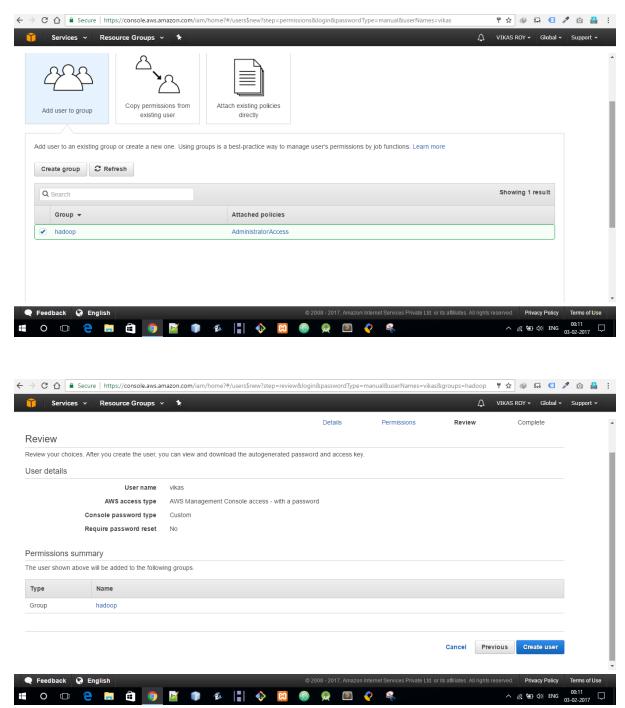
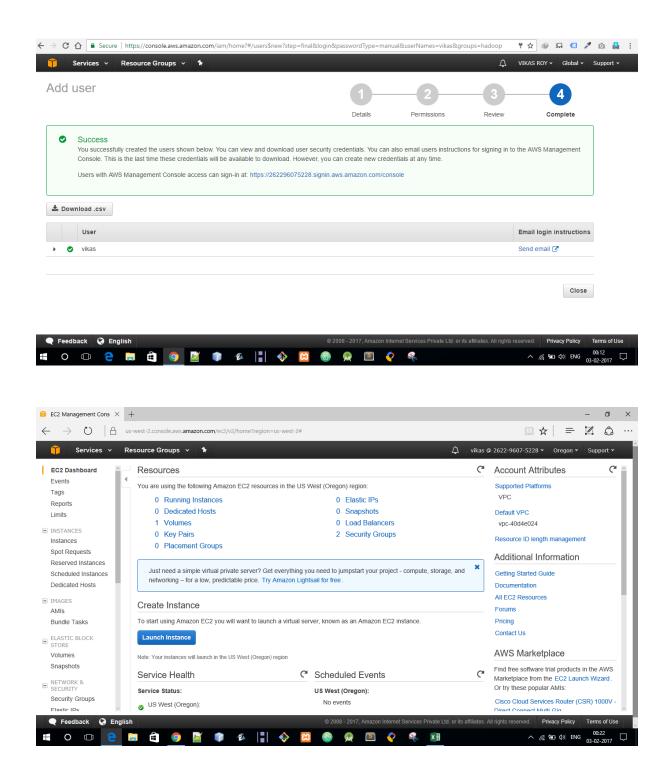
How to install Hadoop in Aws EC2

Before installing Hadoop we have to Create instance in EC2

- 1. First create account at aws.amazon.com
- 2. Afterthat create an IAM uservia https://console.aws.amazon.com/iam/
- 3. Add user to group
- 4. Create Group and give admin access to that group

