21.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:

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.

<p align="center">[or]</p>

 $ 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:

```
gurusai@lokesh-ponguru:~$ sudo addgroup hadoop_group
[sudo] password for gurusai:
Adding group `hadoop_group' (GID 1002) ...
Done.
gurusai@lokesh-ponguru:~$ sudo adduser --ingroup hadoop_group hduser1
Adding user `hduser1' ...
Adding new user `hduser1' (1002) with group `hadoop_group' ...
Creating home directory `/home/hduser1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for hduser1
Enter the new value, or press ENTER for the default
        Full Name []: gurusai
        Room Number []: 1
        Work Phone []: 1
        Home Phone []: 1
        Other []: 1
Is the information correct? [Y/n] y
```

```
gurusai@lokesh-ponguru:~$ sudo adduser hduser1 sudo
Adding user `hduser1' to group `sudo' ...
Adding user hduser1 to group sudo
Done.
gurusai@lokesh-ponguru:~$ su - hduser1
su: user - does not exist
gurusai@lokesh-ponguru:~$ su hduser1
Password:
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
$ ssh-keygen -I rsa -P ""
Generating public/private rsa key pair.

Enter file in which to save the key (/home/hduserI/.ssh/id_rsa):
Created directory '/home/hduser1/.ssh'.

Your identification has been saved in /home/hduser1/.ssh/id_rsa
Your pub1tc key has been s aved tn / hone/ hduser 1/ . ss h/ td_r s a . pub
The key ftnger p r tnt ts :

SHA256:TN/yI/b1T9LAbjHYYNspB3IVpRZKt+CuHKhAvNYg5bg hduser1gtokesh-ponguru

The key s r and ona r I tnage ts :

+ - - - [RSA 3072] +


  0.           0 0  = O|

                ^

+----[SHA256] ---- +
                              $ cat  $HOME/.ssh/td_rsa.pub >> $HOME/.ssh/a
uthorized_keys
```

```
$ ssh localhost
The
      au thenttctty   of hosI   'localhosI ( 127.0.0.1} ' can' t be estabttshed .

      key ftnge r pr tnt  ts SHA256:k2Flu L+D84hy rcwkDyX7H2o1Co+T8Xkev8n4zFx0X4w.

Are you  are you want to continue connecting (yes/no/[fingerprint])7 yes
Na r ntng    Permanently added                    the
 cone bo  Ubuntu 20 . 04.2 LTS ( GNU/ Ltnu x 5 . 4. 0 - 42- g ene r tc x86_64 }



            https // help  ubuntu
            can be tns tailed tnned tately .
 Management:       https :// land s cape . canonical. con
   Su          // ubuntu      ad vantage



476 updates

tnd tvtduat  files    are security updates.

To see these additional updates run: apt list --upgradable


Your Hardware Enablement Stack (HWE) is supported until April 2025.

The          included with the Ubuntu        are free
```

```
                    x et https://ntr rors.eSt0lnternet.tn/apache/h6JO0g/C0
PP0n/b6#O0g-3.2.2/Ldé0Og-3.2.2.tar. z
  -2021-07-22 00:10:3J--  https://Qtr rors . eS tOtf\t0rn0t. lh/d§dCb0/bbb00§/COP00h/b
b#00§-3.2.2 b6#O0§-3.2.2. tar . §z
k€'S0tVth  ntr r0rs.eSt0lnternet. ln (ntr r0rs.eSt0lnternet. tn)... é3.2J5.166.2Jé,
2403:89#O: 3:1::l
C0f\ngCfIh§ t0 Qtr rors.eStolnternet. tn (ntr rors.eSt0lnternet. tn)|cJ.255.166.254
: 443... C0f\h€'Ctgb .

t@00p-3.2.2.tar. z 16a[=-›               ] 62.88M  149KB/s   eta 38m20
```

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PP0n/bdé00§-3.2.2/hBé00§-3.2.2. tar . gz
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dé0O§-3.2.2 bdé00g- 3.2.2. far . gz
g0SO1V1n  ntr rors.eSt0tnternez. tfi  (ntr r0rs . eSt0tnternet. tn) ...... 43.25S. 166.254,
2403 : 8940 : 3 : 1:: f
C0f\n0Cttn§ t0 ntr rors.estotnternet. tn (ntr r0rs . eSt0lnternet. tn)|13.255.166.254
: 443......C0hn0ClE'é .

bdéO0g-3.2.2. ter. z 1001[==================›] 377.13a    121KB/s     tn 45n 26s

2021-07-22 00:56:02 (142 KB/S)      bdd00g-3.2.2.tar.gz   saved [395448622/3954486
22]
                          ş |
```

```
hadoop-3.2.2/etc/hadoop/hadoop-metrics2.properties
hadoop-3.2.2/etc/hadoop/core-site.xml
hadoop-3.2.2/etc/hadoop/kms-acls.xml
hadoop-3.2.2/etc/hadoop/hadoop-policy.xml
hadoop-3.2.2/etc/hadoop/yarn-env.sh
hadoop-3.2.2/etc/hadoop/ssl-server.xml.example
hadoop-3.2.2/etc/hadoop/kms-env.sh
hadoop-3.2.2/etc/hadoop/httpfs-signature.secret
hadoop-3.2.2/etc/hadoop/httpfs-env.sh
hadoop-3.2.2/etc/hadoop/yarnservice-log4j.properties
hadoop-3.2.2/etc/hadoop/yarn-env.cmd
hadoop-3.2.2/etc/hadoop/configuration.xsl
hadoop-3.2.2/etc/hadoop/log4j.properties
hadoop-3.2.2/etc/hadoop/yarn-site.xml
hadoop-3.2.2/etc/hadoop/httpfs-log4j.properties
hadoop-3.2.2/etc/hadoop/container-executor.cfg
hadoop-3.2.2/etc/hadoop/hdfs-site.xml
hadoop-3.2.2/etc/hadoop/shellprofile.d/
hadoop-3.2.2/etc/hadoop/shellprofile.d/example.sh
hadoop-3.2.2/etc/hadoop/mapred-env.sh
hadoop-3.2.2/etc/hadoop/hadoop-env.sh
hadoop-3.2.2/etc/hadoop/hadoop-user-functions.sh.example
hadoop-3.2.2/etc/hadoop/user_ec_policies.xml.template
hadoop-3.2.2/etc/hadoop/mapred-queues.xml.template
hadoop-3.2.2/etc/hadoop/httpfs-site.xml
hadoop-3.2.2/etc/hadoop/mapred-env.cmd
hadoop-3.2.2/etc/hadoop/kms-site.xml
hadoop-3.2.2/etc/hadoop/workers
hduser1@lokesh-ponguru:~$
```

```
hadoop-3.2.2/etc/hadoop/workers
hduser1@lokesh-ponguru:~$ sudo mkdir-p/usr/local/hadoop
sudo: mkdir-p/usr/local/hadoop: command not found
hduser1@lokesh-ponguru:~$ sudo mkdir -p/usr/local/hadoop
mkdir: invalid option -- '/'
Try 'mkdir --help' for more information.
hduser1@lokesh-ponguru:~$ sudo mkdir -p /usr/local/hadoop
hduser1@lokesh-ponguru:~$ sudo mv hadoop-3.2.2 /usr/local/hadoop
hduser1@lokesh-ponguru:~$ sudo chown -R hduser:hadoop /usr/local/hadoop
```