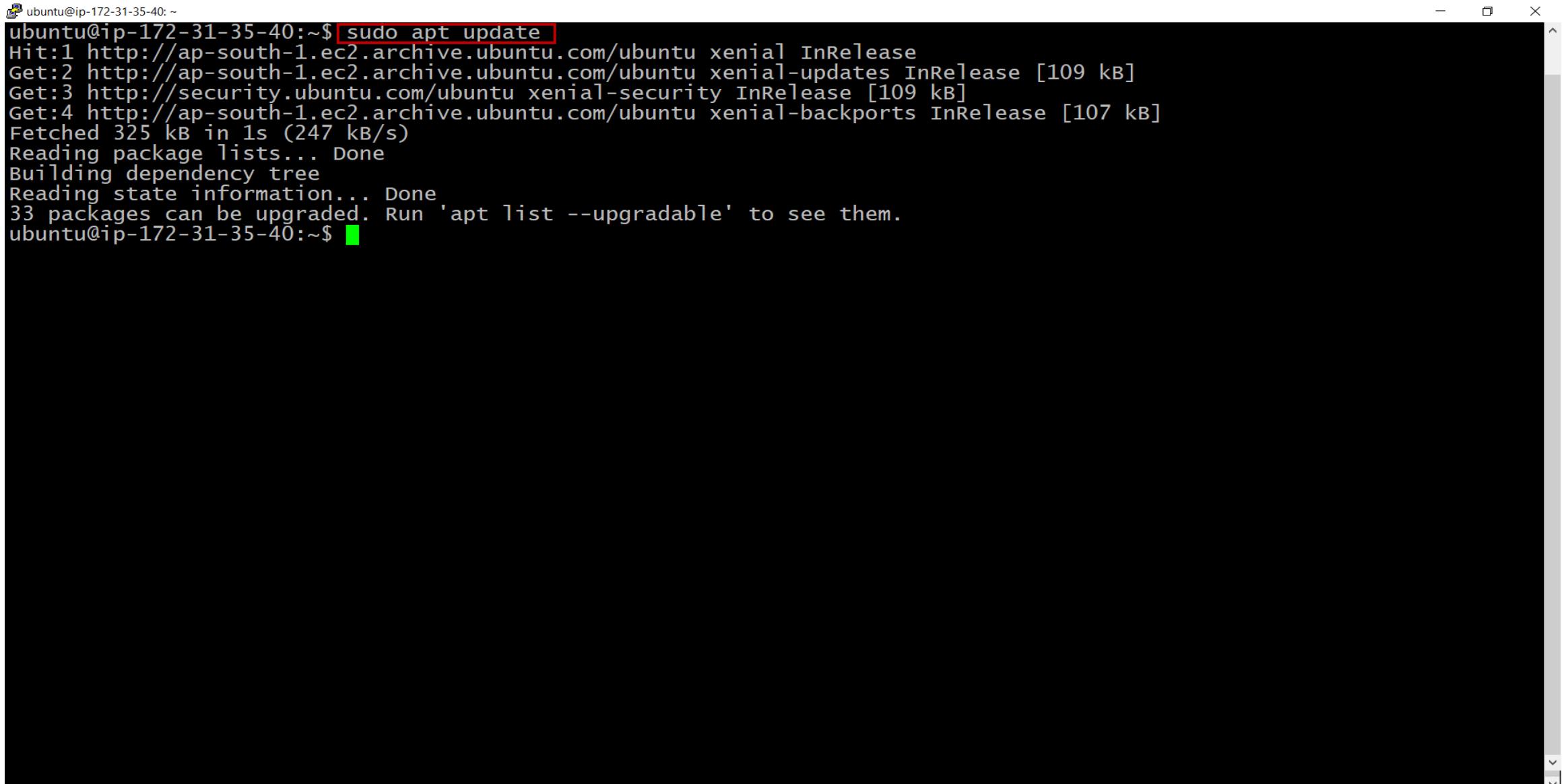


Single Node Cluster

Installation

01) sudo apt-get update



```
ubuntu@ip-172-31-35-40:~$ sudo apt update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu xenial InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Fetched 325 kB in 1s (247 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
33 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-35-40:~$ █
```

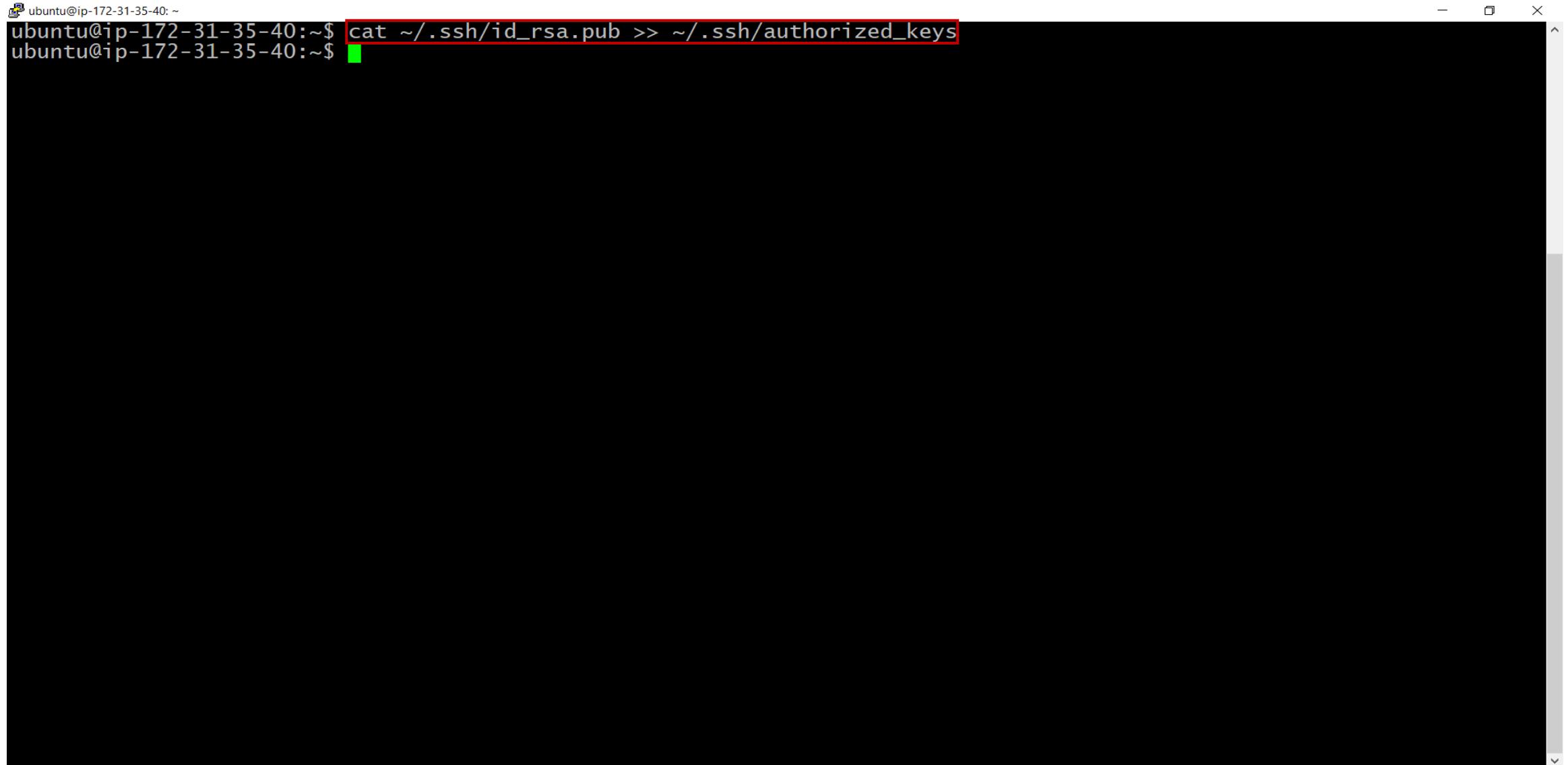
press enter

02) ssh-keygen

```
ubuntu@ip-172-31-35-40:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_rsa.
Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:Emgqfy4zfyT2GyON50Rhb79s/CxMxOHUseIJsl2isnc ubuntu@ip-172-31-35-40
The key's randomart image is:
+---[RSA 2048]---+
|          . . .
|         . o ..
|        o = o+o..
|       o . O =+o
|      . . * E.o
|     o .o* .+ ..
|    ..=+*   +.
|   +o =oo .=o
|   =o.o. .ooo
+---[SHA256]---+
ubuntu@ip-172-31-35-40:~$
```

press enter 6 times

03) cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys



A terminal window titled "ubuntu@ip-172-31-35-40: ~" displays the command "cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys". The command is highlighted with a red box. A green cursor is visible at the end of the command line.

press enter

04) ssh localhost

```
ubuntu@ip-172-31-35-40:~$ ssh localhost
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-1128-aws x86_64)

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

18 packages can be updated.
2 of these updates are security updates.
To see these additional updates run: apt list --upgradable

New release '18.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

*** System restart required ***
Last login: Thu Oct 14 08:39:06 2021 from 152.57.204.27
ubuntu@ip-172-31-35-40:~$
```



press enter

05) sudo apt-get install openjdk-8-jdk -y

```
ubuntu@ip-172-31-35-40:~$ sudo apt-get install openjdk-8-jdk -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ca-certificates-java fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra hicolor-icon-theme
  java-common libasound2 libasound2-data libasyncns0 libatk1.0-0 libatk1.0-data libavahi-client3
  libavahi-common-data libavahi-common3 libcairo2 libcurl2 libdatrie1 libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2
  libdrm-radeon1 libflac8 libfontconfig1 libgdk-pixbuf2.0-0 libgdk-pixbuf2.0-common libgif7 libgl1-mesa-dri
  libgl1-mesa-glx libglapi-mesa libgraphite2-3 libgtk2.0-0 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libice-dev
  libice6 libjbig0 libjpeg-turbo8 libjpeg8 liblcms2-2 liblvm6.0 libnspr4 libnss3 libnss3-nssdb libogg0
  libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0 libpcsc-lite1 libpixman-1-0
  libpthread-stubs0-dev libpulse0 libsensors4 libsm6 libsndfile1 libthai-data libthai0 libtiff5
  libtxc-dxtn-s2tc0 libvorbis0a libvorbisenc2 libx11-dev libx11-doc libx11-xcb1 libxau-dev libxcb-dri2-0
  libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0 libxcb-shm0 libxcb-sync1 libxcb1-dev libcomposite1
  libcursor1 libxdamage1 libxdmcp-dev libxfixed3 libxi6 libxinerama1 libxrandr2 libxrender1 libxshmfence1 libxt-dev
  libxt6 libxtst6 libxf86vm1 openjdk-8-jdk-headless openjdk-8-jre openjdk-8-jre-headless x11-common
  x11proto-core-dev x11proto-input-dev x11proto-kb-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
  default-jre libasound2-plugins alsa-utils cups-common librsvg2-common gvfs libice-doc liblcms2-utils pcscd
  pulseaudio lm-sensors libsm-doc libxcb-doc libxt-doc openjdk-8-demo openjdk-8-source visualvm icedtea-8-plugin
  libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei fonts-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  ca-certificates-java fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra hicolor-icon-theme
  java-common libasound2 libasound2-data libasyncns0 libatk1.0-0 libatk1.0-data libavahi-client3
  libavahi-common-data libavahi-common3 libcairo2 libcurl2 libdatrie1 libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2
  libdrm-radeon1 libflac8 libfontconfig1 libgdk-pixbuf2.0-0 libgdk-pixbuf2.0-common libgif7 libgl1-mesa-dri
  libgl1-mesa-glx libglapi-mesa libgraphite2-3 libgtk2.0-0 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libice-dev
  libice6 libjbig0 libjpeg-turbo8 libjpeg8 liblcms2-2 liblvm6.0 libnspr4 libnss3 libnss3-nssdb libogg0
  libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0 libpcsc-lite1 libpixman-1-0
  libpthread-stubs0-dev libpulse0 libsensors4 libsm6 libsndfile1 libthai-data libthai0 libtiff5
  libtxc-dxtn-s2tc0 libvorbis0a libvorbisenc2 libx11-dev libx11-doc libx11-xcb1 libxau-dev libxcb-dri2-0
  libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0 libxcb-shm0 libxcb-sync1 libxcb1-dev libcomposite1
  libcursor1 libxdamage1 libxdmcp-dev libxfixed3 libxi6 libxinerama1 libxrandr2 libxrender1 libxshmfence1 libxt-dev
  libxt6 libxtst6 libxf86vm1 openjdk-8-jdk openjdk-8-jdk-headless openjdk-8-jre openjdk-8-jre-headless x11-common
  x11proto-core-dev x11proto-input-dev x11proto-kb-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 100 newly installed, 0 to remove and 16 not upgraded.
```

