STEP BY STEP PROCESS OF HOW TO ADD AND MOUNT EBS VOLUME ON EC2 LINUX INSTANCE

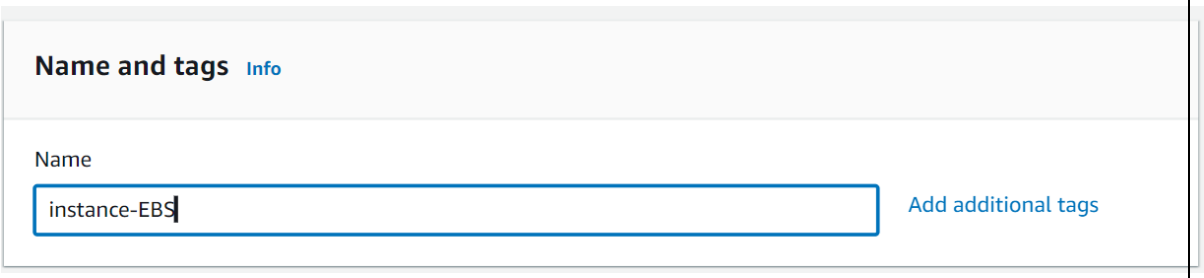
AMAZON ELASTIC BLOCK STORE [EBS]

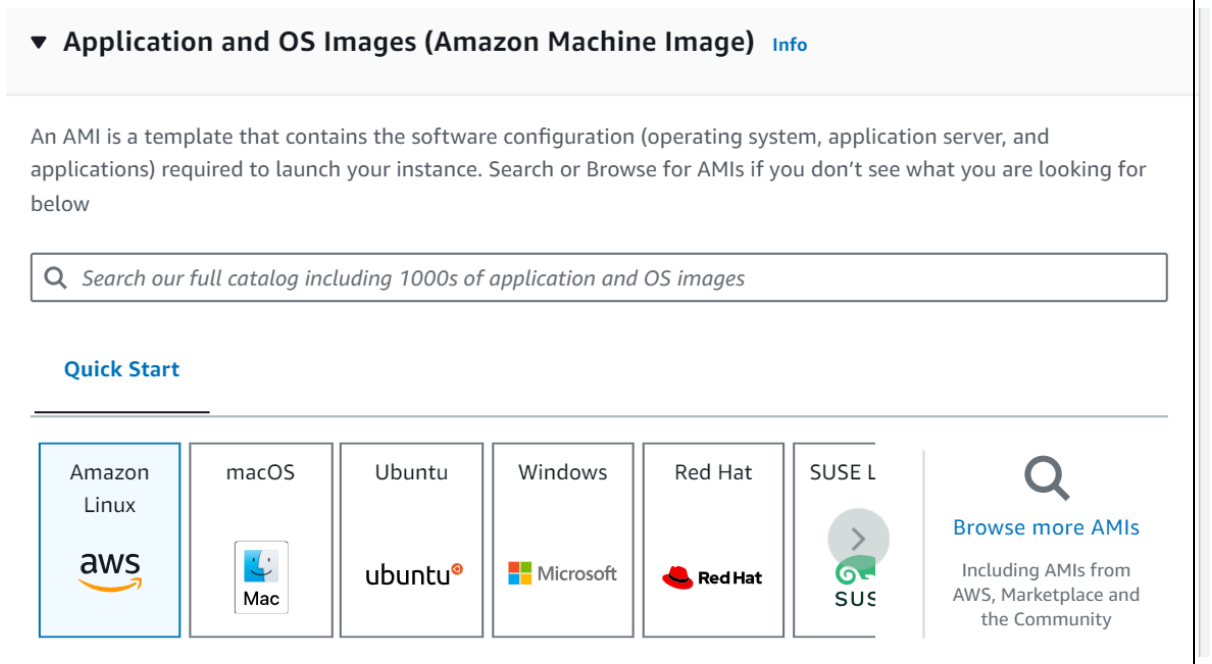
- ➔ Amazon Elastic Block Store (Amazon EBS) is an easy-to-easy , Scalable , high-performance block-storage service designed for Amazon Elastic Compute Cloud [Amazon Ec2].
- ➔ In the realm of AWS Capabilities , you have the Flexibility to generate Fresh EBS volumes , ready to be linked with instance for additional storage .
- ➔ In this guide , we'll walk through the process of attaching and mounting an EBS volume to an EC2 Linux instance running .

Prerequisites:

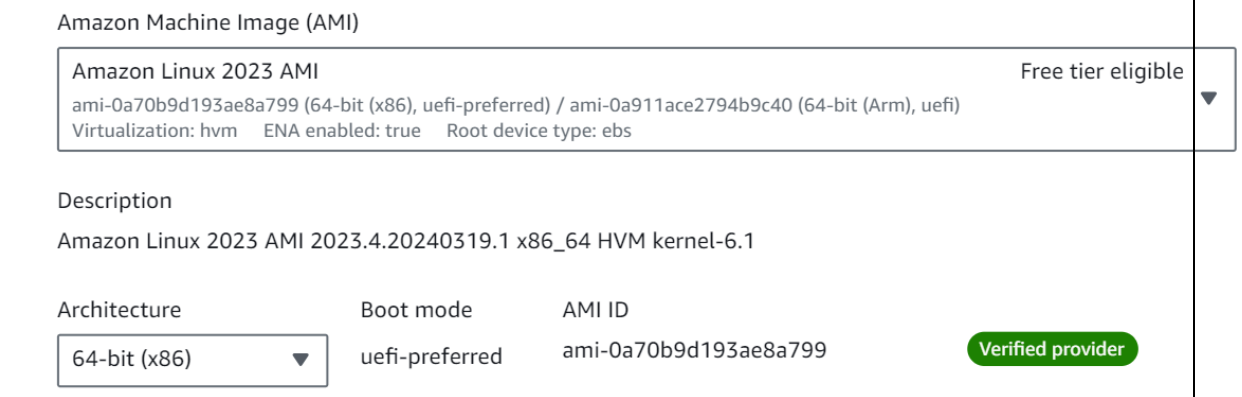
- ➔ An active aws account.
- ➔ An EC2 instance running Linux.

