

EXP.NO:9

DATE:11/02/2023

**PERFORM THE BASIC CONFIGURATION SETUP FOR INSTALLING HADOOP
2.X LIKE CREATING THE HDUSER AND SSH LOCALHOST**

AIM:

To perform the basic configuration setup for installing hadoop 2.x
like creating the hduser and ssh localhost

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 xvfz hadoop-2.7.2.tar.gz
```

```
// Create a folder 'hadoop' in /usr/local
```

```
$ sudo mkdir -p /usr/local/hadoop
```

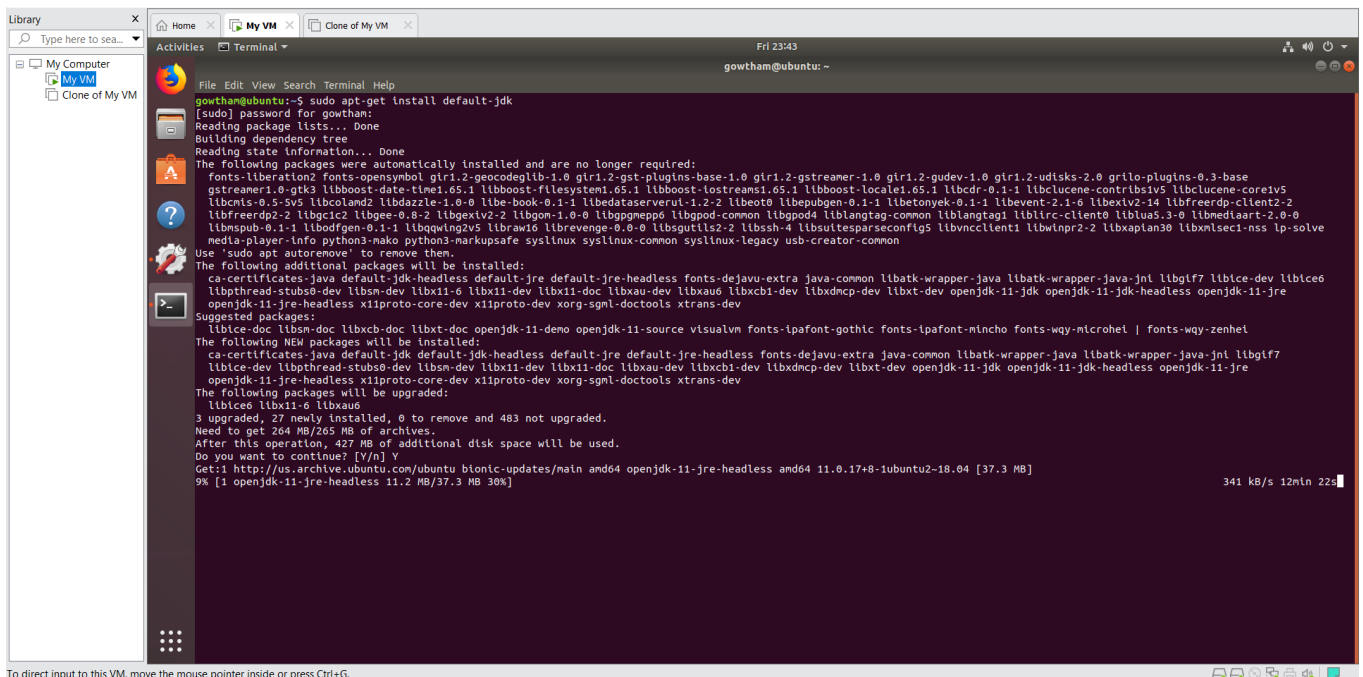
```
// Move the Hadoop folder to /usr/local/hadoop
```

