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## Tugas 2 – Instalasi Hadoop

## Bukti Pengerjaan

- Perintah **hdfs namenode -format** : untuk memformat NameNode di Hadoop Distributed File System (HDFS)

```
C:\WINDOWS\system32\CMD >
C:\Users\TRIVANA DF>hdfs namenode -format
The filename, directory name, or volume label syntax is incorrect.
2025-02-24 23:54:35,106 INFO namenode.NameNode: STARTUP_MSG:
=====
STARTUP_MSG: Starting NameNode
STARTUP_MSG: host = LAPTOP-QU07L08/192.168.1.8
STARTUP_MSG: args = [-format]
STARTUP_MSG: version = 3.6.6
STARTUP_MSG: classpath = C:\hadoop\etc\hadoop.cfg;\hadoop\share\hadoop\common;\hadoop\share\hadoop\common\lib\animal-sniffer-annotations-1.17.jar;
C:\hadoop\share\hadoop\common\lib\audience-annotations-0.5.0.jar;\hadoop\share\hadoop\common\lib\avro-1.7.7.jar;\hadoop\share\hadoop\common\lib\checker-qual-2.5.2.jar;\hadoop\share\hadoop\common\lib\commons-beanutils-1.9.4.jar;\hadoop\share\hadoop\common\lib\commons-cli-1.2.jar;\hadoop\share\hadoop\common\lib\commons-codec-1.15.jar;\hadoop\share\hadoop\common\lib\commons-collections-3.2.2.jar;\hadoop\share\hadoop\common\lib\commons-compress-1.21.jar;\hadoop\share\hadoop\common\lib\commons-configuration-2.8.0.jar;\hadoop\share\hadoop\common\lib\commons-daemon-1.0.13.jar;\hadoop\share\hadoop\common\lib\commons-io-2.8.0.jar;\hadoop\share\hadoop\common\lib\commons-lang3-3.12.0.jar;\hadoop\share\hadoop\common\lib\commons-logging-1.3.jar;\hadoop\share\hadoop\common\lib\commons-math3-3.1.1.jar;\hadoop\share\hadoop\common\lib\commons-net-3.9.0.jar;\hadoop\share\hadoop\common\lib\commons-text-1.10.0.jar;\hadoop\share\hadoop\common\lib\curator-client-5.2.0.jar;\hadoop\share\hadoop\common\lib\curator-framework-5.2.0.jar;\hadoop\share\hadoop\common\lib\curator-recipes-5.2.0.jar;\hadoop\share\hadoop\common\lib\dnsjava-2.1.7.jar;\hadoop\share\hadoop\common\lib\doxia-core-1.9.0.jar;\hadoop\share\hadoop\common\lib\doxia-site-renderer-1.11.1.jar;\hadoop\share\hadoop\common\lib\guava-27.0-jre.jar;\hadoop\share\hadoop\common\lib\hadoop-annotation-api-1.2.1.jar;\hadoop\share\hadoop\common\lib\hadoop-auth-3.6.6.jar;\hadoop\share\hadoop\common\lib\httpclient-4.5.13.jar;\hadoop\share\hadoop\common\lib\httpcore-4.4.13.jar;\hadoop\share\hadoop\common\lib\jackson-annotations-1.1.jar;\hadoop\share\hadoop\common\lib\jackson-annotations-2.12.7.jar;\hadoop\share\hadoop\common\lib\jackson-core-2.12.7.jar;\hadoop\share\hadoop\common\lib\jackson-databind-2.12.7.1.jar;\hadoop\share\hadoop\common\lib\jackson-mapper-asl-1.9.13.jar;\hadoop\share\hadoop\common\lib\jakarta.activation-api-1.2.1.jar;\hadoop\share\hadoop\common\lib\javax.servlet-api-3.1.0.jar;\hadoop\share\hadoop\common\lib\jaxb-api-2.2.11.jar;\hadoop\share\hadoop\common\lib\jaxb-impl-2.2.3.1.jar;\hadoop\share\hadoop\common\lib\jcip-annotations-1.0.1.jar;\hadoop\share\hadoop\common\lib\jersey-core-1.19.4.jar;\hadoop\share\hadoop\common\lib\jersey-server-1.19.4.jar;\hadoop\share\hadoop\common\lib\jersey-servlet-1.19.4.jar;\hadoop\share\hadoop\common\lib\jetty-http-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-io-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-security-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-server-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-util-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-webapp-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jetty-xml-9.4.51.v20230217.jar;\hadoop\share\hadoop\common\lib\jsch-0.1.55.jar;\hadoop\share\hadoop\common\lib\jsp-api-2.1.jar;\hadoop\share\hadoop\common\lib\log4j-1.2.17.jar;\hadoop\share\hadoop\common\lib\log4j-api-2.17.2.jar;\hadoop\share\hadoop\common\lib\logback-classic-1.2.3.jar;\hadoop\share\hadoop\common\lib\logback-core-1.2.3.jar;\hadoop\share\hadoop\common\lib\mapdb-1.0.1.jar;\hadoop\share\hadoop\common\lib\minlog-1.3.1.jar;\hadoop\share\hadoop\common\lib\mongodb-driver-sync-4.8.1.jar;\hadoop\share\hadoop\common\lib\mybatis-3.5.13.jar;\hadoop\share\hadoop\common\lib\mybatis-generator-core-1.3.5.jar;\hadoop\share\hadoop\common\lib\netty-buffer-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-common-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-codec-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-codec-haproxy-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-codec-http-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-codec-http2-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-codec-memcache-4.1.89.Final.jar;\hadoop\share\hadoop\common\lib\netty-common\lib\net