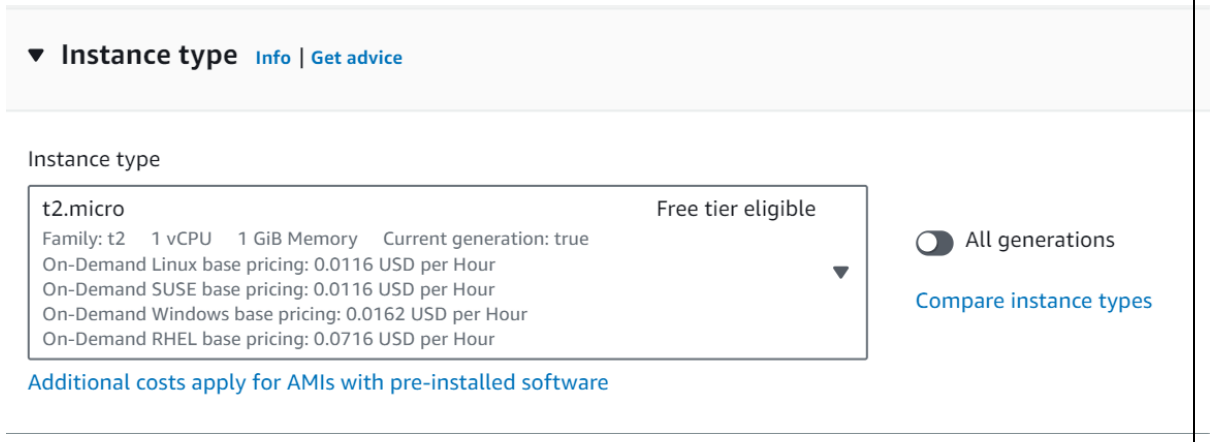
1. **Launching an EC2 Instance**
    - Log in to the AWS Management Console
    - Navigate to the EC2 Dashboard
    - Click on "Launch Instance" and Choose an Amazon Machine Image(AMI) with Your Preffered OS.



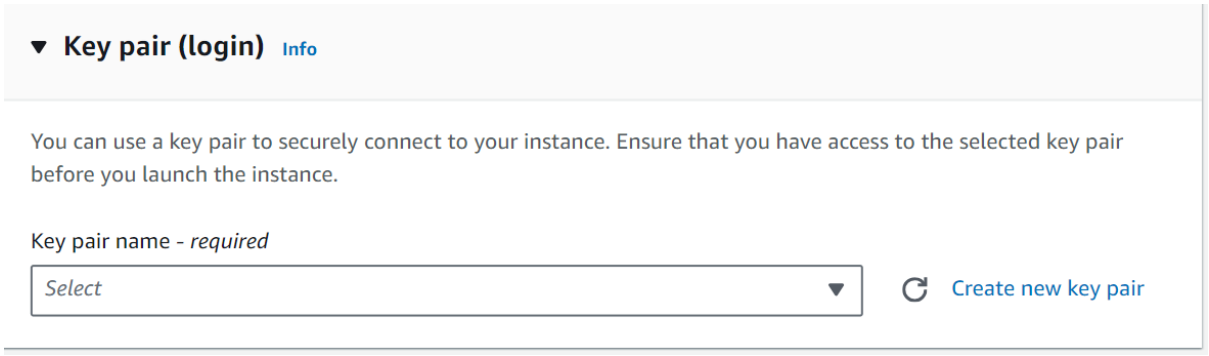


- Select an Instance type , Configure instance details ,add storage and Configure Security Groups .in our Case ,we will select t2.micro to remain in the AWS Free tier.