press enter

06) wget https://archive.apache.org/dist/hadoop/common/hadoop-1.2.1/hadoop-1.2.1.tar.gz

```
ubuntu@ip-172-31-35-40:~$ wget https://archive.apache.org/dist/hadoop/common/hadoop-1.2.1/hadoop-1.2.1.tar.gz
--2021-10-14 06:46:07-- https://archive.apache.org/dist/hadoop/common/hadoop-1.2.1/hadoop-1.2.1.tar.gz
Resolving archive.apache.org (archive.apache.org)... 138.201.131.134, 2a01:4f8:172:2ec5::2
Connecting to archive.apache.org (archive.apache.org)|138.201.131.134|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 63851630 (61M) [application/x-gzip]
Saving to: 'hadoop-1.2.1.tar.gz'

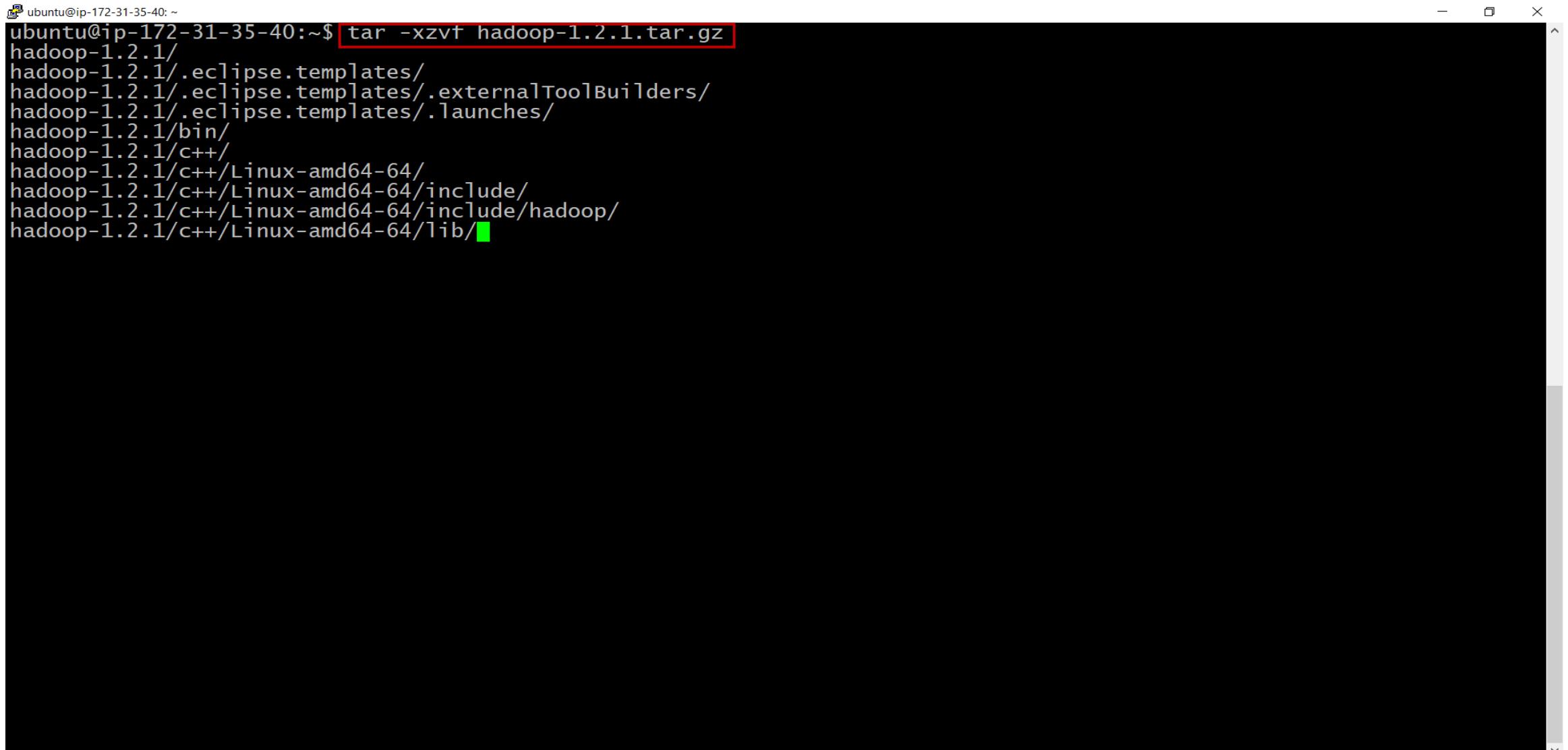
hadoop-1.2.1.tar.gz          100%[=====] 60.89M 12.2MB/s   in 5.7s

2021-10-14 06:46:13 (10.7 MB/s) - 'hadoop-1.2.1.tar.gz' saved [63851630/63851630]

ubuntu@ip-172-31-35-40:~$ █
```

press enter

07) tar -xzvf hadoop-1.2.1.tar.gz

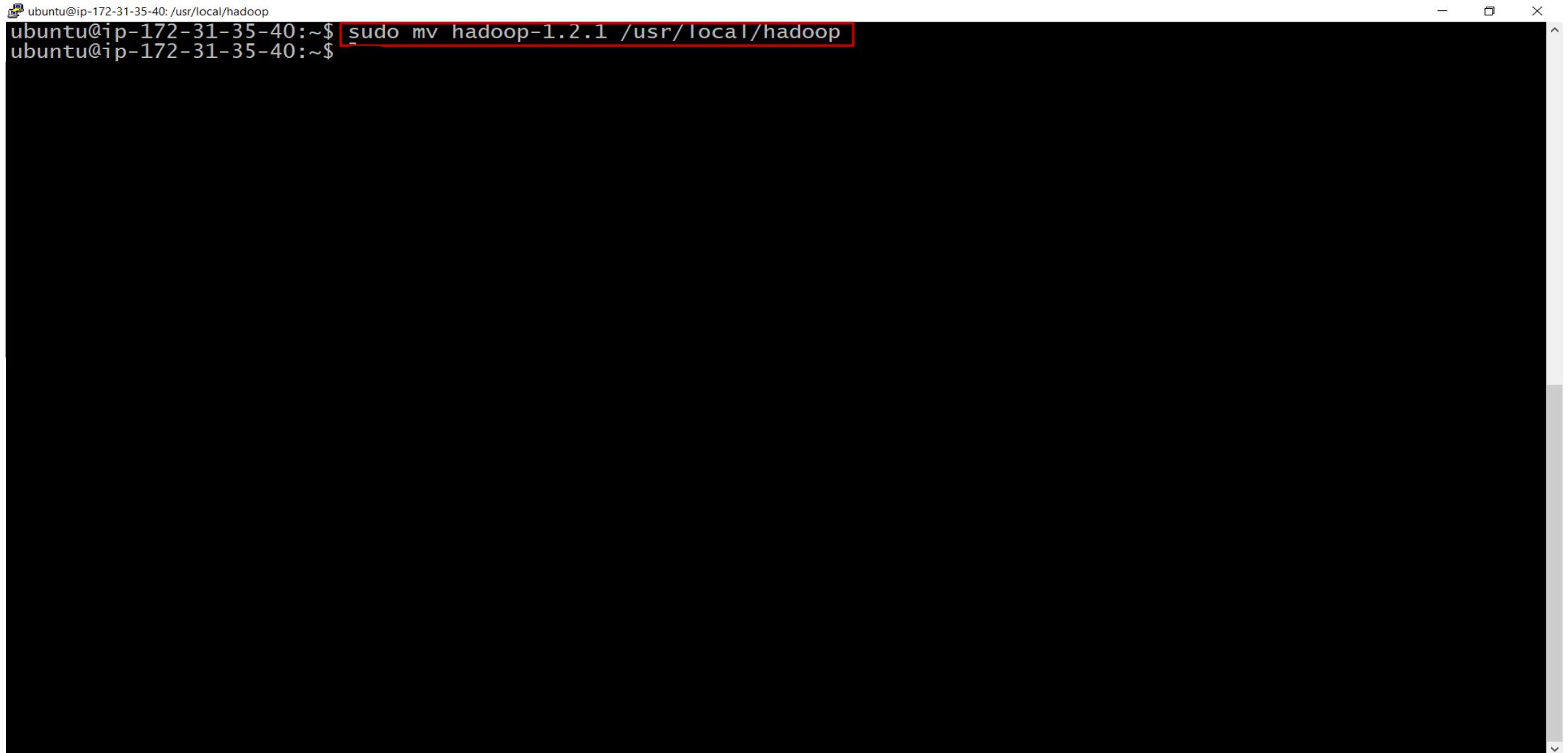


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window shows the command "tar -xzvf hadoop-1.2.1.tar.gz" being run, which extracts the contents of the Hadoop 1.2.1 distribution. The extracted files are listed in the terminal, including "hadoop-1.2.1/", "hadoop-1.2.1/.eclipse.templates/", "hadoop-1.2.1/.eclipse.templates/.externalToolBuilders/", "hadoop-1.2.1/.eclipse.templates/.launches/", "hadoop-1.2.1/bin/", "hadoop-1.2.1/c++/", "hadoop-1.2.1/c++/Linux-amd64-64/", "hadoop-1.2.1/c++/Linux-amd64-64/include/", "hadoop-1.2.1/c++/Linux-amd64-64/include/hadoop/", and "hadoop-1.2.1/c++/Linux-amd64-64/lib/". The terminal has a dark background with white text and a red selection bar around the command line.

```
ubuntu@ip-172-31-35-40:~$ tar -xzvf hadoop-1.2.1.tar.gz
hadoop-1.2.1/
hadoop-1.2.1/.eclipse.templates/
hadoop-1.2.1/.eclipse.templates/.externalToolBuilders/
hadoop-1.2.1/.eclipse.templates/.launches/
hadoop-1.2.1/bin/
hadoop-1.2.1/c++
hadoop-1.2.1/c++/Linux-amd64-64/
hadoop-1.2.1/c++/Linux-amd64-64/include/
hadoop-1.2.1/c++/Linux-amd64-64/include/hadoop/
hadoop-1.2.1/c++/Linux-amd64-64/lib/
```

