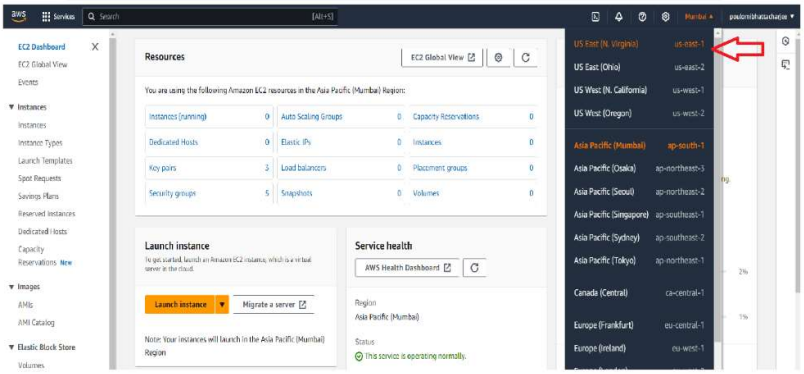
Tasks To Be Performed:

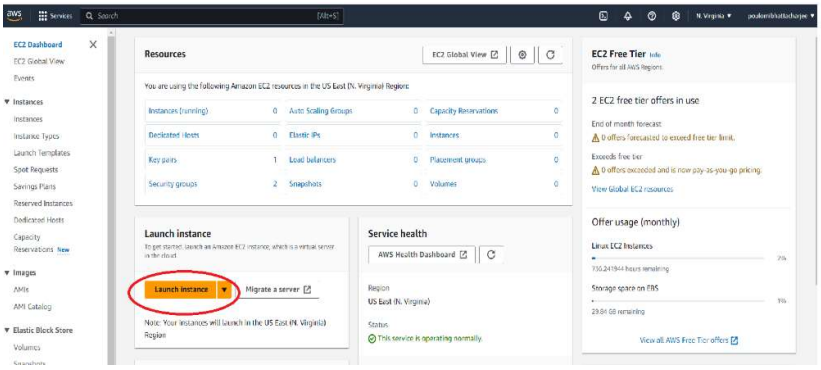
1. Create an instance in the US-East-1 (N. Virginia) region with Linux OS and manage the requirement of web servers of your company using AMI.
2. Replicate the instance in the US-West-2 (Oregon) region.
3. Build two EBS volumes and attach them to the instance in the US-East-1 (N. Virginia) region.
4. Delete one volume after detaching it and extend the size of the other volume.
5. Take backup of this EBS volume.

Solution:

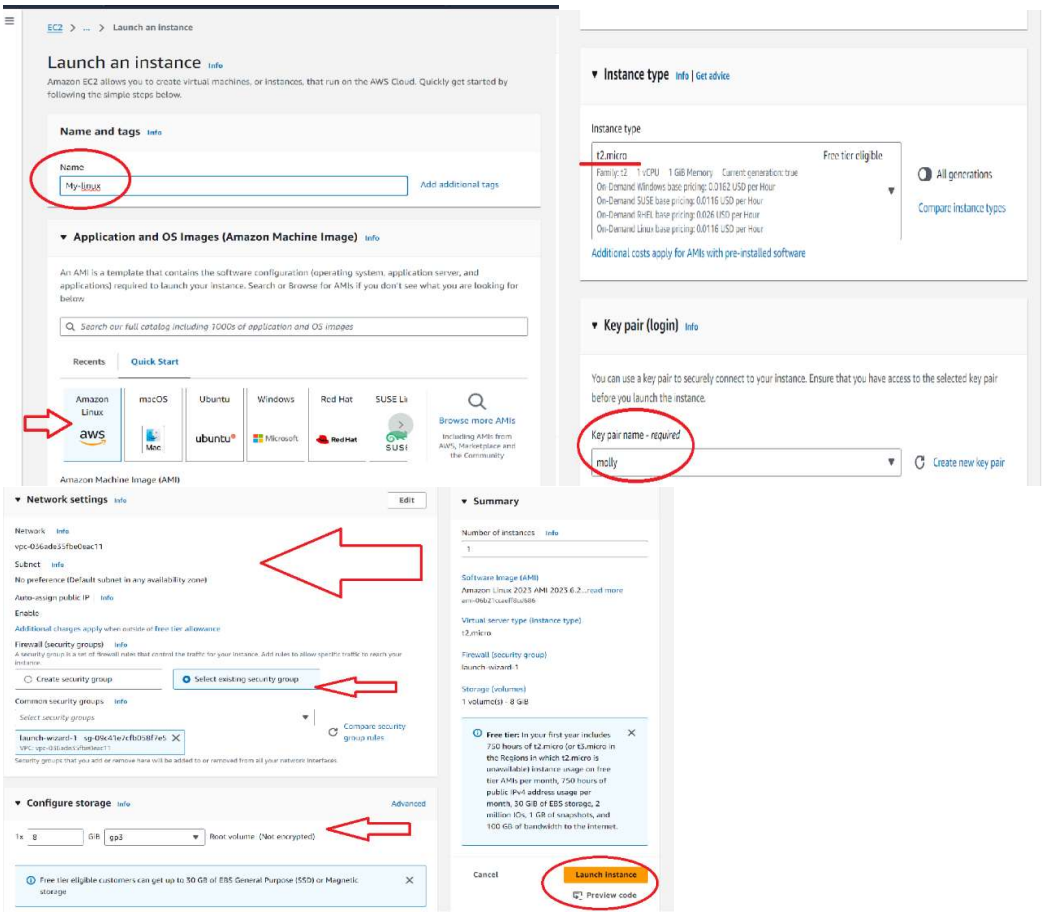
1) Login to your AWS account and go to the EC2 console . Change the region to US-East-1 (N.Virginia) from the up right corner.