```
$ 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:



```
Library
x
Type here to sea...
My Computer
My VM
Clone of My VM

Activities Terminal
Fri 23:43
gowtham@ubuntu: ~

gowtham@ubuntu:~$ sudo apt-get install default-jdk
[sudo] password for gowtham:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
 fonts-liberation2 fonts-opensymbol gir1.2-geocodeglib-1.0 gir1.2-gst-plugins-base-1.0 gir1.2-gstreamer-1.0 gir1.2-gudev-1.0 gir1.2-udisks-2.0 grilo-plugins-0.3-base
 gstreamer1.0-gtk3 libboost-date-time1.65.1 libboost-filesystem1.65.1 libboost-iostreams1.65.1 libboost-locale1.65.1 libcdt-0.1.1 libclucene-contribs1v5 libclucene-core1v5
 libcoms-0.5-5v5 libcoland2 libdazzle-1.0-0 libe-book-0.1-1 libedataseverui-1.2-2 libeot0 libepubgen-0.1-1 libetonyek-0.1-1 libevent-2.1-6 libexiv2-14 libfreerdp-client2-2
 libfreerdp2-2 libgic2 libgee-0.8-2 libgexiv2-2 libgon-1.0-0 libgpgmepp6 libgpod-common libgpod4 liblangtag-common liblangtag1 liblirc-client0 liblua5.3-0 libmediart-2.0-0
 libnspub-0.1-1 libpdfgen-0.1-1 libqwing2v5 libraw16 librevenge-0.0-0 libsgutils2-2 libssh-4 libsuitesparseconfigs libvncclient1 libwinpr2-2 libxapian30 libxlmsec1-nss lp-solve
 media-player-info python3-mako python3-markupsafe syslinux syslinux-common syslinux-legacy usb-creator-common
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
 ca-certificates-java default-jdk-headless default-jre default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-wrapper-java-jni libglf7 libice-dev libice6
 libpthread-stubs0-dev libsm-dev libx11-6 libx11-dev libx11-doc libxau-dev libxau6 libxcb-dev libxcb1-dev libxdmcp-dev libxt-dev openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
 openjdk-11-jre-headless x11proto-core-dev x11proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
 libice-doc libsm-doc libxcb-doc libxt-doc openjdk-11-deno openjdk-11-source visualvm fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhe | fonts-wqy-zenhei
The following NEW packages will be installed:
 ca-certificates-java default-jdk default-jdk-headless default-jre default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-wrapper-java-jni libglf7
 libice-dev libpthread-stubs0-dev libsm-dev libx11-dev libx11-doc libxau-dev libxcb-dev libxcb1-dev libxdmcp-dev libxt-dev openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
 openjdk-11-jre-headless x11proto-core-dev x11proto-dev xorg-sgml-doctools xtrans-dev
The following packages will be upgraded:
 libice6 libx11-6 libxau6
3 upgraded, 27 newly installed, 0 to remove and 483 not upgraded.
Need to get 264 MB/265 MB of archives.
After this operation, 427 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 openjdk-11-jre-headless amd64 11.0.17+8-1ubuntu2-18.04 [37.3 MB]
9% [1 openjdk-11-jre-headless 11.2 MB/37.3 MB 30%]
341 kB/s 12min 22s
```

```
Activities Terminal Sat 03:50
gowtham@ubuntu: ~

File Edit View Search Terminal Help

Adding debian:Hellenic_Academic_and_Research_Institutions_RootCA_2015.pem
Adding debian:GDCA_TrustAUTH_R5_ROOT.pem
Adding debian:Go_Daddy_Root_Certificate_Authority_-_G2.pem
Adding debian:IOSTE_WiSeKey_Global_Root_GA_CA.pem
Adding debian:Staat_der_Nederlanden_RootCA_-_G2.pem
Adding debian:Trustis_FPS_Root_CA.pem
Adding debian:Autoridad_de_Certificacion_Firmaprofesional_CIF_A62634068.pem
Adding debian:certSIGN_ROOT_CA.pem
Adding debian:thawte_Primary_Root_CA_-_G2.pem
Adding debian:Entrust_Root_Certification_Authority_-_G2.pem
Adding debian:COMODO_ECC_Certification_Authority.pem
Adding debian:AC_RAIZ_FNMT-RCM.pem
Adding debian:TWCA_Global_Root_CA.pem
Adding debian:SwissSign_Silver_CA_-_G2.pem
Adding debian:AffirmTrust_Commercial.pem
Adding debian:Security_Communication_RootCA2.pem
Adding debian:GlobalSign_Root_CA_-_R2.pem
Adding debian:Amazon_Root_CA_2.pem
Adding debian:Starfield_Root_Certificate_Authority_-_G2.pem
Adding debian:EE_Certification_Centre_Root_CA.pem
Adding debian:COMODO_Certification_Authority.pem
Adding debian:Buypass_Class_2_Root_CA.pem
