Assignment (02/07/2024)

1.Create 3 instance

A. Attach one EFS to two instances

B. Attach one EBS to two instances

A.

EFS- EFS is nothing but Elastic file system

Its memory will be increased up to petabytes

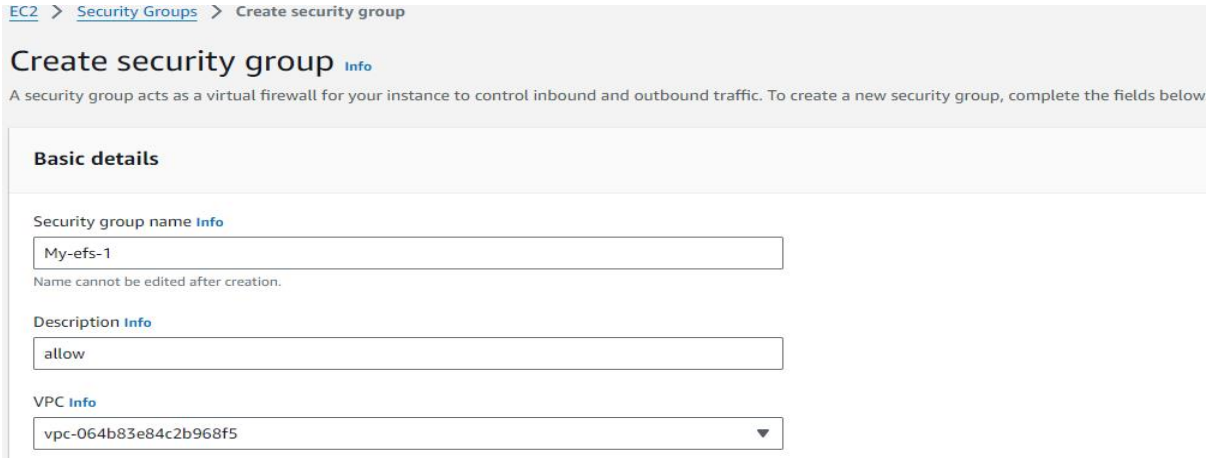
For example ;we are having a drive and we can access that drive from mobile ,laptop and as well as tab also.

If we inserted data in drive from laptop , the same data will be seen and can be accessed from mobile and as well as in tab too.

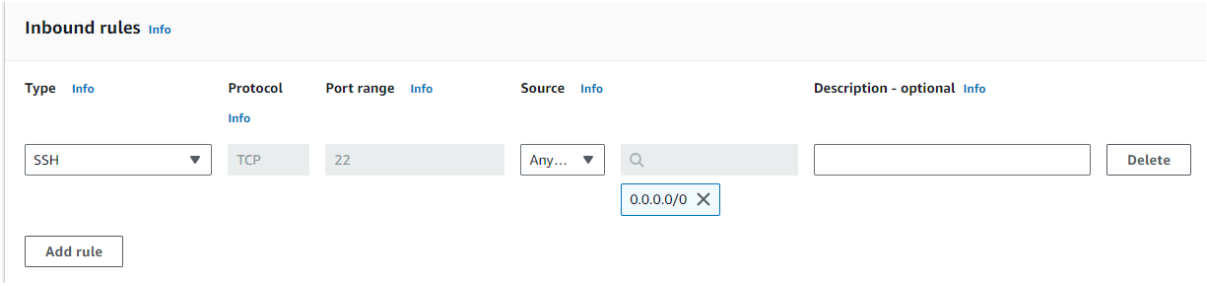
Similar in tab and mobile too.

In this way EFS will work that means we can connect one EFS to two instances at a time and can access the data.

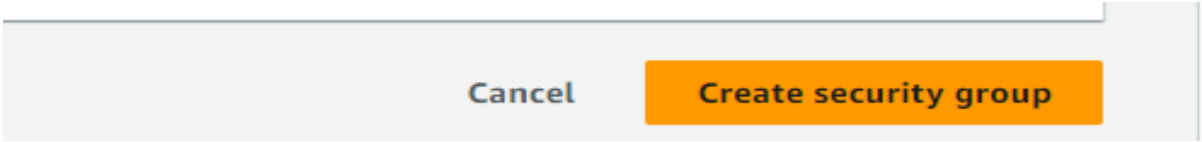
For creating EFS and attaching it to the instance ,first we need to create security group > give name for security group > give description as allow > VPC will be given by default.



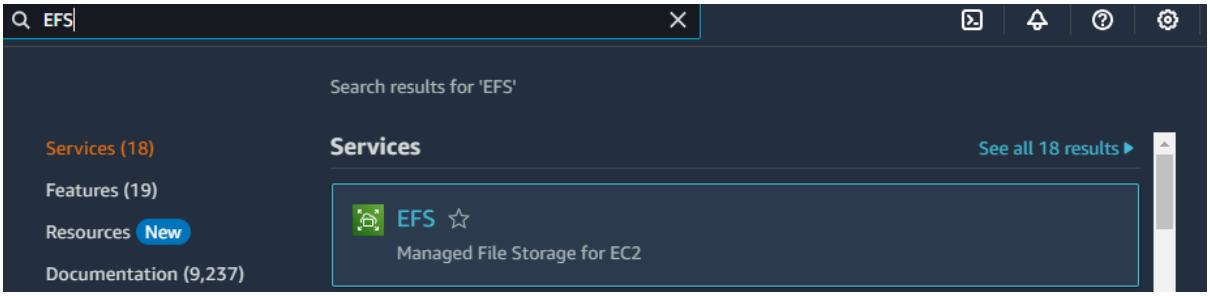
Now edit inbound rules > type – SSH > source – IPV4



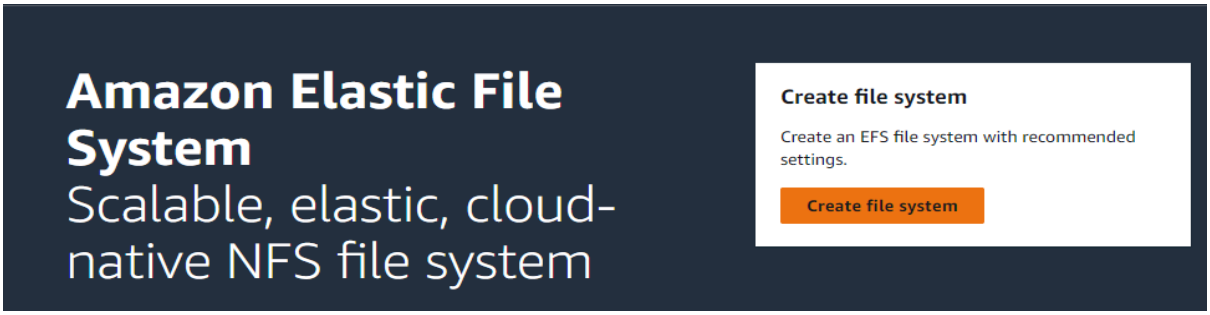
Click on create security group.



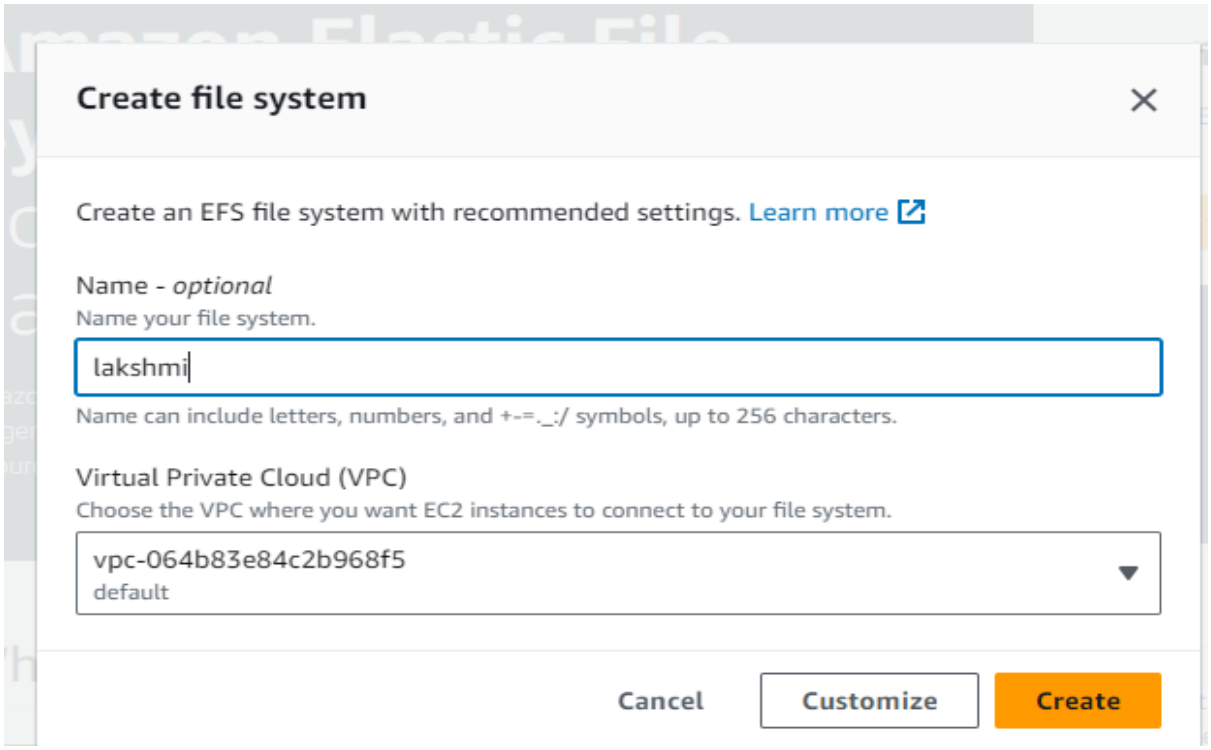
Now search for EFS and open EFS.



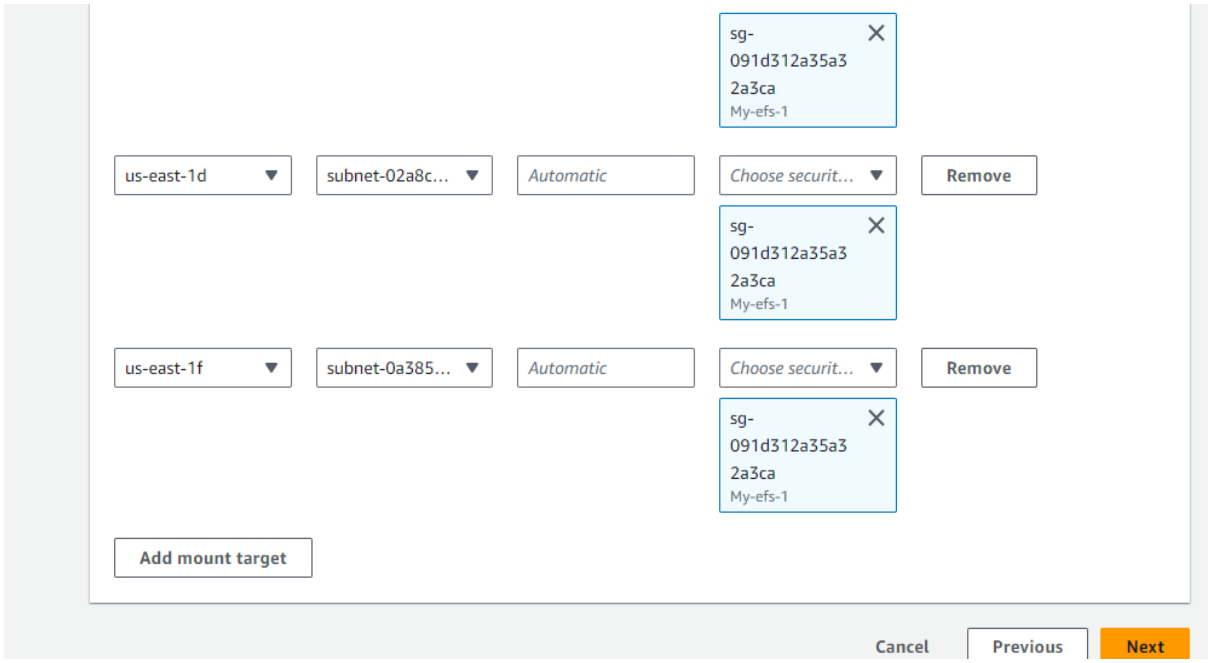
Click on Create file system.



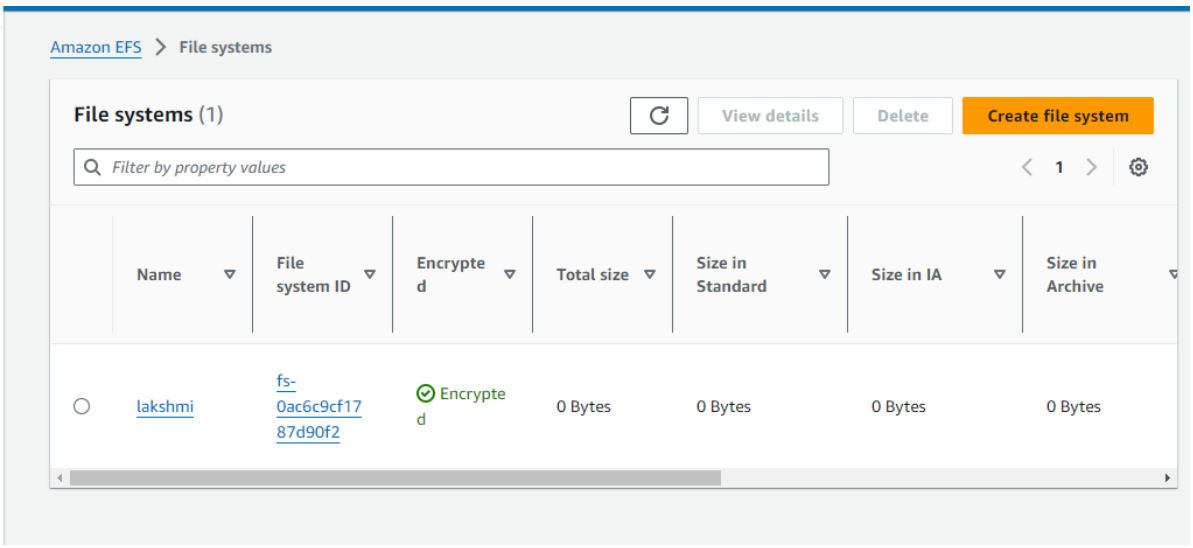
Give name for created file system and then click on customize.



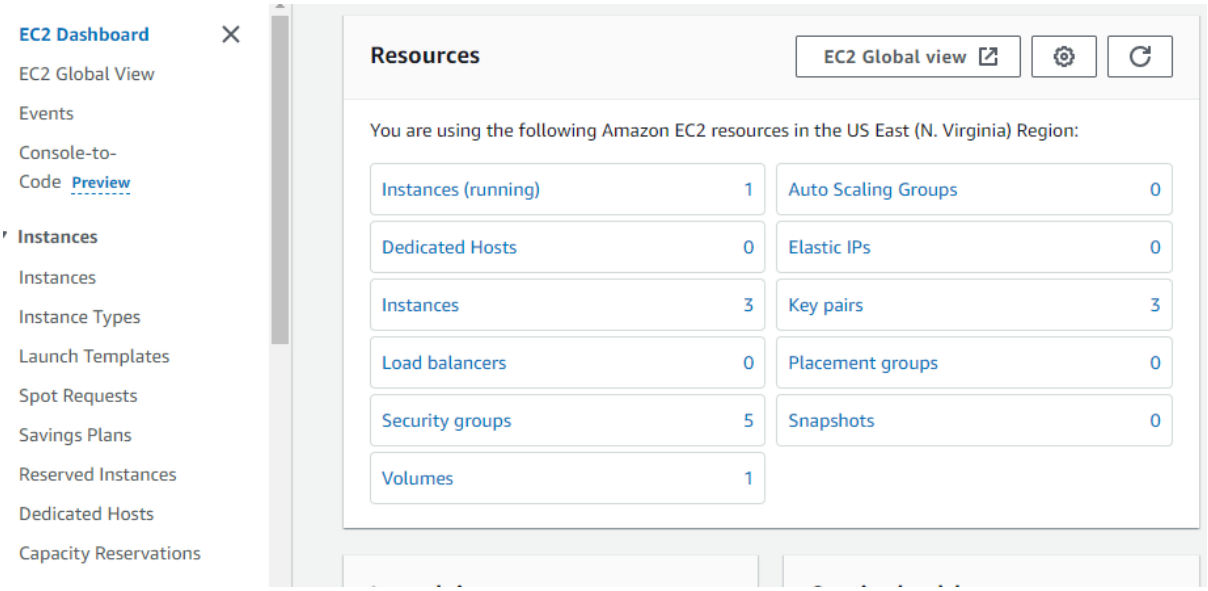
Remove all the security groups which will appear there and select the security group which we have created which is named as My-efs-1 and then click on next > next > create.



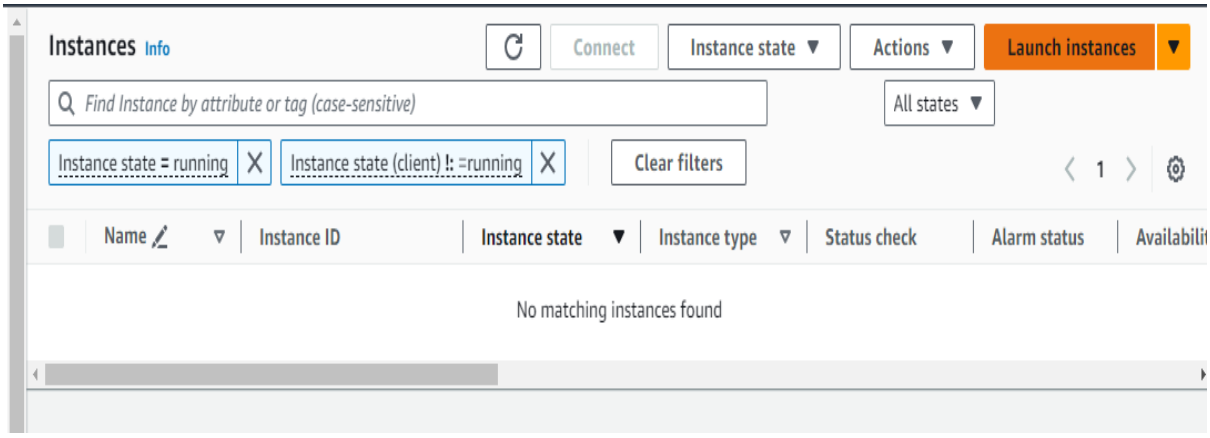
Now the file system will be created.



