

## Practical 2

### Installing and setting environment variables for working with apache Hadoop in linux

**Theory:** Apache Hadoop is an open-source framework designed for distributed storage and processing of large datasets using a cluster of computers. It is particularly suited for handling unstructured and semi-structured data. Here's an overview:

#### **Core Components of Hadoop**

##### **1. Hadoop Distributed File System (HDFS)**

- **Purpose:** Distributed storage system that stores data across multiple nodes in a cluster.
- **Features:**
  - Fault tolerance through data replication.
  - Handles large files by breaking them into smaller blocks (typically 128 MB or 256 MB).
  - Write-once, read-many model.

##### **2. MapReduce**

- **Purpose:** Distributed data processing framework.
- **Features:**
  - Breaks tasks into small chunks, processes them in parallel, and aggregates results.
  - Ideal for batch processing of large datasets.

##### **3. Yet Another Resource Negotiator (YARN)**

- **Purpose:** Resource management layer that allocates system resources to various applications running on a cluster.
- **Features:**
  - Supports multiple processing engines beyond MapReduce (e.g., Apache Spark, Flink).

##### **4. Hadoop Common**

- Provides shared utilities, libraries, and services required by other Hadoop modules.

#### **Steps:**

##### **A)Installing Virtual Box**

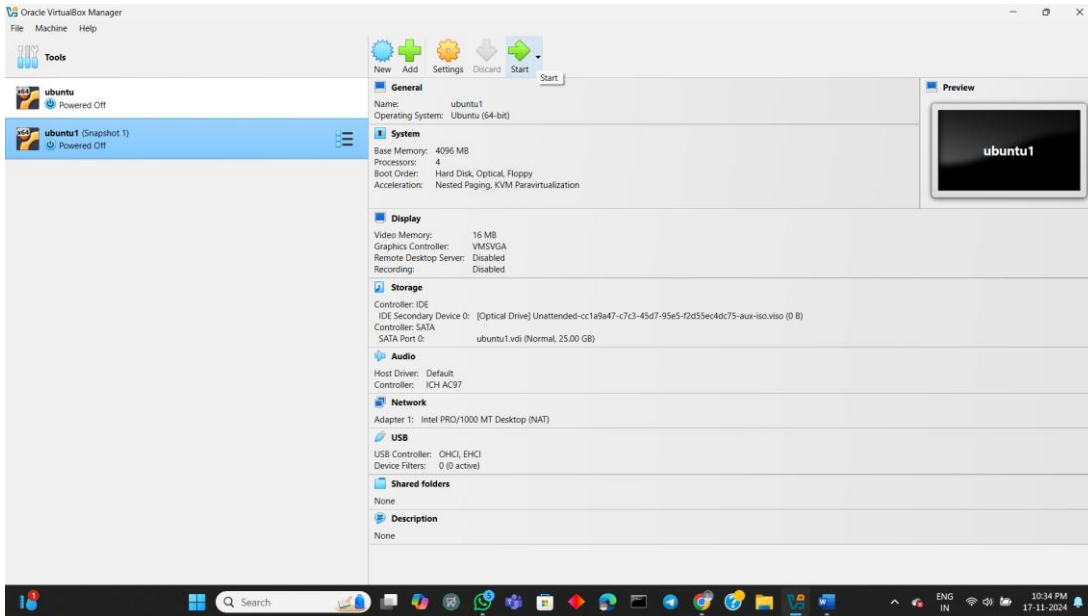
**Link:**<https://download.virtualbox.org/virtualbox/7.1.4/VirtualBox-7.1.4-165100-Win.exe>

##### **B) Installing and Integrating Ubuntu in Virtual box**

**Link:** <https://ubuntu.com/download/desktop/thank-you?version=24.04.1&architecture=amd64&its=true>

##### **C) Installing JDK & Hadoop in Ubuntu**

Open virtual box and start ubuntu machine



## **Step 1 : Install java jdk 8**

First of all you must install Java JDK 8 on your system. You can just type this command to install java jdk on your system.

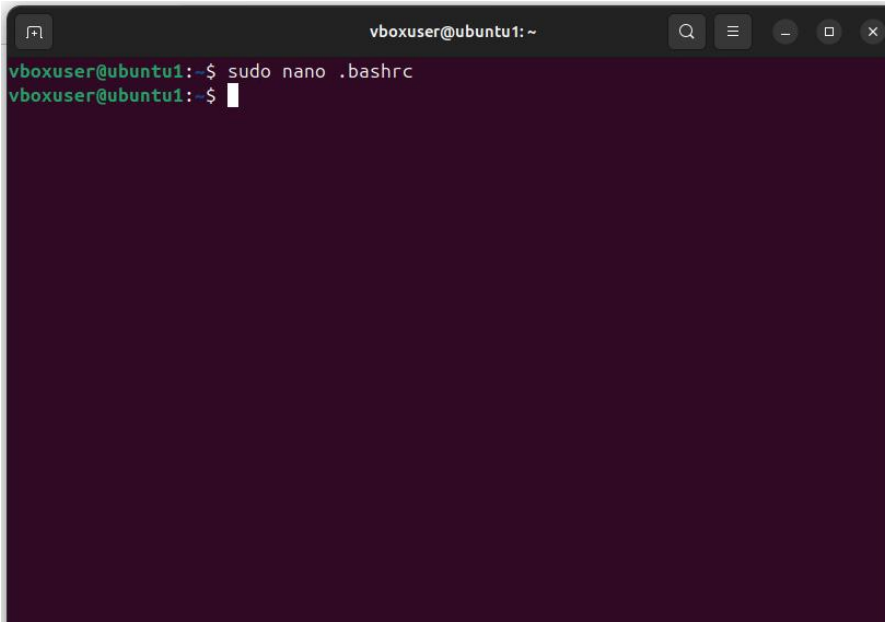
**Cmd: `sudo apt install openjdk-8-jdk`**

```
vboxuser@ubuntu1: ~  
vboxuser@ubuntu1:~$ sudo apt install openjdk-8-jdk  
[sudo] password for vboxuser:  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
openjdk-8-jdk is already the newest version (8u432-ga-us1-0ubuntu2~24.04).  
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.  
vboxuser@ubuntu1:~$
```

