

LAPORAN PRAKTIKUM JARINGAN KOMPUTER

PROTOKOL LAPISAN APLIKASI



Oleh :

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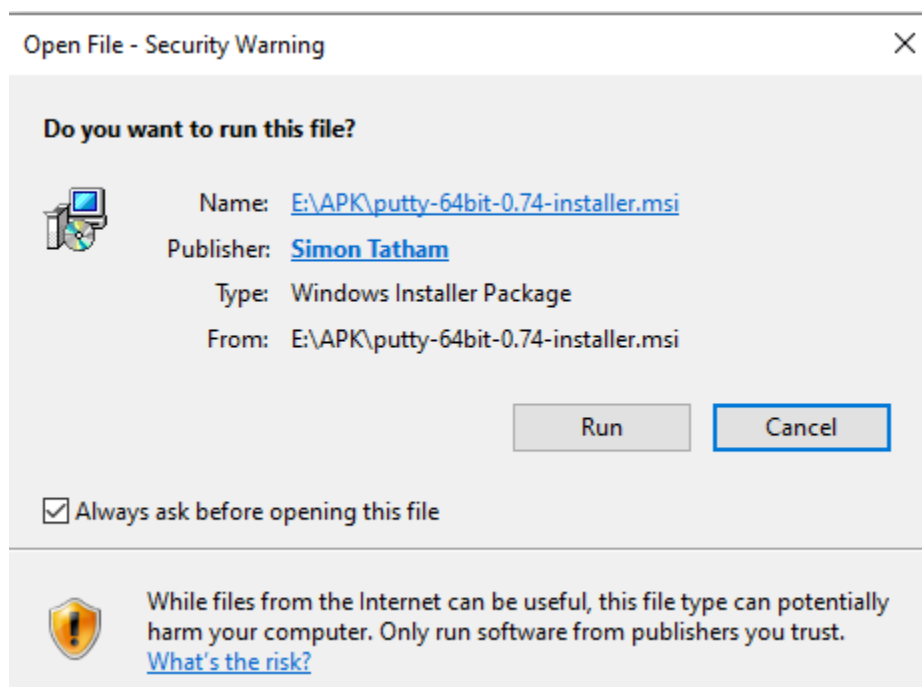
MI 2C / 06

