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Kelas: SIB 3E

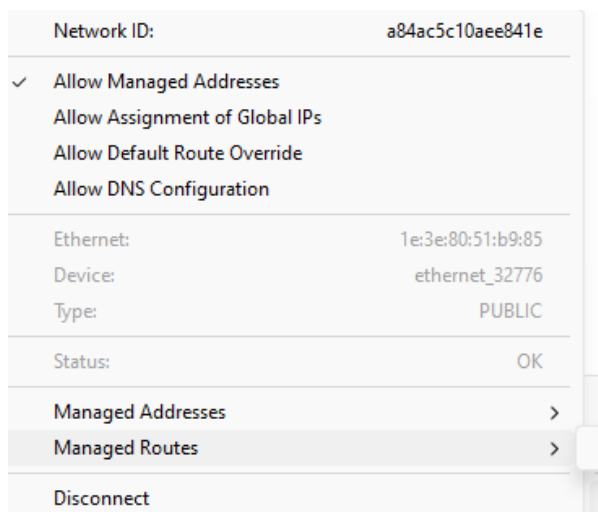
Absen: 06

NIM: 2241760016

LAPORAN PRAKTIKUM

Infrastruktur Big Data Bagian-1 (HDFS)

1. Bergabung ke Jaringan VPN



2. Konfigurasi VPN Client

Jawab:

- Melakukan ping IP 172.29.253.67

```
PS C:\Users\angel putri> ping 172.29.253.67

Pinging 172.29.253.67 with 32 bytes of data:
Reply from 172.29.253.67: bytes=32 time=5ms TTL=64
Reply from 172.29.253.67: bytes=32 time=5ms TTL=64
Reply from 172.29.253.67: bytes=32 time=5ms TTL=64
Reply from 172.29.253.67: bytes=32 time=5ms TTL=64
```

- Mengakses cluster hadoop

```
hadoopuser@172.29.247:~$ ssh hadoopuser@172.29.247.62
PS C:\Users\angel putri> ssh hadoopuser@172.29.247.62
hadoopuser@172.29.247.62's password:
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 Tue Mar 11 04:38:58 AM UTC 2025

System load:  0.38               Processes:    154
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%

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: Tue Mar 11 04:38:58 2025 from 172.29.192.252
```

- Cek status name node

```
Last login: Tue Mar 11 04:38:58 2025 from 172.29.192.252
hadoopuser@hadoop-namenode:~$ jps
38176 Jps
1699 SecondaryNameNode
1878 ResourceManager
1455 NameNode
hadoopuser@hadoop-namenode:~$ hadoop-w
```

- Melihat status data notes

← → ↻ 🔒 Not secure 172.29.247.62:9870/dfshealth.html#tab-overview

Hadoop

Overview

Datanodes

Datanode Volume Failures

Snapshot

Startup Progress

Utilities ▾

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.

171 files and directories, 44 blocks (44 replicated blocks, 0 erasure coded block groups) = 215 total filesystem object(s).

Heap Memory used 65.91 MB of 162.5 MB Heap Memory. Max Heap Memory is 871.5 MB.

Non Heap Memory used 88.61 MB of 90.75 MB Committed Non Heap Memory. Max Non Heap Memory is <unbounded>

- Melihat status data notes

DataNode State <div>All</div>		Show <div>25</div> entries		Search: <div></div>						
Node	Http Address	Last contact	Last Block Report	Used	Non DF S Used	Capacity	Blocks	Block pool used	Block pool usage StdDev	Version
<div><div></div><div>default-rack/hadoop-datanode1.9866</div><div>(192.168.2.204.9866)</div></div>	http://hadoop-datanode1.9864	2s	227m	113.79 MB	9.11 GB	9.74 GB <div></div>	44	113.79 MB (1.14%)	0%	3.4.1
<div><div></div><div>default-rack/hadoop-datanode2.9866</div><div>(192.168.2.205.9866)</div></div>	http://hadoop-datanode2.9864	2s	157m	113.79 MB	9.11 GB	9.74 GB <div></div>	44	113.79 MB (1.14%)	0%	3.4.1
<div><div></div><div>default-rack/hadoop-datanode3.9866</div><div>(192.168.2.206.9866)</div></div>	http://hadoop-datanode3.9864	2s	185m	113.79 MB	9.11 GB	9.74 GB <div></div>	44	113.79 MB (1.14%)	0%	3.4.1

