

LAPORAN BIG DATA
KUIS 1



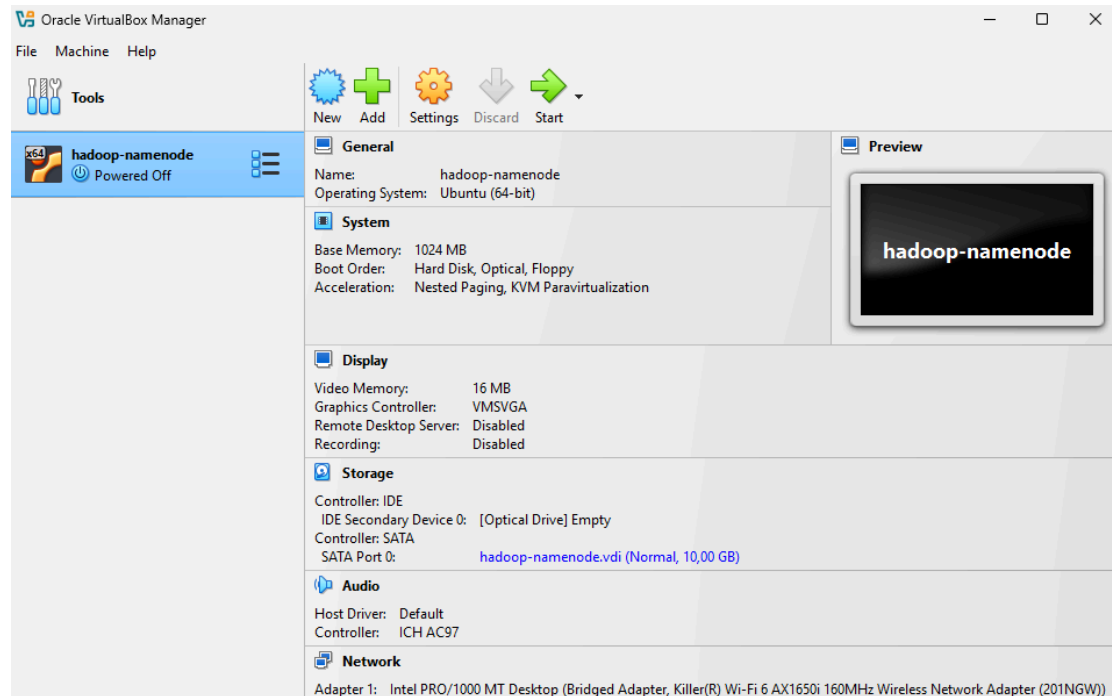
| | |
|------------------------------|--------------|
| Eka Yulianita Widyanti | 244107027006 |
| Ja'far Malik Ibrahim | 244107027005 |
| Puput Galuh Candra Dewi | 244107027014 |
| Rayhan Pradana Putra Nugraha | 244107027011 |

