Automated Setup & Installation Guide

for

Hadoop Single Node Cluster Environment

(Pseudo Distributed mode)

Developed & Tested

by

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Context:-

We will be using automated script for installation & configurations of "Hadoop/Spark Single Node Cluster" on Ubuntu (18.04 LTS) Linux .

Installation from Ubuntu console

```
$ sudo apt-get install unzip
```

```
$ wget
https://github.com/rajuchal/hadoop_light_cloud/archive/master.zip
```

```
$ unzip master.zip
```

```
Archive:  hadoop_light_cloud.zip
  inflating: hadoop_light_cloud/core-site.xml
 extracting: hadoop_light_cloud/dataset.zip
  inflating: hadoop_light_cloud/hbase-env.sh
  inflating: hadoop_light_cloud/hbase-site.xml
  inflating: hadoop_light_cloud/hdfs-site.xml
  inflating: hadoop_light_cloud/hive-config.sh
  inflating: hadoop_light_cloud/hive-env.sh
  inflating: hadoop_light_cloud/hive-site.xml
 extracting: hadoop_light_cloud/hosts
  inflating: hadoop_light_cloud/install.sh
  inflating: hadoop_light_cloud/mapred-site.xml
 extracting: hadoop_light_cloud/masters
  inflating: hadoop_light_cloud/my.cnf
 extracting: hadoop_light_cloud/regionservers
 extracting: hadoop_light_cloud/slaves
  inflating: hadoop_light_cloud/spark-defaults.conf
  inflating: hadoop_light_cloud/spark-env.sh
  inflating: hadoop_light_cloud/yarn-site.xml
```

```
$ mv hadoop_light_cloud-master hadoop_light_cloud
```

```
$ cd hadoop_light_cloud/
```

```
$ chmod 755 install.sh
```

$ ./install.sh

```
mysql: [Warning] Using a password on the command line interface can be insecure.
mysql: [Warning] Using a password on the command line interface can be insecure.
mysql: [Warning] Using a password on the command line interface can be insecure.
mysql: [Warning] Using a password on the command line interface can be insecure.
mysql: [Warning] Using a password on the command line interface can be insecure.
 metastore_db @MySQL server  created
/home/ubuntu/bigdata
Dowloading Hadoop
Dowloading Spark
```

```
20/07/22 11:28:05 INFO scheduler.OutputCommitCoordinator$OutputCommitCoordinatorEndpoint: OutputCommitCoordinator stopped!
20/07/22 11:28:05 INFO spark.SparkContext: Successfully stopped SparkContext
20/07/22 11:28:05 INFO util.ShutdownHookManager: Shutdown hook called
20/07/22 11:28:05 INFO util.ShutdownHookManager: Deleting directory /tmp/spark-f44cd999-1054-4a89-8a47-d3b886839bbf
20/07/22 11:28:05 INFO util.ShutdownHookManager: Deleting directory /tmp/spark-6c4fbb6c-8975-4654-b9e8-841d1cb6699b
 Your environment is ready
```

[Note :- it will take 15 minutes to complete the installations]

$ cd

$ clear

$ source .bashrc

$ jps

```
7. 54.209.143.114 (ubuntu)    8. 54.209.143.114    9. 54.209.143.114 (1)
ubuntu@ip-172-31-59-56:~$ jps
10000 DataNode
9811 NameNode
10227 SecondaryNameNode
12531 Jps
10950 Master
10392 ResourceManager
10568 NodeManager
11086 Worker
ubuntu@ip-172-31-59-56:~$
```

$ hdfs dfs -ls

Found 1 items

drwxr-xr-x - ubuntu supergroup 0 2020-07-22 11:27 wordcount

```
ubuntu@ip-172-31-68-92:~$ ls bigdata/
cassandra  hadoop  hbase  hive  java  kafka  mongodb  mysql-connector  pig  sbt  scala  spark  sqoop
ubuntu@ip-172-31-68-92:~$
```

$ pyspark --master spark://localhost:7077

```
Python 3.6.9 (default, Apr 18 2020, 01:56:04)
[GCC 8.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
20/07/22 11:31:31 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
Welcome to
      ____              __
     / __/__  ___ _____/ /__
    _\ \/ _ \/ _ `/ __/  '_/
   /__ / .__/\_,_/_/ /_/\_\   version 2.4.5
      /_/

Using Python version 3.6.9 (default, Apr 18 2020 01:56:04)
SparkSession available as 'spark'.
>>>
```

>>> quit()

ubuntu@ip-172-31-68-92:~$ spark-shell --master spark://localhost:7077

```
20/07/22 11:33:19 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
Spark context Web UI available at http://ip-172-31-68-92.ec2.internal:4040
Spark context available as 'sc' (master = spark://localhost:7077, app id = app-20200722113326-0002).
Spark session available as 'spark'.
Welcome to
      ____              __
     / __/__  ___ _____/ /__
    _\ \/ _ \/ _ `/ __/  '_/
   /___/ .__/\_,_/_/ /_/\_\   version 2.4.5
      /_/

Using Scala version 2.11.12 (Java HotSpot(TM) 64-Bit Server VM, Java 1.8.0_131)
Type in expressions to have them evaluated.
Type :help for more information.
```

scala> :q

ubuntu@ip-172-31-68-92:~$

Stop All the Services

$ stop-dfs.sh

```
Stopping namenodes on [localhost]
localhost: stopping namenode
localhost: stopping datanode
Stopping secondary namenodes [0.0.0.0]
0.0.0.0: stopping secondarynamenode
```