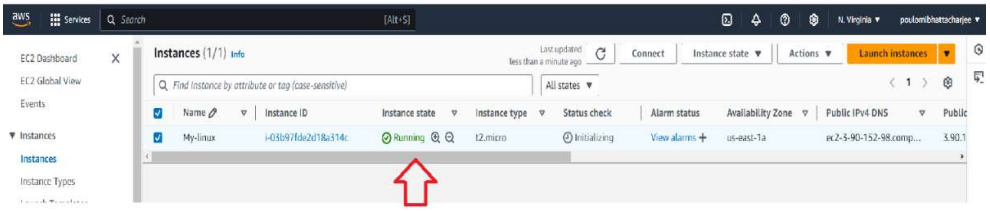
2) Click launch instance



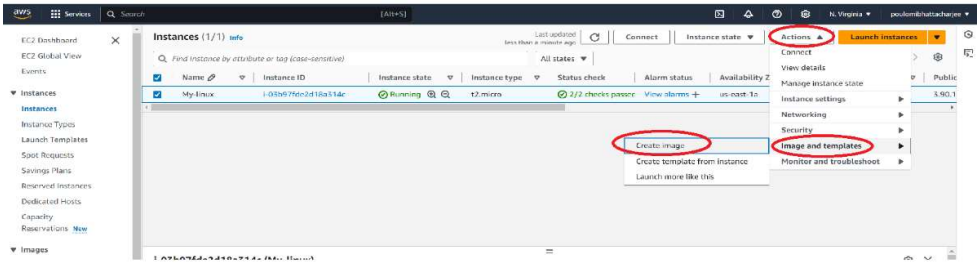
3) Give a name and choose AMI amazon linux. Choose instance type and key pair login. Choose network settings , firewall security groups and configure storage. Cclick launch instance.



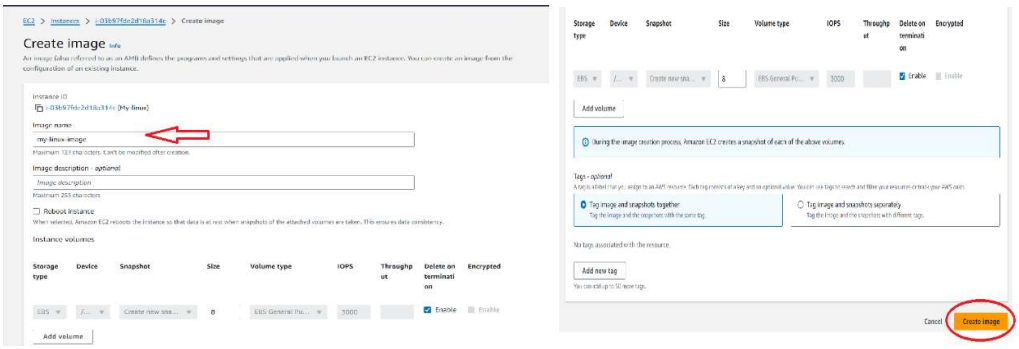
4) An instance in the US-East-1 (N. Virginia) region with Linux OS is created.