Adding debian:Certinomis_-_Root_CA.pem
Adding debian:Certigna.pem
Adding debian:D-TRUST_Root_Class_3_CA_2_EV_2009.pem
Adding debian:Entrust_Root_Certification_Authority.pem
Adding debian:Starfield_Services_Root_Certificate_Authority_-_G2.pem
Adding debian:Hongkong_Post_Root_CA_1.pem
Adding debian:cybertrust_Global_Root.pem
Adding debian:Amazon_Root_CA_3.pem
done.
Setting up default-jre (2:1.11-68ubuntu1-18.04.1) ...
Setting up openjdk-11-jdk:amd64 (11.0.17+8-1ubuntu2-18.04) ...
update-alternatives: using /usr/lib/jvm/java-11-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Setting up default-jdk (2:1.11-68ubuntu1-18.04.1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for ca-certificates (20180409) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
done.
gowtham@ubuntu:~$
```

```
Activities Terminal Sat 03:57
gowtham@ubuntu: ~

File Edit View Search Terminal Help

Adding debian:Staat_der_Nederlanden_RootCA_-_G2.pem
Adding debian:Trustis_FPS_Root_CA.pem
Adding debian:Autoridad_de_Certificacion_Firmaprofesional_CIF_A62634068.pem
Adding debian:certSIGN_ROOT_CA.pem
Adding debian:thawte_Primary_Root_CA_-_G2.pem
Adding debian:Entrust_Root_Certification_Authority_-_G2.pem
Adding debian:COMODO_ECC_Certification_Authority.pem
Adding debian:AC_RAIZ_FNMT-RCM.pem
Adding debian:TWCA_Global_Root_CA.pem
Adding debian:SwissSign_Silver_CA_-_G2.pem
Adding debian:AffirmTrust_Commercial.pem
Adding debian:Security_Communication_RootCA2.pem
Adding debian:GlobalSign_Root_CA_-_R2.pem
Adding debian:Amazon_Root_CA_2.pem
Adding debian:Starfield_Root_Certificate_Authority_-_G2.pem
Adding debian:EE_Certification_Centre_Root_CA.pem
Adding debian:COMODO_Certification_Authority.pem
Adding debian:Buypass_Class_2_Root_CA.pem
Adding debian:Certinomis_-_Root_CA.pem
Adding debian:Certigna.pem
Adding debian:D-TRUST_Root_Class_3_CA_2_EV_2009.pem
Adding debian:Entrust_Root_Certification_Authority.pem
Adding debian:Starfield_Services_Root_Certificate_Authority_-_G2.pem
Adding debian:Hongkong_Post_Root_CA_1.pem
Adding debian:cybertrust_Global_Root.pem
Adding debian:Amazon_Root_CA_3.pem
done.
Setting up default-jre (2:1.11-68ubuntu1-18.04.1) ...
Setting up openjdk-11-jdk:amd64 (11.0.17+8-1ubuntu2-18.04) ...
update-alternatives: using /usr/lib/jvm/java-11-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Setting up default-jdk (2:1.11-68ubuntu1-18.04.1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for ca-certificates (20180409) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
done.
gowtham@ubuntu:~$ java -version
openjdk version "11.0.17" 2022-10-18
OpenJDK Runtime Environment (build 11.0.17+8-post-Ubuntu-1ubuntu218.04)
OpenJDK 64-Bit Server VM (build 11.0.17+8-post-Ubuntu-1ubuntu218.04, mixed mode, sharing)
gowtham@ubuntu:~$
```

```
Activities Terminal Sun 19:59
linux@ubuntu: ~
File Edit View Search Terminal Help
Hit:2 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:3 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:5 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease
Reading package lists... Done
linux@ubuntu:~$ sudo apt-get install oracle-java8-installer
sudo: apt-get: command not found
linux@ubuntu:~$ sudo apt-get install oracle-java8-installer
Reading package lists... Done
Building dependency tree
Reading state information... Done
Package oracle-java8-installer is not available, but is referred to by another
package.
This may mean that the package is missing, has been obsoleted, or
is only available from another source.

E: Package 'oracle-java8-installer' has no installation candidate
linux@ubuntu:~$ sudo apt-get install default-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
 fonts-liberation2 fonts-opensymbol gir1.2-geocodeglib-1.0
 gir1.2-gst-plugins-base-1.0 gir1.2-gstreamer-1.0 gir1.2-gudev-1.0
 gir1.2-udisks-2.0 grilo-plugins-0.3-base gstreamer1.0-gtk3
 libboost-date-time1.65.1 libboost-filesystem1.65.1 libboost-iostreams1.65.1
