

Output –

Install JDK :

```
ubuntu@Ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@Ubuntu:~/Desktop$ sudo apt-get update
[sudo] password for ubuntu:
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/main amd64 DEP-11 Metadat
a [41.5 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [995
kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 DEP-11 Met
adata [18.5 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [471
kB]
Get:9 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 DEP-11 Metada
ta [101 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages
[608 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages
[900 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 DEP-11 M
```

```
ubuntu@Ubuntu: ~/Desktop
adata [7,976 B]
Get:15 http://in.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 DEP-11
Metadata [12.5 kB]
Fetched 3,761 kB in 5s (770 kB/s)
Reading package lists... Done
ubuntu@Ubuntu:~/Desktop$ sudo apt install default-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
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
  libice-dev libpthread-stubs0-dev libsm-dev libx11-dev libxau-dev libxcb1-dev
  libxdmcp-dev libxt-dev openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
  openjdk-11-jre-headless x11proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
  libice-doc libsm-doc libx11-doc libxcb-doc libxt-doc 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 libice-dev libpthread-stubs0-dev libsm-dev
  libx11-dev libxau-dev libxcb1-dev libxdmcp-dev libxt-dev openjdk-11-jdk
```

Creating user group and user for Hadoop :

```
ubuntu@Ubuntu: ~/Desktop
ubuntu@Ubuntu:~/Desktop$ sudo addgroup hadoop
Adding group `hadoop' (GID 1001) ...
Done.
ubuntu@Ubuntu:~/Desktop$ sudo adduser --ingroup hadoop hdp123
Adding user `hdp123' ...
Adding new user `hdp123' (1001) with group `hadoop' ...
Creating home directory `/home/hdp123' ...
Copying files from `/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for hdp123
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
ubuntu@Ubuntu:~/Desktop$ sudo adduser hdp123 sudo
Adding user `hdp123' to group `sudo' ...
Adding user hdp123 to group sudo
Done.
```

```
ubuntu@Ubuntu: ~/Desktop
Adding user `hdp123' to group `sudo' ...
Adding user hdp123 to group sudo
Done.
ubuntu@Ubuntu:~/Desktop$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 133 not upgraded.
Need to get 750 kB of archives.
After this operation, 6,046 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 openssh-sftp-server amd64 1:8.9p1-3ubuntu0.1 [38.7 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 openssh-server amd64 1:8.9p1-3ubuntu0.1 [434 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 ncurses-term all 6.3-2 [267 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 ssh-import-id all 5.1
```

```
hdp123@Ubuntu: /home/ubuntu/Desktop
ubuntu@Ubuntu:~/Desktop$ su hdp123
Password:
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

hdp123@Ubuntu: /home/ubuntu/Desktop$ ssh-keygen -t rsa -P ""
Generating public/private rsa key pair.
Enter file in which to save the key (/home/hdp123/.ssh/id_rsa):
Created directory '/home/hdp123/.ssh'.
Your identification has been saved in /home/hdp123/.ssh/id_rsa
Your public key has been saved in /home/hdp123/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:9hYNklF5CK1sz6pQLnEsdQjiOomcr9IA0YH5aUby/50 hdp123@Ubuntu
The key's randomart image is:
+---[RSA 3072]-----+
| +o..  o+.o |
|=.o. . . o+ . |
| *..  o.+... |
|+oB  o .+. o |
|*= .o +.So. . |
|... .* . .o. |
| o .o... oo |
|. o  o. E. |
|..  .. |
```

```
hdp123@Ubuntu: ~
+---[SHA256]-----+
hdp123@Ubuntu: /home/ubuntu/Desktop$ cat $HOME/.ssh/id_rsa.pub >> $HOME/.ssh/authorized_keys
hdp123@Ubuntu: /home/ubuntu/Desktop$ chmod 640 ~/.ssh/authorized_keys
hdp123@Ubuntu: /home/ubuntu/Desktop$ ssh localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ED25519 key fingerprint is SHA256:MPKKN3cYlgHqIPyXb8EB4rLITni7S5yedNUilG8NuYU.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
Enter passphrase for key '/home/hdp123/.ssh/id_rsa':
hdp123@localhost's password:
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-32-generic x86_64)

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

 * Introducing Expanded Security Maintenance for Applications.
   Receive updates to over 25,000 software packages with your
   Ubuntu Pro subscription. Free for personal use.

https://ubuntu.com/pro
```