## **Step 2 : Add this configuration on you bash file**

Now just open .bashrc file and paste these commands.

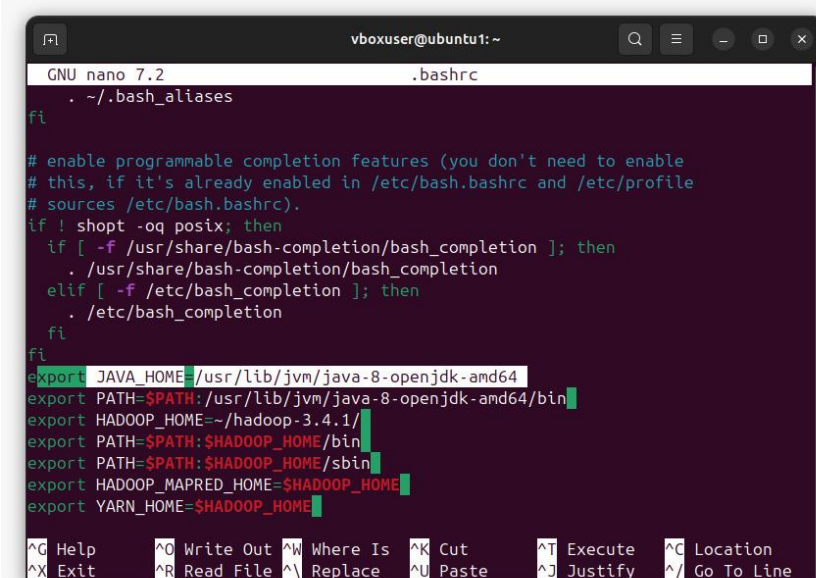
**1)Cmd: `sudo nano .bashrc`**



```
vboxuser@ubuntu1: ~  
vboxuser@ubuntu1:~$ sudo nano .bashrc  
vboxuser@ubuntu1:~$
```

Copy paste:

```
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export PATH=$PATH:/usr/lib/jvm/java-8-openjdk-amd64/bin  
export HADOOP_HOME=~/.hadoop-3.4.1/  
export PATH=$PATH:$HADOOP_HOME/bin  
export PATH=$PATH:$HADOOP_HOME/sbin  
export HADOOP_MAPRED_HOME=$HADOOP_HOME  
export YARN_HOME=$HADOOP_HOME  
export HADOOP_CONF_DIR=$HADOOP_HOME/etc/hadoop  
export HADOOP_COMMON_LIB_NATIVE_DIR=$HADOOP_HOME/lib/native  
export HADOOP_OPTS="-Djava.library.path=$HADOOP_HOME/lib/native"  
export HADOOP_STREAMING=$HADOOP_HOME/share/hadoop/tools/lib/hadoop-streaming-3.4.1.jar  
export HADOOP_LOG_DIR=$HADOOP_HOME/logs  
export PDSH_RCMD_TYPE=ssh
```