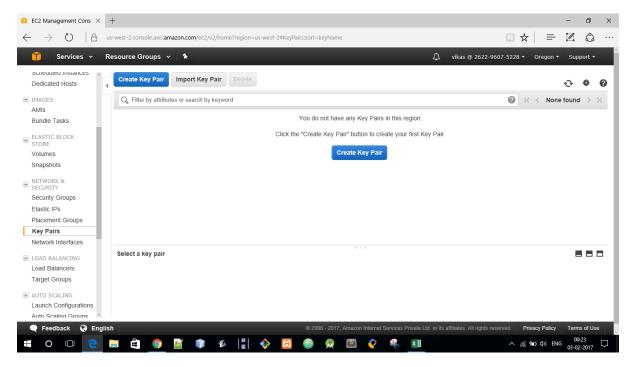




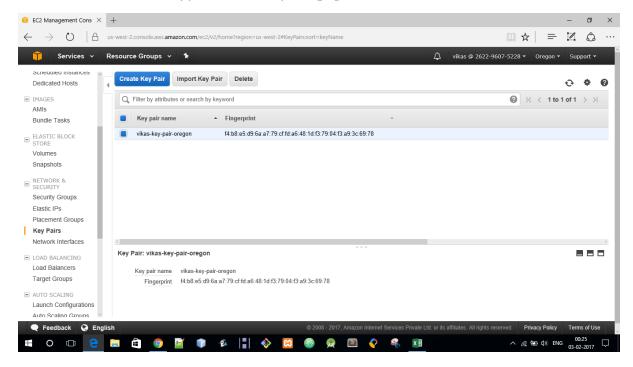
To sign in as IAM new user we need aws account id in following url and then it can be login by providing user name (this is not same as aws account email) and password.

Create a Key Pair

- 1. Sign in to aws using above url
- 2. From dashboard choose EC2 to open the amazon EC2 console
- 3. In navigation pane under Network and security, click key pairs

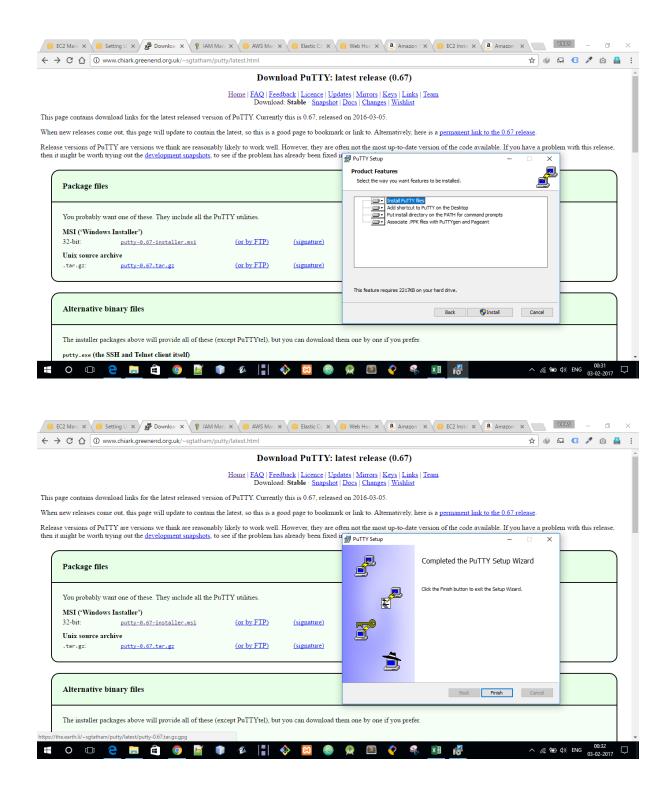


- 4. Click Create key pair
- 5. Enter name for new key pair followed by -key-pair

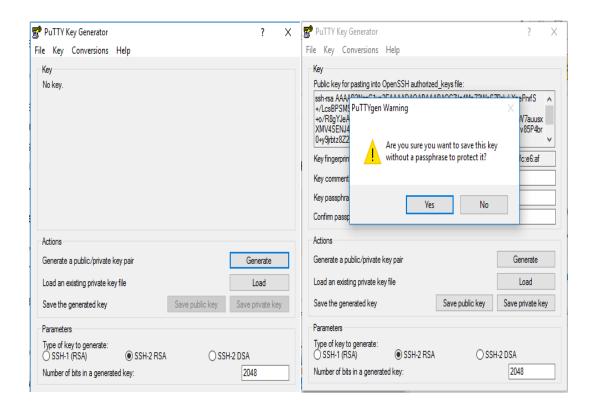


6. Private key will be downloaded automatically with .pem extension

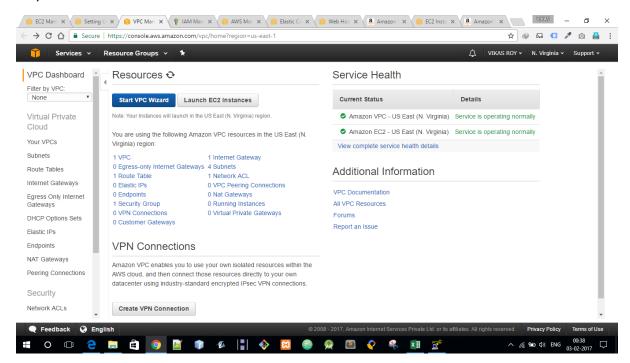
For connection with linux instance via windows or linux we can download putty entire package.

