Module-2: Case Study

AWS Solutions Architect Training

Problem Statement

You work for XYZ Corporation. Your corporation is working on an application and they require secured web servers on Linux to launch the application.

You have been asked to:

1. Create an Instance in 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 us-west-2 (Oregon) region

3. Build two EBS volumes and attach them to the instance in us-east-1 (N. Virginia) region

4. Delete one volume after detaching it and extend the size of other volume

5. Take backup of this EBS volume

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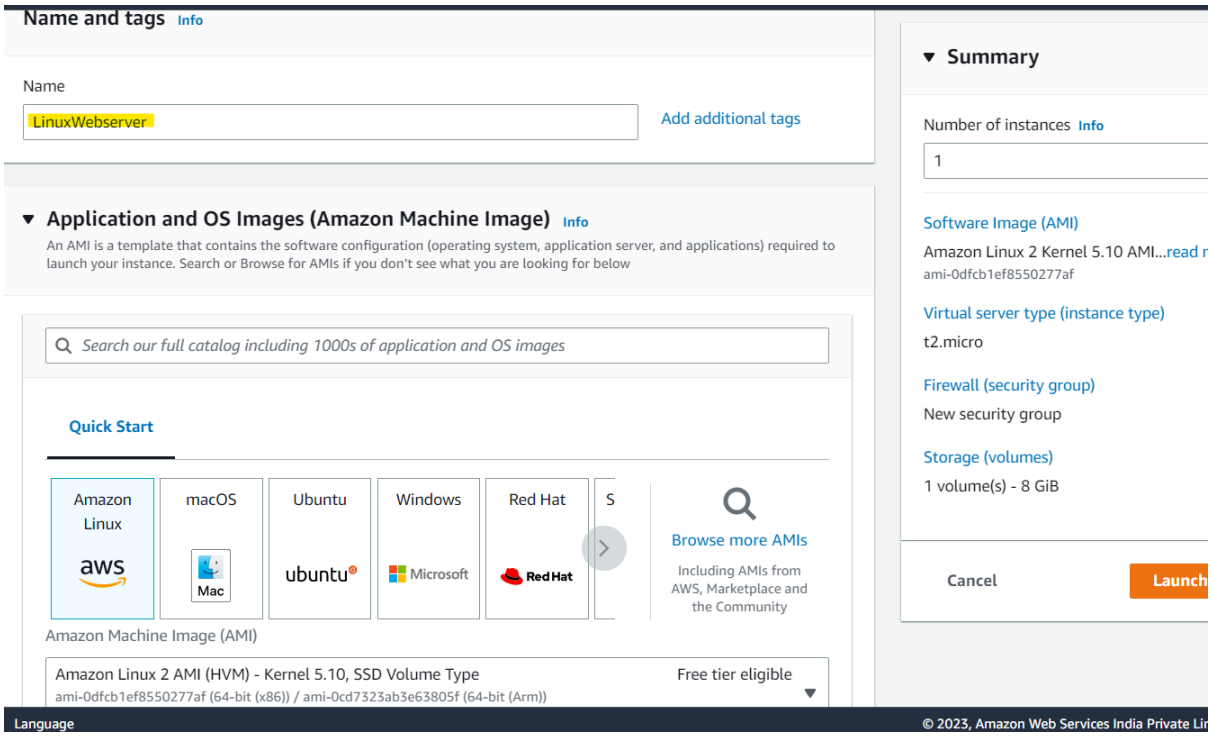
1. Create an Instance in us-east-1 (N. Virginia) region with Linux OS and manage the requirement of web servers of your company using AMI