Downloading Hadoop –

Index of /hadoop/common			
Name	Last modified	Size	Description
Parent Directory	-		
current/	2023-03-24 10:56	-	
current2/	2022-06-17 11:29	-	
hadoop-2.10.1/	2022-06-17 11:32	-	
hadoop-2.10.2/	2022-06-17 11:29	-	
hadoop-3.2.3/	2022-06-17 11:30	-	
hadoop-3.2.4/	2022-07-22 02:08	-	
hadoop-3.3.1/	2022-06-17 11:31	-	
hadoop-3.3.2/	2022-06-17 11:30	-	
hadoop-3.3.3/	2022-06-17 11:30	-	
hadoop-3.3.4/	2022-08-04 18:11	-	
hadoop-3.3.5/	2023-03-24 10:56	-	
stable/	2023-03-24 10:56	-	
stable2/	2022-06-17 11:29	-	
KEYS	2023-03-28 16:57	418K	
README.txt	2015-04-21 01:32	184	

Index of /hadoop/common/hadoop-2.10.1			
Name	Last modified	Size	Description
Parent Directory	-		
CHANGES.md	2020-09-22 02:23	41K	
CHANGES.md.asc	2020-09-22 02:23	836	
CHANGES.md.sha512	2020-09-22 02:23	186	
RELEASENOTES.md	2020-09-22 02:23	2.8K	
RELEASENOTES.md.asc	2020-09-22 02:23	836	
RELEASENOTES.md.sha512	2020-09-22 02:23	201	
hadoop-2.10.1-rat.txt	2020-09-22 02:23	1.5M	
hadoop-2.10.1-rat.txt.asc	2020-09-22 02:23	836	
hadoop-2.10.1-rat.txt.sha512	2020-09-22 02:23	219	
hadoop-2.10.1-site.tar.gz	2020-09-22 02:23	32M	
hadoop-2.10.1-site.tar.gz.asc	2020-09-22 02:23	836	
hadoop-2.10.1-site.tar.gz.sha512	2020-09-22 02:23	260	
hadoop-2.10.1-src.tar.gz	2020-09-22 02:23	43M	
hadoop-2.10.1-src.tar.gz.asc	2020-09-22 02:23	836	
hadoop-2.10.1-src.tar.gz.sha512	2020-09-22 02:23	256	
hadoop-2.10.1.tar.gz	2020-09-22 02:23	390M	
hadoop-2.10.1.tar.gz.asc	2020-09-22 02:23	836	
hadoop-2.10.1.tar.gz.sha512	2020-09-22 02:23	216	

Extracting Hadoop and editing some of its configuration files :

```
hdp123@Ubuntu: /home/ubuntu/Downloads
hadoop-2.10.1/include/StringUtils.hh
hadoop-2.10.1/include/SerialUtils.hh
hadoop-2.10.1/LICENSE.txt
hadoop-2.10.1/NOTICE.txt
hadoop-2.10.1/README.txt
hdp123@Ubuntu: /home/ubuntu/Downloads$ ls
hadoop-2.10.1  hadoop-2.10.1.tar.gz  hadoop-installation-ubuntu.txt
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo mv hadoop-2.10.1 /usr/local/hadoop
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo chown -R hadoop /usr/local
chown: invalid user: 'hadoop'
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo chown -R hdp123 /usr/local
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo mkdir -p /usr/local/hadoop_space
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo mkdir -p /usr/local/hadoop_space/hdfs
/namenode
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo mkdir -p /usr/local/hadoop_space/hdfs
/datanode
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo chown -R hdp123 /usr/local/
hdp123@Ubuntu: /home/ubuntu/Downloads$ jps
9652 Jps
hdp123@Ubuntu: /home/ubuntu/Downloads$ udo nano ~/.bashrc
Command 'udo' not found, but can be installed with:
sudo apt install udo
hdp123@Ubuntu: /home/ubuntu/Downloads$ sudo nano ~/.bashrc
hdp123@Ubuntu: /home/ubuntu/Downloads$
```