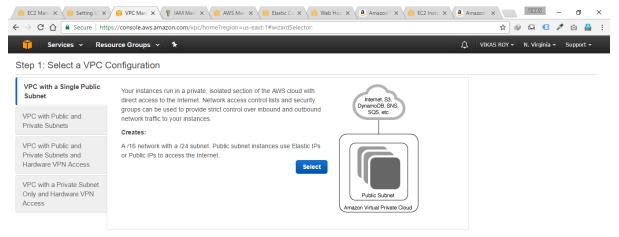


Using putty keygen we have to convert our .pem file which we have downloaded earlier into .ppk file

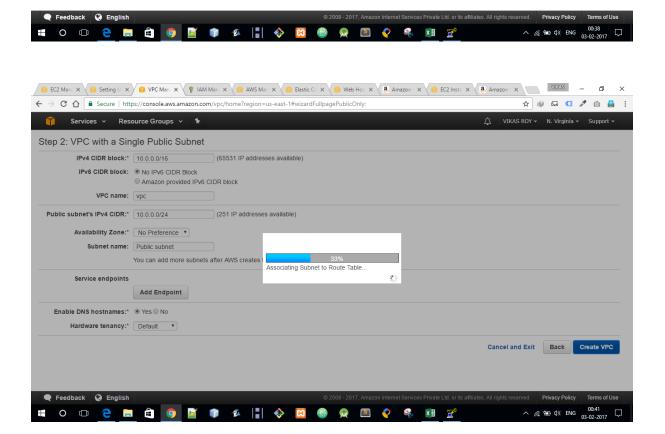


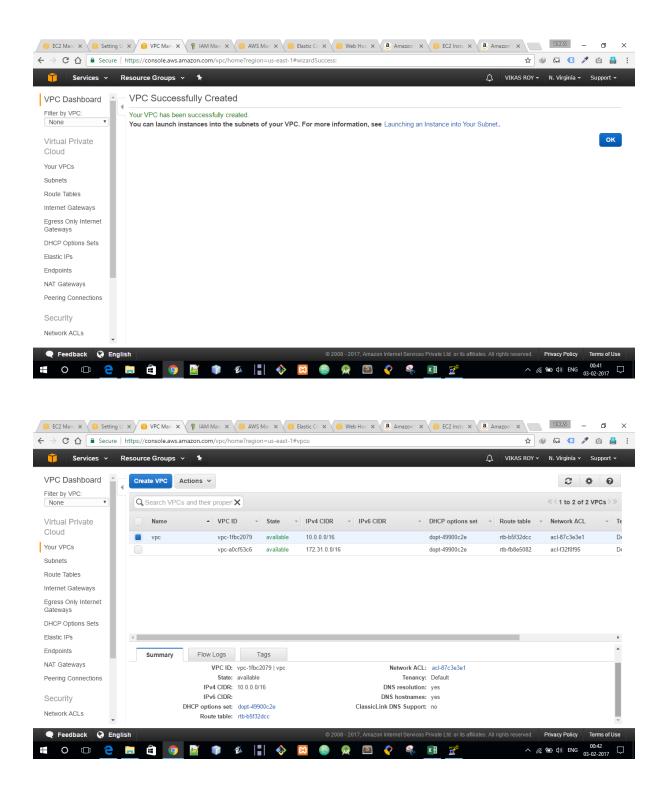
If by default VPC is not created we have to create VPC via VPC dashboard