Create key pair

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** Learn more

Key pair name

KP1702

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

Key pair type

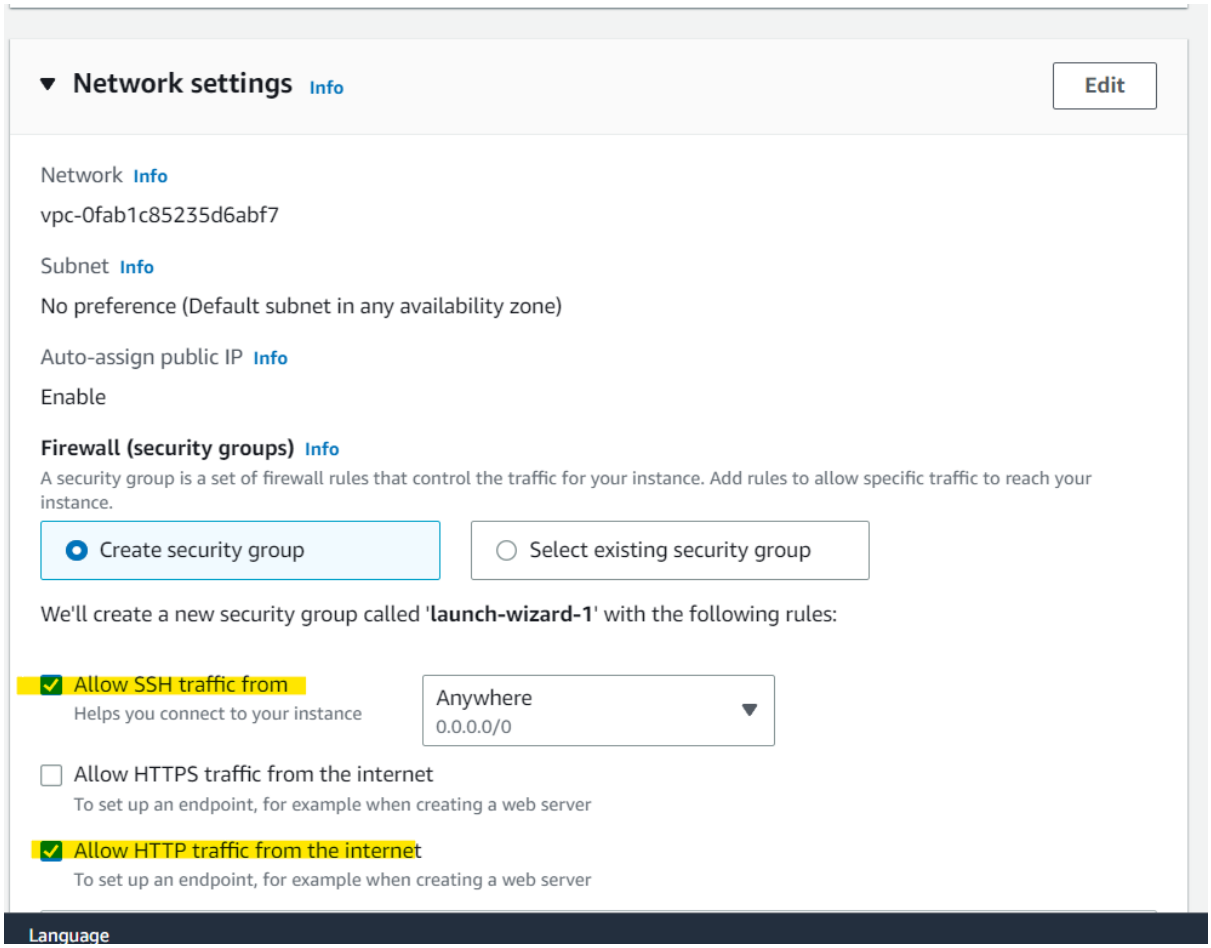
- (•) RSA
  RSA encrypted private and public key pair
- ( ) ED25519
  ED25519 encrypted private and public key pair (Not supported for Windows instances)