D-III MANAJEMEN INFORMATIKA
JURUSAN TEKNOLOGI INFORMASI
POLITEKNIK NEGERI MALANG

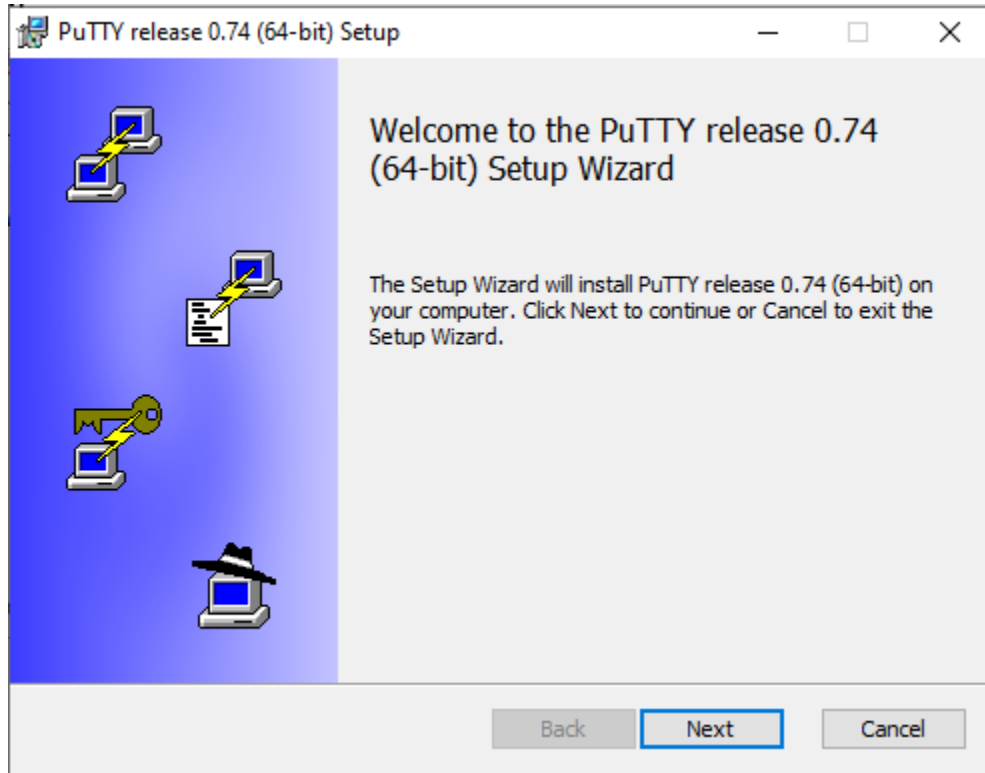
2020 / 2021

Install putty

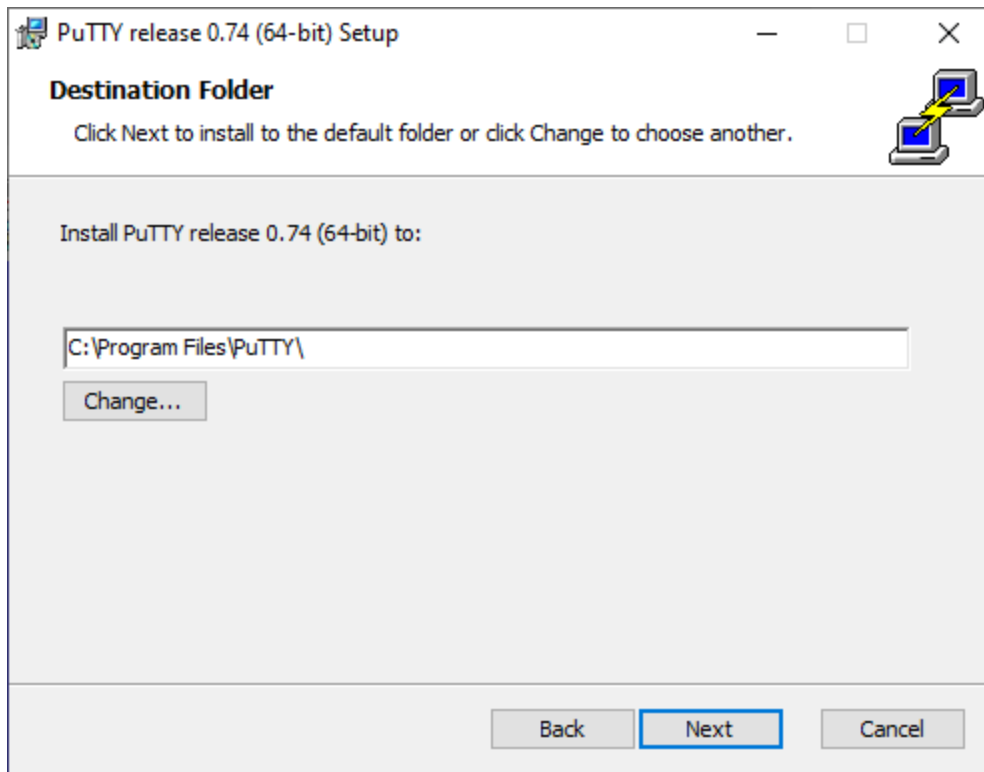
1. Klik run



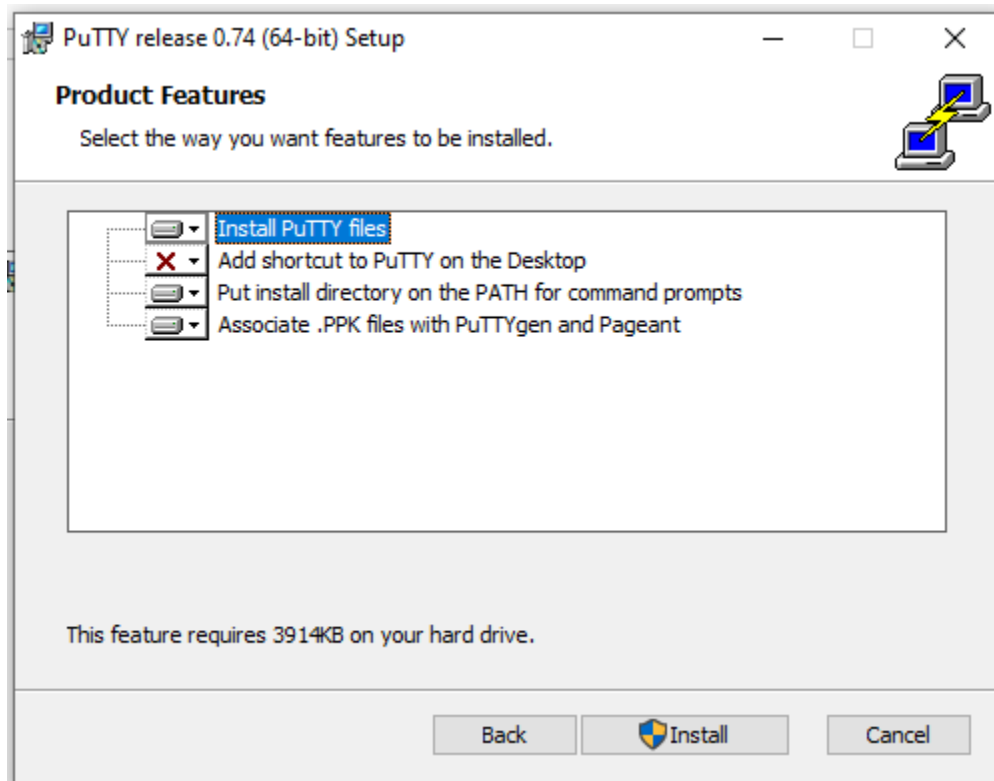
2. Klik next



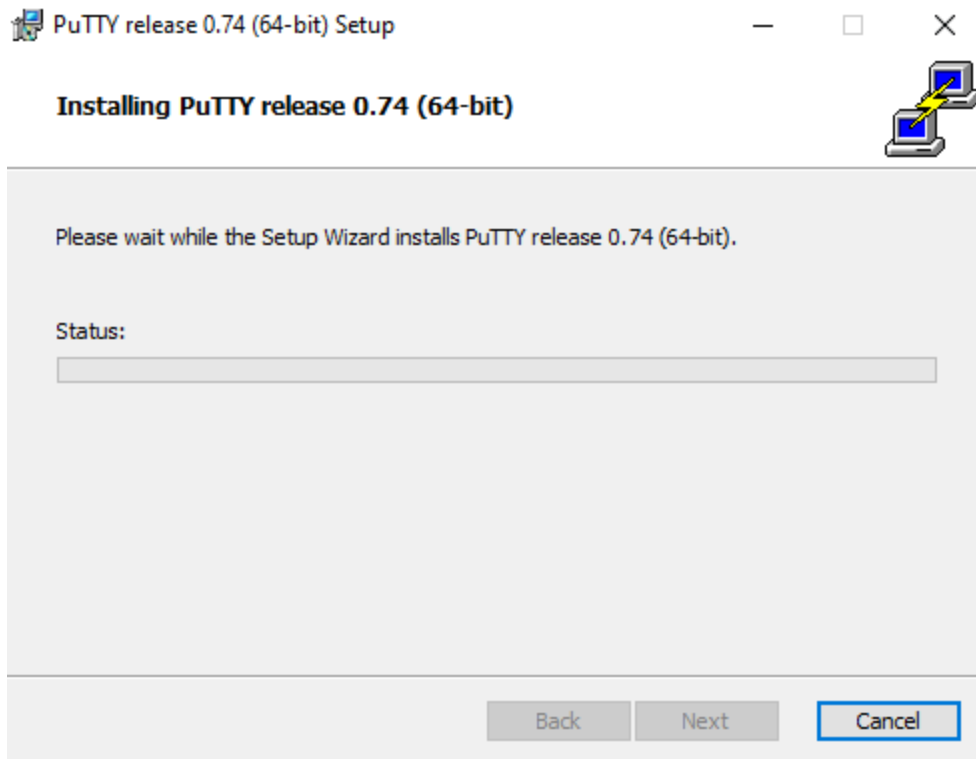
3. Klik



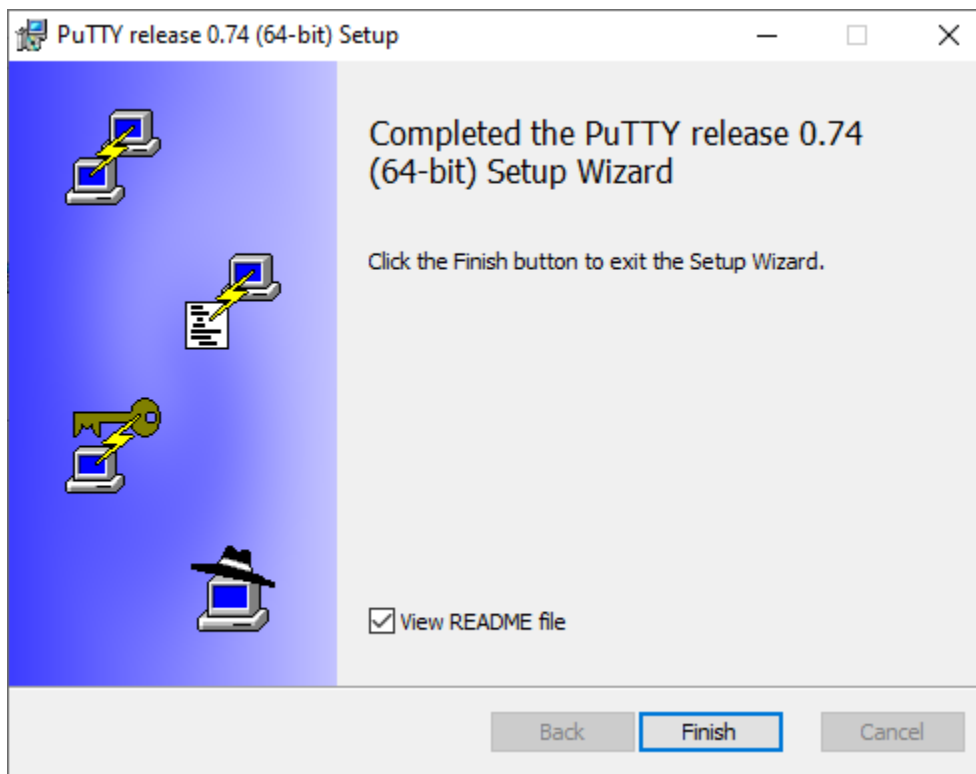
4. Klik



5. Tunggu



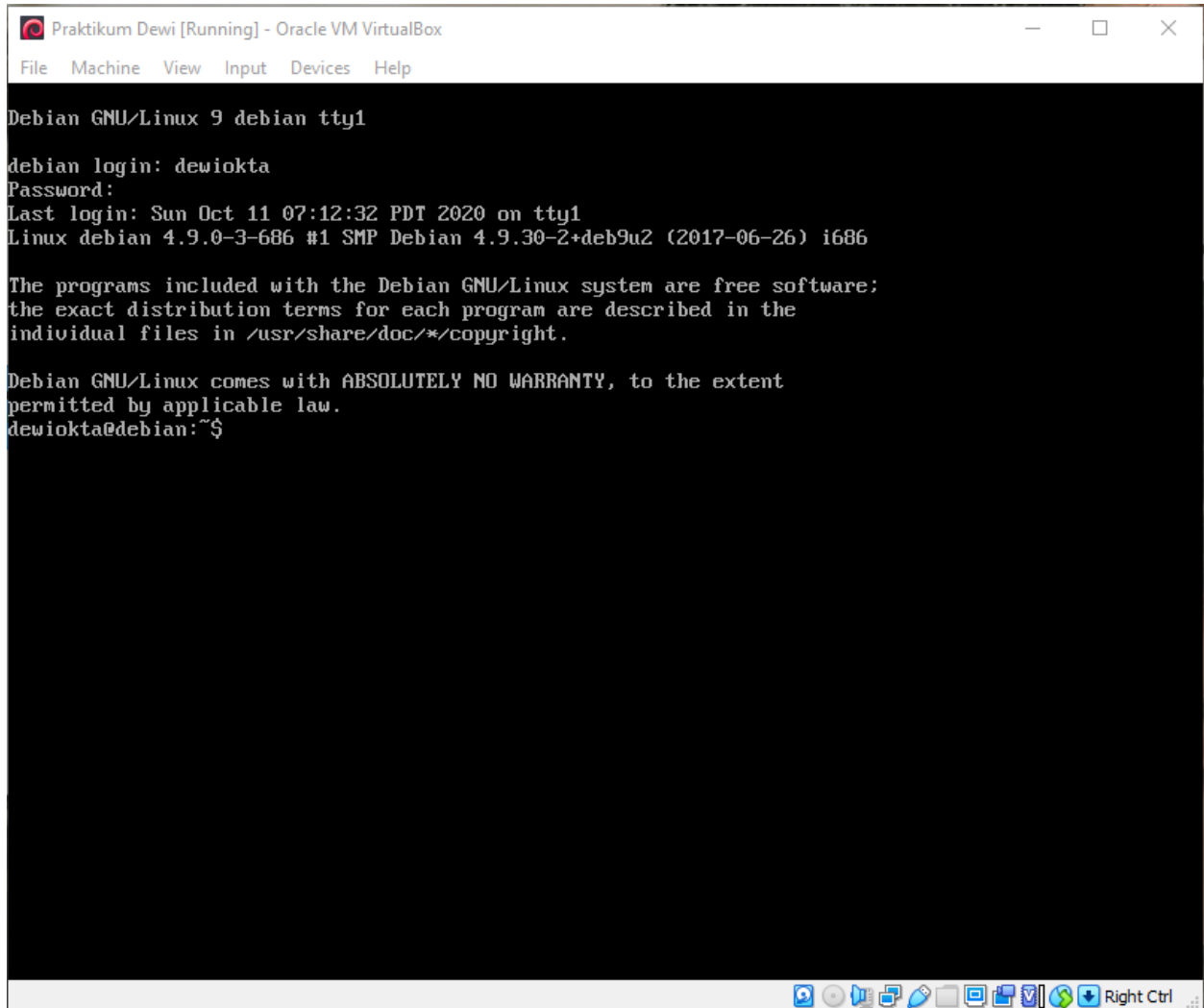
6. Klik finish



Protokol Lapisan Aplikasi

PART 1

Seperti biasa lakukan login terlebih dahulu

A screenshot of a terminal window titled 'Praktikum Dewi [Running] - Oracle VM VirtualBox'. The terminal shows a Debian GNU/Linux 9 login session. The user 'dewiokta' logs in with a password. The terminal displays the last login time as 'Sun Oct 11 07:12:32 PDT 2020 on tty1' and the kernel version as 'Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686'. It also shows the Debian GNU/Linux license information. The prompt is 'dewiokta@debian:~\$'.

```
Debian GNU/Linux 9 debian tty1

debian login: dewiokta
Password:
Last login: Sun Oct 11 07:12:32 PDT 2020 on tty1
Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
dewiokta@debian:~$
```

Lalu ketikkan perintah 'ping www.google.com' untuk memeriksa koneksi dan setelahnya klik ctrl+c untuk menghentikan

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

Debian GNU/Linux 9 debian tty1

debian login: dewiokta
Password:
Last login: Sun Oct 11 07:12:32 PDT 2020 on tty1
Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
dewiokta@debian:~$ ping www.google.com
PING www.google.com (172.217.194.106) 56(84) bytes of data.
64 bytes from 172.217.194.106: icmp_seq=1 ttl=56 time=35.6 ms
64 bytes from 172.217.194.106: icmp_seq=2 ttl=56 time=34.5 ms
64 bytes from 172.217.194.106: icmp_seq=3 ttl=56 time=36.5 ms
64 bytes from 172.217.194.106: icmp_seq=4 ttl=56 time=44.2 ms
64 bytes from 172.217.194.106: icmp_seq=5 ttl=56 time=34.0 ms
64 bytes from 172.217.194.106: icmp_seq=6 ttl=56 time=37.2 ms
64 bytes from 172.217.194.106: icmp_seq=7 ttl=56 time=34.4 ms
64 bytes from 172.217.194.106: icmp_seq=8 ttl=56 time=36.9 ms
64 bytes from 172.217.194.106: icmp_seq=9 ttl=56 time=36.1 ms
64 bytes from 172.217.194.106: icmp_seq=10 ttl=56 time=34.7 ms
64 bytes from 172.217.194.106: icmp_seq=11 ttl=56 time=33.1 ms
^C
--- www.google.com ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 11037ms
rtt min/avg/max/mdev = 33.132/36.157/44.269/2.860 ms
dewiokta@debian:~$
```

Mencari alamat domain polinema dengan perintah dig

```
Praktikum Dewi [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
64 bytes from 172.217.194.106: icmp_seq=7 ttl=56 time=34.4 ms
64 bytes from 172.217.194.106: icmp_seq=8 ttl=56 time=36.9 ms
64 bytes from 172.217.194.106: icmp_seq=9 ttl=56 time=36.1 ms
64 bytes from 172.217.194.106: icmp_seq=10 ttl=56 time=34.7 ms
64 bytes from 172.217.194.106: icmp_seq=11 ttl=56 time=33.1 ms
^C
--- www.google.com ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 11037ms
rtt min/avg/max/mdev = 33.132/36.157/44.269/2.860 ms
dewiokta@debian:~$ dig polinema.ac.id

; <<>> DiG 9.10.3-P4-Debian <<>> polinema.ac.id
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 24546
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 2

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;polinema.ac.id.                IN      A

;; ANSWER SECTION:
polinema.ac.id.                38400   IN      A      114.6.41.77

;; AUTHORITY SECTION:
polinema.ac.id.                38400   IN      NS      ns1.polinema.ac.id.

;; ADDITIONAL SECTION:
ns1.polinema.ac.id.            38400   IN      A      114.6.25.178

;; Query time: 62 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 05:42:41 PDT 2020
;; MSG SIZE rcvd: 93

dewiokta@debian:~$ _
```

Atau menggunakan perintah nslookup

```
dewiokta@debian:~$ nslookup polinema.ac.id
Server:                192.168.100.1
Address:                192.168.100.1#53

Non-authoritative answer:
Name:                   polinema.ac.id
Address:                114.6.41.77

dewiokta@debian:~$ _
```

Perintah dig google.com NS

```
Praktikum Dewi [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
dewiokta@debian:~$ dig nslookup ping polinema.ac.id www.google.com
dewiokta@debian:~$ dig google.com NS

; <<>> DiG 9.10.3-P4-Debian <<>> google.com NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53273
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 9

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:: udp: 4096
;; QUESTION SECTION:
;google.com.                IN      NS

;; ANSWER SECTION:
google.com.                192158  IN      NS      ns4.google.com.
google.com.                192158  IN      NS      ns1.google.com.
google.com.                192158  IN      NS      ns2.google.com.
google.com.                192158  IN      NS      ns3.google.com.

;; ADDITIONAL SECTION:
ns4.google.com.            345582  IN      A        216.239.38.10
ns4.google.com.            345582  IN      AAAA     2001:4860:4802:38::a
ns1.google.com.            345582  IN      A        216.239.32.10
ns1.google.com.            345582  IN      AAAA     2001:4860:4802:32::a
ns2.google.com.            345582  IN      A        216.239.34.10
ns2.google.com.            345582  IN      AAAA     2001:4860:4802:34::a
ns3.google.com.            345582  IN      A        216.239.36.10
ns3.google.com.            345582  IN      AAAA     2001:4860:4802:36::a

;; Query time: 162 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 05:46:28 PDT 2020
;; MSG SIZE rcvd: 287

dewiokta@debian:~$
```

Dengan perintah nslookup

```
dewiokta@debian:~$ nslookup -type=NS google.com
Server:                192.168.100.1
Address:                192.168.100.1#53

Non-authoritative answer:
google.com              nameserver = ns3.google.com.
google.com              nameserver = ns2.google.com.
google.com              nameserver = ns4.google.com.
google.com              nameserver = ns1.google.com.

Authoritative answers can be found from:
ns3.google.com          internet address = 216.239.36.10
ns3.google.com          has AAAA address 2001:4860:4802:36::a
ns2.google.com          internet address = 216.239.34.10
ns2.google.com          has AAAA address 2001:4860:4802:34::a
ns4.google.com          internet address = 216.239.38.10
ns4.google.com          has AAAA address 2001:4860:4802:38::a
ns1.google.com          internet address = 216.239.32.10
ns1.google.com          has AAAA address 2001:4860:4802:32::a

dewiokta@debian:~$ _
```


Mencari alamat server dari polinema dengan perintah dig

```
Praktikum Dewi [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
google.com      nameserver = ns1.google.com.

Authoritative answers can be found from:
ns3.google.com  internet address = 216.239.36.10
ns3.google.com  has AAAA address 2001:4860:4802:36::a
ns2.google.com  internet address = 216.239.34.10
ns2.google.com  has AAAA address 2001:4860:4802:34::a
ns4.google.com  internet address = 216.239.38.10
ns4.google.com  has AAAA address 2001:4860:4802:38::a
ns1.google.com  internet address = 216.239.32.10
ns1.google.com  has AAAA address 2001:4860:4802:32::a

dewiokta@debian:~$ dig polinema.ac.id NS

; <<>> DiG 9.10.3-P4-Debian <<>> polinema.ac.id NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 24597
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 2

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;polinema.ac.id.                IN      NS

;; ANSWER SECTION:
polinema.ac.id.                38400   IN      NS      ns1.polinema.ac.id.

;; ADDITIONAL SECTION:
ns1.polinema.ac.id.            38400   IN      A        114.6.25.178

;; Query time: 69 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 05:50:15 PDT 2020
;; MSG SIZE rcvd: 77

dewiokta@debian:~$
```

Dengan perintah nslookup

```
dewiokta@debian:~$ nslookup -type=NS polinema.ac.id
Server:          192.168.100.1
Address:         192.168.100.1#53

Non-authoritative answer:
polinema.ac.id  nameserver = ns1.polinema.ac.id.

Authoritative answers can be found from:
ns1.polinema.ac.id      internet address = 114.6.25.178

dewiokta@debian:~$
```

Mail server dengan menambahkan parameter MX

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

<<>> DiG 9.10.3-P4-Debian <<>> google.com MX
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 50471
;; flags: qr rd ra; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 11

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;google.com.                IN      MX

;; ANSWER SECTION:
google.com.                600     IN      MX      30 alt2.aspmx.l.google.com.
google.com.                600     IN      MX      20 alt1.aspmx.l.google.com.
google.com.                600     IN      MX      50 alt4.aspmx.l.google.com.
google.com.                600     IN      MX      10 aspmx.l.google.com.
google.com.                600     IN      MX      40 alt3.aspmx.l.google.com.

;; ADDITIONAL SECTION:
alt2.aspmx.l.google.com. 293     IN      A       74.125.137.26
alt2.aspmx.l.google.com. 293     IN      AAAA    2607:f8b0:4023:c03::1a
alt1.aspmx.l.google.com. 293     IN      A       74.125.28.26
alt1.aspmx.l.google.com. 293     IN      AAAA    2607:f8b0:400e:c04::1a
alt4.aspmx.l.google.com. 293     IN      A       142.250.28.26
alt4.aspmx.l.google.com. 293     IN      AAAA    2607:f8b0:4003:c1c::1b
aspmx.l.google.com.      293     IN      A       74.125.68.26
aspmx.l.google.com.      293     IN      AAAA    2404:6800:4003:c02::1b
alt3.aspmx.l.google.com. 293     IN      A       142.250.113.26
alt3.aspmx.l.google.com. 293     IN      AAAA    2607:f8b0:4023:1000::1b

;; Query time: 53 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 05:57:48 PDT 2020
;; MSG SIZE rcvd: 367

dewiokta@debian:~$ _
```

Dengan perintah nslookup

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

alt1.aspmx.l.google.com. 293 IN AAAA 2607:f8b0:400e:c04::1a
alt4.aspmx.l.google.com. 293 IN A 142.250.28.26
alt4.aspmx.l.google.com. 293 IN AAAA 2607:f8b0:4003:c1c::1b
aspmx.l.google.com. 293 IN A 74.125.68.26
aspmx.l.google.com. 293 IN AAAA 2404:6800:4003:c02::1b
alt3.aspmx.l.google.com. 293 IN A 142.250.113.26
alt3.aspmx.l.google.com. 293 IN AAAA 2607:f8b0:4023:1000::1b

;; Query time: 53 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 05:57:48 PDT 2020
;; MSG SIZE rcvd: 367

dewiokta@debian:~$ nslookup -type=MX google.com
Server: 192.168.100.1
Address: 192.168.100.1#53

Non-authoritative answer:
google.com mail exchanger = 40 alt3.aspmx.l.google.com.
google.com mail exchanger = 20 alt1.aspmx.l.google.com.
google.com mail exchanger = 50 alt4.aspmx.l.google.com.
google.com mail exchanger = 10 aspmx.l.google.com.
google.com mail exchanger = 30 alt2.aspmx.l.google.com.

