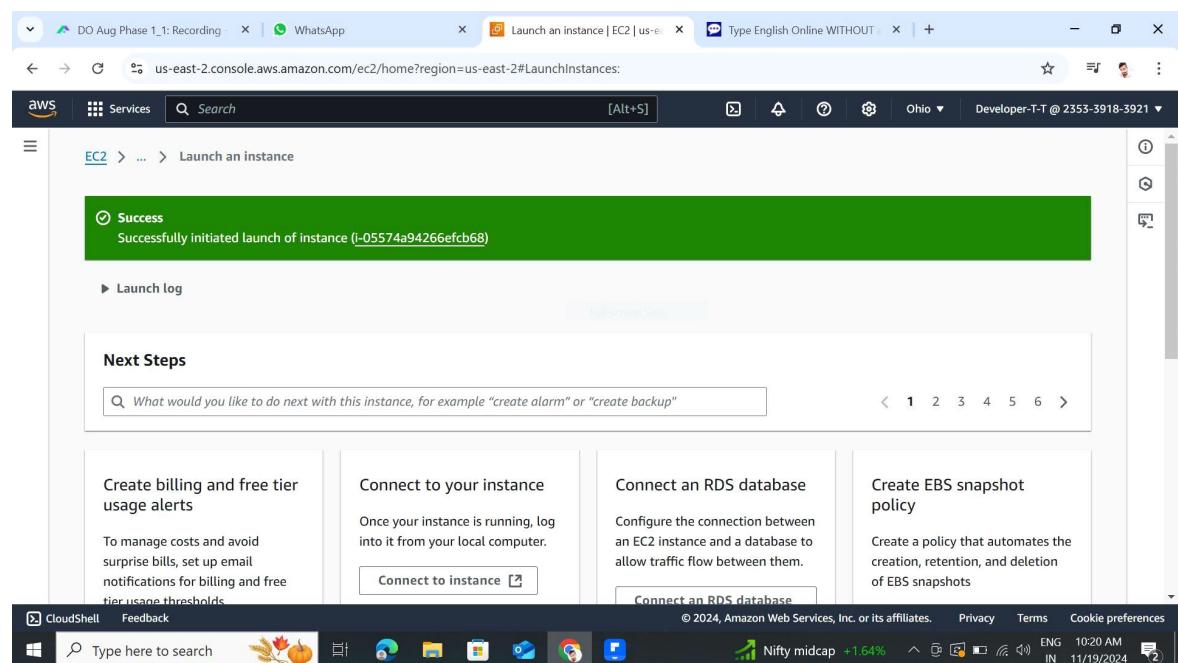


Prakash Reddy

Assignment Linux Module -2

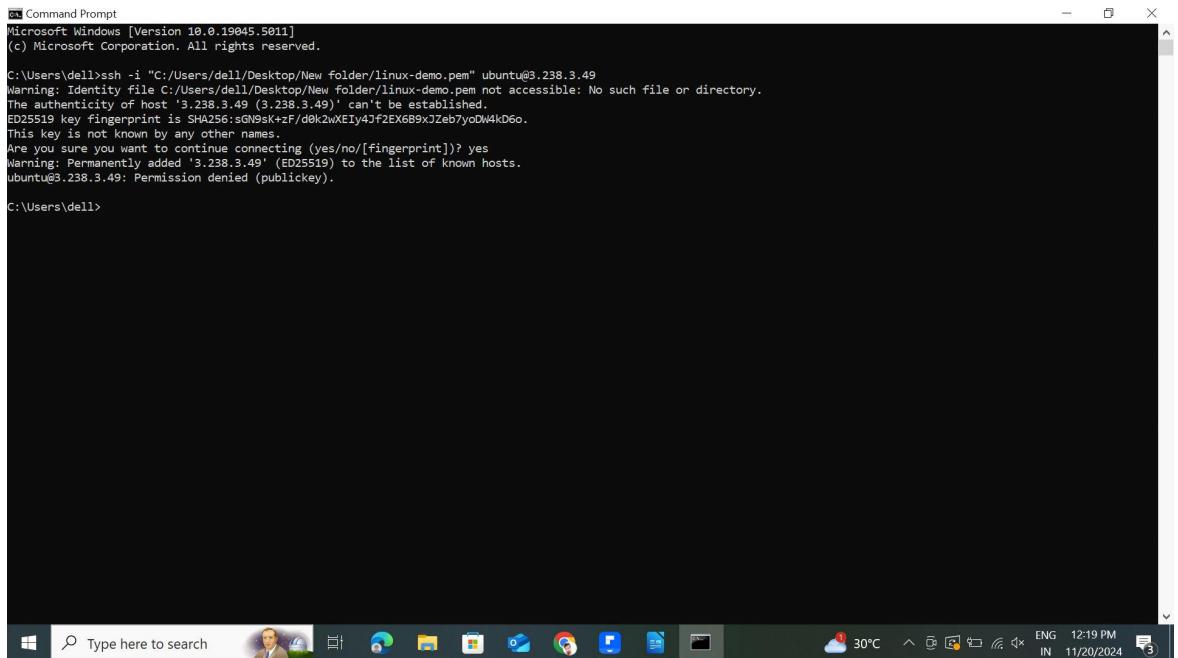
L1 - In EC2 Ubuntu Instance Create a new user and SSH Key pair with an authorized key

1) Successfully initiated launch the instance



successfully lunched

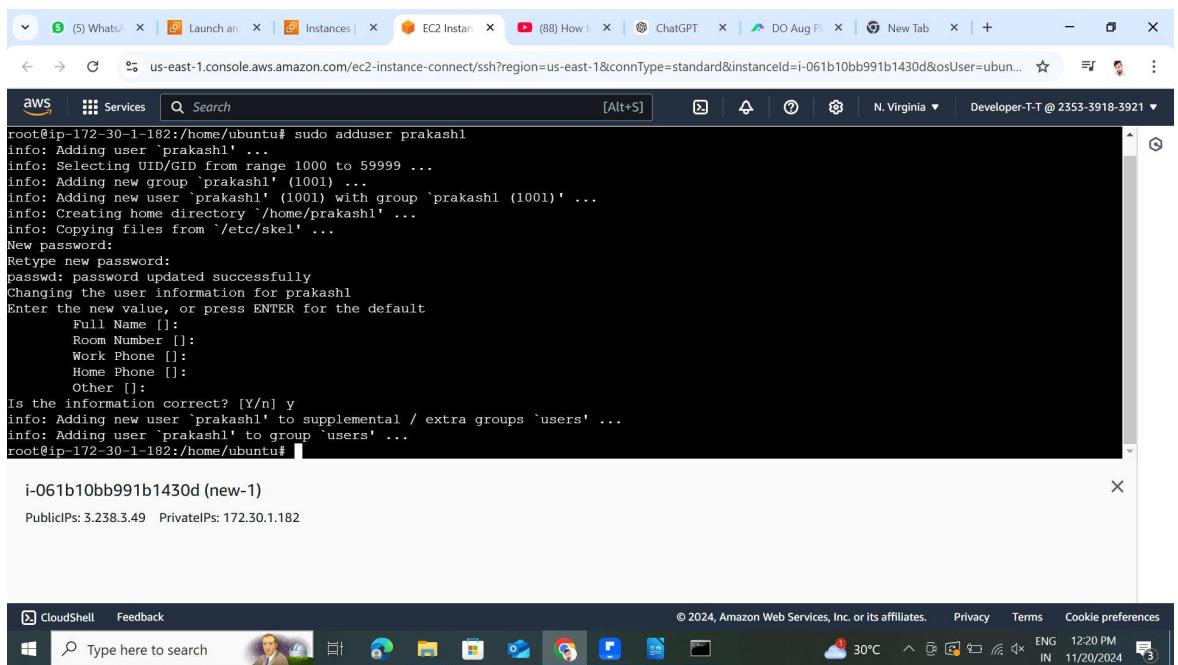
2) Try to login instance with public key-pair



```
C:\Users\dell>ssh -i "C:/Users/dell/Desktop/New folder/linux-demo.pem" ubuntu@3.238.3.49
Warning: Identity file C:/Users/dell/Desktop/New folder/linux-demo.pem not accessible: No such file or directory.
The authenticity of host '3.238.3.49 (3.238.3.49)' can't be established.
ED25519 key fingerprint is SHA256:GN9sK+Zf/dk2wXElY4Jf2EX6B9jZeb7yoDw4kD6o.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.238.3.49' (ED25519) to the list of known hosts.
ubuntu@3.238.3.49: Permission denied (publickey).

C:\Users\dell>
```

- unable to login due to permission denied to public key
- now we need sort some issue to work came below following steps



```
aws Services Search [Alt+S] N. Virginia ▾ Developer-T-T @ 2353-3918-3921 ▾
root@ip-172-30-1-182:/home/ubuntu# sudo adduser prakashl
info: Adding user 'prakashl' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group 'prakashl' (1001) ...
info: Adding new user 'prakashl' (1001) with group 'prakashl' (1001) ...
info: Creating home directory '/home/prakashl' ...
info: Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for prakashl
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
info: Adding new user 'prakashl' to supplemental / extra groups 'users' ...
info: Adding user 'prakashl' to group 'users' ...
root@ip-172-30-1-182:/home/ubuntu# i-061b10bb991b1430d (new-1)
PublicIPs: 3.238.3.49 PrivateIPs: 172.30.1.182
```