=====
2025-02-24 23:54:37,785 INFO blockmanagement.BlockManager: maxNumBlockTolog = 1000
2025-02-24 23:54:37,866 INFO namenode.FSDirectory: GLOBAL serial map: bits=29 maxEntries=536870911
2025-02-24 23:54:37,866 INFO namenode.FSDirectory: USER serial map: bits=24 maxEntries=16777215
2025-02-24 23:54:37,866 INFO namenode.FSDirectory: GROUP serial map: bits=24 maxEntries=16777215
2025-02-24 23:54:37,866 INFO namenode.FSDirectory: XATTR serial map: bits=24 maxEntries=16777215
2025-02-24 23:54:37,963 INFO util.GSet: Computing capacity for map INodeMap
2025-02-24 23:54:37,982 INFO util.GSet: VM type = 64-bit
2025-02-24 23:54:37,994 INFO util.GSet: capacity = 2 * 1048576 entries
2025-02-24 23:54:37,998 INFO namenode.FSDirectory: ACLs enabled true
2025-02-24 23:54:37,998 INFO namenode.FSDirectory: POSIX ACL inheritance enabled true
2025-02-24 23:54:37,998 INFO namenode.FSDirectory: XATTR enabled true
2025-02-24 23:54:37,996 INFO namenode.NameNode: Caching file names occurring more than 10 times
2025-02-24 23:54:37,917 INFO snapshot.SnapshotManager: Loaded config captureOpenFiles: false, skipCaptureAccessTimeOnlyChange: false, snapshotDiffal
lowSnapRootDescendant: true, maxSnapshotLimit: 65536
2025-02-24 23:54:37,997 INFO snapshot.SnapshotManager: Skiplist is disabled
2025-02-24 23:54:37,991 INFO util.GSet: Computing capacity for map cachedBlocks
2025-02-24 23:54:37,992 INFO util.GSet: VM type = 64-bit
2025-02-24 23:54:37,992 INFO util.GSet: capacity = 25% max memory 889 MB = 2.2 MB
2025-02-24 23:54:37,993 INFO util.GSet: capacity = 2 * 18 = 262144 entries
2025-02-24 23:54:38,007 INFO metrics.TopMetrics: NNTOP conf: dfs.namenode.top.window.num.buckets = 10
2025-02-24 23:54:38,011 INFO metrics.TopMetrics: NNTOP conf: dfs.namenode.top.num.users = 10
2025-02-24 23:54:38,011 INFO metrics.TopMetrics: NNTOP conf: dfs.namenode.top.windows.minutes = 1,5,25
2025-02-24 23:54:38,019 INFO namenode.FSNamesystem: Retry cache on namenode is enabled
2025-02-24 23:54:38,019 INFO namenode.FSNamesystem: Retry cache will use 0.03 of total heap and retry cache entry expiry time is 600000 millis
2025-02-24 23:54:38,024 INFO util.GSet: Computing capacity for map NameNodeEntryCache
2025-02-24 23:54:38,025 INFO util.GSet: VM type = 64-bit
2025-02-24 23:54:38,026 INFO util.GSet: 0.029999999329447746% max memory 889 MB = 273.1 KB
2025-02-24 23:54:38,026 INFO util.GSet: capacity = 2 * 15 = 32768 entries
2025-02-24 23:54:38,075 INFO namenode.FSImage: Allocated new BlockPoolId: BP-1592687732-192.168.1.8-7f04d4e678665
2025-02-24 23:54:38,075 INFO namenode.Storage: Stage directory C:\hadoop\data\nameNode has been successfully formatted.
2025-02-24 23:54:38,192 INFO namenode.FSImageFormatProtobuf: Saving image file C:\hadoop\data\nameNode\current\fsimage.chkpt_00000000000000000000 usin
g no compression
2025-02-24 23:54:38,456 INFO namenode.FSImageFormatProtobuf: Image file C:\hadoop\data\nameNode\current\fsimage.chkpt_00000000000000000000 of size 402
bytes saved in 0 seconds
2025-02-24 23:54:38,482 INFO namenode.NNStorageRetentionManager: Going to retain 1 images with txid == 0
2025-02-24 23:54:38,522 INFO namenode.FSNamesystem: Stopping services started for active state
2025-02-24 23:54:38,523 INFO namenode.FSNamesystem: Stopping services started for standby state
2025-02-24 23:54:38,530 INFO namenode.FSImage: FSImageSaver clean checkpoint: txid=0 when meet shutdown.
2025-02-24 23:54:38,530 INFO namenode.NameNode: SHUTDOWN_MSG:
=====
SHUTDOWN_MSG: Shutting down NameNode at LAPTOP-QU07L08/192.168.1.8
=====
```