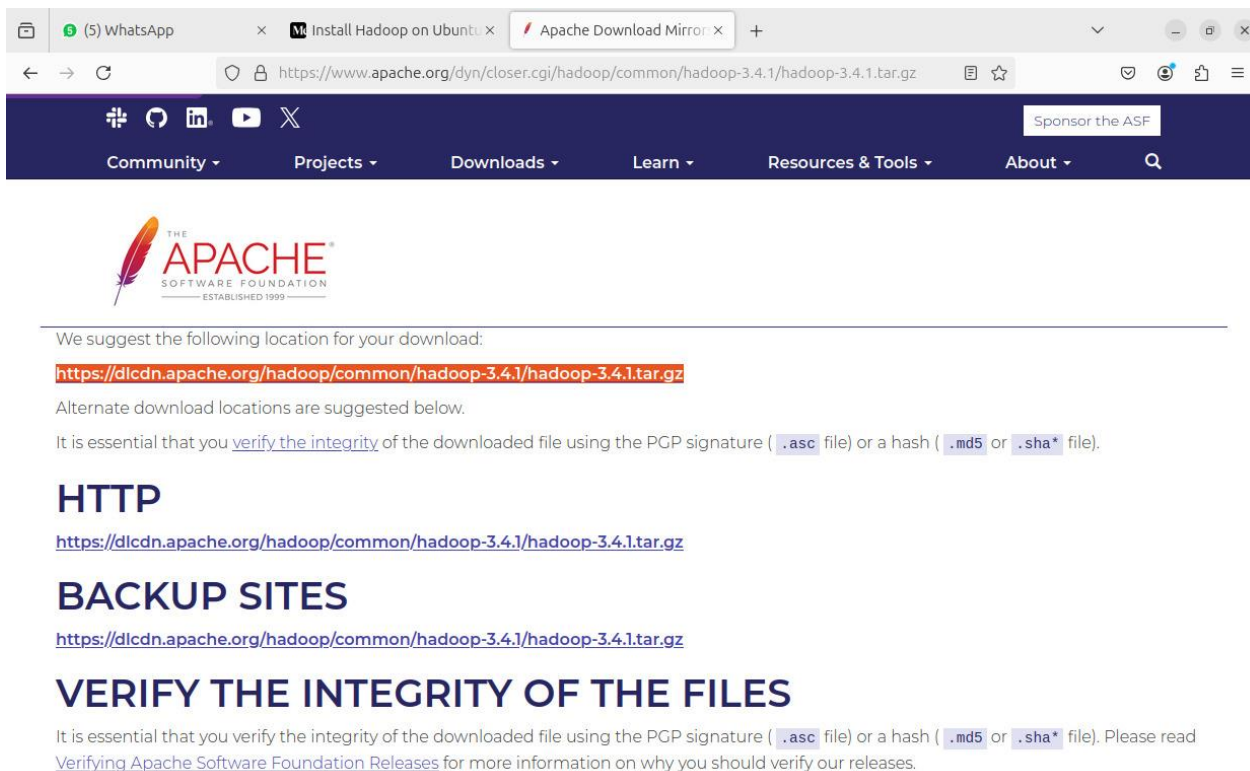
```
GNU nano 7.2 .bashrc  
# ~/.bash_aliases  
fi  
  
# enable programmable completion features (you don't need to enable  
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile  
# sources /etc/bash.bashrc).  
if ! shopt -oq posix; then  
  if [ -f /usr/share/bash-completion/bash_completion ]; then  
    . /usr/share/bash-completion/bash_completion  
  elif [ -f /etc/bash_completion ]; then  
    . /etc/bash_completion  
  fi  
fi  
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export PATH=$PATH:/usr/lib/jvm/java-8-openjdk-amd64/bin  
export HADOOP_HOME=~/.hadoop-3.4.1/  
export PATH=$PATH:$HADOOP_HOME/bin  
export PATH=$PATH:$HADOOP_HOME/sbin  
export HADOOP_MAPRED_HOME=$HADOOP_HOME  
export YARN_HOME=$HADOOP_HOME  
  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location  
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify  ^_ Go To Line
```

2)Cmd: sudo apt-get install ssh

```
vboxuser@ubuntu1: ~  
vboxuser@ubuntu1:~$ sudo nano .bashrc  
vboxuser@ubuntu1:~$ sudo apt-get install ssh  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
ssh is already the newest version (1:9.6p1-3ubuntu13.5).  
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.  
vboxuser@ubuntu1:~$
```

**3) now go to [hadoop.apache.org](https://hadoop.apache.org) website download the tar file (hadoop.apache.org — download tar file of hadoop.)**

**Link: <https://d1cdn.apache.org/hadoop/common/hadoop-3.4.1/hadoop-3.4.1.tar.gz>**



**5)now type**

**Cmd: tar -zxvf ~/Downloads/hadoop-3.4.1.tar.gz**

```
vboxuser@ubuntu1: ~  
vboxuser@ubuntu1: ~$ cd  
vboxuser@ubuntu1: ~$ tar -zxvf ~/Downloads/hadoop-3.4.1.tar.gz
```

6) Now change the directory to edit the files

(Extract the tar file)

Cmd: cd hadoop-3.4.1/etc/Hadoop

```
vboxuser@ubuntu1: ~/hadoop-3.4.1/etc/hadoop  
vboxuser@ubuntu1: ~  
hadoop-3.4.1/libexec/tools/hadoop-sls.sh  
hadoop-3.4.1/libexec/tools/hadoop-dynamometer-blockgen.sh  
hadoop-3.4.1/libexec/tools/hadoop-distcp.sh  
hadoop-3.4.1/libexec/tools/hadoop-dynamometer-infra.sh  
hadoop-3.4.1/libexec/tools/hadoop-archives.sh  
hadoop-3.4.1/libexec/tools/hadoop-gridmix.sh  
hadoop-3.4.1/libexec/tools/hadoop-archive-logs.sh  
hadoop-3.4.1/libexec/tools/hadoop-extras.sh  
hadoop-3.4.1/libexec/tools/hadoop-aws.sh  
hadoop-3.4.1/libexec/tools/hadoop-resourceestimator.sh  
vboxuser@ubuntu1: ~$ cd hadoop-3.4.1/  
vboxuser@ubuntu1: ~/hadoop-3.4.1$ cd etc/hadoop/  
vboxuser@ubuntu1: ~/hadoop-3.4.1/etc/hadoop$ ls  
capacity-scheduler.xml      kms-log4j.properties  
configuration.xml           kms-site.xml  
container-executor.cfg      log4j.properties  
core-site.xml               mapred-env.cmd  
hadoop-env.cmd              mapred-env.sh  
hadoop-env.sh               mapred-queues.xml.template  
hadoop-metrics2.properties  mapred-site.xml  
hadoop-policy.xml           shellprofile.d  
hadoop-user-functions.sh.example  ssl-client.xml.example  
hdfs-rbf-site.xml           ssl-server.xml.example  
hdfs-site.xml               user_ec_policies.xml.template  
httpfs-env.sh               workers  
httpfs-log4j.properties     yarn-env.cmd  
httpfs-site.xml             yarn-env.sh  
kms-acls.xml                yarnservice-log4j.properties  
kms-env.sh                  yarn-site.xml  
vboxuser@ubuntu1: ~/hadoop-3.4.1/etc/hadoop$
```

