

**BIG DATA**  
**PERTEMUAN 3**



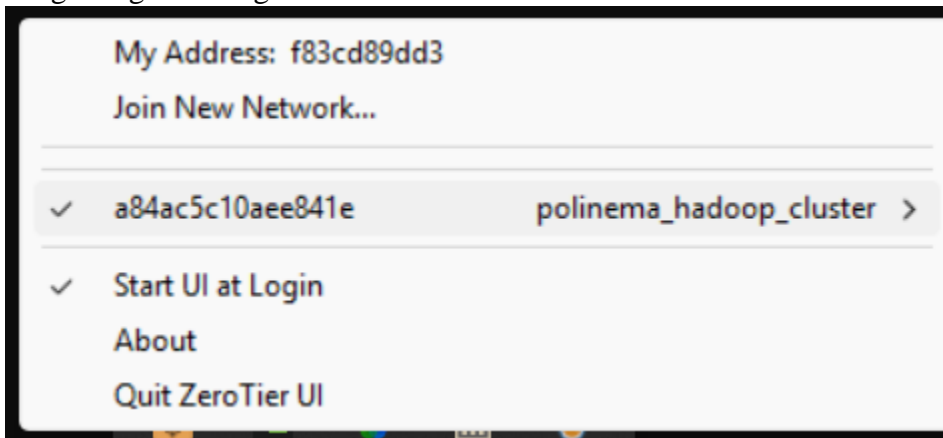
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**TEKNIK INFORMATIKA – 3D**

**TEKNOLOGI INFORMASI**  
**POLITEKNIK NEGERI MALANG**

**2025**

### 1. Bergabung ke Jaringan VPN



### 2. Konfigurasi VPN Client

```
C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.26120.3360]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ASUS TUF>ping 172.29.253.67

Pinging 172.29.253.67 with 32 bytes of data:
Reply from 172.29.253.67: bytes=32 time=714ms TTL=64
Reply from 172.29.253.67: bytes=32 time=421ms TTL=64
Reply from 172.29.253.67: bytes=32 time=304ms TTL=64
Reply from 172.29.253.67: bytes=32 time=411ms TTL=64

Ping statistics for 172.29.253.67:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 304ms, Maximum = 714ms, Average = 462ms
```

### 3. Mengakses Cluster Hadoop

```
hadoopuser@hadoop-namen x + v
hadoopuser@hadoop-namenode:~$ ssh hadoopuser@172.29.247.62
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-54-generic x86_64)

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

System information as of Mon Mar 10 01:23:56 PM UTC 2025

System load:  0.06          Processes:           129
Usage of /:   76.0% of 9.74GB Users logged in:      1
Memory usage: 47%          IPv4 address for enp0s3: 192.168.2.203
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.

26 updates can be applied immediately.
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

*** System restart required ***
Last login: Mon Mar 10 13:23:57 2025 from 172.29.84.95
hadoopuser@hadoop-namenode:~$
```

4. Cek Status Name Node

```
hadoopuser@hadoop-namenode:~$ jps
1699 SecondaryNameNode
32532 Jps
1878 ResourceManager
1455 NameNode
hadoopuser@hadoop-namenode:~$
```

5. Melihat status data nodes

Namenode information

Not secure 172.29.247.62:98...

HadoopOverviewDatanodesDatanode Volume FailuresSnapshotStartup ProgressUtilities

Overview 'hadoop-namenode:9000' (✓active)

Started:	Fri Mar 07 08:51:43 +0700 2025
Version:	3.4.1, r4d7825309348956336b8f06a08322b78422849b1
Compiled:	Wed Oct 09 21:57:00 +0700 2024 by mthakur from branch-3.4.1
Cluster ID:	CID-3e28bd4b-1e31-47c4-9300-979d5967571b
Block Pool ID:	BP-1878800960-192.168.2.204-1739979975544

Summary

Security is off.  
Safemode is off.  
162 files and directories, 44 blocks (44 replicated blocks, 0 erasure coded block groups) = 206 total filesystem object(s).  
Heap Memory used 83.6 MB of 160 MB Heap Memory. Max Heap Memory is 871.5 MB.  
Non Heap Memory used 86.31 MB of 88.75 MB Committed Non Heap Memory. Max Non Heap Memory is <unbounded>.