- successfully connect the created instance and create new user and set the password

```

GNU nano 7.2
/etc/sudoers.tmp
# User alias specification
# Cmnd alias specification
# User privilege specification
root    ALL=(ALL:ALL) ALL
prakash1 ALL=(ALL:ALL) ALL
# Members of the admin group may gain root privileges
%admin  ALL=(ALL) ALL
# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL
# See sudoers(5) for more information on "@include" directives:
@includedir /etc/sudoers.d

^G Help      ^Q Write Out     ^W Where Is      ^K Cut          ^T Execute       ^C Location      M-U Undo
^X Exit      ^R Read File     ^Y Replace      ^U Paste         ^J Justify       ^V Go To Line    M-E Redo
                                         ^O             ^I             ^S             ^L             M-A Set Mark
                                         M-G Copy

```

i-061b10bb991b1430d (new-1)
PublicIP: 3.238.3.49 PrivateIP: 172.30.1.182

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- after successfully created new user and gave the root permission to new user for creating of files and directories

```

Sorry, try again.
[sudo] password for prakash1:

sudo: 3 incorrect password attempts
prakash1@ip-172-30-1-182:~$ 
prakash1@ip-172-30-1-182:~$ 
prakash1@ip-172-30-1-182:~$ exit
logout
root@ip-172-30-1-182:/home/ubuntu# visudo
root@ip-172-30-1-182:/home/ubuntu# visudo
visudo: /etc/sudoers.tmp unchanged
root@ip-172-30-1-182:/home/ubuntu# y
y: command not found
root@ip-172-30-1-182:/home/ubuntu# sudo su - prakash1
prakash1@ip-172-30-1-182:~$ sudo mkdir /home/prakash1/.ssh
[sudo] password for prakash1:
prakash1@ip-172-30-1-182:~$ sudo mkdir /home/prakash1/.ssh
mkdir: cannot create directory '/home/prakash1/.ssh': File exists
prakash1@ip-172-30-1-182:~$ sudo chmod 700 /home/prakash1/.ssh
prakash1@ip-172-30-1-182:~$ 

```

i-061b10bb991b1430d (new-1)

PublicIPs: 3.238.3.49 PrivateIPs: 172.30.1.182



- after root permission to new user then we need to create SSH file for authorized key
- so we create new directory also gave the chmod777 permission to ssh

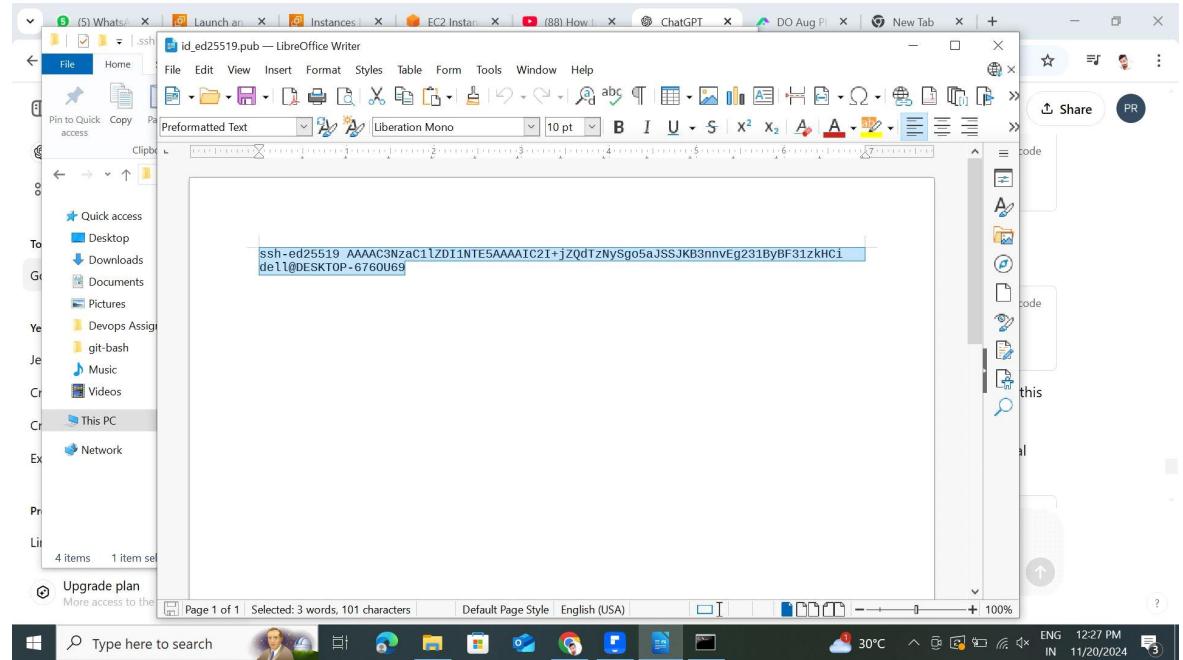
```

prakash1@ip-172-30-1-182:~$ sudo chmod 700 /home/prakash1/.ssh
prakash1@ip-172-30-1-182:~$ sudo touch /home/prakash1/.ssh/authorized_keys
prakash1@ip-172-30-1-182:~$ sudo chmod 600 /home/prakash1/.ssh/authorized_keys
prakash1@ip-172-30-1-182:~$ sudo chown prakash1:prakash1 /home/prakash1/.ssh/authorized_keys
prakash1@ip-172-30-1-182:~$ 

```

- create new authorized_key file and gave chmod 600 permission to file and also change the permission to file and owner

3) create public and private key with local terminal using SSH-KEYGEN command for creation of authorized to login new user



- after creating public and private keys copy public key into authorized file which is present in new user
- it will help to login new user with authorized key

```

AWS Services Search [Alt+S] N. Virginia ▾ Developer-T-T @ 2353-3918-3921 ▾
GNU nano 7.2 /home/prakash1/.ssh/authorized_keys *
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIC2I+jZQdTzNySgobJSSJKB3mvEq231ByBF31zkHCl dell@DESKTOP-6760U69

^G Help ^O Write Out ^W Where Is ^R Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^V Replace ^U Paste ^J Justify ^Y Go To Line M-E Redo
M-A Set Mark M-D Copy

i-061b10bb991b1430d (new-1)
Public IPs: 3.238.3.49 Private IPs: 172.30.1.182

```

- by using vi command which is used to edit the existed file
- copy the public key in authorized_key and press
clt+x+yes+enter

```

prakash1@ip-172-30-1-115: ~
System load: 0.0 Processes: 111
Usage of /: 23.1% of 6.71GB Users logged in: 1
Memory usage: 28% IPv4 address for enX0: 172.30.1.115
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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

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

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

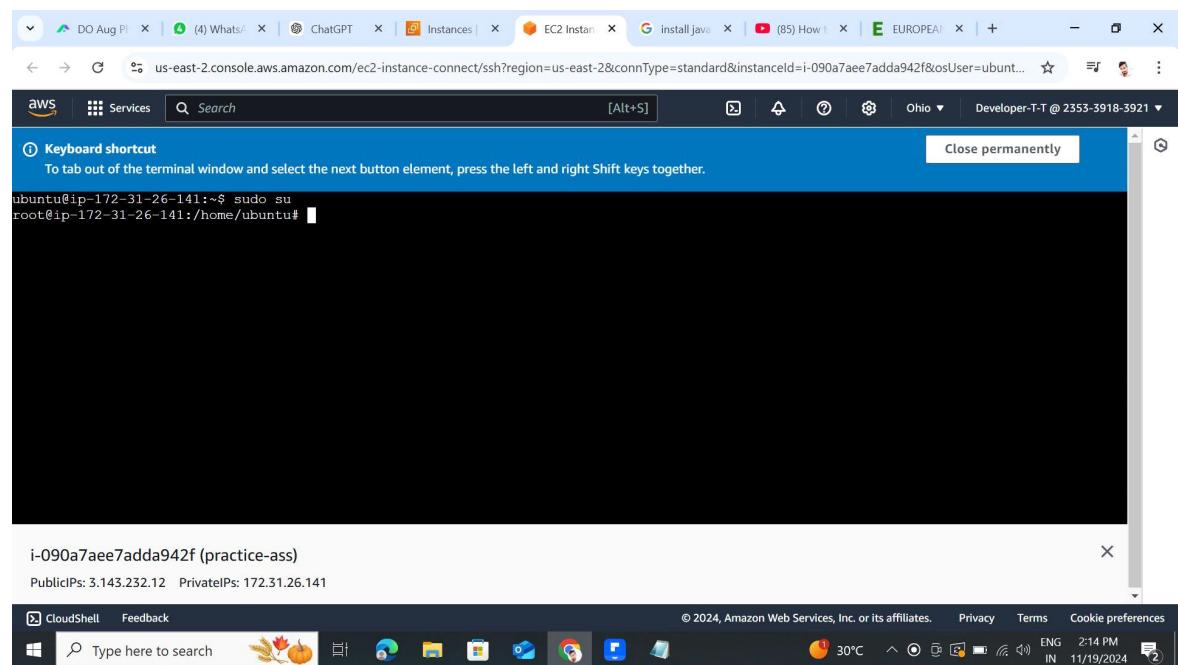
prakash1@ip-172-30-1-115:~$ 

```

successfully login new user with authorized_key

2) As a Linux root user Create Files/Directory in the same

Instance and change the ownership to a new user



- After successfully launch the instance and connect to aws
- after that we go to root user by using SUDO SU command

