



Mata Kuliah : Big Data
Program Studi : D4 – Sistem Informasi Bisnis
Semester : 6

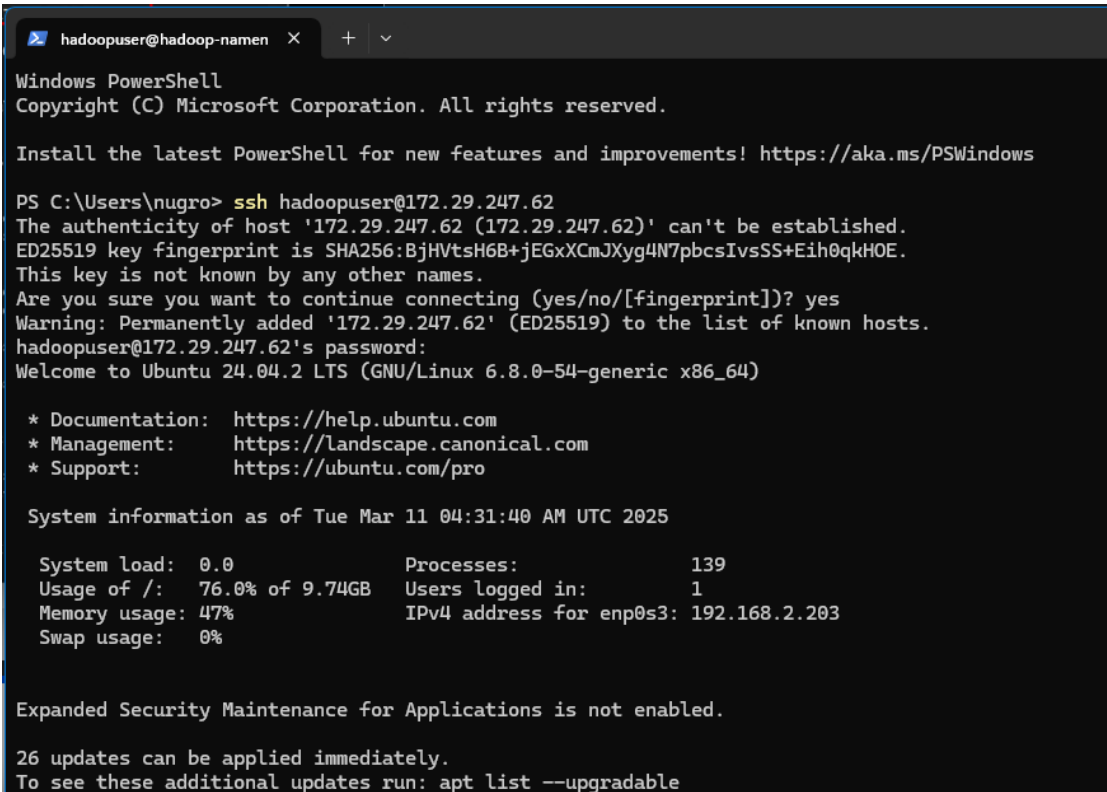
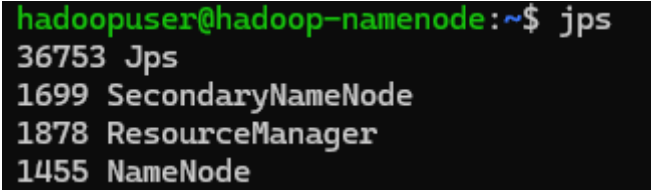
Kelas : SIB-3E
NIM : 2241760135
Nama : Agung Nugroho
Jobsheet Ke- : 01

