



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

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Kelas : SIB  
NIM : 2241760094  
Nama : Muhammad Ivan Yoda Bellamy  
Jobsheet Ke- : 1

## Laporan Jobsheet

### Mengakses Cluster Hadoop

| Langkah | Jawaban/Deskripsi  |
|---------|--|
| 1       | Untuk mengakses suatu cluster Hadoop, sekalilagi, Anda hanya perlu terhubung dengan nama 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       | <p>Jika Anda di macOS/Linux:</p> <ul style="list-style-type: none"><li>• Buka terminal dan ketikkan perintah: <code>ssh <a href="mailto:hadoopuser@172.29.253.67">hadoopuser@172.29.253.67</a></code></li><li>• Masukkan password: <code>hadoop</code></li></ul> |
| 4       | Jika Anda di Windows, gunakan PowerShell atau (install) Putty.   |



|    |  |
|----|--|
| 5  | <pre>PS C:\Users\USER&gt; 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:BjHVtsH6B+jEGxXCmJXyg4N7pbcsIvsSS+Eih0qkH0E. 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 04:40:03 AM UTC 2025  System load:  0.82               Processes:           167 Usage of /:   76.0% of 9.74GB    Users logged in:    1 Memory usage: 48%               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 04:39:43 2025 from 172.29.194.24 hadoopuser@hadoop-namenode:~\$ jps</pre> |
| 6  | Mengakses Cluster Hadoop Cek Status Name Node  |
| 7  | Jika Anda berhasil terhubung, makadi terminal anda, prompt nya akan berganti menjadi:<br><br>• hadoopuser@hadoop namenode  |
| 8  | Ketikkan perintah “jps”  |
| 9  | Akan ditampilkan status mesin saat ini yang bertugas sebagai name node   |
| 10 | <pre>hadoopuser@hadoop-namenode:~\$ jps 38192 Jps 1699 SecondaryNameNode 1878 ResourceManager 1455 NameNode hadoopuser@hadoop-namenode:~\$</pre>   |



|                |   |          |                                |          |  |           |   |             |  |                |   |
|----------------|---|----------|--------------------------------|----------|--|-----------|---|-------------|--|----------------|---|
| 11             | Mengakses Cluster Hadoop Melihat Status Data Nodes  |          |                                |          |  |           |   |             |  |                |   |
| 12             | Anda dapat melihat status data nodes saat ini melalui GUI Web yang dapat diakses melalui alamat: • <a href="http://:9870/dfshealth.html">http:// :9870/dfshealth.html</a>   |          |                                |          |  |           |   |             |  |                |   |
| 13             | <div><div>Hadoop</div><div>OverviewDatanodesDatanode Volume FailuresSnapshotStartup ProgressUtilities ▾</div><div>Overview 'hadoop-namenode:9000' (✓active)</div><table><tr><td>Started:</td><td>Fri Mar 07 08:51:43 +0700 2025</td></tr><tr><td>Version:</td><td>3.4.1, r4d7825309348956336b8f06a08322b78422849b1</td></tr><tr><td>Compiled:</td><td>Wed Oct 09 21:57:00 +0700 2024 by mthakur from branch-3.4.1</td></tr><tr><td>Cluster ID:</td><td>CID-3e28bd4b-1e31-47c4-9300-979d5967571b</td></tr><tr><td>Block Pool ID:</td><td>BP-1878800960-192.168.2.204-1739979975544</td></tr></table></div> | 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 |
| 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   |          |                                |          |  |           |   |             |  |                |   |
| 14             | Klik menu Datanodes untuk melihat informasi data node yang ada pada cluster.  |          |                                |          |  |           |   |             |  |                |   |

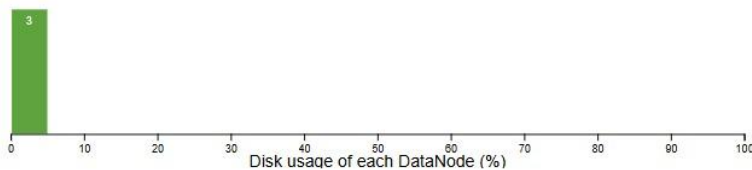


15

## Datanode Information

✓ In service    ⚠ Down    🔄 Decommissioning    ⚡ Decommissioned    ☠ Decommissioned & dead  
🔧 Entering Maintenance    🛠 In Maintenance    🛑 In Maintenance & dead

### Datanode usage histogram



### In operation

| DataNode State: <span>All</span> Show <span>25</span> entries Search: <input type="text"/> |   |              |                   |           |              |          |        |                   |                         |                              |
|--|---|--------------|-------------------|-----------|--------------|----------|--------|-------------------|-------------------------|------------------------------|
| 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<br>(192.168.2.204:9866)                              | <a href="http://hadoop-datanode1:9866">http://hadoop-datanode1:9866</a> | 0s           | 232m              | 113.79 MB | 9.11 GB      | 9.74 GB  | 44     | 113.79 MB (1.14%) | 0%                      | 3.4.1                        |
| ✓ /default-rack/hadoop-datanode2:9866<br>(192.168.2.205:9866)                              | <a href="http://hadoop-datanode2:9866">http://hadoop-datanode2:9866</a> | 0s           | 162m              | 113.79 MB | 9.11 GB      | 9.74 GB  | 44     | 113.79 MB (1.14%) | 0%                      | 3.4.1                        |
| ✓ /default-rack/hadoop-datanode3:9866<br>(192.168.2.206:9866)                              | <a href="http://hadoop-datanode3:9866">http://hadoop-datanode3:9866</a> | 0s           | 190m              | 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  |   |              |                   |           |              |          |        |                   |                         | Previous <span>1</span> Next |