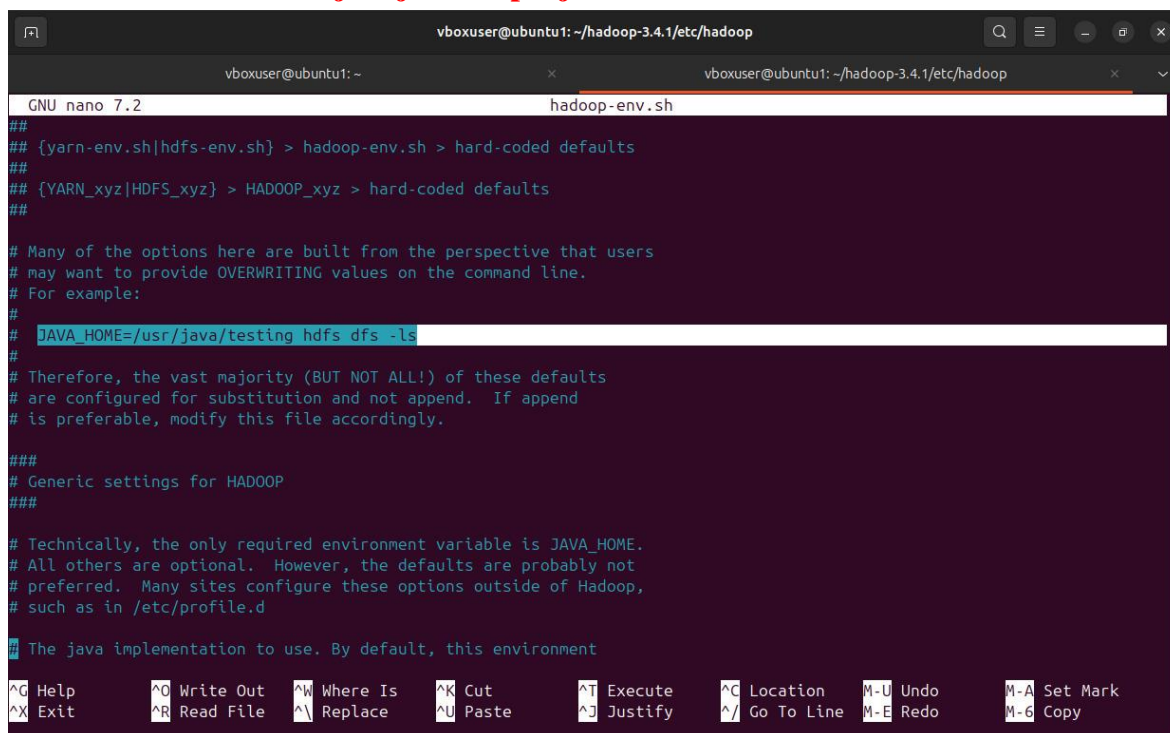
7) now open hadoop-env.h



**Cmd: sudo nano hadoop-env.h**

**In that change the java home path i.e**

**JAVA\_HOME=/usr/lib/jvm/java-8-openjdk-amd64**

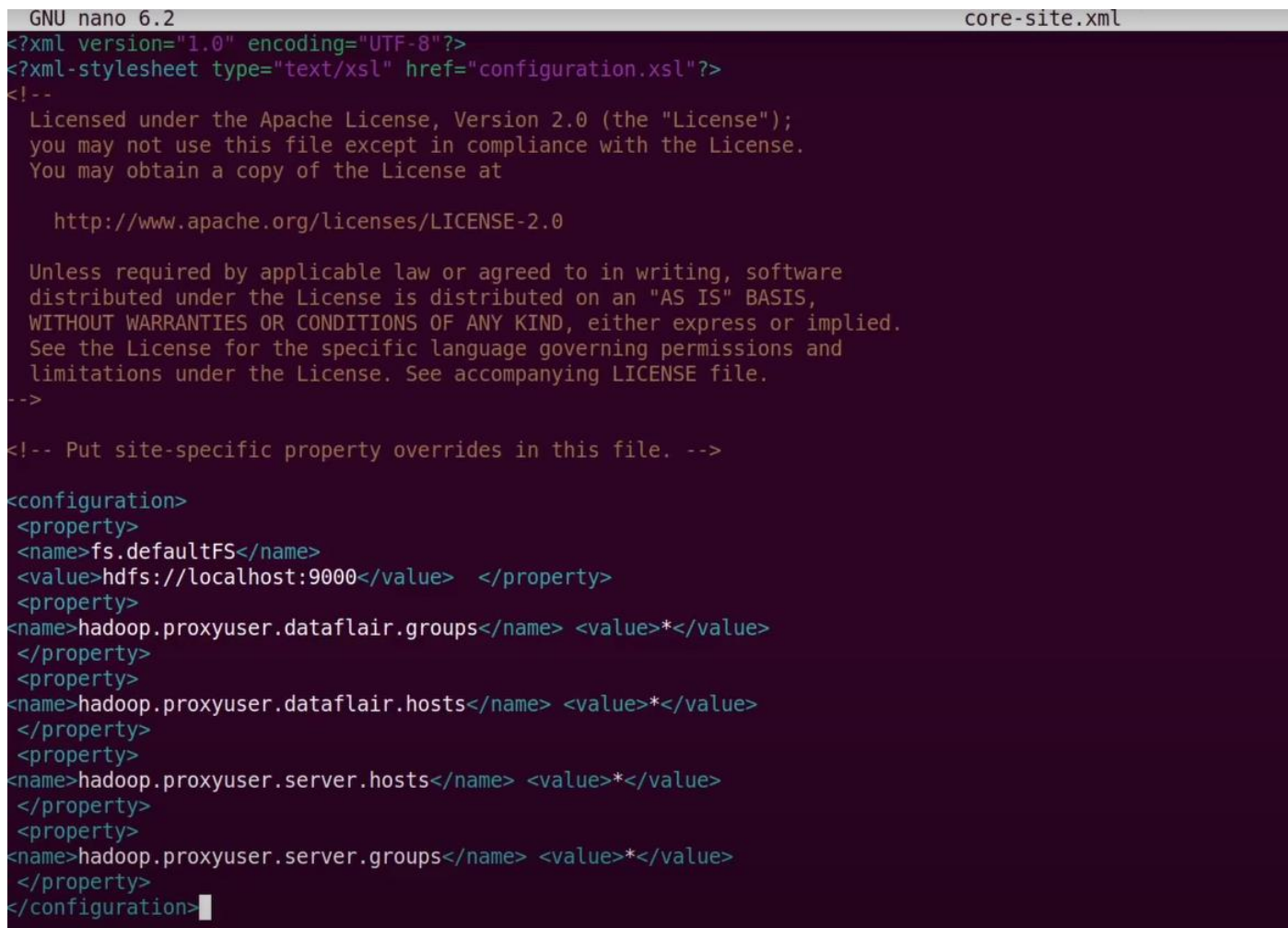


```
GNU nano 7.2 hadoop-env.sh
##
## {yarn-env.sh|hdfs-env.sh} > hadoop-env.sh > hard-coded defaults
##
## {YARN_xyz|HDFS_xyz} > HADOOP_xyz > hard-coded defaults
##
# Many of the options here are built from the perspective that users
# may want to provide OVERWRITING values on the command line.
# For example:
#
# JAVA_HOME=/usr/java/testing hdfs dfs -ls
#
# Therefore, the vast majority (BUT NOT ALL!) of these defaults
# are configured for substitution and not append. If append
# is preferable, modify this file accordingly.
###
# Generic settings for HADOOP
###
# Technically, the only required environment variable is JAVA_HOME.
# All others are optional. However, the defaults are probably not
# preferred. Many sites configure these options outside of Hadoop,
# such as in /etc/profile.d
#
# The java implementation to use. By default, this environment
```

**Step 3 :** Add this the following code in the respective xml

**Files**

**Cmd: sudo nano core-site.xml**



```
GNU nano 6.2 core-site.xml
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!--
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  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>
  <property>
    <name>fs.defaultFS</name>
    <value>hdfs://localhost:9000</value> </property>
  <property>
    <name>hadoop.proxyuser.dataflair.groups</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.dataflair.hosts</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.server.hosts</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.server.groups</name> <value>*</value>
  </property>
</configuration>
```