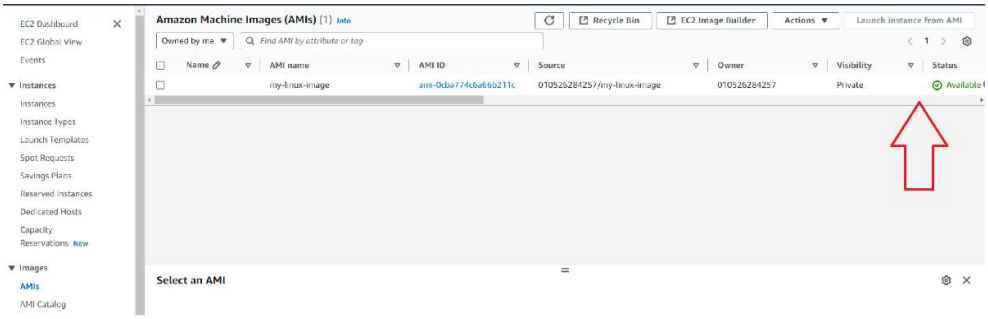
5) To Replicate the instance in the US-West-2 (Oregon) region we need to create AMI of our instance. Select the instance , click actions – image & templates – create image.



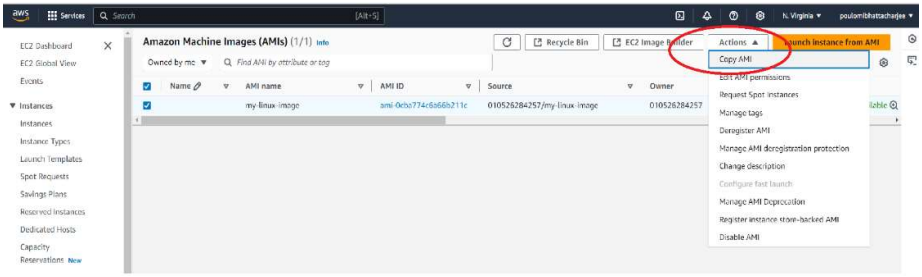
6) Give a name , choose other optional and then create image.



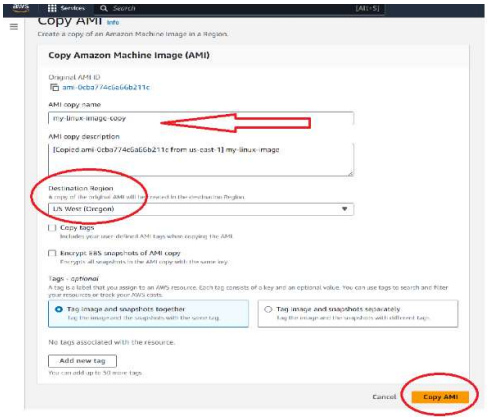
7) To check our image . click AMIs under images tab and we can see our EC2 image is available.



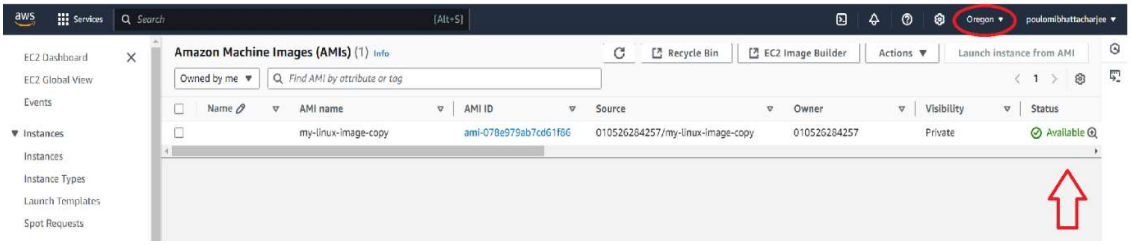
8) Select the AMI ,click actions and then copy AMI.



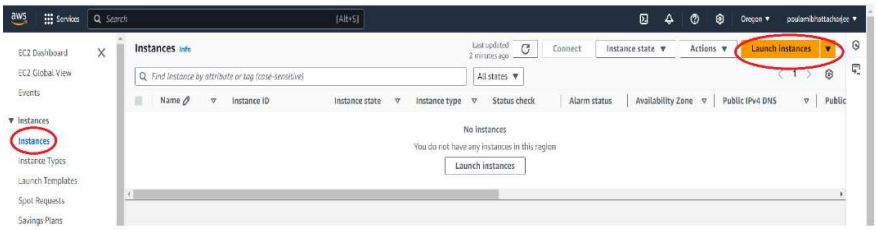
9) Give a name , choose the destination region , choose other parameters and click copy AMI.



