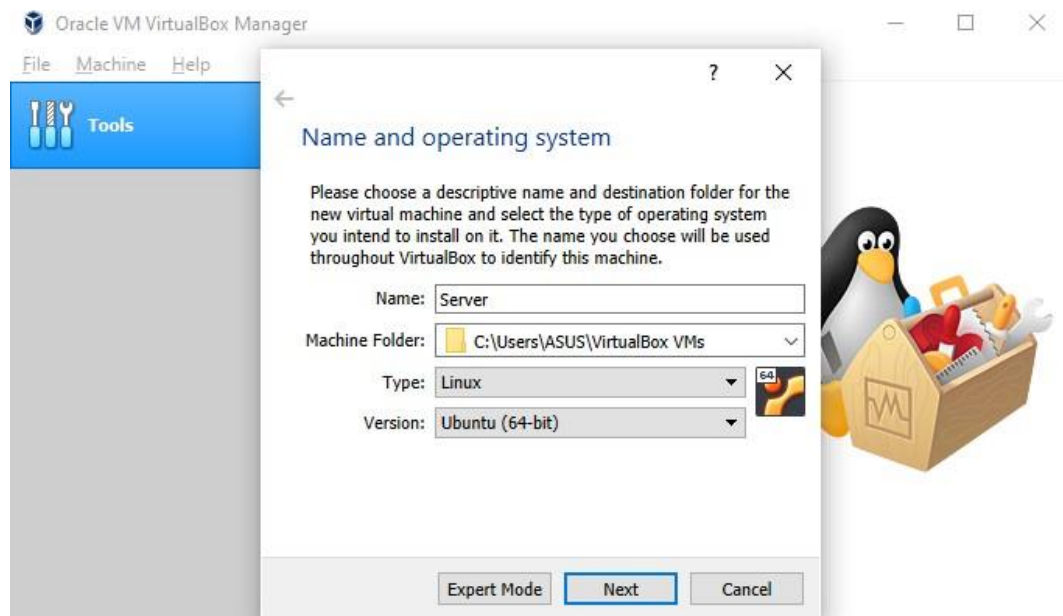
Jumlah Lembar : 10 Lembar

LABORATORIUM TEKNIK INFORMATIKA

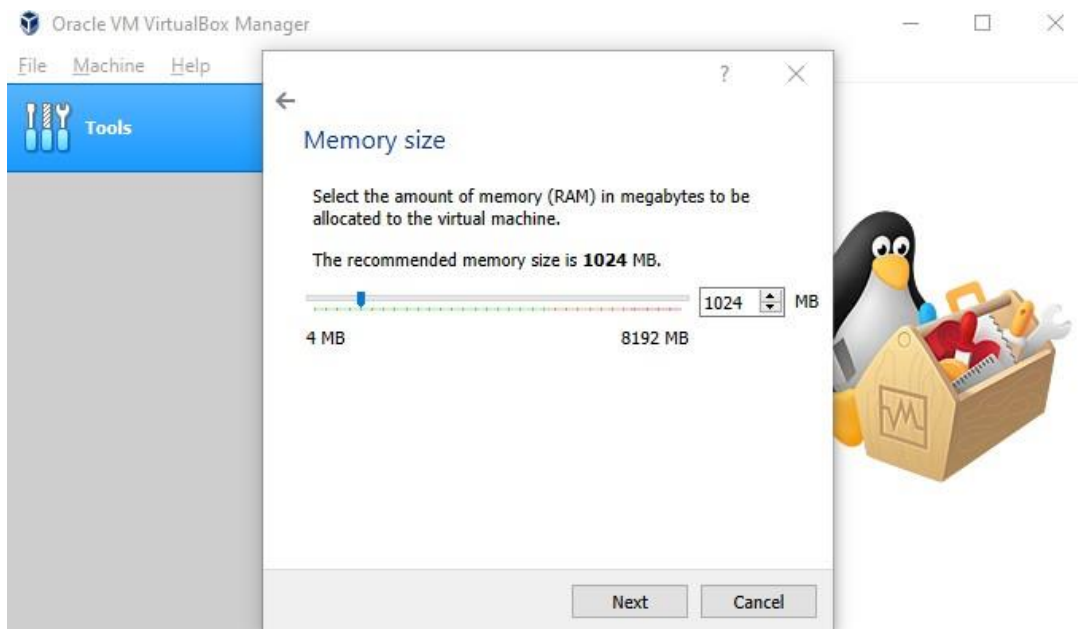
UNIVERSITAS GUNADARMA

2024

1. Pertama-tama kita buat role untuk server dengan menggunakan linux ubuntu 64bit juga menentukan di mana letak path yang ingin di arahkan



