

**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
 libcms-0.5-5v5 libcoland2 libdazzle-1.0-0 libe-book-0.1-1 libedataseverui-1.2-2 libevent0 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 libmediaart-2.0-0
 libnspub-0.1-1 libodfgen-0.1-1 libqwing2v5 libraw16 librevenge-0.0-0 libsgutils2-2 libssh-4 libsuitesparseconfigs libvncclient1 libwinpr2-2 libxapian3 libxmlsec1-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 libgiff7 libice-dev libice6
 libpthread-stubs0-dev libsm-dev libx11-6 libx11-dev libx11-doc libxau-dev libxau6 libxcb1-dev libxdmcp-dev libxt-dev openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
 openjdk-11-jre-headless xi1proto-core-dev xi1proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
 libice-doc libsm-doc libxcb-doc libxt-dev openjdk-11-demo openjdk-11-source visualvm fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | 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 libgiff7
 libice-dev libpthread-stubs0-dev libsm-dev libx11-dev libx11-doc libxau-dev libxcb1-dev libxdmcp-dev libxt-dev openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
 openjdk-11-jre-headless xi1proto-core-dev xi1proto-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
```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

```
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_CA_CA.pem
Adding debian:Staat_der_Nederlanden_Root_CA_-_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:certnomis_-_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_Root_CA_-_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:certnomis_-_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:~$
```

```

gowtham@ubuntu:~$ sudo apt-get install ssh
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 libepubgen-0.1-1 libetonyek-0.1-1 libevent-2.1-6
 libexiv2-14 libfreerdp-client2-2 libfreerdp2-2 libgc1c2
 libgee-0.8-2 libgexiv2-2 libgom-1.0-0 libgpgmepp6
 libgpod-common libgpod4 liblangtag-common liblangtag1
 liblirc-client0 liblua5.3-0 libmediaart-2.0-0
 libmspub-0.1-1 libodfgen-0.1-1 libqqwing2v5 libraw16
 librevenge-0.0-0 libsgutils2-2 libssh-4
 libsuitesparseconfig5 libvncclient1 libwinpr2-2
 libxapian30 libxmlsec1-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:

```

```

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:
SHA256:9Q0MeESPa4mTNI01jJUwD7z9bnFdvSvgyFYakAwX0t0 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$

```



```
hduser@ubuntu:/home/gowtham$ cat $HOME/.ssh/id_rsa.pub >>$HOME/.ssh/authorized_keys
hduser@ubuntu:/home/gowtham$ ssh localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:6gdkkdG4yDoeRvEwKo2/1rINz8mB3SVX9LmYoy3geY.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 5.4.0-137-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
```

```
490 packages can be updated.
398 updates are security updates.
```

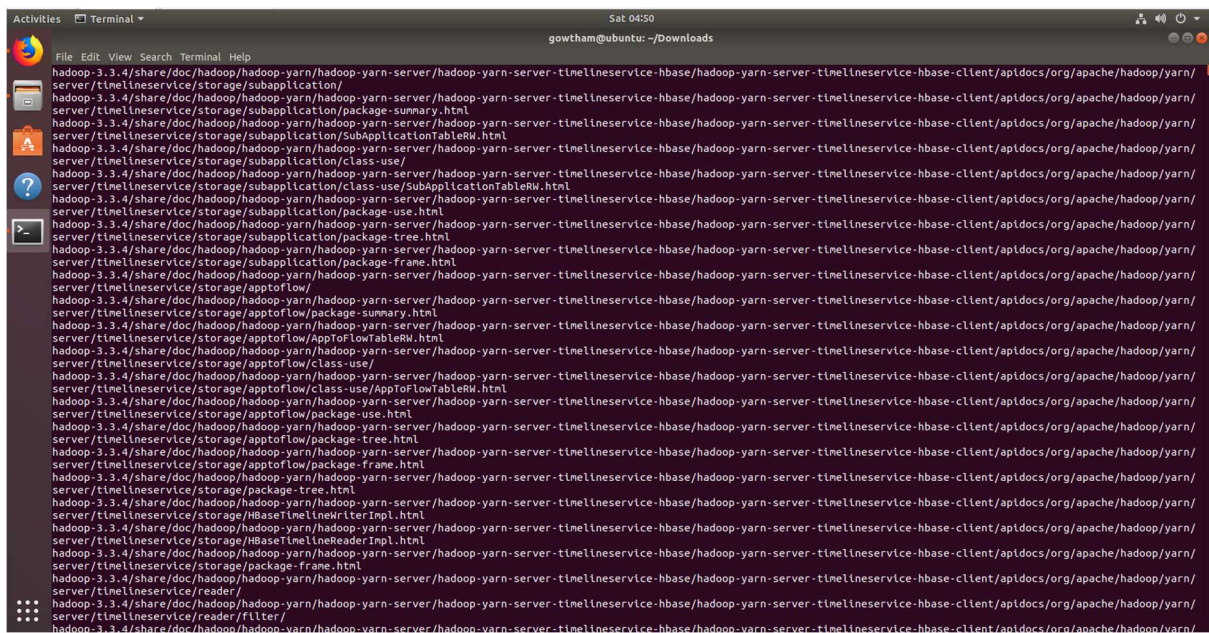
Your Hardware Enablement Stack (HWE) is supported until April 2023.

The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/\*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo\_root" for details.

```
hduser@ubuntu:~$
```



```
Activities Terminal Sat 04:50
gowtham@ubuntu: ~/Downloads
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/package-summary.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/SubApplicationTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/class-use/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/class-use/SubApplicationTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/package-use.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/subapplication/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/package-summary.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/AppToFlowTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/class-use/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/class-use/AppToFlowTableRW.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/package-use.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/package-tree.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/apptoflow/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/HBaseTimelineWriterInpl.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/HBaseTimelineReaderInpl.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/storage/package-frame.html
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/reader/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-hbase-client/apidocs/org/apache/hadoop/yarn/
server/timeline-service/reader/filter/
hadoop-3.3.4/share/doc/hadoop/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-timeline-service-hbase/hadoop-yarn-server-timeline-service-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.