- **jps** : (Java Process Status) untuk menampilkan daftar proses Java yang sedang berjalan di sistem. Ini berguna untuk mengecek apakah layanan Hadoop sudah aktif atau tidak.

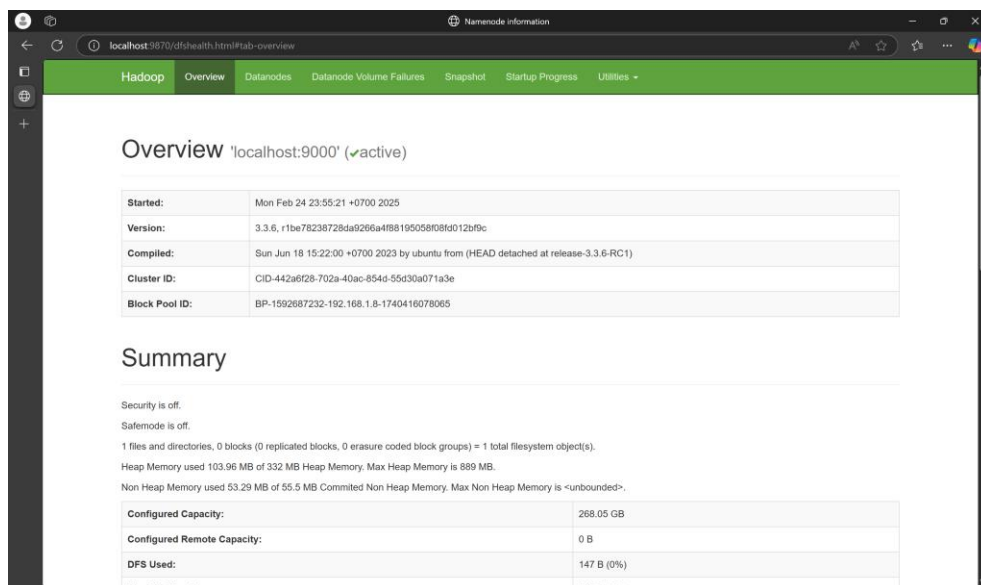
```

C:\WINDOWS\system32\CMD
C:\Users\TRIVANA DF>cd c:/hadoop
c:\hadoop>cd 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.

c:\hadoop\sbin>jps
16480 NameNode
6320 ResourceManager
25944 NodeManager
3800 Jps
11260 DataNode
c:\hadoop\sbin>

```

- **localhost:9870** : untuk mengakses HDFS Web UI (NameNode), yang menampilkan status HDFS, kapasitas penyimpanan, daftar DataNode, dan file system HDFS.



- **localhost:8088** : untuk mengakses YARN Resource Manager Web UI (scheduler tugas Hadoop), yang menampilkan status job, node yang tersedia, dan antrian tugas.

The screenshot displays the Hadoop YARN Resource Manager Web UI. The browser address bar shows `localhost:8088/cluster`. The page features the Hadoop logo and a sidebar menu with the following items: Cluster, About, Nodes, Node Labels, Applications, NEW, NEW SAVING, SUBMITTED, ACCEPTED, RUNNING, FINISHED, FAILED, KILLED, Scheduler, and Tools. The main content area is titled "All Appli" and contains several sections:

- Cluster Metrics:** A table with columns: Apps Submitted (0), Apps Pending (0), Apps Running (0), Apps Completed (0), Containers Running (0), and Used Resources (<memory:0 B, vCores:0>).
- Cluster Nodes Metrics:** A table with columns: Active Nodes (0), Decommissioning Nodes (0), and Decommissioned Nodes (0).
- Scheduler Metrics:** A table with columns: Scheduler Type (Capacity Scheduler), Scheduling Resource Type (memory-mb (unit=M), vcores), and Minimum Allocation (<memory:1024, vCores:1>).
- Applications Table:** A table with columns: ID, User, Name, Application Type, Application Tags, Queue, Application Priority, StartTime, LaunchTime, FinishTime, State, and FinalStatus. The table is currently empty, showing "Showing 0 to 0 of 0 entries".