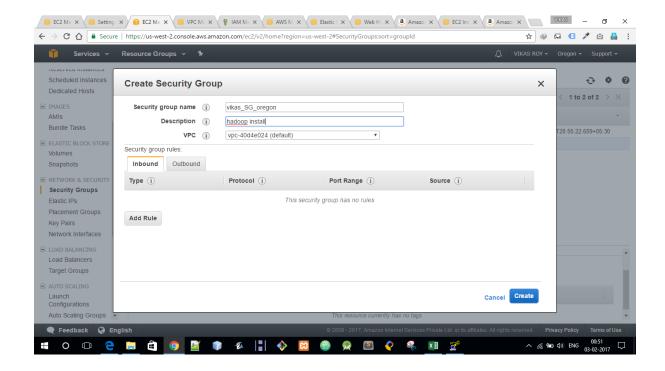


Cancel and Exit





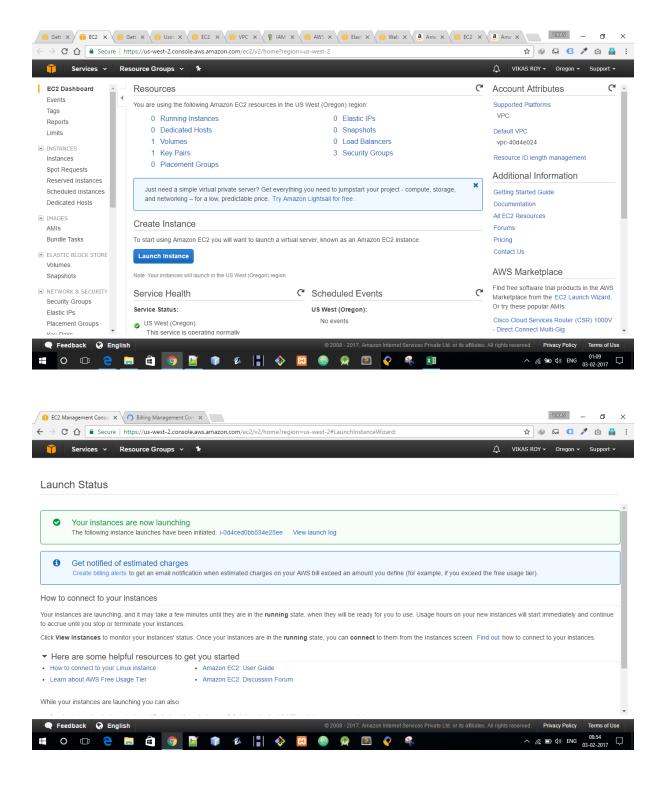
After that create security group by accessing navigation pane.



- 1. Click security group in navigation pane
- 2. Click create security group
- 3. Name security group, description and select vpc default list from drop down.
- 4. In Inbound tab create the following rule
 - Select HTTP from the Type list, and make sure that Source is set to Anywhere
 - Select HTTPS from the Type list, and make sure that Source is set to Anywhere
 - Select SSH from the Type list. In the Source box, choose My IP to automatically populate the field with the public IPv4 address of your local computer.

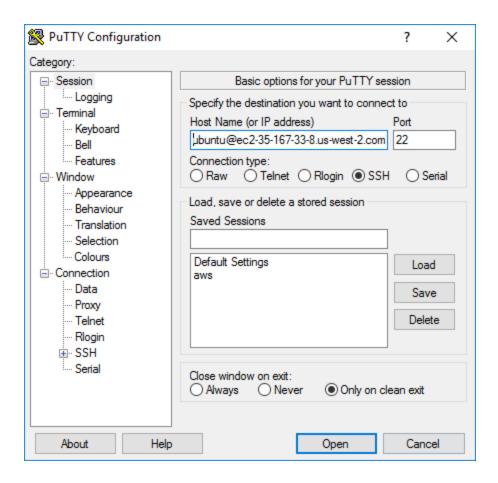
Launch instance

Select os which you want to launch, and select existing security group when it ask for it, choose existing key pair. Then it will take some time and instance will be launch automitacally.

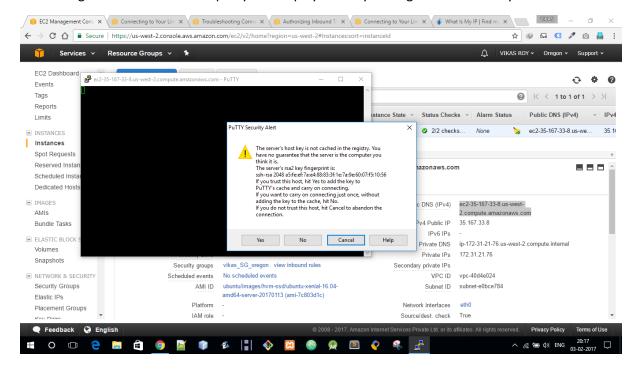


Connect instance from windows using putty

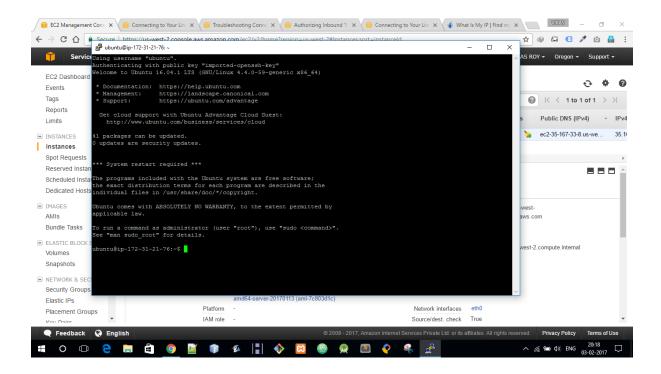
- 1. Start putty
- 2. In host name box enter username@public-dns
- 3. In my case I have Ubuntu running instance so my username will be Ubuntu and public dns can be seen from aws dashboard



- 4. Under Connection expand ssh and select auth choose browse and select ppk file which you have generated earlier. Then Click Open.
- 5. During first time connection putty will display security alert ignore and select yes.