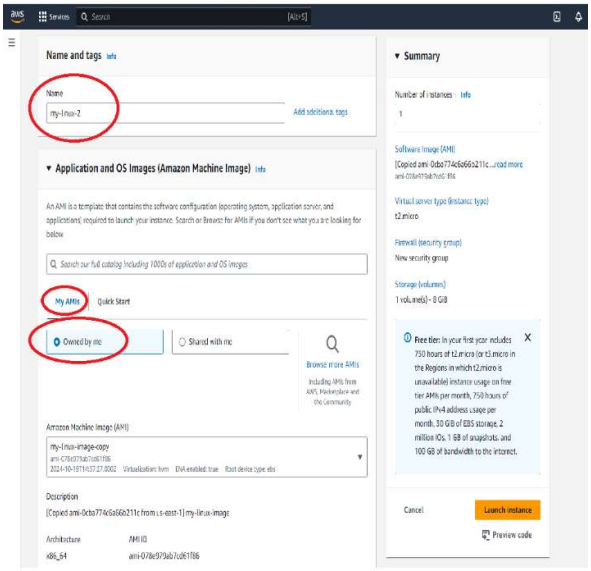
10) Change the region to US-West-2 (Oregon) region . click AMI and we can see our copy image.



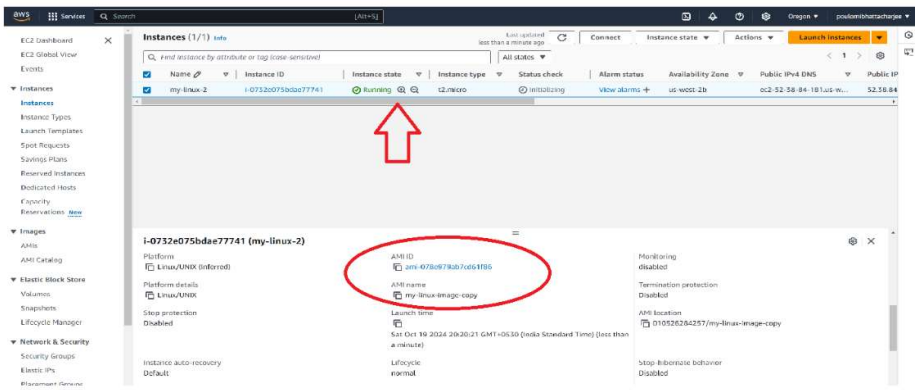
11) Click instances and launch instance.



12) Give name, choose My AMIs and then owned by me. We can see the EC2 image with all the details.

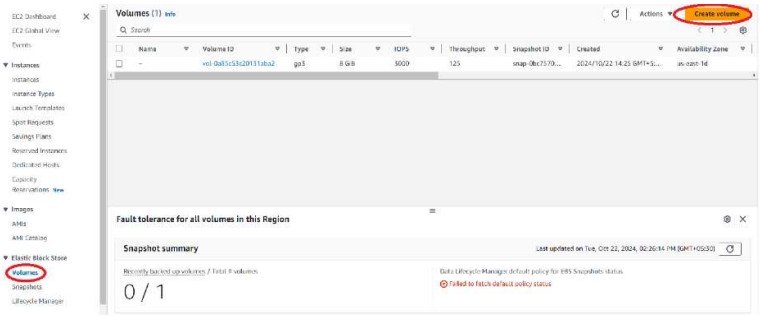


13) Choose instance type and key pair login.
Choose network settings , firewall security groups and configure storage. click launch instance. The instance is running and we can see the AMI . US-East-1 (N.Virginia) EC2 is replicated .

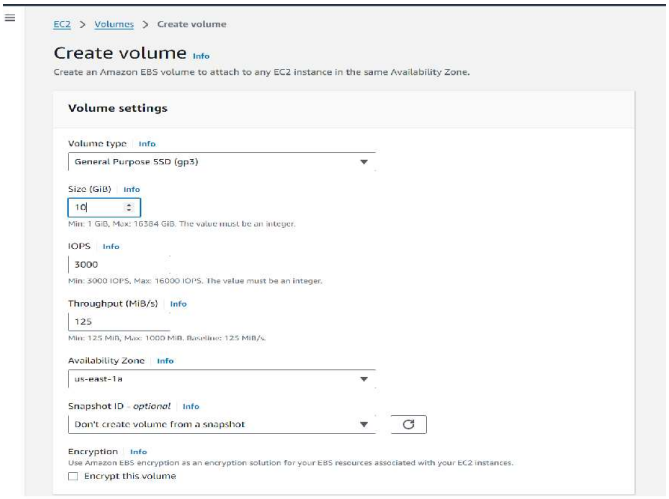


Build two EBS volumes and attach them to the instance in the US-East-1 (N. Virginia) region.

