EXP NO 15:

Perform the basic configuration setup for Installing Hadoop 2.x like Creating the HDUSER and SSH localhost

Aim:

To configure a single node Hadoop cluster and create an user and test the SSH connection.

Procedure:

PROCEDURE

Step 1 – System Update

$ sudo apt-get update

Step 2 – Install Java and Set JAVA_HOME

//This first thing to do is to setup the webupd8 ppa on your system. Run the following command and proceed.

$ sudo apt-add-repository ppa:webupd8team/java

$ sudo apt-get update

//After setting up the ppa repository, update the package cache as well.

//Install the Java 8 installer

$ sudo apt-get install oracle-java8-installer

// After the installation is finished, Oracle Java is setup. Run the java command again to check the version and vendor.

[or]

$ sudo apt-get install default-jdk

$ java -version

Step 3 – Add a dedicated Hadoop user

$ sudo addgroup hadoop

$ sudo adduser --ingroup hadoop hduser

// Add hduser to sudo user group

$ sudo adduser hduser sudo

Step 4 – Install SSH and Create Certificates

$ sudo apt-get install ssh

$ su hduser

$ ssh-keygen -t rsa -P ""

// Set Environmental variables

$ cat $HOME/.ssh/id_rsa.pub >> $HOME/.ssh/authorized_keys

Step 5 – Check if SSH works

$ ssh localhost

Step 6 – Install Hadoop

// Extract Hadoop-2.7.2

$ sudo tar xvzf hadoop-2.7.2.tar.gz

// Create a folder ‘hadoop’ in /usr/local

$ sudo mkdir –p /usr/local/hadoop

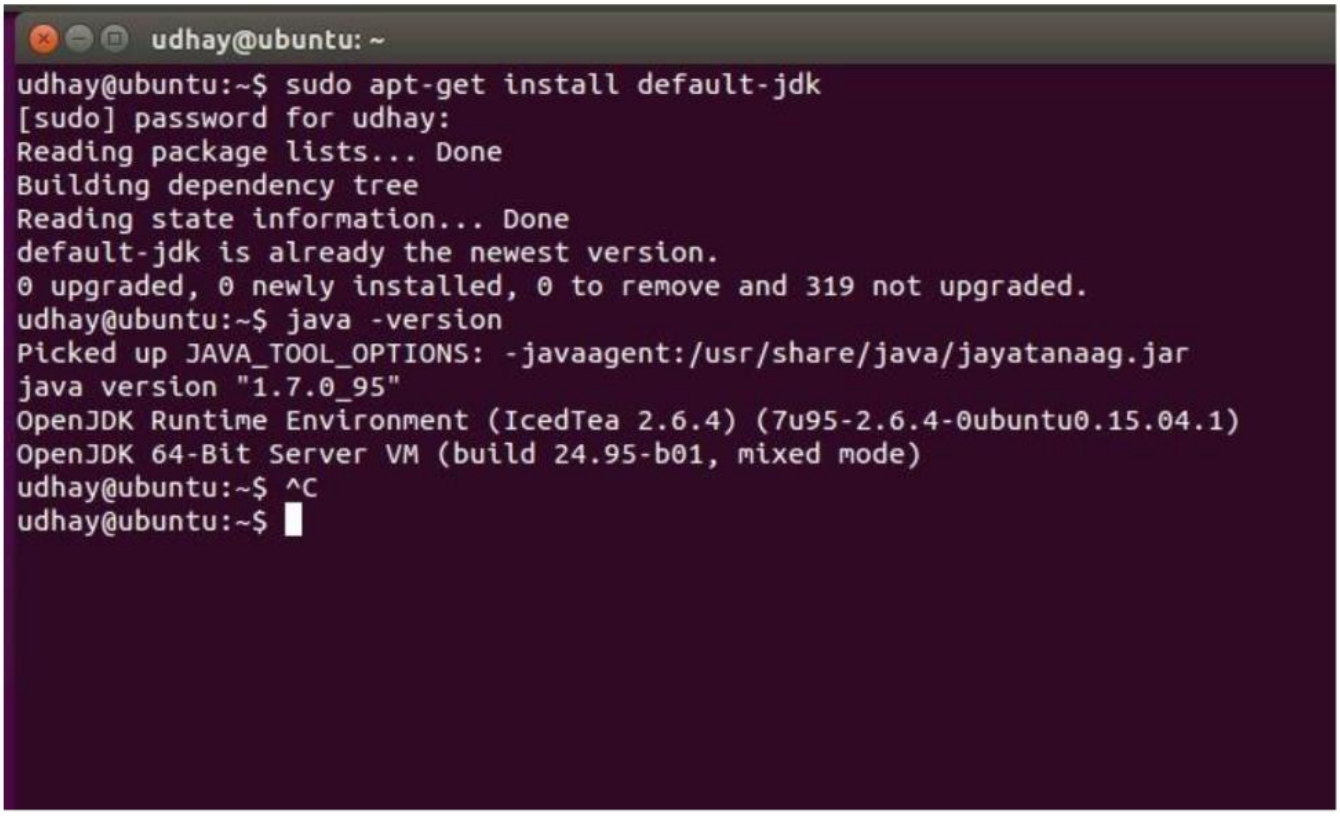
// Move the Hadoop folder to /usr/local/hadoop