$ stop-yarn.sh

```
stopping yarn daemons
stopping resourcemanager
localhost: stopping nodemanager
localhost: nodemanager did not stop gracefully after 5 seconds: killing with kill -9
no proxyserver to stop
```

```
$ stop-master.sh
```

```
stopping org.apache.spark.deploy.master.Master
```

```
$ stop-slaves.sh
```

```
localhost: stopping org.apache.spark.deploy.worker.Worker
```

```
$ jps
```

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Start All the Services

```
$ start-dfs.sh
```

```
Starting namenodes on [localhost]
localhost: starting namenode, logging to /home/ubuntu/bigdata/hadoop/logs/hadoop-ubuntu-namenode-ip-172-31-68-92.out
localhost: starting datanode, logging to /home/ubuntu/bigdata/hadoop/logs/hadoop-ubuntu-datanode-ip-172-31-68-92.out
Starting secondary namenodes [0.0.0.0]
0.0.0.0: starting secondarynamenode, logging to /home/ubuntu/bigdata/hadoop/logs/hadoop-ubuntu-secondarynamenode-ip-172-31-68-92.out
```

```
$ start-yarn.sh
```

```
starting yarn daemons
starting resourcemanager, logging to /home/ubuntu/bigdata/hadoop/logs/yarn-ubuntu-resourcemanager-ip-172-31-68-92.out
localhost: starting nodemanager, logging to /home/ubuntu/bigdata/hadoop/logs/yarn-ubuntu-nodemanager-ip-172-31-68-92.out
```

```
$ start-master.sh
```

```
starting org.apache.spark.deploy.master.Master, logging to /home/ubuntu/bigdata/spark/logs/spark-ubuntu-org.apache.spark.deploy.master.Master-1-ip-172-31-68-92.out
```

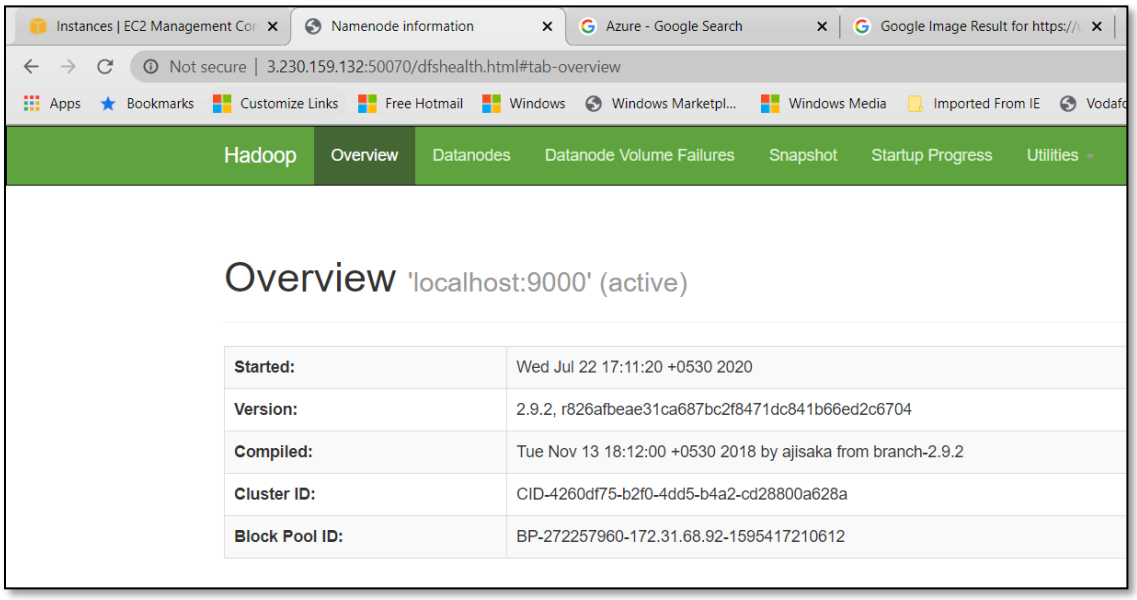
```
$ start-slaves.sh
```

```
localhost: starting org.apache.spark.deploy.worker.Worker, logging to /home/ubuntu/bigdata/spark/logs/spark-ubuntu-org.apache.spark.deploy.worker.Worker-1-ip-172-31-68-92.out
```

```
ubuntu@ip-172-31-68-92:~$ jps
```