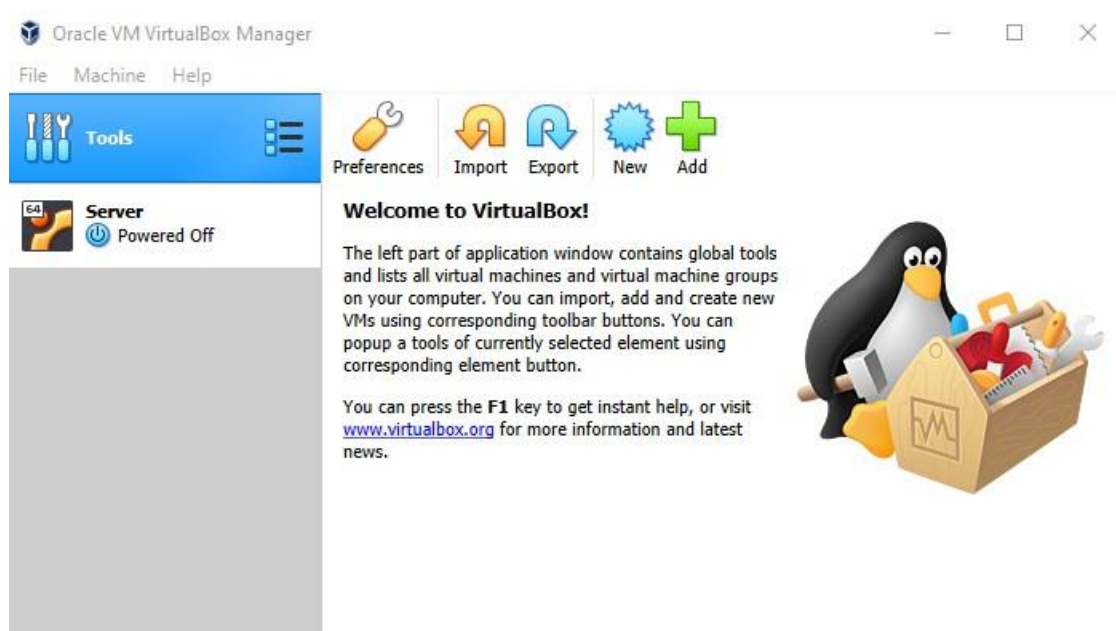
2. Tentukan memory size yang akan di gunakan nanti saat di pakai role