6. A window will be open and that will be connected to instance.



How to install Hadoop

Before starting Hadoop installation we have to check whether java is install or not in our system

Type following command in instance for check

Java -version

```
■ ubuntu@ip-172-31-21-76: ~

                                                                                                                                            ×
   Documentation: https://help.ubuntu.com
                       https://landscape.canonical.com
                       https://ubuntu.com/advantage
  Get cloud support with Ubuntu Advantage Cloud Guest:
    http://www.ubuntu.com/business/services/cloud
 1 packages can be updated.
  updates are security updates.
 ** System restart required ***
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
ndividual files in /usr/share/doc/*/copyright.
Dountu 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.
ubuntu@ip-172-31-21-76:~$ java -version
The program 'java' can be found in the following packages:
  default-jre
* gcj-5-jre-headless
* openjdk-8-jre-headless
* gcj-4.8-jre-headless
* openjdk-9-jre-headless
     sudo apt install <selected package>
ubuntu@ip-172-31-21-76:~$
```

If java is not installed try "sudo apt install openjdk-9-jre-headless"

You can install different version of java jdk also, I have downloaded latest one in my case.

```
    □ ubuntu@ip-172-31-21-76: ~

                                                                                                                                                                                                       П
                                                                                                                                                                                                                 X
     openjdk-8-jre-headless
 * gcj-4.8-jre-headless
* gcj-4.9-jre-headless
    openjdk-9-jre-headless
Try: sudo apt install <selected package>
ubuntu@ip-172-31-21-76:~$ ls
ubuntu@ip-172-31-21-76:~$ java --version
The program 'java' can be found in the following packages:
  * default-jre
* openjdk-8-jre-headless
* gcj-4.8-jre-headless
       cj-4.9-jre-headless
 * openjdk-9-jre-headless
Try: sudo apt install <selected package>
ubuntu@ip-172-31-21-76:~$ sudo apt install openjdk-9-jre-headless
Reading package lists... Done
 Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ca-certificates-java java-common libavahi-client3 libavahi-common-data libavahi-common3 libcups2 libjpeg-turbo8 libjpeg8 liblcms2-2 libnspr4 libnss3 libnss3-nssdb libpcsclite1 libxi6 libxrender1 libxtst6 x11-common
 uggested packages:
   default-jre cups-common liblcms2-utils pcscd libnss-mdns fonts-dejavu-extra fonts-ipafont-gothic
fonts-ipafont-mincho ttf-wqy-microhei | ttf-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  ca-certificates-java java-common libavahi-client3 libavahi-common-data libavahi-common3 libcups2 libjpeg-turbo8 libjpeg8 liblcms2-2 libnspr4 libnss3 libnss3-nssdb libpcsclite1 libxi6 libxrender1 libxtst6 openjdk-9-jre-headless
O upgraded, 18 newly installed, 0 to remove and 46 not upgraded.

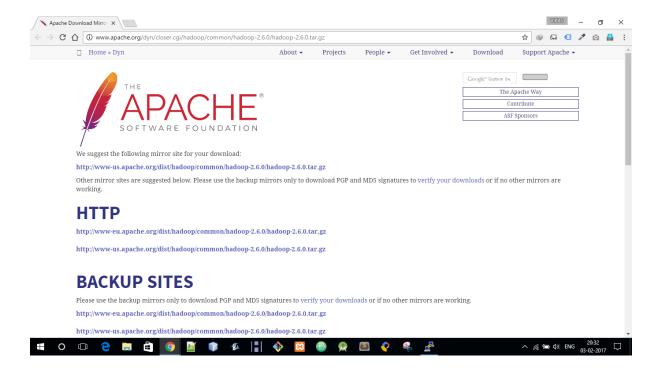
Need to get 185 MB of archives.

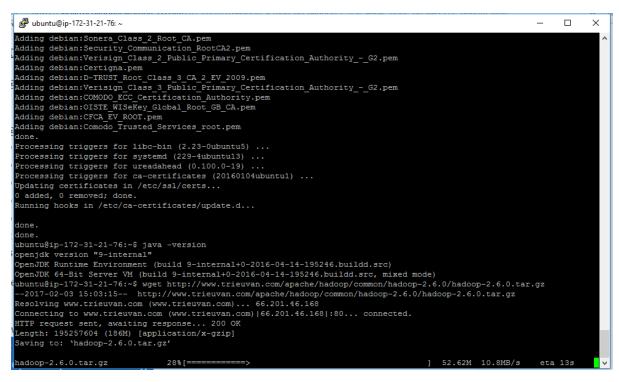
After this operation, 313 MB of additional disk space will be used.

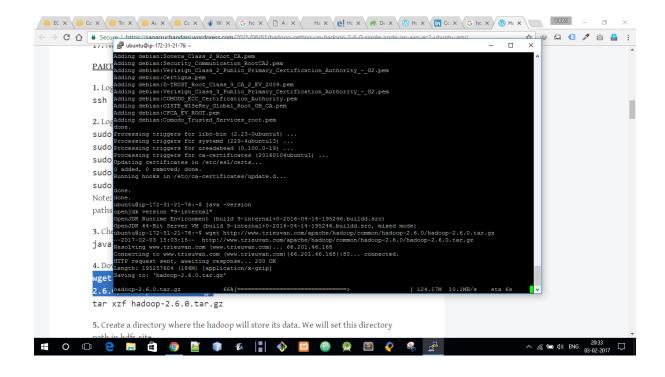
Do you want to continue? [Y/n]
```

```
Adding debian:Atos TrustedRoot_2011.pem
Adding debian:TWCA Global Root_CA.pem
Adding debian:TWCA Global Root_CA.yem
Adding debian:TGlosonera Root_CA.yl.pem
Adding debian:Mosion.pem
Adding debian:Wosion.pem
Adding debian:Wosion.pem
Adding debian:GoTrust_Primary_Cettificates_Root.pem
Adding debian:GoTrust_Primary_Cettification_Authority.pem
Adding debian:QuoVadis_Root_CA_2_Go.pem
Adding debian:Suissis_Gold_CA__G2.pem
Adding debian:Soinera_Class_2_Root_CA.pem
Adding debian:Soinera_Class_2_Root_CA.pem
Adding debian:Soinera_Class_2_Root_CA.pem
Adding debian:Soinera_Class_2_Public_Primary_Cettification_Authority__G2.pem
Adding debian:Cottaga.pem
Adding debian:Cottaga.pem
Adding debian:On_TRUST_Root_Class_3_CA_2_EV_2009.pem
Adding debian:On_TRUST_Root_Class_2_EV_2009.pem
Adding debian:On_TRUST_Root_Class_2_EV_2009.pem
Addi
```

