

LAPORAN KUIS PERTAMA

NameNode dan DataNode

Untuk : Tugas Mata Kuliah – Big Data



Disusun Oleh :
Kelompok 4

- | | |
|--------------------------|----------------|
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PROGRAM STUDI D-IV TEKNIK INFORMATIKA

JURUSAN TEKNIK INFORMATIKA

POLITEKNIK NEGERI MALANG

2025

- Sistem operasi Ubuntu Server yang ada pada VM.

```
Ubuntu 24.04.2 LTS hadoop-datanode3 tty1
hadoop-datanode3 login:
```

- Login untuk setiap komputer yang akan dijadikan **namenode**, **datanode1**, **datanode2**, dan **datanode3**.

Username : hadoopuser

Password : hadoop

```
Ubuntu 24.04.2 LTS hadoop-datanode3 tty1
hadoop-datanode3 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 Thu Mar 20 11:30:47 PM UTC 2025

System load: 0.05          Memory usage: 18%    Processes:      99
Usage of /:  61.4% of 9.74GB Swap usage:   0%      Users logged in: 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.

68 updates can be applied immediately.
34 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

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

hadoopuser@hadoop-datanode3:~$
```

- Setelah berhasil login, pada masing-masing VM ketikkan perintah: **ip addr** untuk mengetahui IP dari masing masing komputer.
- Catat IP address lokal semua VM lalu masukkan semua IP dari masing masing komputer ke dalam **sudo nano /etc/hosts** lalu simpan.

```

GNU nano 7.2
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
192.168.72.49 hadoop-namenode
192.168.72.209 hadoop-datanode1
192.168.72.173 hadoop-datanode2
192.168.72.93 hadoop-datanode3

```

- Jika semua file /etc/hosts di semua VM sudah disesuaikan dengan alamat IP nya pada masing masing komputer, di VM **namenode**, ketikkan perintah berikut:
 - **start-dfs.sh**
 - **start-yarn.sh**
 - **jps**

```

hadoopuser@hadoop-namenode:~$ start-dfs.sh
Starting namenodes on [hadoop-namenode]
hadoop-namenode: namenode is running as process 1300. Stop it first and ensure /tmp/
er-namenode.pid file is empty before retry.
pdsh@hadoop-namenode: hadoop-namenode: ssh exited with exit code 1
Starting datanodes
hadoop-datanode2: datanode is running as process 1105. Stop it first and ensure /tmp/
ser-datanode.pid file is empty before retry.
pdsh@hadoop-namenode: hadoop-datanode2: ssh exited with exit code 1
hadoop-datanode3: ssh: connect to host hadoop-datanode3 port 22: No route to host
pdsh@hadoop-namenode: hadoop-datanode3: ssh exited with exit code 255

```

- Pada semua VM yang menjadi **datanode**, jalankan juga perintah **jps**.

```

hadoopuser@hadoop-datanode3:~$ jps
3124 Jps
2277 DataNode
2425 NodeManager
hadoopuser@hadoop-datanode3:~$

```

- Selanjutnya pada sebuah direktori di cluster Hadoop, membuat sebuah folder berupa noAbsen_Nama, lalu didalamnya membuat sebuah file.txt yang berisikan nama dan nomor absen.
 - NameNode : Wahyudinata

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

hadoopuser@hadoop-namenode:~/kelompok_4/21_Wahyudinata$ ls
dinata.txt
hadoopuser@hadoop-namenode:~/kelompok_4/21_Wahyudinata$ cat dinata.txt
Nama : Wahyudinata
Absen : 21
Kelas : RPL 4K
hadoopuser@hadoop-namenode:~/kelompok_4/21_Wahyudinata$ _
```

- DataNode1 : Annisa Rahmania Putri

```
hadoop-datanode1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

hadoopuser@hadoop-namenode:~/kelompok4/02_AnnisaRahmaniaPutri$ ls
rahmania.txt
hadoopuser@hadoop-namenode:~/kelompok4/02_AnnisaRahmaniaPutri$ cat rahmania.txt
Nama : Annisa Rahmania Putri
Absen : 02/4K-RPL
hadoopuser@hadoop-namenode:~/kelompok4/02_AnnisaRahmaniaPutri$ _
```

- DataNode2 : Bimo Cahyo Kusumo

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

hadoopuser@hadoop-namenode:~/kelompok4/05_BimoCahyoKusumo$ ls
bimo.txt
hadoopuser@hadoop-namenode:~/kelompok4/05_BimoCahyoKusumo$ cat bimo.txt
Nama: Bimo Cahyo Kusumo
Absen: 05
hadoopuser@hadoop-namenode:~/kelompok4/05_BimoCahyoKusumo$
```

- DataNode3 : Nailul Maqsudi

```
hadoop-datanode3 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

hadoopuser@hadoop-namenode:~/kelompok_4/15_NailulMaqsudi$ ls
Nailul.txt
hadoopuser@hadoop-namenode:~/kelompok_4/15_NailulMaqsudi$ cat Nailul.txt
Nama: Nailul Maqsudi
Absen : 15
Kelas : RPL-4K
hadoopuser@hadoop-namenode:~/kelompok_4/15_NailulMaqsudi$ _
```