D-IV TEKNIK INFORMATIKA
TEKNOLOGI INFORMASI
POLITEKNIK NEGERI MALANG
2025

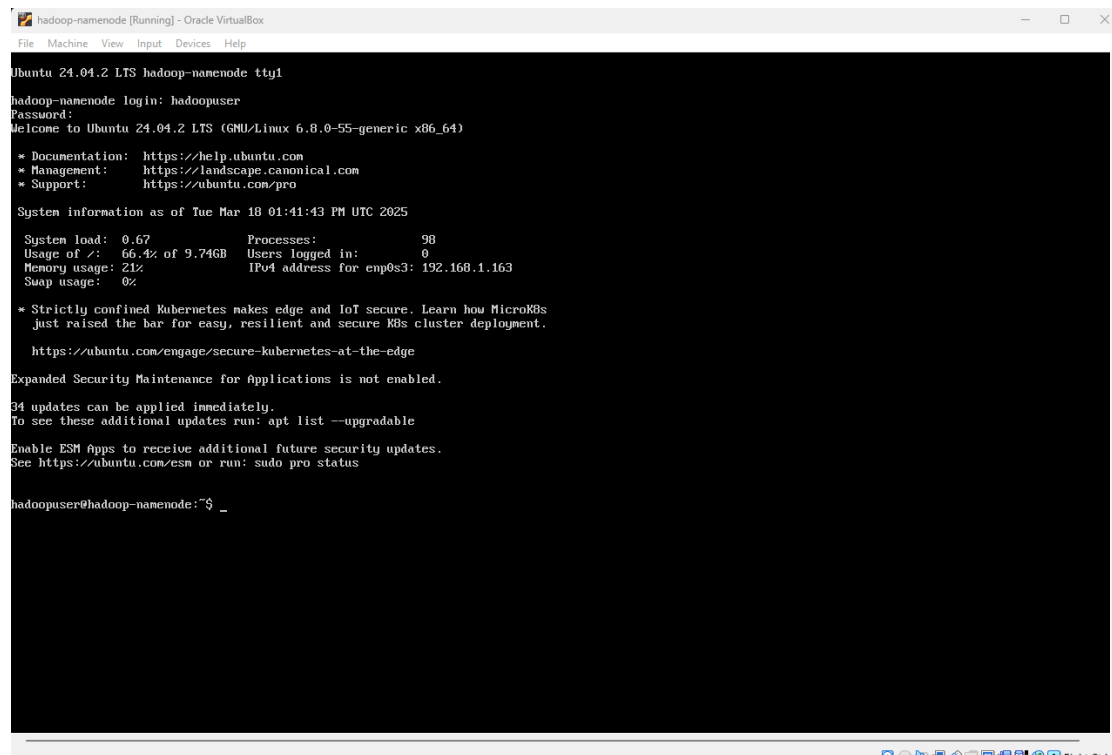
KUIS 1

1. Namenode (Rayhan)

a. Hasil install vm



b. Login hadoop



- c. Ip addr -> Untuk mendapatkan ip address dari enp0s3 -> 192.168.1.163

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:fb:7a:fa brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.163/24 metric 100 brd 192.168.1.255 scope global dynamic enp0s3
        valid_lft 86295sec preferred_lft 86295sec
    inet6 fe80::a00:27ff:fe7b:7afa/64 scope link
        valid_lft forever preferred_lft forever
3: ztnfacwriu: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 2800 qdisc fq_codel state UNKNOWN group default qlen 1000
    link/ether 1e:4d:89:48:00:b1 brd ff:ff:ff:ff:ff:ff
    inet 172.29.247.62/16 brd 172.29.255.255 scope global ztnfacwriu
        valid_lft forever preferred_lft forever
    inet6 fe80::1c4d:89ff:fe48:b1/64 scope link
        valid_lft forever preferred_lft forever
hadoopuser@hadoop-namenode:~$
```

- d. Edit file hosts dari /etc/hosts

```
GNU nano 7.2 /etc/hosts *
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

# Hadoop cluster nodes
192.168.1.163 hadoop-namenode
192.168.1.164 hadoop-datanode1
192.168.1.165 hadoop-datanode2
192.168.1.158 hadoop-datanode3
```

- e. Menjalankan ,start-dfs.sh, start-yarn.sh, jps

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ start-dfs.sh
Starting namenodes on [hadoop-namenode]
Starting datanodes
Starting secondary namenodes [hadoop-namenode]
hadoopuser@hadoop-namenode:~$ start-yarn.sh
Starting resourcemanager
Starting nodemanagers
hadoopuser@hadoop-namenode:~$ jps
3306 ResourceManager
3597 Jps
3135 SecondaryNameNode
2895 NameNode
hadoopuser@hadoop-namenode:~$
```

f. Membuat direktori pada cluster

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ hdfs dfs -mkdir /19_RayhanPradanaPutraNugraha
hadoopuser@hadoop-namenode:~$ hdfs dfs -ls /
Found 2 items
-rwxr-xr-x - hadoopuser supergroup          0 2025-03-18 14:20 /19_RayhanPradanaPutraNugraha
-rwxr-xr-x - hadoopuser supergroup          0 2025-02-19 16:50 /yunhasnawa
hadoopuser@hadoop-namenode:~$ _
```

g. Membuat file pada lokal

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ touch BiodataRayhan.txt
hadoopuser@hadoop-namenode:~$ ls
BiodataRayhan.txt  profil-jti-polinema.mp4  snap
hadoopuser@hadoop-namenode:~$
```