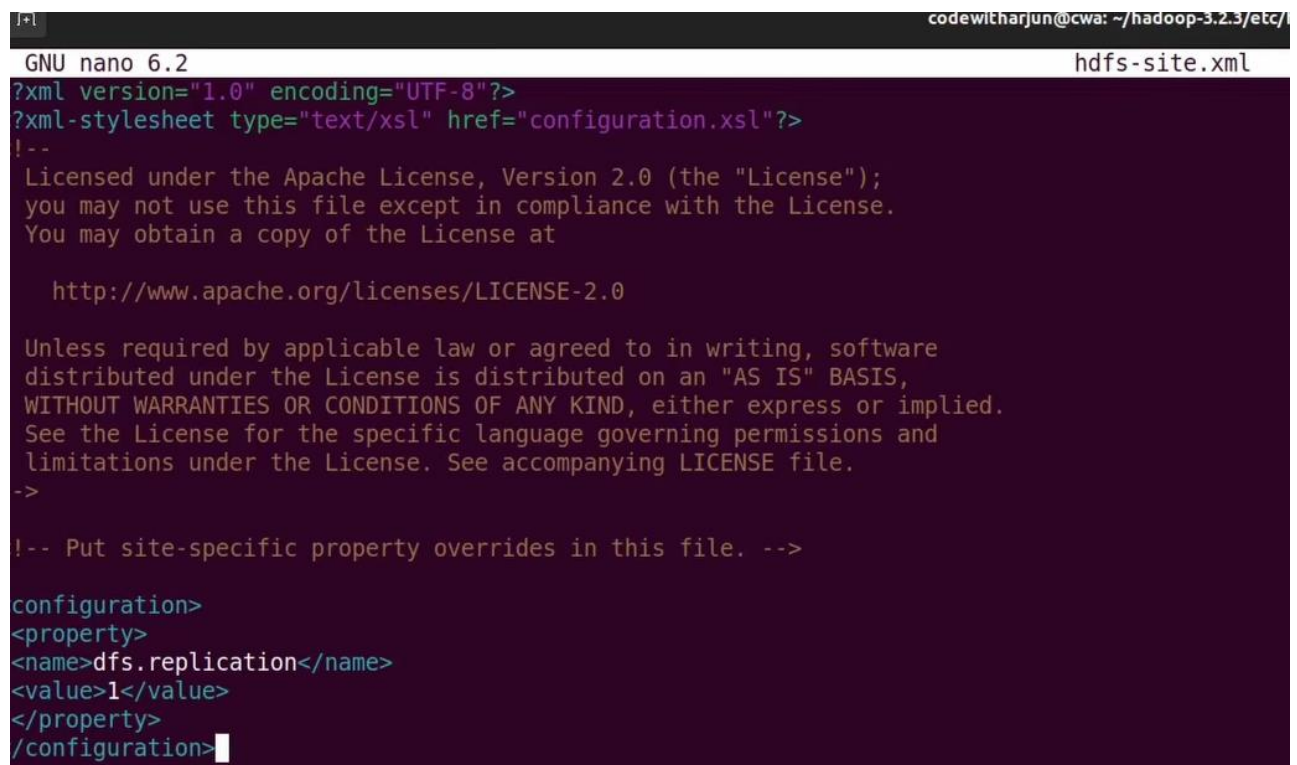
Now add this configuration in core-site.xml file.

1. core-site.xml

```
<configuration>
  <property>
    <name>fs.defaultFS</name>
    <value>hdfs://localhost:9000</value> </property>
  <property>
    <name>hadoop.proxyuser.dataflair.groups</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.dataflair.hosts</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.server.hosts</name> <value>*</value>
  </property>
  <property>
    <name>hadoop.proxyuser.server.groups</name> <value>*</value>
  </property>
</configuration>
```

2. hdfs-site.xml:

Cmd: sudo nano hdfs-site.xml



```
GNU nano 6.2 hdfs-site.xml
?xml version="1.0" encoding="UTF-8"?>
?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
!--
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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>
property>
name>dfs.replication</name>
value>1</value>
</property>
/configuration>
```

```
<configuration>
  <property>
    <name>dfs.replication</name>
    <value>1</value>
  </property>
</configuration>
```

### 3. mapred-site.xml

Cmd: sudo nano mapred-site.xml

```
GNU nano 6.2 mapred-site.xml
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!--
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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>
<property>
<name>mapreduce.framework.name</name> <value>yarn</value>
</property>
<property>
<name>mapreduce.application.classpath</name>
<value>$HADOOP_MAPRED_HOME/share/hadoop/mapreduce/*:$HADOOP_MAPRED_HOME/share/hadoop/mapreduce/lib/*</value>
</property>
</configuration>
```

```
<configuration>
<property>
<name>mapreduce.framework.name</name> <value>yarn</value>
</property>
<property>
<name>mapreduce.application.classpath</name>
<value>$HADOOP_MAPRED_HOME/share/hadoop/mapreduce/*:$HADOOP_MAPRED_HOME/share/hadoop/mapreduce/lib/
*</value>
</property>
</configuration>
```

### 4. yarn-site.xml

Cmd: sudo nano yarn-site.xml

```
GNU nano 6.2 yarn-site.xml
<?xml version="1.0"?>
<!--
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    http://www.apache.org/licenses/LICENSE-2.0

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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.
-->
<configuration>
<property>
<name>yarn.nodemanager.aux-services</name>
<value>mapreduce_shuffle</value>
</property>
<property>
<name>yarn.nodemanager.env-whitelist</name>
<value>JAVA_HOME,HADOOP_COMMON_HOME,HADOOP_HDFS_HOME,HADOOP_CONF_DIR,CLASSPATH_PREP_END_DISTCACHE,HADOOP_YARN_HOME,HADOOP_MAPRED_HOME</value>
</property>
</configuration>
```

```
<configuration>
<property>
<name>yarn.nodemanager.aux-services</name>
```



```

<value>mapreduce_shuffle</value>
</property>
<property>
<name>yarn.nodemanager.env-whitelist</name>

<value>JAVA_HOME,HADOOP_COMMON_HOME,HADOOP_HDFS_HOME,HADOOP_CONF_
DIR,CLASSPATH_PREP
END_DISTCACHE,HADOOP_YARN_HOME,HADOOP_MAPRED_HOME</value>

</property>
</configuration>

```

## Step 4: Now ssh part

```

codewitharjun@cwa:~/hadoop-3.2.3/etc/hadoop$ sudo nano core-site.xml
codewitharjun@cwa:~/hadoop-3.2.3/etc/hadoop$ sudo nano hdfs-site.xml
codewitharjun@cwa:~/hadoop-3.2.3/etc/hadoop$ sudo nano mapred-site.xml
codewitharjun@cwa:~/hadoop-3.2.3/etc/hadoop$ sudo nano yarn-site.xml
codewitharjun@cwa:~/hadoop-3.2.3/etc/hadoop$ ssh localhost
Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.15.0-27-generic x86_64)

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

0 updates can be applied immediately.