Laporan Jobsheet

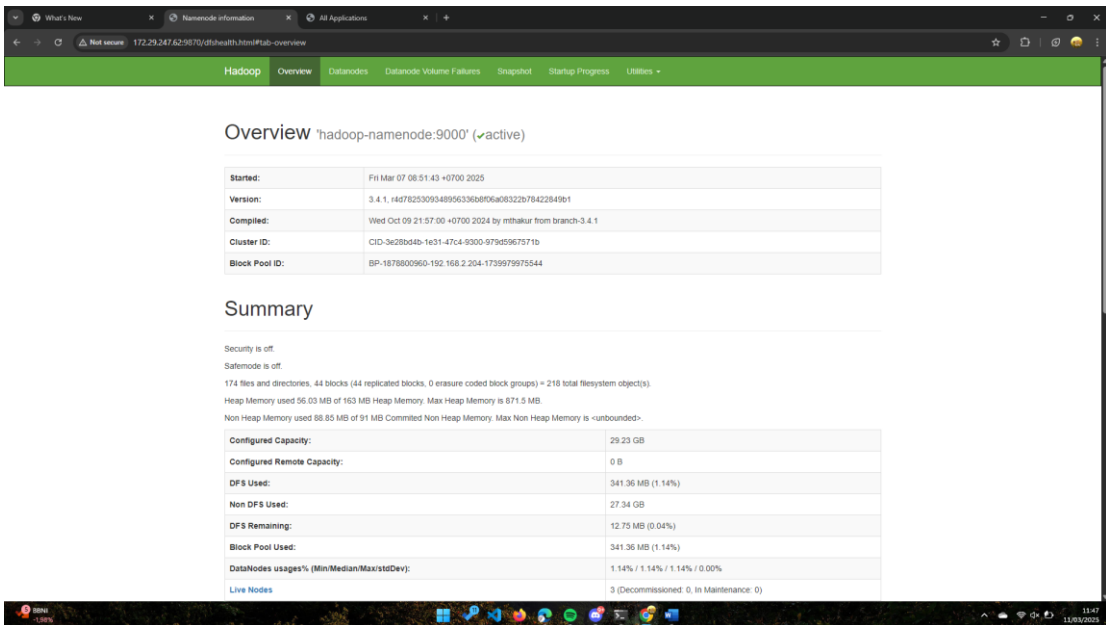
Praktikum Ke-1 – Mengakses Cluster Hadoop

Langkah	Jawaban/Deskripsi
1	Untuk mengakses suatu cluster Hadoop, sekali lagi, Anda hanya perlu terhubung dengan name-node-nya saja.
2	Ketika komputer Anda sudah terhubung dengan VPN cluster Hadoop, maka Anda dapat mencoba untuk terhubung dengan name node melalui SSH.
3	Disini saya menggunakan Windows PowerShell



	 <pre>hadoopuser@hadoop-namenode X + v Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved. Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows PS C:\Users\nugro> ssh hadoopuser@172.29.247.62 The authenticity of host '172.29.247.62 (172.29.247.62)' can't be established. ED25519 key fingerprint is SHA256:BjHVtshH6B+jEGxXCmJXyg4N7pbcsIvsSS+Eih0qkHOE. This key is not known by any other names. Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added '172.29.247.62' (ED25519) to the list of known hosts. 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 04:31:40 AM UTC 2025 System load: 0.0 Processes: 139 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</pre>
4	Jika anda berhasil terhubung, maka di terminal Anda, prompt-nya akan berganti menjadi: <code>hadoopuser@hadoop-namenode</code>
5	Ketikan perintah “ <code>jps</code> ”
6	Maka akan ditampilkan status mesin saat ini yang bertugas sebagai name node.  <pre>hadoopuser@hadoop-namenode:~\$ jps 36753 Jps 1699 SecondaryNameNode 1878 ResourceManager 1455 NameNode</pre>
7	Anda dapat melihat status data nodes saat ini melalui GUI Web yang dapat diakses melalui alamat: <code>http://<IP_NameNode>:9870/dfshealth.html</code>





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

Started:	Fri Mar 07 08:51:43 +0700 2025
Version:	3.4.1, 14d782530954895633606f06a09322b7842284961
Compiled:	Wed Oct 09 21:57:00 +0700 2024 by mthakur from branch-3.4.1
Cluster ID:	CID-3e28d4b-1e31-47c4-9300-979d5967571b
Block Pool ID:	BP-1878800960-192.168.2.204-1739979975544