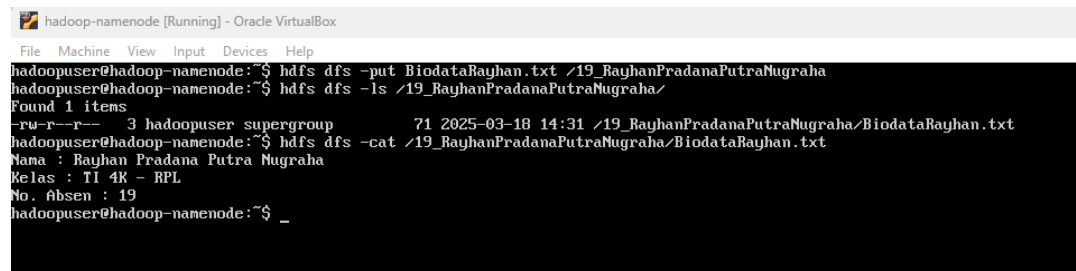
h. Edit file

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
GNU nano 7.2
Nama : Rayhan Pradana Putra Nugraha
Kelas : TI 4K - RPL
No. Absen : 19
```

i. Baca file

```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ cat BiodataRayhan.txt
Nama : Rayhan Pradana Putra Nugraha
Kelas : TI 4K - RPL
No. Absen : 19
hadoopuser@hadoop-namenode:~$ _
```

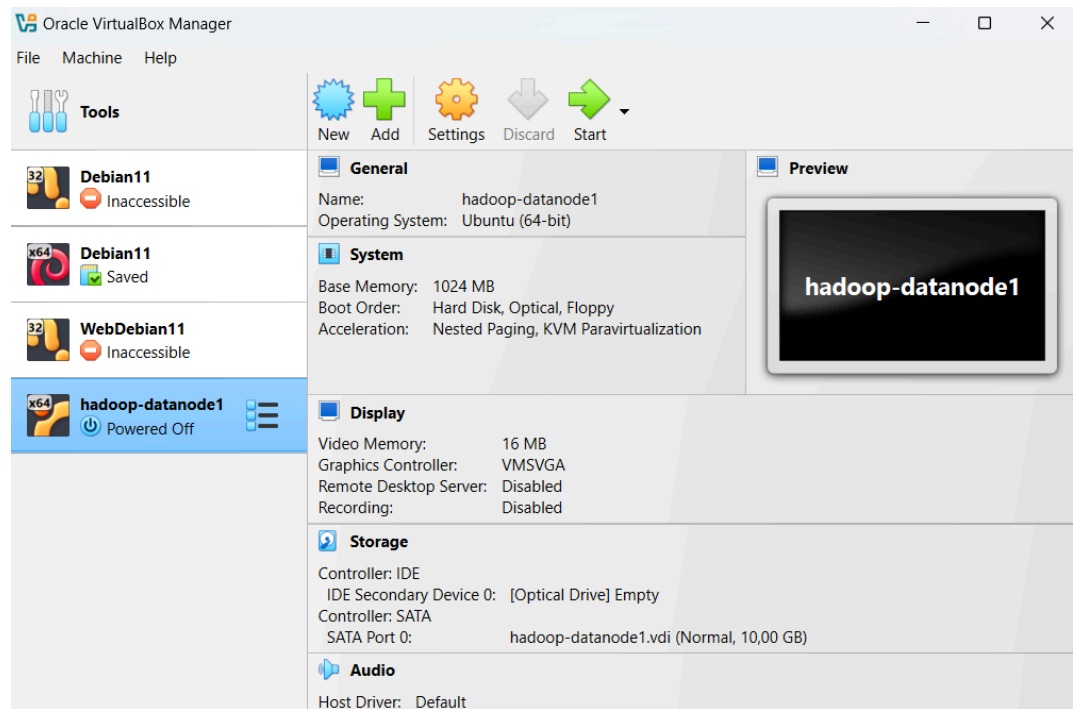
j. Mengupload file ke cluster dan diletakkan pada direktori



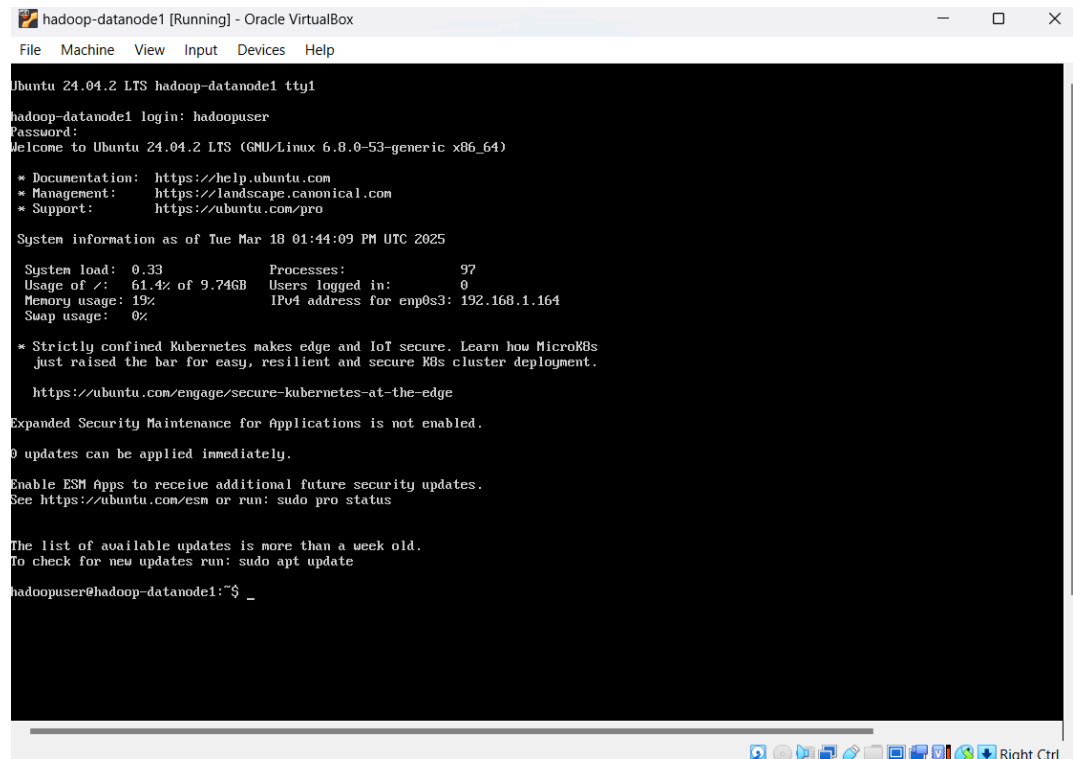
```
hadoop-namenode [Running] - Oracle VirtualBox
File Machine View Input Devices Help
hadoopuser@hadoop-namenode:~$ hdfs dfs -put BiodataRayhan.txt /19_RayhanPradanaPutraNugraha
hadoopuser@hadoop-namenode:~$ hdfs dfs -ls /19_RayhanPradanaPutraNugraha/
Found 1 items
-rw-r--r--  3 hadoopuser supergroup          71 2025-03-18 14:31 /19_RayhanPradanaPutraNugraha/BiodataRayhan.txt
hadoopuser@hadoop-namenode:~$ hdfs dfs -cat /19_RayhanPradanaPutraNugraha/BiodataRayhan.txt
Nama : Rayhan Pradana Putra Nugraha
Kelas : TI 4K - RPL
No. Absen : 19
hadoopuser@hadoop-namenode:~$ _
```

2. Datanode-1 (Puput)

a. Hasil install vm



b. Login hadoop



- c. Ip addr -> Untuk mendapatkan ip address dari enp0s3 -> 192.168.1.164

```
hadoopuser@hadoop-datanode1:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:91:4b:9a brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.164/24 metric 100 brd 192.168.1.255 scope global dynamic enp0s3
        valid_lft 86251sec preferred_lft 86251sec
    inet6 fe80::a00:27ff:fe91:4b9a/64 scope link
        valid_lft forever preferred_lft forever
hadoopuser@hadoop-datanode1:~$ _
```

- d. Edit file hosts dari /etc/hosts

```
GNU nano 7.2 /etc/hosts *
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

# Hadoop cluster nodes
192.168.1.163 hadoop-namenode
192.168.1.164 hadoop-datanode1
192.168.1.165 hadoop-datanode2
192.168.1.158 hadoop-datanode3
_
```

- e. Menampilkan informasi melalui jps