```

CMD:ssh localhost

CMD: ssh-keygen -t rsa -P "" -f ~/.ssh/id\_rsa  
cat ~/.ssh/id\_rsa.pub >> ~/.ssh/authorized\_keys

CMD: chmod 0600 ~/.ssh/authorized\_keys

CMD: hadoop-3.4.1/bin/hdfs namenode -format

## STEP:5 FORMAT THE FILE SYSTEM

CMD: export PDSH\_RCMD\_TYPE=ssh

```

codewitharjun@cwa: ~
2022-05-10 20:45:03,790 INFO namenode.FSDirectory: XAttrs enabled? true
2022-05-10 20:45:03,790 INFO namenode.NameNode: Caching file names occurring more than 10 times
2022-05-10 20:45:03,799 INFO snapshot.SnapshotManager: Loaded config captureOpenFiles: false, skipCaptureAccessTimeOnlyChange: false, snapshotDiffAllowSnapRootDescend
ant: true, maxSnapshotLimit: 65536
2022-05-10 20:45:03,801 INFO snapshot.SnapshotManager: SkipList is disabled
2022-05-10 20:45:03,807 INFO util.GSet: Computing capacity for map cachedBlocks
2022-05-10 20:45:03,807 INFO util.GSet: VM type = 64-bit
2022-05-10 20:45:03,807 INFO util.GSet: 0.25% max memory 3.4 GB = 8.8 MB
2022-05-10 20:45:03,807 INFO util.GSet: capacity = 2^20 = 1048576 entries
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.window.num.buckets = 10
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.num.users = 10
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.windows.minutes = 1,5,25
2022-05-10 20:45:03,826 INFO namenode.FSNamesystem: Retry cache on namenode is enabled
2022-05-10 20:45:03,826 INFO namenode.FSNamesystem: Retry cache will use 0.03 of total heap and retry cache entry expiry time is 600000 millis
2022-05-10 20:45:03,828 INFO util.GSet: Computing capacity for map NameNodeRetryCache
2022-05-10 20:45:03,828 INFO util.GSet: VM type = 64-bit
2022-05-10 20:45:03,828 INFO util.GSet: 0.029999999329447746% max memory 3.4 GB = 1.1 MB
2022-05-10 20:45:03,828 INFO util.GSet: capacity = 2^17 = 131072 entries
Re-format filesystem in Storage Directory root= /tmp/hadoop-codewitharjun/dfs/name; location= null ? (Y or N) Y
2022-05-10 20:45:06,845 INFO namenode.FSImage: Allocated new BlockPoolId: BP-228066331-127.0.1.1-1652194866827
2022-05-10 20:45:06,845 INFO common.Storage: Will remove files: [/tmp/hadoop-codewitharjun/dfs/name/current/edits_inprogress_0000000000000000004, /tmp/hadoop-codewith
arjun/dfs/name/current/VERSION, /tmp/hadoop-codewitharjun/dfs/name/current/seen_txid, /tmp/hadoop-codewitharjun/dfs/name/current/edits_0000000000000000001-0000000000
00000001, /tmp/hadoop-codewitharjun/dfs/name/current/fsimage_0000000000000000000.mds, /tmp/hadoop-codewitharjun/dfs/name/current/edits_0000000000000000002-0000000000
00000003, /tmp/hadoop-codewitharjun/dfs/name/current/fsimage_0000000000000000000]
2022-05-10 20:45:06,863 INFO common.Storage: Storage directory /tmp/hadoop-codewitharjun/dfs/name has been successfully formatted.
2022-05-10 20:45:06,898 INFO namenode.FSImageFormatProtobuf: Saving image file /tmp/hadoop-codewitharjun/dfs/name/current/fsimage.ckpt_0000000000000000000 using no co
mpression
2022-05-10 20:45:07,005 INFO namenode.FSImageFormatProtobuf: Image file /tmp/hadoop-codewitharjun/dfs/name/current/fsimage.ckpt_0000000000000000000 of size 408 bytes
saved in 0 seconds.
2022-05-10 20:45:07,013 INFO namenode.NNStorageRetentionManager: Going to retain 1 images with txid >= 0
2022-05-10 20:45:07,045 INFO namenode.FSNamesystem: Stopping services started for active state
2022-05-10 20:45:07,045 INFO namenode.FSNamesystem: Stopping services started for standby state
2022-05-10 20:45:07,050 INFO namenode.FSImage: FSImageSaver clean checkpoint: txid=0 when meet shutdown.
2022-05-10 20:45:07,050 INFO namenode.NameNode: SHUTDOWN_MSG:
*****
SHUTDOWN_MSG: Shutting down NameNode at cwa/127.0.1.1
*****
codewitharjun@cwa: ~$ export PDSH_RCMD_TYPE=ssh
codewitharjun@cwa: ~$ start-all.sh
WARNING: Attempting to start all Apache Hadoop daemons as codewitharjun in 10 seconds.
WARNING: This is not a recommended production deployment configuration.
WARNING: Use CTRL-C to abort.