press enter

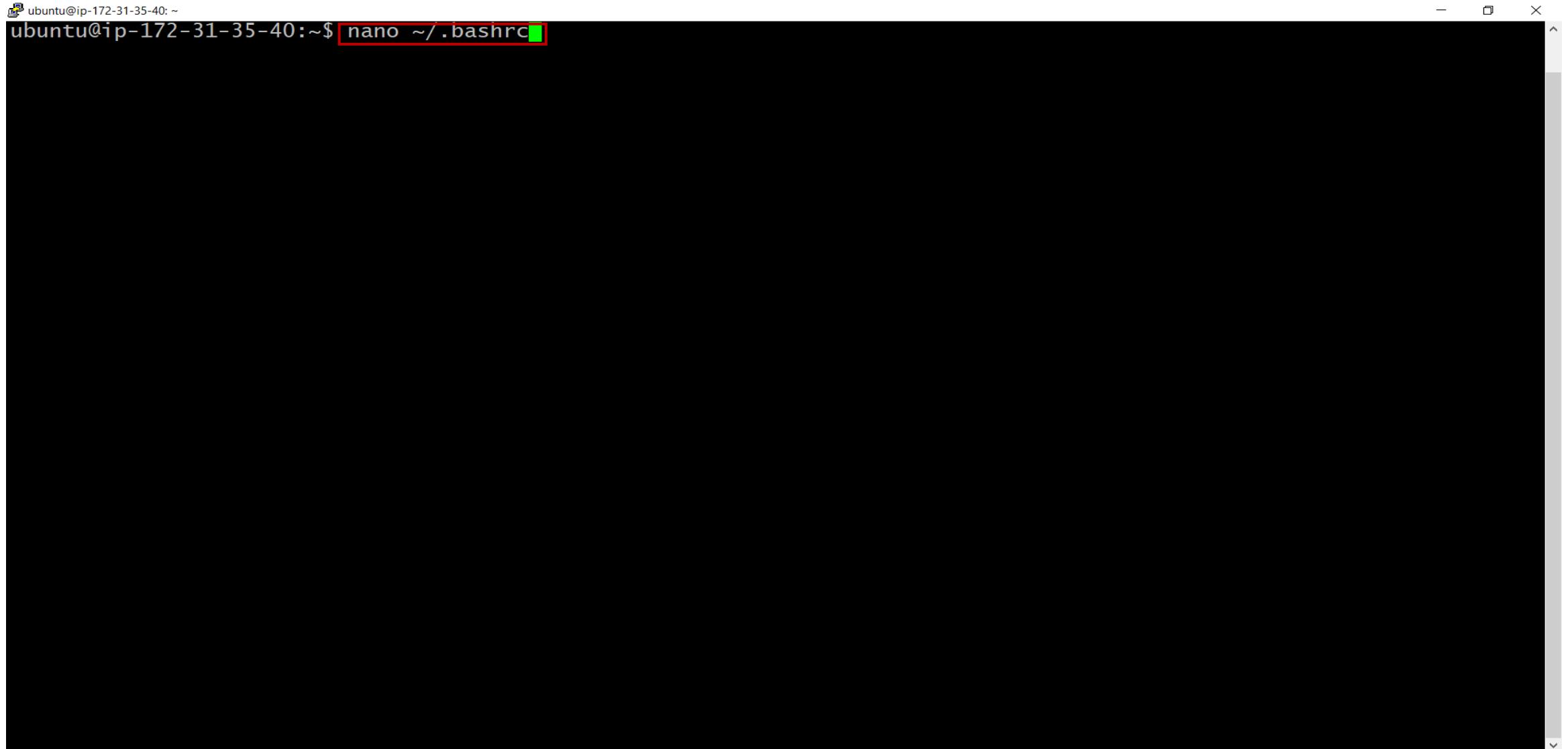
08) sudo mv hadoop-1.2.1 /usr/local/hadoop



```
ubuntu@ip-172-31-35-40:~/usr/local/hadoop
ubuntu@ip-172-31-35-40:~$ sudo mv hadoop-1.2.1 /usr/local/hadoop
ubuntu@ip-172-31-35-40:~$
```

press enter

09) nano ~/.bashrc

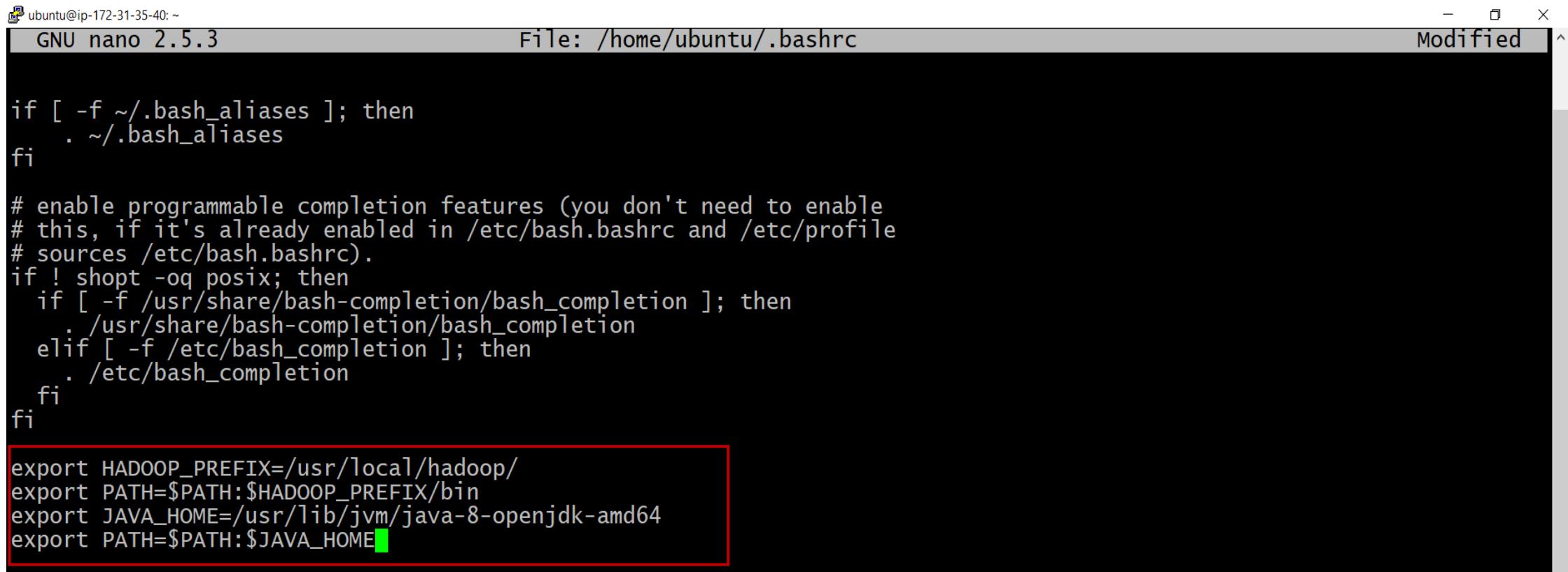


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains the command "nano ~/.bashrc" which is highlighted with a red rectangle. The rest of the terminal window is blank black space.

press enter

10) Scroll down at the bottom area & paste the commands

```
export HADOOP_PREFIX=/usr/local/hadoop/  
export PATH=$PATH:$HADOOP_PREFIX/bin  
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export PATH=$PATH:$JAVA_HOME
```

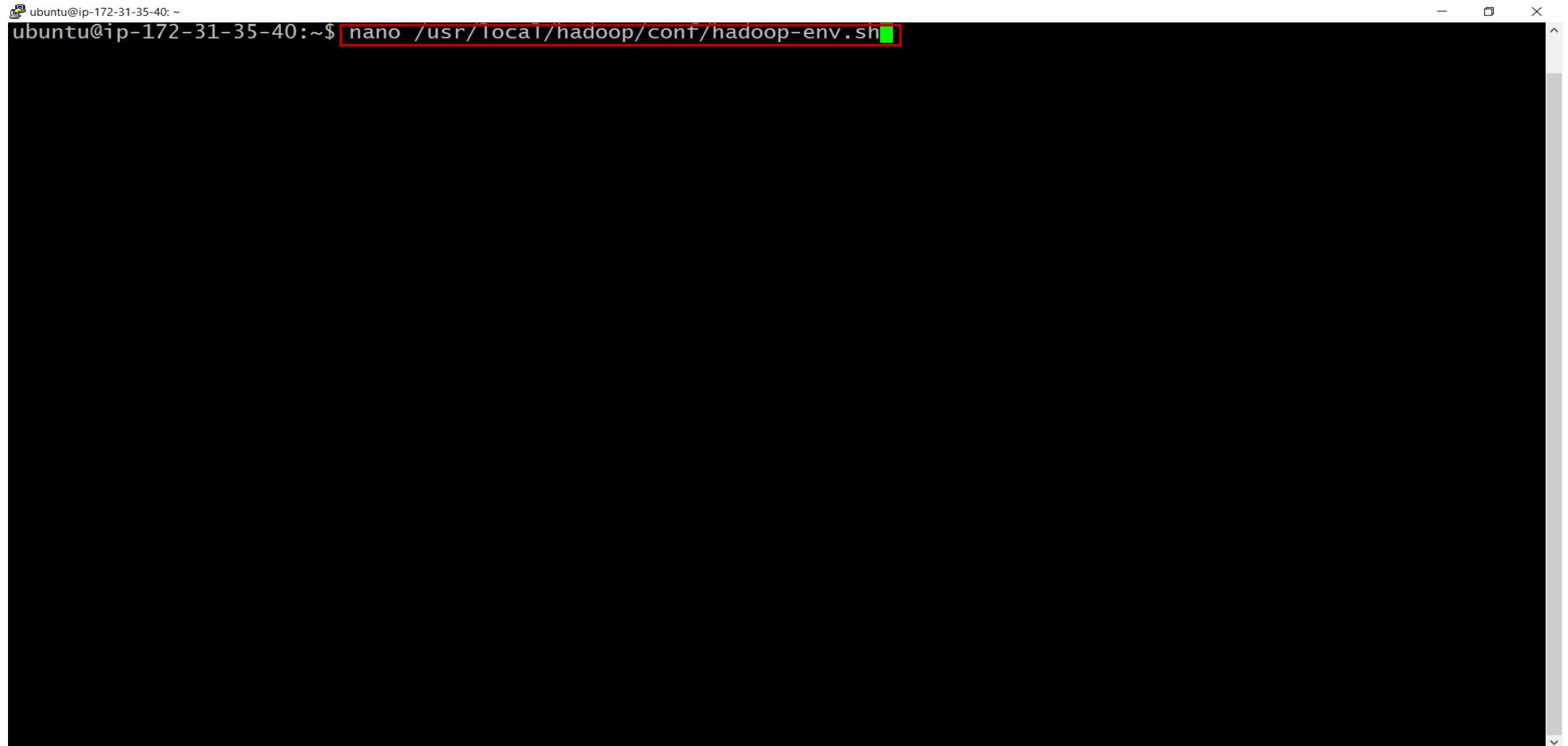


The screenshot shows a terminal window titled "GNU nano 2.5.3" with the file path "File: /home/ubuntu/.bashrc". The window title bar also includes "Modified". The terminal content displays the .bashrc script with several additions highlighted by a red rectangle at the bottom:

```
if [ -f ~/.bash_aliases ]; then  
    . ~/.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 HADOOP_PREFIX=/usr/local/hadoop/  
export PATH=$PATH:$HADOOP_PREFIX/bin  
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export PATH=$PATH:$JAVA_HOME
```

ctrl + O (to save) > Enter > ctrl + X (to exit)