6. Melihat status data nodes

Namenode information

Not secure 172.29.247.62:98...

HadoopOverviewDatanodesDatanode Volume FailuresSnapshotStartup ProgressUtilities

3

Disk usage of each DataNode (%)

In operation

DataNode State: All

Show: 25 entries

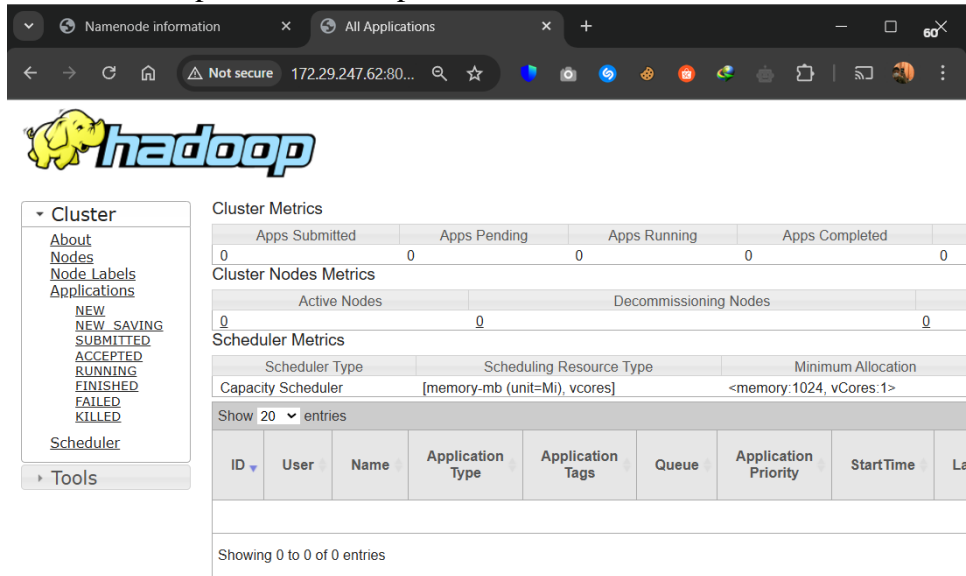
Search:

Node	Http Address	Last contact	Last Block Report	Used	Non DFS Used	Capacity	Blocks	Block pool used	Block pool usage StdDev	Version
✓/default-rack/hadoop-datanode1:9866 (192.168.2.204:9866)	http://hadoop-datanode1:9864	2s	34m	113.79 MB	9.11 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1
✓/default-rack/hadoop-datanode2:9866 (192.168.2.205:9866)	http://hadoop-datanode2:9864	2s	324m	113.79 MB	9.15 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1
✓/default-rack/hadoop-datanode3:9866 (192.168.2.206:9866)	http://hadoop-datanode3:9864	0s	352m	113.79 MB	9.11 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1

Showing 1 to 3 of 3 entries

Previous1Next

## 7. Melihat status pemrosesan MapReduce



The screenshot shows the Hadoop web interface in a browser. The address bar indicates the URL is 172.29.247.62:80... The interface includes the Hadoop logo and a sidebar with navigation links: Cluster, About, Nodes, Node Labels, Applications, NEW, NEW\_SAVING, SUBMITTED, ACCEPTED, RUNNING, FINISHED, FAILED, KILLED, and Scheduler. The main content area displays Cluster Metrics, Cluster Nodes Metrics, and Scheduler Metrics. The Cluster Metrics table shows 0 Apps Submitted, 0 Apps Pending, 0 Apps Running, and 0 Apps Completed. The Cluster Nodes Metrics table shows 0 Active Nodes and 0 Decommissioning Nodes. The Scheduler Metrics table shows Capacity Scheduler, Scheduling Resource Type [memory-mb (unit=Mi), vcores], and Minimum Allocation <memory:1024, vCores:1>. Below these tables is a table with columns: ID, User, Name, Application Type, Application Tags, Queue, Application Priority, StartTime, and La. The table is currently empty, showing 0 to 0 of 0 entries.