- Melihat status pemrosesan MapReduce

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⚠ Not secure

172.29.247.62:8088/cluster

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Log

All Applications

Apps Pending	0	Apps Running	0	Apps Completed	0	Containers Running		Used Resources	<memory 0 B, vCores 0>	Total Resources	<memory 0 B, vCores 0>	Reserved Resources	<memory 0 B, vCores 0>	Physical Mem Used %	0	Physical vCores U	0																								
Decommissioning Nodes			0			Decommissioned Nodes			0			Lost Nodes			0			Unhealthy Nodes			0			Rebooted Nodes			0			Shutdown Nodes			0								
Scheduling Resource Type			[memory-mb (unit=Mi), vcores]			Minimum Allocation			<memory 1024, vCores 1>			Maximum Allocation			<memory 5192, vCores 4>			Maximum Cluster Application Priority			0			Scheduler Busy %			0			RM Dispatcher EventQueue Size			0			Scheduler Dispatcher EventQueue					
Search:																																									
Application Type	Application Tags	Queue	Application Priority	StartTime	LaunchTime	FinishTime	State	FinalStatus	Running Containers	Allocated CPU vCores	Allocated Memory MB	Allocated GPUs	Reserved CPU vCores	Reserved Memory MB	Reserved GPUs	% of Queue	% of Cluster	Progress	Tracking UI																						
No data available in table																																									

First

Previous

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3. Melihat versi hadoop

Jawab:

```
1455 NameNode
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
```

4. Membuat folder

Jawab:

```

drwxr-xr-x - hadoopuser supergroup 0 2025-03-09 00:20 /yumnashawa
hadoopuser@hadoop-namenode:~$ hadoop fs -mkdir /06_AngeliaAnna
hadoopuser@hadoop-namenode:~$ hadoop fs -ls /
Found 45 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:50 /03_AgtaFadjrinAminullah
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:38 /04_AgungNugroho
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:38 /05_Al bani
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:33 /05_FebbyMathelda
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:58 /06_AngeliaAnna
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 2025-03-11 04:53 /09_FitriaNurSholikah
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 2025-03-11 04:41 /11_hilmy
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_SukmaBagusWahasdwika
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:40 /21_TriyanaDewiFatmawati
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:37 /AgungNugroho
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 2025-03-11 04:44 /HertinNurhayati
drwxr-xr-x - hadoopuser supergroup 0 2025-03-08 14:16 /MuhammadRifky
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:39 /NaufalPutra
drwxr-xr-x - hadoopuser supergroup 0 2025-02-26 07:41 /RifkiFakhrudin
drwxr-xr-x - hadoopuser supergroup 0 2025-03-10 13:48 /RioBagasHermawan

```

5. Melihat folder yang ada

Jawab:

```

hadoopuser@hadoop-namenode:~$ hadoop fs -ls /
Found 45 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:50 /03_AgtaFadjrinAminullah
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:38 /04_AgungNugroho
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:38 /05_Al bani
drwxr-xr-x - hadoopuser supergroup 0 2025-02-25 07:33 /05_FebbyMathelda
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:58 /06_AngeliaAnna

```

```

hadoopuser@hadoop-namenode:~$ hadoop fs -ls /SIB-3E/
Found 14 items
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:49 /SIB-3E/03_AgtaFadjrinAminullah
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:57 /SIB-3E/04_AgungNugroho
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:48 /SIB-3E/05_Al baniRajataMalik
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 05:28 /SIB-3E/06_AngeliaAnna
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 05:08 /SIB-3E/07_DimasRosyidin
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:59 /SIB-3E/09_FitriaNurSholikah
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:51 /SIB-3E/10_HertinNurhayati
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:47 /SIB-3E/11_HilmyZakyy
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:47 /SIB-3E/12_FikriSetiawan
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:59 /SIB-3E/13_MuhammadIvanYodaBellamy
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 05:02 /SIB-3E/15_NaufalPutra
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:51 /SIB-3E/16_RegaDaneWijayanta
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:57 /SIB-3E/18_SyavaApriliaP
drwxr-xr-x - hadoopuser supergroup 0 2025-03-11 04:46 /SIB-3E/19_ZanuarAldiSyahputra
hadoopuser@hadoop-namenode:~$

```