Exp.No:8 210701109

SET UP A SINGLE HADOOP CLUSTER AND SHOW THE PROCESS USING WEB UI

AIM:

To set up a single hadoop cluster and show the process using web UI.

PROCEDURE:

1. Install Java 8: Download Java 8 from the link:

http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

- a. Set environmental variables:
 - i. User variable:
 - Variable: JAVA_HOME
 - Value: C:/java
 - ii. System variable:
 - Variable: PATHValue: C:/java/bin
- b. Check on cmd, see below:

```
Command Prompt

Microsoft Windows [Version 10.0.19045.4780]

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C:\Users\user>cd \

C:\>java -version
java version "1.8.0_202"

Java(TM) SE Runtime Environment (build 1.8.0_202-b08)

Java HotSpot(TM) 64-Bit Server VM (build 25.202-b08, mixed mode)

C:\>
```

- **2. Download Hadoop-3.3.6**: download Hadoop 3.3.6 from the link: http://www.apache.org/dyn/closer.cgi/hadoop/common/hadoop-3.3.6/hadoop-3.3.6.tar.gz
 - a. Put extracted Hadoop-3.3.6 files into C drive. Note that do not put these extracted files into Cdrive, where you installed your Windows.
 - b. **Download** "hadoop-common-3.3.6-bin-master" from the link: https://github.com/amihalik/hadoop-common-3.3.6-bin/tree/master/bin. You will see 11 filesthere. Paste all these files into the "bin" folder of Hadoop-3.3.6.
 - c. Create a "data" folder inside Hadoop-3.3.6, and also create two more folders in the "data" folderas "data" and "name."
 - d. Create a folder to store temporary data during execution of a project, such as "D:/hadoop/temp."
 - e. Create a log folder, such as "D:/hadoop/userlog"
 - f. Go to Hadoop-3.3.6 \rightarrow etc \rightarrow Hadoop and edit four files:
 - i. core-site.xml
 - ii. hdfs-site.xml
 - iii. mapred-site.xml
 - iv. yarn-site.xml

```
core-site.xml:
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<configuration>
cproperty>
  <name>fs.defaultFS</name>
  <value>hdfs://localhost:9000</value>
 </configuration>
hdfs-site.xml:
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<configuration>
 cproperty>
  <name>dfs.replication</name>
  <value>1</value>
 cproperty>
  <name>dfs.namenode.name.dir</name>
  <value>file:///C:/hadoop-3.3.6/data/namenode
 cproperty>
  <name>dfs.datanode.data.dir</name>
  <value>file:///C:/hadoop-3.3.6/data/datanode</value>
 </configuration>
mapred-site.xml:
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<configuration>
cproperty>
  <name>mapreduce.framework.name</name>
  <value>yarn</value>
 </configuration>
```

yarn-site.xml:

```
<?xml version="1.0"?>
<configuration>
configuration>

chame
yarn.nodemanager.aux-services

cvalue
mapreduce_shuffle
c/property>
</configuration>
```

g. Go to the location: "Hadoop-3.3.6 \rightarrow etc \rightarrow hadoop," and edit "hadoop-env.cmd" by writingset JAVA_HOME=C:/java/jdk1.8.0_202

h. Set environmental variables: Do: My computer → Properties → Advance system settings →

Advanced → Environmental variables

i. User variables:

Variable: HADOOP_HOMEValue: C:/hadoop-3.3.6

ii. System variable

• Variable: Path

• Value: C:/hadoop-3.3.6/bin C:/hadoop-3.3.6/sbin

C:/hadoop-3.3.6/share/hadoop/common/*

C:/hadoop-3.3.6/share/hadoop/hdfs

C:/hadoop-3.3.6/share/hadoop/hdfs/lib/* C:/hadoop-3.3.6/share/hadoop/hdfs/* C:/hadoop-3.3.6/share/hadoop/yarn/lib/*

C:/hadoop-3.3.6/share/hadoop/yarn/*

C:/hadoop-3.3.6/share/hadoop/mapreduce/lib/* C:/hadoop-3.3.6/share/hadoop/mapreduce/* C:/hadoop-3.3.6/share/hadoop/common/lib/*

i. Check on cmd; see below.

```
C:\Windows\System32>hadoop version

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-3.3.6/share/hadoop/common/hadoop-common-3.3.6.jar
```

- j. **Format name-node**: On cmd go to the location "Hadoop-2.6.0→bin" by writing on cmd "cdhadoop-2.6.0.\bin" and then "hdfs namenode –format"
- k. Start Hadoop. Go to the location: "D:\hadoop-2.6.0\sbin." Run the following files as administrator "start-all.cmd".
- 1. Go to your web browser and search "localhost:9870" to access Hadoop NameNode. For Resource Manager, search "localhost:8088".

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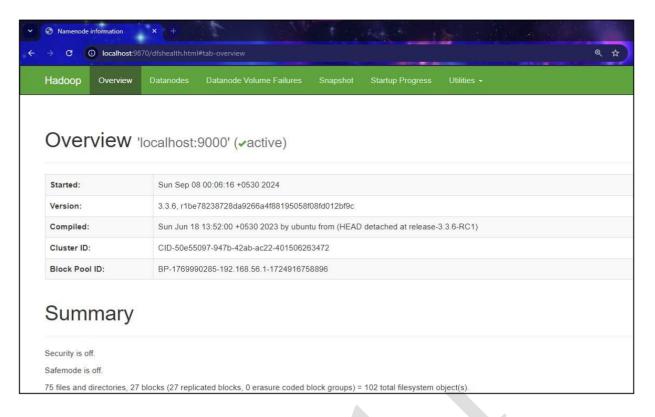
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.4780]
(c) Microsoft Corporation. All rights reserved.

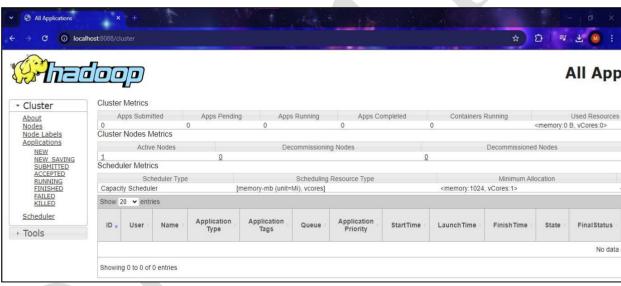
C:\WINDOWS\system32>start-all.cmd
This script is Deprecated. Instead use start-dfs.cmd and start-yarn.cmd
starting yarn daemons

C:\WINDOWS\system32>jps
11104 Jps
12868 DataNode
11288 ResourceManager
12456 NodeManager
5596 NameNode

C:\WINDOWS\system32>

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| Comparison Description Descr
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RESULT:

The set up of a single hadoop cluster and show the process using web UI on Windows system have been successfully completed.