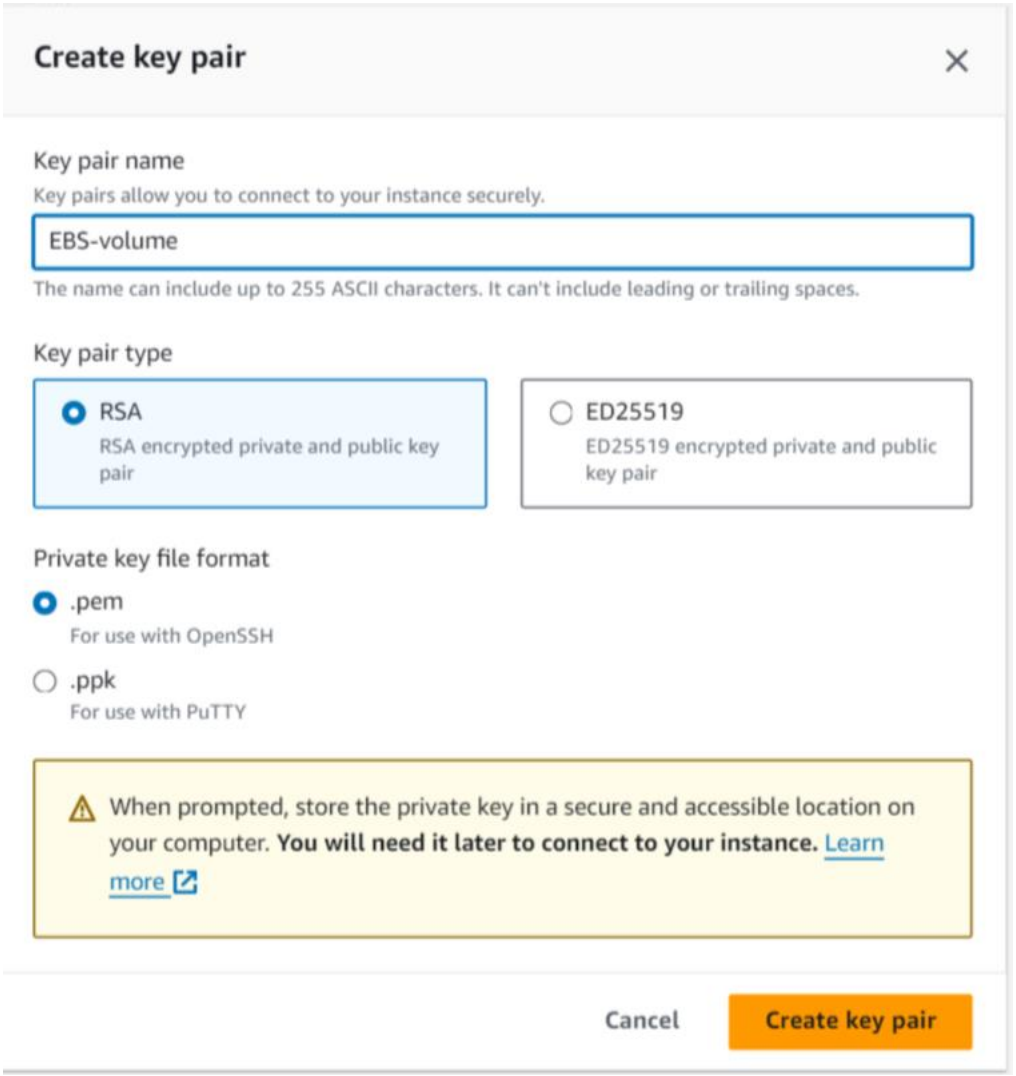




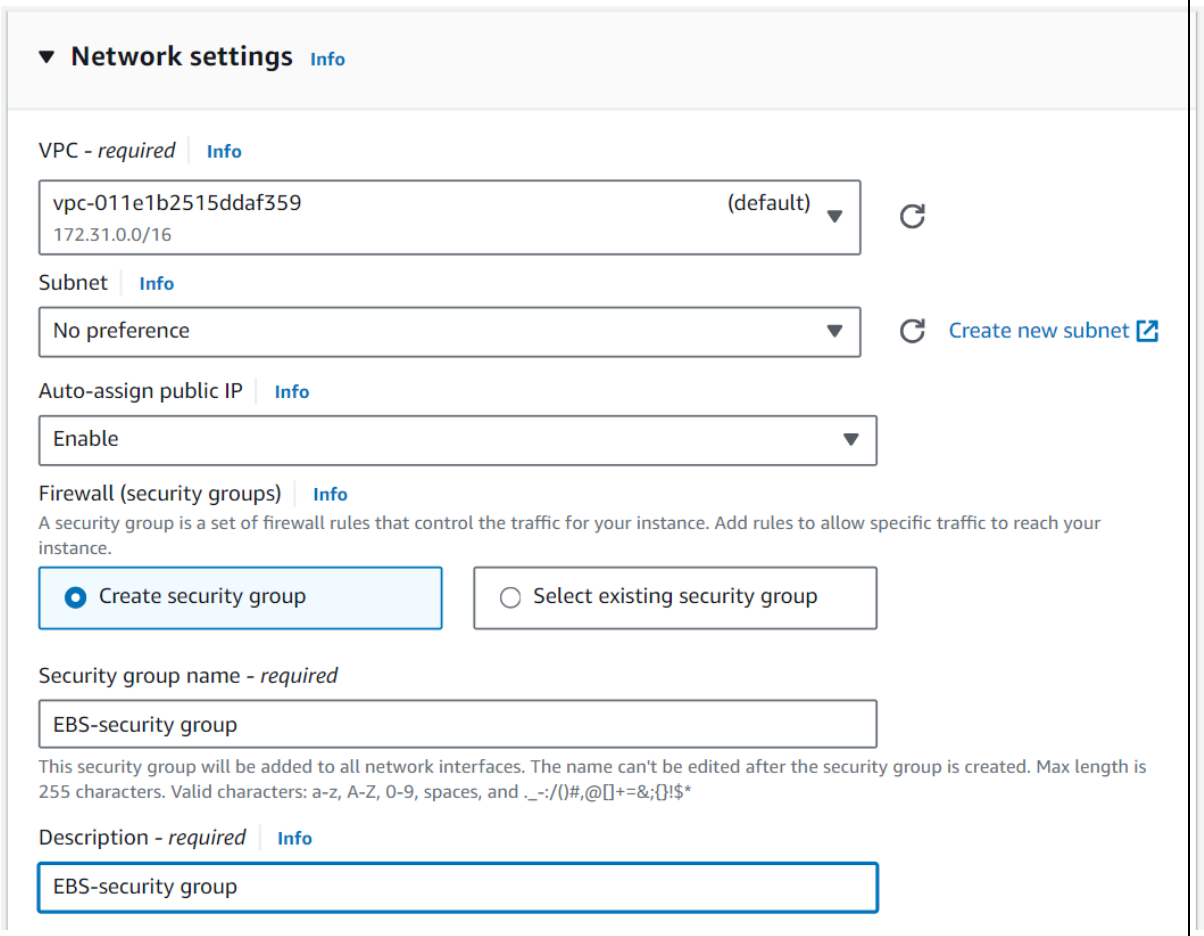
- Generate a new key pair or utilize an Existing one under the key-pair section . in this instance , I will generate a new key pair.