After successful installation of java find mirror of Hadoop and then download it in aws linux instance using **wget** command







Extract downloaded tar file using following command

tar xvf filename.tar.gz

```
Х
hadoop-2.6.0/share/hadoop/mapreduce/sources/hadoop-mapreduce-client-common-2.6.0
hadoop-2.6.0/share/hadoop/mapreduce/sources/hadoop-mapreduce-client-hs-2.6.0-tes
t-sources.jar
hadoop-2.6.0/LICENSE.txt
hadoop-2.6.0/README.txt
hadoop-2.6.0/bin/
hadoop-2.6.0/bin/hdfs.cmd
hadoop-2.6.0/bin/test-container-executor
hadoop-2.6.0/bin/container-executor
hadoop-2.6.0/bin/hadoop.cmd
hadoop-2.6.0/bin/rcc
hadoop-2.6.0/bin/hdfs
hadoop-2.6.0/bin/mapred
hadoop-2.6.0/bin/hadoop
hadoop-2.6.0/bin/yarn.cmd
hadoop-2.6.0/bin/mapred.cmd
hadoop-2.6.0/bin/yarn
hadoop-2.6.0/include/
hadoop-2.6.0/include/TemplateFactory.hh
hadoop-2.6.0/include/StringUtils.hh
hadoop-2.6.0/include/hdfs.h
hadoop-2.6.0/include/Pipes.hh
hadoop-2.6.0/include/SerialUtils.hh
ubuntu@ip-172-31-21-76:~$ sudo hostname ec2-user
ubuntu@ip-172-31-21-76:~$ hostname
ec2-user
ubuntu@ip-172-31-21-76:~$
```