```
hadoopuser@hadoop-datanode1:~$ jps
1541 Jps
1452 NodeManager
1311 DataNode
hadoopuser@hadoop-datanode1:~$
```

- f. Membuat direktori pada cluster

```
hadoopuser@hadoop-datanode1:~$ hdfs dfs -mkdir /17_PuputGaluhCandraDewi
hadoopuser@hadoop-datanode1:~$ hdfs dfs -ls /
Found 5 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /06_EkaYulianitaWidyanti
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /08_JafarMalikIbrahim
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /17_PuputGaluhCandraDewi
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:20 /19_RayhanPradanaPutraNugraha
drwxr-xr-x - hadoopuser supergroup 0 2025-02-19 16:50 /yunhasnawa
```

- g. Membuat file pada lokal

```
hadoopuser@hadoop-datanode1:~$ touch BiodataPuput.txt
hadoopuser@hadoop-datanode1:~$ ls
BiodataPuput.txt
```

- h. Edit file

```
GNU nano 7.2
Nama : Puput Galuh Candra Dewi
Kelas : TI 4K - RPL
No. Absen : 17
```

i. Baca file

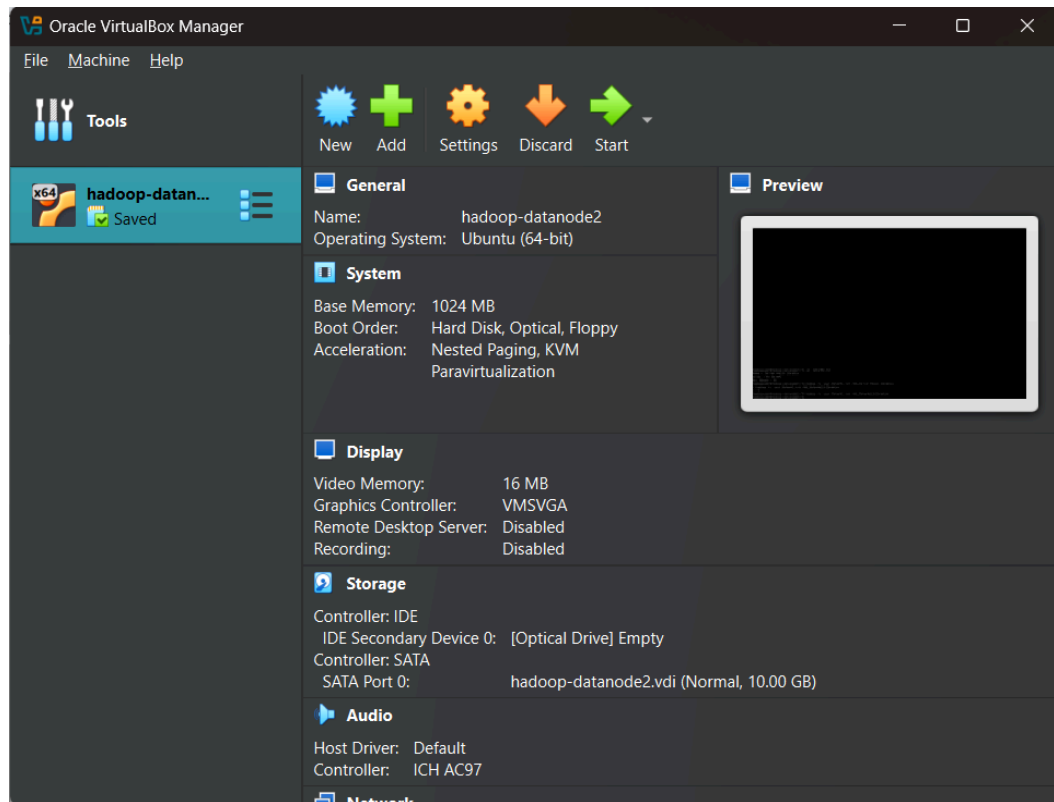
```
hadoopuser@hadoop-datanode1:~$ cat BiodataPuput.txt
Nama : Puput Galuh Candra Dewi
Kelas : TI 4K - RPL
No. Absen : 17
```

j. Mengupload file ke cluster dan diletakkan pada direktori