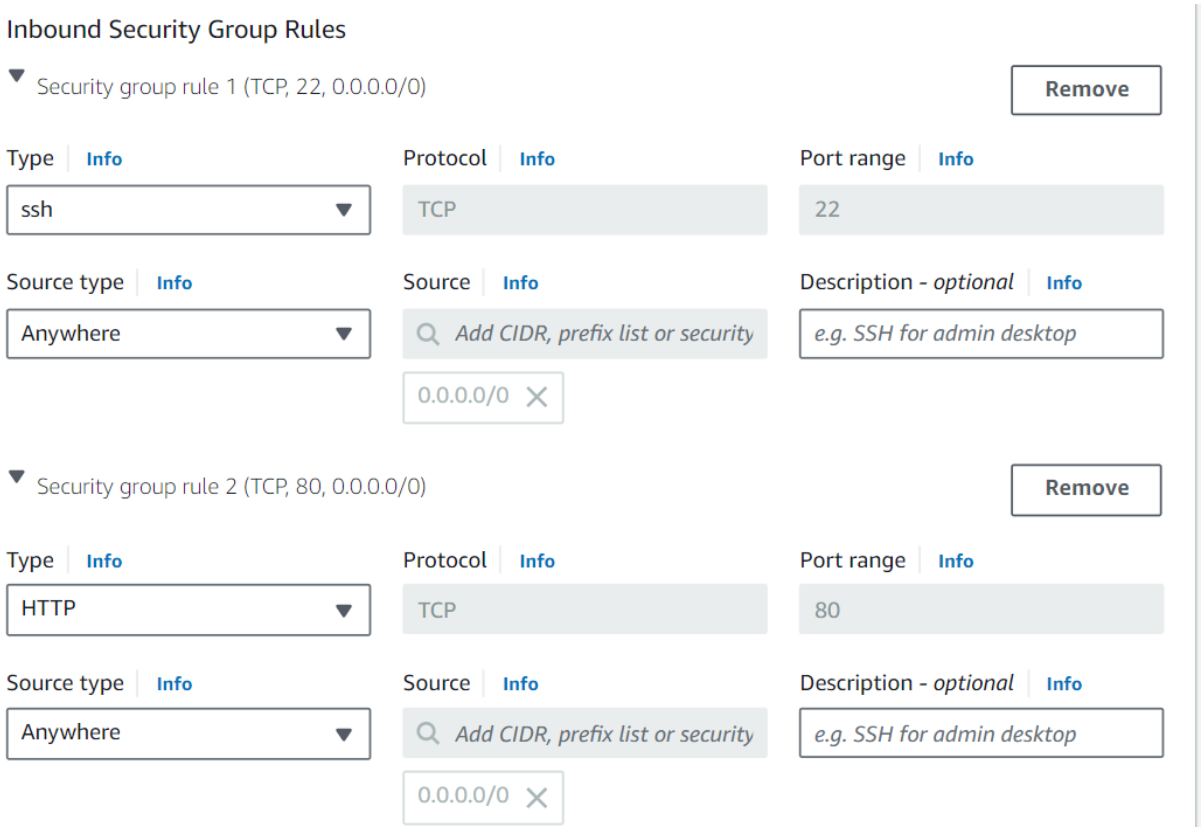
- Give a name to your key pair and click on Create key pair as shown below.



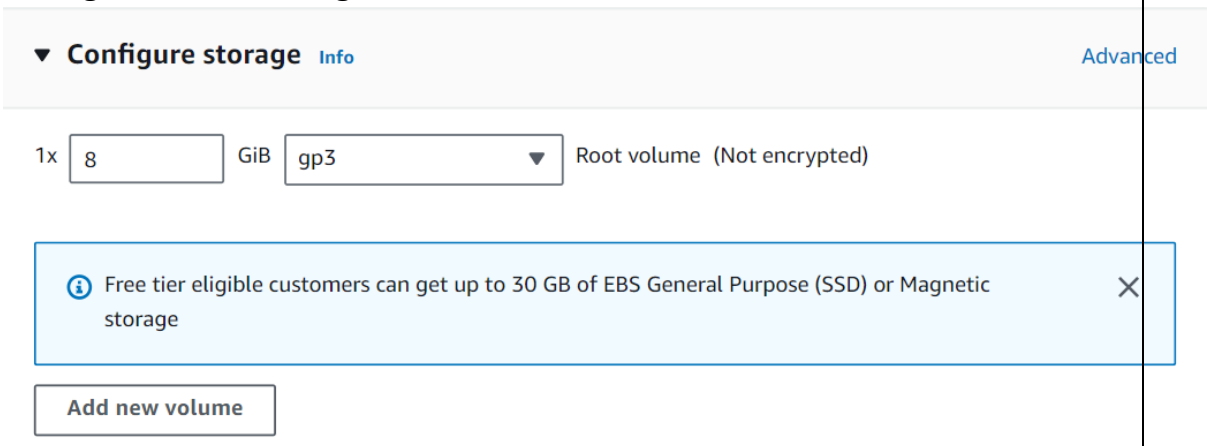
- Adjust the network settings and established a new security group. Choose a fitting name and ensure that the “Auto-assign public Ip” option is Enable.