 Add Hadoop and java environment variable in .bashrc file using command sudo vi .bashrc

```
"# Set Hadoop-related environment variables
export HADOOP_HOME=$HOME/hadoop-2.6.0
export HADOOP_CONF_DIR=$HOME/hadoop2.6.0/etc/hadoop
export HADOOP_MAPRED_HOME=$HOME/hadoop-2.6.0
export HADOOP_COMMON_HOME=$HOME/hadoop-2.6.0
export HADOOP_HDFS_HOME=$HOME/hadoop-2.6.0
export YARN_HOME=$HOME/hadoop-2.6.0
# Set JAVA_HOME
export JAVA_HOME=/usr/lib/jvm/java-9-openjdk-amd64/bin/java
export PATH=$PATH:$JAVA_HOME/bin
# Add Hadoop bin/ directory to PATH
export PATH=$PATH:$HOME/hadoop-2.6.0/bin"
```

```
wbuntu@ip-172-31-21-76: ~
export HADOOP_CONF_DIR=$HOME/hadoop2.6.0/etc/hadoop
export HADOOP_MAPRED_HOME=$HOME/hadoop-2.6.0
export HADOOP_COMMON_HOME=$HOME/hadoop-2.6.0
export HADOOP_HDFS_HOME=$HOME/hadoop-2.6.0
export YARN_HOME=$HOME/hadoop-2.6.0
export YARN_HOME=$HOME/hadoop-2.6.0
export JAVA_HOME
export JAVA_HOME
export JAVA_HOME=/usr/lib/jvm/java-9-openjdk-amd64/jre
export PATH=$PATH:$JAVA_HOME/bin
 
# Add Hadoop bin/ directory to PATH
export PATH=$PATH:$HOME/hadoop-2.6.0/bin
```

Use "source .bashrc" for refresh and check .bashrcfile

Then enter Hadoop for check environment is working or not

```
_ _
                                                                          \times
-bash: .bashrc: line 142: ` '
ubuntu@ec2-user:~$ sudo vi .bashrc
ubuntu@ec2-user:~$ source .bashrc
ubuntu@ec2-user:~$ hadoop
Usage: hadoop [--config confdir] COMMAND
      where COMMAND is one of:
 fs
                      run a generic filesystem user client
 version
                     print the version
 jar <jar>
                      run a jar file
 checknative [-a|-h] check native hadoop and compression libraries availabilit
 distcp <srcurl> <desturl> copy file or directories recursively
 archive -archiveName NAME -p  parent path> <src>* <dest> create a hadoop archi
 classpath
                      prints the class path needed to get the
 credential
                      interact with credential providers
                      Hadoop jar and the required libraries
                      get/set the log level for each daemon
 daemonlog
                      view and modify Hadoop tracing settings
 trace
 CLASSNAME
                      run the class named CLASSNAME
Most commands print help when invoked w/o parameters.
ubuntu@ec2-user:~$
```

- Cd Hadoop-2.6.0
- Cd share/Hadoop

```
ubuntu@ec2-user: ~/hadoop-2.6.0/sbin
                                                                             ×
                                                                        П
ubuntu@ec2-user:~$ cd hadoop-2.6.0
ubuntu@ec2-user:~/hadoop-2.6.0$ cd share/hadoop
ubuntu@ec2-user:~/hadoop-2.6.0/share/hadoop$ ls
ubuntu@ec2-user:~/hadoop-2.6.0/share/hadoop$ cd ..
ubuntu@ec2-user:~/hadoop-2.6.0/share$ ls
ubuntu@ec2-user:~/hadoop-2.6.0/share$ cd ..
ubuntu@ec2-user:~/hadoop-2.6.0$ ls
                         NOTICE.txt sbin
etc lib LICENSE.txt README.txt share
ubuntu@ec2-user:~/hadoop-2.6.0$ cd sbin
ubuntu@ec2-user:~/hadoop-2.6.0/sbin$ ls
distribute-exclude.sh start-all.cmd
                                             stop-balancer.sh
hadoop-daemon.sh
                       start-all.sh
                                             stop-dfs.cmd
hadoop-daemons.sh
                        start-balancer.sh
                                             stop-dfs.sh
hdfs-config.cmd
                        start-dfs.cmd
                                             stop-secure-dns.sh
hdfs-config.sh
                        start-dfs.sh
                                             stop-yarn.cmd
httpfs.sh
                        start-secure-dns.sh stop-yarn.sh
kms.sh
                        start-yarn.cmd
                                             yarn-daemon.sh
mr-jobhistory-daemon.sh start-yarn.sh
                                             yarn-daemons.sh
refresh-namenodes.sh
                        stop-all.cmd
slaves.sh
                        stop-all.sh
ubuntu@ec2-user:~/hadoop-2.6.0/sbin$
```

```
ubuntu@ec2-user: ~/hadoop-2.6.0/etc/hadoop
                                                                            X
          RX bytes:11840 (11.8 KB) TX bytes:11840 (11.8 KB)
ubuntu@ec2-user:~$ cd etc
-bash: cd: etc: No such file or directory
ubuntu@ec2-user:~$ cd hadoop-2.6.0
ubuntu@ec2-user:~/hadoop-2.6.0$ ls
bin include libexec NOTICE.txt sbin
            LICENSE.txt README.txt share
ubuntu@ec2-user:~/hadoop-2.6.0$ cd etc
ubuntu@ec2-user:~/hadoop-2.6.0/etc$ ls
ubuntu@ec2-user:~/hadoop-2.6.0/etc$ cd hadoop
ubuntu@ec2-user:~/hadoop-2.6.0/etc/hadoop$ 1s
capacity-scheduler.xml
                             httpfs-env.sh
                                                       mapred-env.sh
                             httpfs-log4j.properties mapred-queues.xml.template httpfs-signature.secret mapred-site.xml.template
configuration.xsl
container-executor.cfg
core-site.xml
                             httpfs-site.xml
                                                       slaves
hadoop-env.cmd
                             kms-acls.xml
                                                       ssl-client.xml.example
hadoop-env.sh
                                                       ssl-server.xml.example
                             kms-env.sh
hadoop-metrics2.properties kms-log4j.properties
                                                       yarn-env.cmd
hadoop-metrics.properties
                             kms-site.xml
                                                       yarn-env.sh
hadoop-policy.xml
                             log4j.properties
                                                       yarn-site.xml
                             mapred-env.cmd
hdfs-site.xml
ubuntu@ec2-user:~/hadoop-2.6.0/etc/hadoop$
```