The screenshot shows a terminal window with the AWS Services navigation bar at the top. The terminal content includes a keyboard shortcut note, a command to switch to root, and a command to add a new user named 'newuser'.

```
buntu@ip-172-31-26-141:~$ sudo su
root@ip-172-31-26-141:/home/ubuntu# useradd -m newuser
```

create new user with the help of USERADD command and
name of user is newuser

The screenshot shows a terminal window with a keyboard shortcut note, a command to switch to root, a command to add a new user named 'newuser', and a command to update its password. The password is entered and confirmed.

```
buntu@ip-172-31-26-141:~$ sudo su
root@ip-172-31-26-141:/home/ubuntu# useradd -m newuser
root@ip-172-31-26-141:/home/ubuntu# passwd newuser
[REDACTED] password:
[REDACTED] type new password:
passwd: password updated successfully
root@ip-172-31-26-141:/home/ubuntu#
```

- After successfully new user and update password
successfully

Keyboard shortcut

To tab out of the terminal window and select the next button element, press the left and right arrow keys.

```
ubuntu@ip-172-31-26-141:~$ sudo su
root@ip-172-31-26-141:/home/ubuntu# useradd -m newuser
root@ip-172-31-26-141:/home/ubuntu# passwd newuser
New password:
Retype new password:
passwd: password updated successfully
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/mydir
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/mydir
drwxr-xr-x 2 root root 4096 Nov 19 08:49 /home/mydir
root@ip-172-31-26-141:/home/ubuntu# █
```

- create new directory with MAKDIR command and successfully directory name mydir

```
ubuntu@ip-172-31-26-141:~$ sudo su
root@ip-172-31-26-141:/home/ubuntu# useradd -m newuser
root@ip-172-31-26-141:/home/ubuntu# passwd newuser
New password:
Retype new password:
passwd: password updated successfully
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/mydir
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/mydir
drwxr-xr-x 2 root root 4096 Nov 19 08:49 /home/mydir
root@ip-172-31-26-141:/home/ubuntu# touch /home/mydir/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# nano /home/mydir/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# █
```

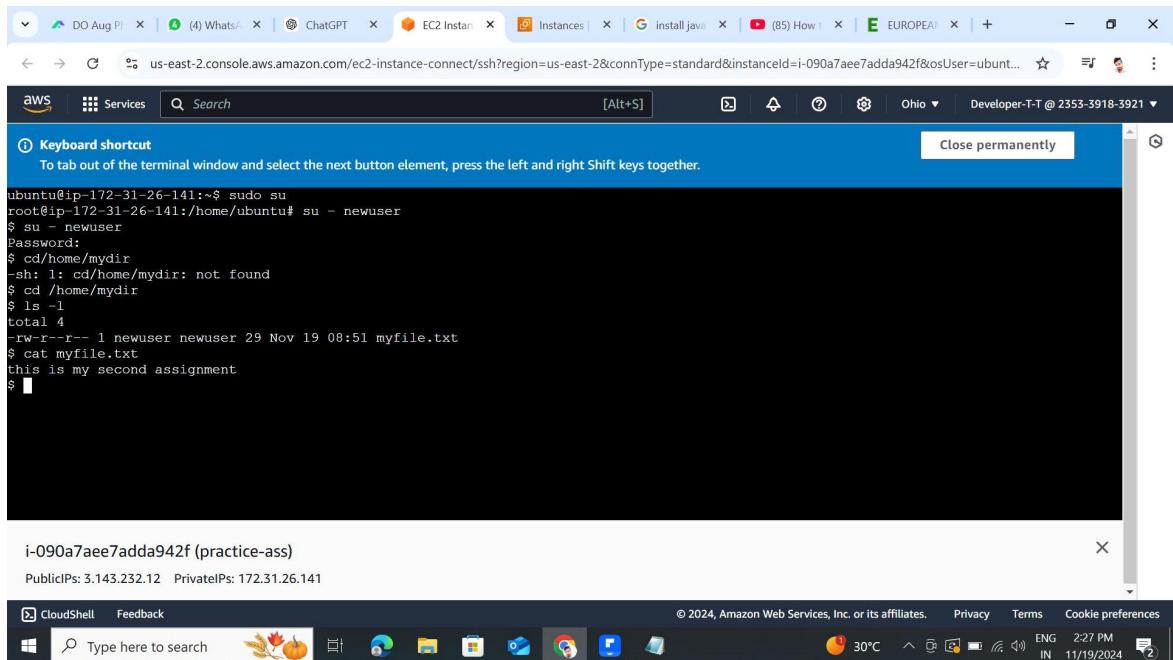
create file using TOUCH command and created successfully
filename is myfile.txt

```

passwd: password updated successfully
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/mydir
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/mydir
drwxr-xr-x 2 root root 4096 Nov 19 08:49 /home/mydir
root@ip-172-31-26-141:/home/ubuntu# touch /home/mydir/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# nano /home/mydir/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# chown -R newuser:newuser /home/mydir
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/mydir
total 4
-rw-r--r-- 1 newuser newuser 29 Nov 19 08:51 myfile.txt
root@ip-172-31-26-141:/home/ubuntu# █

```

- change the ownership of created user by using CHOWN

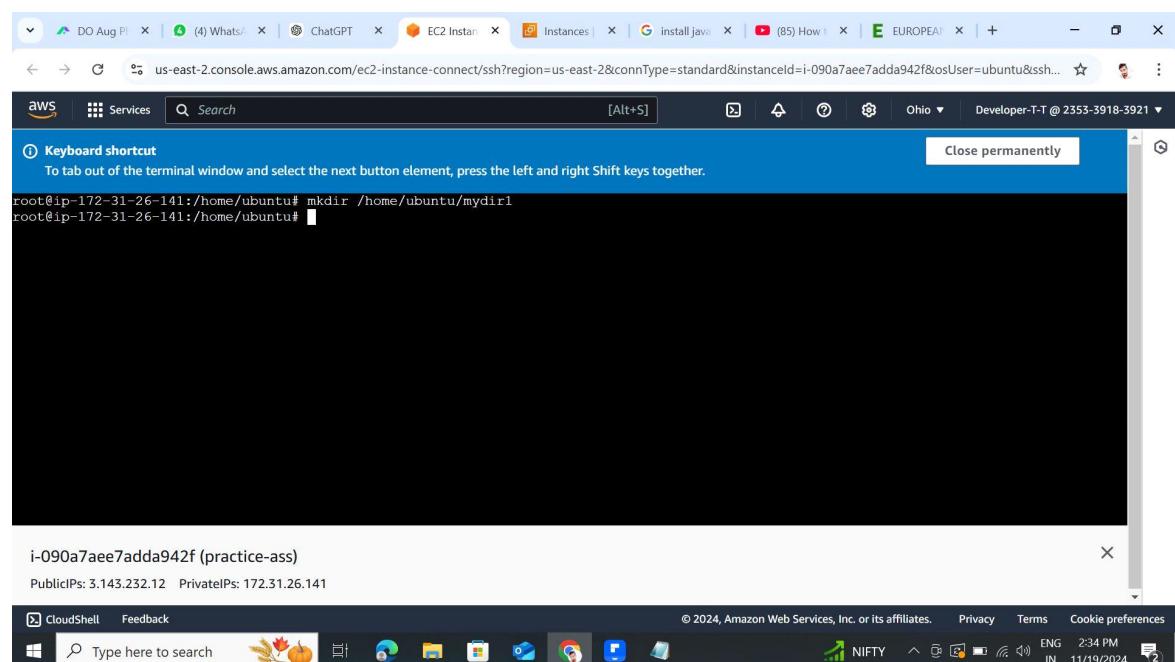


- finally login new user and check ownership and successfully change the ownership we saw in above screenshot

3. L3 - In EC2 Ubuntu Instance Create Files and

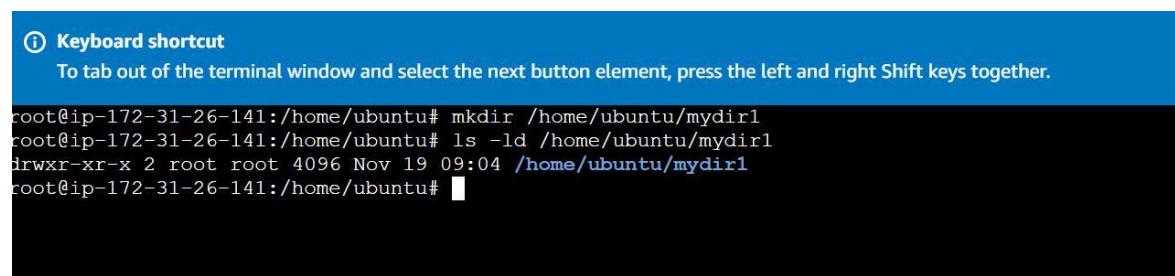
Directories and Grand R/W/X Access only to the Owner and User Group

1) Successfully launch and connect the created instance



A screenshot of an AWS CloudShell terminal window. The terminal shows the command `mkdir /home/ubuntu/mydir1` being run by root user on an EC2 instance. The terminal has a blue header bar with keyboard shortcut instructions and a 'Close permanently' button. Below the terminal is a status bar showing the instance ID (i-090a7aee7adda942f), public and private IP addresses, and the AWS region (Ohio). The bottom of the screen shows the Windows taskbar with various pinned icons.

- Using sudo su command to enter into root account



A screenshot of an AWS CloudShell terminal window. The terminal shows the command `mkdir /home/ubuntu/mydir1` being run by root user on an EC2 instance. The terminal has a blue header bar with keyboard shortcut instructions and a 'Close permanently' button. Below the terminal is a status bar showing the instance ID (i-090a7aee7adda942f), public and private IP addresses, and the AWS region (Ohio). The bottom of the screen shows the Windows taskbar with various pinned icons.