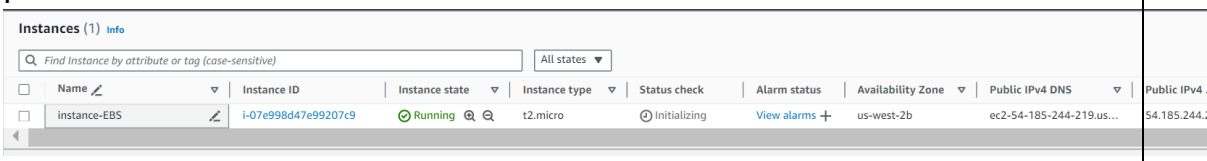
- Configure the inbound security group rules to permit SSH, HTTP.Additonal ports can be allowed later based on the application requirements.



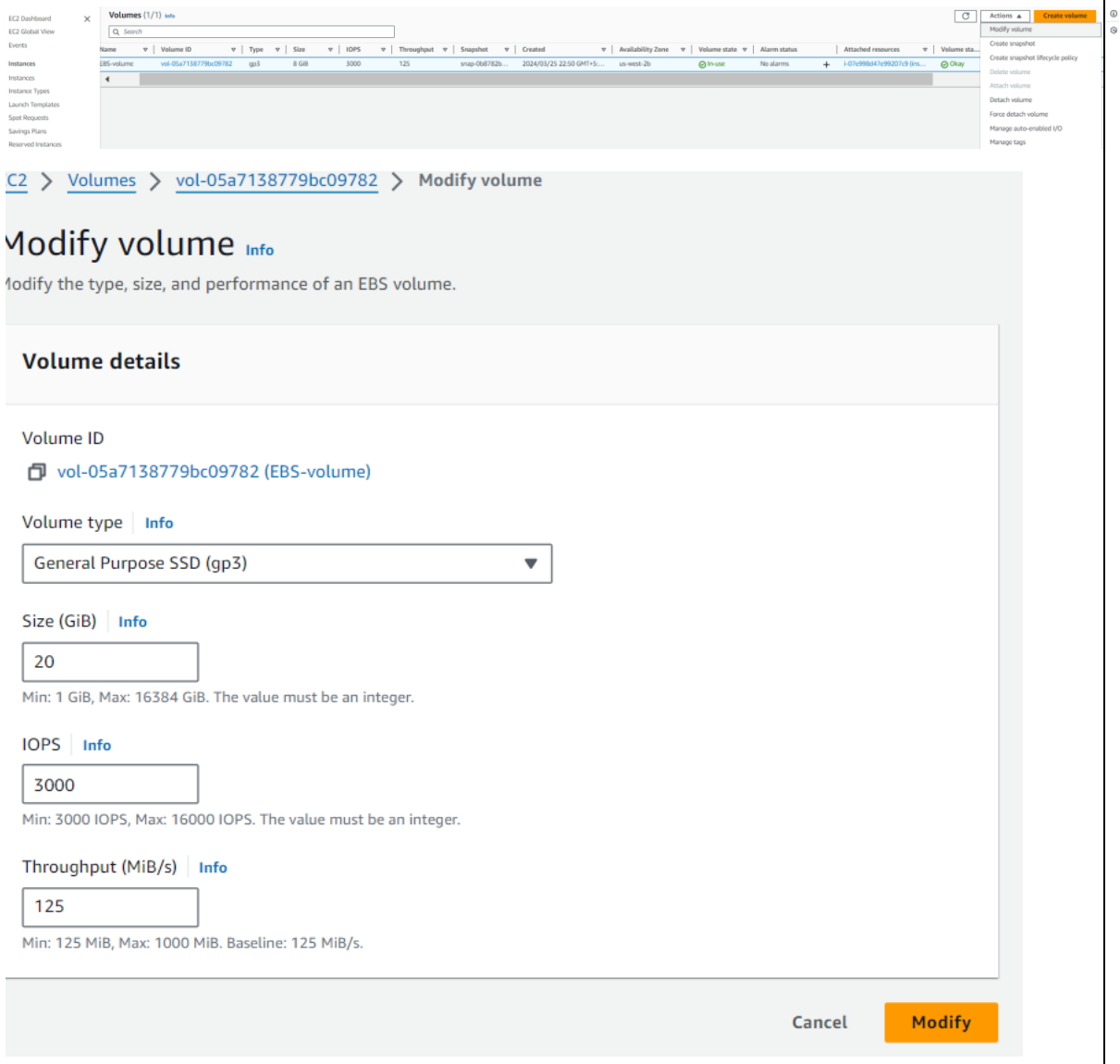
- Configure to the storage.



- Maintain the default setting for the remaining Configurations and proceed to launch the instance.