```
hadoopuser@hadoop-datanode1:~$ hdfs dfs -put BiodataPuput.txt /17_PuputGaluhCandraDewi
hadoopuser@hadoop-datanode1:~$ hdfs dfs -ls /17_PuputGaluhCandraDewi
Found 1 items
-rw-r--r-- 3 hadoopuser supergroup 66 2025-03-18 14:33 /17_PuputGaluhCandraDewi/BiodataPuput.txt
hadoopuser@hadoop-datanode1:~$ hdfs dfs -cat /17_PuputGaluhCandraDewi/BiodataPuput.txt
Nama : Puput Galuh Candra Dewi
Kelas : TI 4K - RPL
No. Absen : 17
hadoopuser@hadoop-datanode1:~$
```


3. Datanode-2 (Ja'far)

a. Hasil install vm



b. Login hadoop

```
hadoop-datanode2 [Running] - Oracle VirtualBox
File Machine View Input Devices Help

Ubuntu 24.04.2 LTS hadoop-datanode2 tty2
hadoop-datanode2 login: hadoopuser
Password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-53-generic x86_64)

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

System information as of Tue Mar 18 01:46:49 PM UTC 2025

System load:  0.04          Processes:      104
Usage of /:   60.8% of 9.74GB Users logged in:  1
Memory usage: 50%          IPv4 address for enp0s3: 192.168.1.165
Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.
   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

hadoopuser@hadoop-datanode2:~$
```

- c. Ip addr -> Untuk mendapatkan ip address dari enp0s3

```
hadoopuser@hadoop-datanode2:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:c9:55:36 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.165/24 metric 100 brd 192.168.1.255 scope global dynamic enp0s3
        valid_lft 86203sec preferred_lft 86203sec
    inet6 fe80::a00:27ff:fec9:5536/64 scope link
        valid_lft forever preferred_lft forever
hadoopuser@hadoop-datanode2:~$ _
```

- d. Edit file hosts dari /etc/hosts

```
GNU nano 7.2 /etc/hosts *
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

# Hadoop cluster nodes
192.168.1.163 hadoop-namenode
192.168.1.164 hadoop-datanode1
192.168.1.165 hadoop-datanode2
192.168.1.158 hadoop-datanode3
```

- e. Menampilkan informasi melalui jps

```
hadoopuser@hadoop-datanode2:~$ jps
2572 NodeManager
2461 DataNode
2719 Jps
hadoopuser@hadoop-datanode2:~$ _
```

- f. Membuat direktori pada cluster

```
hadoopuser@hadoop-datanode2:~$ hdfs dfs -mkdir /08_JafarMalikIbrahim
hadoopuser@hadoop-datanode2:~$ ls
hadoopuser@hadoop-datanode2:~$ hdfs dfs -ls /
Found 5 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /06_EkaYulianitaWidyanti
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /08_JafarMalikIbrahim
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /17_PuputGaluhCandraDewi
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:20 /19_RayhanPradanaPutraNugraha
drwxr-xr-x - hadoopuser supergroup 0 2025-02-19 16:50 /yunhasnawa
hadoopuser@hadoop-datanode2:~$
```

- g. Membuat file pada lokal

```
hadoopuser@hadoop-datanode2:~$ ls
JafarMI.txt
hadoopuser@hadoop-datanode2:~$
```

h. Edit file