Authoritative answers can be found from:
alt3.aspmx.l.google.com internet address = 142.250.113.27
alt3.aspmx.l.google.com has AAAA address 2607:f8b0:4023:1000::1a
alt1.aspmx.l.google.com internet address = 74.125.28.26
alt1.aspmx.l.google.com has AAAA address 2607:f8b0:400e:c04::1b
alt4.aspmx.l.google.com internet address = 142.250.28.26
alt4.aspmx.l.google.com has AAAA address 2607:f8b0:4003:c1c::1b
aspmx.l.google.com internet address = 74.125.24.27
aspmx.l.google.com has AAAA address 2404:6800:4003:c04::1a
alt2.aspmx.l.google.com internet address = 74.125.137.27
alt2.aspmx.l.google.com has AAAA address 2607:f8b0:4023:c03::1b

dewiokta@debian:~$
```

Menambahkan parameter MX saat mencari alamat server polinema

```
Praktikum Dewi [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
alt2.aspmx.l.google.com internet address = 74.125.137.27
alt2.aspmx.l.google.com has AAAA address 2607:f8b0:4023:c03::1b

dewiokta@debian:~$ dig polinema.ac.id MX

; <<>> DiG 9.10.3-P4-Debian <<>> polinema.ac.id MX
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 54367
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 1, ADDITIONAL: 2

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;polinema.ac.id.                IN      MX

;; ANSWER SECTION:
polinema.ac.id.                38400   IN      MX      10 ALT4.ASPMX.L.GOOGLE.COM.
polinema.ac.id.                38400   IN      MX      15 5tuqmbbrknp5iaawomeveskx4dnfge4ii3kuo6dgrrrqke.jsxi
dkg.mx-verification.GOOGLE.COM.
polinema.ac.id.                38400   IN      MX      1 ASPMX.L.GOOGLE.COM.
polinema.ac.id.                38400   IN      MX      5 ALT1.ASPMX.L.GOOGLE.COM.
polinema.ac.id.                38400   IN      MX      5 ALT2.ASPMX.L.GOOGLE.COM.
polinema.ac.id.                38400   IN      MX      10 ALT3.ASPMX.L.GOOGLE.COM.

;; AUTHORITY SECTION:
polinema.ac.id.                38400   IN      NS      ns1.polinema.ac.id.

;; ADDITIONAL SECTION:
ns1.polinema.ac.id.            38400   IN      A      114.6.25.178

;; Query time: 75 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 06:00:52 PDT 2020
;; MSG SIZE rcvd: 280

dewiokta@debian:~$
```

Dengan perintah nslookup

```
Praktikum Dewi [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
polinema.ac.id. 38400 IN MX 10 ALT4.ASPMX.L.GOOGLE.COM.
polinema.ac.id. 38400 IN MX 15 5tuqmbnrknp5iaawomeveskx4dnfge4ii3kuo6dgrrqke.jsxi
dkq.mx-verification.GOOGLE.COM.
polinema.ac.id. 38400 IN MX 1 ASPMX.L.GOOGLE.COM.
polinema.ac.id. 38400 IN MX 5 ALT1.ASPMX.L.GOOGLE.COM.
polinema.ac.id. 38400 IN MX 5 ALT2.ASPMX.L.GOOGLE.COM.
polinema.ac.id. 38400 IN MX 10 ALT3.ASPMX.L.GOOGLE.COM.

;; AUTHORITY SECTION:
polinema.ac.id. 38400 IN NS ns1.polinema.ac.id.

;; ADDITIONAL SECTION:
ns1.polinema.ac.id. 38400 IN A 114.6.25.178

;; Query time: 75 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Thu Oct 29 06:00:52 PDT 2020
;; MSG SIZE rcvd: 280

dewiokta@debian:~$ nslookup -type=MX polinema.ac.id
Server: 192.168.100.1
Address: 192.168.100.1#53

Non-authoritative answer:
polinema.ac.id mail exchanger = 10 ALT3.ASPMX.L.GOOGLE.COM.
polinema.ac.id mail exchanger = 10 ALT4.ASPMX.L.GOOGLE.COM.
polinema.ac.id mail exchanger = 15 5tuqmbnrknp5iaawomeveskx4dnfge4ii3kuo6dgrrqke.jsxi
dkq.mx-verification.GOOGLE.COM.
polinema.ac.id mail exchanger = 1 ASPMX.L.GOOGLE.COM.
polinema.ac.id mail exchanger = 5 ALT1.ASPMX.L.GOOGLE.COM.
polinema.ac.id mail exchanger = 5 ALT2.ASPMX.L.GOOGLE.COM.

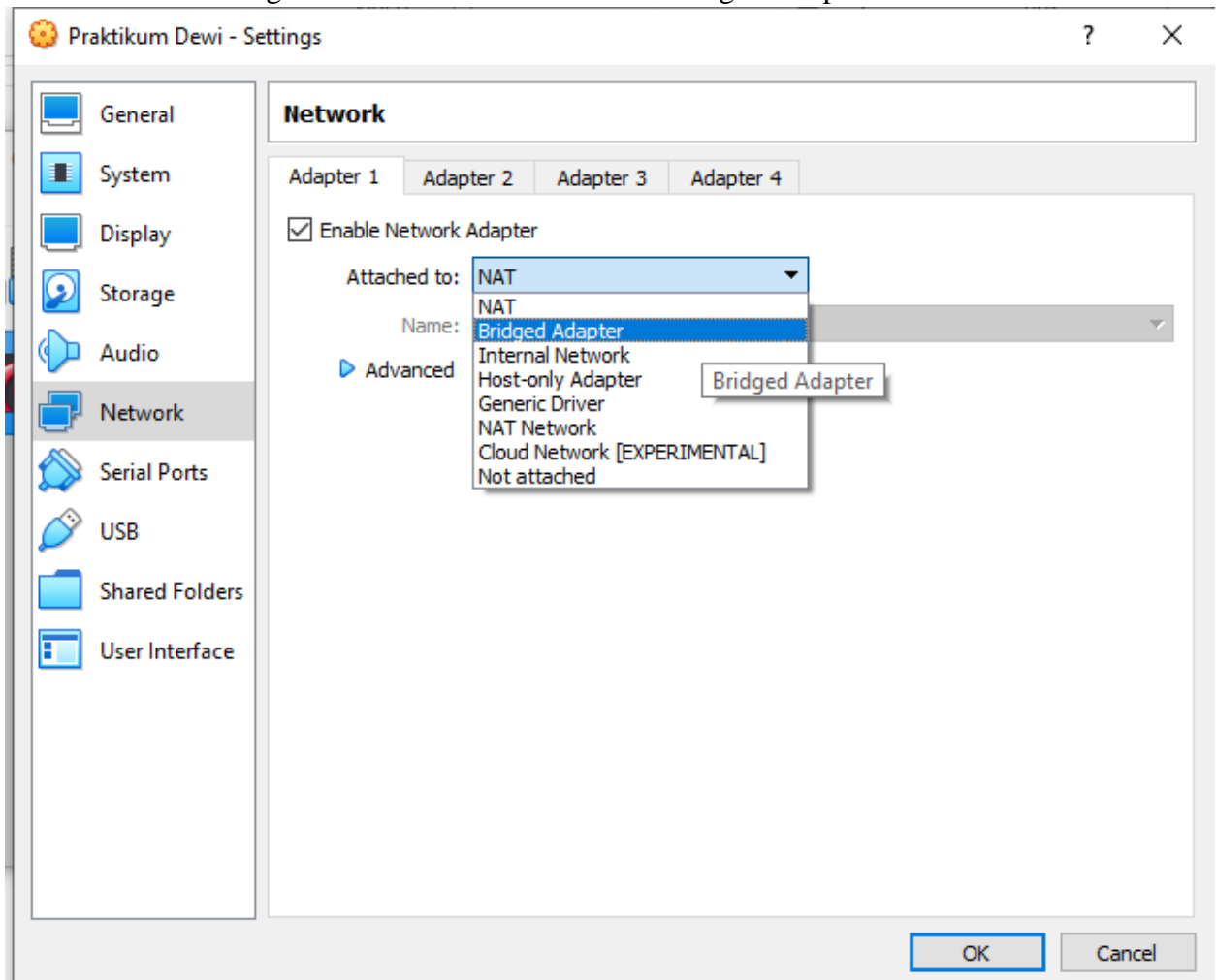
Authoritative answers can be found from:
polinema.ac.id nameserver = ns1.polinema.ac.id.
ns1.polinema.ac.id internet address = 114.6.25.178

dewiokta@debian:~$ _
```

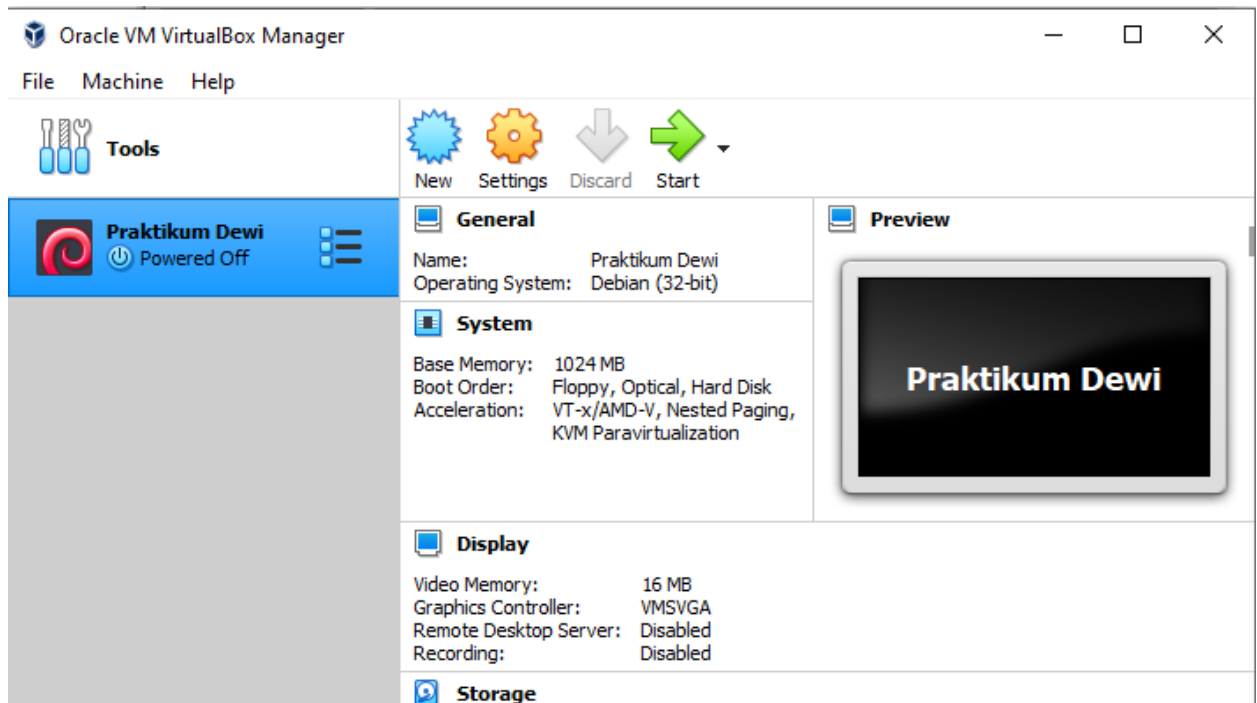
PART 2 : SSH

Pastikan koneksi VM menggunakan bridge adapter

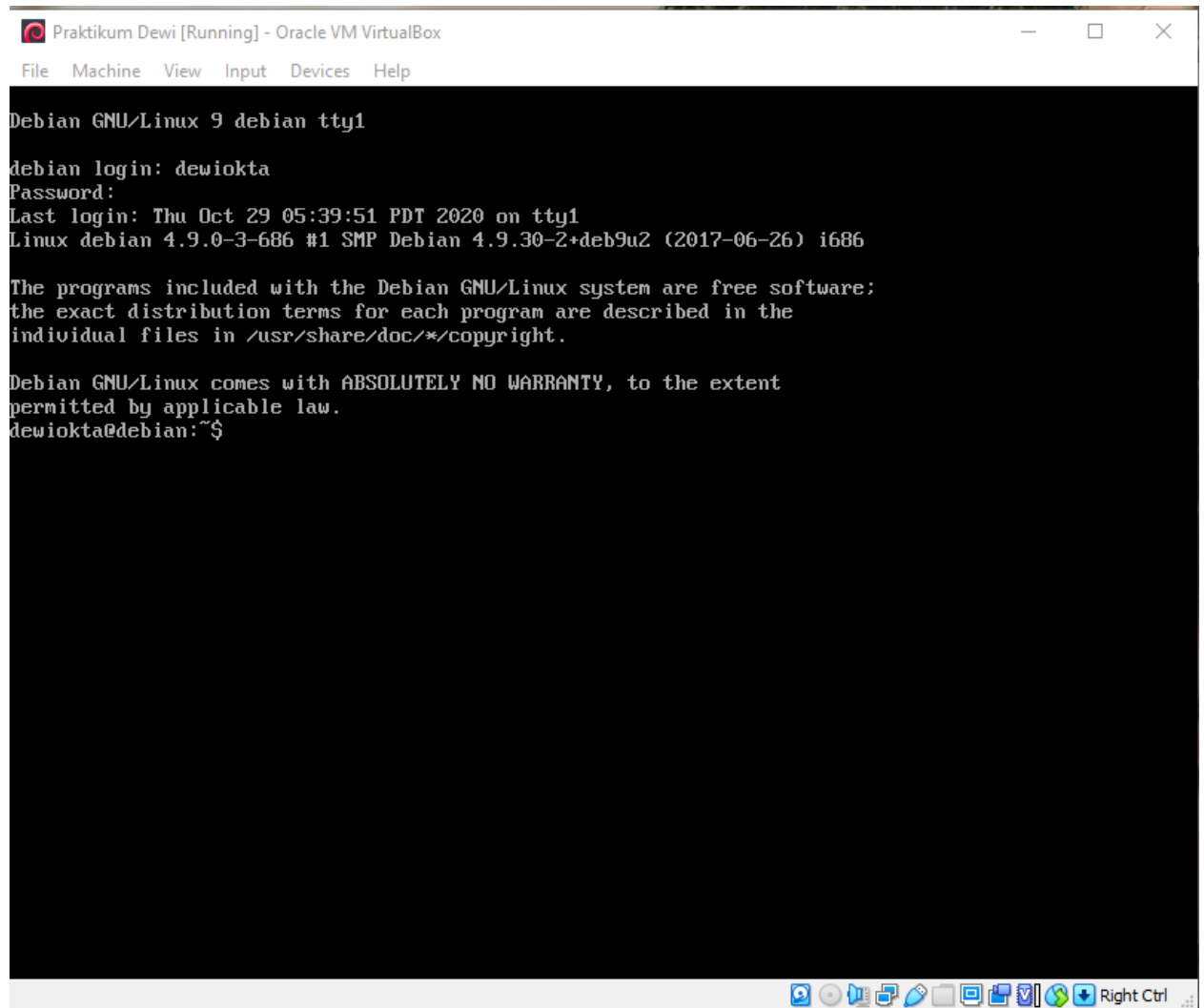
- Pada VM buka setting -> Network -> Attached to -> Bridged Adapter -> OK



- Kemudian klik "Start"



- Login seperti biasa dengan memasukkan uname dan password



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

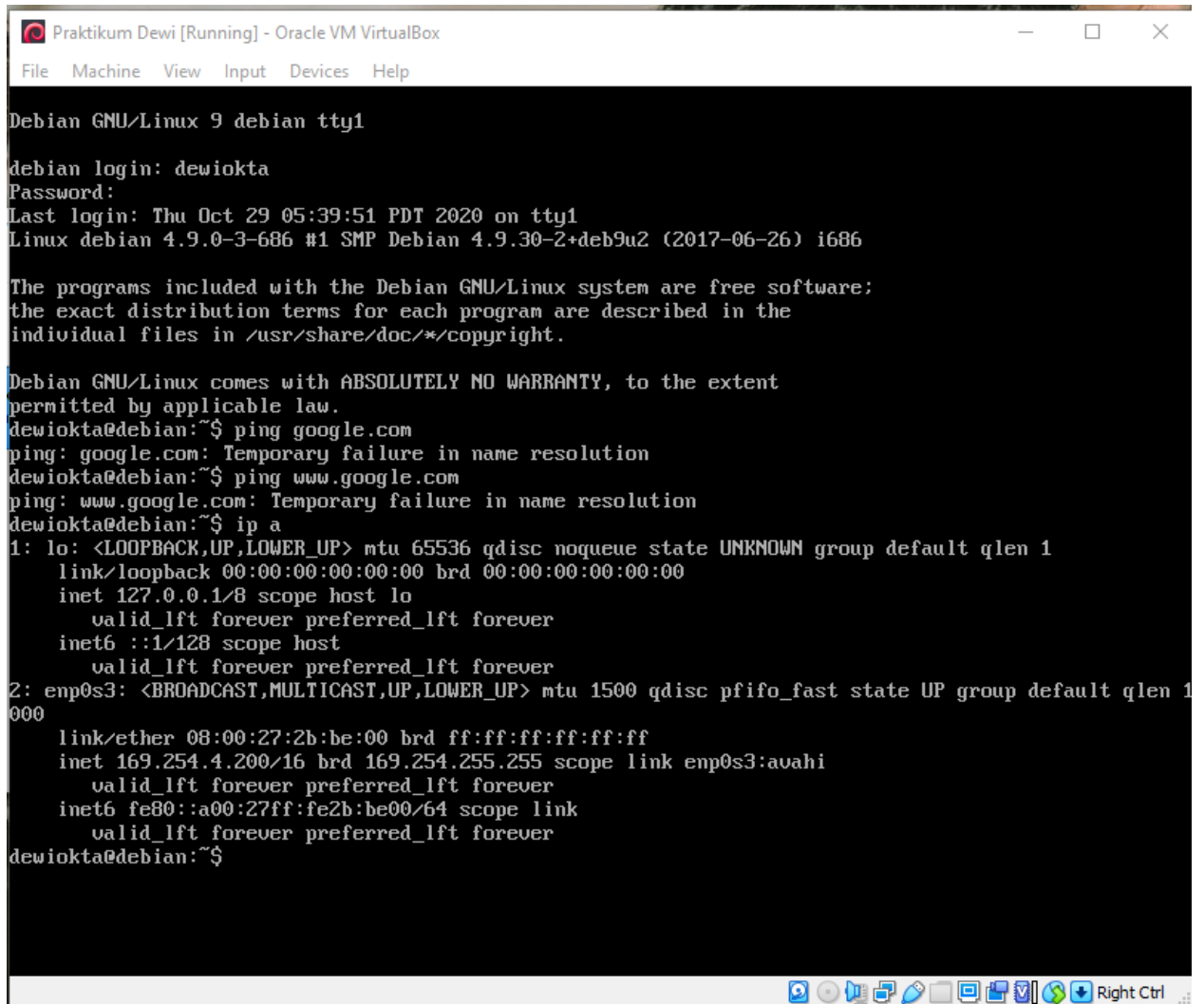
Debian GNU/Linux 9 debian tty1

debian login: dewiokta
Password:
Last login: Thu Oct 29 05:39:51 PDT 2020 on tty1
Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
dewiokta@debian:~$
```