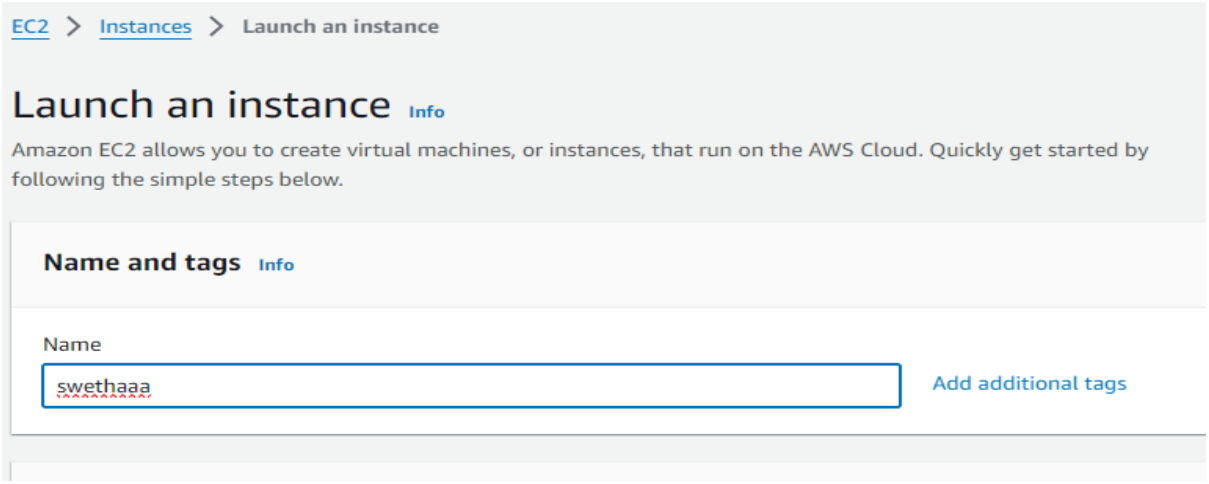
Open EC2 dashboard and open instances.



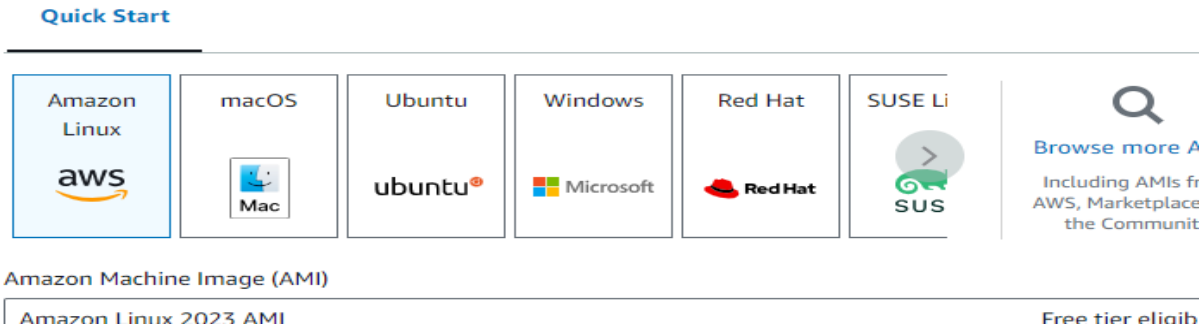
Click on launch instances.



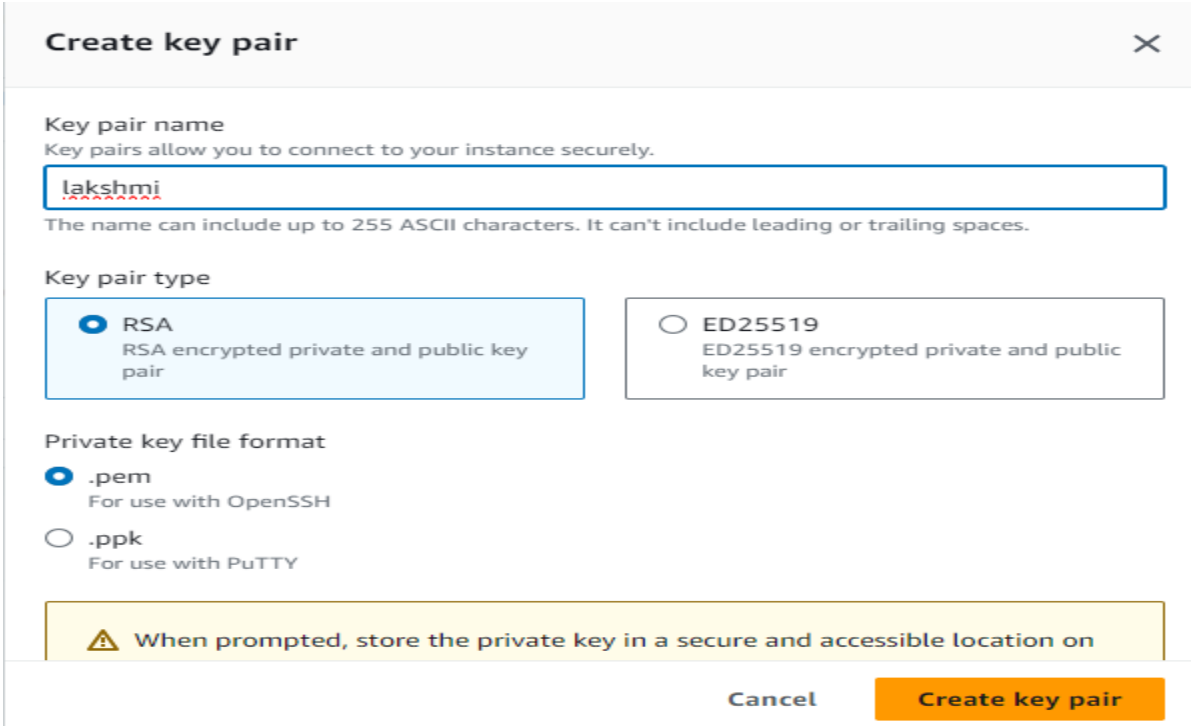
Give name to the instance .



EFS will not be able to work with ubuntu , It only works with Amazon Linux. So select AWS.



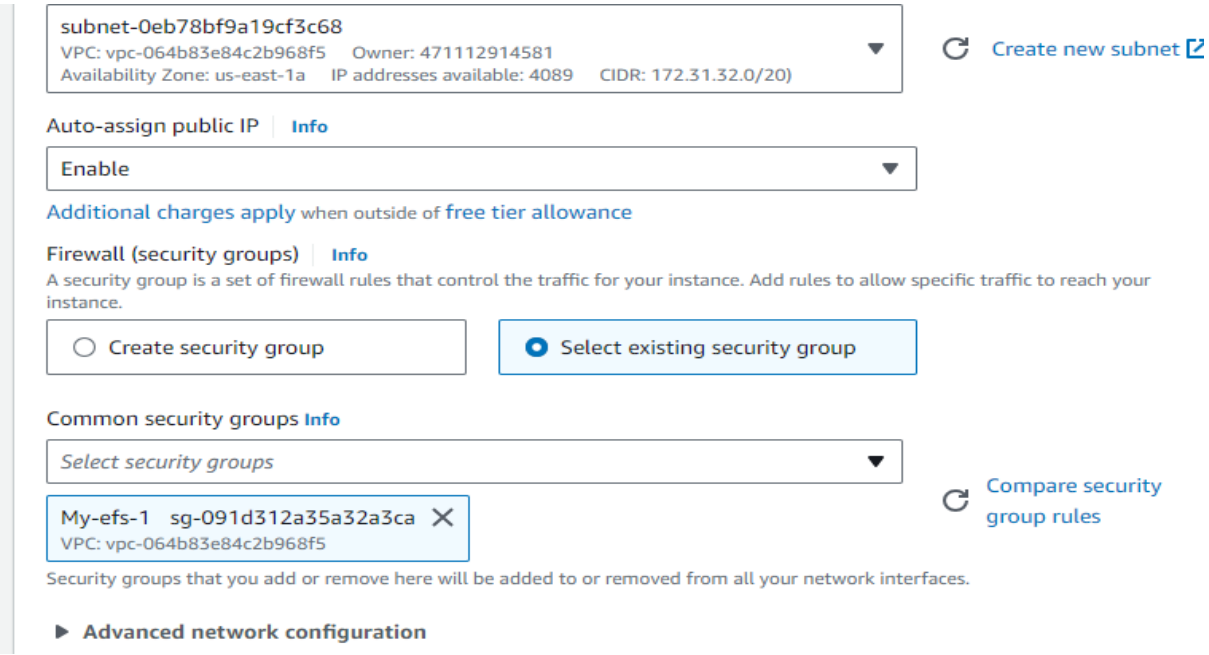
Click on create new key pair and name it and then click on create key pair.



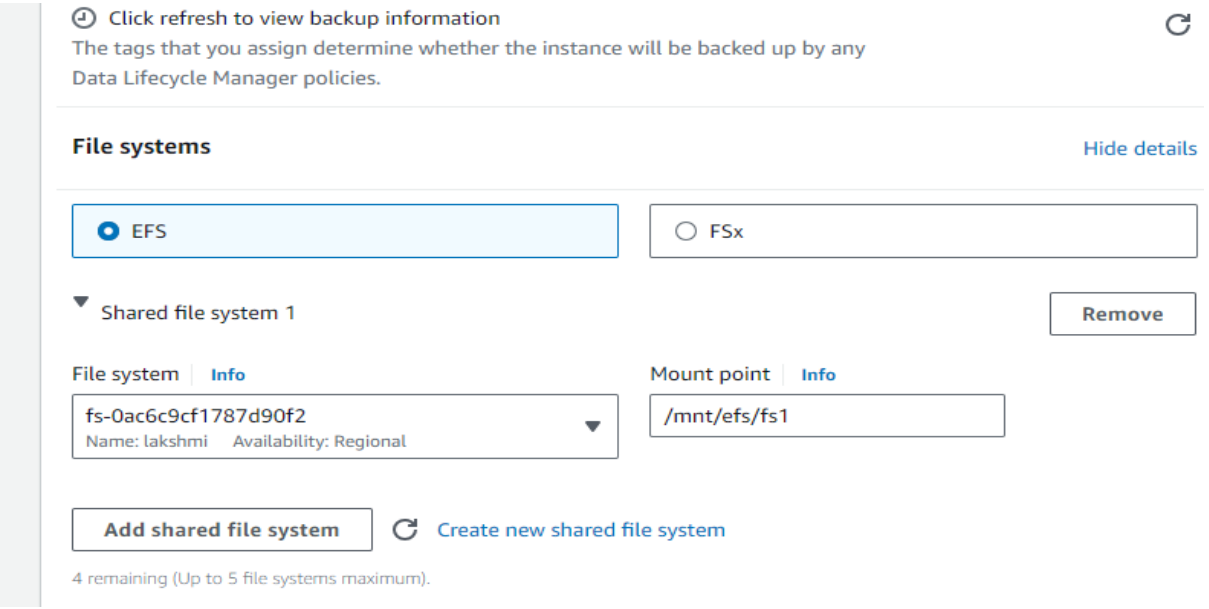
After creating the key pair the .pem extension file will be downloaded.

Go to downloads > cut the .pem file > copy it on the desktop.

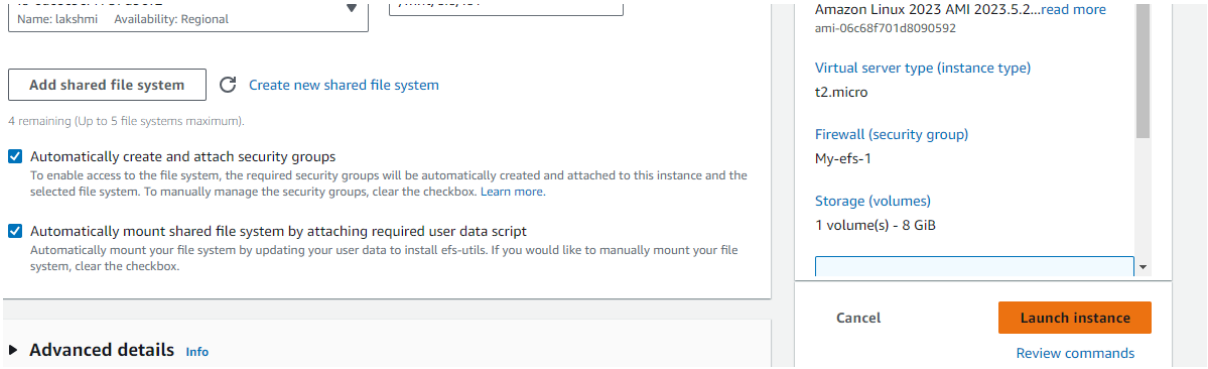
Go back to instance page and edit there it to enable and click on select existing security group and attach the created security group My-efs-1 .



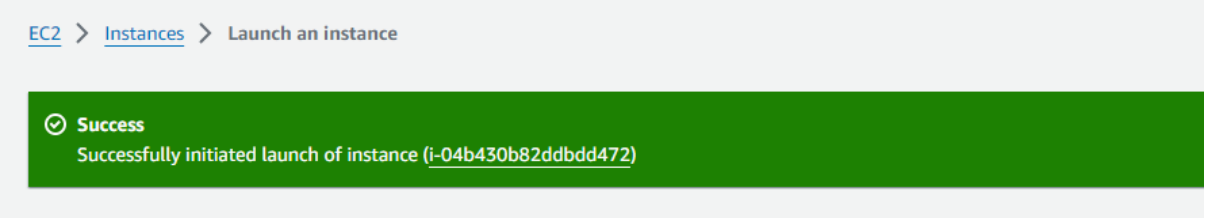
Click on edit > EFS > click on add shared file system then it will attach by automatically.



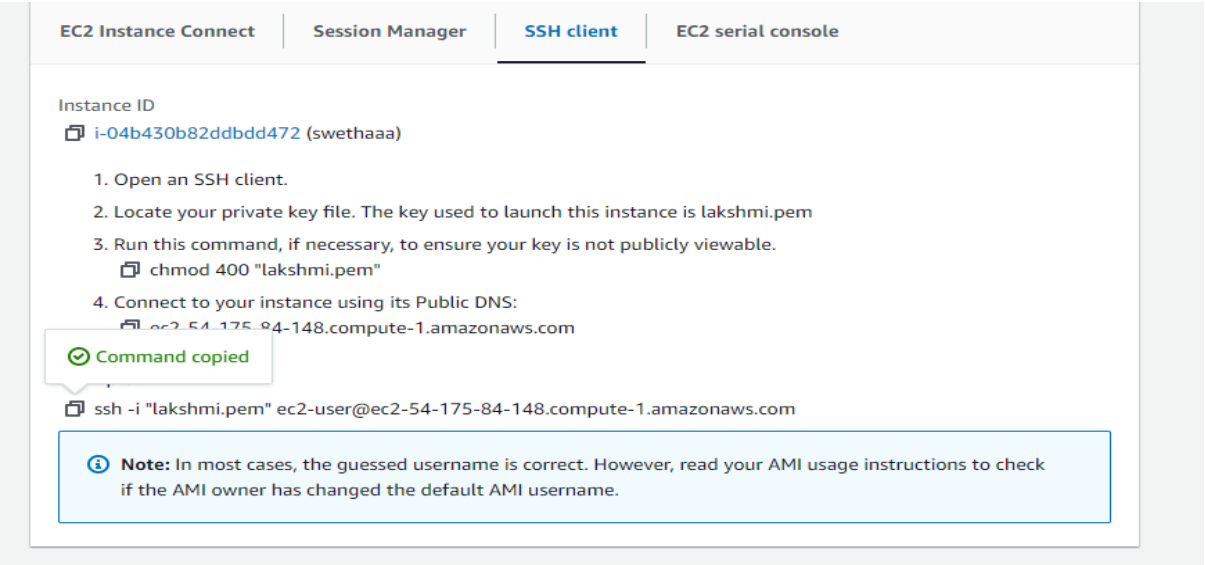
Click on launch instance.



It will show the message as the instance initiated successfully.



Open that created instance and click on connect then click on SSH Client , copy the Command as shown below.



Open gitbash and paste it there , give confirmation as yes and connect it to server named ec2(amazon linux).