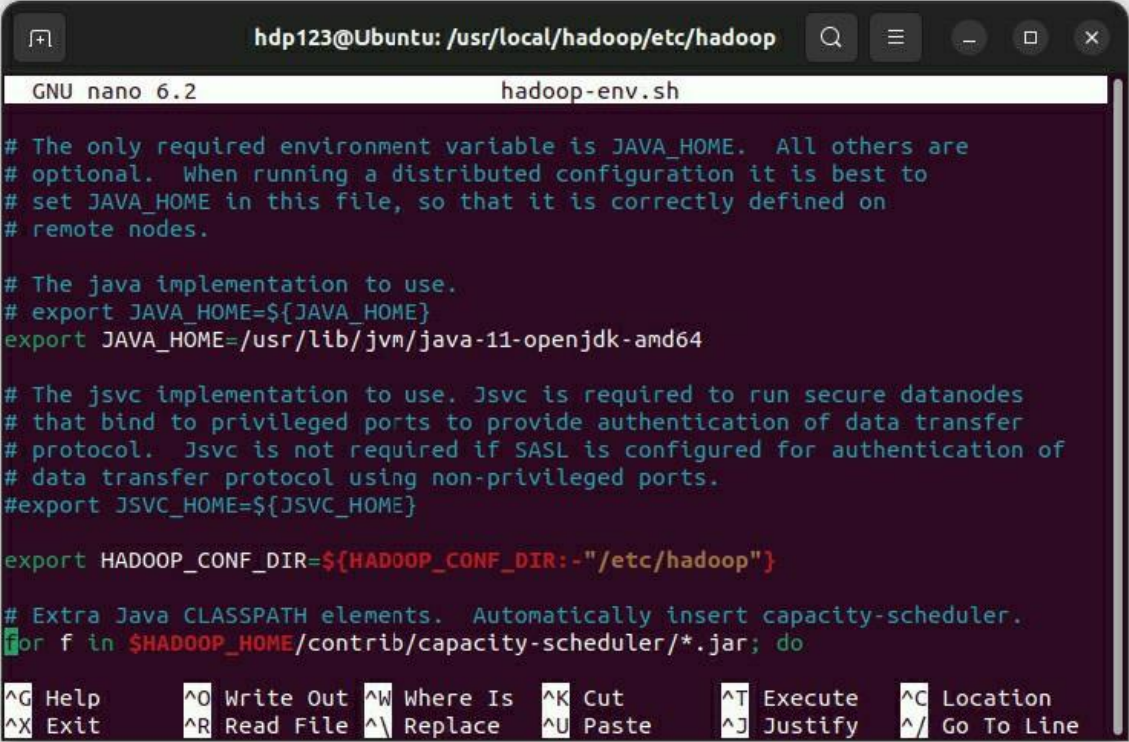
sudo nano ~/.bashrc

```
ubuntu@Ubuntu: ~/Downloads
GNU nano 6.2 /home/ubuntu/.bashrc *
# 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 HADOOP_HOME=/usr/local/hadoop
export PATH=$PATH:$HADOOP_HOME/bin
export PATH=$PATH:$HADOOP_HOME/sbin
export HADOOP_MAPRED_HOME=$HADOOP_HOME
export HADOOP_COMMON_HOME=$HADOOP_HOME
export HADOOP_HDFS_HOME=$HADOOP_HOME
export YARN_HOME=$HADOOP_HOME
export HADOOP_COMMON_LIB_NATIVE_DIR=$HADOOP_HOME/native
export HADOOP_OPTS="-Djava.library.path=$HADOOP_HOME/native"

^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
```


sudo nano hadoop-env.sh



```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
GNU nano 6.2 hadoop-env.sh

# 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}
export JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64

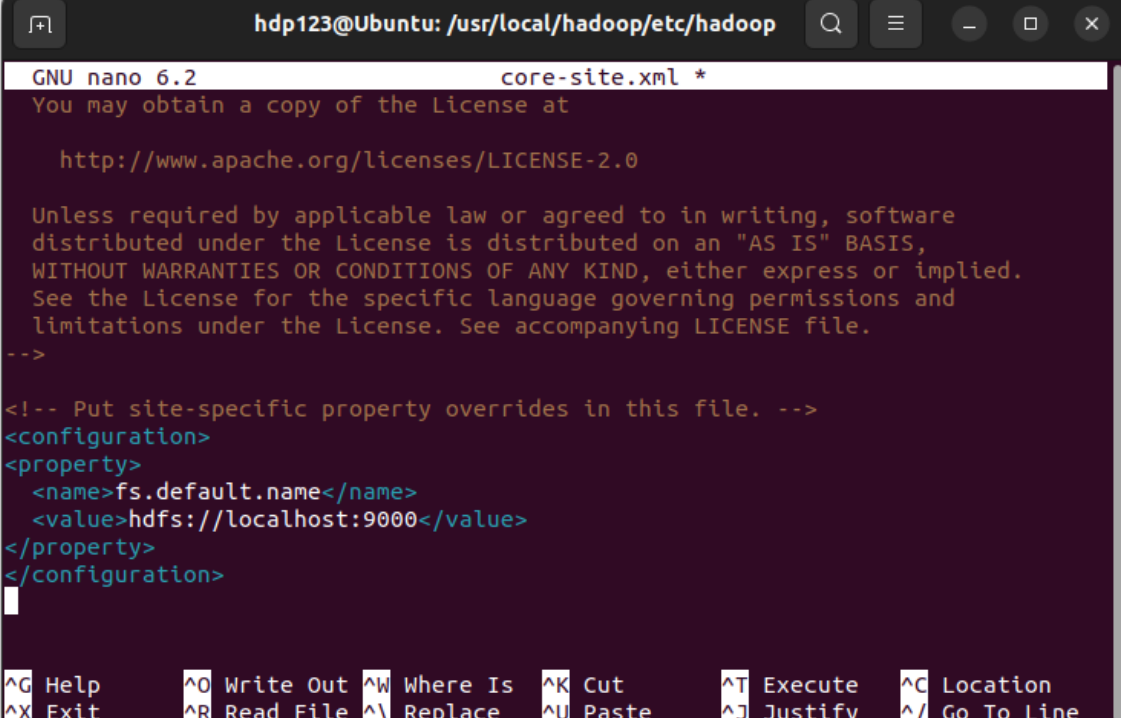
# The jsvc implementation to use. Jsvc is required to run secure datanodes
# that bind to privileged ports to provide authentication of data transfer
# protocol. Jsvc is not required if SASL is configured for authentication of
# data transfer protocol using non-privileged ports.
#export JSVC_HOME=${JSVC_HOME}

export HADOOP_CONF_DIR=${HADOOP_CONF_DIR:-"/etc/hadoop"}

# Extra Java CLASSPATH elements. Automatically insert capacity-scheduler.
for f in $HADOOP_HOME/contrib/capacity-scheduler/*.jar; do