Successfully created directory

```
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
drwxr-xr-x 2 root root 4096 Nov 19 09:04 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# touch /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/ubuntu/mydir1/myfile.txt
-rw-r--r-- 1 root root 0 Nov 19 09:06 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# █
```

Successfully created file in mydir1 directory

```
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
rwxr-xr-x 2 root root 4096 Nov 19 09:04 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# touch /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/ubuntu/mydir1/myfile.txt
rw-r--r-- 1 root root 0 Nov 19 09:06 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# sudo groupadd mygroup
root@ip-172-31-26-141:/home/ubuntu# sudo usermod -aG mygroup ubuntu
root@ip-172-31-26-141:/home/ubuntu# groups ubuntu
ubuntu : ubuntu adm cdrom sudo dip lxd mygroup
```

Successfully created groups

- created group with **groupadd** command and make sudo permission to group and check we see in above picture

```
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
drwxr-xr-x 2 root root 4096 Nov 19 09:04 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# touch /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/ubuntu/mydir1/myfile.txt
-rw-r--r-- 1 root root 0 Nov 19 09:06 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# sudo groupadd mygroup
root@ip-172-31-26-141:/home/ubuntu# sudo usermod -aG mygroup ubuntu
root@ip-172-31-26-141:/home/ubuntu# groups ubuntu
ubuntu : ubuntu adm cdrom sudo dip lxd mygroup
root@ip-172-31-26-141:/home/ubuntu# sudo chmod 770 /home/ubuntu/mydir1
chmod: cannot access '/home/ubuntu/mydir1': No such file or directory
root@ip-172-31-26-141:/home/ubuntu# sudo chmod 770 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
drwxrwx--- 2 root root 4096 Nov 19 09:06 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# █
```

- make permission to created directory using **chmod 700**

 **Keyboard shortcut**

To tab out of the terminal window and select the next button element, press the left and right Shift keys together.

```
root@ip-172-31-26-141:/home/ubuntu# mkdir /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
drwxr-xr-x 2 root root 4096 Nov 19 09:04 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# touch /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/ubuntu/mydir1/myfile.txt
-rw-r--r-- 1 root root 0 Nov 19 09:06 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# sudo groupadd mygroup
root@ip-172-31-26-141:/home/ubuntu# sudo usermod -aG mygroup ubuntu
root@ip-172-31-26-141:/home/ubuntu# groups ubuntu
ubuntu : ubuntu adm cdrom sudo dip lxd mygroup
root@ip-172-31-26-141:/home/ubuntu# sudo chmod 770 /home/ubuntu/mydir1
chmod: cannot access '/home/ubuntu/mydir1': No such file or directory
root@ip-172-31-26-141:/home/ubuntu# sudo chmod 770 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# ls -ld /home/ubuntu/mydir1
drwxrwx--- 2 root root 4096 Nov 19 09:06 /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu# sudo chmod 770 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# ls -l /home/ubuntu/mydir1/myfile.txt
-rwxrwx--- 1 root root 0 Nov 19 09:06 /home/ubuntu/mydir1/myfile.txt
root@ip-172-31-26-141:/home/ubuntu# █
```

- make permission to file using **chmod 700**

```
ubuntu@ip-172-31-26-141:~$ su - ubuntu
Password:
ubuntu@ip-172-31-26-141:~$ ls -l
total 4
drwxrwx--- 2 root root 4096 Nov 19 09:06 mydir1
ubuntu@ip-172-31-26-141:~$ █
```

- after gave the permission to directory ,files check

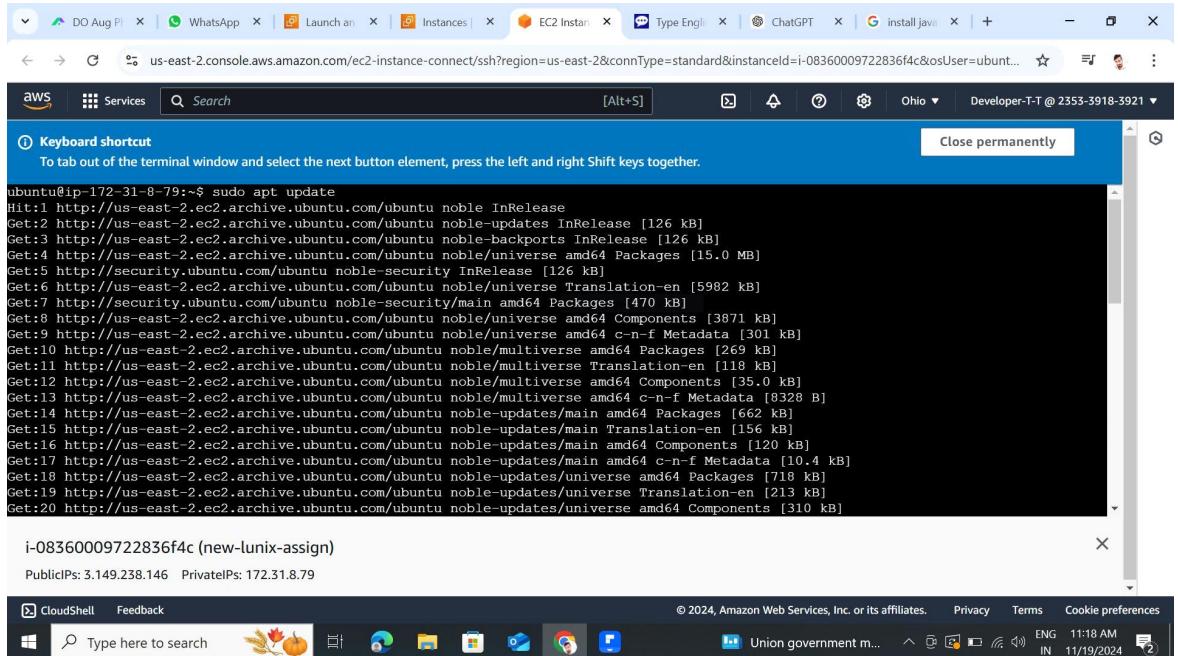
```
root@ip-172-31-26-141:/home/ubuntu# cd /home/ubuntu/mydir1
root@ip-172-31-26-141:/home/ubuntu/mydir1# ls -l
total 0
-rwxrwx--- 1 root root 0 Nov 19 09:06 myfile.txt
root@ip-172-31-26-141:/home/ubuntu/mydir1# cat myfile.txt
root@ip-172-31-26-141:/home/ubuntu/mydir1# █
```

**successfully created files and directory only grand permission
to owner and group**

4) L4 - In EC2 Ubuntu Instance install JDK and setup

JAVA_HOME path environment variable

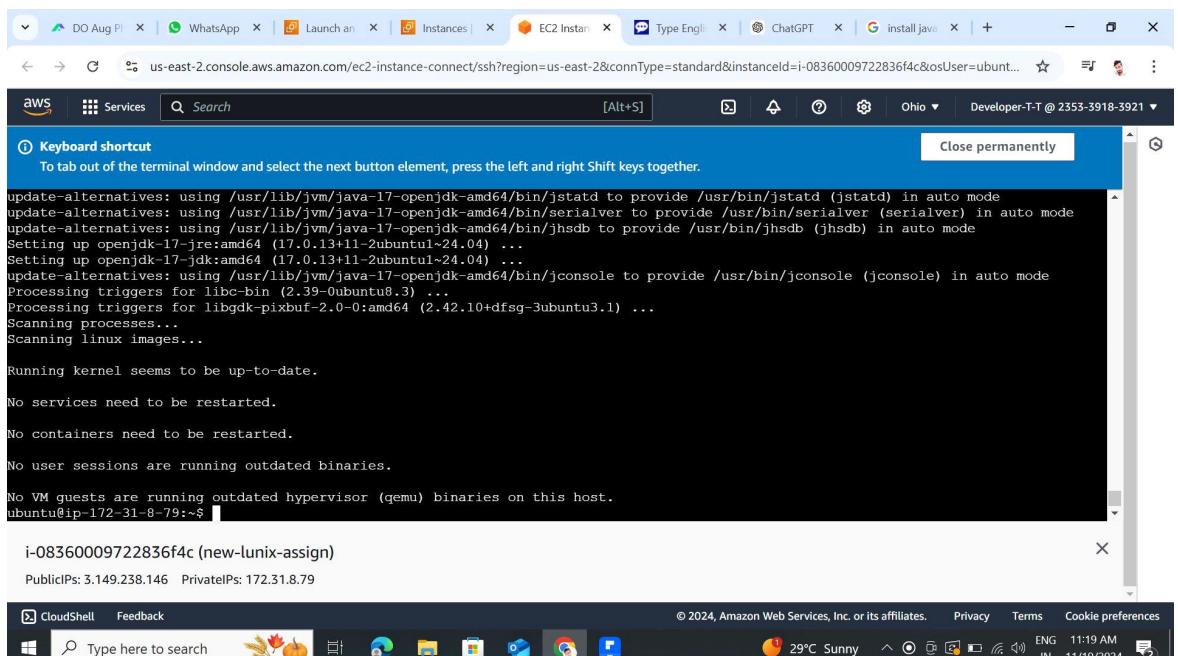
1) Successfully launch and connect the instance



```
ubuntu@ip-172-31-8-79:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [470 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [662 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [156 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [120 kB]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [10.4 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [718 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [213 kB]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [310 kB]

i-08360009722836f4c (new-lunix-assign)
Public IPs: 3.149.238.146 Private IPs: 172.31.8.79
```