2. **In the left navigation pane, Choose “volume” under the “Elastic Block store” section.**
    - **Take note of the existing volume.in this example, we have an 8GB volume.**
    - **Select volume------>to Click on Modify volume----->to change the 8GB volume to 20 GB assign it .**



➔ **Connecting to the Ec2 Instance**

Utilize your preferred SSH terminal to connect to the Ec2 instance .in my case, I will be using Gitbash by the below command use.

ssh -i <pem.file> user_name@public_ip

```
duggi@pavansiva MINGW64 ~/Downloads
$ ssh -i "EBS-volume.pem" ec2-user@ec2-54-185-244-219.us-west-2.compute.amazonaws.co
       #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Mon Mar 25 17:34:13 2024 from 104.28.220.171
[ec2-user@ip-172-31-18-75 ~]$ sudo su -
Last login: Mon Mar 25 17:34:19 UTC 2024 on pts/1
```

➔ After we run to the below commands

lsblk ---show all Volumes

```
[root@ip-172-31-18-75 ~]# lsblk
NAME      MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0  20G  0 disk
├─xvda1   202:1    0   8G  0 part /
├─xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0  10M  0 part /boot/efi
[root@ip-172-31-18-75 ~]#
```

df -h ---shows only root volumes

```
root@ip-172-31-18-75 ~]# df -h
ilesystem      Size  Used Avail Use% Mounted on
evtmpfs        4.0M     0  4.0M   0% /dev
mpfs           475M     0  475M   0% /dev/shm
mpfs           190M  2.9M  188M   2% /run
dev/xvda1      8.0G  1.6G  6.5G  19% /
mpfs           475M     0  475M   0% /tmp
dev/xvda128     10M  1.3M  8.7M  13% /boot/efi
mpfs            95M     0   95M   0% /run/user/1000
root@ip-172-31-18-75 ~]#
```

Volume attached to the console below command use:

1. growpart /dev/xvda 1

```
[root@ip-172-31-18-75 ~]# growpart /dev/xvda 1
CHANGED: partition=1 start=24576 old: size=16752607 end=16777183 new: size=41918431 end=41943007
```

2. xfs_growfs -d /

```
[root@ip-172-31-18-75 ~]# xfs_growfs -d /
meta-data=/dev/xvda1              isize=512    agcount=2, agsize=1047040 blks
         =                        sectsz=4096  attr=2, projid32bit=1
         =                        crc=1        finobt=1, sparse=1, rmapbt=0
         =                        reflink=1    bigtime=1 inobtcount=1
data     =                        bsize=4096   blocks=2094075, imaxpct=25
         =                        sunit=128    swidth=128 blks
naming   =version 2               bsize=16384  ascii-ci=0, ftype=1
log      =internal log            bsize=4096   blocks=16384, version=2
         =                        sectsz=4096  sunit=4 blks, lazy-count=1
realtime =none                    extsz=4096   blocks=0, rtextents=0
data blocks changed from 2094075 to 5239803
```

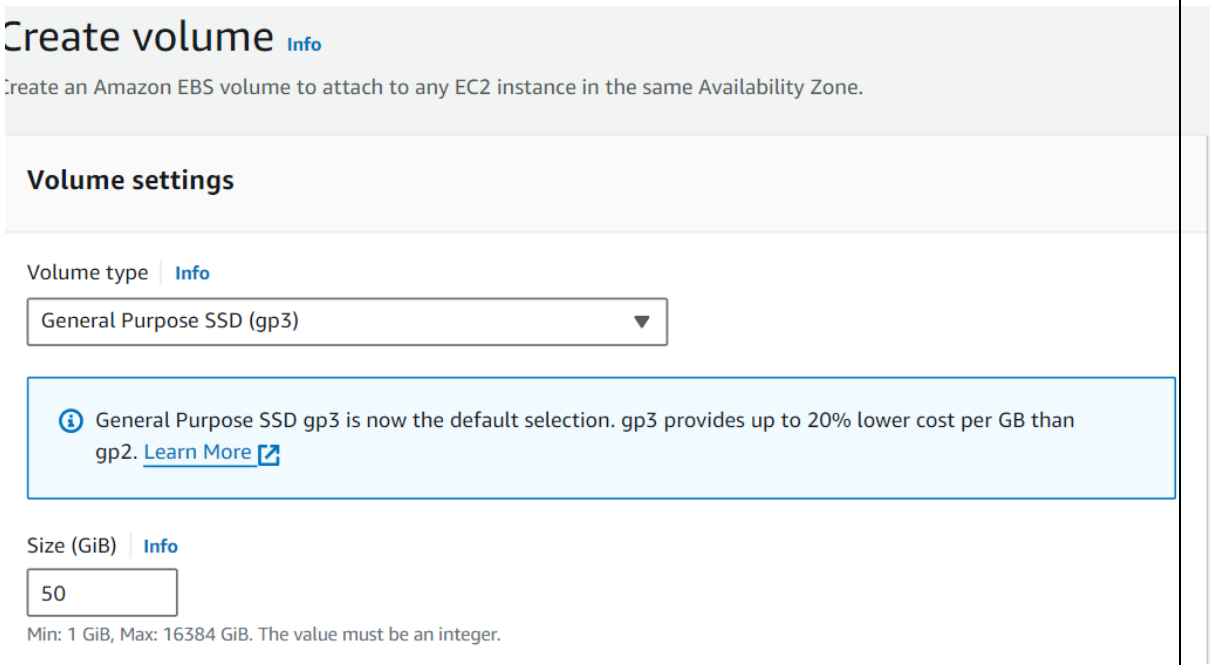
3. lsblk

```
NAME      MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0  20G  0 disk
├─xvda1   202:1    0  20G  0 part /
├─xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0  10M  0 part /boot/efi
```