```

sudo nano core-site.xml



```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
GNU nano 6.2 core-site.xml *
You may obtain a copy of the License at

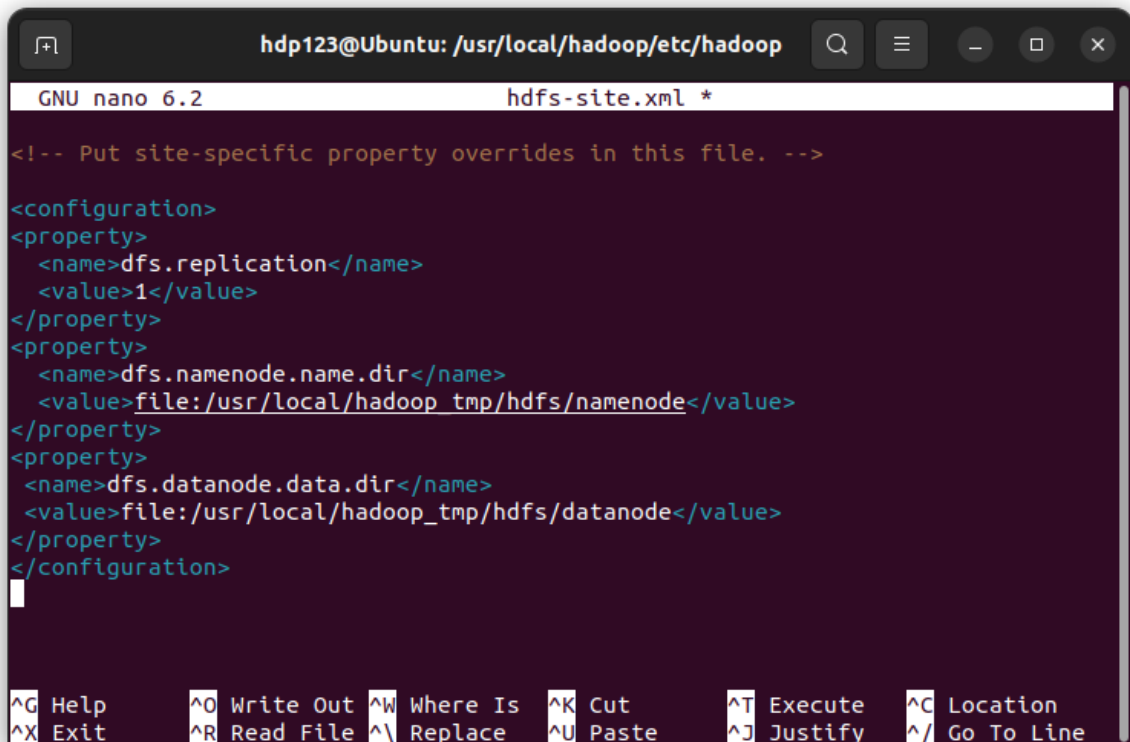
http://www.apache.org/licenses/LICENSE-2.0

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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.
-->

<!-- Put site-specific property overrides in this file. -->
<configuration>
<property>
  <name>fs.default.name</name>
  <value>hdfs://localhost:9000</value>
</property>
</configuration>