Successfully update the packages



```
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jstatd to provide /usr/bin/jstatd (jstatd) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/serialver to provide /usr/bin/serialver (serialver) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jhsdb to provide /usr/bin/jhsdb (jhsdb) in auto mode
Setting up openjdk-17-jre:amd64 (17.0.13+11-2ubuntu1~24.04) ...
Setting up openjdk-17-jdk:amd64 (17.0.13+11-2ubuntu1~24.04) ...
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Processing triggers for libgc-bin (2.39-0ubuntu8.3) ...
Processing triggers for libgdk-pixbuf2-0.0:amd64 (2.42.10+dfsg-3ubuntu3.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-8-79:~$
```

install the jdk

```
ubuntu@ip-172-31-8-79:~$ source /etc/profile
ubuntu@ip-172-31-8-79:~$ echo $JAVA_HOME
/usr/lib/jvm/java-11-openjdk-amd64
ubuntu@ip-172-31-8-79:~$
```

i-08360009722836f4c (new-lunix-assign)
Public IPs: 3.149.238.146 Private IPs: 172.31.8.79

check the JAVA_HOME path

```
GNU nano 7.2
/etc/profile
PS1='# '
else
  PS1='$ '
fi
fi

if [ -d /etc/profile.d ]; then
  for i in /etc/profile.d/*.sh; do
    if [ -r $i ]; then
      . $i
    fi
  done
  unset i
fi
export JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64
export PATH=$JAVA_HOME/bin:$PATH
```

i-08360009722836f4c (new-lunix-assign)
Public IPs: 3.149.238.146 Private IPs: 172.31.8.79

open the profile configuration

The screenshot shows a terminal window titled "Developer-T-T @ 2353-3918-3921" running on an AWS CloudShell. The terminal displays the output of a Java installation command:

```
Setting up openjdk-17-jdk:amd64 (17.0.13+11-2ubuntu1~24.04) ...
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for libgdk-pixbuf-2.0-0:amd64 (2.42.10+dfsg-3ubuntu3.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-8-79:~$ java -version
openjdk version "17.0.13" 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-8-79:~$
```

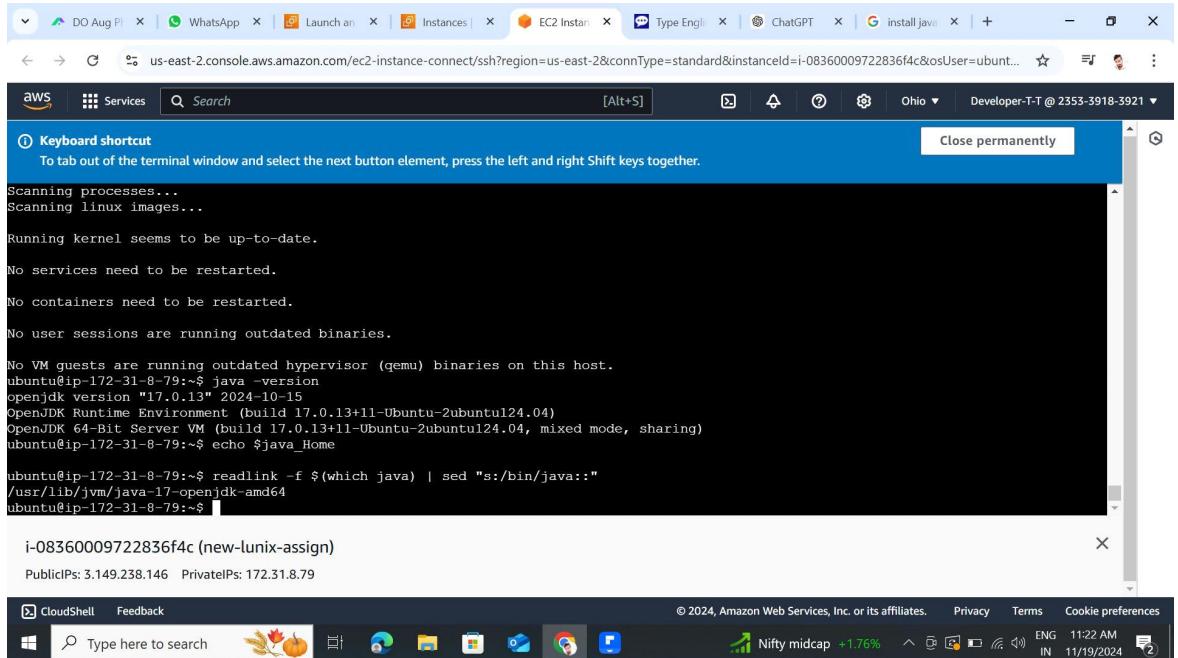
Below the terminal, the CloudShell interface includes a search bar, a toolbar with icons for various services, and a status bar showing the date and time.

- install jdk with the help of chrome to take command on it
- and check the version of the jdk
- openjdk runtime environment has been set sucessfully

The screenshot shows a terminal window displaying the output of the command "echo \$java_HOME". The output shows the path to the Java runtime environment:

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-8-79:~$ java -version
openjdk version "17.0.13" 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-8-79:~$ echo $java_HOME
```

check the javac home



The screenshot shows a terminal window titled "Developer-T-T @ 2353-3918-3921" running on an AWS EC2 instance. The terminal displays the output of a "java -version" command. The output includes:

```
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-8-79:~$ java -version
openjdk version "17.0.13" 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-8-79:~$ echo $java_HOME
ubuntu@ip-172-31-8-79:~$ i-08360009722836f4c (new-lunix-assign)
Public IPs: 3.149.238.146 Private IPs: 172.31.8.79
```

successfully the java_home path

5. L5 - Create two AWS EC2 Ubuntu Instances to establish SSH Connection and SCP the files from one Instance to another instance

1) Successfully launch and connect the instance

The screenshot shows the AWS EC2 Instances page. The left sidebar includes options like Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main content area displays two instances: 'instance-ubuntu...' (running, t2.micro, 2/2 checks passed) and 'instance-2linux' (running, t2.micro, 2/2 checks passed). A search bar at the top allows filtering by instance ID. The bottom status bar shows the date and time as 11/21/2024.

successfully launch two instance

The screenshot shows the AWS Security Groups page. The left sidebar includes options like Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main content area displays a security group named 'launch-wizard-16' with the following details:

Security group name	Security group ID	Description	VPC ID
launch-wizard-16	sg-00926015d42a918e8	created 2024-11-19T07:45:25.338Z	vpc-087daa16608019286

Under the 'Inbound rules' tab, there is one rule listed:

Name	Security group rule...	IP version	Type	Protocol
-	sgr-0dc605bf9b67c0a27	IPv4	SSH	TCP

The bottom status bar shows the date and time as 11/21/2024.

- Set the security group permission carefully allow the SSH ,port 22 permission

- Also allow the first instance private ip access in to second instance
- same like the follow instructions into second instance private allow into first instance sg
- instead of allow all traffic inbound rule use this way it have high secure this is best practices

```

ubuntu@ip-172-31-8-92:~$ C:\Users\dell\ssh -i C:\Users\dell\Downloads\keys\new-demo.pem ubuntu@3.147.76.98
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

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

System information as of Thu Nov 21 08:22:57 UTC 2024

System load: 0.0 Processes: 123
Usage of /: 23.2% of 6.71GB Users logged in: 1
Memory usage: 23% IPv4 address for enX0: 172.31.3.248
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

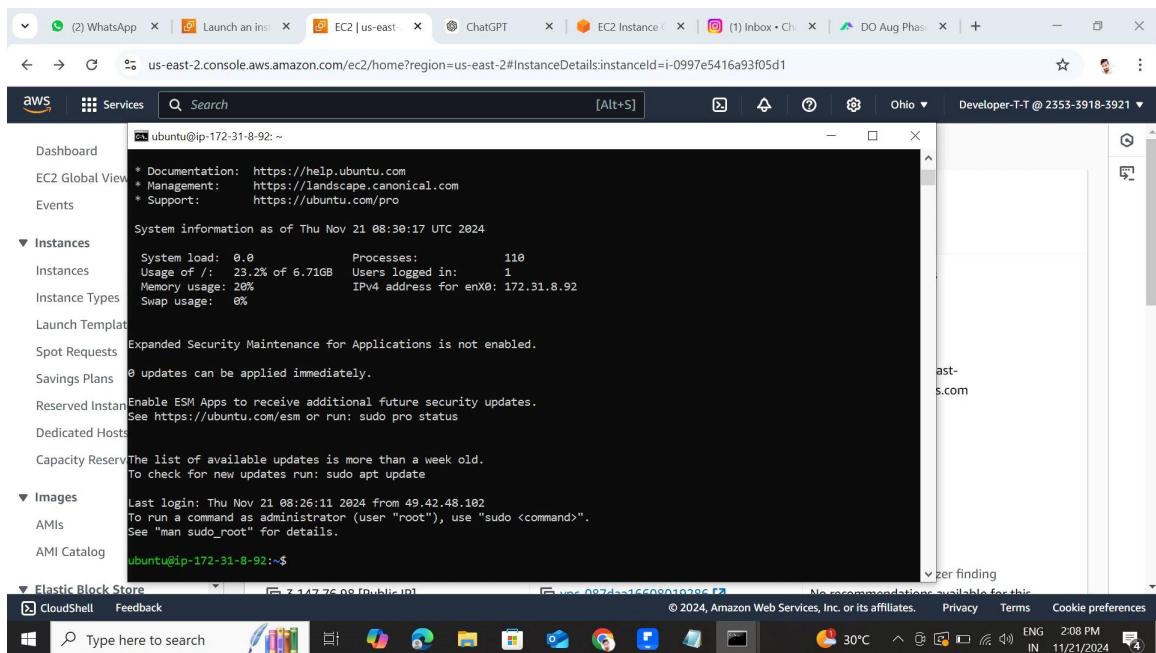
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Thu Nov 21 08:14:33 2024 from 49.42.48.102
ubuntu@ip-172-31-3-248:~$ ubuntu@ip-172-31-3-248:~$ ubuntu@ip-172-31-3-248:~$ ping 172.31.8.92