11) nano /usr/local/hadoop/conf/hadoop-env.sh

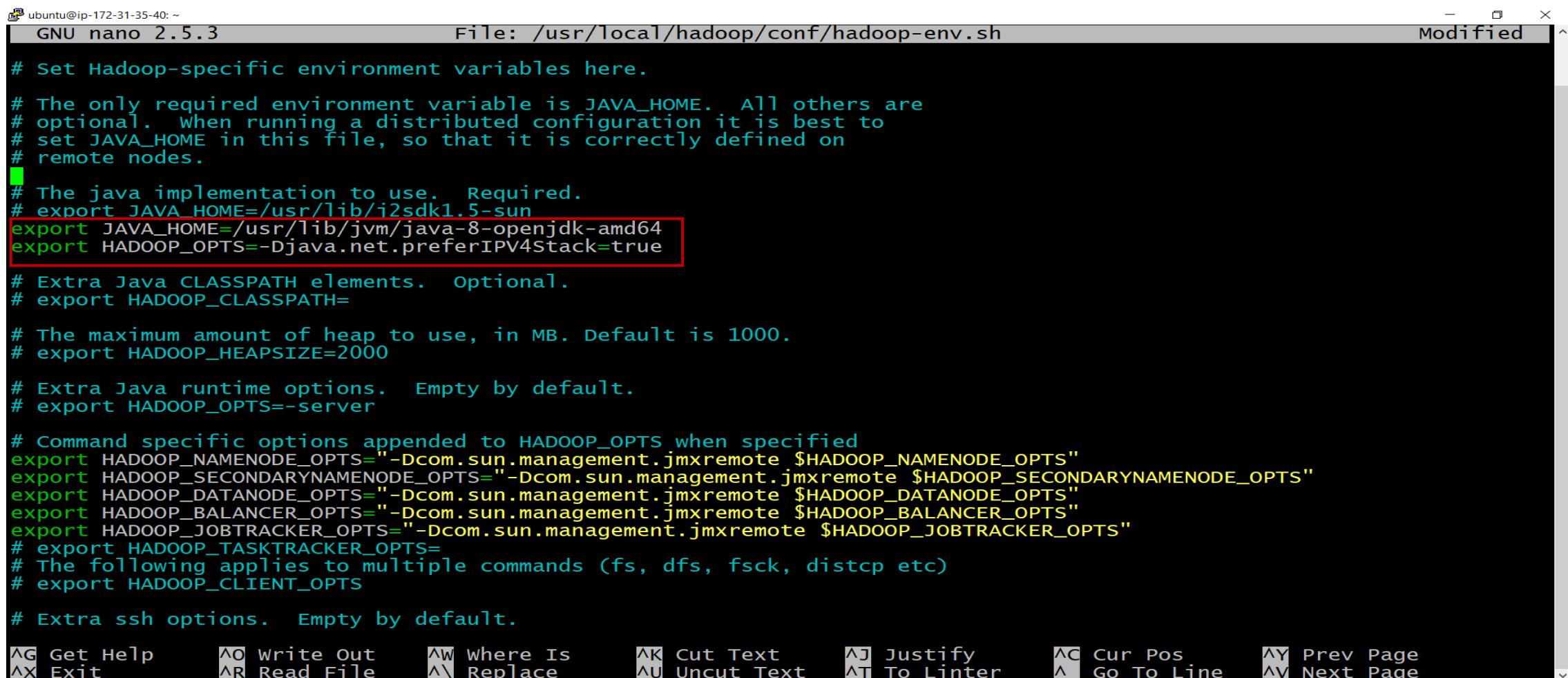


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains the command "nano /usr/local/hadoop/conf/hadoop-env.sh" which is highlighted with a red rectangle. The rest of the terminal window is blank black space.

press enter

12) Paste the commands in the mentioned area as per the below image

```
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export HADOOP_OPTS=-Djava.net.preferIPv4Stack=true
```



ubuntu@ip-172-31-35-40: ~

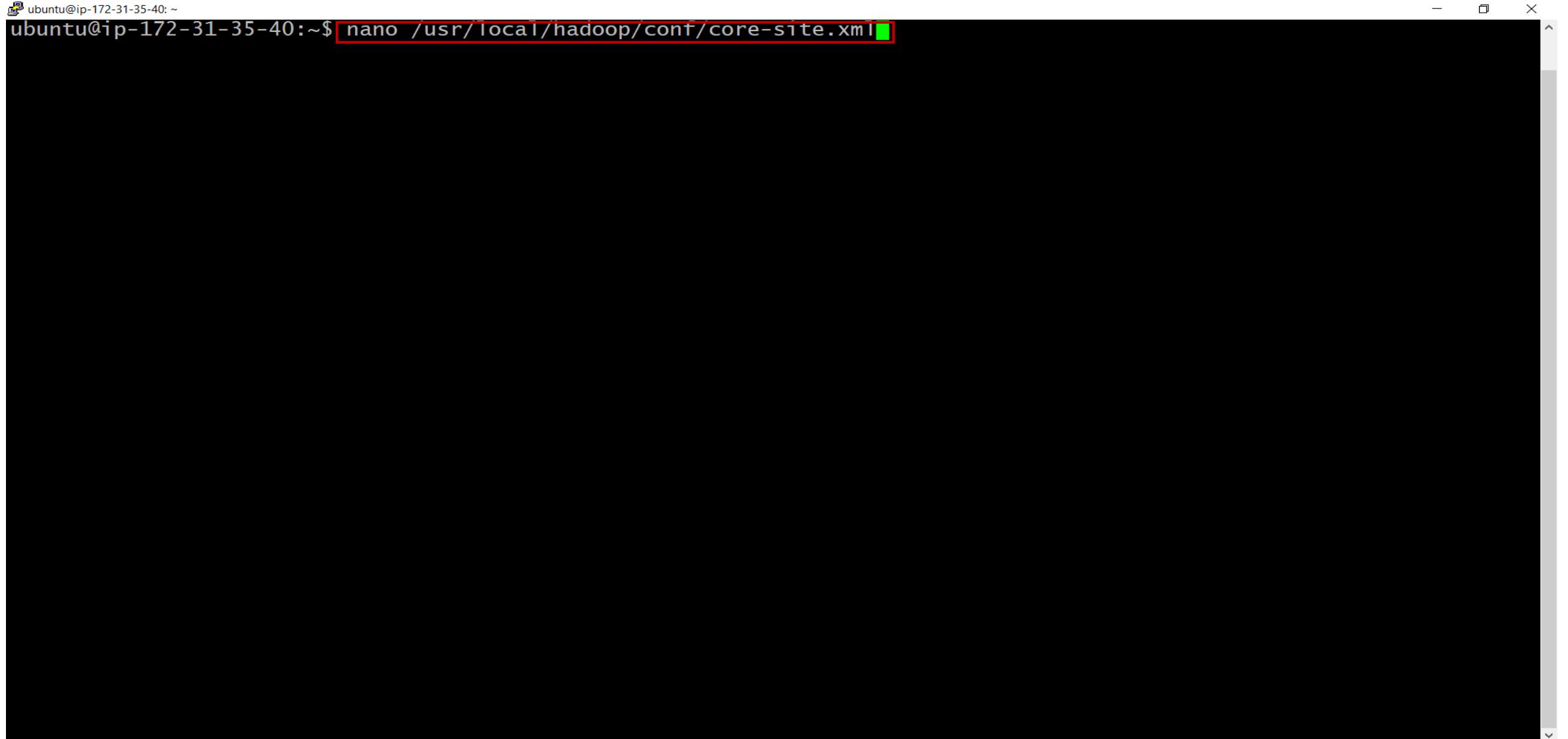
GNU nano 2.5.3 File: /usr/local/hadoop/conf/hadoop-env.sh Modified

```
# 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. Required.  
# export JAVA_HOME=/usr/lib/i2sdk1.5-sun  
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64  
export HADOOP_OPTS=-Djava.net.preferIPv4Stack=true  
  
# Extra Java CLASSPATH elements. Optional.  
# export HADOOP_CLASSPATH=  
  
# The maximum amount of heap to use, in MB. Default is 1000.  
# export HADOOP_HEAPSIZE=2000  
  
# Extra Java runtime options. Empty by default.  
# export HADOOP_OPTS=-server  
  
# Command specific options appended to HADOOP_OPTS when specified  
export HADOOP_NAMENODE_OPTS="-Dcom.sun.management.jmxremote $HADOOP_NAMENODE_OPTS"  
export HADOOP_SECONDARYNAMENODE_OPTS="-Dcom.sun.management.jmxremote $HADOOP_SECONDARYNAMENODE_OPTS"  
export HADOOP_DATANODE_OPTS="-Dcom.sun.management.jmxremote $HADOOP_DATANODE_OPTS"  
export HADOOP_BALANCER_OPTS="-Dcom.sun.management.jmxremote $HADOOP_BALANCER_OPTS"  
export HADOOP_JOBTRACKER_OPTS="-Dcom.sun.management.jmxremote $HADOOP_JOBTRACKER_OPTS"  
# export HADOOP_TASKTRACKER_OPTS=  
# The following applies to multiple commands (fs, dfs, fsck, distcp etc)  
# export HADOOP_CLIENT_OPTS  
  
# Extra ssh options. Empty by default.
```

AG Get Help AO Write Out AW Where Is AK Cut Text AJ Justify AC Cur Pos AY Prev Page
AX Exit AR Read File A\ Replace AU Uncut Text AT To Linter A_ Go To Line AV Next Page

ctrl + O (to save) > Enter > ctrl + X (to exit)

13) nano /usr/local/hadoop/conf/core-site.xml



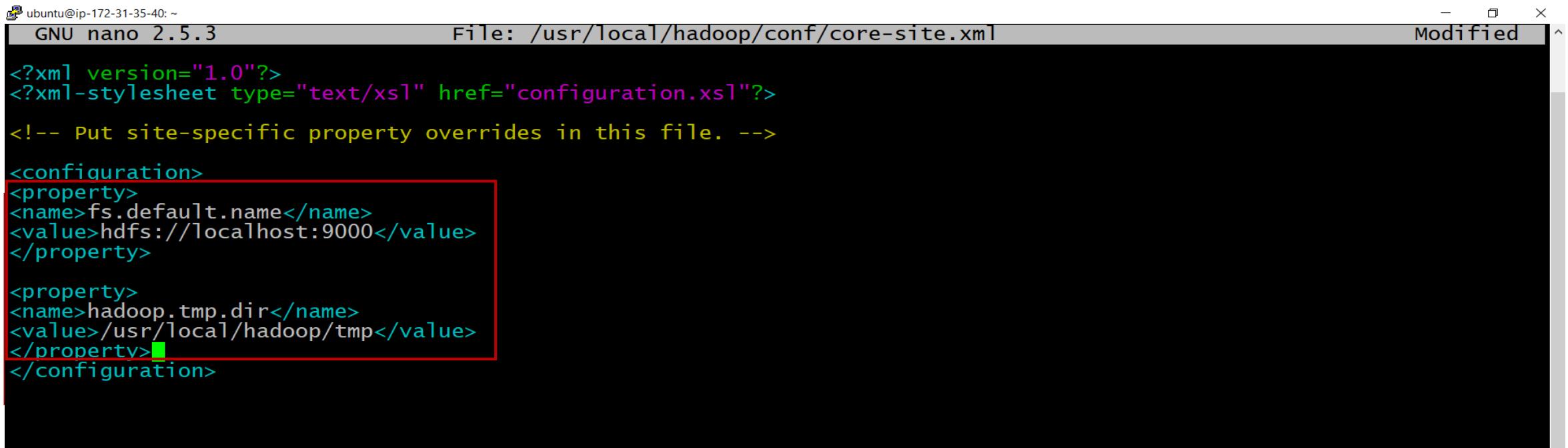
A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains the command "nano /usr/local/hadoop/conf/core-site.xml" which is highlighted with a red rectangle. The rest of the terminal window is blank black space.

press enter

14) Paste the following commands in-between the <configuration> & </configuration>
(If you create your own DNS, you need to rename the localhost to your hostname e.g is)

```
<property>
<name>fs.default.name</name>
<value>hdfs://localhost:9000</value>
</property>

<property>
<name>hadoop.tmp.dir</name>
<value>/usr/local/hadoop/tmp</value>
</property>
```