It will connect to ec2 server.

```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "lakshmi.pem" ec2-user@ec2-54-175-84-148.compute-1.amazonaws.com
The authenticity of host 'ec2-54-175-84-148.compute-1.amazonaws.com (54.175.84.148)' can't be established.
ED25519 key fingerprint is SHA256:ExbOz4hlLEtoOO91Ap5NZCwnk87mD84KrOSPNzAFVb4.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-175-84-148.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-42-53 ~]$
```

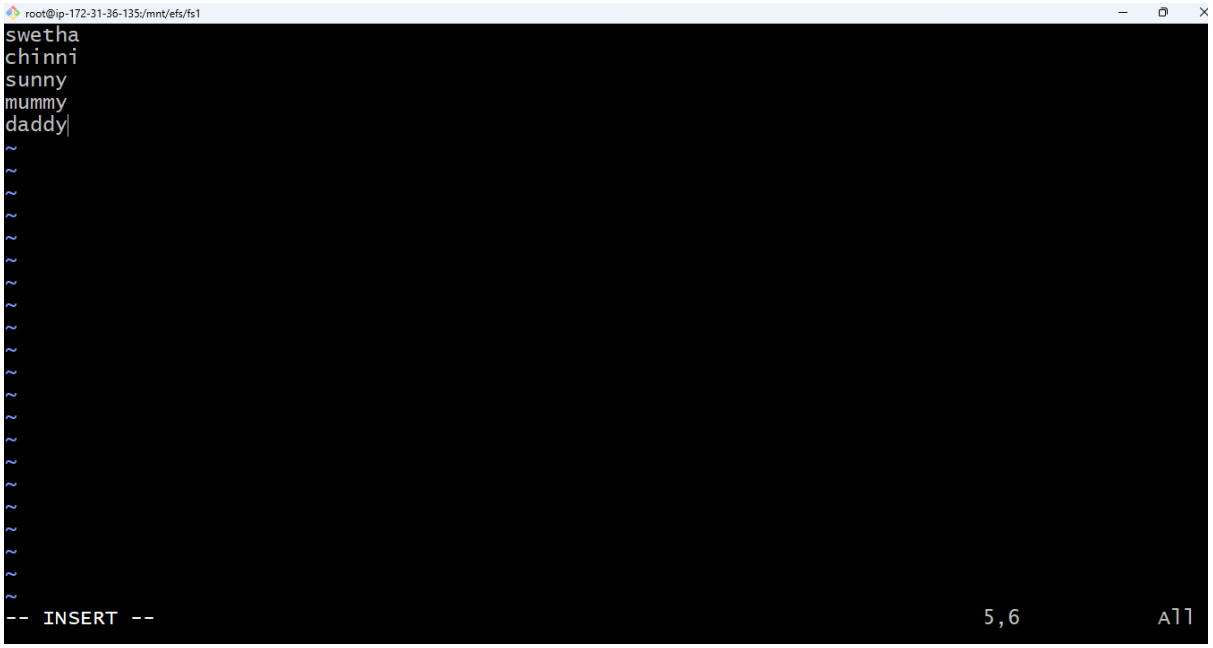
By the command sudo -i , we can able to connect to root user.

Check the data which is existed with the help of ls.

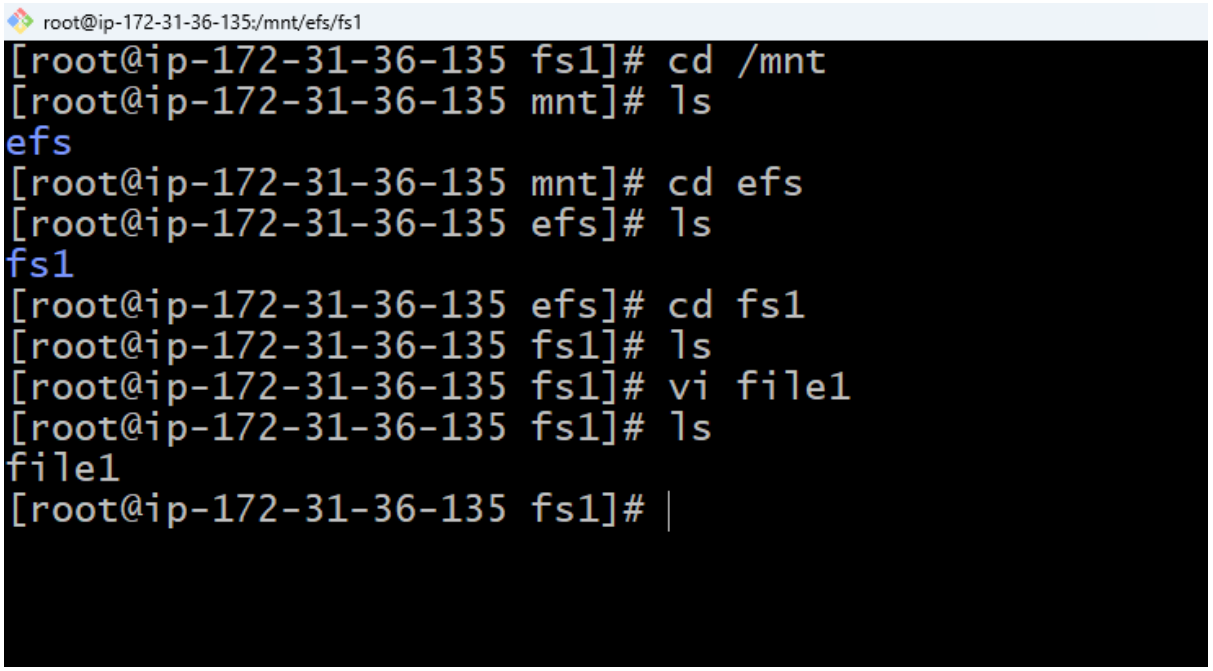
Create the file with the help of vi command.

```
root@ip-172-31-36-135:/mnt/efs/fs1
[root@ip-172-31-36-135 fs1]# cd /mnt
[root@ip-172-31-36-135 mnt]# ls
efs
[root@ip-172-31-36-135 mnt]# cd efs
[root@ip-172-31-36-135 efs]# ls
fs1
[root@ip-172-31-36-135 efs]# cd fs1
[root@ip-172-31-36-135 fs1]# ls
[root@ip-172-31-36-135 fs1]# vi file1
[root@ip-172-31-36-135 fs1]#
```

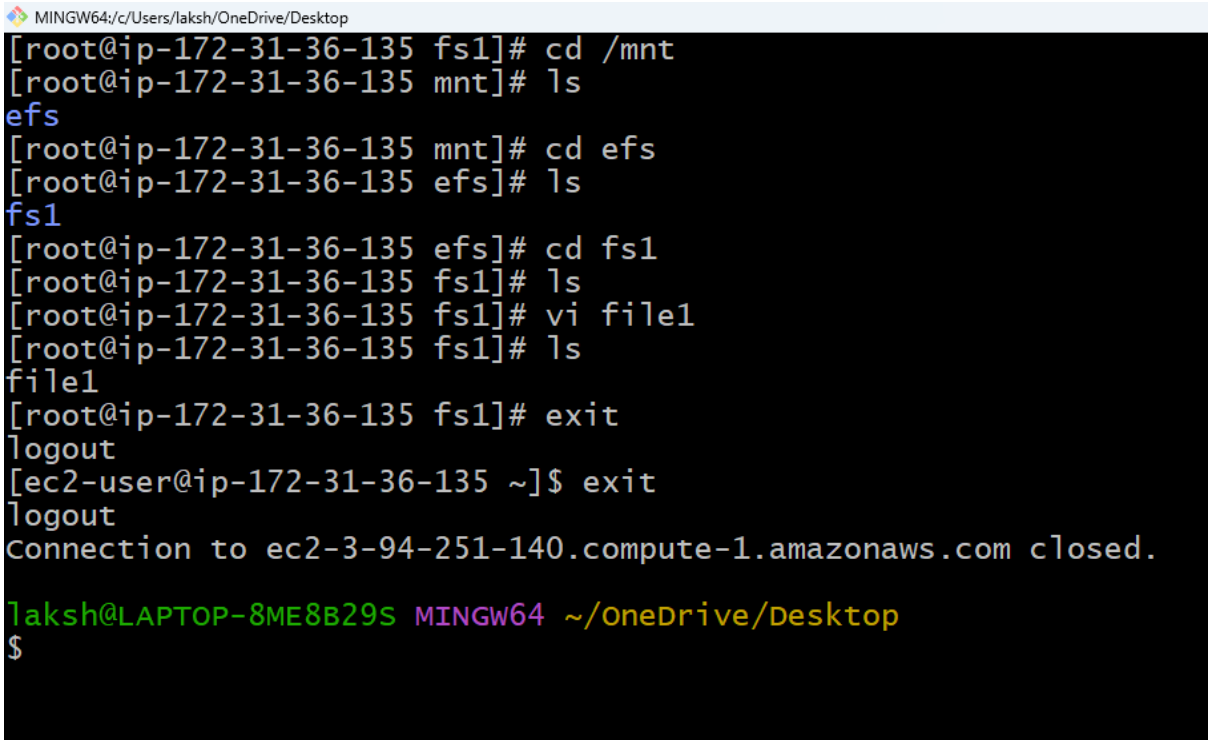
Enter into insert mode ‘i’ and enter the data which you need to enter.



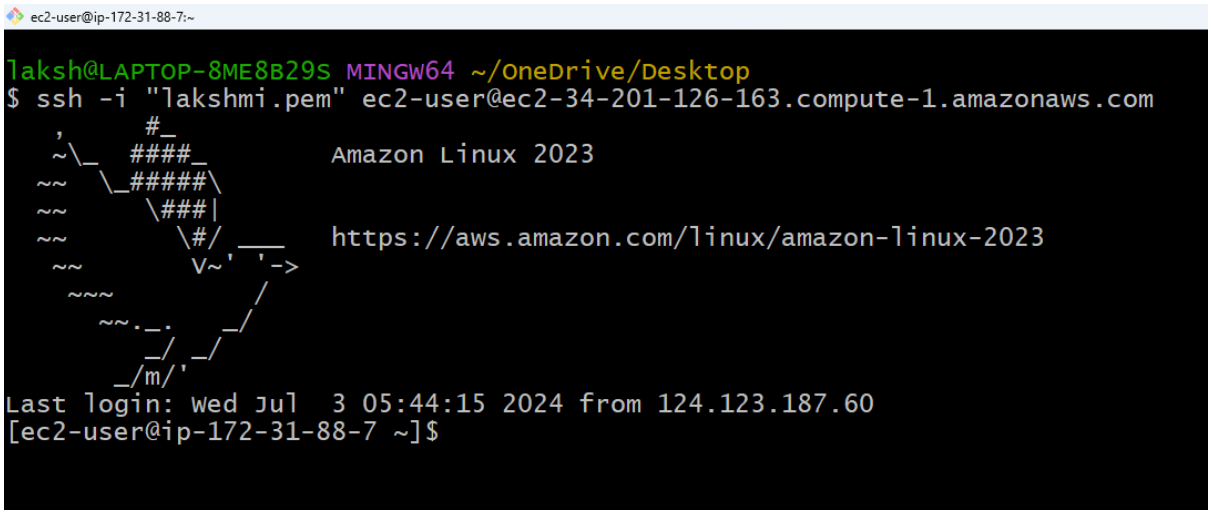
For saving the file → esc + shift + : →wq



Logout from that for creating another instances and insert file because to verify whether it will consist both the files created or not.



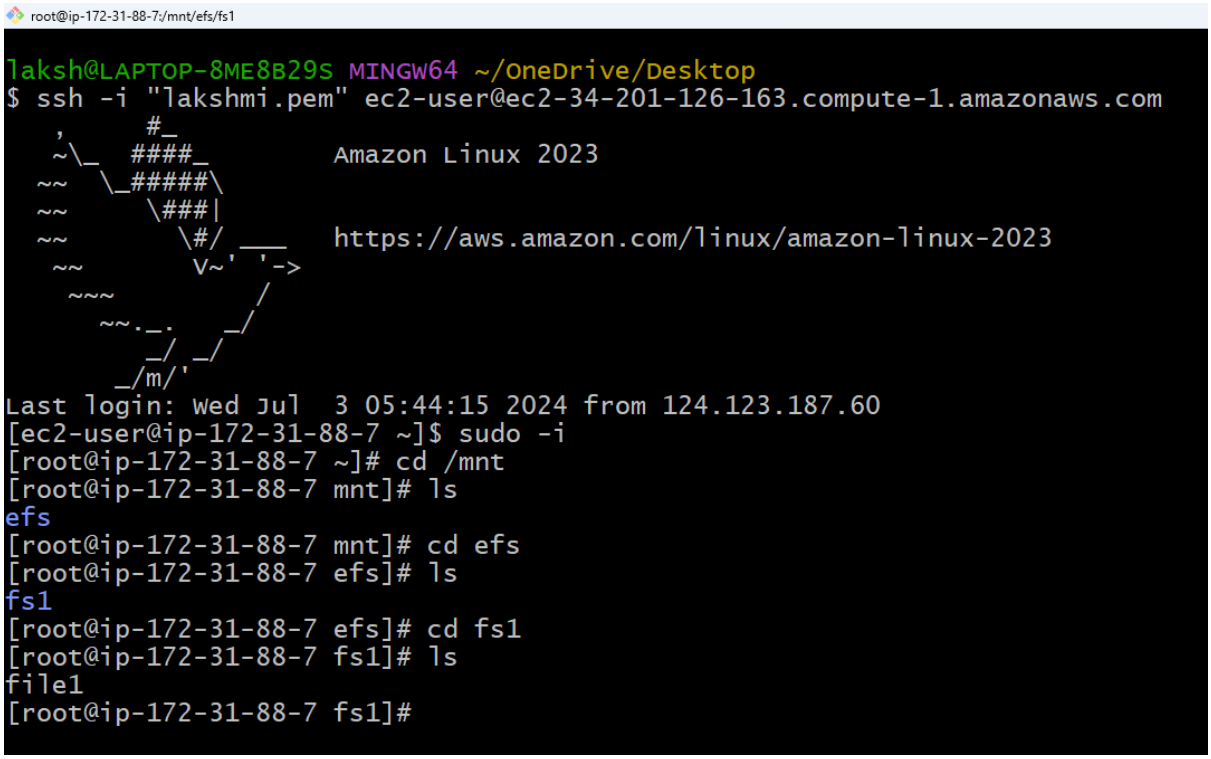
Connect to the second instance .



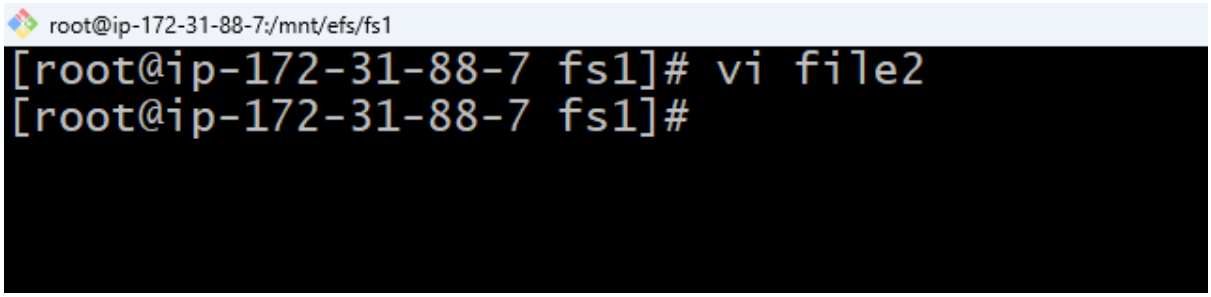
For connecting to the root use sudo -i command.

Ls command is used to check whether the file1 which is created in first instance is there or not.

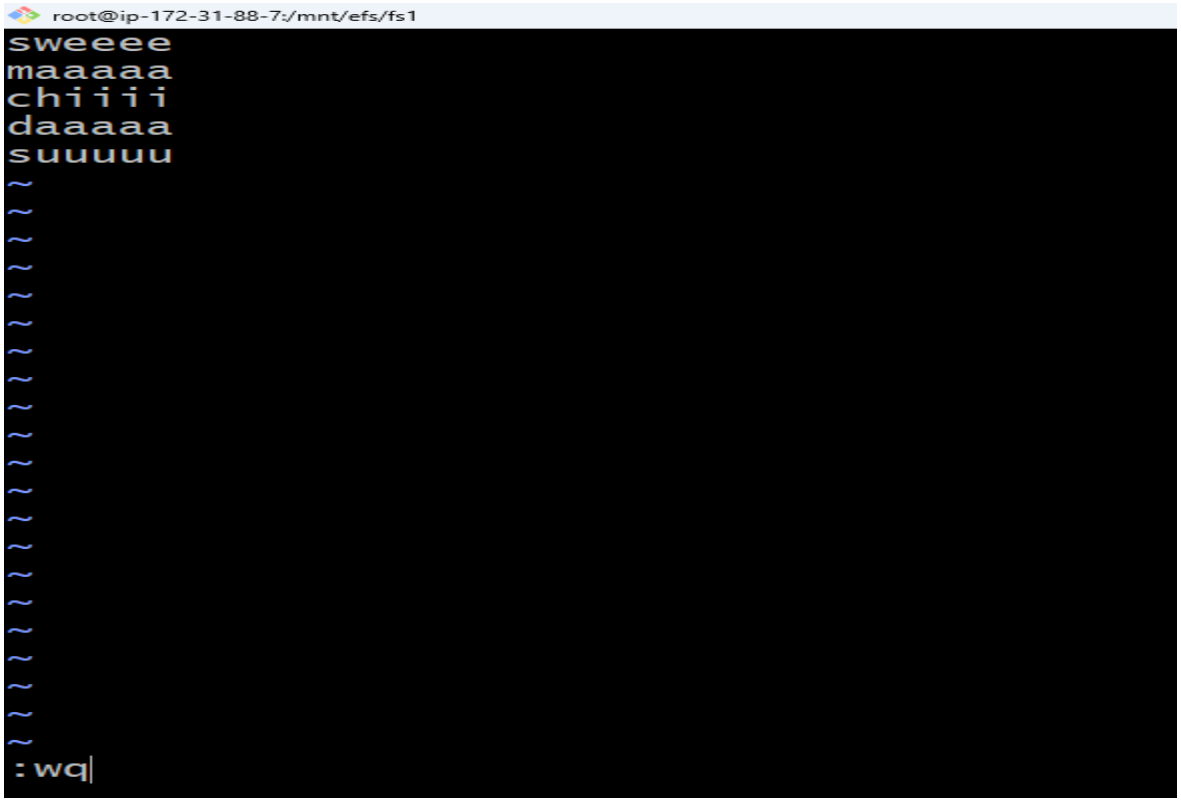
The file1 created in first instance is accessed in the second instance.



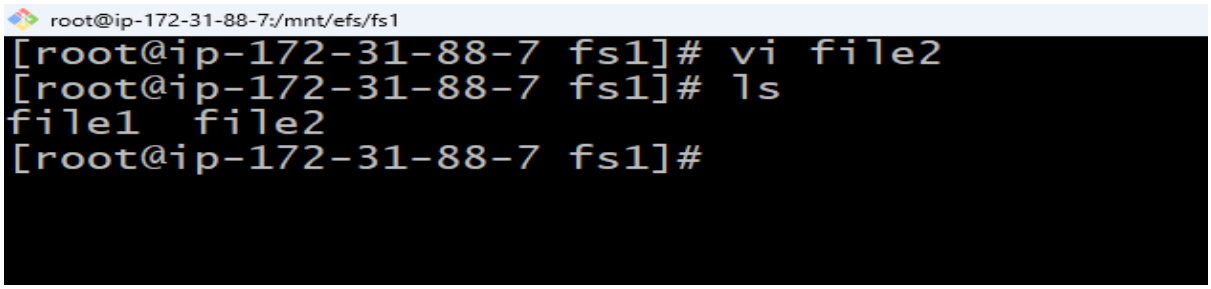
Now create another file named file2 in 2nd instance.