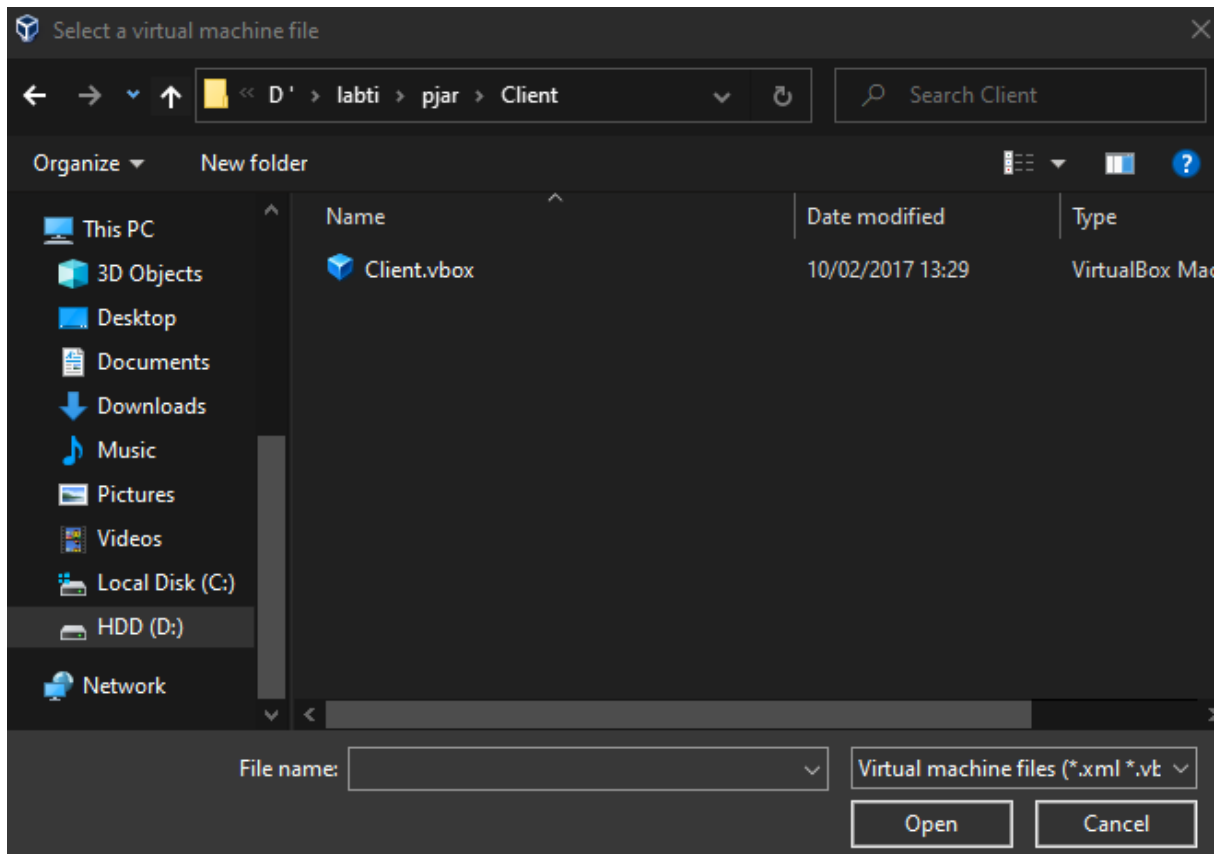
3. Lalu kita pilih menggunakan sebuah memory virtual hard disk file dengan memasukan file Server.vdi



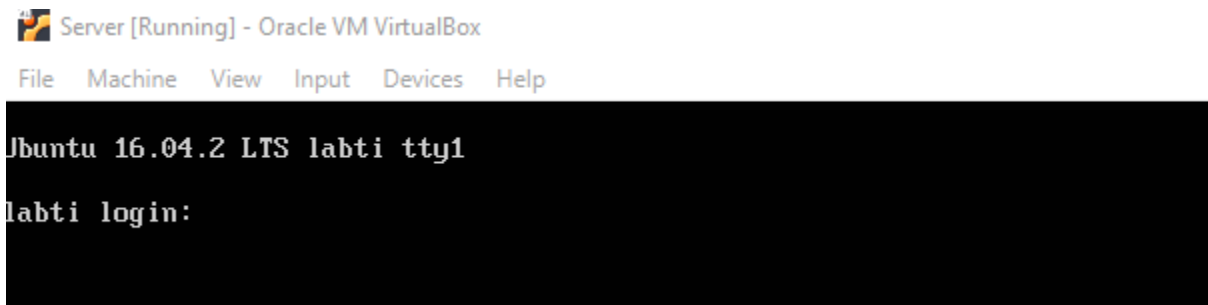
4. Lalu apabila berhasil maka akan tampil sebagai berikut



5. Lalu tambahkan Client.vbox



6. lalu masuk ke server login dengan server dan password server



7. Lalu akan muncul tampilan seperti ini apabila login berhasil, lalu kita ubah ip nya lalu simpan dan

```
Server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Ubuntu 16.04.2 LTS labti tty1

labti login: server
Password:
Last login: Fri Feb 10 13:15:54 WIB 2017 on tty1
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.4.0-62-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

298 packages can be updated.
210 updates are security updates.

server@labti:~$ ifconfig
enp0s3    Link encap:Ethernet  HWaddr 08:00:27:09:9b:4e
          inet addr:10.0.2.15  Bcast:10.0.2.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fe09:9b4e/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:8683 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1427 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:12514869 (12.5 MB)  TX bytes:99177 (99.1 KB)

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:168 errors:0 dropped:0 overruns:0 frame:0
          TX packets:168 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:12238 (12.2 KB)  TX bytes:12238 (12.2 KB)

server@labti:~$ _
```

8. File konfigurasi jaringan /etc/network/interfaces digunakan untuk mengkonfigurasi jaringan pada sistem Linux/Unix.

```
server@labti:~$ sudo nano /etc/network/interfaces
[sudo] password for server:
```