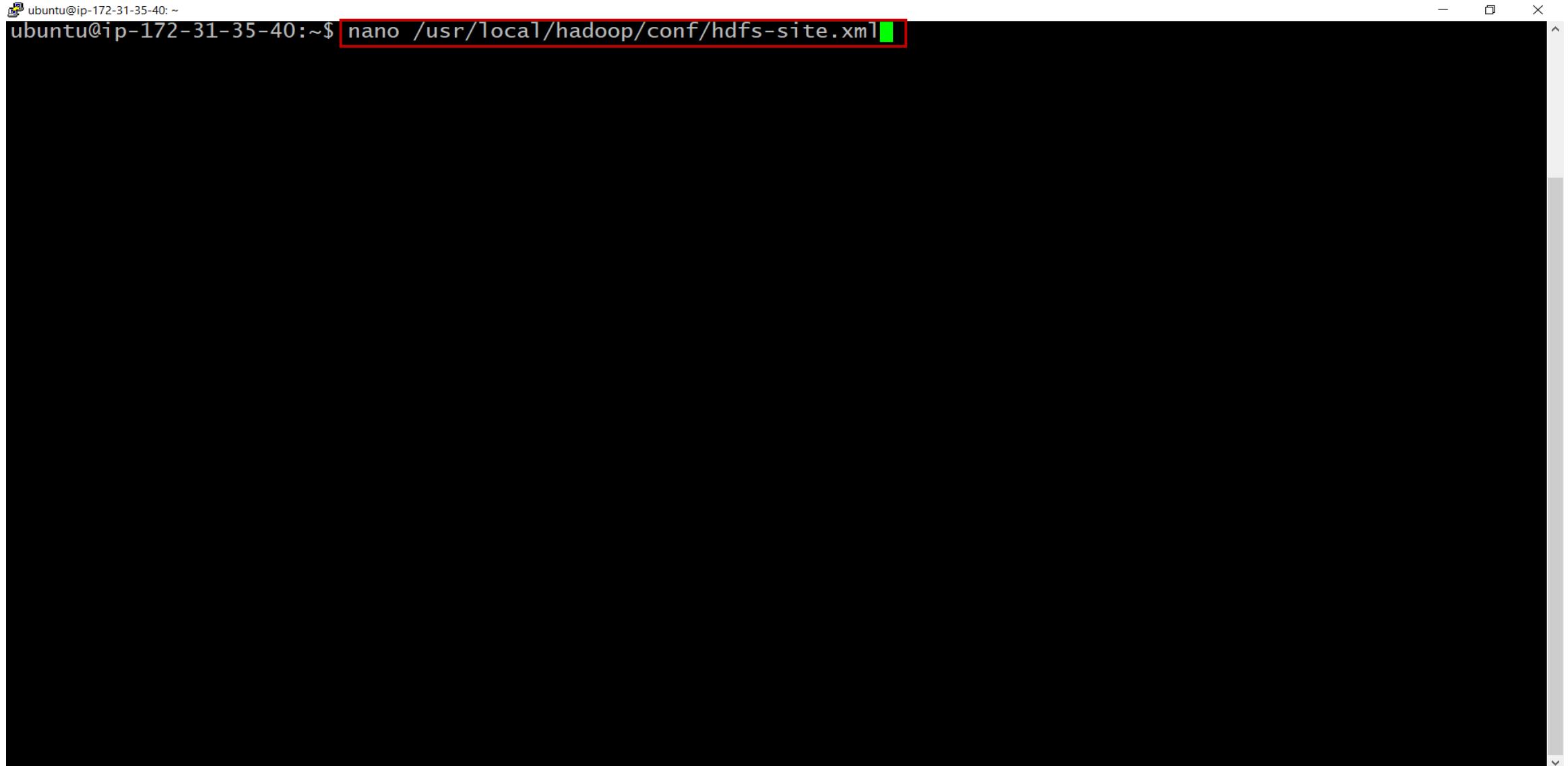
ubuntu@ip-172-31-35-40: ~

GNU nano 2.5.3 File: /usr/local/hadoop/conf/core-site.xml Modified

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!-- Put site-specific property overrides in this file. --&gt;
&lt;configuration&gt;
&lt;property&gt;
&lt;name&gt;fs.default.name&lt;/name&gt;
&lt;value&gt;hdfs://localhost:9000&lt;/value&gt;
&lt;/property&gt;
&lt;property&gt;
&lt;name&gt;hadoop.tmp.dir&lt;/name&gt;
&lt;value&gt;/usr/local/hadoop/tmp&lt;/value&gt;
&lt;/property&gt;
&lt;/configuration&gt;</pre>
```

ctrl + O (to save) > Enter > ctrl + X (to exit)

15) nano /usr/local/hadoop/conf/hdfs-site.xml

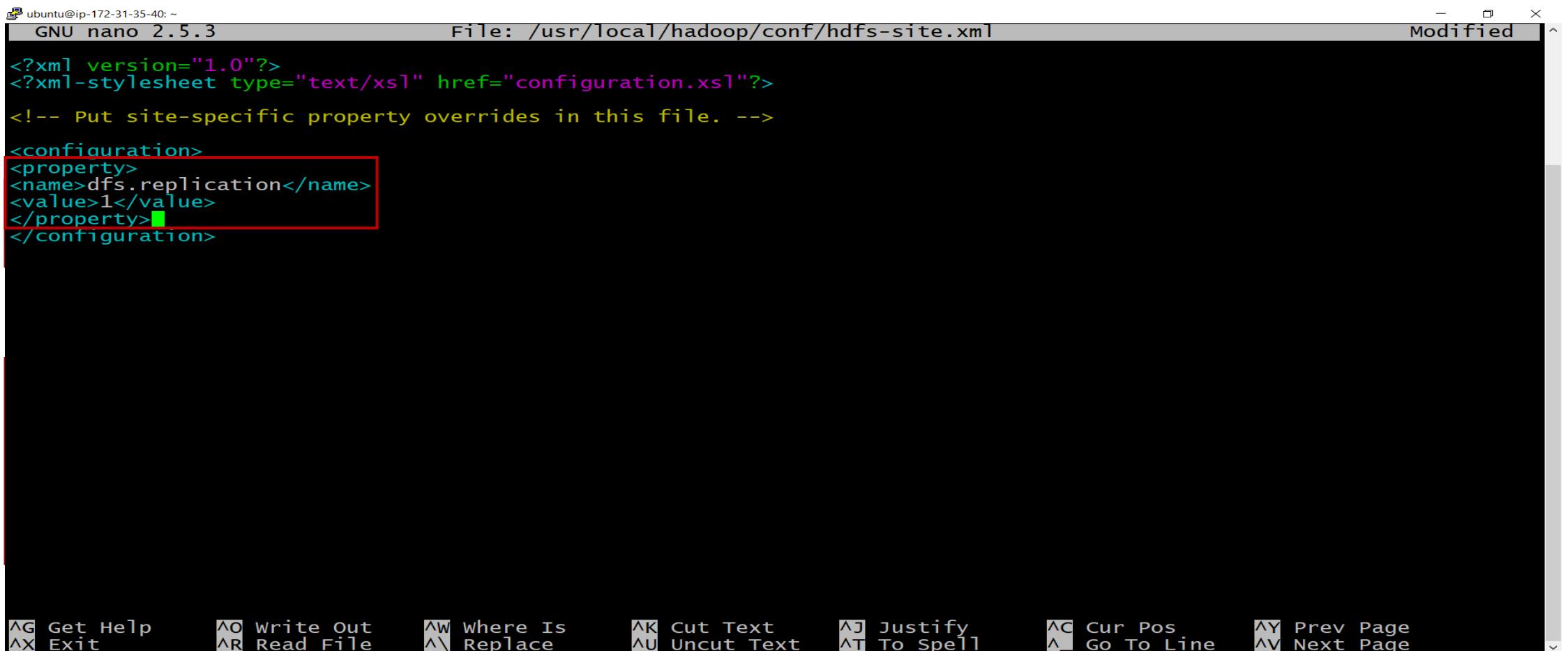


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains a single line of text: "ubuntu@ip-172-31-35-40:~\$ nano /usr/local/hadoop/conf/hdfs-site.xml". The command is highlighted with a red rectangle. The terminal has a dark background and light-colored text.

press enter

16) Paste the following commands in-between the <configuration> & </configuration>

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



The screenshot shows a terminal window titled "ubuntu@ip-172-31-35-40: ~" running the "GNU nano 2.5.3" editor. The file being edited is "/usr/local/hadoop/conf/hdfs-site.xml". The text in the editor is:

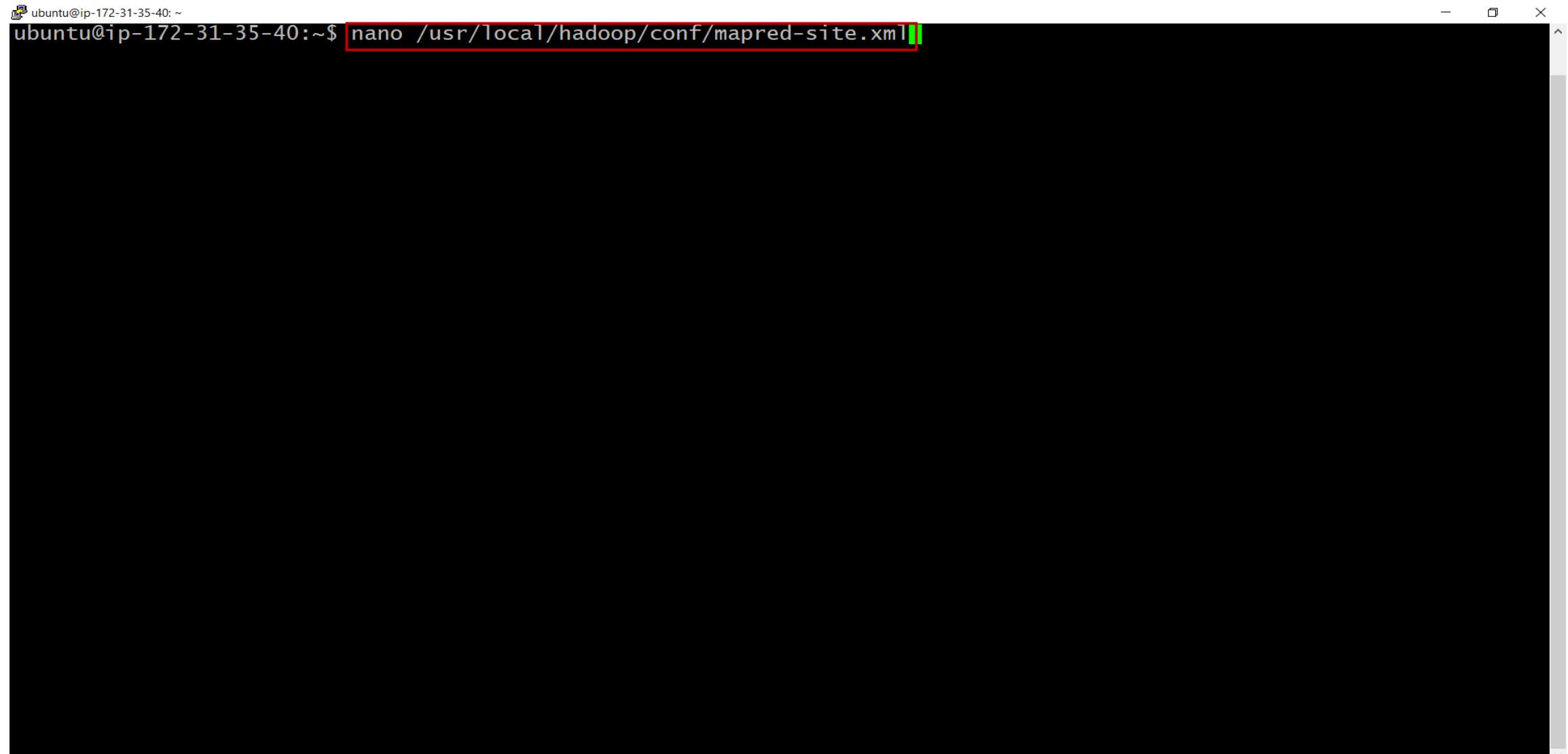
```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!-- Put site-specific property overrides in this file. --&gt;
&lt;configuration&gt;
&lt;property&gt;
&lt;name&gt;dfs.replication&lt;/name&gt;
&lt;value&gt;1&lt;/value&gt;
&lt;/property&gt;
&lt;/configuration&gt;</pre>