- Lakukan perintah 'ip a' untuk mengetahui alamat IP VM dan catat alamat IP nya



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

Debian GNU/Linux 9 debian tty1

debian login: dewiokta
Password:
Last login: Thu Oct 29 05:39:51 PDT 2020 on tty1
Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
dewiokta@debian:~$ ping google.com
ping: google.com: Temporary failure in name resolution
dewiokta@debian:~$ ping www.google.com
ping: www.google.com: Temporary failure in name resolution
dewiokta@debian:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1
    link/ether 08:00:27:2b:be:00 brd ff:ff:ff:ff:ff:ff
    inet 169.254.4.200/16 brd 169.254.255.255 scope link enp0s3:avahi
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe2b:be00/64 scope link
        valid_lft forever preferred_lft forever
dewiokta@debian:~$
```

- Buka cmd pada windows dan ketikkan perintah 'ipconfig' untuk melihat alamat IP Windows

```
Command Prompt

C:\Users\user>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . :

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix . . :
    Link-local IPv6 Address . . . . . : fe80::a0e0:2a8a:cf00:fd8e%48
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Wireless LAN adapter Local Area Connection* 3:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . :

Wireless LAN adapter Local Area Connection* 4:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . :

Wireless LAN adapter Wi-Fi:
```

- Pastikan windows terhubung dengan VM, untuk mengeceknya ketikkan perintah ‘ping’ lalu disertai alamat IP VM

```
Command Prompt

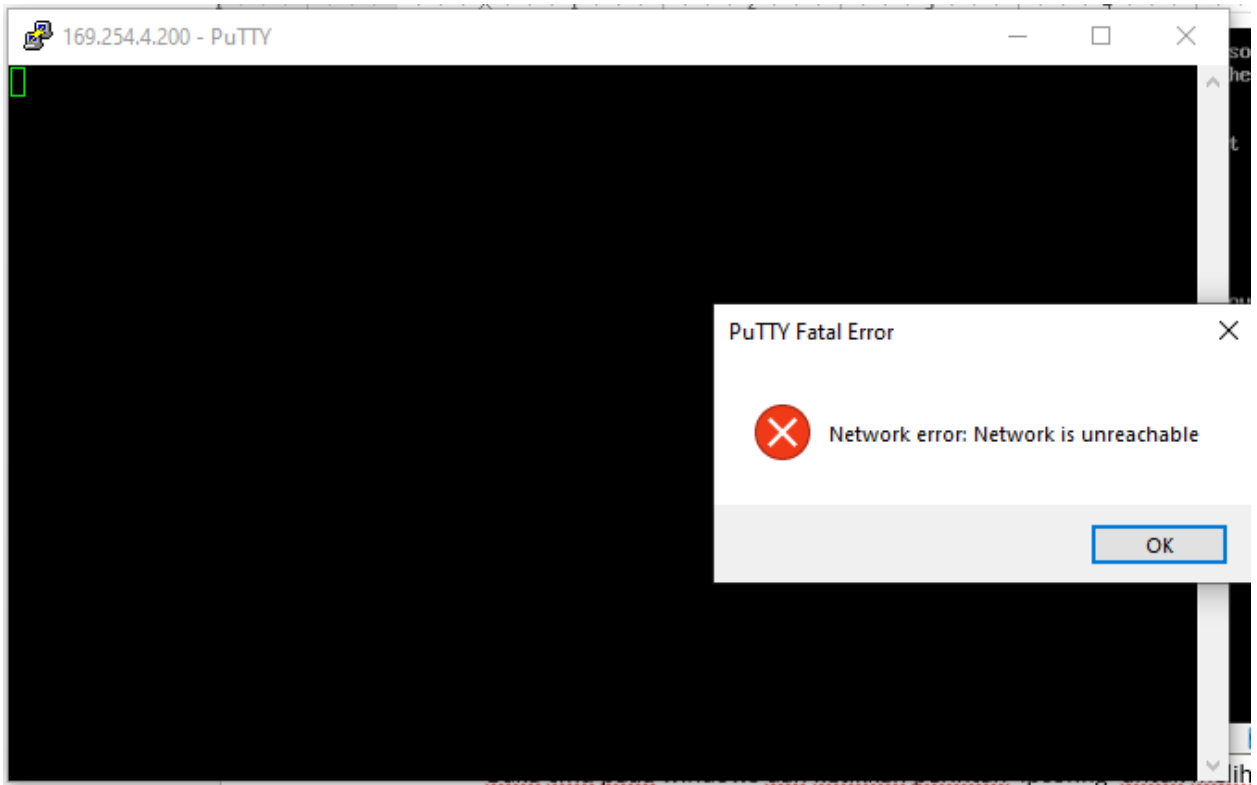
C:\Users\user>ping 169.254.4.200

Pinging 169.254.4.200 with 32 bytes of data:
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.

Ping statistics for 169.254.4.200:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\user>
```

- Kemudian buka putty pada windows
- Masukkan alamat IP VM pada host -> open



Namun saat saya klik open terjadi error seperti diatas pak, dan saya ulang-ulang tetap seperti itu. Padahal sinyal saya bagus pak

- Lalu saya coba untuk menggunakan perintah 'su' untuk mengecek ulang dns dan juga untuk mengkoneksikan VM dengan WiFi dirumah saya
- Kemudian saya menjalankan perintah 'ping google.com' dapat terkoneksi karena sebelumnya tidak terkoneksi, dan saya menjalankan perintah 'ip a'. namun, disini alamat IP VM berubah

```
dewiokta@debian:~$ ping google.com
PING google.com (216.239.38.120) 56(84) bytes of data:
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=1 ttl=116 time=33.5 ms
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=2 ttl=116 time=48.9 ms
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=3 ttl=116 time=32.5 ms
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=4 ttl=116 time=37.8 ms
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=5 ttl=116 time=32.6 ms
64 bytes from any-in-2678.1e100.net (216.239.38.120): icmp_seq=6 ttl=116 time=31.0 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5010ms
rtt min/avg/max/mdev = 31.067/36.120/48.993/6.134 ms
dewiokta@debian:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1
    link/ether 08:00:27:2b:be:00 brd ff:ff:ff:ff:ff:ff
    inet 192.168.100.244/24 brd 192.168.100.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe2b:be00/64 scope link
        valid_lft forever preferred_lft forever
dewiokta@debian:~$
```

- Kemudian saya membuka cmd dan melakukan perintah 'ping alamat IP VM yg baru' dan terhubung

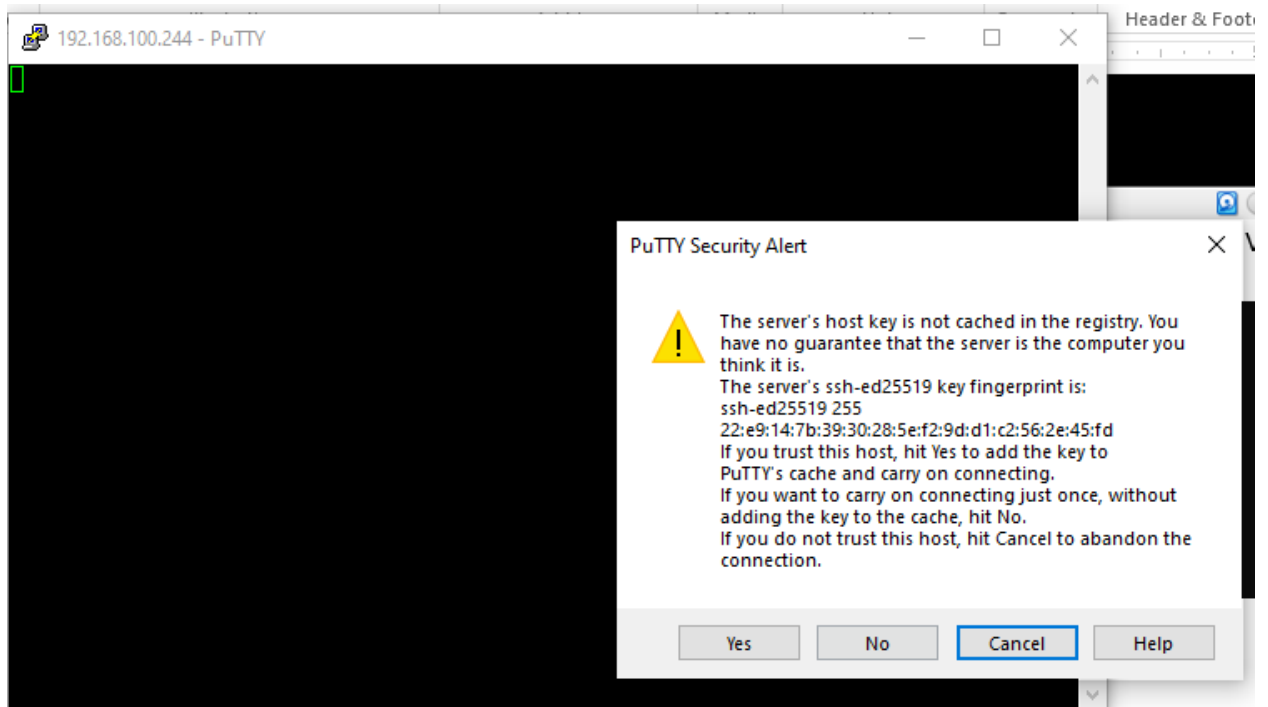
```
C:\Users\user>ping 192.168.100.244

Pinging 192.168.100.244 with 32 bytes of data:
Reply from 192.168.100.244: bytes=32 time<1ms TTL=64
Reply from 192.168.100.244: bytes=32 time=1ms TTL=64
Reply from 192.168.100.244: bytes=32 time=1ms TTL=64
Reply from 192.168.100.244: bytes=32 time=1ms TTL=64