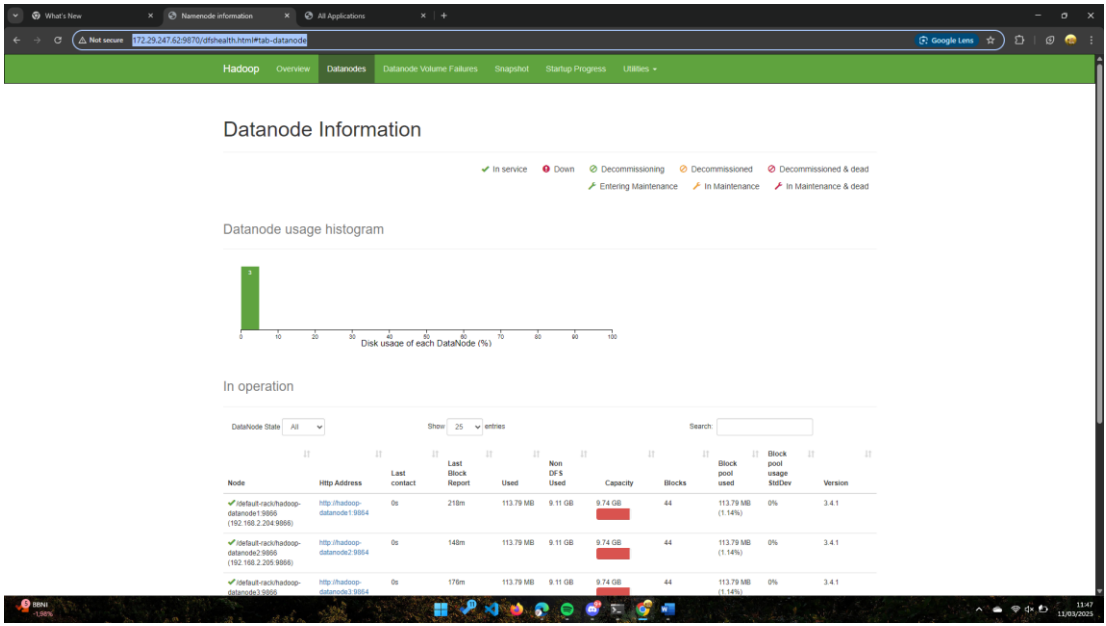
Summary

Security is off.
Safemode is off.
174 files and directories, 44 blocks (44 replicated blocks, 0 erasure coded block groups) = 218 total filesystem object(s).
Heap Memory used 56.03 MB of 163 MB Heap Memory. Max Heap Memory is 871.5 MB.
Non Heap Memory used 88.85 MB of 91 MB Committed Non Heap Memory. Max Non Heap Memory is -unbounded-.

Configured Capacity:	29.23 GB
Configured Remote Capacity:	0 B
DFS Used:	341.36 MB (1.14%)
Non DFS Used:	27.34 GB
DFS Remaining:	12.75 MB (0.04%)
Block Pool Used:	341.36 MB (1.14%)
DataNodes usage% (Min/Median/Max/stdDev):	1.14% / 1.14% / 1.14% / 0.00%

Live Nodes: 3 (Decommissioned: 0, In Maintenance: 0)

8 Klik menu Datannodes untuk melihat informasi data node yang ada pada cluster.



Datanode Information

✓ In service ⬇ Down ⬇ Decommissioning ⬇ Decommissioned ⬇ Decommissioned & dead
✓ Entering Maintenance ⬇ In Maintenance ⬇ In Maintenance & dead

Datanode usage histogram

In operation

Node	Http Address	Last contact	Last Block Report	Used	Non DFS Used	Capacity	Blocks	Block pool used	Block pool usage statDev	Version
✓ /default-rack/hadoop-datanode1-9966 (192.168.2.204:9966)	http://hadoop-datanode1-9966	0s	218m	113.79 MB	9.11 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1
✓ /default-rack/hadoop-datanode2-9966 (192.168.2.205:9966)	http://hadoop-datanode2-9966	0s	148m	113.79 MB	9.11 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1
✓ /default-rack/hadoop-datanode3-9966	http://hadoop-datanode3-9966	0s	176m	113.79 MB	9.11 GB	9.74 GB	44	113.79 MB (1.14%)	0%	3.4.1

9 Situs yang sebelumnya terkait dengan penyimpanan data (HDFS) untuk pemrosesan, ada GUI Web yang lain. Anda dapat mengaksesnya melalui browser Anda dengan mengetikkan alamat:

http://<IP_NameNode>:8088?cluster



Praktikum Ke-2 – Perintah Dasar

Langkah	Jawaban/Deskripsi
1	<p>Setelah berhasil mengakses Hadoop dan melihat-lihat GUI Web HDFS dan MapReduce berikutnya waktunya mencoba sedikit perintah dasar pada Hadoop.</p> <p>Perintah-perintah tersebut adalah:</p> <ul style="list-style-type: none">• Melihat versi Hadoop• Membuat direktori• Melihat direktori
2	<p>Melihat versi Hadoop</p> <p>Ketikkan:</p> <ul style="list-style-type: none">• <code>hadoop version</code> <pre>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</pre>
3	<p>Membuat Folder</p> <ul style="list-style-type: none">• Ketikkan perintah:



	<p>hadoop fs -mkdir/<NamaFolder></p> <ul style="list-style-type: none">Nama folder jangan ada spasi <p>Disarankan menggunakan CamelCase</p> <ul style="list-style-type: none">“/” adalah direktori teratas alias root directory. <p>Semua folder yang dibuat harus selalu berada di bawahnya</p> <pre>hadoopuser@hadoop-namenode:~\$ hadoop fs -mkdir /04_AgungNugroho</pre>
4	<p>Melihat folder-folder yang Ada.</p> <ul style="list-style-type: none">Ketikkan: <pre>hadoop fs -ls /</pre> <pre>hadoopuser@hadoop-namenode:~\$ hadoop fs -ls / Found 44 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 2025-03-07 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_FitriaNurSholikhah 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_hilmv</pre>