The entire configuration block is highlighted with a red rectangle. The bottom of the terminal shows the nano editor's command bar with various keyboard shortcuts.


```

ctrl + O (to save) > Enter > ctrl + X (to exit)

17) nano /usr/local/hadoop/conf/mapred-site.xml

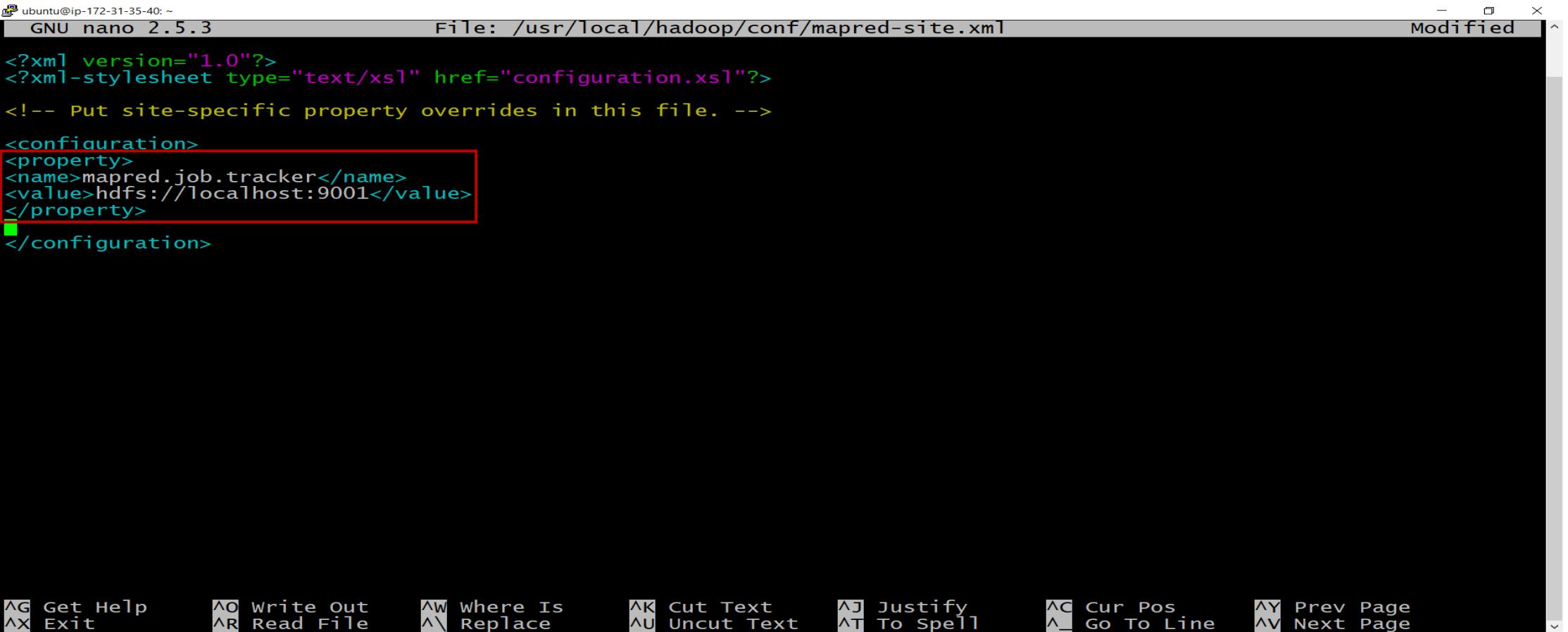


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains a single line of text: "ubuntu@ip-172-31-35-40:~\$ nano /usr/local/hadoop/conf/mapred-site.xml". The command is highlighted with a red rectangular box.

press enter

18) Paste the following commands in-between the <configuration> & </configuration>
(If you create your own DNS, you need to rename the localhost to your hostname e.g is)

```
<property>
<name>mapred.job.tracker</name>
<value>hdfs://localhost:9001</value>
</property>
```



The screenshot shows a terminal window titled "GNU nano 2.5.3" with the file path "File: /usr/local/hadoop/conf/mapred-site.xml". The file content is an XML configuration for Hadoop's MapReduce job tracker. A red box highlights the new configuration block that was pasted into the file:

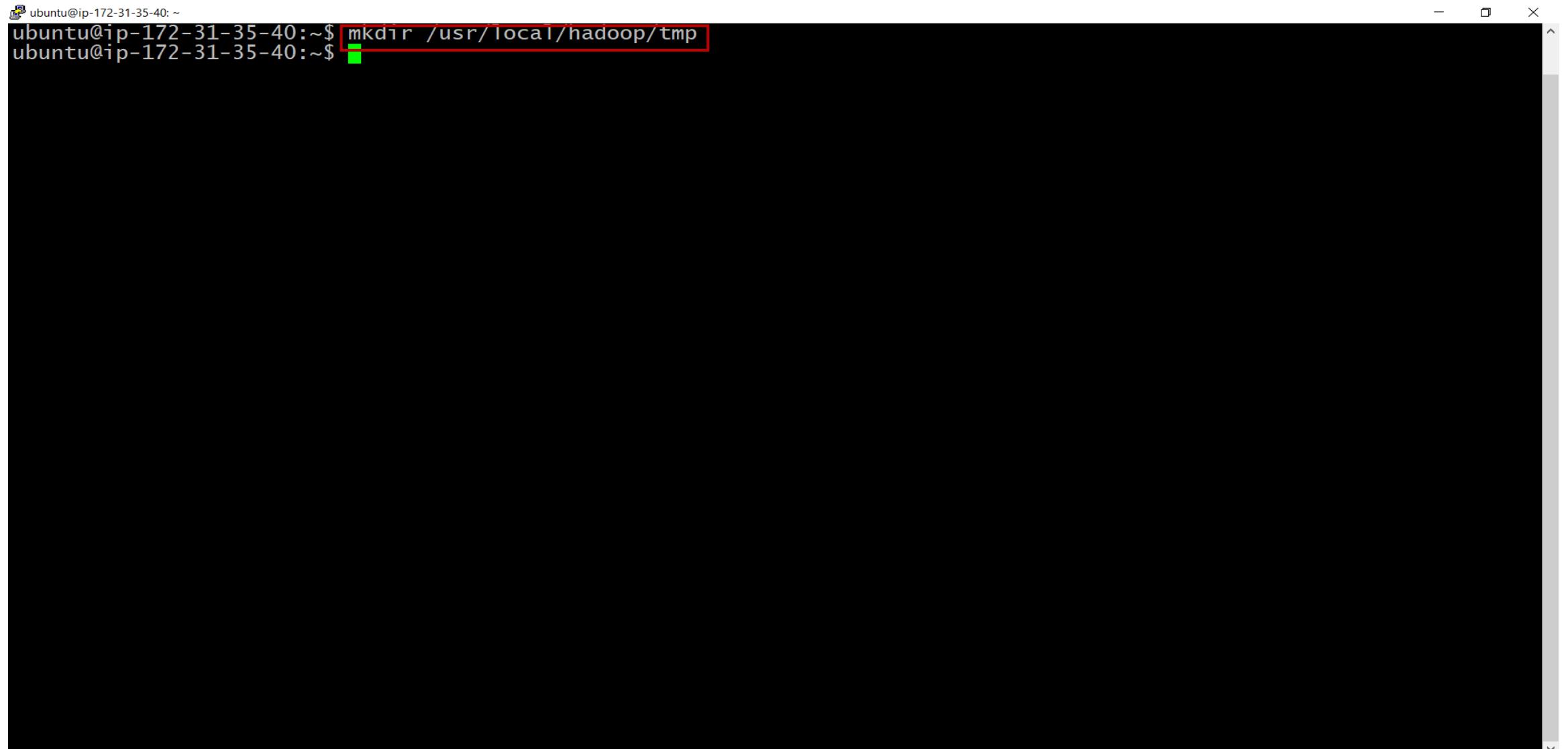
```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!-- Put site-specific property overrides in this file. --&gt;
&lt;configuration&gt;
&lt;property&gt;
&lt;name&gt;mapred.job.tracker&lt;/name&gt;
&lt;value&gt;hdfs://localhost:9001&lt;/value&gt;
&lt;/property&gt;
&lt;/configuration&gt;</pre>

The terminal window also includes a menu bar with "Modified" and standard nano key bindings at the bottom.


```

ctrl + O (to save) > Enter > ctrl + X (to exit)

19) mkdir /usr/local/hadoop/tmp

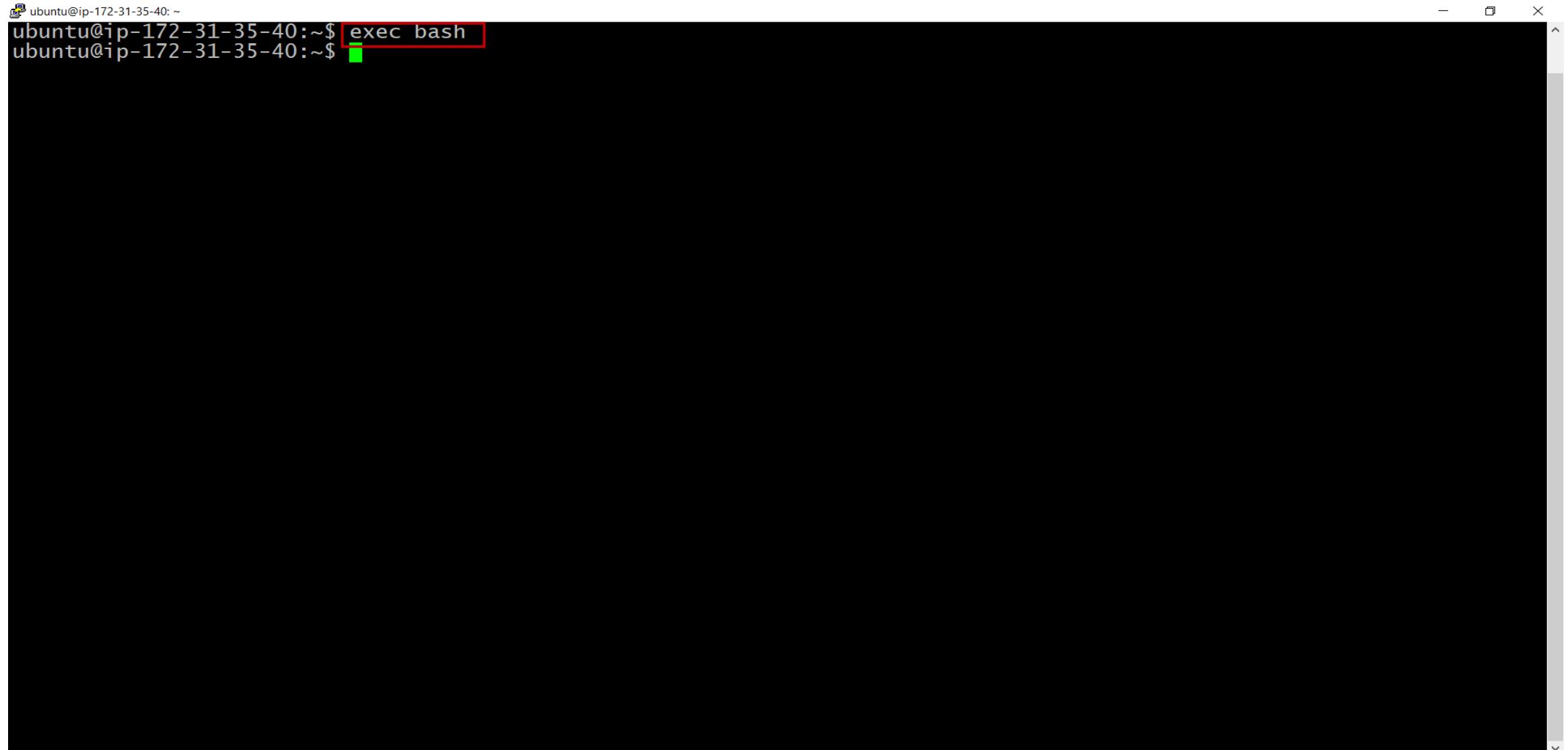


A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains the following text:
ubuntu@ip-172-31-35-40:~\$ **mkdir /usr/local/hadoop/tmp**
ubuntu@ip-172-31-35-40:~\$

The command "mkdir /usr/local/hadoop/tmp" is highlighted with a red rectangular box. A green square cursor is located at the end of the command line.

press enter

20) exec bash



A terminal window titled "ubuntu@ip-172-31-35-40: ~". The user has typed the command "exec bash" into the input field, which is highlighted with a red border. A small green square cursor is visible at the end of the command. The terminal is otherwise empty.

press enter

21) hadoop namenode -format