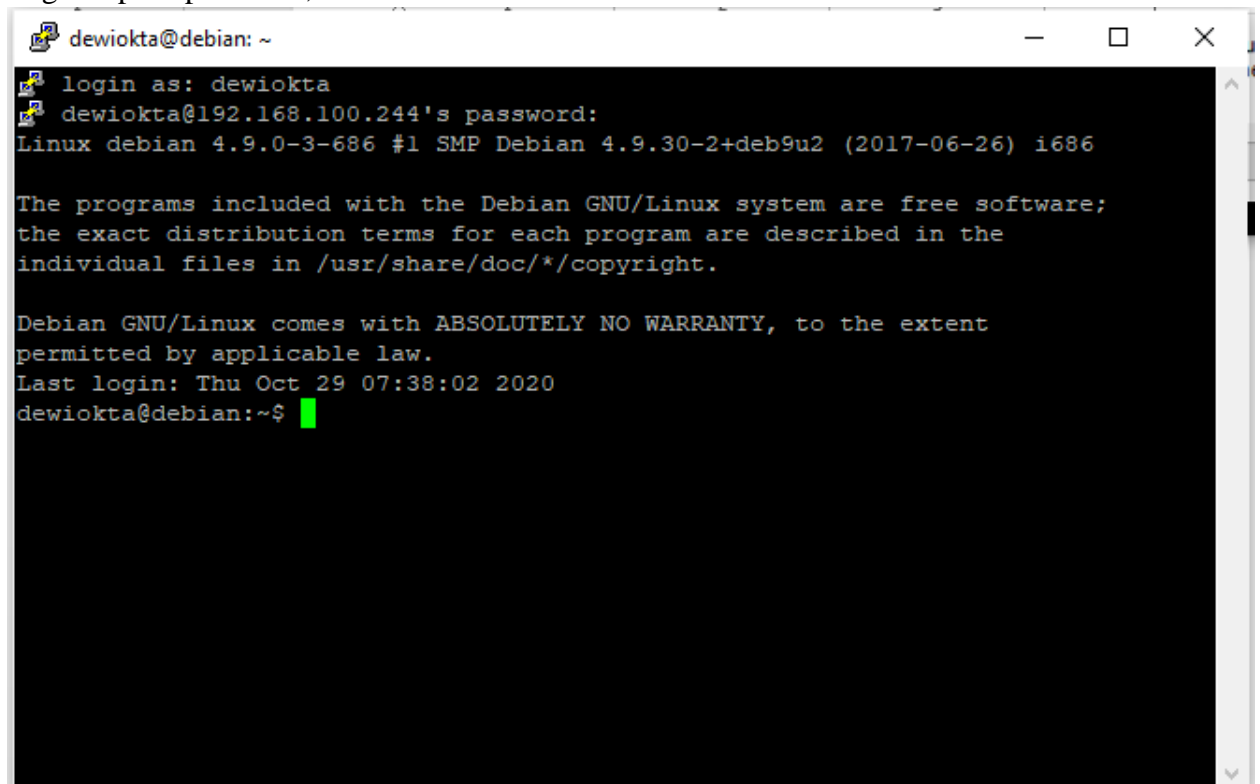
Ping statistics for 192.168.100.244:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\user>
```

- Kemudian buka putty dan melakukan perintah seperti sebelumnya, alhamdulillah bisa pak.
Apabila muncul window klik yes



- Login seperti pada VM, koneksi SSH berhasil.



- Buat file txt pada linux dengan menggunakan SSH pada windows. Sebelumnya cek dahulu daftar file dengan menggunakan perintah ls pada Linux dan PuTTY untuk mengecek kesamaan apakah sudah berada di directory yang sama Putty

```
dewiokta@debian:~$ ls
dewiokta@debian:~$
```

Linux

```
dewiokta@debian:~$ ls
dewiokta@debian:~$ _
```

- Membuat file dengan format txt pada SSH dan mengisi file tersebut (bebas) kemudian klik CTRL+X lalu klik Y dan 'enter' untuk mengesave.

```
dewiokta@debian:~$ nano PraktikumSSHDewi.txt
GNU nano 2.7.4      File: PraktikumSSHDewi.txt      Modified
Hello World! Saya Dewi Oktavia Efendi
```

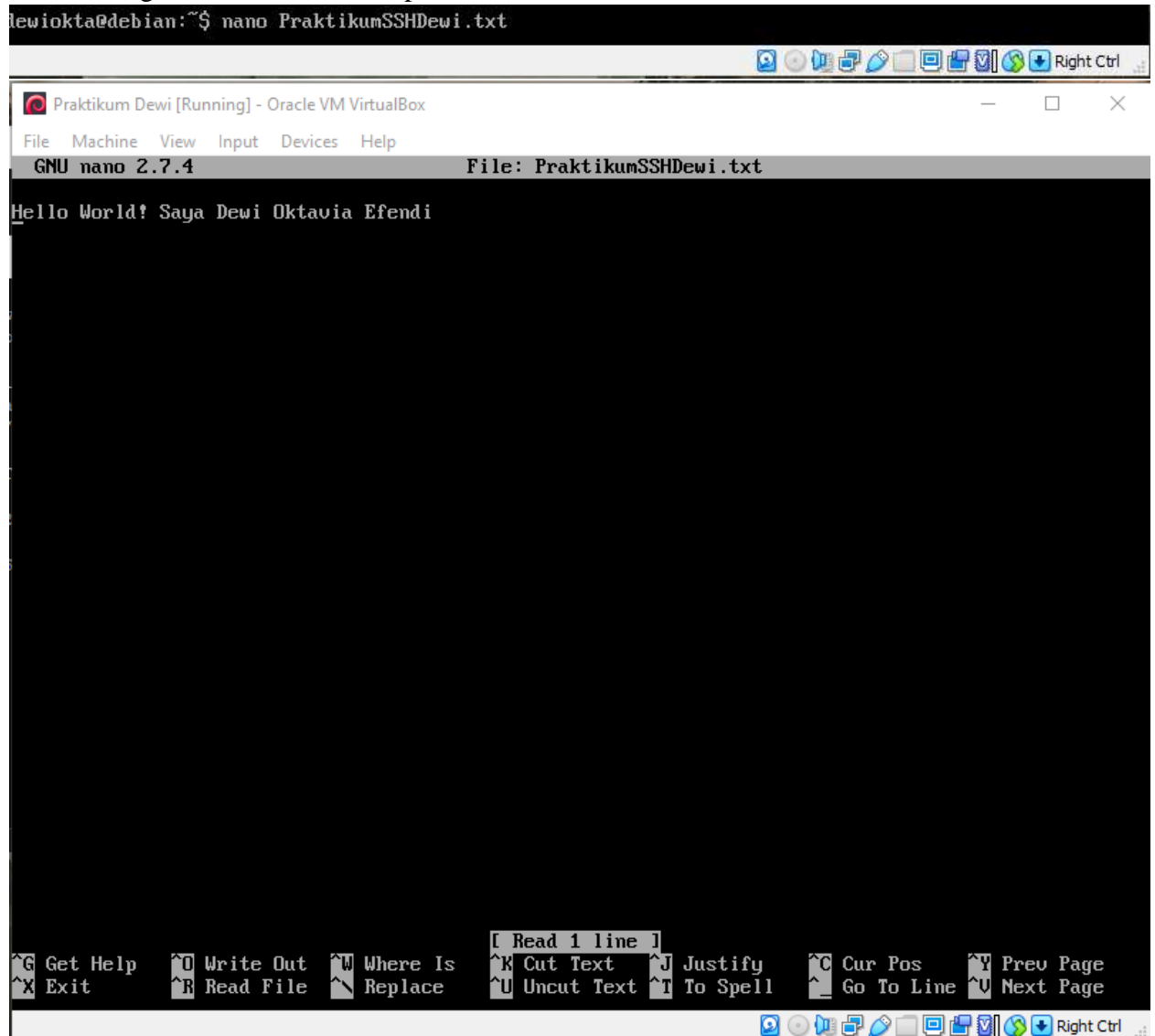
- Kemudian cek file pada Linus dengan perintah ls

```
dewiokta@debian:~$ ls
PraktikumSSHDewi.txt
dewiokta@debian:~$
```

File telah ditambahkan dalam directory

- Untuk mengecek isi file, tuliskan perintah nano namaFiles lalu klik enter