9. Lalu kita tambahkan address, netmask dan gate way

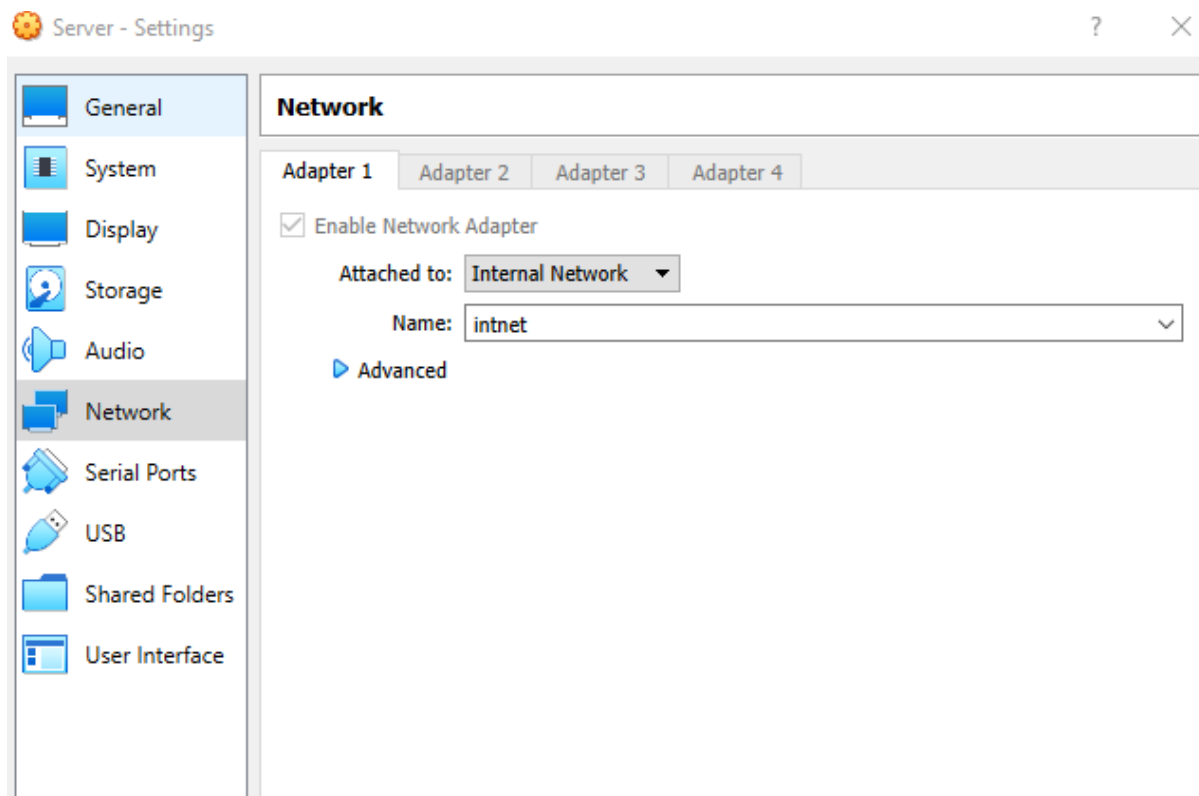
```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto enp0s3
iface enp0s3 inet static
    address 192.168.1.10
    netmask 255.255.255.0
    gateway 192.168.1.1
    dns-nameserver 192.168.1.10_
```

10. Lalu ke setting ke bagian network ubah jaringannya menjadi internal network dan basis intnet lalu setelahnya di reboot



```
server@labti:~$ reboot
```

11. Lalu kita cek ip telah kita rubah tadi menggunakan ifconfig

```
File Machine View Input Devices Help
Ubuntu 16.04.2 LTS labti tty1

labti login: server
Password:
Last login: Sat Apr  1 08:51:51 WIB 2023 on tty1
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.4.0-62-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

298 packages can be updated.
210 updates are security updates.

New release '18.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

server@labti:~$ 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:322 errors:0 dropped:0 overruns:0 frame:0
                  TX packets:322 errors:0 dropped:0 overruns:0 carrier:0
                  collisions:0 txqueuelen:1
                  RX bytes:21538 (21.5 KB)  TX bytes:21538 (21.5 KB)
```