```

Sudo nano hdfs-site.xml



```
GNU nano 6.2 hdfs-site.xml *

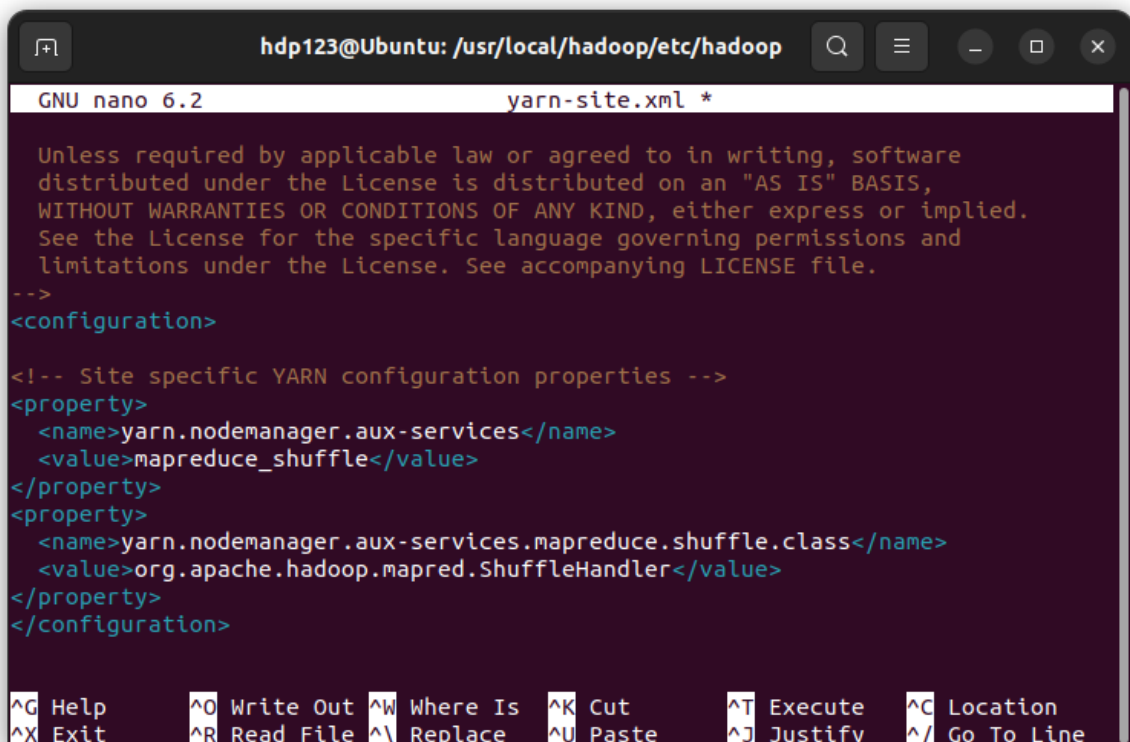
<!-- Put site-specific property overrides in this file. -->

<configuration>
<property>
  <name>dfs.replication</name>
  <value>1</value>
</property>
<property>
  <name>dfs.namenode.name.dir</name>
  <value>file:/usr/local/hadoop_tmp/hdfs/namenode</value>
</property>
<property>
  <name>dfs.datanode.data.dir</name>
  <value>file:/usr/local/hadoop_tmp/hdfs/datanode</value>
</property>
</configuration>