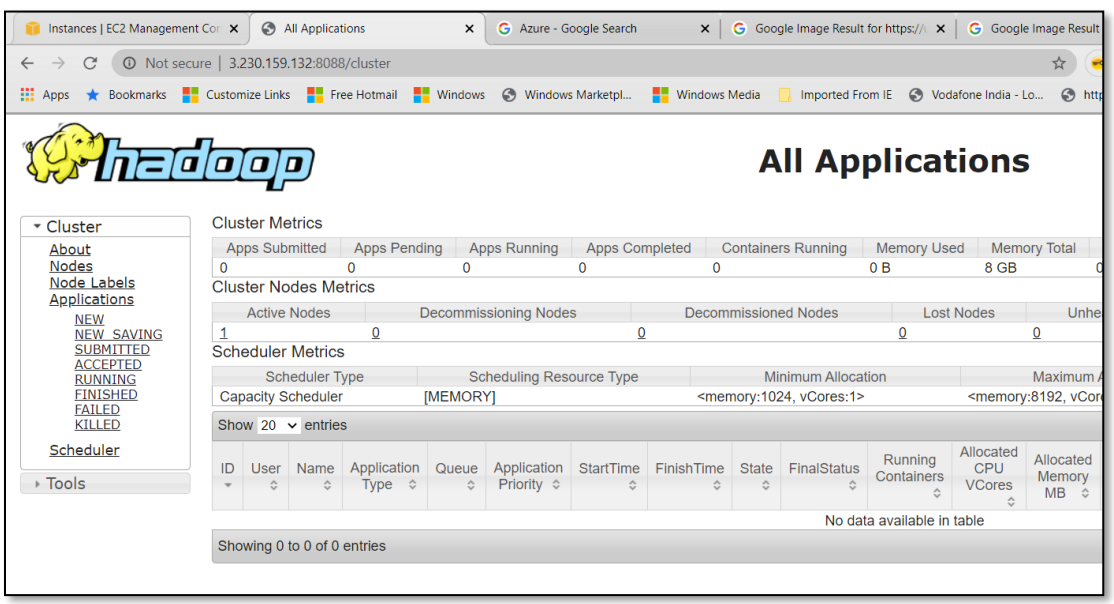
Check Namenode web interface

http://<public ip >:50070



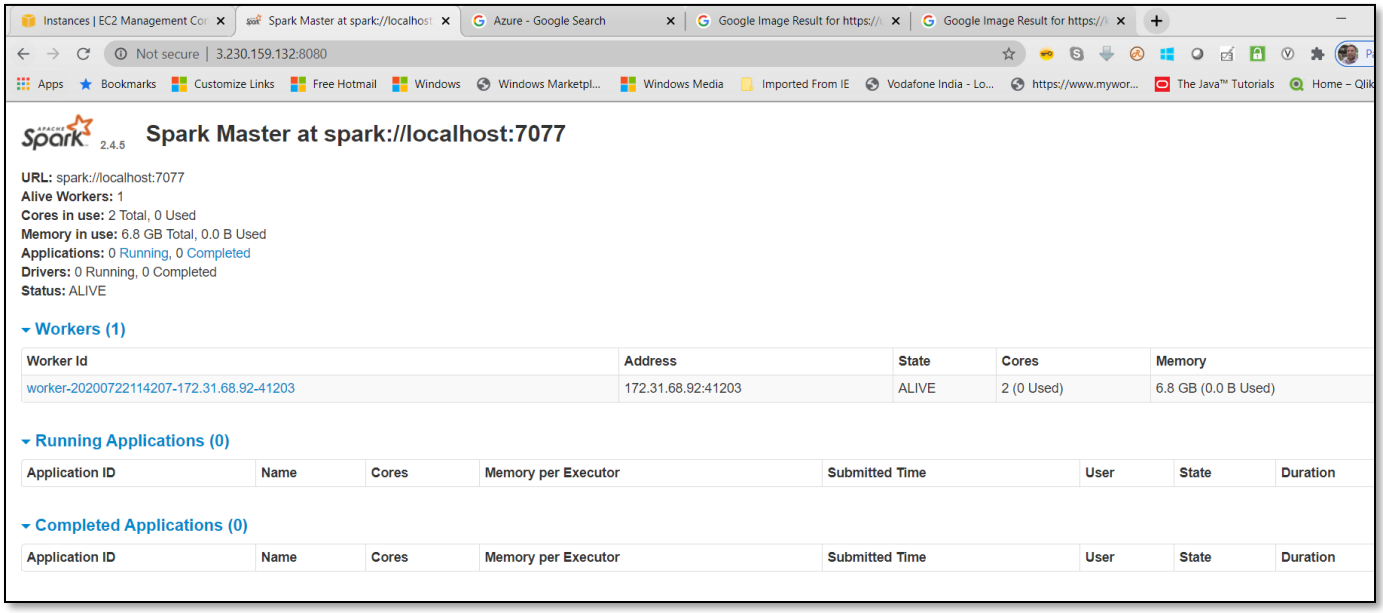
Check Resource Manager web interface

http://<public ip >:8088



Check Spark Master web interface

http://<public ip >:8080



Stop the Ubuntu Instance

```
$ sudo init 0
```