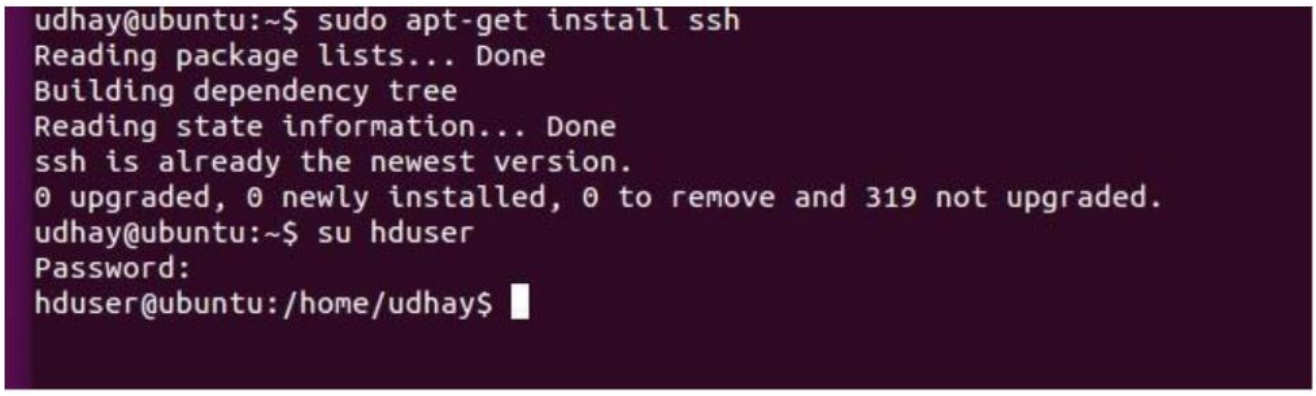
$ sudo mv hadoop-2.7.2 /usr/local/hadoop

// Assigning read and write access to Hadoop folder

$ sudo chown –R hduser:hadoop /usr/local/hadoop

Implementation:



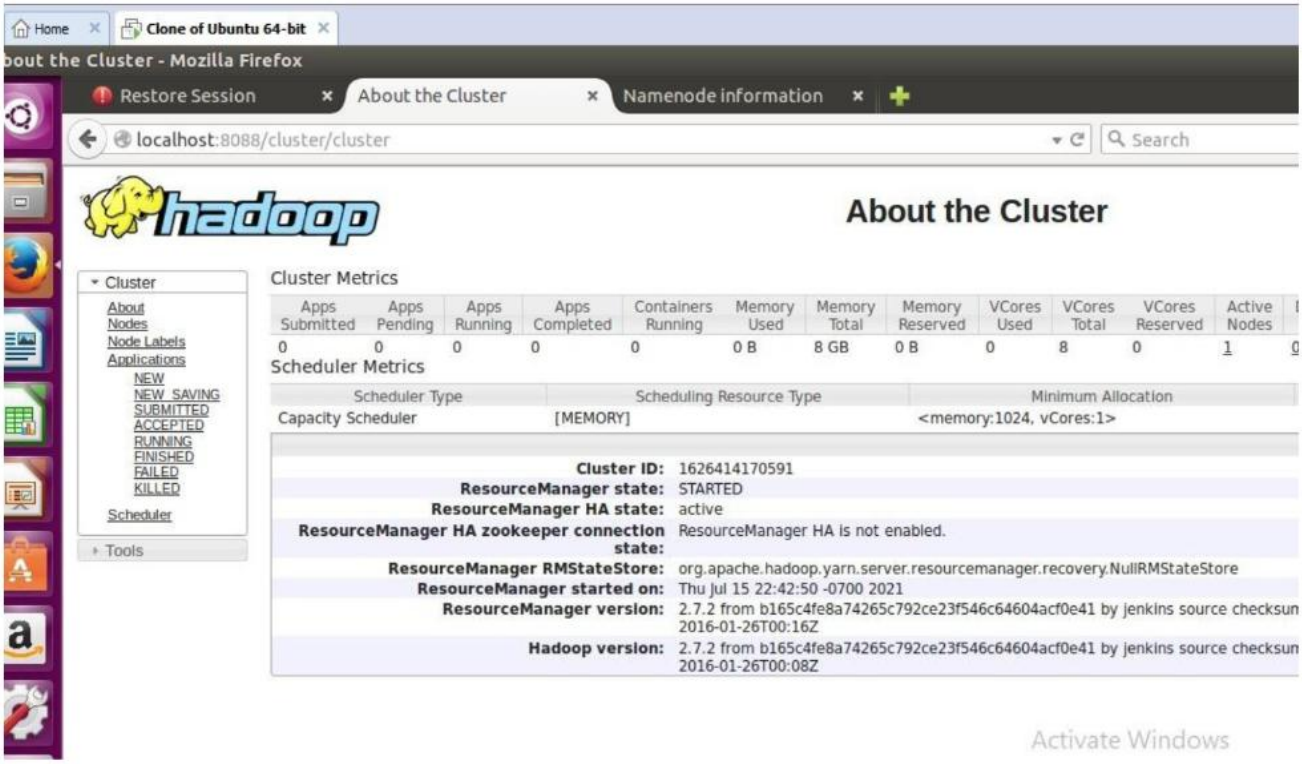


```
udhay@ubuntu:~$ su hduser
Password:
hduser@ubuntu:/home/udhay$ ssh-keygen -t rsa -P ""
Generating public/private rsa key pair.
Enter file in which to save the key (/home/hduser/.ssh/id_rsa):
/home/hduser/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Your identification has been saved in /home/hduser/.ssh/id_rsa.
Your public key has been saved in /home/hduser/.ssh/id_rsa.pub.
The key fingerprint is:
09:0f:15:f2:b2:b7:5e:11:1a:6c:d3:2f:c3:09:02:15 hduser@ubuntu
The key's randomart image is:
+---[RSA 2048]----+
|     ..E.o.      |
|      . = .      |
|       = B o     |
|        O B +    |
|       . S * .   |
|        . . +    |
|         . .     |
|        . .      |
|         .       |
+-----------------+
hduser@ubuntu:/home/udhay$
```

```
hduser@ubuntu:/home/udhay$ cat $HOME/.ssh/id_rsa.pub >> $HOME/.ssh/authorized_keys
hduser@ubuntu:/home/udhay$ ssh localhost
Welcome to Ubuntu 15.04 (GNU/Linux 3.19.0-84-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

Last login: Thu Jul 15 22:00:14 2021 from localhost
hduser@ubuntu:~$
```


Home
Clone of Ubuntu 64-bit
bout the Cluster - Mozilla Firefox
Restore Session
About the Cluster
Namenode information
localhost:8088/cluster/cluster
Search
hadoop
About the Cluster
Cluster
About
Nodes
Node Labels
Applications
NEW
NEW_SAVING
SUBMITTED
ACCEPTED
RUNNING
FINISHED
FAILED
KILLED
Scheduler
Tools
Cluster Metrics
Apps Submitted
Apps Pending
Apps Running
Apps Completed
Containers Running
Memory Used
Memory Total
Memory Reserved
VCores Used
VCores Total
VCores Reserved
Active Nodes
0 0 0 0 0 0 B 8 GB 0 B 0 8 0 1
Scheduler Metrics
Scheduler Type
Scheduling Resource Type
Minimum Allocation
Capacity Scheduler
[MEMORY]
<memory:1024, vCores:1>
Cluster ID: 1626414170591
ResourceManager state: STARTED
ResourceManager HA state: active
ResourceManager HA zookeeper connection state: ResourceManager HA is not enabled.
ResourceManager RMStateStore: org.apache.hadoop.yarn.server.resourcemanager.recovery.NullRMStateStore
ResourceManager started on: Thu Jul 15 22:42:50 -0700 2021
ResourceManager version: 2.7.2 from b165c4fe8a74265c792ce23f546c64604acf0e41 by jenkins source checksum 2016-01-26T00:16Z
Hadoop version: 2.7.2 from b165c4fe8a74265c792ce23f546c64604acf0e41 by jenkins source checksum 2016-01-26T00:08Z
Activate Windows