Cd etc/Hadoop

Set java home in Hadoop-env.sh

Command: sudo vi Hadoop-env.sh

And add following as in pic

```
# "License"); you may not use this file except in compliance
# with the License. You may obtain a copy of the License at

# http://www.apache.org/licenses/LICENSE-2.0
#
Unless required by applicable law or agreed to in writing, software
# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.

# Set Hadoop-specific environment variables here.

# The only required environment variable is JAVA HOME. All others are
# optional. When running a distributed configuration it is best to
# set JAVA_HOME in this file, so that it is correctly defined on
# remote nodes.

# The java implementation to use.

export JAVA_HOME=${JAVA_HOME}
# Set JAVA_HOME=/usr/lib/jvm/java-9-openjdk-amd64/jre

export JAVA_HOME=/usr/lib/jvm/java-9-openjdk-amd64/jre
```

Edit core-site.xml file. This file contains the configuration settings for Hadoop Core such as I/O settings that are common to HDFS and MapReduce.

Command: vi core-site.xml

```
# ubuntu@ec2-user.~/hadoop-2.6.0/etc/hadoop

<?xml-stylesheet type="text/xs1" href="configuration.xs1"?>
<!--
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

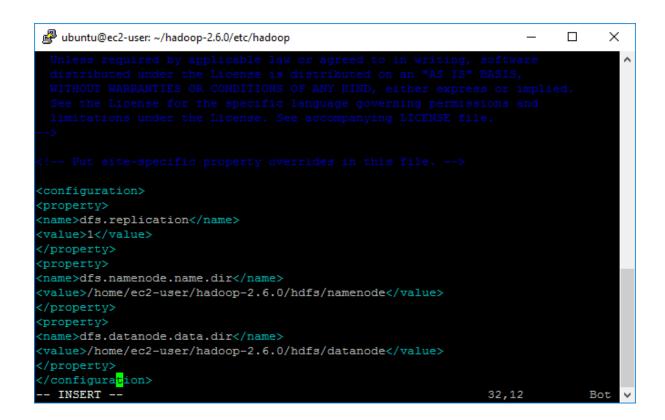
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License. See accompanying LICENSE file.
-->

<!-- Put site-specific property overrides in this file. -->

<configuration>

<pr
```

Command: vi hdfs-site.xml



Edit mapred-site.xml. This file contains the configuration settings for MapReduce daemons.

Command: cp mapred-site.xml.template mapred-site.xml

Command: vi mapred-site.xml

Edit yarn-site.xml. This file contains the configuration settings for YARN.

Command: vi yarn-site.xml

Command: cd

Command: hadoop namenode -format

Command: cd hadoop-2.6.0/sbin/

Command: ./start-dfs.sh

Start the YARN services i.e. Resource Manager and Node Manager

Command: ./start-yarn.sh

Now run jps command to check if the daemons are running.

Command: jps

Now open browser and enter public dns name and hit enter you will get a page running.