

<b>Mata kuliah</b>	Big Data
<b>Materi</b>	02. Introducing Apache Hadoop
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## I. Bukti Hasil Screenshoot Instalasi Hadoop

- a. Cek versi java dengan menjalankan perintah **java -version** di cmd.

```
C:\Windows\System32>java -version
java 21.0.5 2024-10-15 LTS
Java(TM) SE Runtime Environment (build 21.0.5+9-LTS-239)
Java HotSpot(TM) 64-Bit Server VM (build 21.0.5+9-LTS-239, mixed mode, sharing)
```

- b. Cek versi Hadoop untuk memastikan bahwa Hadoop sudah berhasil terinstall

```
C:\Windows\System32>hadoop version
The filename, directory name, or volume label syntax is incorrect.
Hadoop 3.3.6
Source code repository https://github.com/apache/hadoop.git -r 1be78238728da9266a4f88195058f08fd012bf9c
Compiled by ubuntu on 2023-06-18T08:22Z
Compiled on platform linux-x86_64
Compiled with protoc 3.7.1
From source with checksum 5652179ad55f76cb287d9c633bb53bbd
This command was run using /C:/hadoop/share/hadoop/common/hadoop-common-3.3.6.jar
```

- c. Buka CMD. Kemudian ketik perintah **hdfs namenode -format** untuk memformat sistem file HDFS (Hadoop Distributed File System). Tujuannya : Menginisialisasi HDFS, Membersihkan Metadata, Persiapan Cluster Baru.

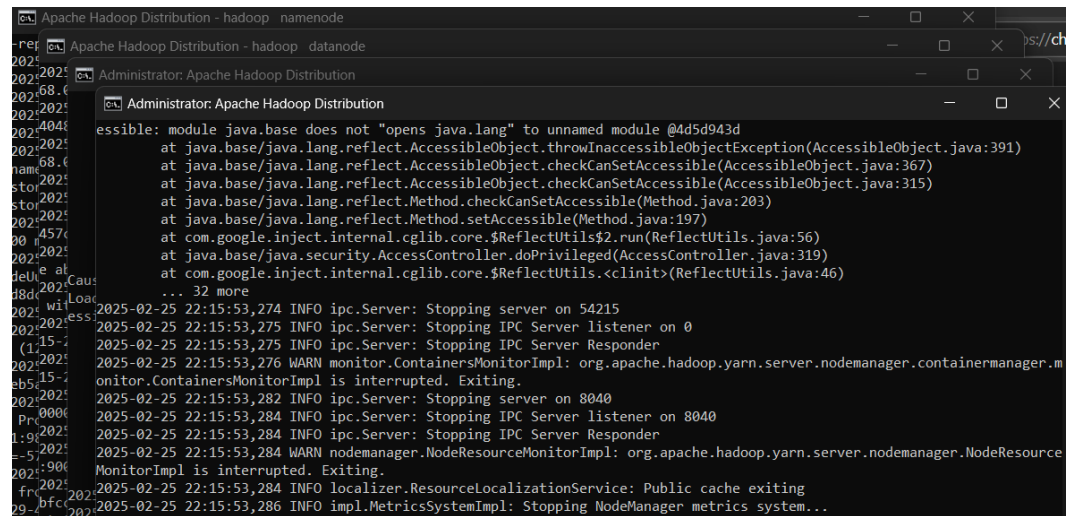
```
C:\Windows\System32>hdfs namenode -format
The filename, directory name, or volume label syntax is incorrect.
2025-02-25 22:13:39,721 INFO namenode.NameNode: STARTUP_MSG:
/*
*****
STARTUP_MSG: Starting NameNode
STARTUP_MSG: host = LAPTOP-H9VJ1IR7/192.168.0.16
STARTUP_MSG: args = [-format]
STARTUP_MSG: version = 3.3.6
STARTUP_MSG: classpath = C:\hadoop\etc\hadoop;C:\hadoop\share\hadoop\common;C:\hadoop\share\hadoop\common\lib\animal-s
niffer-annotations-1.17.jar;C:\hadoop\share\hadoop\common\lib\audience-annotations-0.5.0.jar;C:\hadoop\share\hadoop\comm
on\lib\avro-1.7.7.jar;C:\hadoop\share\hadoop\common\lib\checker-qual-2.5.2.jar;C:\hadoop\share\hadoop\common\lib\commons
-beanutils-1.9.4.jar;C:\hadoop\share\hadoop\common\lib\commons-cli-1.2.jar;C:\hadoop\share\hadoop\common\lib\commons-cod
ec-1.15.jar;C:\hadoop\share\hadoop\common\lib\commons-collections-3.2.2.jar;C:\hadoop\share\hadoop\common\lib\commons-co
mpress-1.21.jar;C:\hadoop\share\hadoop\common\lib\commons-configuration2-2.8.0.jar;C:\hadoop\share\hadoop\common\lib\com
mons-daemon-1.0.13.jar;C:\hadoop\share\hadoop\common\lib\commons-io-2.8.0.jar;C:\hadoop\share\hadoop\common\lib\commons-
lang3-3.12.0.jar;C:\hadoop\share\hadoop\common\lib\commons-logging-1.1.3.jar;C:\hadoop\share\hadoop\common\lib\commons-m
ath3-3.1.1.jar;C:\hadoop\share\hadoop\common\lib\commons-net-3.9.0.jar;C:\hadoop\share\hadoop\common\lib\commons-text-1.
10.0.jar;C:\hadoop\share\hadoop\common\lib\curator-client-5.2.0.jar;C:\hadoop\share\hadoop\common\lib\curator-framework-
5.2.0.jar;C:\hadoop\share\hadoop\common\lib\curator-recipes-5.2.0.jar;C:\hadoop\share\hadoop\common\lib\dnsjava-2.1.7.ja
r;C:\hadoop\share\hadoop\common\lib\failureaccess-1.0.jar;C:\hadoop\share\hadoop\common\lib\gson-2.9.0.jar;C:\hadoop\sha
re\hadoop\common\lib\guava-27.0-jre.jar;C:\hadoop\share\hadoop\common\lib\hadoop-annotations-3.3.6.jar;C:\hadoop\share\h
adoop\common\lib\hadoop-auth-3.3.6.jar;C:\hadoop\share\hadoop\common\lib\hadoop-shaded-guava-1.1.1.jar;C:\hadoop\share\h
adoop\common\lib\hadoop-shaded-protobuf_3_7-1.1.1.jar;C:\hadoop\share\hadoop\common\lib\httpclient-4.5.13.jar;C:\hadoop\
share\hadoop\common\lib\httpcore-4.4.13.jar;C:\hadoop\share\hadoop\common\lib\j2objc-annotations-1.1.jar;C:\hadoop\share\
hadoop\common\lib\jackson-annotations-2.12.7.jar;C:\hadoop\share\hadoop\common\lib\jackson-core-2.12.7.jar;C:\hadoop\sh
are\hadoop\common\lib\jackson-core-asl-1.9.13.jar;C:\hadoop\share\hadoop\common\lib\jackson-databind-2.12.7.1.jar;C:\had
oop\share\hadoop\common\lib\jackson-mapper-asl-1.9.13.jar;C:\hadoop\share\hadoop\common\lib\jakarta.activation-api-1.2.1
```