 libboost-locale1.65.1 libcdr-0.1-1 libclucene-contribs1v5
 libclucene-core1v5 libcmis-0.5-5v5 libcolamd2 libdazzle-1.0-0
 libe-book-0.1-1 libdataserverui-1.2-2 libeot0 libepub2-0.1-1
```

```
gowtham@ubuntu:~$ su hduser
Password:
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

hduser@ubuntu:/home/gowtham$
```

```
hduser@ubuntu:/home/gowtham$ 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
Created directory '/home/hduser/.ssh'.
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:
SHA256:9QOMeESPa4mTNl01jJUwD7z9bnFdvSvgyFYakAwX0t0 hduser@ubuntu
The key's randomart image is:
+---[RSA 2048]---+
|      .++== 0      |
|     .Xo*.= E     |
|    oo0 = . .    |
|   *. = o . .o   |
|  B S. o.+..    |
|   = oo.=..     |
|   .oo+ .      |
|   o. . .      |
|   .            |
+---[SHA256]-----+
hduser@ubuntu:/home/gowtham$
```

```
Activities Terminal Sun 20:53
hduser@ubuntu: ~
File Edit View Search Terminal Help

ssh-keygen [-D pkcs11_provider] [-n principals] [-O option]
ssh-keygen [-V validity_interval] [-z serial_number] file ...
ssh-keygen -L [-f input_keyfile]
ssh-keygen -A
ssh-keygen -k -f krl_file [-u] [-s ca_public] [-z version_number]
file ...
ssh-keygen -Q -f krl_file file ...

hduser@ubuntu:/home/linux$ cat $HOME/.ssh/id_ras.pub>>$HOME/.ssh/authorized_key
s
bash: /home/hduser/.ssh/authorized_keys: No such file or directory
hduser@ubuntu:/home/linux$ $cat $HOME/.ssh/id_ras.pub>>$HOME/.ssh/authorized_ke
ys
bash: /home/hduser/.ssh/authorized_keys: No such file or directory
hduser@ubuntu:/home/linux$ ssh localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:xTzZE9DwTntWocoQkanbKbHbHQoeXkBVYUX/lYCFgaE.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.
hduser@localhost's password:
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 5.0.0-23-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch
```

```
Activities Terminal Sat 04:50
gowtham@ubuntu: ~/Downloads

hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/package-summary.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/SubApplicationTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/class-use/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/class-use/SubApplicationTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/package-use.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/package-tree.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/subapplication/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/package-summary.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/AppToFlowTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/class-use/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/class-use/AppToFlowTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/package-use.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/package-tree.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/apptoflow/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/HBaseTimelineWriterImpl.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/HBaseTimelineReaderImpl.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/storage/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/reader/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timelineservice/reader/filter/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timelineservice-hbase/hadoop-yarn-server-timelineservice-hbase-client/apidocs/org/apache/hadoop/yarn/
```

```
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/h3.jpg
hduser@ubuntu:/home/gowtham/Downloads$ sudo mkdir -p /usr/local/hadoop
hduser@ubuntu:/home/gowtham/Downloads$ sudo mv hadoop-3.3.4 /usr/local/hadoop
hduser@ubuntu:/home/gowtham/Downloads$ sudo chown -R hduser/usr:hadoop /usr/local/hadoop
hduser@ubuntu:/home/gowtham/Downloads$ sudo chown -R hduser:hadoop /usr/local/hadoop
hduser@ubuntu:/home/gowtham/Downloads$ █
```

RESULT:

Hence perform the basic configuration setup for installing hadoop 2.x like creating the hduser and ssh localhost is installed successfully.