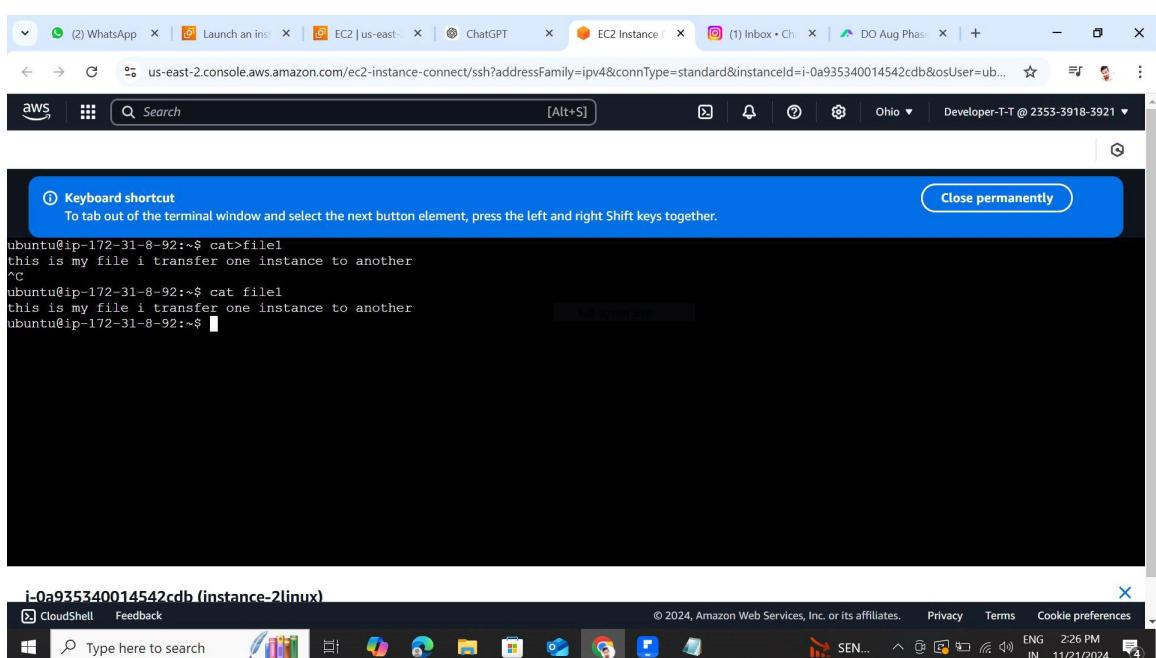
```

with the help of public key login first instance in local terminal

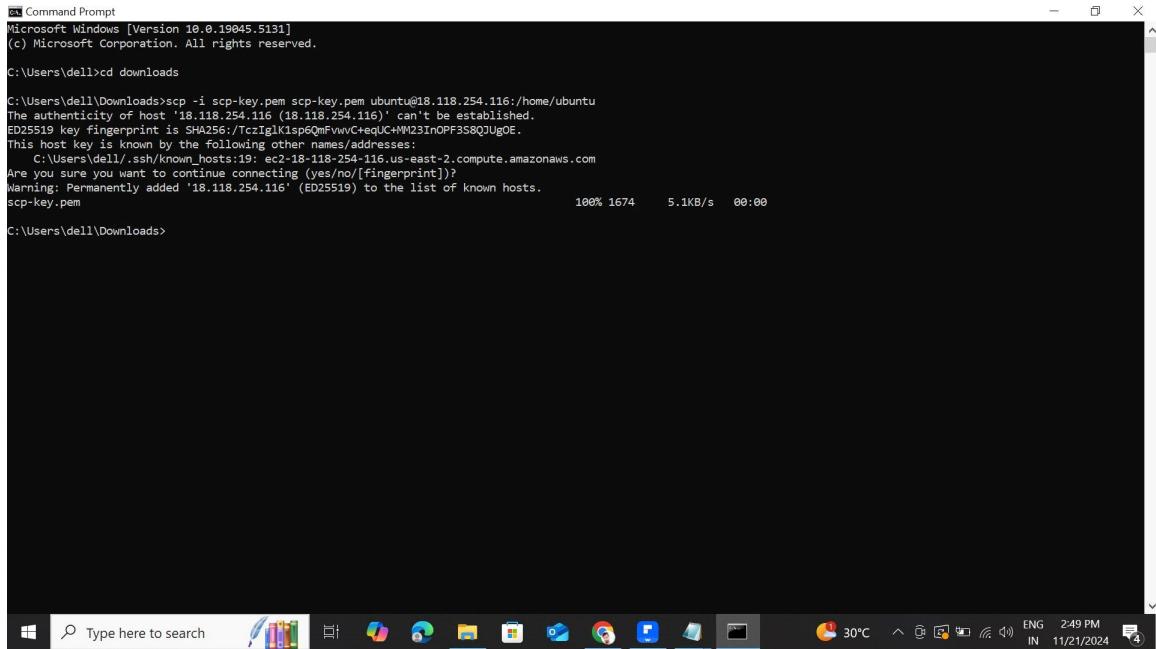


successfully establish SSH connection between first instance
into second instance

2) SCP the files from one Instance to another instance



- create file with the help of cat command then file name is file1



```

cmd Command Prompt
Microsoft Windows [Version 10.0.19045.5131]
(c) Microsoft Corporation. All rights reserved.

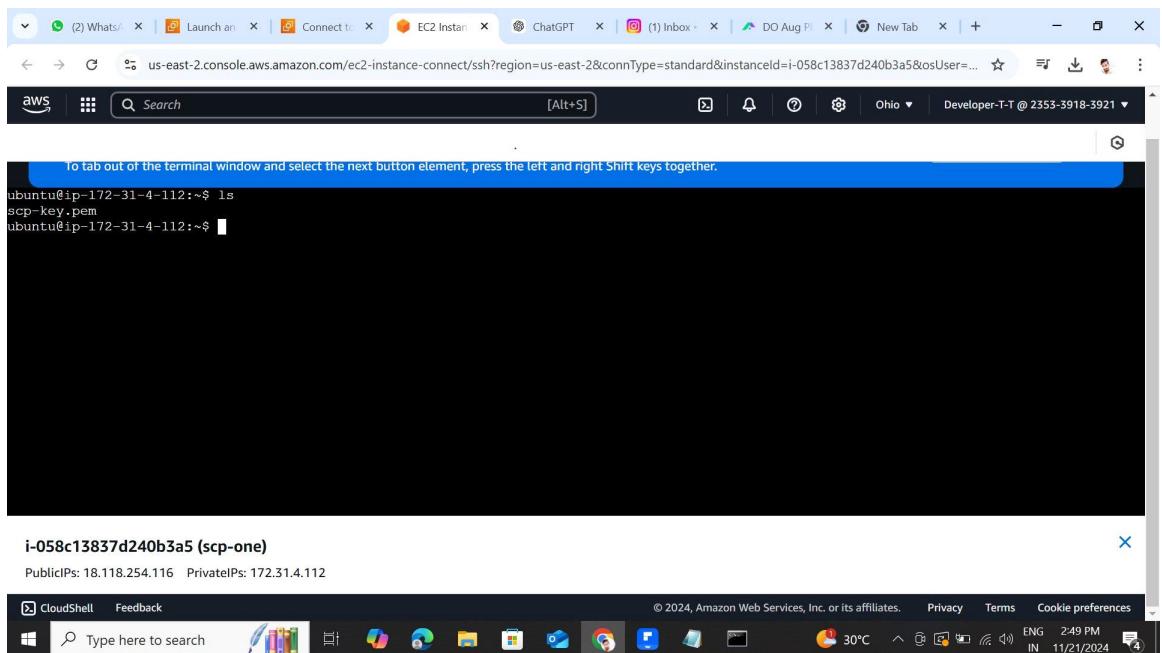
C:\Users\dell>cd downloads
C:\Users\dell\Downloads>scp -i scp-key.pem scp-key.pem ubuntu@18.118.254.116:/home/ubuntu
The authenticity of host '18.118.254.116 (18.118.254.116)' can't be established.
ED25519 key fingerprint is SHA256:/TczIgIk1sp6QmFvvvC+eqUC:MW23InOPF3SBQJUgOE.
This host key is known by the following other names/addresses:
  C:\Users\dell/.ssh/known_hosts:19: ec2-18-118-254-116.us-east-2.compute.amazonaws.com
Are you sure you want to continue connecting (yes/no/[fingerprint])?
Warning: Permanently added '18.118.254.116' (ED25519) to the list of known hosts.
scp-key.pem                                         100% 1674      5.1KB/s   00:00