```

## STEP6: START HADOOP

CMD: start-all.sh

```
codewitharjun@cwa: ~
2022-05-10 20:45:03,790 INFO namenode.FSDirectory: Xattrs enabled? true
2022-05-10 20:45:03,790 INFO namenode.NameNode: Caching file names occurring more than 10 times
2022-05-10 20:45:03,799 INFO snapshot.SnapshotManager: Loaded config captureOpenFiles: false, skipCaptureAccessTimeOnlyChange: false, snapshotDiffAllowSnapRootDescend
ant: true, maxSnapshotLimit: 65536
2022-05-10 20:45:03,801 INFO snapshot.SnapshotManager: Skiplist is disabled
2022-05-10 20:45:03,807 INFO util.GSet: Computing capacity for map cachedBlocks
2022-05-10 20:45:03,807 INFO util.GSet: VM type      = 64-bit
2022-05-10 20:45:03,807 INFO util.GSet: 0.25% max memory 3.4 GB = 8.8 MB
2022-05-10 20:45:03,807 INFO util.GSet: capacity    = 2^20 = 1048576 entries
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.window.num.buckets = 10
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.num.users = 10
2022-05-10 20:45:03,821 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.windows.minutes = 1,5,25
2022-05-10 20:45:03,826 INFO namenode.FSNamesystem: Retry cache on namenode is enabled
2022-05-10 20:45:03,826 INFO namenode.FSNamesystem: Retry cache will use 0.03 of total heap and retry cache entry expiry time is 600000 millis
2022-05-10 20:45:03,828 INFO util.GSet: Computing capacity for map NameNodeRetryCache
2022-05-10 20:45:03,828 INFO util.GSet: VM type      = 64-bit
2022-05-10 20:45:03,828 INFO util.GSet: 0.029999999329447746% max memory 3.4 GB = 1.1 MB
2022-05-10 20:45:03,828 INFO util.GSet: capacity    = 2^17 = 131072 entries
Re-format filesystem in Storage Directory root= /tmp/hadoop-codewitharjun/dfs/name; location= null ? (Y or N) Y
2022-05-10 20:45:06,845 INFO namenode.FSImage: Allocated new BlockPoolId: BP-228066331-127.0.1.1-1652194806827
2022-05-10 20:45:06,845 INFO common.Storage: Will remove files: [/tmp/hadoop-codewitharjun/dfs/name/current/edits_inprogress_0000000000000000004, /tmp/hadoop-codewith
arjun/dfs/name/current/VERSION, /tmp/hadoop-codewitharjun/dfs/name/current/seen_txid, /tmp/hadoop-codewitharjun/dfs/name/current/edits_0000000000000000001-00000000000
000000001, /tmp/hadoop-codewitharjun/dfs/name/current/fsimage_00000000000000000000.md5, /tmp/hadoop-codewitharjun/dfs/name/current/edits_0000000000000000002-00000000000
000000003, /tmp/hadoop-codewitharjun/dfs/name/current/fsimage_00000000000000000000]
2022-05-10 20:45:06,863 INFO common.Storage: Storage directory /tmp/hadoop-codewitharjun/dfs/name has been successfully formatted.
2022-05-10 20:45:06,898 INFO namenode.FSImageFormatProtobuf: Saving image file /tmp/hadoop-codewitharjun/dfs/name/current/fsimage.ckpt_0000000000000000000 using no co
mpression
2022-05-10 20:45:07,005 INFO namenode.FSImageFormatProtobuf: Image file /tmp/hadoop-codewitharjun/dfs/name/current/fsimage.ckpt_0000000000000000000 of size 408 bytes
saved in 0 seconds
2022-05-10 20:45:07,013 INFO namenode.NNStorageRetentionManager: Going to retain 1 images with txid >= 0
2022-05-10 20:45:07,045 INFO namenode.FSNamesystem: Stopping services started for active state
2022-05-10 20:45:07,045 INFO namenode.FSNamesystem: Stopping services started for standby state
2022-05-10 20:45:07,050 INFO namenode.FSImage: FSImageSaver clean checkpoint: txid=0 when meet shutdown.
2022-05-10 20:45:07,050 INFO namenode.NameNode: SHUTDOWN_MSG:
/*****
SHUTDOWN_MSG: Shutting down NameNode at cwa/127.0.1.1
*****/
codewitharjun@cwa: ~$ export PDSH_RCMD_TYPE=ssh
codewitharjun@cwa: ~$ start-all.sh
WARNING: Attempting to start all Apache Hadoop daemons as codewitharjun in 10 seconds.
WARNING: This is not a recommended production deployment configuration.
WARNING: Use CTRL-C to abort.
```