```

^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

sudo nano yarn-site.xml



```
GNU nano 6.2 yarn-site.xml *

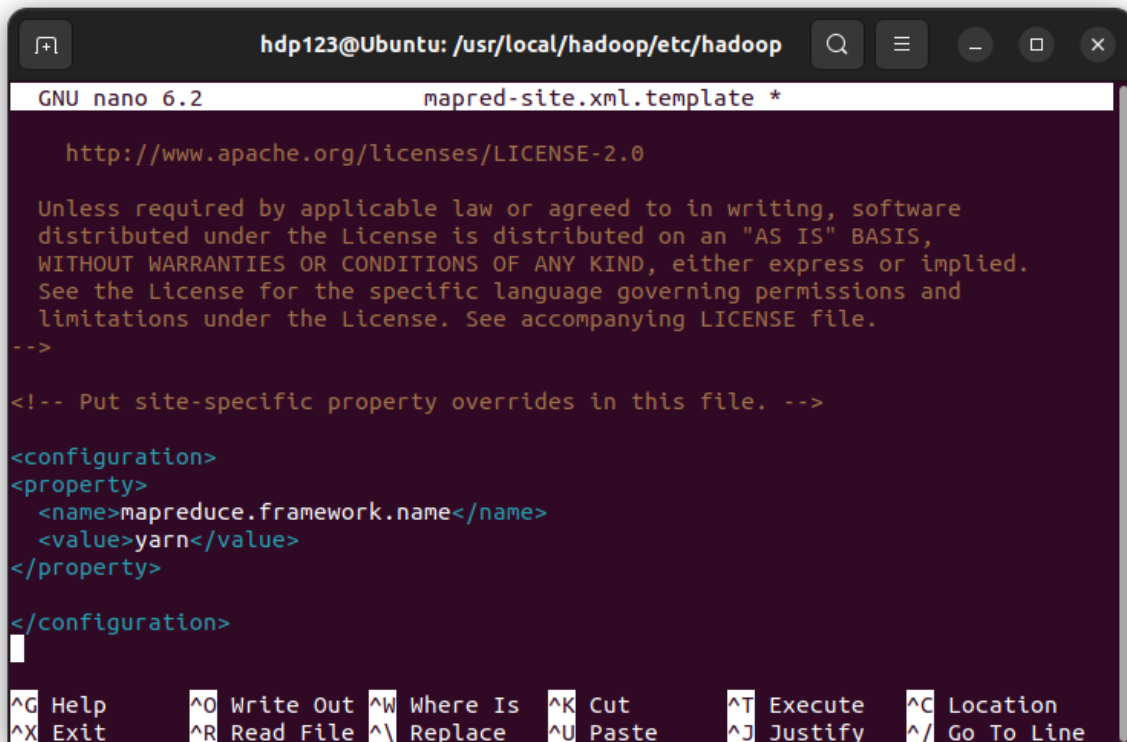
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License. See accompanying LICENSE file.
-->
<configuration>

<!-- Site specific YARN configuration properties -->
<property>
  <name>yarn.nodemanager.aux-services</name>
  <value>mapreduce_shuffle</value>
</property>
<property>
  <name>yarn.nodemanager.aux-services.mapreduce.shuffle.class</name>
  <value>org.apache.hadoop.mapred.ShuffleHandler</value>
</property>
</configuration>

```

^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

sudo nano mapred-site.xml.template



The screenshot shows a terminal window with the title bar "hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop". The nano editor is open, editing the file "mapred-site.xml.template". The content of the file includes the Apache License 2.0 text, a comment to put site-specific property overrides in this file, and an XML configuration block for mapreduce.framework.name set to yarn. The nano editor's status bar at the bottom shows various keyboard shortcuts like ^G Help, ^O Write Out, ^W Where Is, ^K Cut, ^T Execute, ^C Location, ^X Exit, ^R Read File, ^_ Replace, ^U Paste, ^J Justify, and ^_ Go To Line.

```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
GNU nano 6.2 mapred-site.xml.template *

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

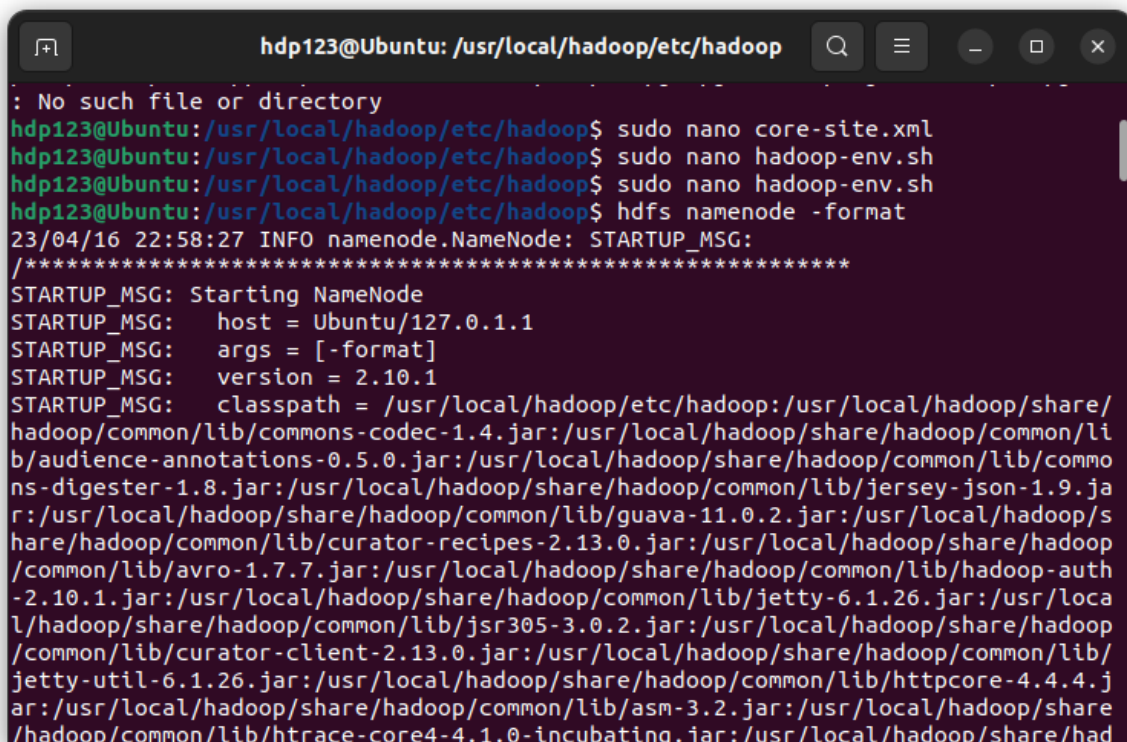
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License. See accompanying LICENSE file.
-->

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

<configuration>
<property>
  <name>mapreduce.framework.name</name>
  <value>yarn</value>
</property>

</configuration>
^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
```