C:\Users\dell\Downloads>

```

The screenshot shows a Windows Command Prompt window with the title 'cmd Command Prompt'. The command 'scp -i scp-key.pem scp-key.pem ubuntu@18.118.254.116:/home/ubuntu' is being run. The output indicates that the authenticity of the host cannot be established, and it asks if the user wants to continue connecting. The user has responded with 'yes'. The progress bar shows the file is at 100% completion with a size of 1674 bytes and a transfer rate of 5.1KB/s. The transfer took 00:00. The command prompt then returns to the 'C:\Users\dell\Downloads>' prompt.

- with the help of scp to transfer files one instance into another instance
- `scp -i <path of file> <file name> username@<public ip of first instance>:<path of destiny instance>`
- with the help of above command we transfer file into each other

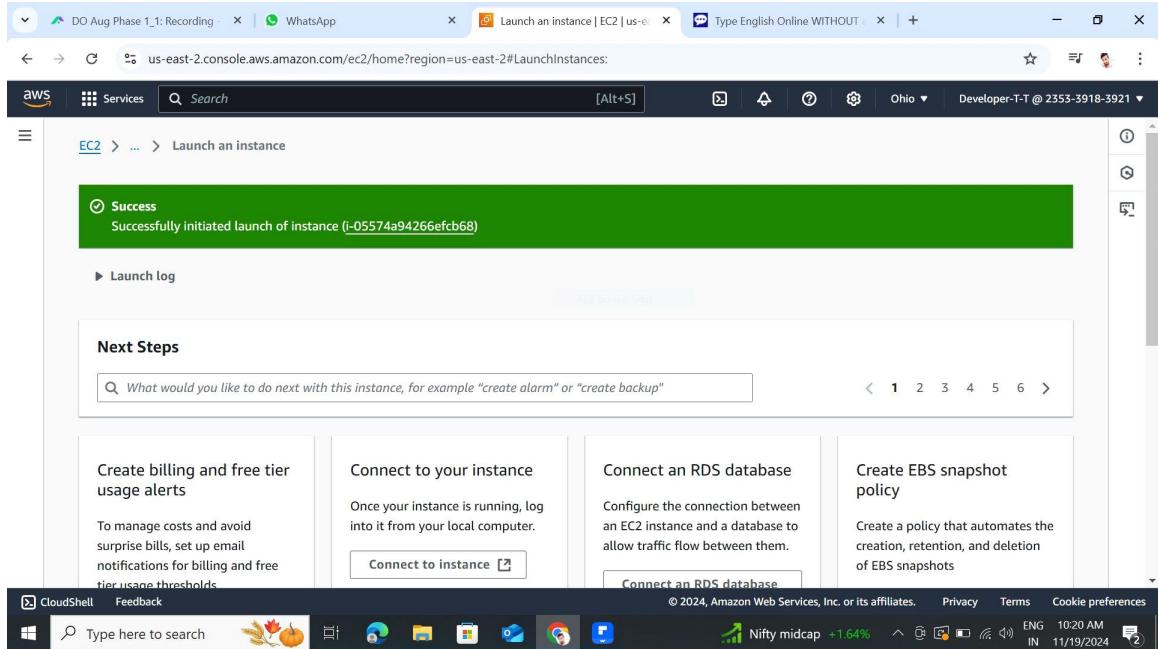


scp-key.pem file successfully transfer in another instance

6. L6 - Write a Linux Shell Script to Install Git, JDK,

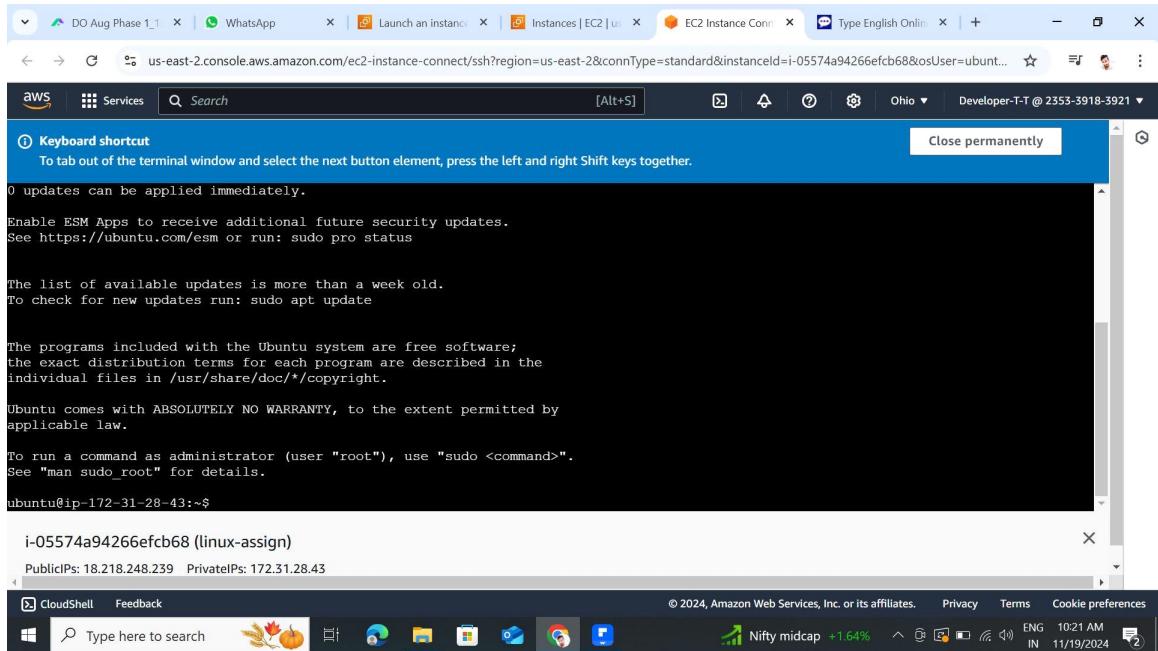
Maven in EC2 Ubuntu Instance

1) successfully launch instance

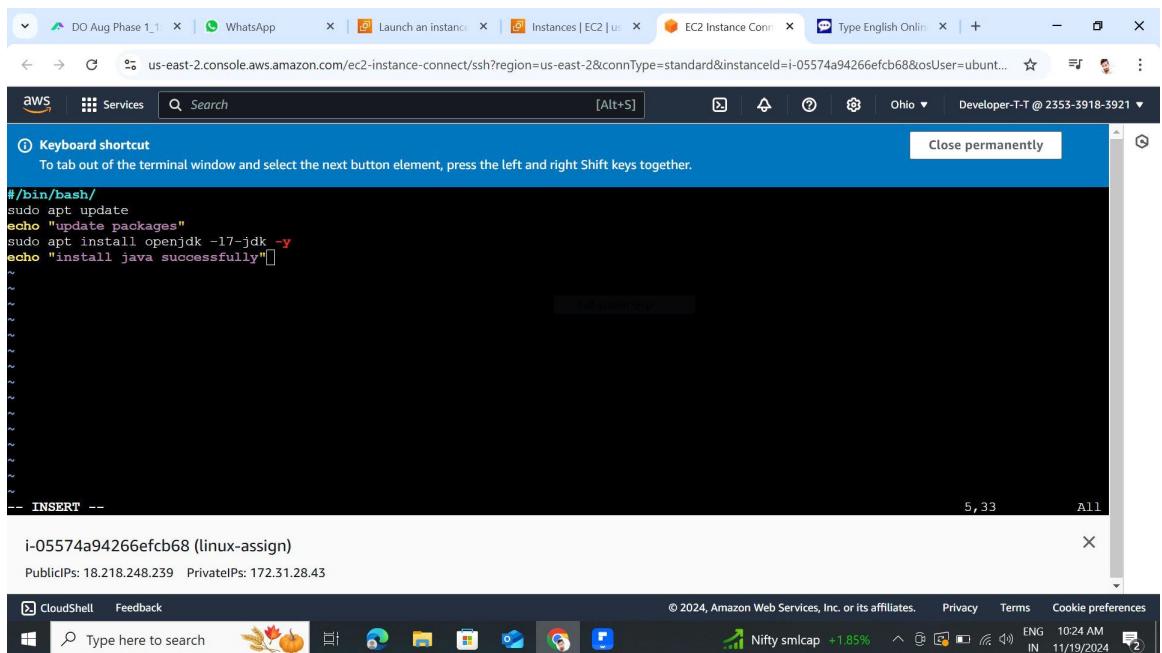


The screenshot shows the AWS CloudShell interface. At the top, there are tabs for "DO Aug Phase 1: Recording", "WhatsApp", "Launch an instance | EC2 | us-east-2", and "Type English Online WITHOUT...". The main content area displays a success message: "Successfully initiated launch of instance (i-05574a94266efcb68)". Below this, there's a "Launch log" button and a "Next Steps" section with links to "Create billing and free tier usage alerts", "Connect to your instance", "Connect an RDS database", and "Create EBS snapshot policy". A search bar at the bottom asks, "What would you like to do next with this instance, for example 'create alarm' or 'create backup'?".

2) successfully connect the instance with ssh port



The screenshot shows a terminal window titled "EC2 Instance Connect" with the URL "us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-05574a94266efcb68&osUser=ubuntu...". The terminal content includes a keyboard shortcut notice, update information, and a warning about the age of available updates. It also provides instructions for running commands as root and ends with the prompt "ubuntu@ip-172-31-28-43:~\$". The status bar at the bottom shows "PublicIPs: 18.218.248.239 PrivateIPs: 172.31.28.43".

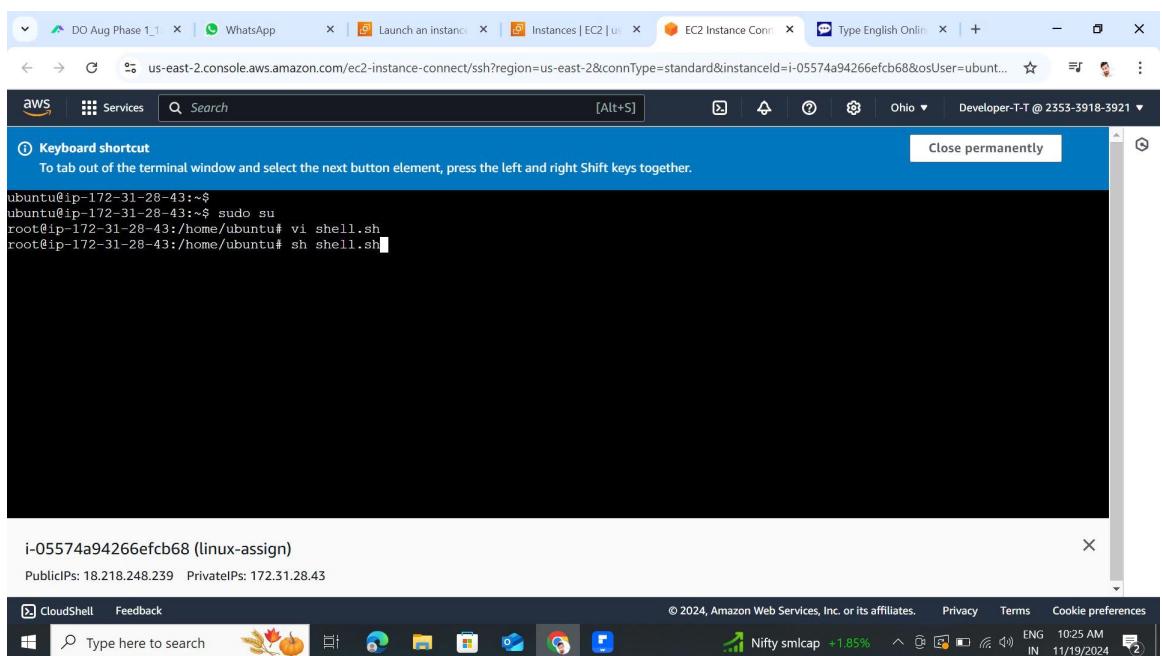