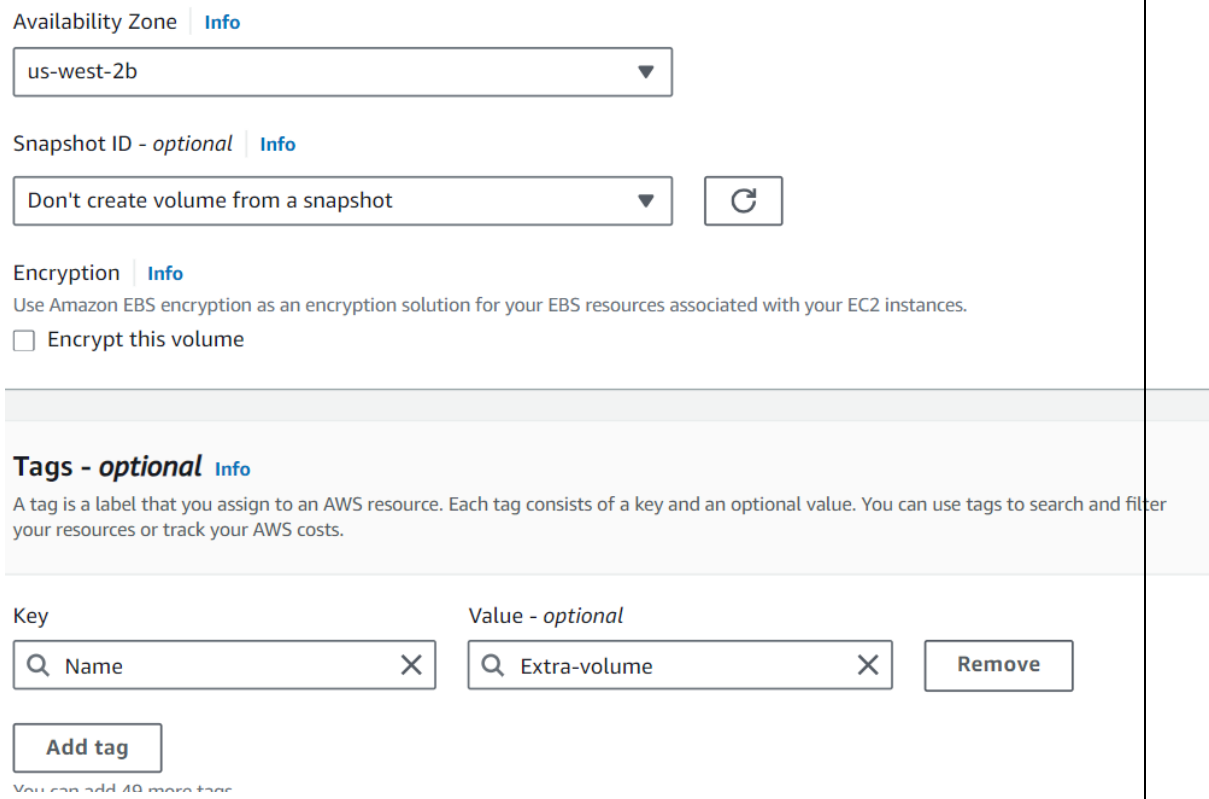
➔ **Tempory mount**

Click “Create volume” to add a new EBS volume.

- **Volume type : General Purpose SSD (gp2)**
- **Size (GIB): Enter 50 for a 50GB Volume.**
- **Availability Zone: Choose the same availability zone as your Ec2 instance.**

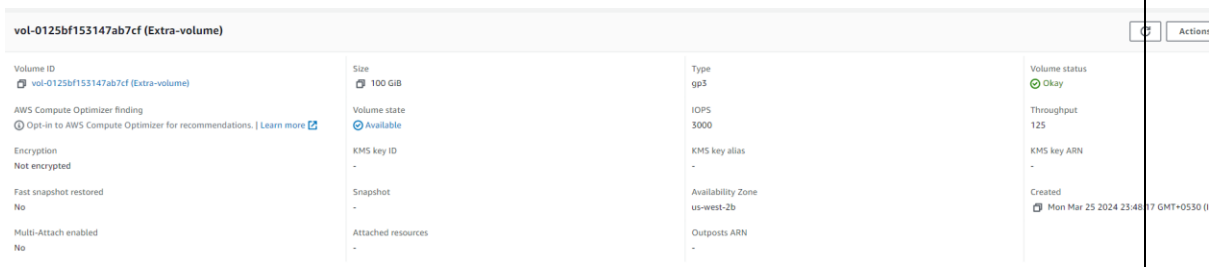


- We can a tag which is a label that you assign to an AWS resource .Each tag Consists of a key and an optional value . you can use tags to search and filter your resource or track your AWS costs.



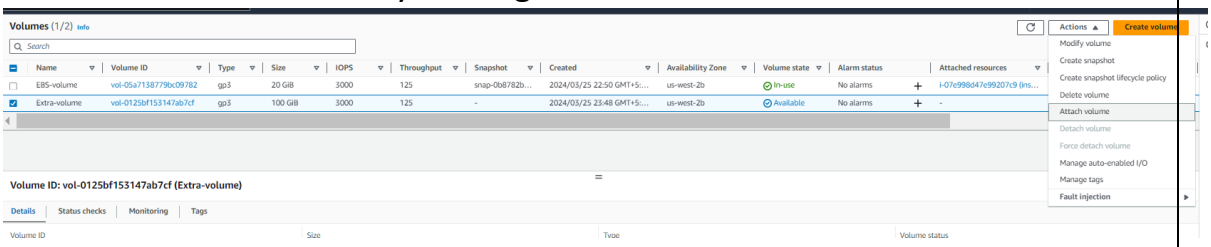
- Finally, Click " Create " to Create the EBS volume.

- Now if we can check the status of the newly created volume will be available.