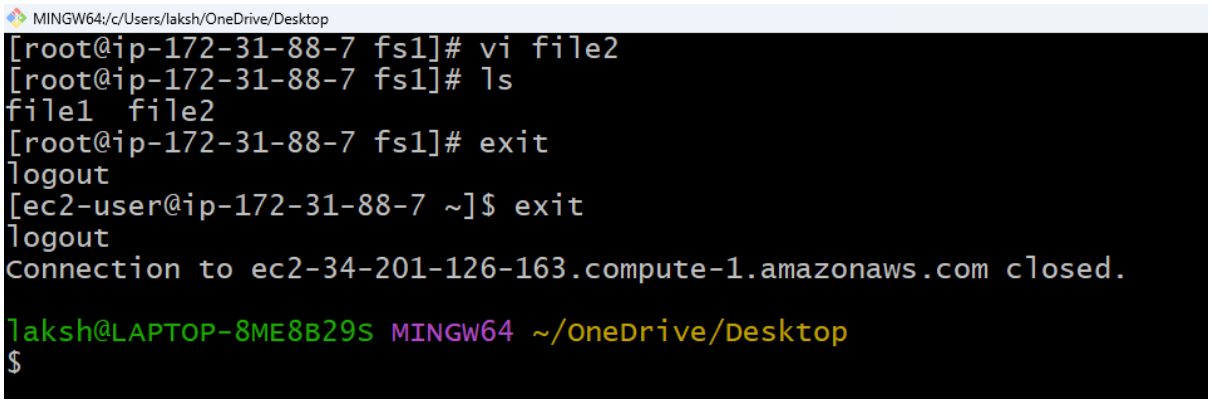
Insert ‘i’ and enter the data and then esc + shift + : wq for saving the file.



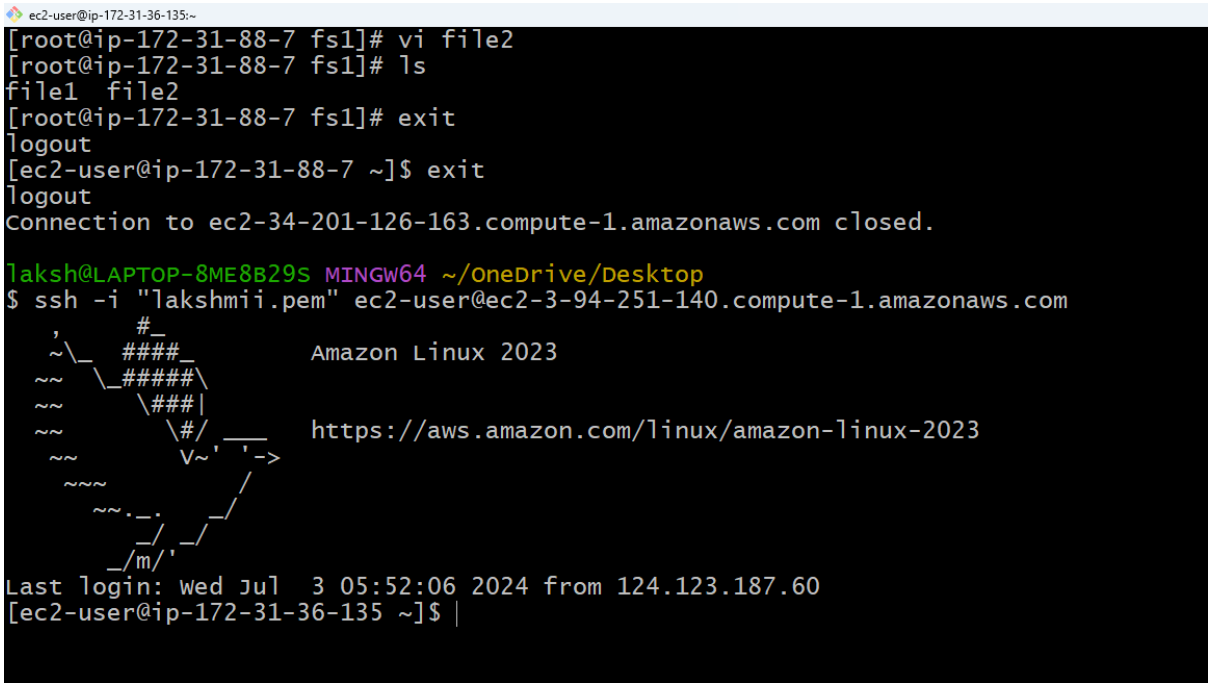
Check the list now ; we can able to see 2 files created in both the instances.



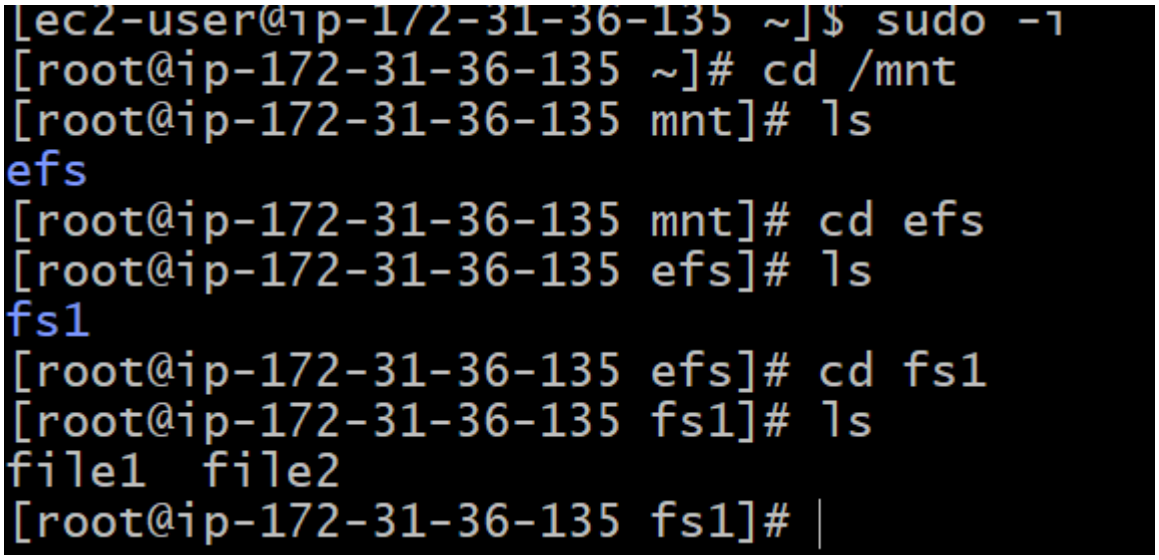
Now logout from second instance too with the help of exit command.



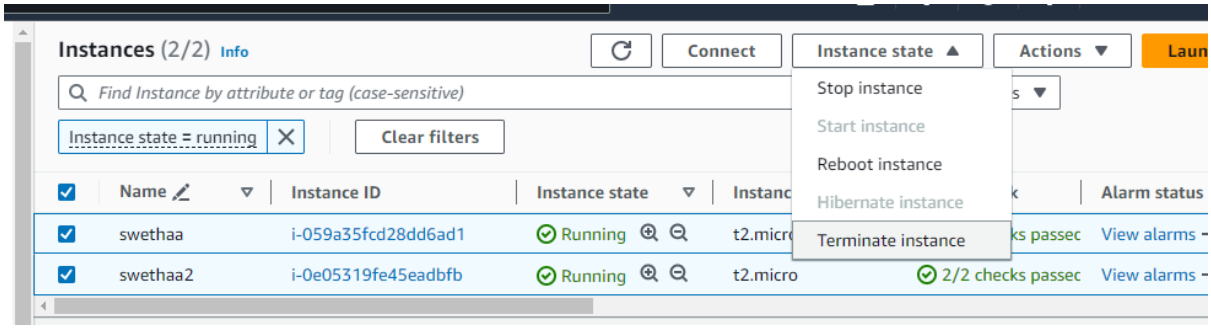
Connect to the first instance for verifying whether the file2 created in second instance will be shown or not.



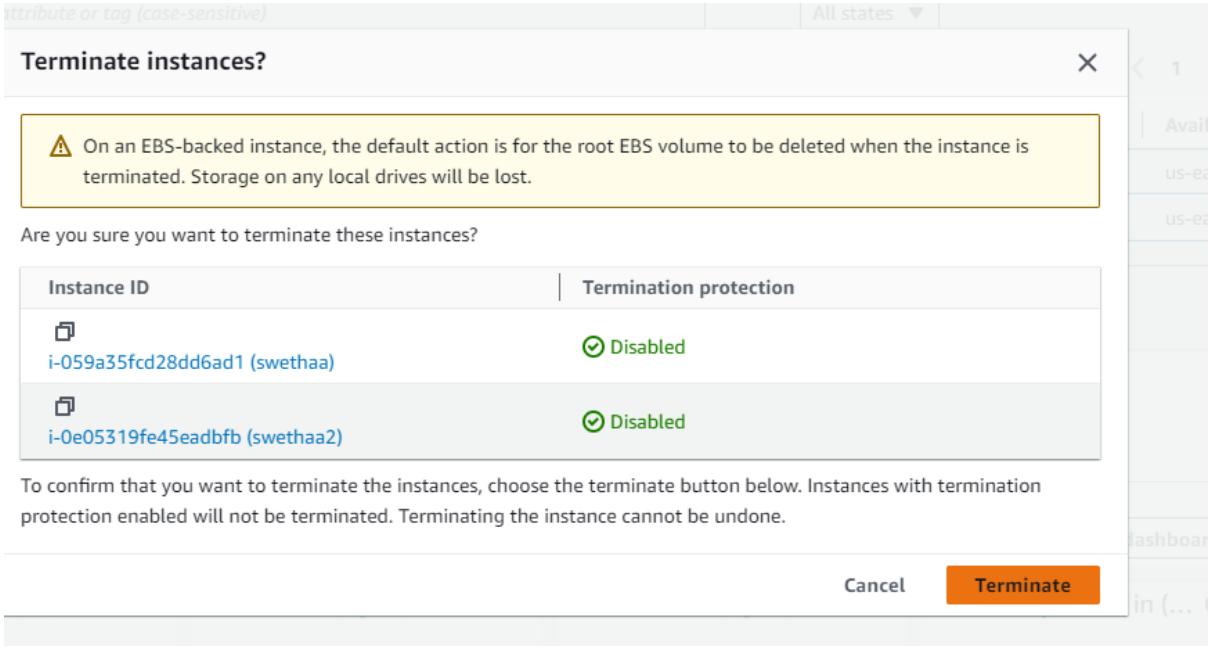
The two files are shown.



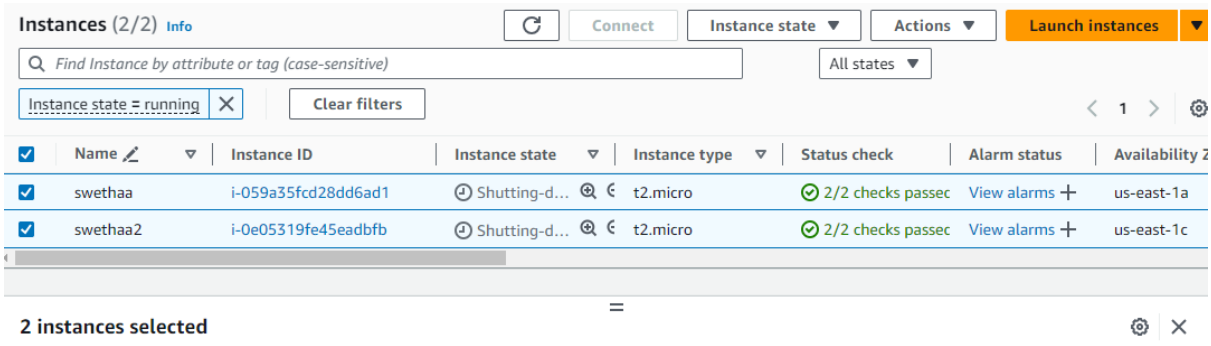
Now we need to terminate both the instances.



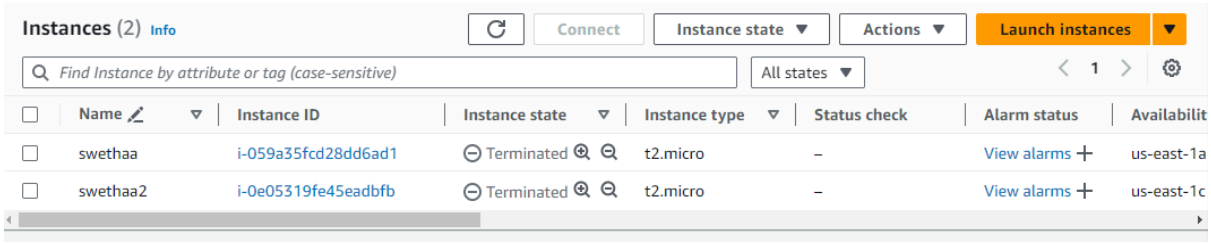
Confirm as ‘terminate’.



It will shut down first.



And then it goes to terminate state.



B.

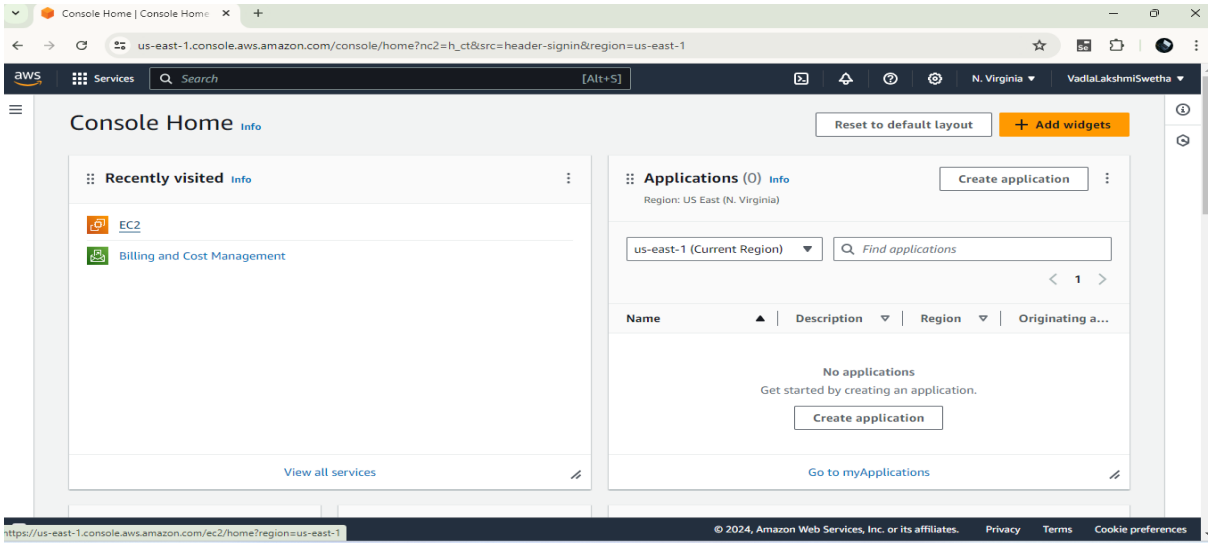
EBS- Elastic Block Storage

Only one instance can be connected to EBS once.

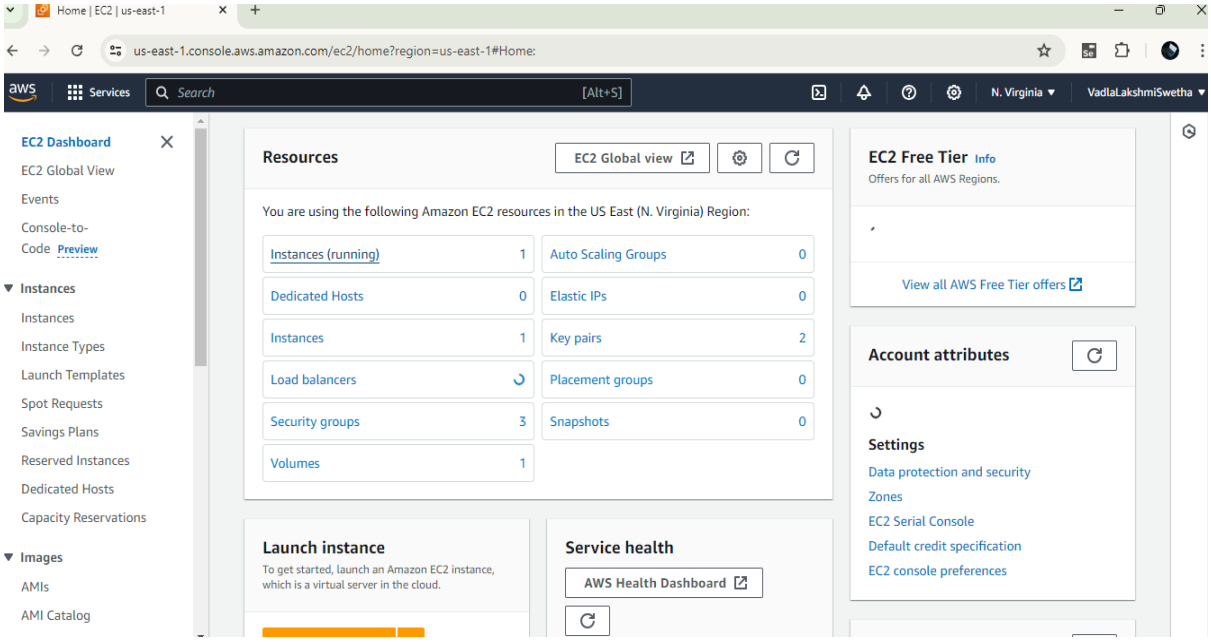
After the detachment of one instance from EBS server then only we can attach another instance that EBS server.