```
lewiokta@debian:~$ nano PraktikumSSHDewi.txt
```



```
File: PraktikumSSHDewi.txt
```

```
Hello World! Saya Dewi Oktavia Efendi
```

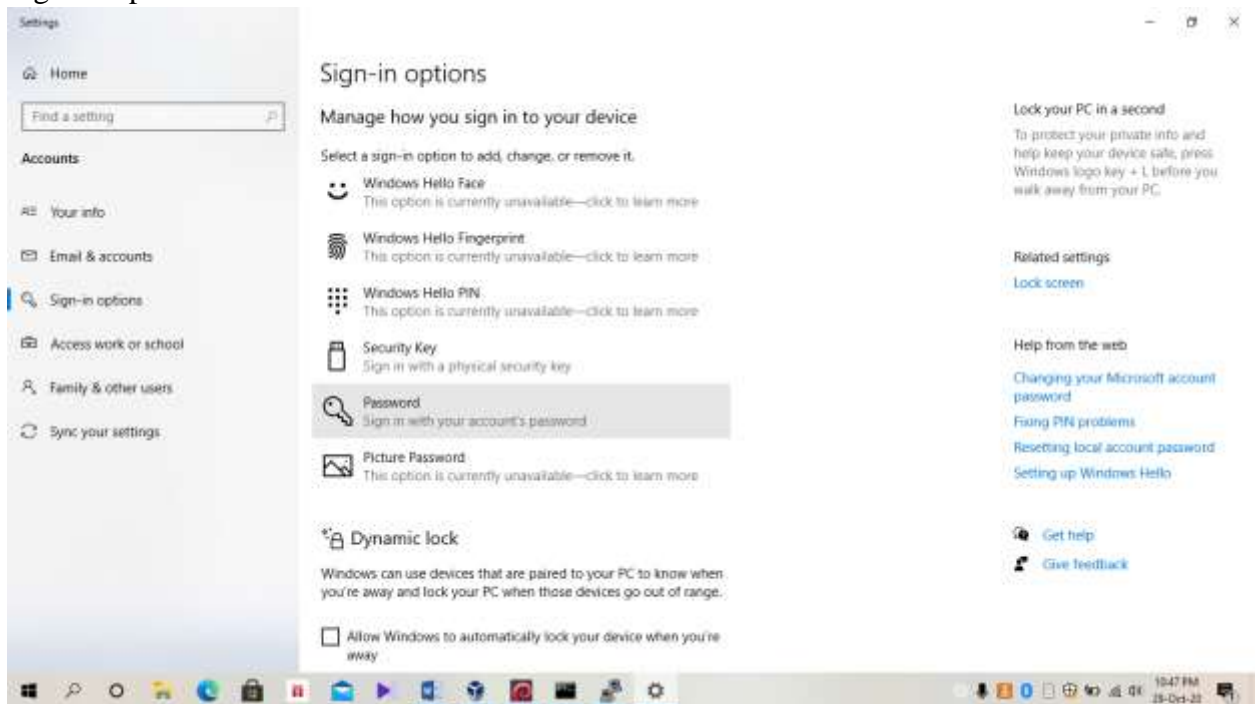
GNU nano 2.7.4 File: PraktikumSSHDewi.txt

^G Get Help ^O Write Out ^W Where Is [Read 1 line] ^R Cut Text ^J Justify ^C Cur Pos ^Y Prev Page
^X Exit ^R Read File ^U Uncut Text ^T To Spell ^_ Go To Line ^U Next Page

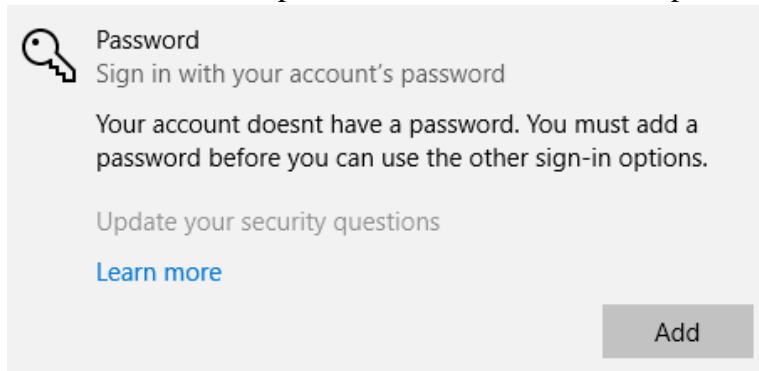
Isi file telah sesuai dengan yang telah dibuat

PART 3

- Pastikan user windows telah memiliki password, dengan cara buka setting -> accounts -> Sign in Options -> Password



- Jika belum memiliki password maka klik add -> isi password -> next -> finish



Create a password

New password

••••••••


Confirm password

••••••••


Password hint

Next

Cancel

 Create a password

Next time you sign in, use your new password.



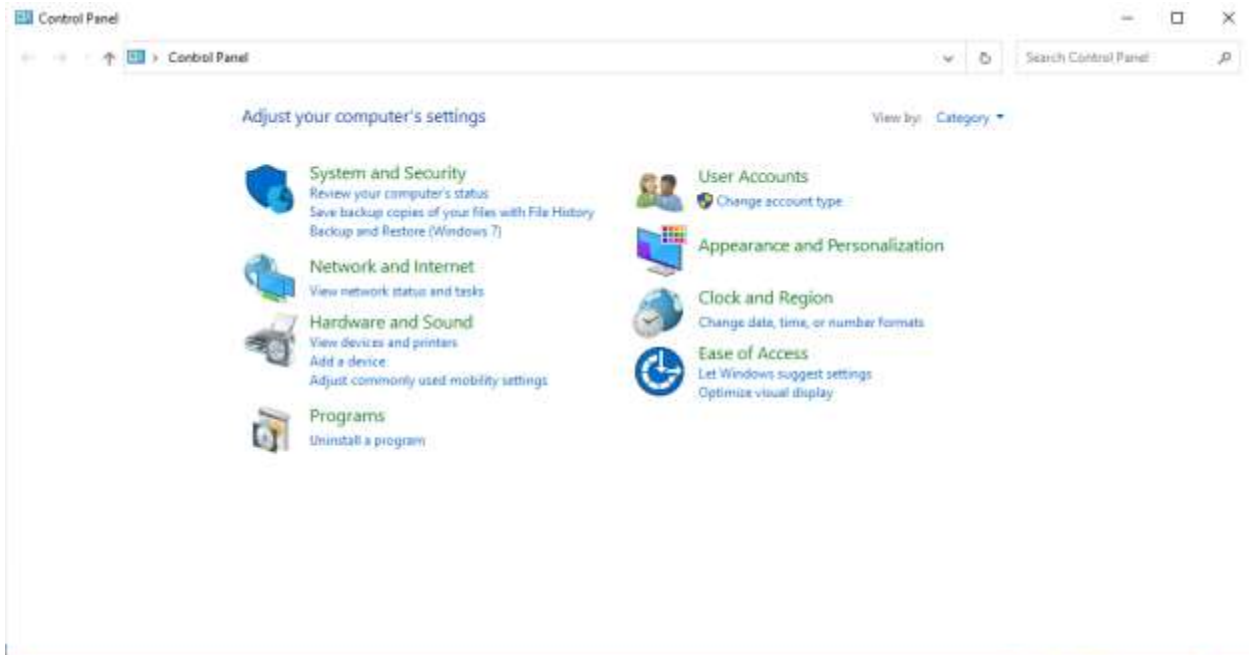
user

Local account

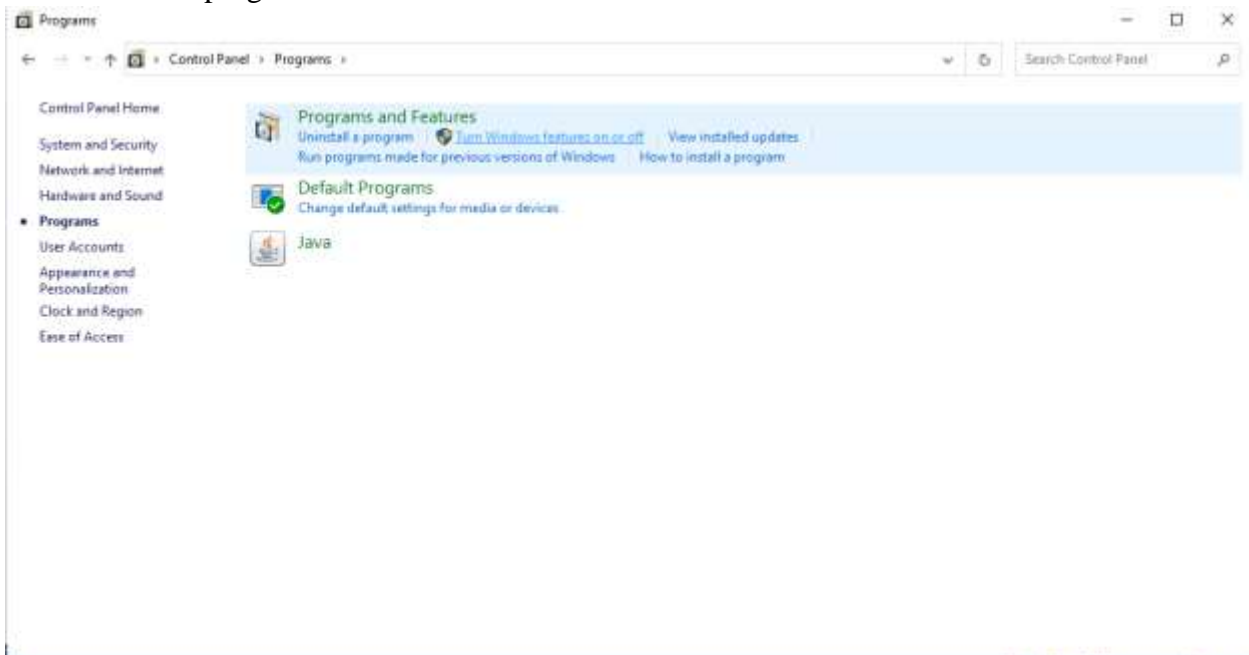
Finish

Cancel

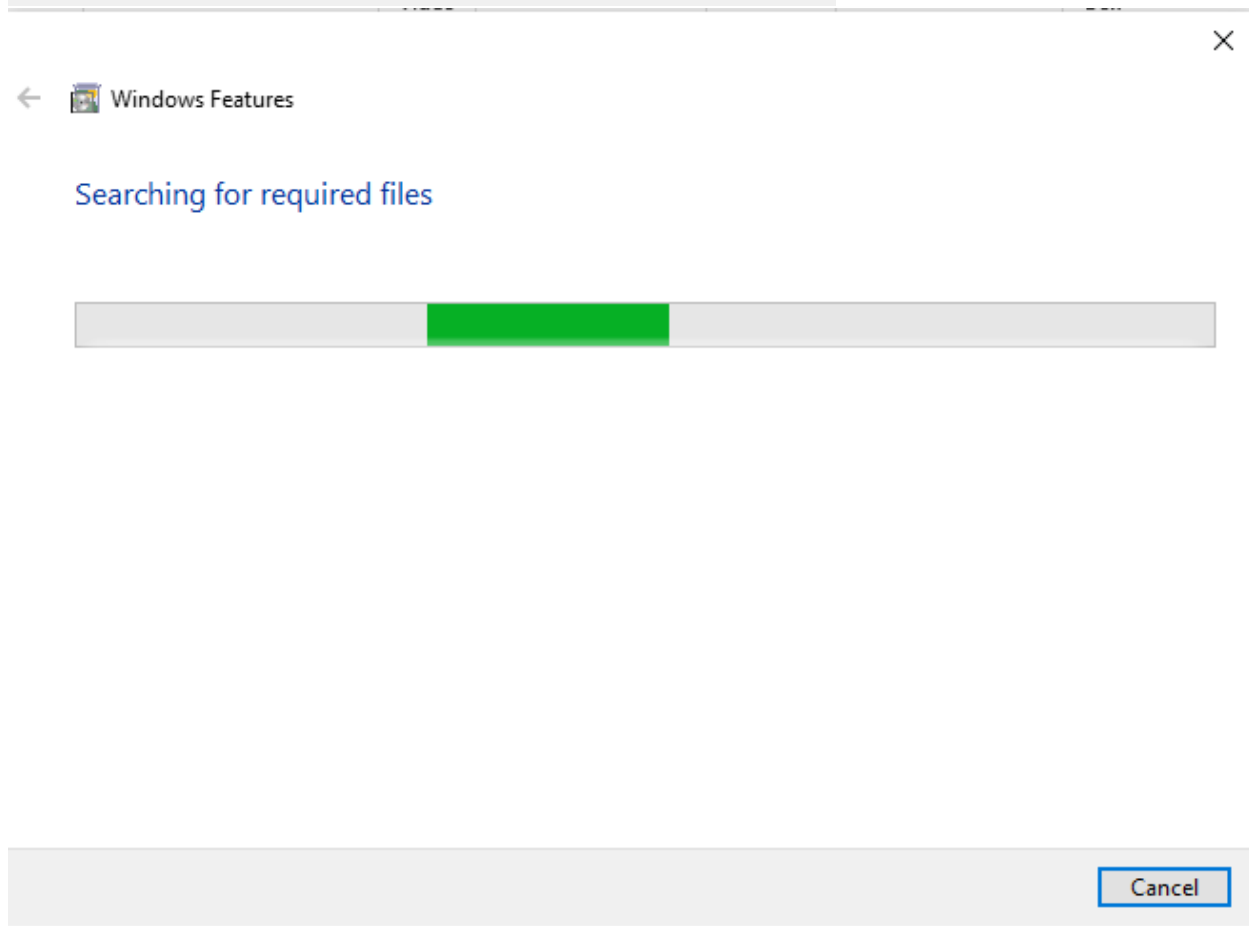
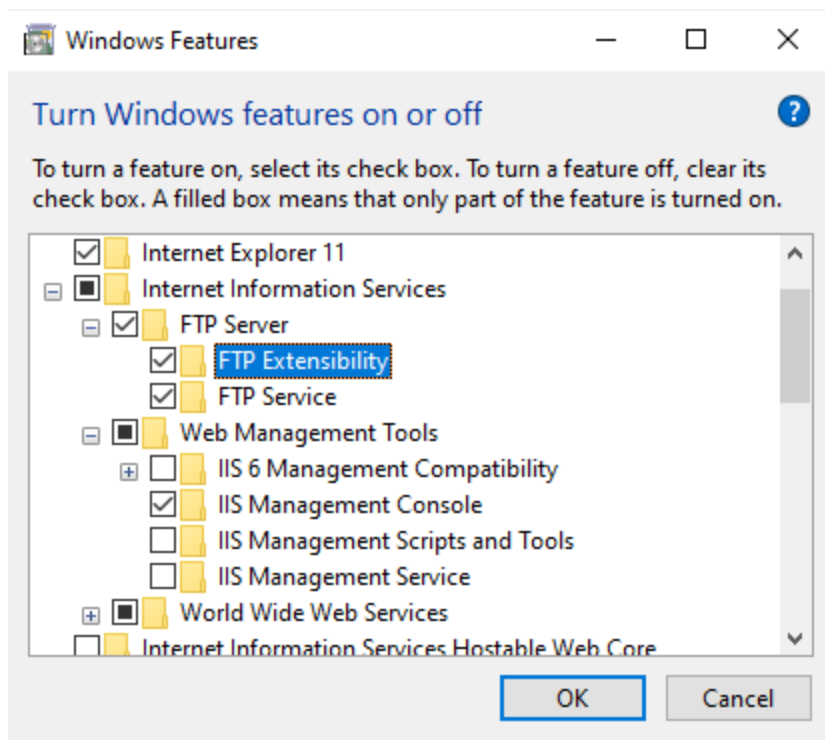
- Aktifkan fitur FTP pada Windows dengan cara klik search button dan ketikkan “control panel”

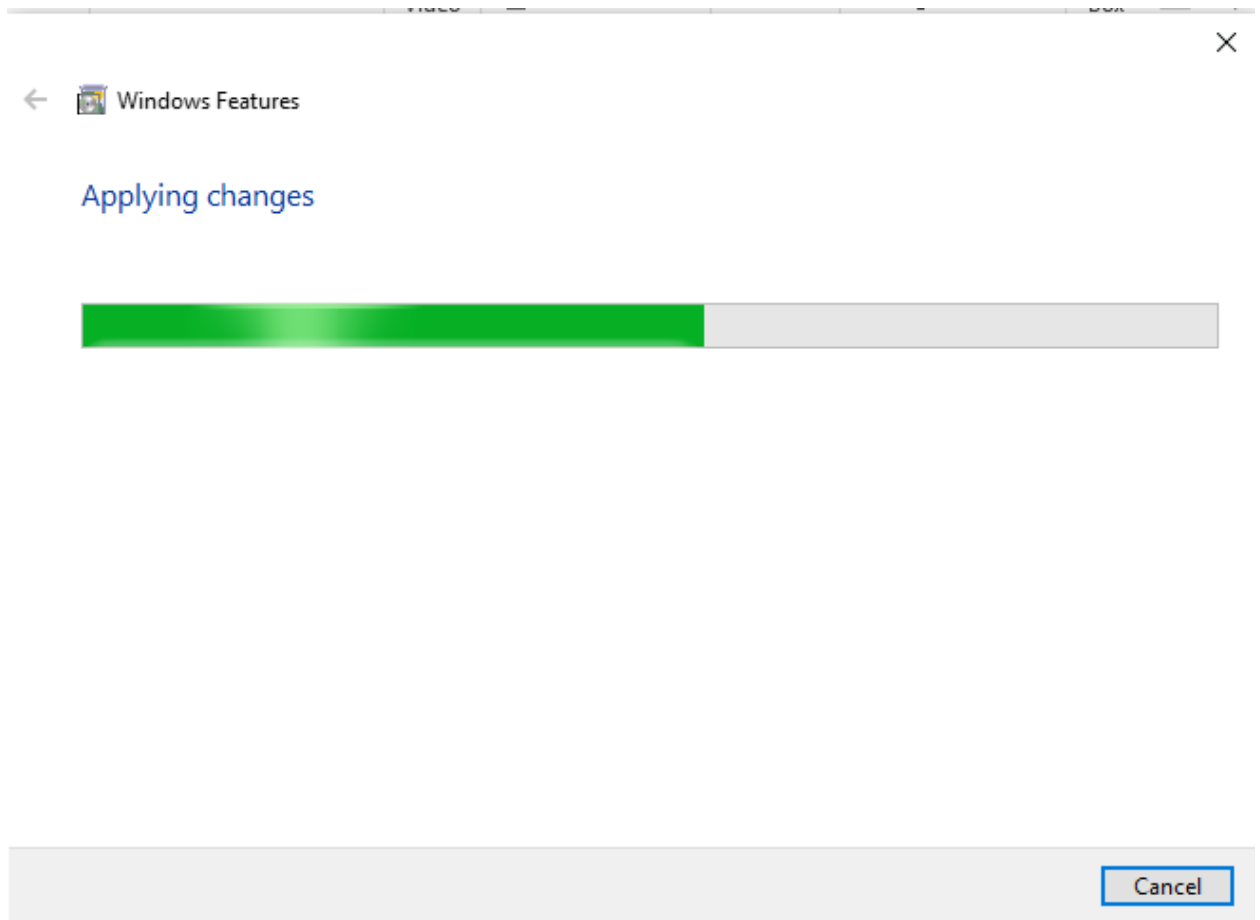


- Kemudian klik program -> turn Windows features on or off

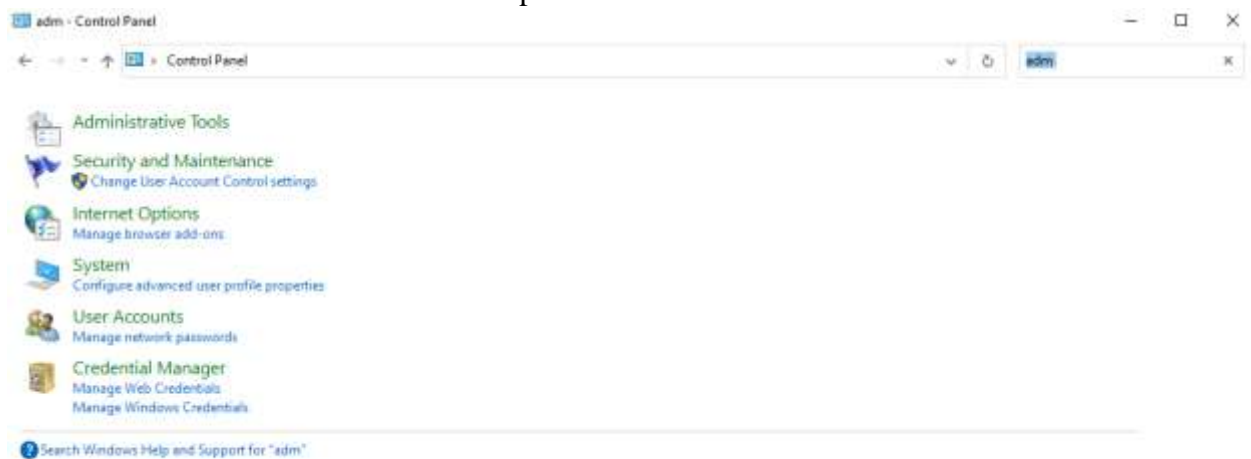


- Checklist pada FTP dan IIS Management Console

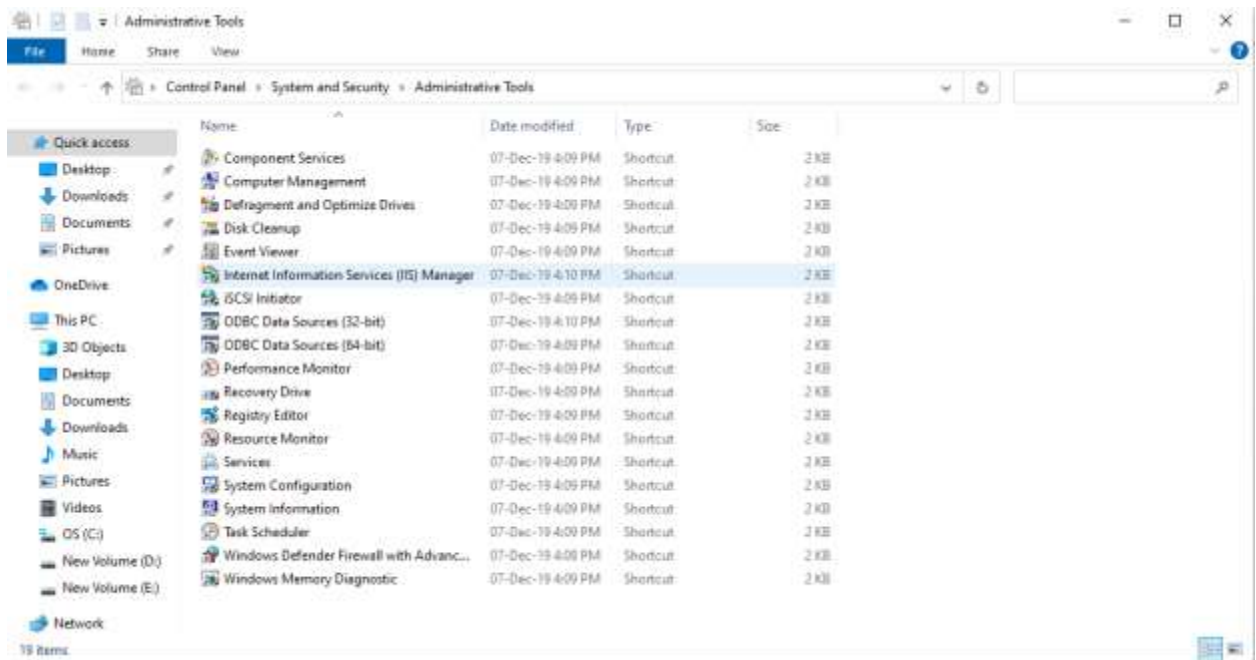




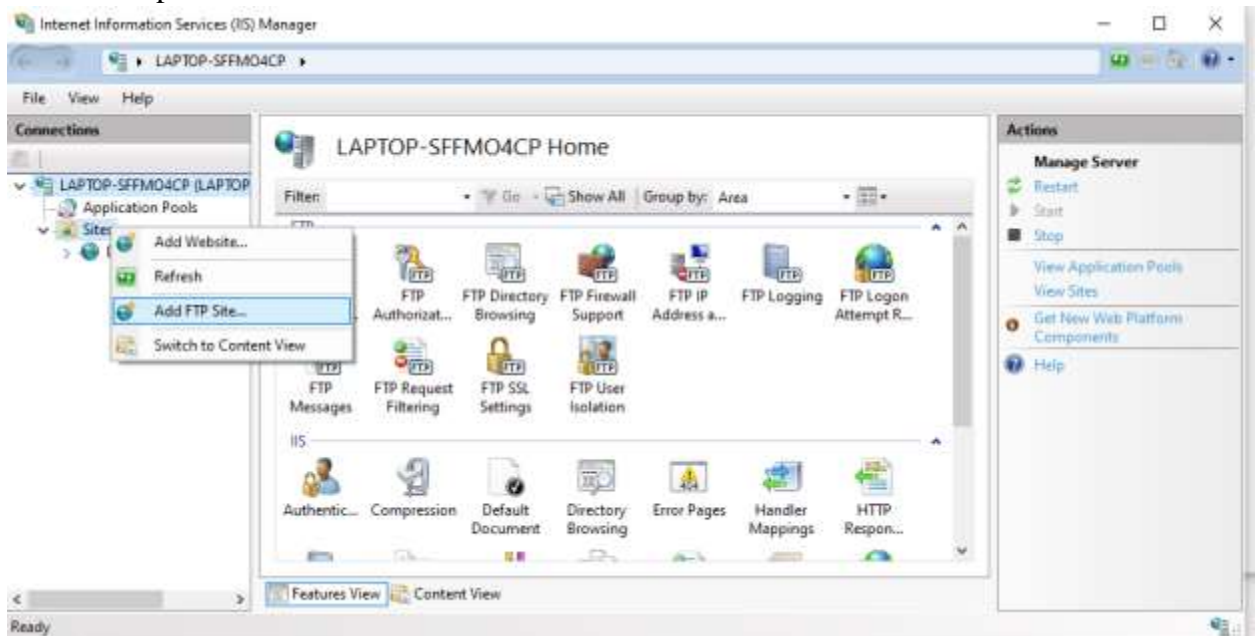
- Pada search button ketik “admin”. Lalu pilih “administrative tools



- Kemudian klik IIS Manager.




- Klik kanan pada sites -> add FTP site



- Beri nama FTP site dan juga letak direktorynya. Lalu klik next

Add FTP Site ? X

 **Site Information**

FTP site name:


Content Directory

Physical path:

Previous Next Finish Cancel

- Masukkan alamat IP Windows -> No SSL -> Next

Add FTP Site

 **Binding and SSL Settings**

Binding

IP Address: 192.168.100.5 Port: 21

☐ Enable Virtual Host Names:

Virtual Host (example: ftp.contoso.com):

☐ Start FTP site automatically

SSL

☒ No SSL

☐ Allow SSL

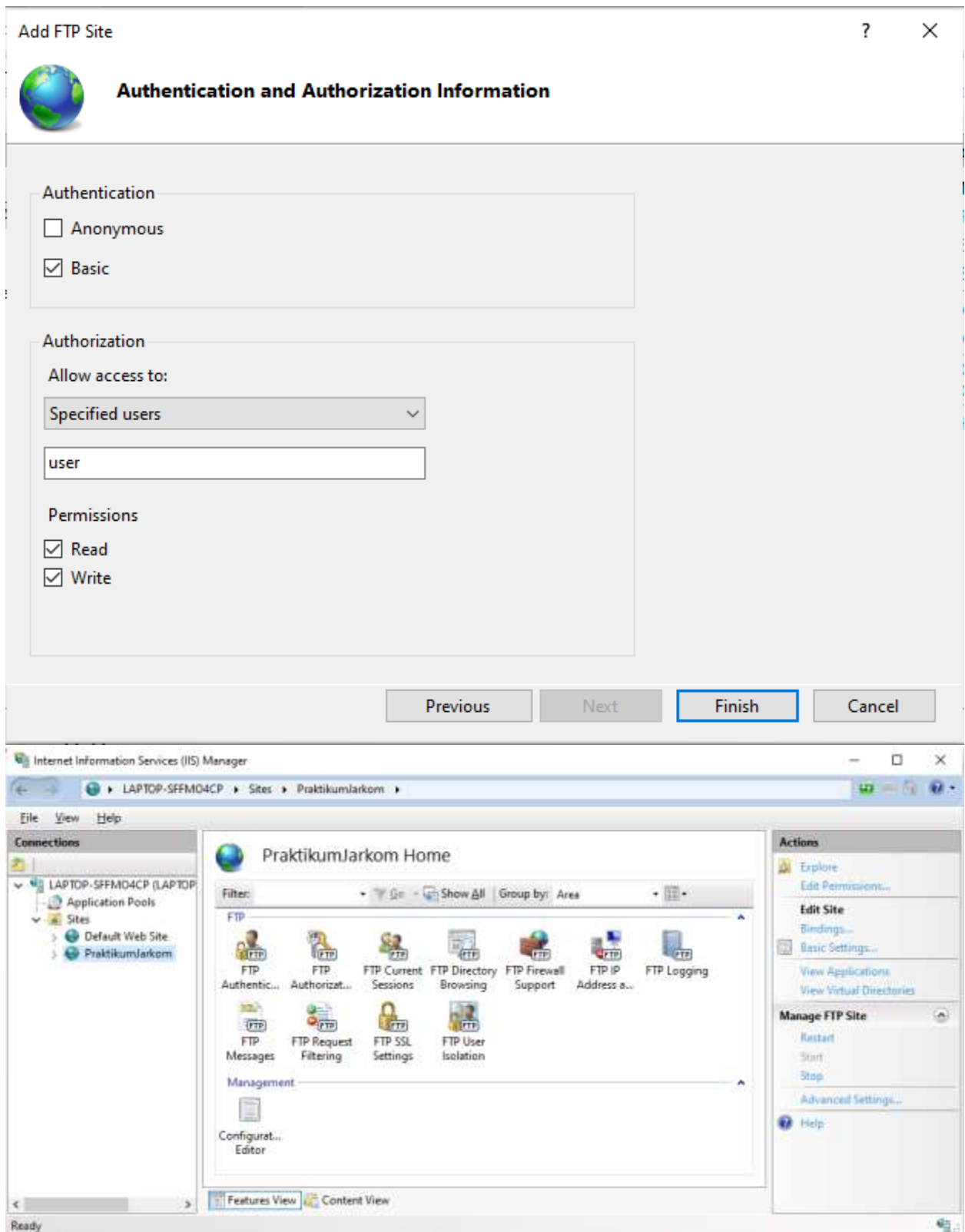
☐ Require SSL

SSL Certificate: Not Selected

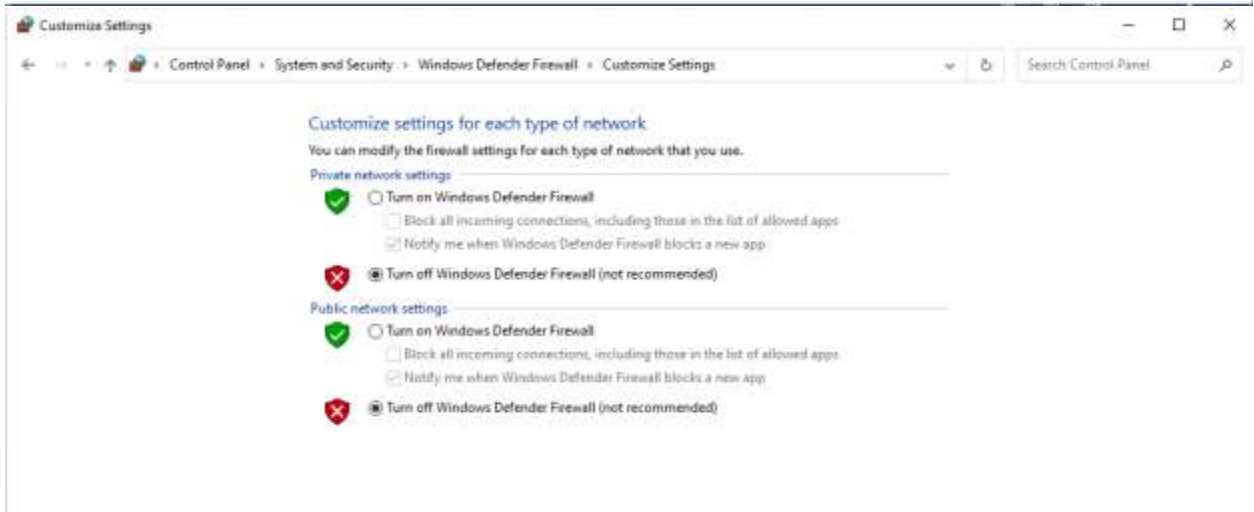
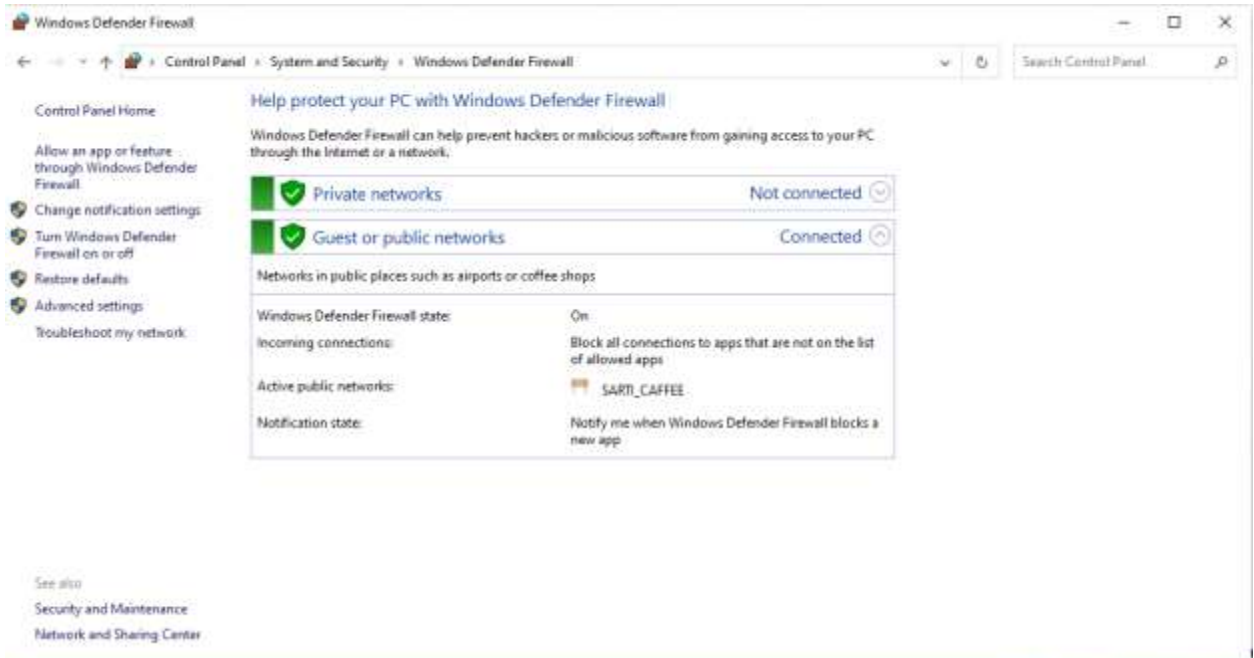
Select... View...

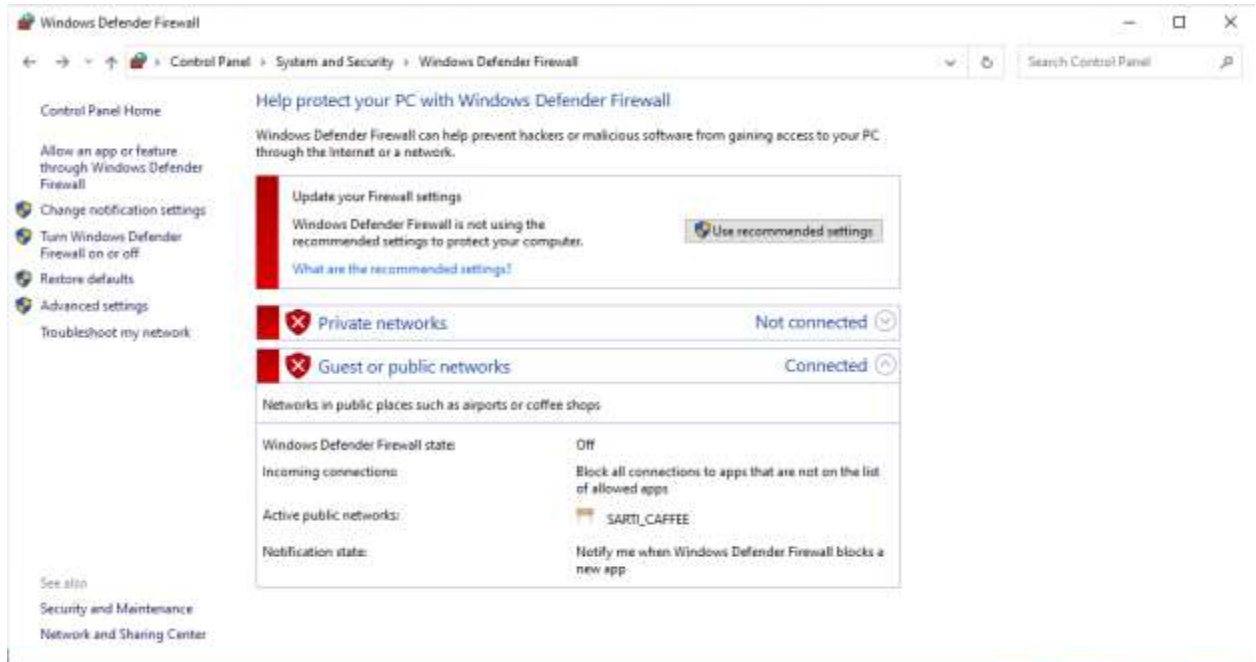
Previous Next Finish Cancel

- Untuk authentication pilih basic -> allow acces to specified user -> username = username Windows -> checklis read & write -> Finish



- FTP telah siap digunakan
- Kembali pada control panel -> Windows Defender FireWall -> matikan sementara firewall agar praktikum lancar -> OK

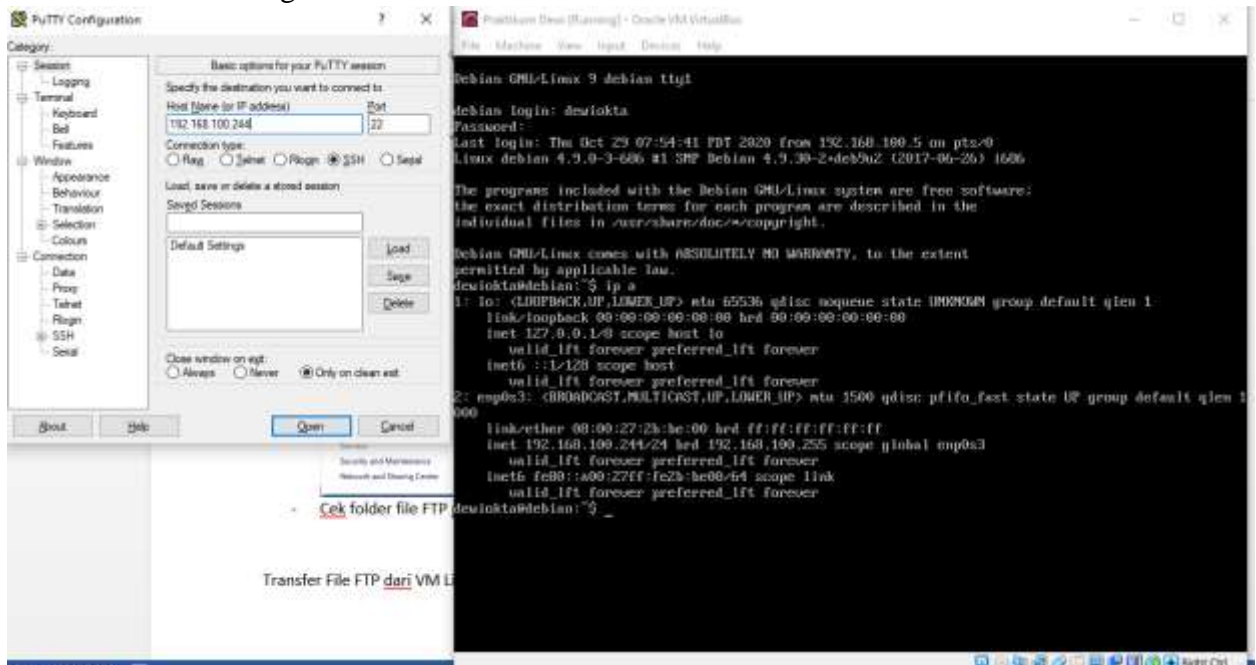




- Cek folder file FTP pada directory Windows

Transfer File FTP dari VM Linux ke Windows dengan menggunakan FTP

- Koneksikan SSH dengan Linux