Starting hadoop services –



The screenshot shows a terminal window with the title bar "hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop". The user has executed several commands: "sudo nano core-site.xml", "sudo nano hadoop-env.sh", "sudo nano hadoop-env.sh", and "hdfs namenode -format". The output of the "hdfs namenode -format" command is displayed, showing a startup message for the NameNode. The message includes the host (Ubuntu/127.0.1.1), arguments ([-format]), version (2.10.1), and a long classpath listing various Hadoop and Java libraries.

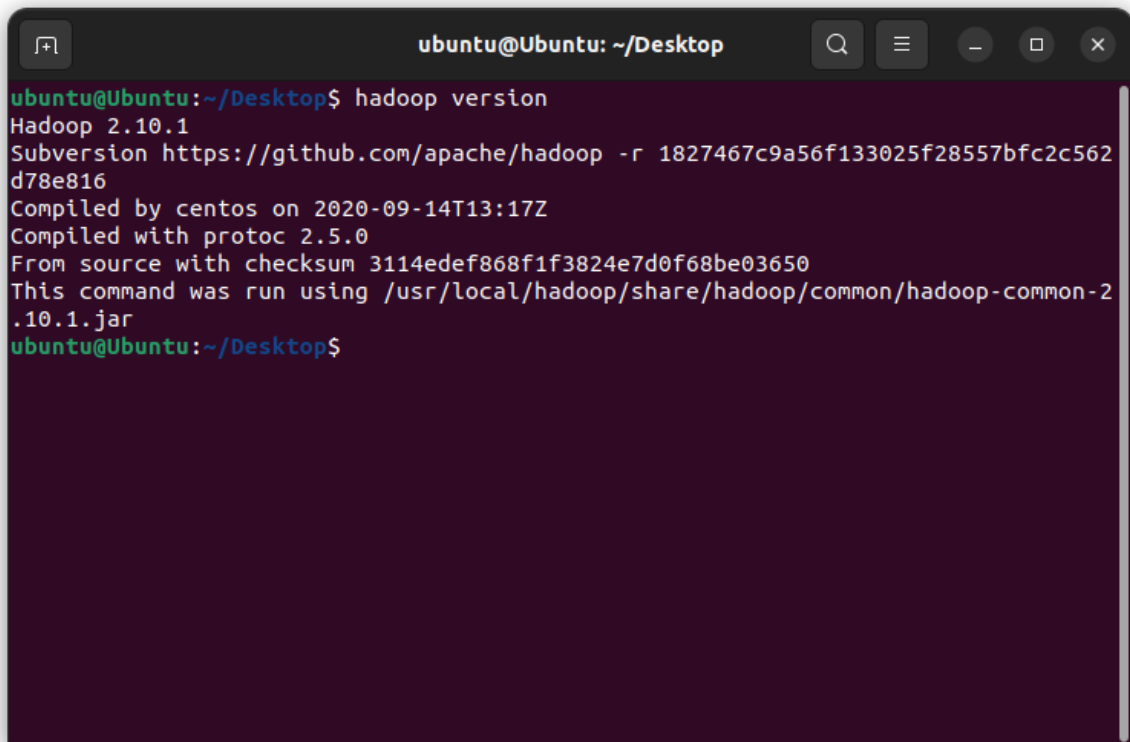
```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
: No such file or directory
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop$ sudo nano core-site.xml
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop$ sudo nano hadoop-env.sh
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop$ sudo nano hadoop-env.sh
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop$ hdfs namenode -format
23/04/16 22:58:27 INFO namenode.NameNode: STARTUP_MSG:
/*****
STARTUP_MSG: Starting NameNode
STARTUP_MSG:   host = Ubuntu/127.0.1.1
STARTUP_MSG:   args = [-format]
STARTUP_MSG:   version = 2.10.1
STARTUP_MSG:   classpath = /usr/local/hadoop/etc/hadoop:/usr/local/hadoop/share/
hadoop/common/lib/commons-codec-1.4.jar:/usr/local/hadoop/share/hadoop/common/li
b/audience-annotations-0.5.0.jar:/usr/local/hadoop/share/hadoop/common/lib/commo
ns-digester-1.8.jar:/usr/local/hadoop/share/hadoop/common/lib/jersey-json-1.9.jar
:/usr/local/hadoop/share/hadoop/common/lib/guava-11.0.2.jar:/usr/local/hadoop/s
hare/hadoop/common/lib/curator-recipes-2.13.0.jar:/usr/local/hadoop/share/hadoop
/common/lib/avro-1.7.7.jar:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth
-2.10.1.jar:/usr/local/hadoop/share/hadoop/common/lib/jetty-6.1.26.jar:/usr/loca
l/hadoop/share/hadoop/common/lib/jsr305-3.0.2.jar:/usr/local/hadoop/share/hadoop
/common/lib/curator-client-2.13.0.jar:/usr/local/hadoop/share/hadoop/common/lib/
jetty-util-6.1.26.jar:/usr/local/hadoop/share/hadoop/common/lib/httpcore-4.4.4.j
ar:/usr/local/hadoop/share/hadoop/common/lib/asm-3.2.jar:/usr/local/hadoop/share
/hadoop/common/lib/htrace-core4-4.1.0-incubating.jar:/usr/local/hadoop/share/had
```



```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
hdp123@Ubuntu:/usr/local/hadoop/etc/hadoop$ start-dfs.sh
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.