No fixed memory is allocated for EBS , the memory will be increased/ decreased based on the actions we take / user take.

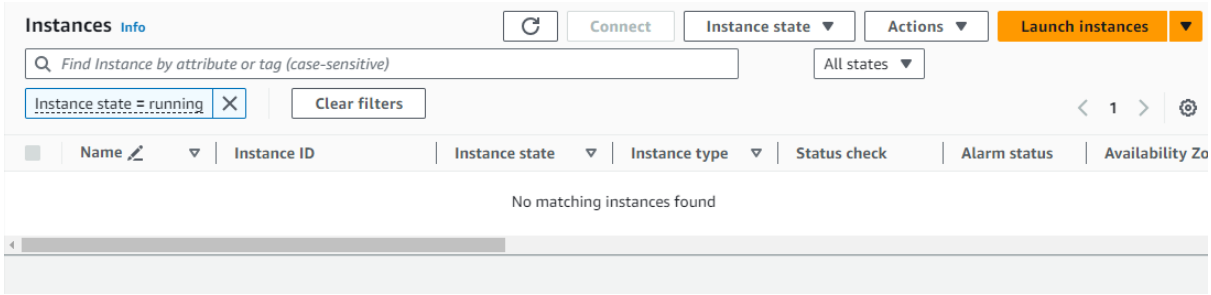
Go to EC2 dashboard.



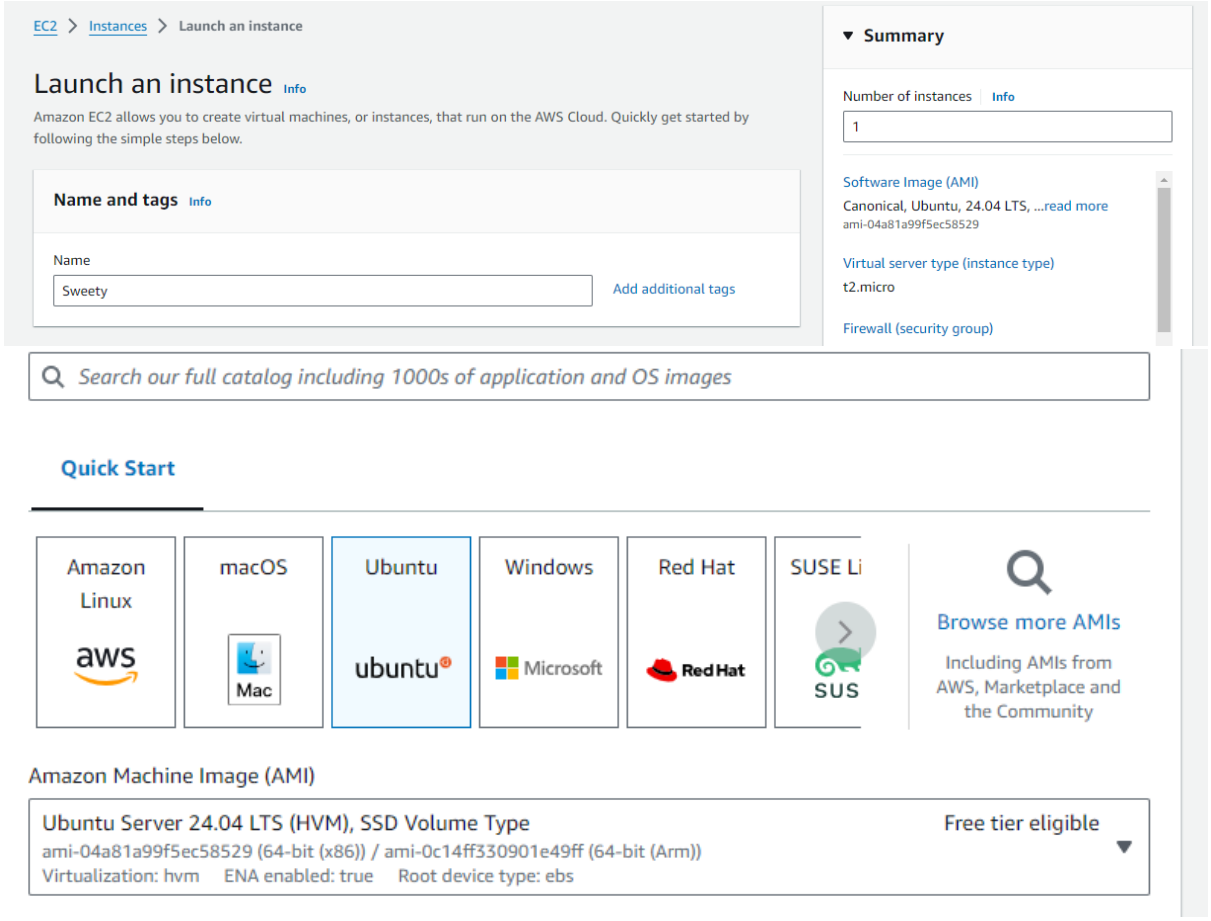
Click on instances.



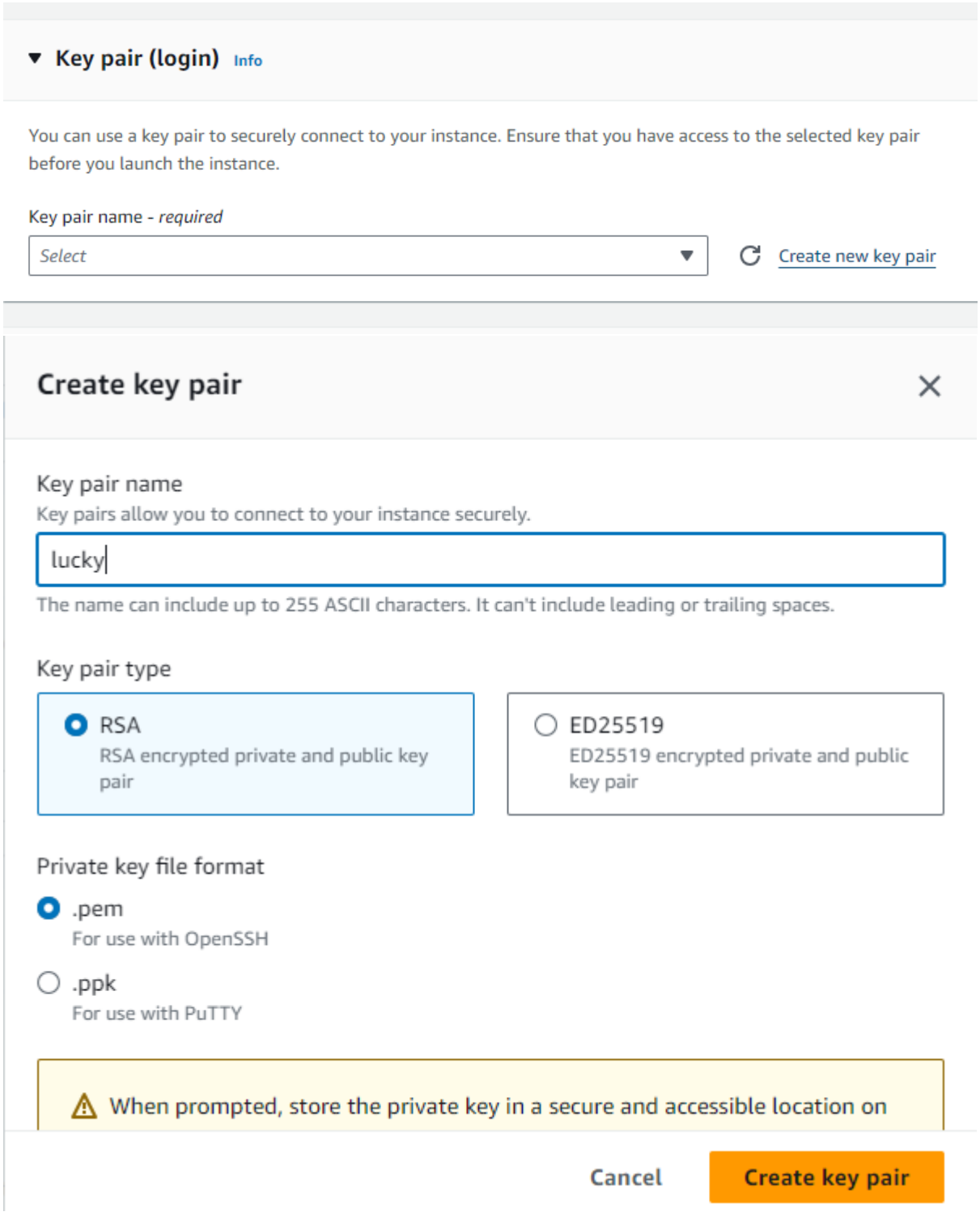
Click on launch instances.

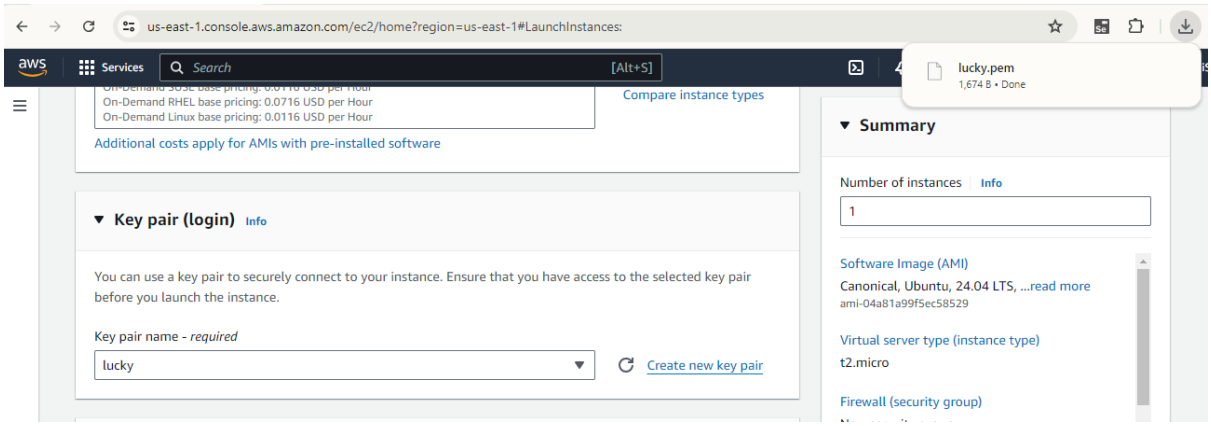


Give the instance name and select ubuntu server.

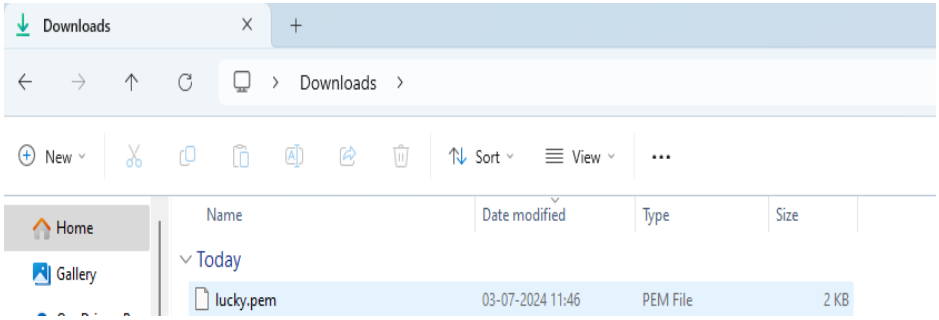


Create new key pair > RSA > .pem > create key pair.

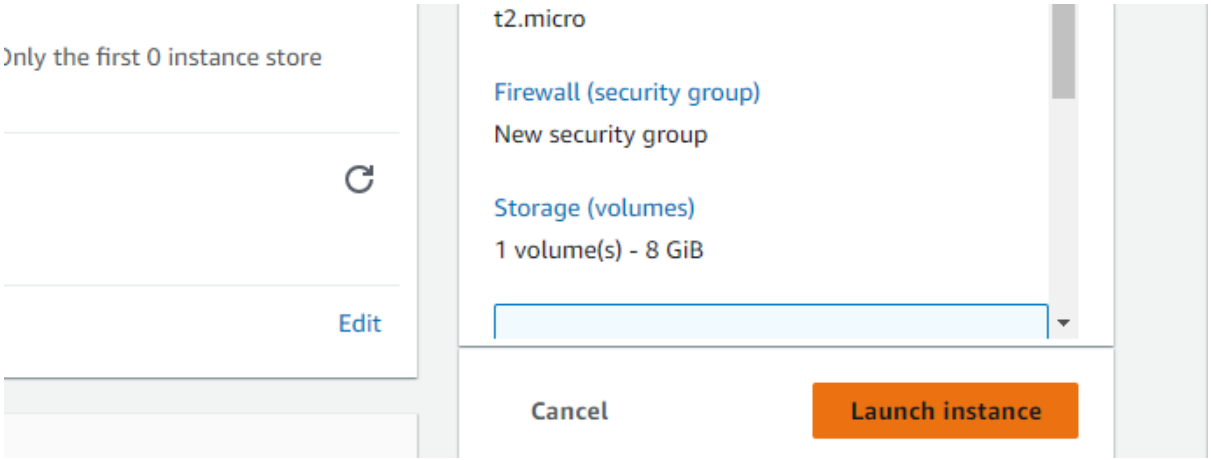




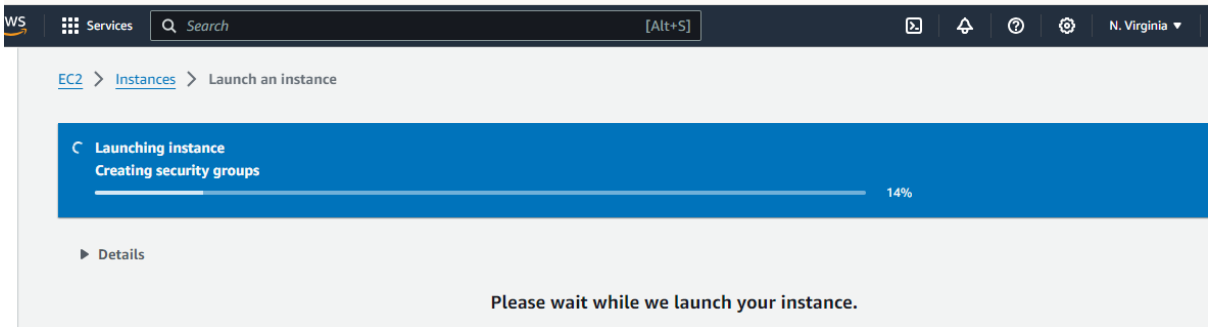
.pem file will be downloaded cut it and paste on desktop.



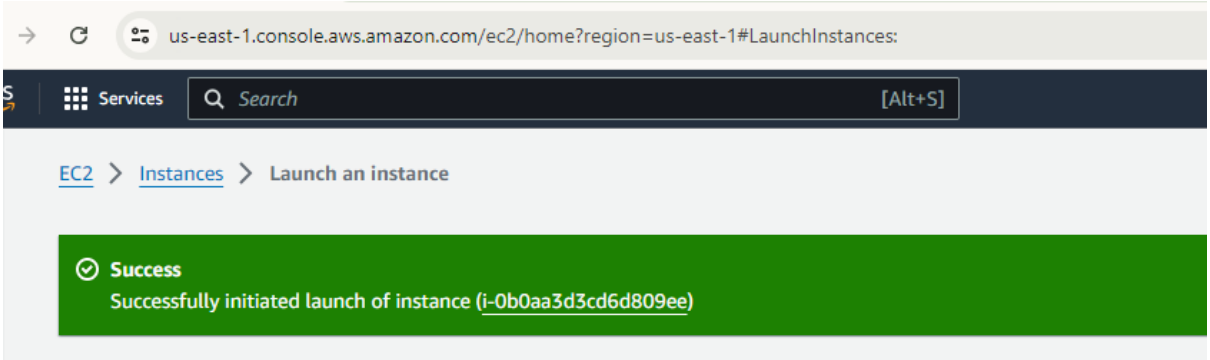
Click on launch instance.



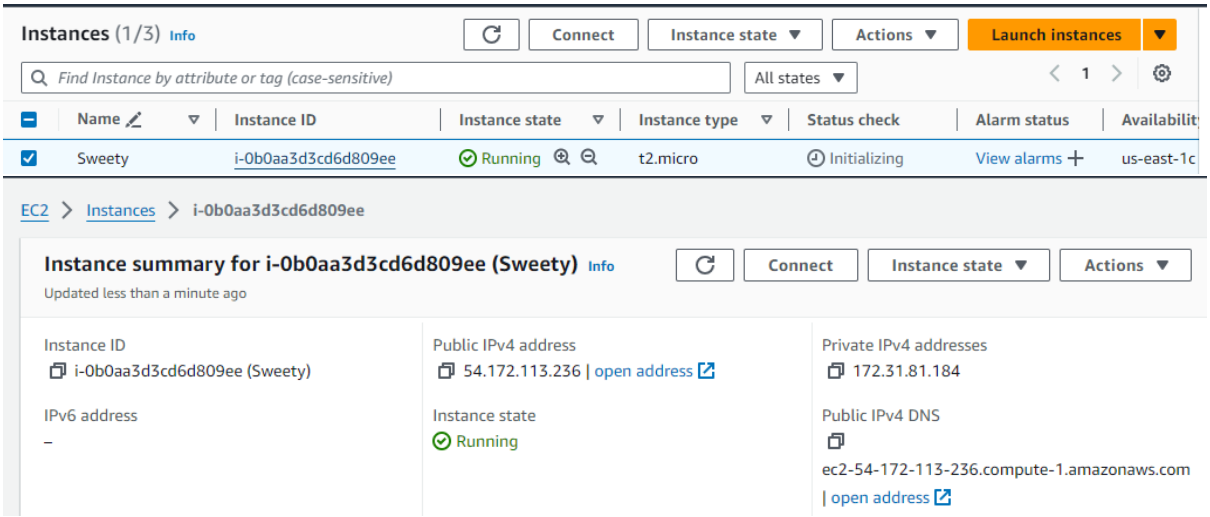
It will start to launch the instance.