```
ubuntu@ip-172-31-35-40:~$ hadoop namenode -format
21/10/14 07:35:43 INFO namenode.NameNode: STARTUP_MSG:
/*****
STARTUP_MSG: Starting NameNode
STARTUP_MSG:   host = ip-172-31-35-40/172.31.35.40
STARTUP_MSG:   args = [-format]
STARTUP_MSG:   version = 1.2.1
STARTUP_MSG:   build = https://svn.apache.org/repos/asf/hadoop/common/branches/branch-1.2 -r 1503152; compiled by 'mat
tf' on Mon Jul 22 15:23:09 PDT 2013
STARTUP_MSG:   java = 1.8.0_292
*****
21/10/14 07:35:43 INFO util.GSet: Computing capacity for map BlocksMap
21/10/14 07:35:43 INFO util.GSet: VM type      = 64-bit
21/10/14 07:35:43 INFO util.GSet: 2.0% max memory = 1013645312
21/10/14 07:35:43 INFO util.GSet: capacity      = 2^21 = 2097152 entries
21/10/14 07:35:43 INFO util.GSet: recommended=2097152, actual=2097152
21/10/14 07:35:44 INFO namenode.FSNamesystem: fsOwner=ubuntu
21/10/14 07:35:44 INFO namenode.FSNamesystem: supergroup=supergroup
21/10/14 07:35:44 INFO namenode.FSNamesystem: isPermissionEnabled=true
21/10/14 07:35:44 INFO namenode.FSNamesystem: dfs.block.invalidate.limit=100
21/10/14 07:35:44 INFO namenode.FSNamesystem: isAccessTokenEnabled=false accessKeyUpdateInterval=0 min(s), accessToken
Lifetime=0 min(s)
21/10/14 07:35:44 INFO namenode.FSEditLog: dfs.namenode.edits.toleration.length = 0
21/10/14 07:35:44 INFO namenode.NameNode: Caching file names occurring more than 10 times
21/10/14 07:35:44 INFO common.Storage: Image file /usr/local/hadoop/tmp/dfs/name/current/fsimage of size 112 bytes sav
ed in 0 seconds.
21/10/14 07:35:44 INFO namenode.FSEditLog: closing edit log: position=4, editlog=/usr/local/hadoop/tmp/dfs/name/curren
t/edits
21/10/14 07:35:44 INFO namenode.FSEditLog: close success: truncate to 4, editlog=/usr/local/hadoop/tmp/dfs/name/curren
t/edits
21/10/14 07:35:44 INFO common.Storage: Storage directory /usr/local/hadoop/tmp/dfs/name has been successfully formatte
d.
21/10/14 07:35:44 INFO namenode.NameNode: SHUTDOWN_MSG:
/*****
SHUTDOWN_MSG: Shutting down NameNode at ip-172-31-35-40/172.31.35.40
*****
```

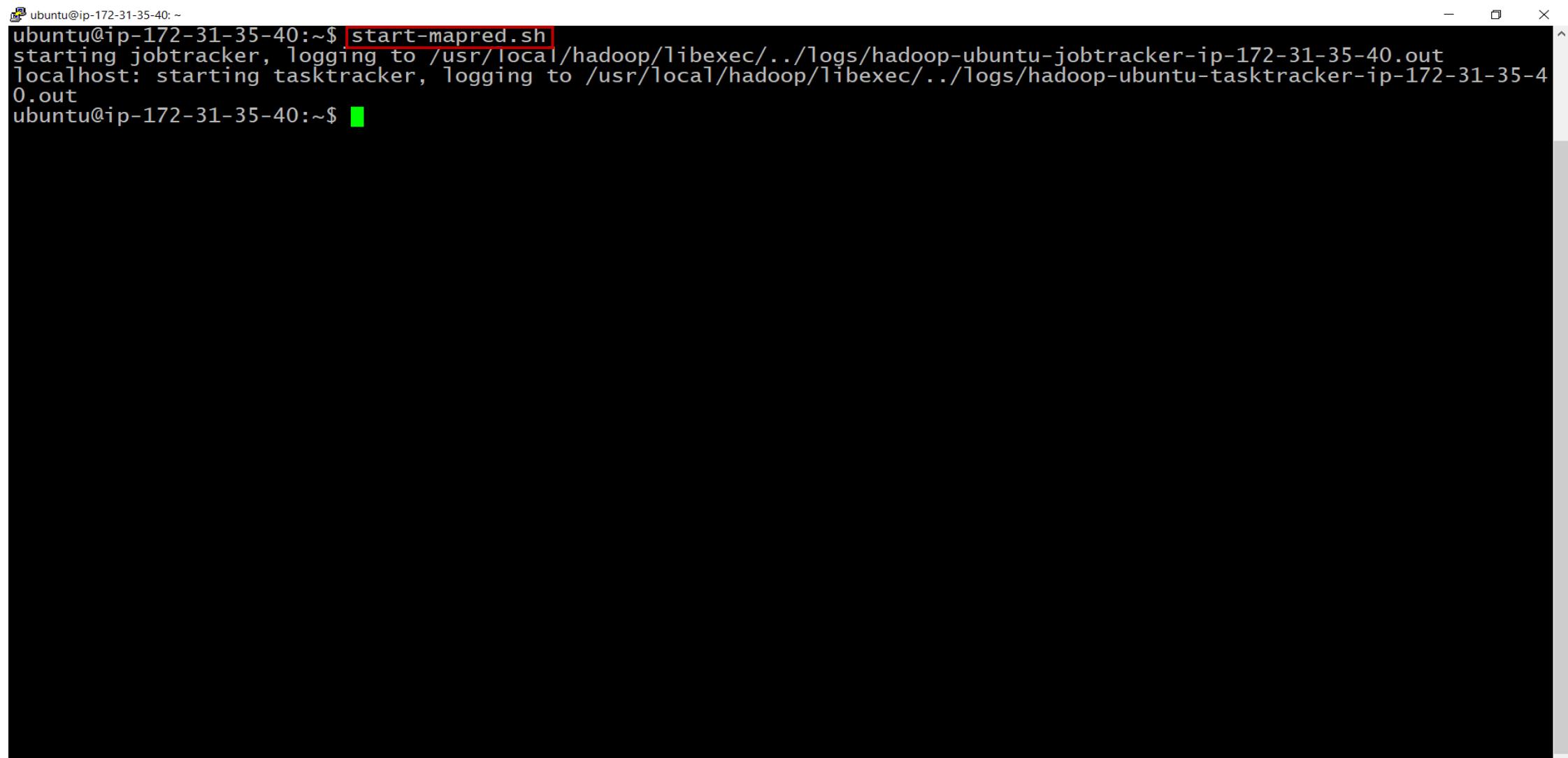
press enter

22) start-dfs.sh

```
ubuntu@ip-172-31-35-40:~$ start-dfs.sh
starting namenode, logging to /usr/local/hadoop/libexec/../logs/hadoop-ubuntu-namenode-ip-172-31-35-40.out
localhost: starting datanode, logging to /usr/local/hadoop/libexec/../logs/hadoop-ubuntu-datanode-ip-172-31-35-40.out
localhost: starting secondarynamenode, logging to /usr/local/hadoop/libexec/../logs/hadoop-ubuntu-secondarynamenode-ip-172-31-35-40.out
ubuntu@ip-172-31-35-40:~$ █
```

press enter

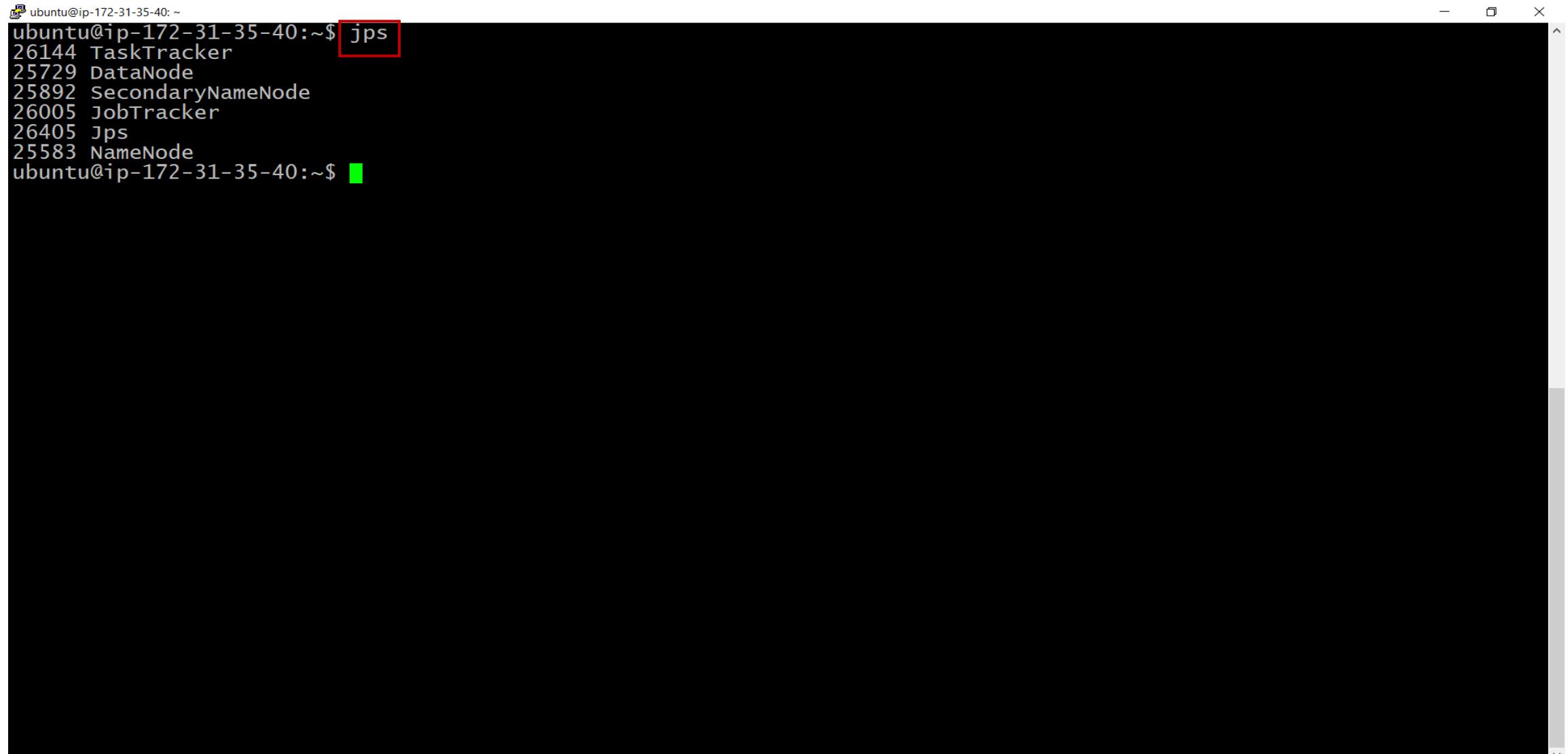
23) start-mapred.sh



ubuntu@ip-172-31-35-40:~\$ **start-mapred.sh**
starting jobtracker, logging to /usr/local/hadoop/libexec/../logs/hadoop-ubuntu-jobtracker-ip-172-31-35-40.out
localhost: starting tasktracker, logging to /usr/local/hadoop/libexec/../logs/hadoop-ubuntu-tasktracker-ip-172-31-35-40.out
ubuntu@ip-172-31-35-40:~\$ █

press enter

24) jps



A screenshot of a terminal window titled "ubuntu@ip-172-31-35-40: ~". The window contains the following text:

```
ubuntu@ip-172-31-35-40:~$ jps
26144 TaskTracker
25729 DataNode
25892 SecondaryNameNode
26005 JobTracker
26405 Jps
25583 NameNode
ubuntu@ip-172-31-35-40:~$
```

The command "jps" is highlighted with a red box. A green box highlights the final "\$" character at the end of the command line.

press enter

25) Open the security groups

The screenshot shows the AWS EC2 Instances page with a single instance named "kida_02". The instance is running and has passed 2/2 checks. The "Security" tab is selected, and the security group "sg-01e71f1ed24be1fe6 (launch-wizard-17)" is highlighted with a red box. The "Inbound rules" section is also visible.

Instances (1/1) [Info](#)

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
kida_02	i-087e2cd356526e2d1	Running	t2.micro	2/2 checks passed		ap-south-1a	ec2-13-233-148-

Instance: i-087e2cd356526e2d1 (kida_02)

1 Security

2 Security groups

sg-01e71f1ed24be1fe6 (launch-wizard-17)

Owner ID: 509149891835

Launch time: Wed Oct 13 2021 17:45:17 GMT+0530 (India Standard Time)

Inbound rules

Filter rules

26) Click on edit inbound rules

The screenshot shows the AWS EC2 Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations), Images (with sub-links for AMIs), and Elastic Block Store (with sub-links for Volumes, Snapshots, and Lifecycle Manager). The main content area displays the details of a security group named 'sg-0e383a20197d1d74f - launch-wizard-1'. The 'Details' section shows the security group name, ID, description, owner, and rule counts. Below this, there are tabs for 'Inbound rules' (which is selected), 'Outbound rules', and 'Tags'. A message indicates that network connectivity can be checked using the Reachability Analyzer. At the bottom, the 'Inbound rules (1/1)' section shows one rule entry, with buttons for 'Edit inbound rules' (which is highlighted with a red box), 'Manage tags', and other actions. The status bar at the bottom includes links for Feedback, English (US), Privacy Policy, Terms of Use, and Cookie preferences.

EC2 Management Console

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#SecurityGroup:securityGroupId=sg-0e383a20197d1d74f

Gmail YouTube Translate

aws Services

Search for services, features, marketplace products, and docs [Alt+S]

New EC2 Experience Tell us what you think

EC2 Security Groups sg-0e383a20197d1d74f - launch-wizard-1

sg-0e383a20197d1d74f - launch-wizard-1

Actions

Details

Security group name	Security group ID	Description	VPC ID
launch-wizard-1	sg-0e383a20197d1d74f	launch-wizard-1 created 2021-09-22T15:26:32.908+05:30	vpc-f8563993
Owner	Inbound rules count	Outbound rules count	
748304928648	1 Permission entry	1 Permission entry	

Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Inbound rules (1/1)

Filter security group rules

Name Security group rule... IP version Type Protocol Port range

Edit inbound rules

Manage tags

Feedback English (US) © 2008 - 2021, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

27) Click on Add rule for 4 times

The screenshot shows the AWS EC2 Management Console with the URL us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#ModifyInboundSecurityGroupRules:securityGroupId=sg-0e383a20197d1d74f. The page title is "Edit inbound rules" for the security group "sg-0e383a20197d1d74f - launch-wizard-1". The main table displays one existing rule:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0d187120c1797e931	SSH	TCP	22	Custom 0.0.0.0/0	

At the bottom left of the table, there is a red box highlighting the "Add rule" button. Below the table, there are three buttons: "Cancel", "Preview changes", and "Save rules".

28) Configure the port range to 50070, 50030, 50075, 50010 & change there source to My Ip and click on save rules

The screenshot shows the AWS EC2 Management Console with the URL us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#ModifyInboundSecurityGroupRules:securityGroupId=sg-0e383a20197d1d74f. The page displays the 'Inbound rules' section for a specific security group. There are five rules listed:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0d187120c1797e931	SSH	TCP	22	Custom	0.0.0.0/0
-	Custom TCP	TCP	50070	My IP	103.47.153.162/32
-	Custom TCP	TCP	50030	My IP	103.47.153.162/32
-	Custom TCP	TCP	50075	My IP	103.47.153.162/32
-	Custom TCP	TCP	50010	My IP	103.47.153.162/32

At the bottom right of the page, the 'Save rules' button is highlighted with a red box.

29) Now you have successfully modified on the security groups

The screenshot shows the AWS EC2 Management Console interface. At the top, there is a navigation bar with tabs for 'EC2 Management Console' and other services like Gmail, YouTube, and Translate. A search bar is also present. On the left, a sidebar lists various services: EC2 Dashboard, Events, Tags, Limits, Instances (with sub-options like Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays a success message: 'Inbound security group rules successfully modified on security group (sg-0e383a20197d1d74f | launch-wizard-1)' with a 'Details' link. Below this, the security group details are shown: Security group name: 'launch-wizard-1', Security group ID: 'sg-0e383a20197d1d74f', Description: 'launch-wizard-1 created 2021-09-22T15:26:32.908+05:30', VPC ID: 'vpc-f8563993'. It also shows the owner (ID: 748304928648), Inbound rules count (5 Permission entries), and Outbound rules count (1 Permission entry). Below the details, there are tabs for 'Inbound rules' (selected), 'Outbound rules', and 'Tags'. A message at the bottom says 'You can now check network connectivity with Reachability Analyzer' with a 'Run Reachability Analyzer' button. At the very bottom, there are buttons for 'Edit inbound rules', 'Manage tags', and a refresh icon.

Inbound security group rules successfully modified on security group (sg-0e383a20197d1d74f | launch-wizard-1)

Details

EC2 > Security Groups > sg-0e383a20197d1d74f - launch-wizard-1

sg-0e383a20197d1d74f - launch-wizard-1

Actions ▾

Details			
Security group name	Security group ID	Description	VPC ID
launch-wizard-1	sg-0e383a20197d1d74f	launch-wizard-1 created 2021-09-22T15:26:32.908+05:30	vpc-f8563993
Owner	Inbound rules count	Outbound rules count	
748304928648	5 Permission entries	1 Permission entry	

Inbound rules (5)

Outbound rules

Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Edit inbound rules

Manage tags

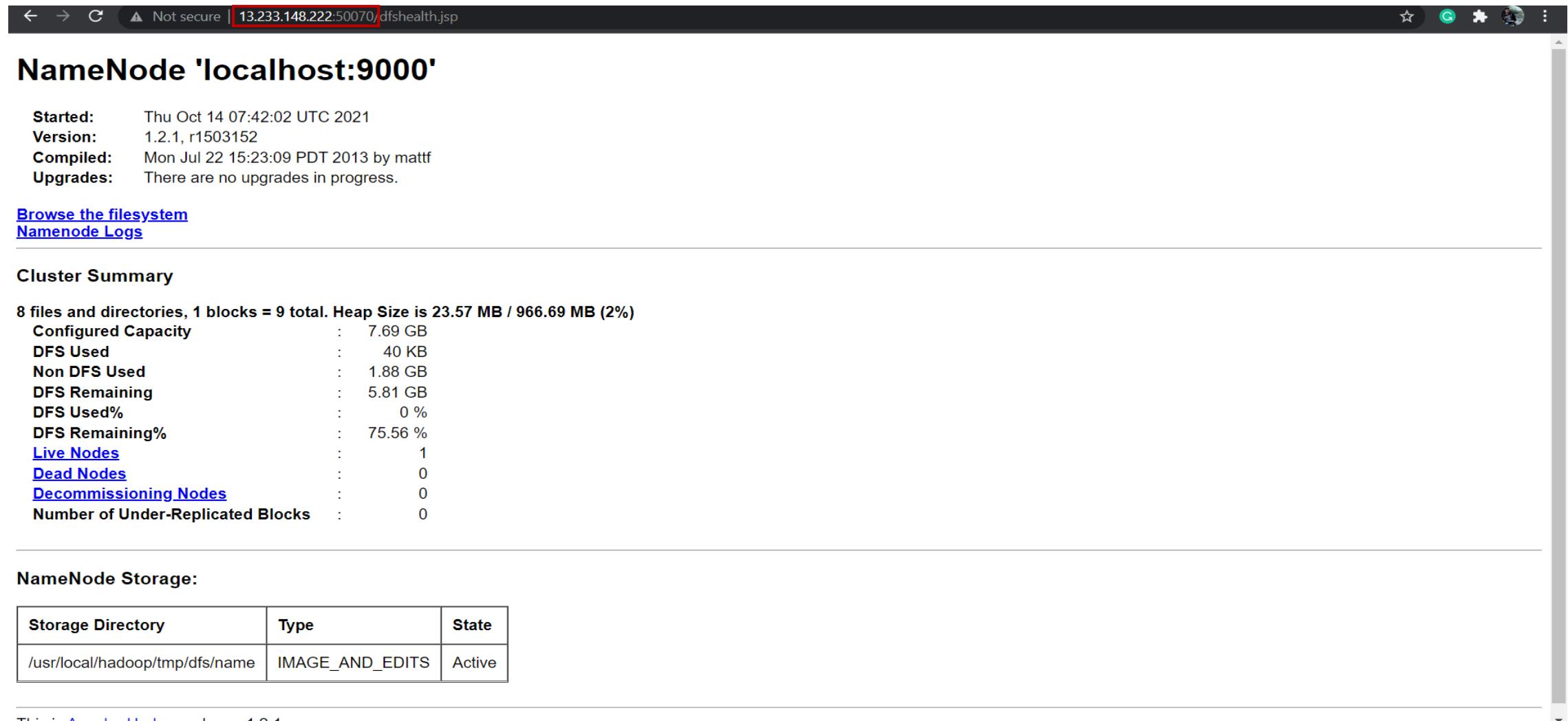
Refresh

Filter security group rules

https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchTemplates:

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30) To review, open Incognito mode and launch
yourpublicIPv4address:50070



Not secure | 13.233.148.222:50070/dfshealth.jsp

NameNode 'localhost:9000'

Started: Thu Oct 14 07:42:02 UTC 2021
Version: 1.2.1, r1503152
Compiled: Mon Jul 22 15:23:09 PDT 2013 by mattf
Upgrades: There are no upgrades in progress.

[Browse the filesystem](#)
[Namenode Logs](#)

Cluster Summary

8 files and directories, 1 blocks = 9 total. Heap Size is 23.57 MB / 966.69 MB (2%)

Configured Capacity	:	7.69 GB
DFS Used	:	40 KB
Non DFS Used	:	1.88 GB
DFS Remaining	:	5.81 GB
DFS Used%	:	0 %
DFS Remaining%	:	75.56 %
Live Nodes	:	1
Dead Nodes	:	0
Decommissioning Nodes	:	0
Number of Under-Replicated Blocks	:	0

NameNode Storage:

Storage Directory	Type	State
/usr/local/hadoop/tmp/dfs/name	IMAGE_AND_EDITS	Active

31) Also, open yourpublicIPv4address:50030

localhost Hadoop Map/Reduce Administration

State: RUNNING
Started: Thu Oct 14 07:44:00 UTC 2021
Version: 1.2.1, r1503152
Compiled: Mon Jul 22 15:23:09 PDT 2013 by mattf
Identifier: 202110140744
SafeMode: OFF

Cluster Summary (Heap Size is 15.5 MB/966.69 MB)

Running Map Tasks	Running Reduce Tasks	Total Submissions	Nodes	Occupied Map Slots	Occupied Reduce Slots	Reserved Map Slots	Reserved Reduce Slots	Map Task Capacity	Reduce Task Capacity	Avg. Tasks/Node	Blacklisted Nodes	Graylisted Nodes	Excluded Nodes
0	0	0	1	0	0	0	0	2	2	4.00	0	0	0

Scheduling Information

Queue Name	State	Scheduling Information
default	running	N/A

Filter (Jobid, Priority, User, Name)

Example: 'user:smith 3200' will filter by 'smith' only in the user field and '3200' in all fields

Running Jobs

none

Retired Jobs