1) Click on volumes and then create volume.

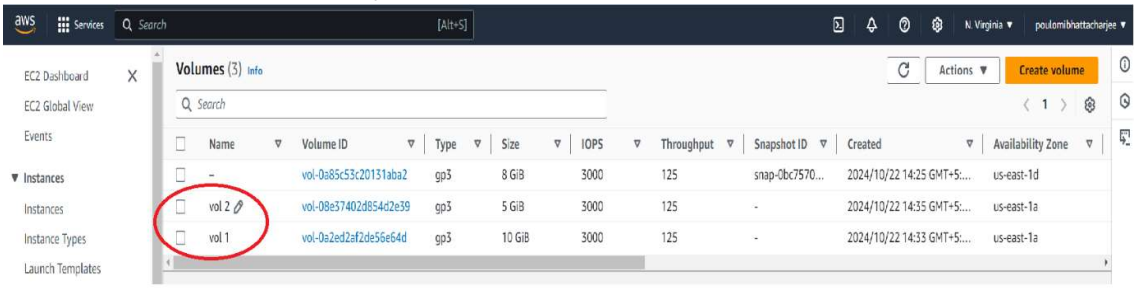


2) Choose volume type, size, IOPS, throughput , AZ, encryption etc according to the requirement and then click create.

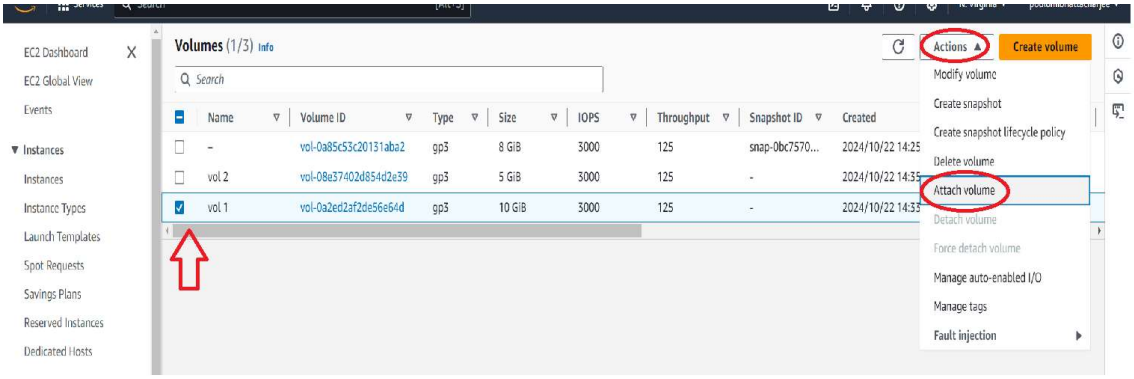


3) Create one more volume same steps as above.

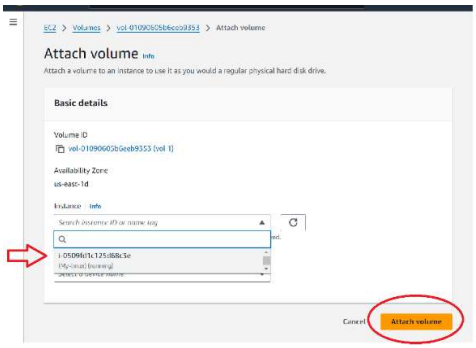
4) Two volumes are created but they are not attached to our EC2.

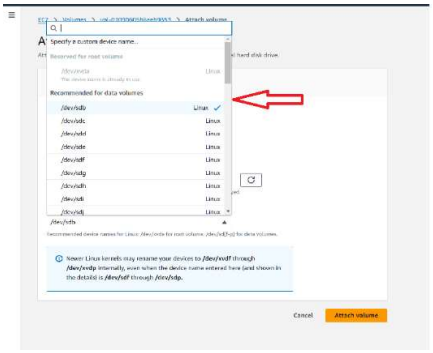


5) Select vol 1 and click actions and then attach volume.