16

MelihatStatus PemrosesanMapReduce


17

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://:8088/cluster>



18



All Applications

Cluster

About

Nodes

Node Labels

Applications

NEW

NEW SAVING

SUBMITTED

ACCEPTED

RUNNING

FINISHED

FAILED

KILLED

Scheduler

Tools

Cluster Metrics

|                |   |              |   |              |   |                |   |                    |   |                |                        |
|----------------|---|--------------|---|--------------|---|----------------|---|--------------------|---|----------------|------------------------|
| Apps Submitted | 0 | Apps Pending | 0 | Apps Running | 0 | Apps Completed | 0 | Containers Running | 0 | Used Resources | <memory:0 B, vCores:0> |
|----------------|---|--------------|---|--------------|---|----------------|---|--------------------|---|----------------|------------------------|

Cluster Nodes Metrics

|              |   |                       |   |                      |   |            |   |
|--------------|---|-----------------------|---|----------------------|---|------------|---|
| Active Nodes | 0 | Decommissioning Nodes | 0 | Decommissioned Nodes | 0 | Lost Nodes | 0 |
|--------------|---|-----------------------|---|----------------------|---|------------|---|

Scheduler Metrics

|                |                    |                          |                            |                    |                         |                    |                         |                             |   |
|----------------|--------------------|--------------------------|----------------------------|--------------------|-------------------------|--------------------|-------------------------|-----------------------------|---|
| Scheduler Type | Capacity Scheduler | Scheduling Resource Type | memory-mb (unit=M), vcores | Minimum Allocation | <memory:1024, vCores:1> | Maximum Allocation | <memory:8192, vCores:4> | Maximum Cluster Application | 0 |
|----------------|--------------------|--------------------------|----------------------------|--------------------|-------------------------|--------------------|-------------------------|-----------------------------|---|

Show 20 entries

| ID                         | User | Name | Application Type | Application Tags | Queue | Application Priority | StartTime | LaunchTime | FinishTime | State | FinalStatus | Running Containers | All |
|----------------------------|------|------|------------------|------------------|-------|----------------------|-----------|------------|------------|-------|-------------|--------------------|-----|
| No data available in table |      |      |                  |                  |       |                      |           |            |            |       |             |                    |     |

Showing 0 to 0 of 0 entries

### Sedikit Perintah Dasar

| Langkah | Jawaban/Deskripsi  |
|---------|--|
| 1       | Setelah Anda berhasil mengakses Hadoop dan melihat-lihat GUI Web HDFS dan MapReduce, berikutnya waktunya mencoba sedikit perintah dasar pada Hadoop  |
| 2       | Perintah-perintah tersebut adalah: <ul style="list-style-type: none"><li>• Melihat versi Hadoop</li><li>• Membuat direktori</li><li>• Melihat direktori</li></ul>  |
| 3       | Ketikkan: <ul style="list-style-type: none"><li>• <code>hadoopversion</code></li></ul>   |
| 4       | <pre>hadoopuser@hadoop-namenode:~\$ hadoop version Hadoop 3.4.1 Source code repository https://github.com/apache/hadoop.git -r 4d78253093489 56336b8f06a08322b78422849b1 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-comm on-3.4.1.jar</pre> |
| 5       | Membuat Folder   |
| 6       | <ul style="list-style-type: none"><li>• Ketikkan:</li><li>• <code>hadoop fs -mkdir / &lt;NamaFolder&gt;</code></li><li>• Nama folder jangan ada spasi.</li><li>• Disarankan menggunakan CamelCase.</li></ul>   |



|   |   |
|---|---|
|   | <ul style="list-style-type: none"><li>• “/” adalah direktori teratas alias root directory.</li><li>• Semua folder yang dibuat harus selalu berada di bawahnya.</li></ul>  |
| 7 | <pre>hadoopuser@hadoop-namenode:~\$ hadoop fs -mkdir /SIB-3E/MuhammadIvanYodaBellamy</pre>  |
| 8 | <p>Melihat Folder-folder yang Ada</p> <ul style="list-style-type: none"><li>• Ketikkan:</li></ul> <pre>hadoopfs -ls /</pre>   |
| 9 | <pre>hadoopuser@hadoop-namenode:~\$ hadoop fs -ls /SIB-3E Found 11 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 04:59 /SIB-3E/09_FitriaNurSholikhah 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 04:51 /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 drwxr-xr-x - hadoopuser supergroup      0 2025-03-11 04:59 /SIB-3E/MuhammadIvanYodaBellamy hadoopuser@hadoop-namenode:~\$</pre> |