```
#!/bin/bash/
sudo apt update
echo "update packages"
sudo apt install openjdk-17-jdk -y
echo "install java successfully"[]

-- INSERT --
i-05574a94266efcb68 (linux-assign)
Public IPs: 18.218.248.239 Private IPs: 172.31.28.43
```

The screenshot shows a terminal window titled 'Developer-T-T @ 2353-3918-3921'. It contains a shell script that installs OpenJDK 17. The script uses `sudo apt update` to update packages, `apt install openjdk-17-jdk -y` to install Java, and `echo` to confirm the installation. The terminal is in 'INSERT' mode at the bottom. Below the terminal is a taskbar with various icons and a system tray showing network status and system time.

- create shell script with .sh
- inside the shellscript we install openjdk
- and also install update package of default



```
ubuntu@ip-172-31-28-43:~$ sudo su
root@ip-172-31-28-43:/home/ubuntu# vi shell.sh
root@ip-172-31-28-43:/home/ubuntu# sh shell.sh
```

The screenshot shows a terminal window with root privileges. The user runs `vi shell.sh` to edit a script, then executes it with `sh shell.sh`. Below the terminal is a taskbar with various icons and a system tray showing network status and system time.

- execute the file with the help of **sh shell.sh** command

```

update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/serialver to provide /usr/bin/serialver (serialver) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jhsdb to provide /usr/bin/jhsdb (jhsdb) in auto mode
Setting up openjdk-17-jre-amd64 (17.0.13+11-2ubuntu1-24.04) ...
Setting up openjdk-17-jdk-amd64 (17.0.13+11-2ubuntu1-24.04) ...
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jconsole to provide /usr/bin/jconsole (jconsole) in auto mode
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for libgdk-pixbuf-2.0-0:amd64 (2.42.10+dfsg-3ubuntu3.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

java install successfully
root@ip-172-31-28-43:/home/ubuntu#

```

i-05574a94266efc68 (linux-assign)
Public IPs: 18.218.248.239 Private IPs: 172.31.28.43

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Result ENG 10:32 AM IN 11/19/2024

- successfully update the default packages and install openjdk

The screenshot shows a CloudShell terminal window with a blue header bar. The terminal content is a black screen with white text. At the top of the terminal, there is a keyboard shortcut note: "To tab out of the terminal window and select the next button element, press the left and right Shift keys together." Below this, the terminal displays the following command and its output:

```
#!/bin/bash
sudo apt install git -y
echo "git install successfully"
~
```

At the bottom of the terminal, it shows the session identifier: i-05574a94266efcb68 (linux-assign) and the public and private IP addresses: PublicIPs: 18.218.248.239 PrivateIPs: 172.31.28.43.

The Windows taskbar at the bottom of the screen includes icons for CloudShell, Feedback, Start, File Explorer, Task View, Edge, File, and Google Chrome. The system tray shows the date and time as 11/19/2024, 10:35 AM, and a battery icon indicating 100% charge.

- again follow the above step now create shellscript and inside command install git with the help of **sudo apt install git**

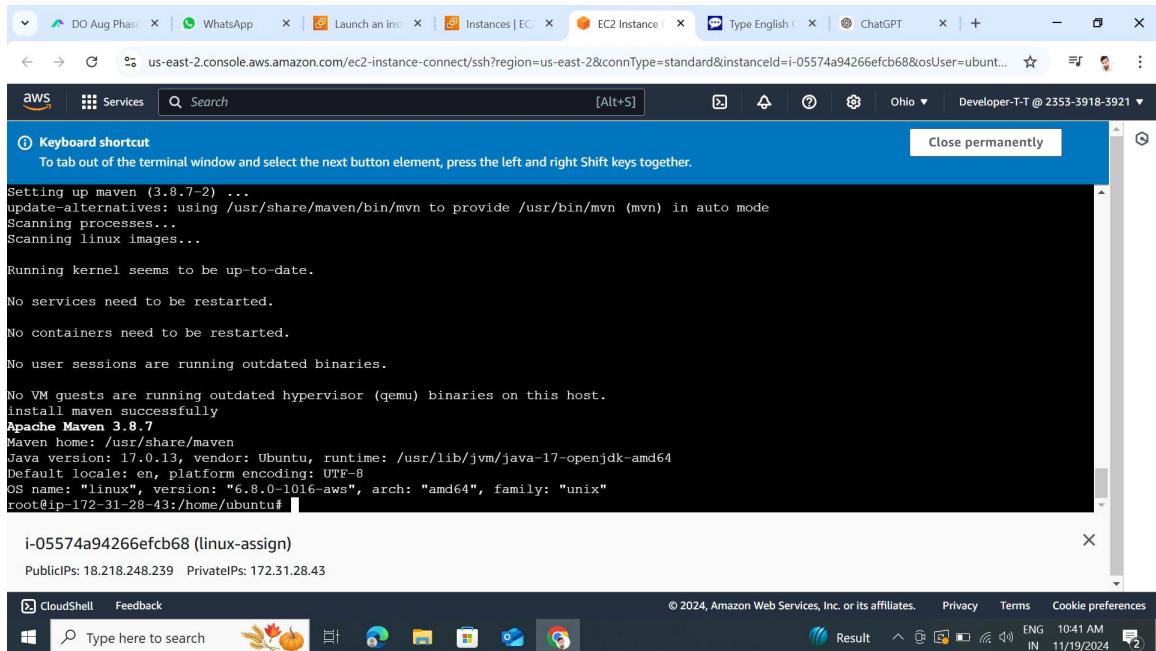
The screenshot shows a CloudShell terminal window with a blue header bar. The terminal content is a black screen with white text. At the top of the terminal, there is a keyboard shortcut note: "To tab out of the terminal window and select the next button element, press the left and right Shift keys together." Below this, the terminal displays the following command and its output:

```
root@ip-172-31-28-43:/home/ubuntu# vi git.sh
root@ip-172-31-28-43:/home/ubuntu# sh git.sh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.43.0-1ubuntu7.1).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 48 not upgraded.
git install successfully
root@ip-172-31-28-43:/home/ubuntu#
```

At the bottom of the terminal, it shows the session identifier: i-05574a94266efcb68 (linux-assign) and the public and private IP addresses: PublicIPs: 18.218.248.239 PrivateIPs: 172.31.28.43.

The Windows taskbar at the bottom of the screen includes icons for CloudShell, Feedback, Start, File Explorer, Task View, Edge, File, and Google Chrome. The system tray shows the date and time as 11/19/2024, 10:36 AM, and a battery icon indicating 100% charge.

- successfully install git by have chmod 700 to file and execute the create shellscript



```

DO Aug Phas... WhatsApp Launch an ins... Instances | EC... EC2 Instance ... Type English ... ChatGPT ...
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-05574a94266efcb68&osUser=ubuntu...
Keyboard shortcut
To tab out of the terminal window and select the next button element, press the left and right Shift keys together.
Close permanently

Setting up maven (3.8.7-2) ...
update-alternatives: using /usr/share/maven/bin/mvn to provide /usr/bin/mvn (mvn) in auto mode
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
install maven successfully
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 17.0.13, vendor: Ubuntu, runtime: /usr/lib/jvm/java-17-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-1016-aws", arch: "amd64", family: "unix"
root@ip-172-31-28-43:/home/ubuntu# i-05574a94266efcb68 (linux-assign)
PublicIPs: 18.218.248.239 PrivateIPs: 172.31.28.43
CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
Type here to search Result ENG 10:41 AM IN 11/19/2024 2

```

follow the above step create shellscript and inside using command **sudo apt install maven**

we see above step maven install successfully

Thank you