12. "name.conf.local" digunakan untuk sebuah file konfigurasi pada sistem DNS (Domain Name System). File ini digunakan untuk menentukan konfigurasi tambahan pada server DNS, seperti pengaturan zona DNS atau konfigurasi DNS forwarding. Dan juga merubah zonanya

```
server@labti:~$
add-apt-repository  bind9-doc          install            reboot
apt                bind9utils         isc-dhcp-server   sudo
autoclean           clear              nginx             update
autoremove         dist-upgrade       oracle-java8-installer upgrade
bind9               ifconfig           ppa:webupd8team/java vsftpd

server@labti:~$ cd /etc/bind
server@labti:/etc/bind$ sudo nano named.conf.local
[sudo] password for server:
```

```
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "pratikum.labti.ug" {
    type master;
    file "/etc/bind/forward.labti";
};

zone "1.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/reverse.labti";
};
```

13. Lalu lakukan konfigurasi seperti berikut, dilanjutkan dengan melakukan forward

```
$TTL 86400
@      IN      SOA      praktikum.labti.ug.  root.praktikum.labti.ug. (
                        101      ;Serial
                        3600     ;Refresh
                        1800     ;Retry
                        604800   ;Expire
                        86400    ;Minimum TTL
)
@      IN      NS       praktikum.labti.ug.
@      IN      A        192.168.1.10
www    IN      A        192.168.1.10
```

```
server@labti:/etc/bind$ sudo cp forward.labti reverse.labti
server@labti:/etc/bind$ sudo nano reverse.labti_
```

14. Lalu konfigurasi dan melakukan restart bind kepada praktikum.labti.ug


```

$TTL 86400
     IN      SOA      praktikum.labti.ug.  root.praktikum.labti.ug. (
                               102      ;Serial
                               3600     ;Refresh
                               1800     ;Retry
                               604800   ;Expire
                               86400    ;Minimum TTL
)
     IN      NS       praktikum.labti.ug.
     IN      A        192.168.1.10
10     IN      PTR     www.praktikum.labti.ug.

```

```

server@labti:/etc/bind$ sudo systemctl restart bind9
server@labti:/etc/bind$ nslookup praktikum.labti.ug
Server:          192.168.1.10
Address:         192.168.1.10#53

Name:   praktikum.labti.ug
Address: 192.168.1.10

```

15. lakukan konfigurasi pada dhcp server dan jalankan berikut tampilan jika berhasil menjalankannya

```

tem.slice/isc-dhcp-server.service
24 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid -cf /etc/dhcp/

labti dhcpd[1324]: For info, please visit https://www.isc.org/software/dhcp/
labti dhcpd[1324]: Wrote 0 leases to leases file.
labti sh[1324]: Wrote 0 leases to leases file.
labti dhcpd[1324]: Listening on LPF/enp0s3/08:00:27:30:54:ad/192.168.1.0/24
labti sh[1324]: Listening on LPF/enp0s3/08:00:27:30:54:ad/192.168.1.0/24
labti dhcpd[1324]: Sending on  LPF/enp0s3/08:00:27:30:54:ad/192.168.1.0/24
labti sh[1324]: Sending on  LPF/enp0s3/08:00:27:30:54:ad/192.168.1.0/24
labti dhcpd[1324]: Sending on  Socket/fallback/fallback-net
labti sh[1324]: Sending on  Socket/fallback/fallback-net
labti dhcpd[1324]: Server starting service.

```

16. Lalu kita run menggunakan client dan apabila berhasil akan tampil sebagai berikut

```
praktikan@client:~$ ping praktikum.labti.ug
PING praktikum.labti.ug (192.168.1.10) 56(84) bytes of data.
64 bytes from www.praktikum.labti.ug (192.168.1.10): icmp_seq=1 ttl=64 time=0.48
5 ms
64 bytes from www.praktikum.labti.ug (192.168.1.10): icmp_seq=2 ttl=64 time=1.28
ms
64 bytes from www.praktikum.labti.ug (192.168.1.10): icmp_seq=3 ttl=64 time=0.61
0 ms
64 bytes from www.praktikum.labti.ug (192.168.1.10): icmp_seq=4 ttl=64 time=0.88
0 ms
64 bytes from www.praktikum.labti.ug (192.168.1.10): icmp_seq=5 ttl=64 time=0.67
7 ms
```

```
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 34046
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 4096
;; QUESTION SECTION:
;praktikum.labti.ug.                IN      A

;; ANSWER SECTION:
praktikum.labti.ug.      86400   IN      A      192.168.1.10

;; AUTHORITY SECTION:
praktikum.labti.ug.      86400   IN      NS      praktikum.labti.ug.
```