Apps Submitted	Apps Pending	Apps Running	Apps Completed
0	0	0	0

Active Nodes	Decommissioning Nodes
0	0

Scheduler Type	Scheduling Resource Type	Minimum Allocation
Capacity Scheduler	[memory-mb (unit=Mi), vcores]	<memory:1024, vCores:1>

ID	User	Name	Application Type	Application Tags	Queue	Application Priority	StartTime	La
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Showing 0 to 0 of 0 entries

## 8. Hadoop Version

```
hadoopuser@hadoop-namenode:~$ hadoop version
Hadoop 3.4.1
Source code repository https://github.com/apache/hadoop.git -r 4d7825309348956336b8f06a08322b78422849b1
Compiled by mthakur on 2024-10-09T14:57Z
Compiled on platform linux-x86_64
Compiled with protoc 3.23.4
From source with checksum 7292fe9dba5e2e44e3a9f763fce3e680
This command was run using /usr/local/hadoop/share/hadoop/common/hadoop-common-3.4.1.jar
hadoopuser@hadoop-namenode:~$
```

## 9. Membuat Folder

```
hadoopuser@hadoop-namenode:~$ hadoop fs -mkdir /RioBagasHermawan
hadoopuser@hadoop-namenode:~$
```

## 10. Melihat Isi Folder

```
hadoopuser@hadoop-namenode:~$ hadoop fs -ls /
Found 35 items
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:33 /05_FebbyMathelda
drwxr-xr-x - hadoopuser supergroup 0 2025-03-07 16:30 /07_HafizhMuhammadRabbani
drwxr-xr-x - hadoopuser supergroup 0 2025-03-08 14:24 /08_HilmiIrfanN
drwxr-xr-x - hadoopuser supergroup 0 2025-02-28 10:25 /09_MayaMelanesia
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 08:04 /10_MochammadZakaroAlFajri
drwxr-xr-x - hadoopuser supergroup 0 2025-03-07 19:10 /11_muhammadiqbalmuhtaram
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 08:58 /12_MuhammadIrsyadDany
drwxr-xr-x - hadoopuser supergroup 0 2025-02-27 01:59 /13_Fifi
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 03:32 /13_Hanief
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 03:33 /13_HaniefMochsin
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 08:58 /14NurhalizaAnindyaPutri
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 08:56 /15_RhanilhamFadlillatulRamadhan
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 08:05 /18_MulkiHakim
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:53 /18_ShasiaSasaSalsabyLa
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 07:44 /19_Rendy
drwxr-xr-x - hadoopuser supergroup 0 2025-03-01 09:04 /20_SukmaBagusWahasdwicka
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:40 /21_TriyanaDewiFatmawati
drwxr-xr-x - hadoopuser supergroup 0 2025-03-10 09:12 /BimoCahyoKusumo_4K-RPL
drwxr-xr-x - hadoopuser supergroup 0 2025-03-08 14:19 /EkaKrisnaFeriaN
drwxr-xr-x - hadoopuser supergroup 0 2025-03-02 20:30 /EntFladda
drwxr-xr-x - hadoopuser supergroup 0 2025-03-10 09:10 /Frankie-Steinlie_4K-RPL
drwxr-xr-x - hadoopuser supergroup 0 2025-03-08 14:16 /MuhammadRifky
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 07:41 /RiFkiFakhrudin
drwxr-xr-x - hadoopuser supergroup 0 2025-03-10 13:48 /RioBagasHermawan
drwxr-xr-x - hadoopuser supergroup 0 2025-02-28 15:08 /SIB-3D
drwxr-xr-x - hadoopuser supergroup 0 2025-02-28 06:30 /TI-3A
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 03:15 /TI-3B
drwxr-xr-x - hadoopuser supergroup 0 2025-02-24 04:08 /TI-3E
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 03:36 /TI_3C
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:39 /TriyanaDewiFatmawati
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 08:24 /asyifa
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 04:29 /hsycoba
drwxr-xr-x - hadoopuser supergroup 0 2025-03-07 07:34 /spark-logs
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 08:39 /syifa
drwxr-xr-x - hadoopuser supergroup 0 2025-03-09 08:26 /yunhasnawa
hadoopuser@hadoop-namenode:~$
```