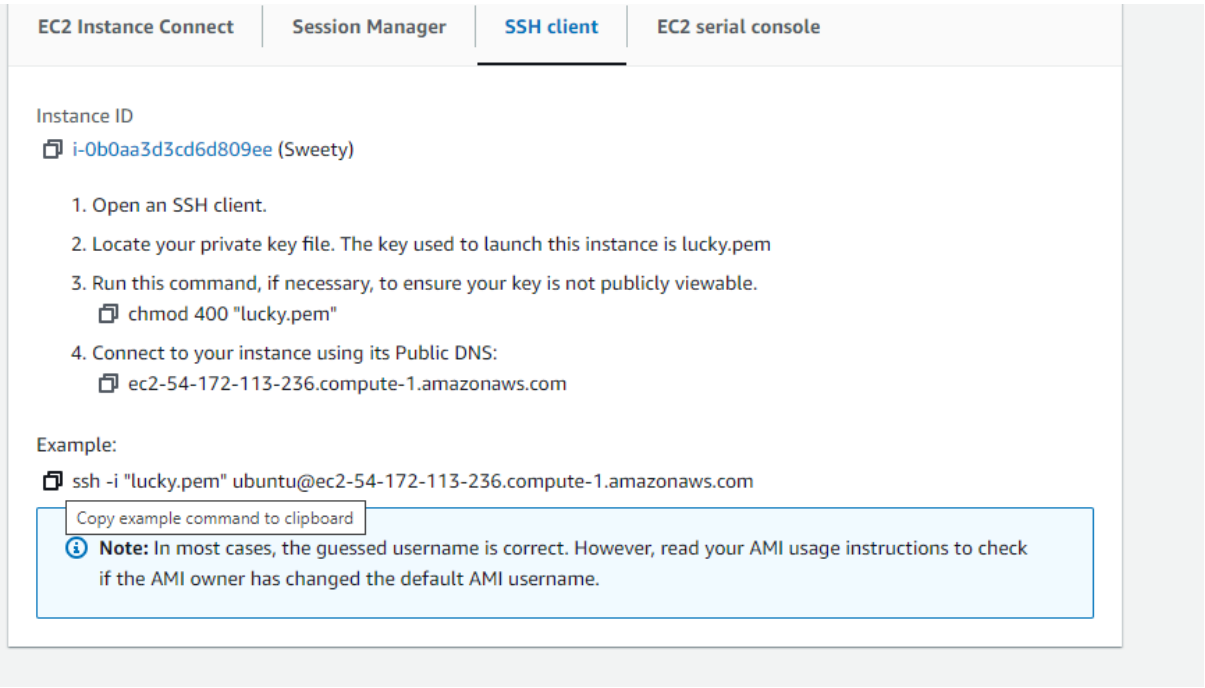
The message will be shown as the instance is launched.



Click on instance ID and click on connect.



Open SSH and copy the command.



Paste in gitbish and connect to the server.

```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "lucky.pem" ubuntu@ec2-54-172-113-236.compute-1.amazonaws.com
The authenticity of host 'ec2-54-172-113-236.compute-1.amazonaws.com (54.172.113.236)' can't be establi
shed.
ED25519 key fingerprint is SHA256:FaUZG+fBsPFR8xyKczo3FOjxHRxsFRsxQxJYGR5GcLg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-172-113-236.compute-1.amazonaws.com' (ED25519) to the list of known
hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1009-aws x86_64)

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

 System information as of Wed Jul  3 06:19:26 UTC 2024

  System load:  0.67              Processes:             105
  Usage of /:   22.7% of 6.71GB   Users logged in:       0
  Memory usage: 20%               IPv4 address for enX0: 172.31.81.184
  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 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.

ubuntu@ip-172-31-81-184:~$
```

For connecting with root user use the command sudo -i.

```
ubuntu@ip-172-31-81-184:~$ sudo -i
root@ip-172-31-81-184:~#
```

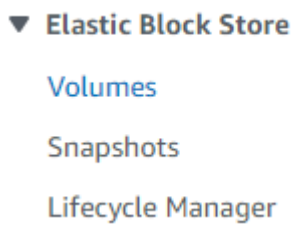
For checking the disk usage use the command df -h.

```
root@ip-172-31-81-184: ~
root@ip-172-31-81-184:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       6.8G  1.6G  5.2G  23% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  868K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
root@ip-172-31-81-184:~#
```

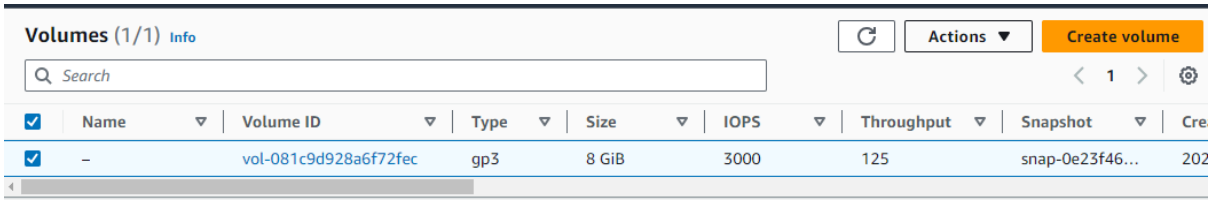
Now logout from the server.

```
MINGW64:/c/Users/laksh/OneDrive/Desktop
root@ip-172-31-81-184:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       6.8G  1.6G  5.2G  23% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  868K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
root@ip-172-31-81-184:~# exit
logout
ubuntu@ip-172-31-81-184:~$ exit
logout
Connection to ec2-54-172-113-236.compute-1.amazonaws.com closed.

laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$
```

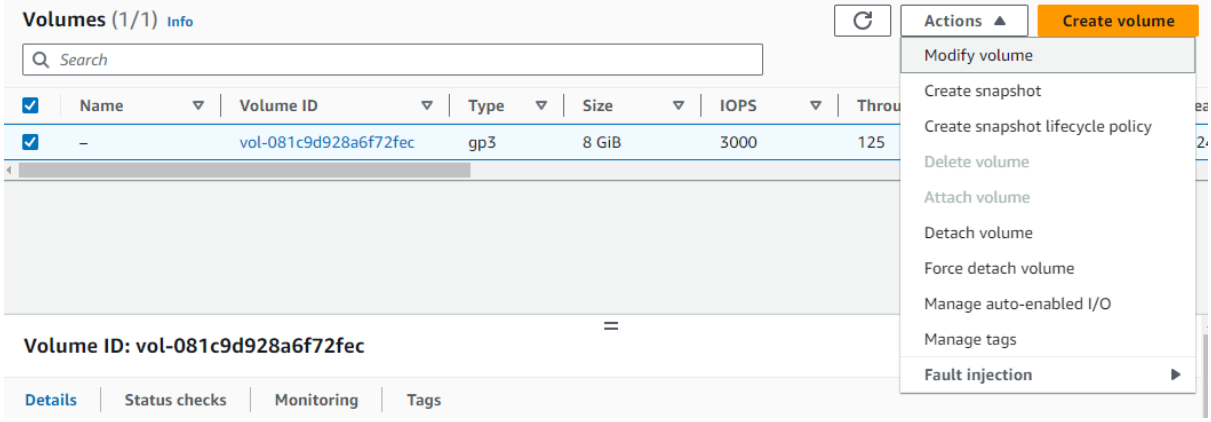
Go to elastic block store and open volumes there , it is used for increasing the size of the memory.



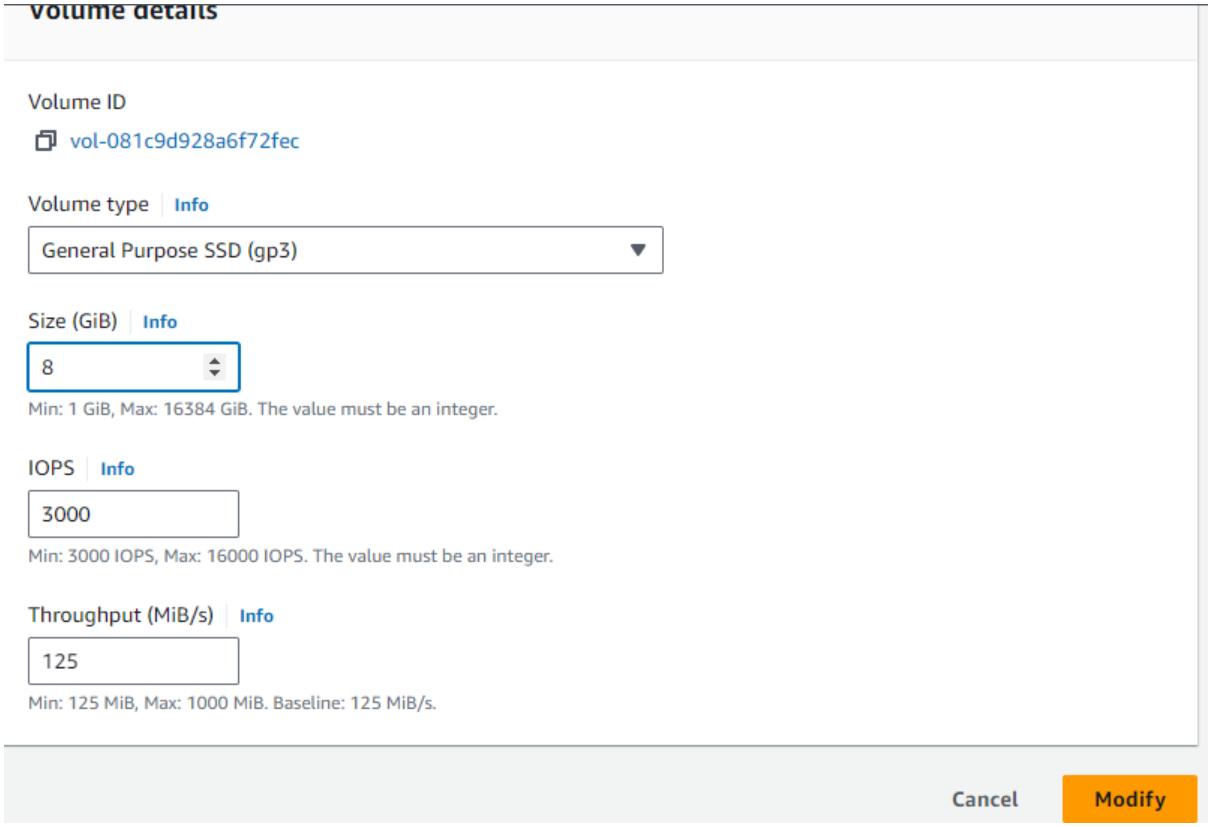
Now click on the checkbox of the displaying volume .



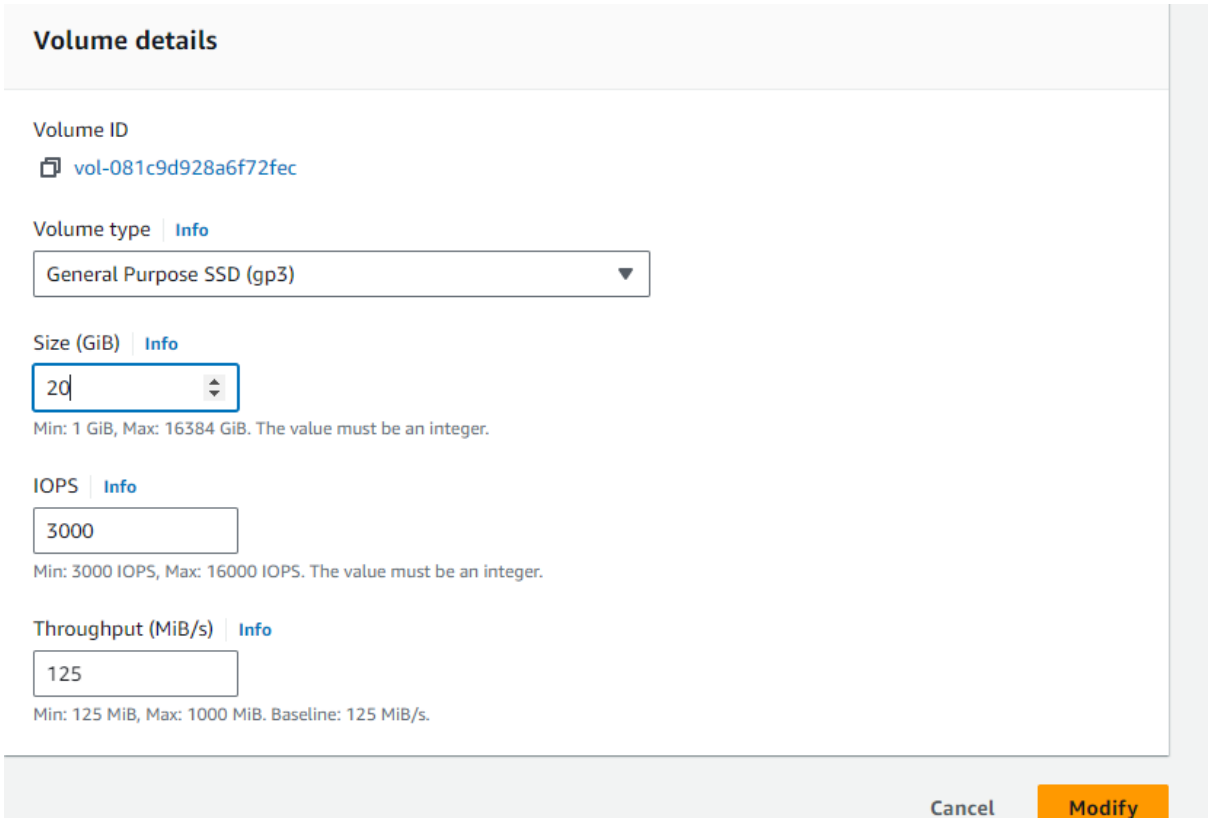
Click on actions and then modify volume.



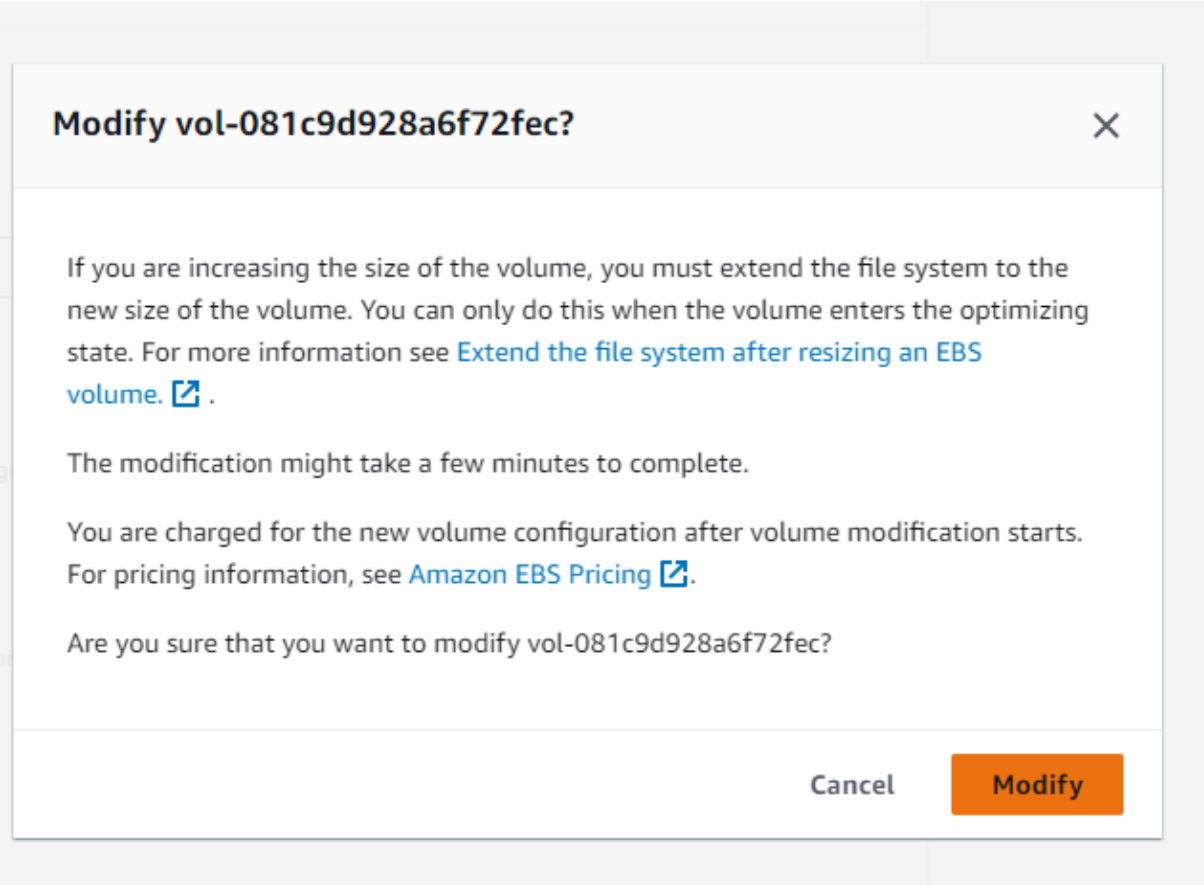
The actual size (GiB) is 8.



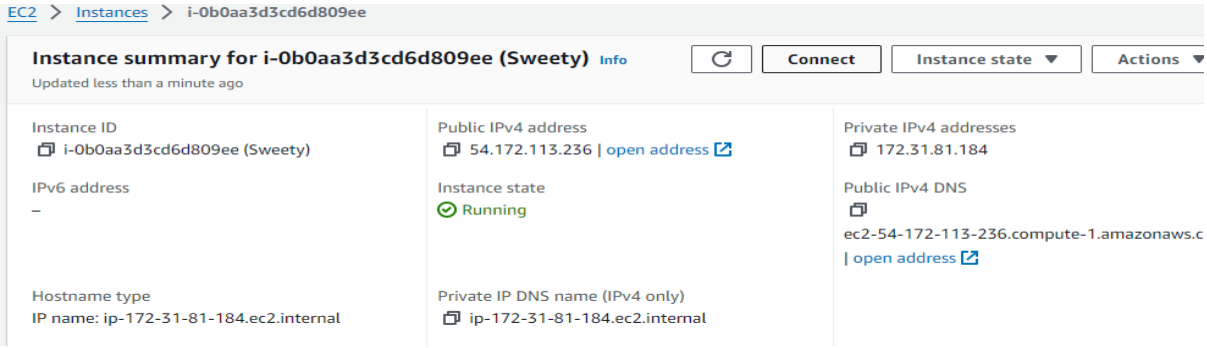
Now I’m changing the size from 8 GiB to 20 GiB.