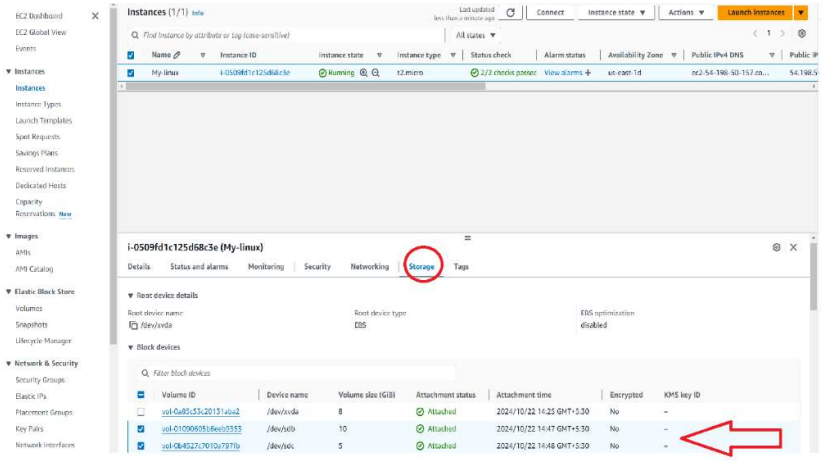


6) Choose the instance we want the volume to be attached, choose the device name and click attach.

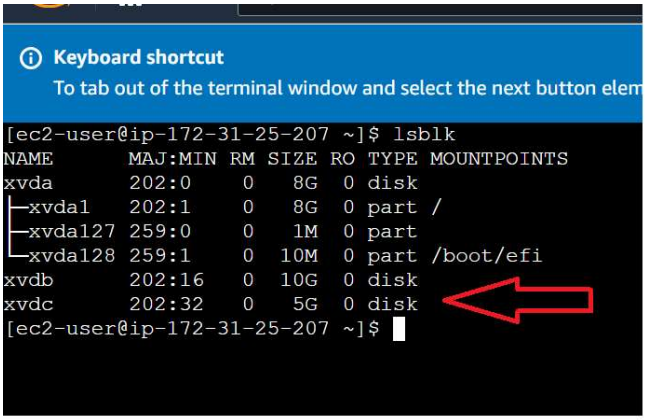




7) Same steps follow for vol 2 attachment.
8) We can check in storage tab that both the volumes are attached to the instance.



9) Connect to the EC2 using instance connect. While using lsblk command we cant see the volumes . The root is xvda and both the volumes are xvdb and xvdc which are not mounted.



10) We have to mount the volumes. First create a file system .ext4 with the vol name. command : sudo mkfs.ext4 /dev/xvdb.

```
[ec2-user@ip-172-31-25-207 ~]$ sudo mkfs.ext4 /dev/xvdb
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 2621440 4k blocks and 655360 inodes
Filesystem UUID: 9c3b24df-489d-4c37-9410-87a076e1f652
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-25-207 ~]$
```

11) Make a new dir where the volume will be mounted. Command: sudo mkdir /newvol.

```
Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-25-207 ~]$ ^C
[ec2-user@ip-172-31-25-207 ~]$ sudo mkdir /newvol
[ec2-user@ip-172-31-25-207 ~]$
```

12) Now we can mount the vol . command : sudo mount /dev/xvdb /newvol.

```
Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-25-207 ~]$ ^C
[ec2-user@ip-172-31-25-207 ~]$ sudo mkdir /newvol
[ec2-user@ip-172-31-25-207 ~]$ ^C
[ec2-user@ip-172-31-25-207 ~]$ sudo mount /dev/xvdb /newvol
[ec2-user@ip-172-31-25-207 ~]$
```

13) Check using lsblk command.

```
[ec2-user@ip-172-31-25-207 ~]$ lsblk
NAME      MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0   8G  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
xvdb      202:16   0  10G  0 disk /newvol
xvdc      202:32   0   5G  0 disk
[ec2-user@ip-172-31-25-207 ~]$
```

14) Same steps to be followed for mounting /dev/xvdc. We can see both the volumes are mounted.

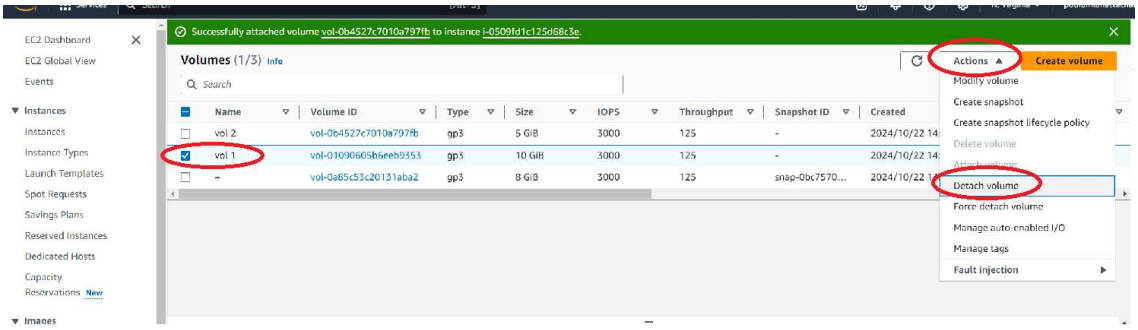
```
NAME      MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0   8G  0 disk
├─xvda1   202:1    0   8G  0 part /
├─xvda127 259:0    0   1M  0 part
└─xvda128 259:1    0  10M  0 part /boot/efi
xvdb      202:16   0  10G  0 disk /newvol
xvdc      202:32   0   5G  0 disk /newvol2
[ec2-user@ip-172-31-25-207 ~]$
```