util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.
10.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
23/04/16 23:00:12 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
Starting namenodes on [localhost]
Enter passphrase for key '/home/hdp123/.ssh/id_rsa':
hdp123@localhost's password:
localhost: starting namenode, logging to /usr/local/hadoop/logs/hadoop-hdp123-na
menode-Ubuntu.out
Enter passphrase for key '/home/hdp123/.ssh/id_rsa':
hdp123@localhost's password:
localhost: starting datanode, logging to /usr/local/hadoop/logs/hadoop-hdp123-da
tanode-Ubuntu.out
Starting secondary namenodes [0.0.0.0]
The authenticity of host '0.0.0.0 (0.0.0.0)' can't be established.
ED25519 key fingerprint is SHA256:MPKkn3cYlqHqIPvXb8EB4rLITni7S5vedNUilG8NuYU.
```

```
hdp123@Ubuntu: /usr/local/hadoop/etc/hadoop
10.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
23/04/16 23:01:00 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
hdp123@Ubuntu:/usr/local/hadoop/etc/hadoop$ start-yarn.sh
starting yarn daemons
starting resourcemanager, logging to /usr/local/hadoop/logs/yarn-hdp123-resource
manager-Ubuntu.out
Enter passphrase for key '/home/hdp123/.ssh/id_rsa':
hdp123@localhost's password:
localhost: starting nodemanager, logging to /usr/local/hadoop/logs/yarn-hdp123-n
odemanager-Ubuntu.out
hdp123@Ubuntu:/usr/local/hadoop/etc/hadoop$ jps
12212 NodeManager
11557 NameNode
12471 Jps
11896 SecondaryNameNode
12042 ResourceManager
11708 DataNode
hdp123@Ubuntu:/usr/local/hadoop/etc/hadoop$
```

Hadoop Version –

A terminal window with a dark background and light text. The window title is 'ubuntu@Ubuntu: ~/Desktop'. The prompt is 'ubuntu@Ubuntu:~/Desktop\$'. The command 'hadoop version' has been executed, and the output is displayed in several lines. The output includes the Hadoop version (2.10.1), the Subversion repository URL, the compile date and time, the compiled protocol version, the source checksum, and the path to the jar file. The prompt 'ubuntu@Ubuntu:~/Desktop\$' is shown again at the bottom.

```
ubuntu@Ubuntu:~/Desktop$ hadoop version
Hadoop 2.10.1
Subversion https://github.com/apache/hadoop -r 1827467c9a56f133025f28557bfc2c562
d78e816
Compiled by centos on 2020-09-14T13:17Z
Compiled with protoc 2.5.0
From source with checksum 3114edef868f1f3824e7d0f68be03650
This command was run using /usr/local/hadoop/share/hadoop/common/hadoop-common-2
.10.1.jar
ubuntu@Ubuntu:~/Desktop$
```