```
GNU nano 7.2
Nama : Ja'far Malik Ibrahim
Kelas : TI RPL-4K
No. Absen : 08
NIM : 24410702705
```

i. Baca file

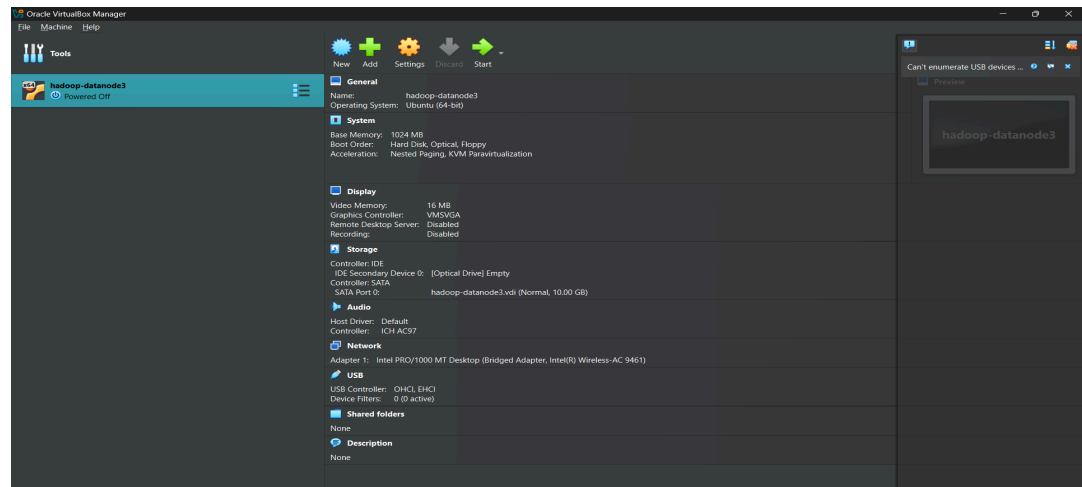
```
hadoopuser@hadoop-datanode2:~$ cat JafarMI.txt
Nama : Ja'far Malik Ibrahim
Kelas : TI RPL-4k
No. Absen : 08
NIM : 24410702705
hadoopuser@hadoop-datanode2:~$ _
```

j. Mengupload file ke cluster dan diletakkan pada direktori

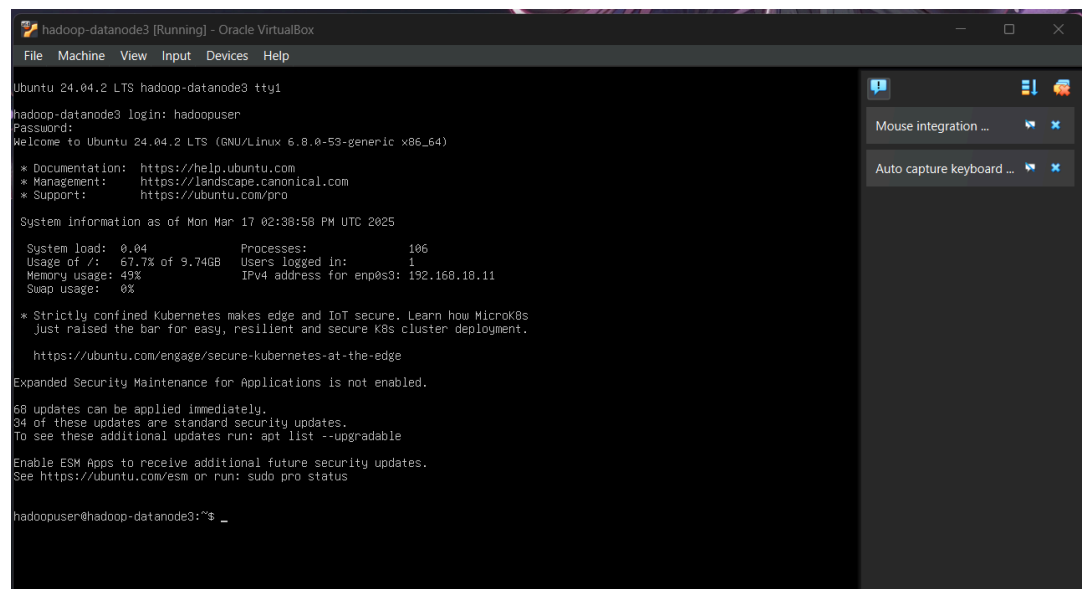
```
hadoopuser@hadoop-datanode2:~$ hdfs dfs -put JafarMI.txt /08_JafarMalikIbrahim
hadoopuser@hadoop-datanode2:~$ hdfs dfs -ls /08_JafarMalikIbrahim/
Found 1 items
-rw-r--r-- 3 hadoopuser supergroup 80 2025-03-18 14:33 /08_JafarMalikIbrahim/JafarMI.txt
hadoopuser@hadoop-datanode2:~$ hdfs dfs -cat /08_JafarMalikIbrahim/JafarMI.txt
Nama : Ja'far Malik Ibrahim
Kelas : TI RPL-4k
No. Absen : 08
NIM : 24410702705
hadoopuser@hadoop-datanode2:~$ _
```

4. Datanode-3 (Wiwid)

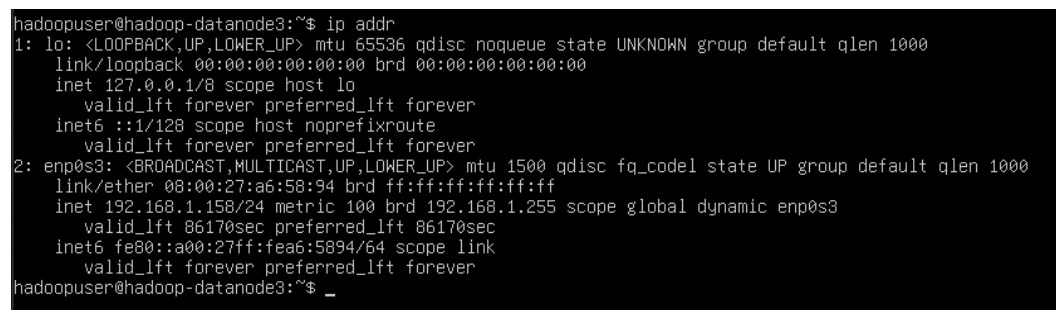
a. Hasil install vm



b. Login hadoop



c. Ip addr -> Untuk mendapatkan ip address dari enp0s3 -> 192.168.1.158



- d. Edit file hosts dari /etc/hosts