Delete one volume after detaching it and extend the size of the other volume. Take backup of this EBS volume.

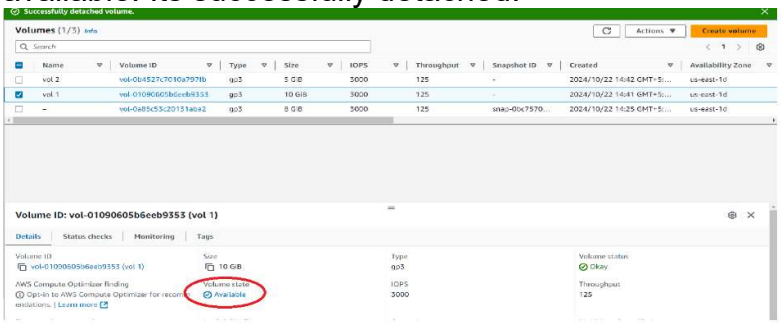
1) Detach one volume by unmounting it first.
   Command : sudo umount /newvol. Check with lsblk command. We can see the volume is unmounted.

```
[ec2-user@ip-172-31-25-207 ~]$ sudo umount /newvol
[ec2-user@ip-172-31-25-207 ~]$ lsblk
NAME      MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda      202:0    0   8G  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
xvdb      202:16   0  10G  0 disk
xvdc      202:32   0   5G  0 disk /newvol2
[ec2-user@ip-172-31-25-207 ~]$
```

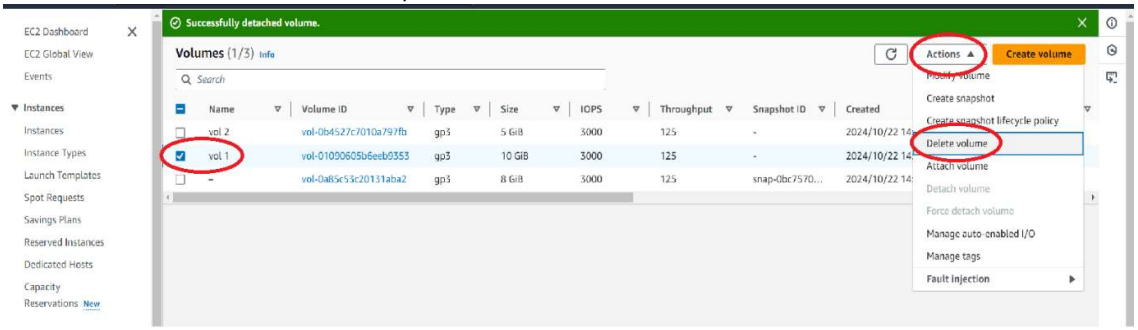
2) Go to the manament console . select the volume, click actions and detach volume.



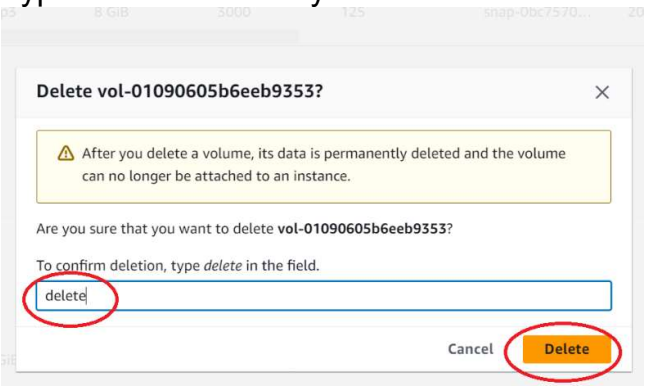
3) To check, select the volume detached and we can see its state is available. Its successfully detached.