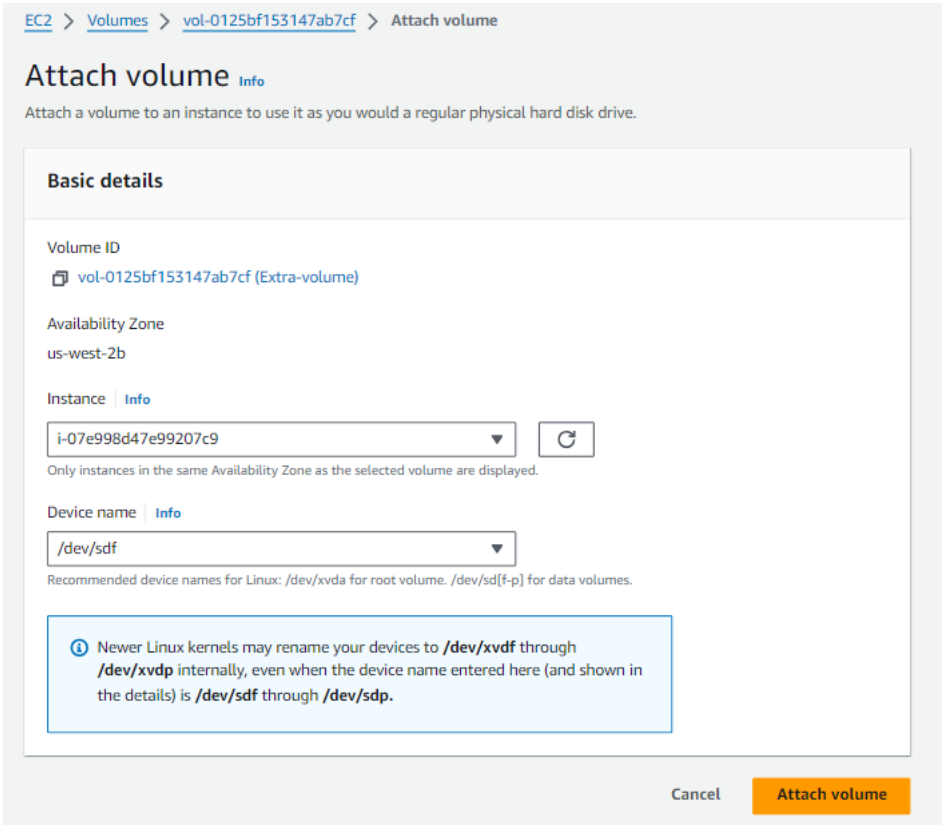


➔ Tempory mount Attached to the Ec2 instance.

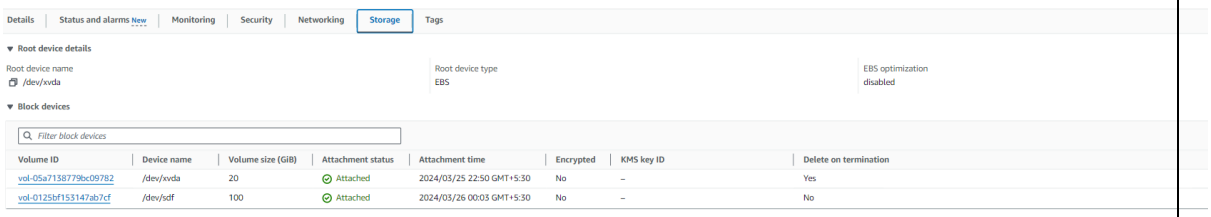
- In the volume dashboard , select the newly created volume.
- Click “actions”> “attach volume” and choose your Ec2 instance.
- Confirm the attachment by clicking “attach”



- Make sure to select the instance on which you have to attach the additional volume.



- To verify that the volume has been successfully attached to the Ec2 instance you can go to the Volume section, select the newly created volume ,and check the attached instance section as shown below.



➔ Connect to your Ec2 instance.

- Use SSH to connect to your Ec2 instance.
- Use the following Command to list the available block device.

1. Lsblk

```
[root@ip-172-31-18-75 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0   20G  0 disk
├─xvda1   202:1    0   20G  0 part /
├─xvda127 259:0    0    1M  0 part
└─xvda128 259:1    0   10M  0 part /boot/efi
xvdf      202:80   0  100G  0 disk
```

2. mkfs.xfs /dev/xvdf

```
[root@ip-172-31-18-75 ~]# mkfs.xfs /dev/xvdf
meta-data=/dev/xvdf              isize=512    agcount=4, agsize=6553600 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=1, rmapbt=0
         =                       reflink=1    bigtime=1 inobtcount=1
data     =                       bsize=4096   blocks=26214400, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0, ftype=1
log      =internal log           bsize=4096   blocks=16384, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
```

3. mount /dev/xvdf /home/ec2-user

```
[root@ip-172-31-18-75 ~]# mount /dev/xvdf /home/ec2-user
```

4. lsblk

```
[root@ip-172-31-18-75 ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0   20G  0 disk
├─xvda1   202:1    0   20G  0 part /
├─xvda127 259:0    0    1M  0 part
└─xvda128 259:1    0   10M  0 part /boot/efi
xvdf      202:80   0  100G  0 disk /home/ec2-user
```

➔ **Permanent mount:**

- Open the /etc/fstab file in text editor:

  vi /etc/fstab

- Add the Following line to the end of the file:

  /dev/xvdf /home/ec2-user ext4 defaults,noatime 1 1

Save and exit the editor.

You can also verfity on the aws console the new EBS volume has been successfully added and mounted.