```
GNU nano 7.2 /etc/hosts *
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

# Hadoop cluster nodes
192.168.1.163 hadoop-namenode
192.168.1.164 hadoop-datanode1
192.168.1.165 hadoop-datanode2
192.168.1.158 hadoop-datanode3
```

- e. Menampilkan informasi melalui jps

```
hadoopuser@hadoop-datanode3:~$ jps
1525 DataNode
1799 Jps
1671 NodeManager
hadoopuser@hadoop-datanode3:~$
```

- f. Membuat direktori pada cluster

```
hadoopuser@hadoop-datanode3:~$ hdfs dfs -mkdir /06_EkaYulianitaWidyanti
hadoopuser@hadoop-datanode3:~$ ls
hadoopuser@hadoop-datanode3:~$ hdfs dfs -ls /06_EkaYulianitaWidyanti
hadoopuser@hadoop-datanode3:~$ hdfs dfs -ls /06_EkaYulianitaWidyanti/
hadoopuser@hadoop-datanode3:~$ hdfs dfs -ls /
Found 5 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /06_EkaYulianitaWidyanti
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /08_JafarMalikIbrahim
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:21 /17_PuputGaluhCandraDewi
drwxr-xr-x - hadoopuser supergroup 0 2025-03-18 14:20 /19_RayhanPradanaPutraNugraha
drwxr-xr-x - hadoopuser supergroup 0 2025-02-19 16:50 /yunhasnawa
hadoopuser@hadoop-datanode3:~$
```

- g. Membuat file pada lokal

```
hadoopuser@hadoop-datanode3:~$ touch BiodataEka.txt
hadoopuser@hadoop-datanode3:~$ ls
BiodataEka.txt
hadoopuser@hadoop-datanode3:~$
```

- h. Edit file

```
File Machine View Input Devices Help
GNU nano 7.2 BiodataEka.txt
Nama : Eka Yulianita Widyanti
NIM : 244107027006
Kelas : TI-RPL 4K
Absen : 06
```

- i. Baca file

```
hadoopuser@hadoop-datanode3:~$ cat BiodataEka.txt
Nama : Eka Yulianita Widyanti
NIM : 244107027006
Kelas : TI-RPL 4K
Absen : 06
hadoopuser@hadoop-datanode3:~$
```

j. Mengupload file ke cluster dan diletakkan pada direktori

```
hadoopuser@hadoop-datanode3:~$ hdfs dfs -put BiodataEka.txt /06_EkaYulianitaWidyanti
hadoopuser@hadoop-datanode3:~$ hdfs dfs -ls /06_EkaYulianitaWidyanti/
Found 1 items
-rw-r--r-- 3 hadoopuser supergroup 85 2025-03-18 14:33 /06_EkaYulianitaWidyanti/BiodataEka.txt
hadoopuser@hadoop-datanode3:~$ hdfs dfs -cat /06_EkaYulianitaWidyanti/BiodataEka.txt
Nama : Eka Yulianita Widyanti
NIM : 244107027006
Kelas : TI-RPL 4K
Absen : 06
hadoopuser@hadoop-datanode3:~$
```