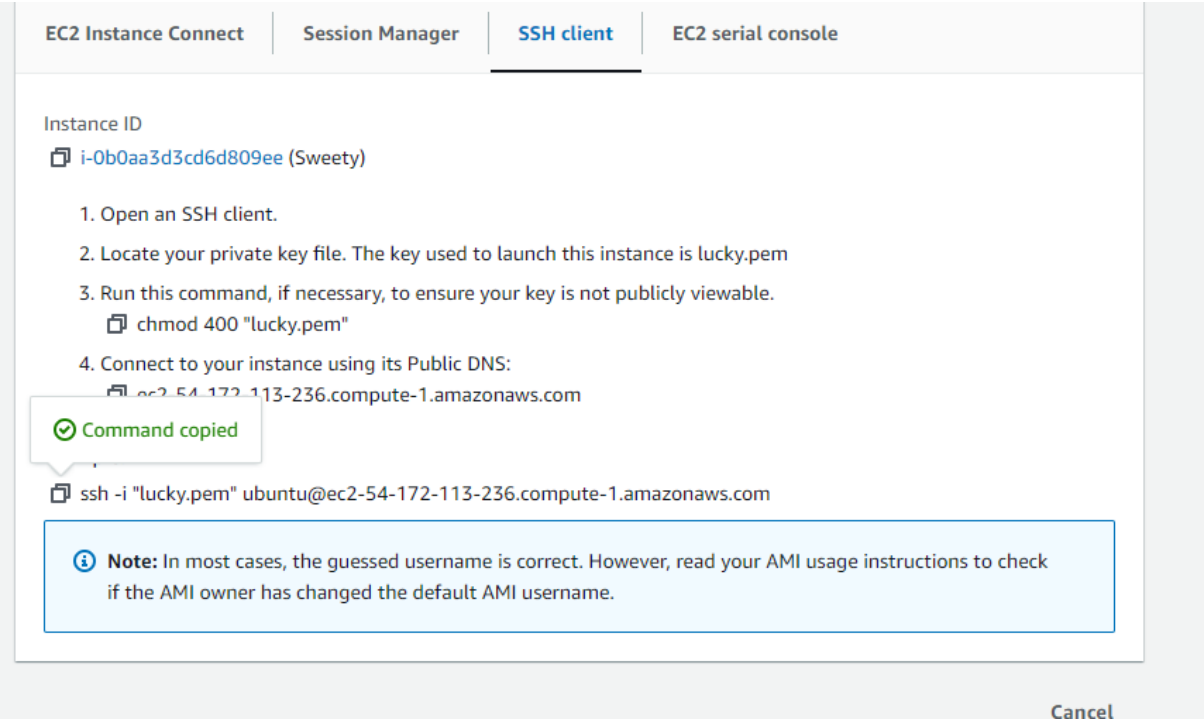
Noew click on modify.



Now open the instances and click on instance ID and then click on connect.



Open SSH client and copy the command.

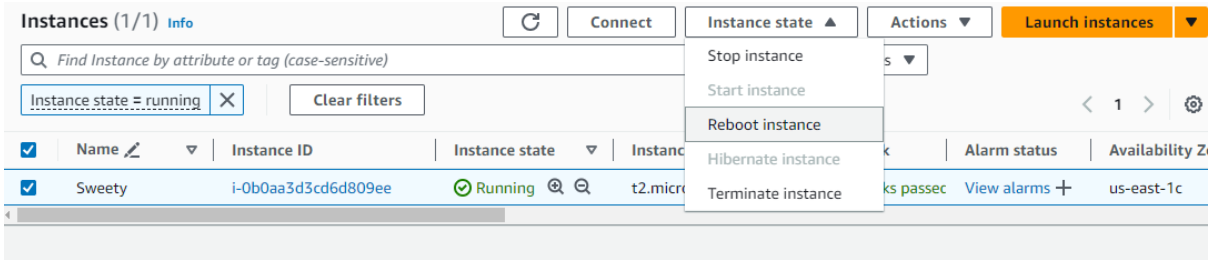


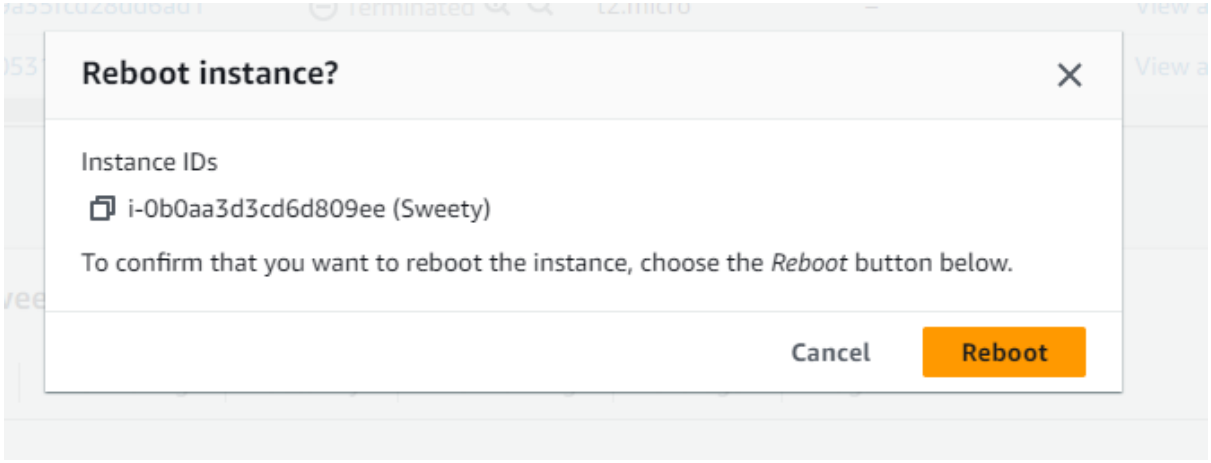
Paste the copied command in gitbash and connect to the server, use command sudo -i for connecting the server to root user.

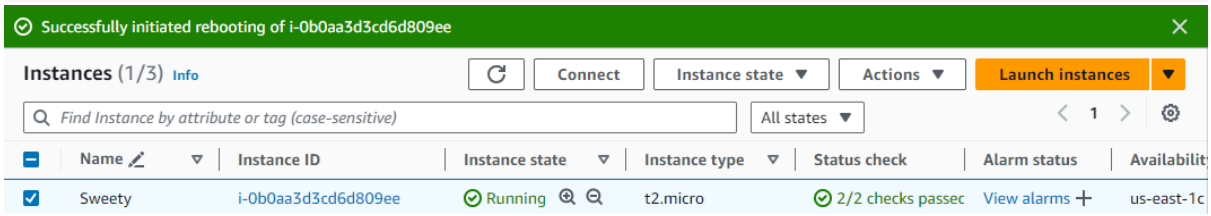
No changes will be shown.

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

System information as of Wed Jul  3 06:24:56 UTC 2024

  System load:  0.0                Processes:             105
  Usage of /:   22.9% of 6.71GB    Users logged in:       0
  Memory usage: 20%                IPv4 address for enX0: 172.31.81.18
  Swap usage:   0%


xpanded Security Maintenance for Applications is not enabled.

 updates can be applied immediately.

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


ast login: Wed Jul  3 06:19:28 2024 from 124.123.187.60
buntu@ip-172-31-81-184:~$ sudo -i
oot@ip-172-31-81-184:~# df -h
ilesystem      Size  Used Avail Use% Mounted on
dev/root       6.8G  1.6G  5.2G  23% /
mpfs           479M     0  479M   0% /dev/shm
mpfs           192M  868K  191M   1% /run
mpfs           5.0M     0  5.0M   0% /run/lock
dev/xvda16     881M   76M  744M  10% /boot
dev/xvda15     105M  6.1M   99M   6% /boot/efi
mpfs            96M   12K   96M   1% /run/user/1000
oot@ip-172-31-81-184:~#
```

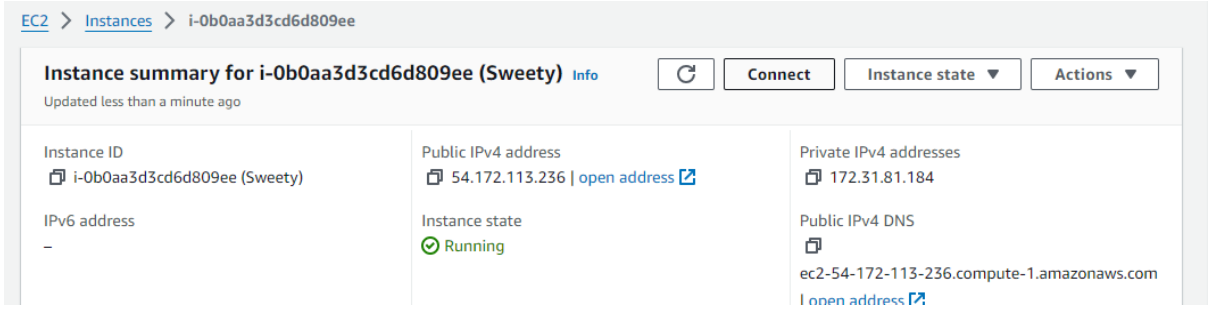
We need to reboot the instance the instance first then the changes will reflect .



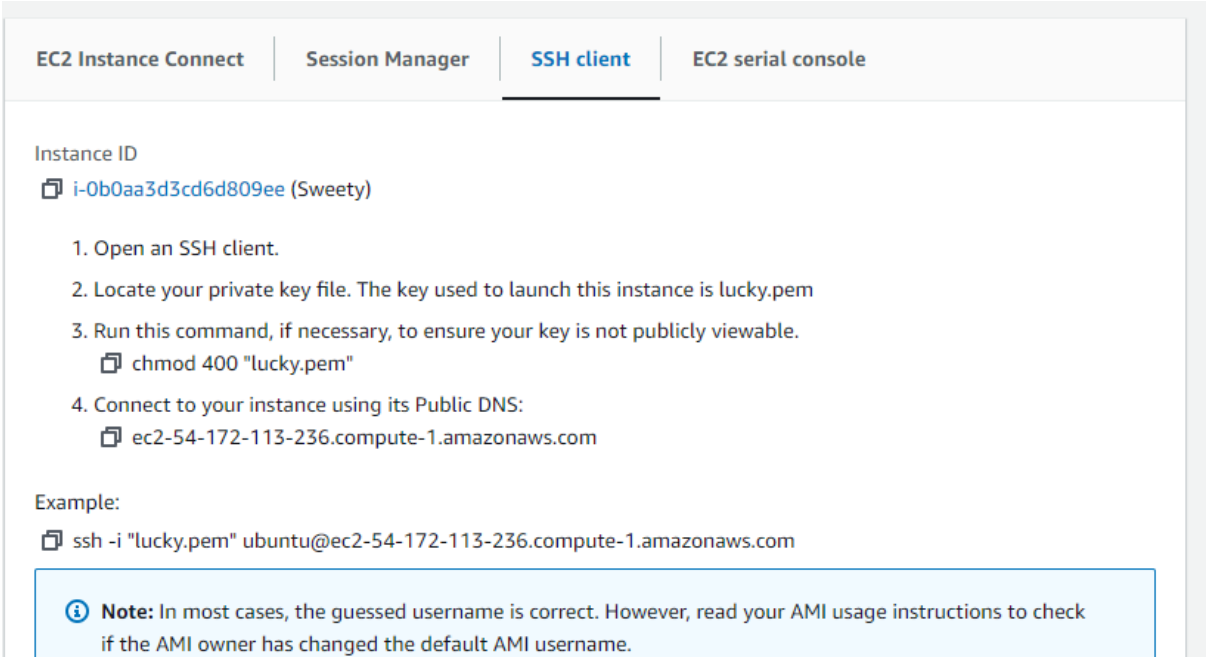




Go to instance ID > connect



SSH client > copy the command.



Paste in gitbash > connect to the server > connect to root user by the command sudo -i

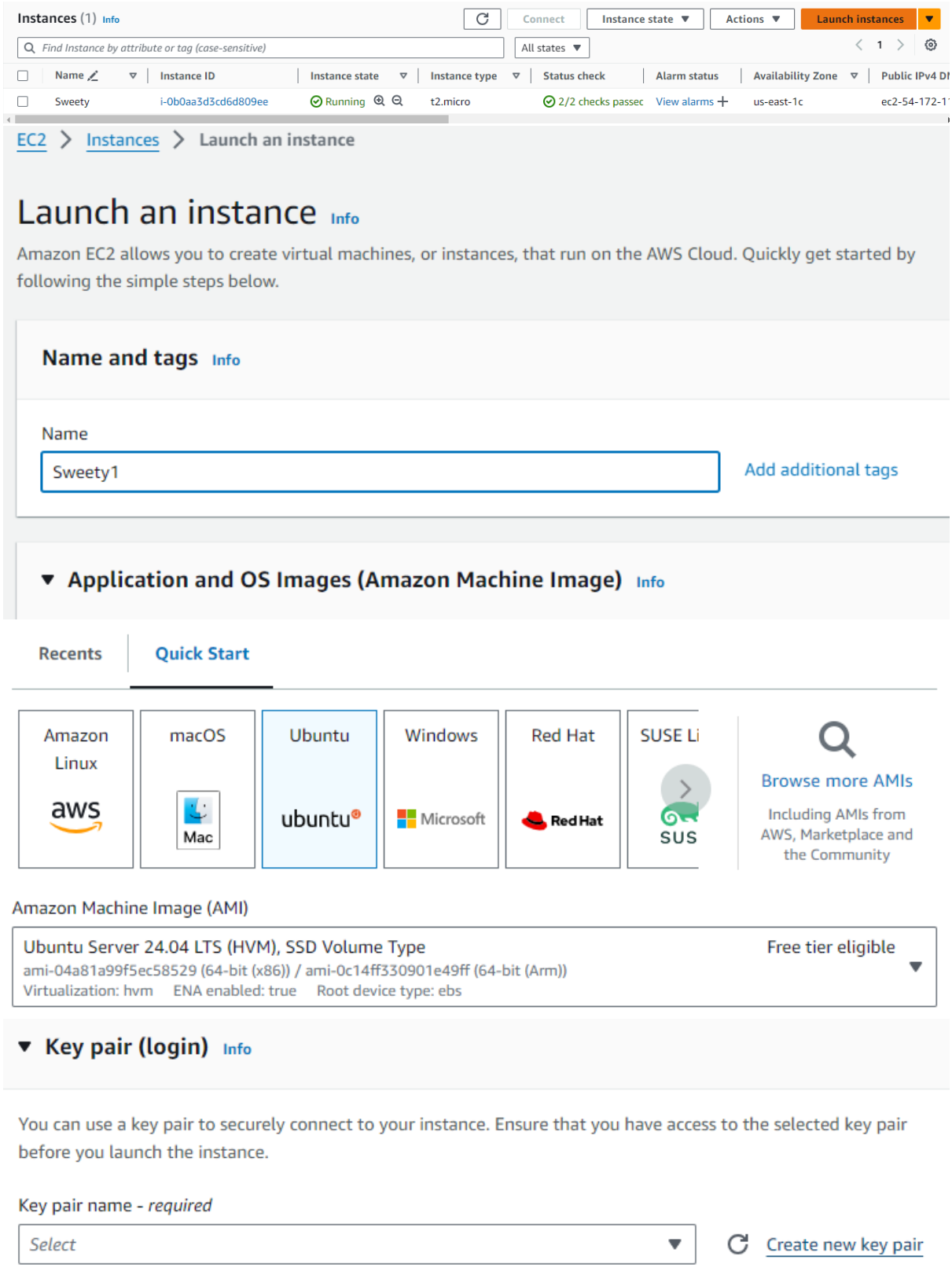
```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "lucky.pem" ubuntu@ec2-54-172-113-236.compute-1.amazonaws.com
```

Check the disk usage now with the help of command df -h

We will observe the changes now.