- d. Pindah atau masuk ke folder **cd C:\hadoop\sbin** kemudian ketik perintah **start-all.cmd**. Menjalankan perintah tersebut untuk mengawali semua layanan dan pengujian cluster skala kecil pada Hadoop di Windows sehingga akan memulai beberapa komponen seperti NameNode, DataNode, ResourceManager, dan NodeManager.

```
C:\Windows\System32>cd C:\hadoop\sbin

C:\hadoop\sbin>start-all.cmd
This script is Deprecated. Instead use start-dfs.cmd and start-yarn.cmd
The filename, directory name, or volume label syntax is incorrect.
The filename, directory name, or volume label syntax is incorrect.
starting yarn daemons
The filename, directory name, or volume label syntax is incorrect.
```

Akan muncul pop-up



```
Administrator: Apache Hadoop Distribution
2025-02-25 22:15:53,274 INFO ipc.Server: Stopping server on 54215
2025-02-25 22:15:53,275 INFO ipc.Server: Stopping IPC Server listener on 0
2025-02-25 22:15:53,275 INFO ipc.Server: Stopping IPC Server Responder
2025-02-25 22:15:53,276 WARN monitor.ContainersMonitorImpl: org.apache.hadoop.yarn.server.nodemanager.containermanager.m
onitor.ContainersMonitorImpl is interrupted. Exiting.
2025-02-25 22:15:53,282 INFO ipc.Server: Stopping server on 8040
2025-02-25 22:15:53,284 INFO ipc.Server: Stopping IPC Server listener on 8040
2025-02-25 22:15:53,284 INFO ipc.Server: Stopping IPC Server Responder
2025-02-25 22:15:53,284 WARN nodemanager.NodeResourceMonitorImpl: org.apache.hadoop.yarn.server.nodemanager.NodeResource
MonitorImpl is interrupted. Exiting.
2025-02-25 22:15:53,284 INFO localizer.ResourceLocalizationService: Public cache exiting
2025-02-25 22:15:53,286 INFO impl.MetricsSystemImpl: Stopping NodeManager metrics system...
```

- e. Setelah menjalankan perintah tersebut, ketik perintah **jps**(Java Virtual Machine Process Status) untuk memverifikasi status yang layanan Hadoop berjalan dengan baik

```
C:\hadoop\sbin>jps
16472 ResourceManager
4520 DataNode
5208 DataNode
12044 Jps
15404 NameNode
2716 NameNode
2988 NodeManager
```

## f. GUI di Browser Chrome

The screenshot shows a Chrome browser window with the address bar displaying 'localhost:9870/dfshealth.html#tab-overview'. The page has a green navigation bar with tabs: 'Hadoop', 'Overview' (selected), 'Datanodes', 'Datanode Volume Failures', 'Snapshot', 'Startup Progress', and 'Utilities'. The main content area is titled 'Overview 'localhost:9000' (✓active)'. It contains a table with metadata, a 'Summary' section with status text, and another table with capacity and usage statistics.

Started:	Tue Feb 25 22:15:46 +0700 2025
Version:	3.3.6, r1b678238728da0266a4f88195058f089d012b69c
Compiled:	Sun Jun 18 15:22:00 +0700 2023 by ubuntu from (HEAD detached at release-3.3.6-RC1)
Cluster ID:	CID-1d8dcd4a-468b-4485-8ccd-c504b54b31b7
Block Pool ID:	BP-100383055-192.168.0.16-1740488314726

### Summary

Security is off.  
Safemode is off.  
1 files and directories, 0 blocks (0 replicated blocks, 0 erasure coded block groups) = 1 total filesystem object(s).  
Heap Memory used 56.22 MB of 82 MB Heap Memory. Max Heap Memory is 1000 MB.  
Non Heap Memory used 54.99 MB of 56.69 MB Committed Non Heap Memory. Max Non Heap Memory is «unbounded».

Configured Capacity:	220.82 GB
Configured Remote Capacity:	0 B
DFS Used:	321 B (0%)
Non DFS Used:	201.87 GB
DFS Remaining:	18.95 GB (8.58%)
Block Pool Used:	321 B (0%)