```
dewiokta@debian: ~  
login as: dewiokta  
dewiokta@192.168.100.244's password:  
Linux debian 4.9.0-3-686 #1 SMP Debian 4.9.30-2+deb9u2 (2017-06-26) i686  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Thu Oct 29 10:01:24 2020  
dewiokta@debian:~$
```

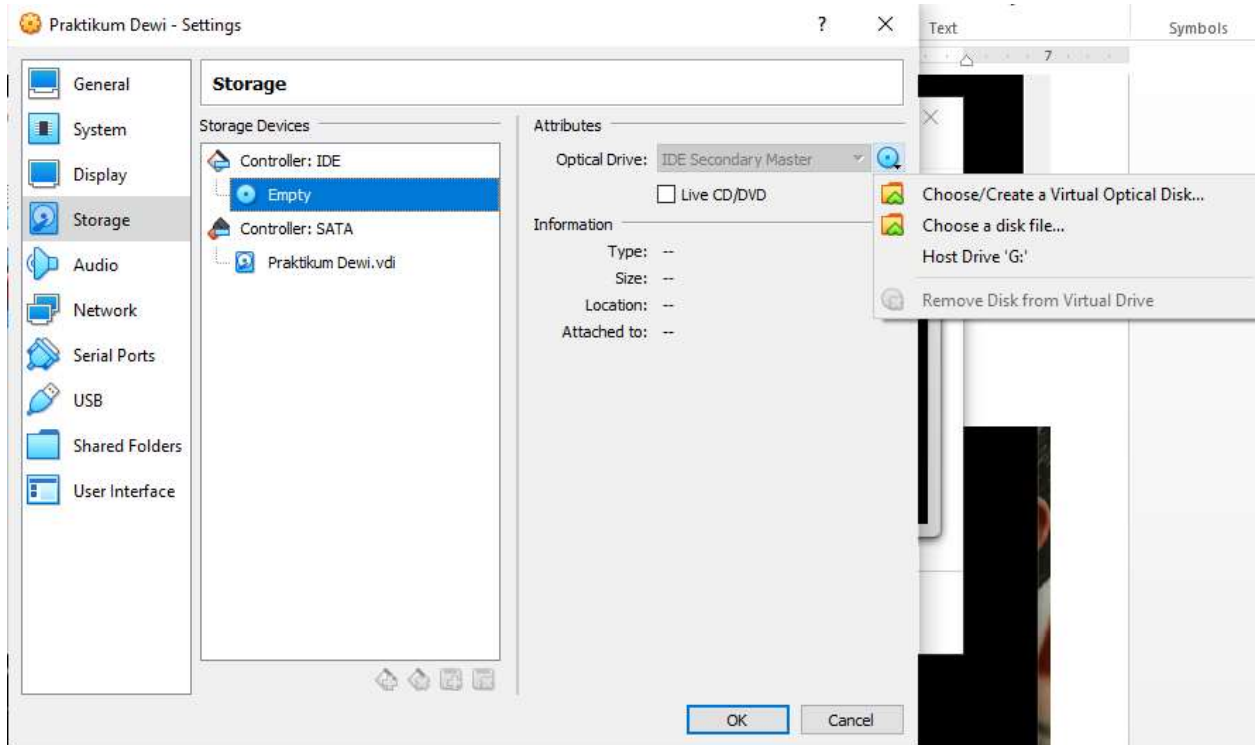
- Buka koneksi FTP dengan perintah 'ftp <ip ftp server'

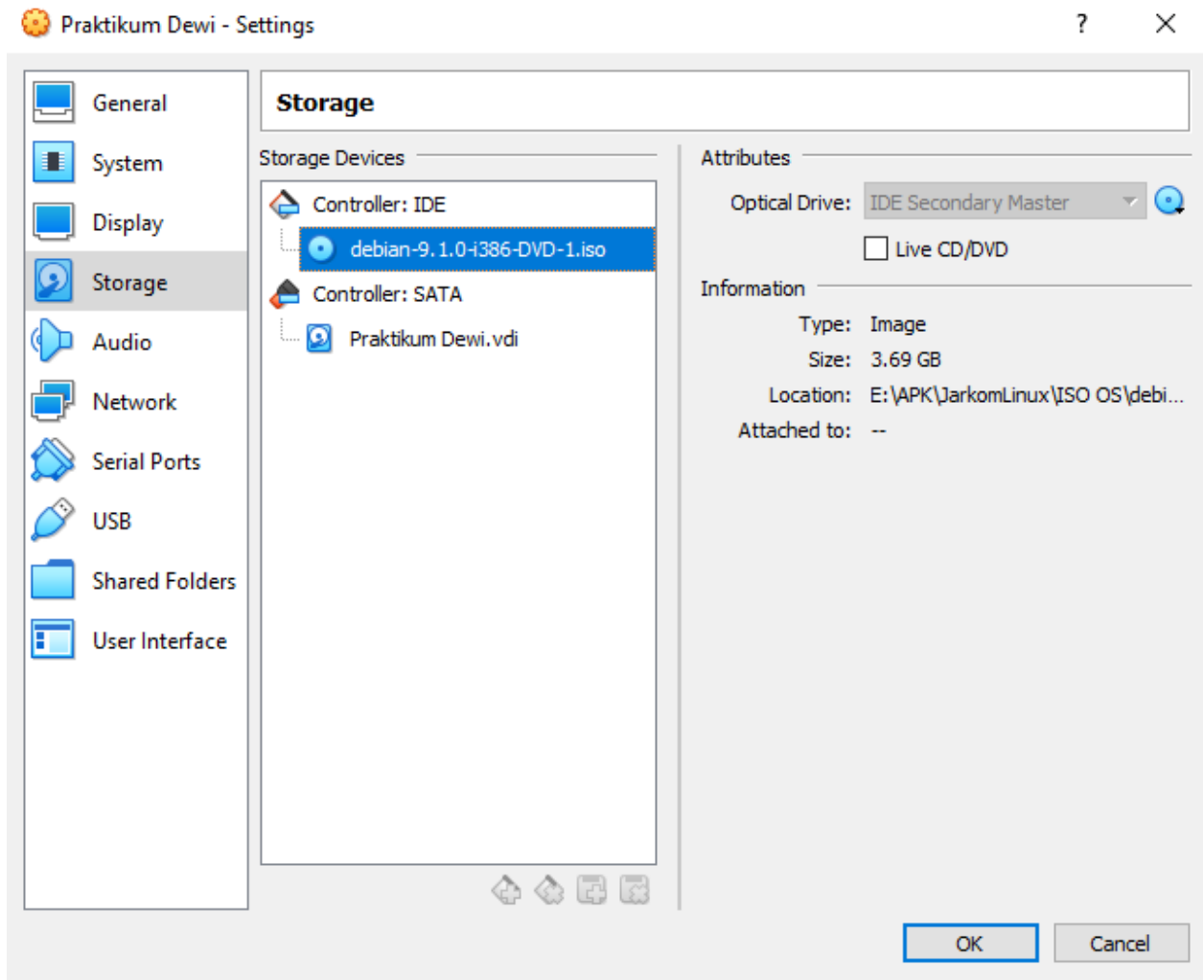
```
dewiokta@debian:~$ ftp 192.168.100.244  
-bash: ftp: command not found  
dewiokta@debian:~$
```

Jika muncul seperti itu tandanya belum install FTP, maka dari itu saya install FTP terlebih dahulu dengan cara menuliskan perintah 'apt-get install ftp' pada VM Linux root