```
Last login: Wed Jul  3 06:26:52 2024 from 124.123.187.60
ubuntu@ip-172-31-81-184:~$ sudo -i
root@ip-172-31-81-184:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        19G  1.6G   17G   9% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  872K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
root@ip-172-31-81-184:~#
```

Terminate the instances and do the same process for another instance as shown below.


Instances (1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DI
Sweety
i-0b0aa3d3cd6d809ee
Running
t2.micro
2/2 checks passec
View alarms
us-east-1c
ec2-54-172-1
EC2
Instances
Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
Sweety1
Add additional tags
Application and OS Images (Amazon Machine Image) Info
Recents
Quick Start
Amazon Linux
aws
macOS
Mac
Ubuntu
ubuntu
Windows
Microsoft
Red Hat
Red Hat
SUSE Li
SUS
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
ami-04a81a99f5ec58529 (64-bit (x86)) / ami-0c14ff330901e49ff (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Free tier eligible
Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
Select
Create new key pair

Create key pair

Key pair name

Key pairs allow you to connect to your instance securely.

ec2

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

- RSA
  RSA encrypted private and public key pair
- ED25519
  ED25519 encrypted private and public key pair

Private key file format

- .pem
  For use with OpenSSH
- .ppk
  For use with PuTTY

⚠ When prompted, store the private key in a secure and accessible location on

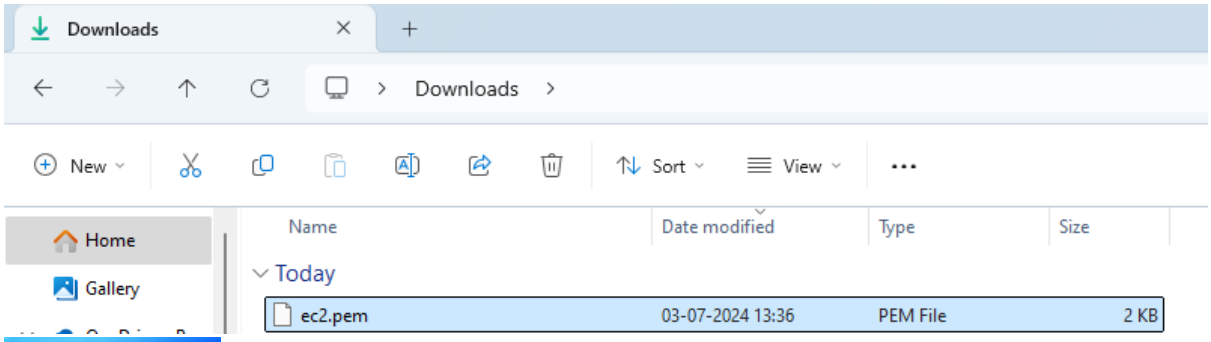
Cancel | Create key pair

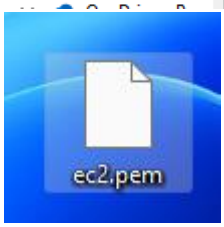
Cancel | Launch instance | Review commands

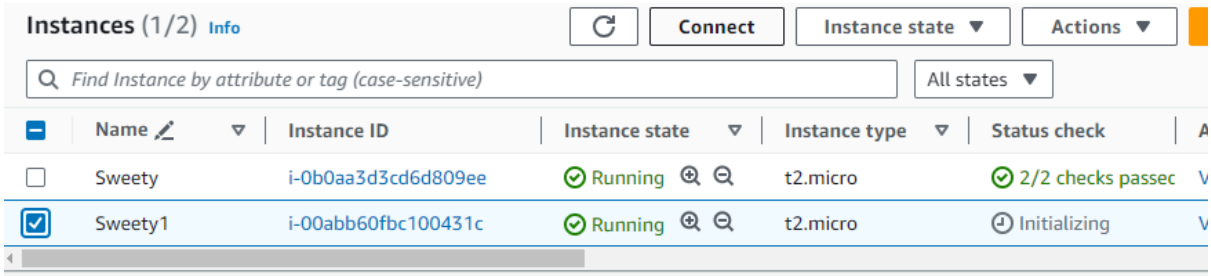
Advanced details Info

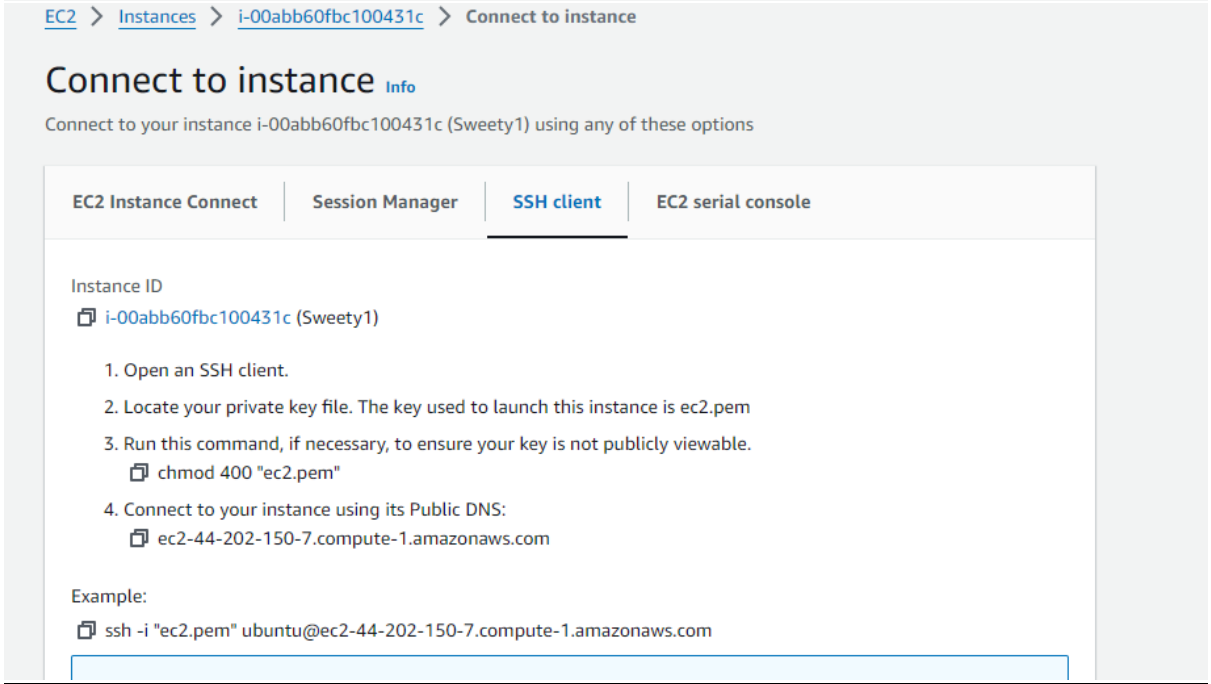
EC2 > Instances > Launch an instance

Success
Successfully initiated launch of instance (i-00abb60fbc100431c)



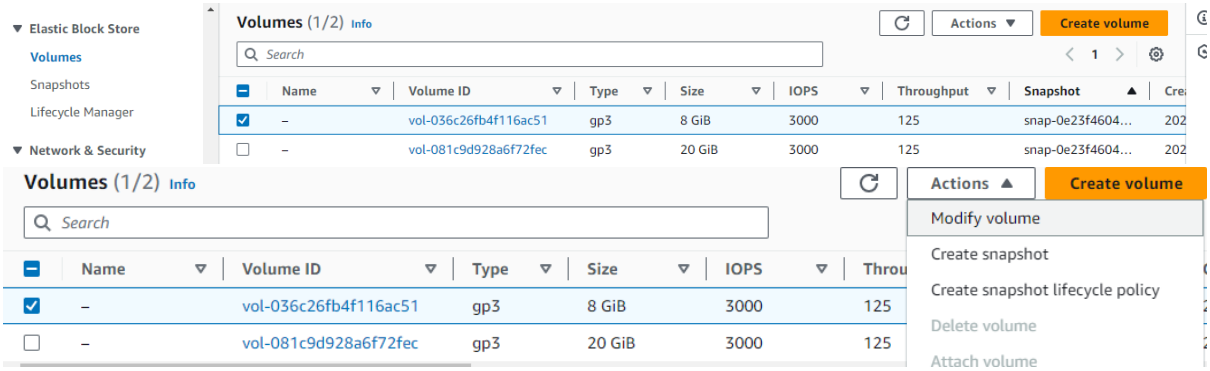


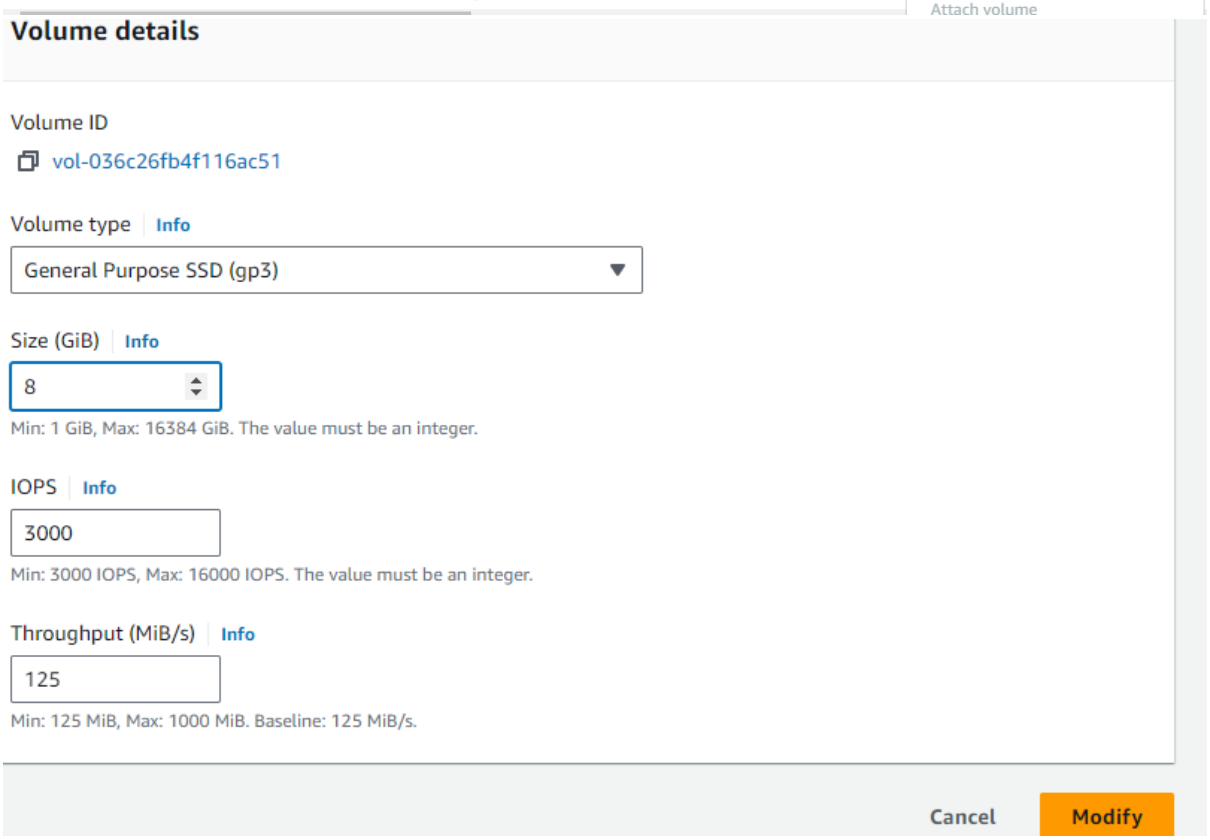





```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "ec2.pem" ubuntu@ec2-44-202-150-7.compute-1.amazonaws.com
The authenticity of host 'ec2-44-202-150-7.compute-1.amazonaws.com (44.202.150.7)' can't be established
.
ED25519 key fingerprint is SHA256:ZpFYX5m9iygFqUwTeRO1J6NU54B5RhiumnZR2Rk54dE.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-44-202-150-7.compute-1.amazonaws.com' (ED25519) to the list of known ho
sts.
```

```
ubuntu@ip-172-31-82-53:~$ sudo -i
root@ip-172-31-82-53:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       6.8G  1.6G  5.2G  23% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  868K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
root@ip-172-31-82-53:~#
```





Volume details

Volume ID

vol-036c26fb4f116ac51

Volume type | Info

General Purpose SSD (gp3)

Size (GiB) | Info

20

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS | Info

3000

Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s) | Info

125

Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.

Cancel Modify

Modify vol-036c26fb4f116ac51?

If you are increasing the size of the volume, you must extend the file system to the new size of the volume. You can only do this when the volume enters the optimizing state. For more information see Extend the file system after resizing an EBS volume. .

The modification might take a few minutes to complete.

You are charged for the new volume configuration after volume modification starts. For pricing information, see Amazon EBS Pricing.

Are you sure that you want to modify vol-036c26fb4f116ac51?

Cancel Modify

Instances (1/2) Info

Connect | Instance state | Actions | Launch instar

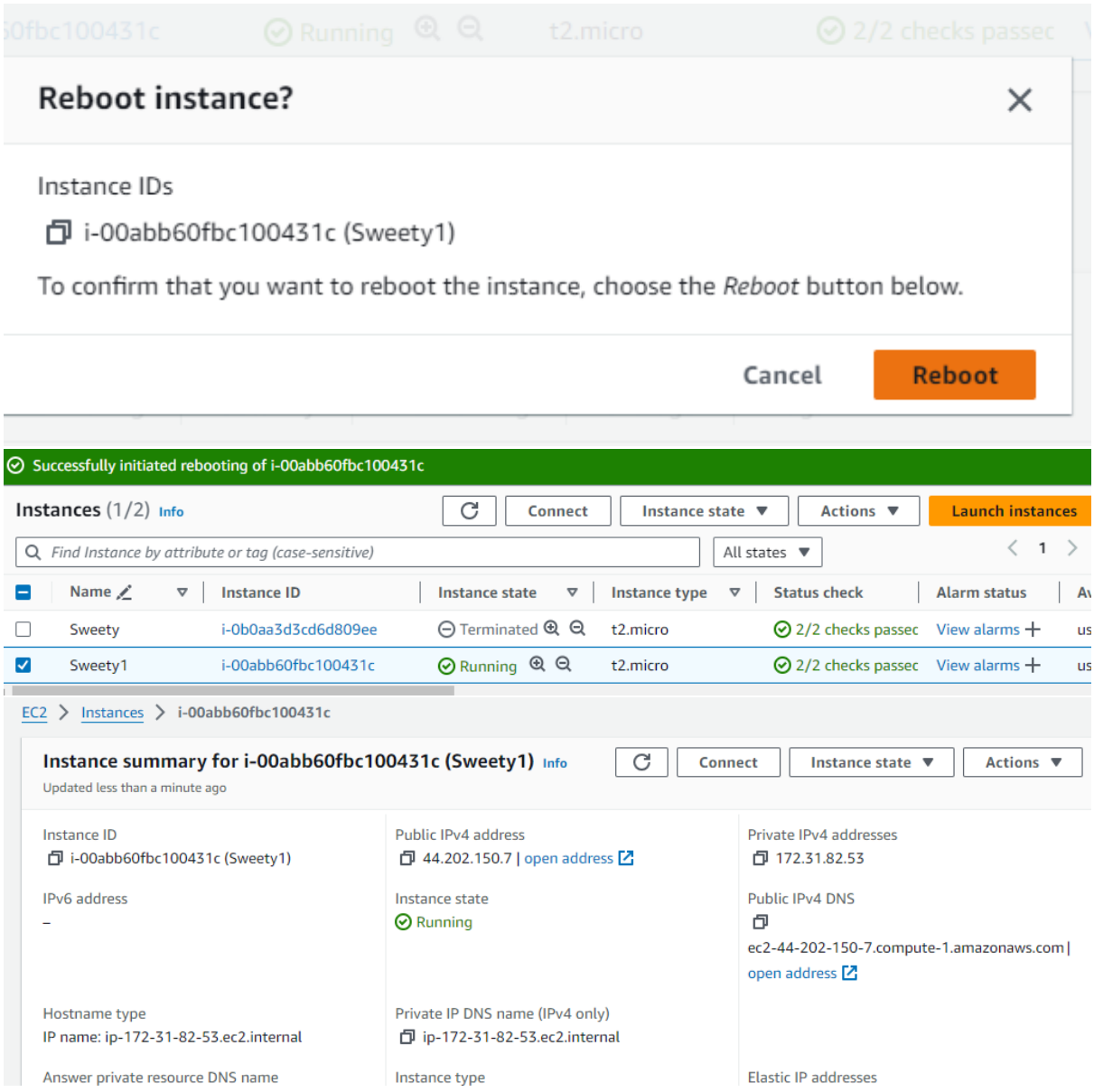
Find Instance by attribute or tag (case-sensitive)

1

Name	Instance ID	Instance state		s check	Alarm status
Sweety	i-0b0aa3d3cd6d809ee	Terminated	t	2 checks passec	View alarms +
Sweety1	i-00abb60fbc100431c	Running	t	2 checks passec	View alarms +

Instance state menu:

- Stop instance
- Start instance
- Reboot instance
- Hibernate instance
- Terminate instance


Reboot instance?
Instance IDs
i-00abb60fbc100431c (Sweety1)
To confirm that you want to reboot the instance, choose the Reboot button below.
Cancel
Reboot
Successfully initiated rebooting of i-00abb60fbc100431c
Instances (1/2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Sweety
i-0b0aa3d3cd6d809ee
Terminated
t2.micro
2/2 checks passec
View alarms
Sweety1
i-00abb60fbc100431c
Running
t2.micro
2/2 checks passec
View alarms
EC2
Instances
i-00abb60fbc100431c
Instance summary for i-00abb60fbc100431c (Sweety1) Info
Updated less than a minute ago
Connect
Instance state
Actions
Instance ID
i-00abb60fbc100431c (Sweety1)
Public IPv4 address
44.202.150.7 | open address
Private IPv4 addresses
172.31.82.53
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-44-202-150-7.compute-1.amazonaws.com | open address
Hostname type
IP name: ip-172-31-82-53.ec2.internal
Private IP DNS name (IPv4 only)
ip-172-31-82-53.ec2.internal
Answer private resource DNS name
Instance type
Elastic IP addresses

Connect to instance Info

Connect to your instance i-00abb60fbc100431c (Sweety1) using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Instance ID

i-00abb60fbc100431c (Sweety1)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is ec2.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
   chmod 400 "ec2.pem"
4. Connect to your instance using its Public DNS:
   ec2-44-202-150-7.compute-1.amazonaws.com

Example:

ssh -i "ec2.pem" ubuntu@ec2-44-202-150-7.compute-1.amazonaws.com

```
laksh@LAPTOP-8ME8B29S MINGW64 ~/OneDrive/Desktop
$ ssh -i "ec2.pem" ubuntu@ec2-44-202-150-7.compute-1.amazonaws.com
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1009-aws x86_64)

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

 System information as of Wed Jul  3 08:12:44 UTC 2024

  System load:  0.17              Processes:             106
  Usage of /:   22.7% of 6.71GB   Users logged in:       0
  Memory usage: 19%               IPv4 address for enX0: 172.31.82.53
  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


Last login: Wed Jul  3 08:12:47 2024 from 205.254.168.165
ubuntu@ip-172-31-82-53:~$ sudo -i
root@ip-172-31-82-53:~#
```

```
Last login: Wed Jul  3 08:12:47 2024 from 205.254.168.165
ubuntu@ip-172-31-82-53:~$ sudo -i
root@ip-172-31-82-53:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        19G  1.6G   17G   9% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  860K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda16     881M   76M  744M  10% /boot
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M   12K   96M   1% /run/user/1000
root@ip-172-31-82-53:~#
```