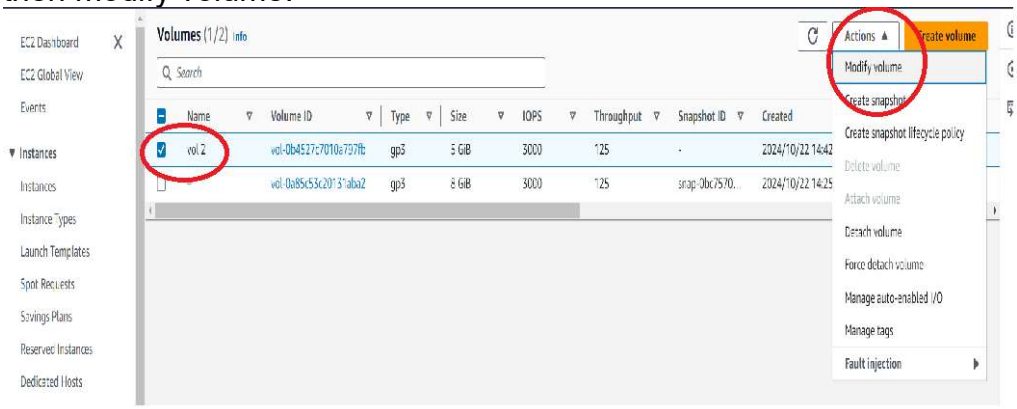
4) To delete select the volume, click actions and delete volume.



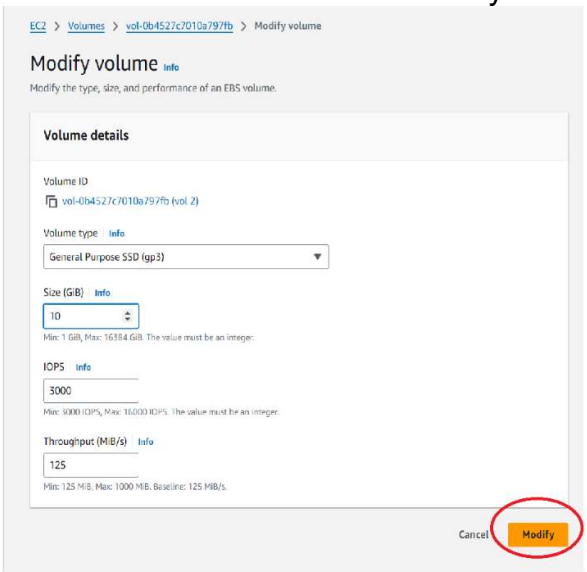
5) Type delete and finally vol is deleted.



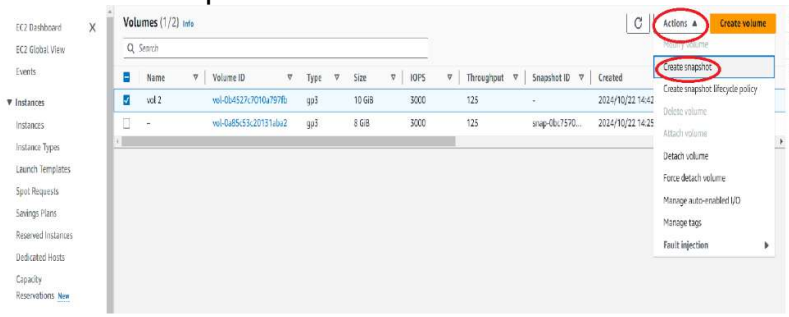
6) To extend the size of other volume. Select the volume, click actions and then modify volume.



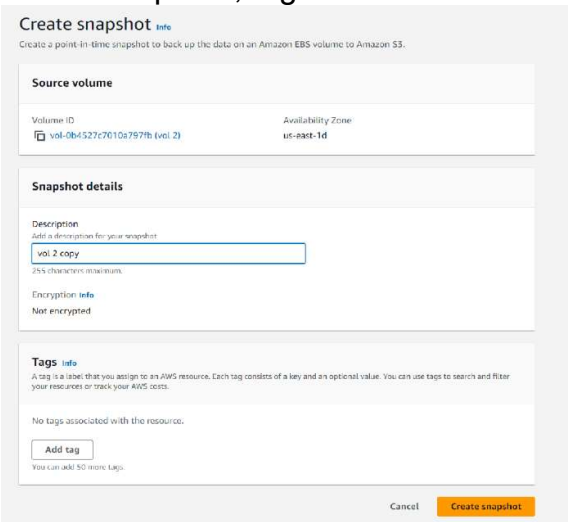
7) Extend the volume and click modify.



8) To take backup . select the volume click actions and create snapshot.



9) Add description , tags and click create snapshot.



10) To check, go to snapshots and we can see the backup of or volume.