```
dewiokta@debian:~$ su  
Password:  
root@debian:/home/dewiokta# apt-get install ftp  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following NEW packages will be installed:  
  ftp  
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.  
Need to get 0 B/61.5 kB of archives.  
After this operation, 141 kB of additional disk space will be used.  
Media change: please insert the disc labeled  
'Debian GNU/Linux 9.1.0 _Stretch_ - Official i386 DVD Binary-1 20170722-12:45'  
in the drive '/media/cdrom/' and press [Enter]
```

Jika muncul seperti diatas, buka VM -> Settings -> Storage -> lalu pilih debian 9 -> OK





- Kembali ke terminal Linux lalu Klik Enter

```
dewiokta@debian:~$ su
Password:
root@debian:/home/dewiokta# apt-get install ftp
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  ftp
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.
Need to get 0 B/61.5 kB of archives.
After this operation, 141 kB of additional disk space will be used.
Media change: please insert the disc labeled
'Debian GNU/Linux 9.1.0 _Stretch_ - Official i386 DVD Binary-1 20170722-12:45'
in the drive '/media/cdrom/' and press [Enter]

Get:1 cdrom://[Debian GNU/Linux 9.1.0 _Stretch_ - Official i386 DVD Binary-1 20170722-12:45] stretch
/main i386 ftp i386 0.17-34 [61.5 kB]
Selecting previously unselected package ftp.
(Reading database ... 27238 files and directories currently installed.)
Preparing to unpack .../ftp_0.17-34_i386.deb ...
Unpacking ftp (0.17-34) ...
Setting up ftp (0.17-34) ...
update-alternatives: using /usr/bin/netkit-ftp to provide /usr/bin/ftp (ftp) in auto mode
Processing triggers for man-db (2.7.6.1-2) ...
root@debian:/home/dewiokta# _
```

- Untuk memastikan telah terinstall atau belum, ketikkan perintah 'dpkg -l ftp'

```
root@debian:/home/dewiokta# dpkg -l ftp
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
++-----+
|/ Name           Version          Architecture     Description
++-----+
ii  ftp             0.17-34          i386             classical file transfer client
root@debian:/home/dewiokta#
```

ftp telah terinstall

- Setelah itu jalankan kembali putty
- Dan ketikkan perintah 'ftp <ip ftp server>' -> '[ftp 192.168.100.244](http://192.168.100.244)'

```
dewiokta@debian:~$ ftp 192.168.100.244
ftp: connect: Connection refused
ftp> exit
dewiokta@debian:~$ █
```

Dan koneksi saya ditolak oleh FTP pak

- Jika bisa terkoneksi silahkan login dengan user ftp/Windows dan password yang telah dibuat
- Jika login berhasil lakukan perintah ls pada terminal Linux untuk melihat directory
- Jika ingin menaruh file FTP ketikkan perintah 'put namaFile' lalu klik enter
- File FTP telah di transfer

- Untuk keluar dari FTP cukup ketikkan perintah 'bye' dan keluar dari SSH ketikkan perintah 'exit' dan tekan enter
- Transfer File Berhasil.