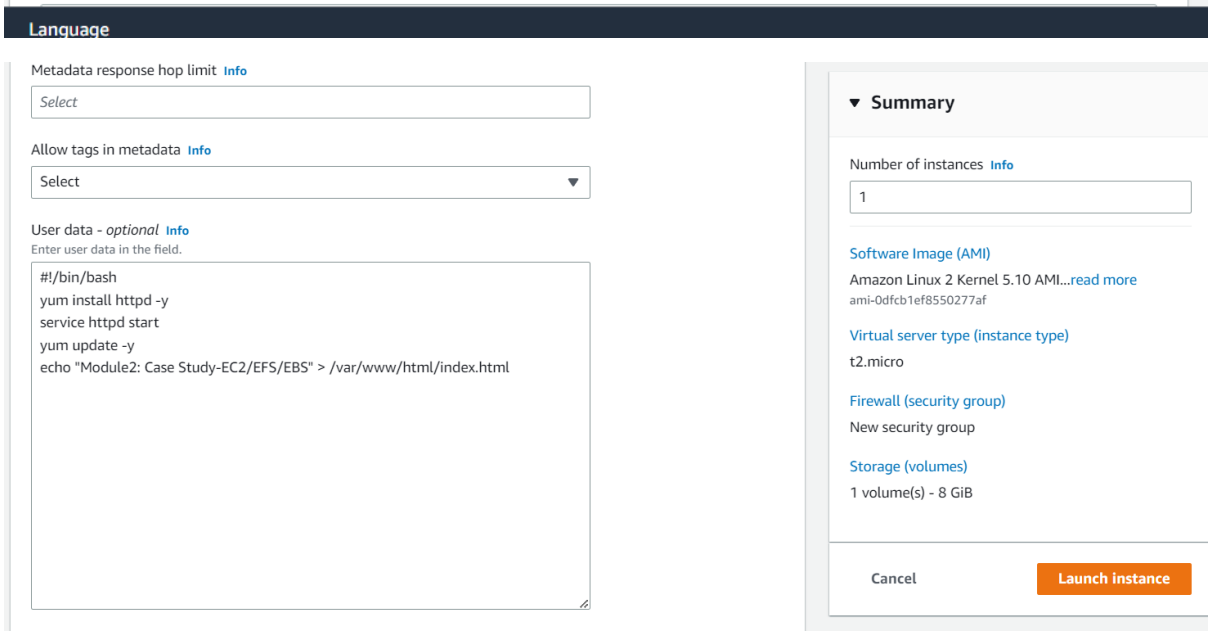
Private key file format

- (•) .pem
  For use with OpenSSH
- ( ) .ppk
  For use with PuTTY

Cancel | Create key pair

Module-2: Case Study





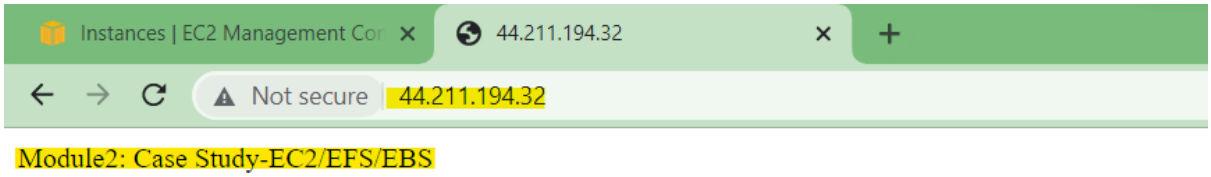
Module-2: Case Study

```
root@ip-172-31-93-238:/var/www/html
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-93-238 ~]$ sudo su
[root@ip-172-31-93-238 ec2-user]# sudo apt-get update
sudo: apt-get: command not found
[root@ip-172-31-93-238 ec2-user]# cd /var/www/
[root@ip-172-31-93-238 www]# ls
cgi-bin  html
[root@ip-172-31-93-238 www]# cd html/
[root@ip-172-31-93-238 html]# ls
index.html
[root@ip-172-31-93-238 html]# cat index.html
Module2: Case Study-EC2/EFS/EBS
[root@ip-172-31-93-238 html]#
```

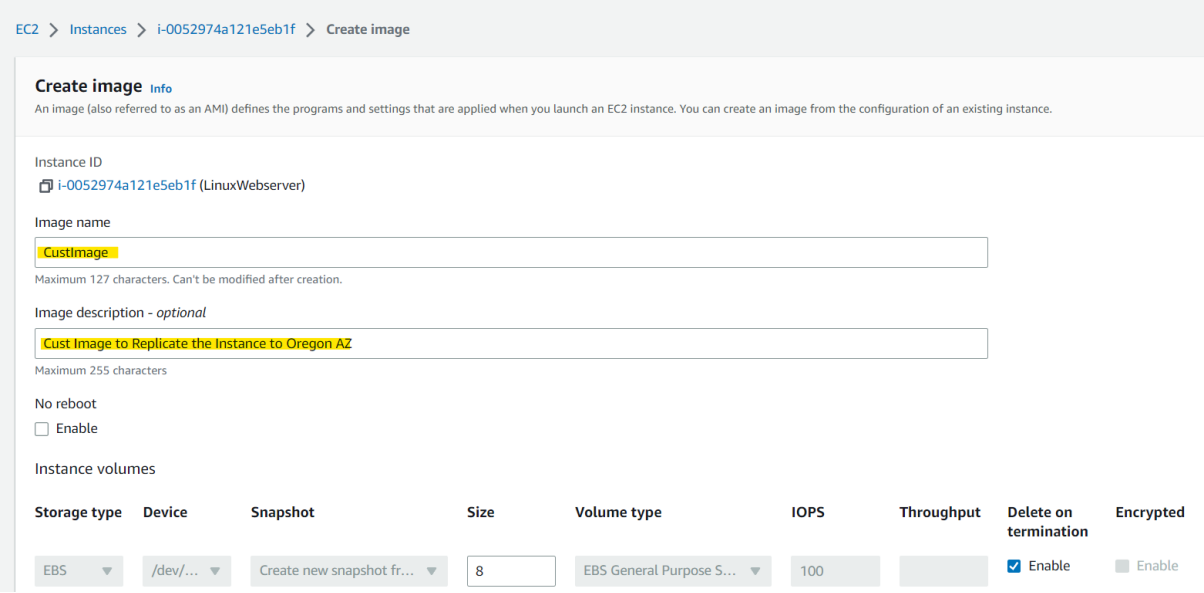
Webpage:



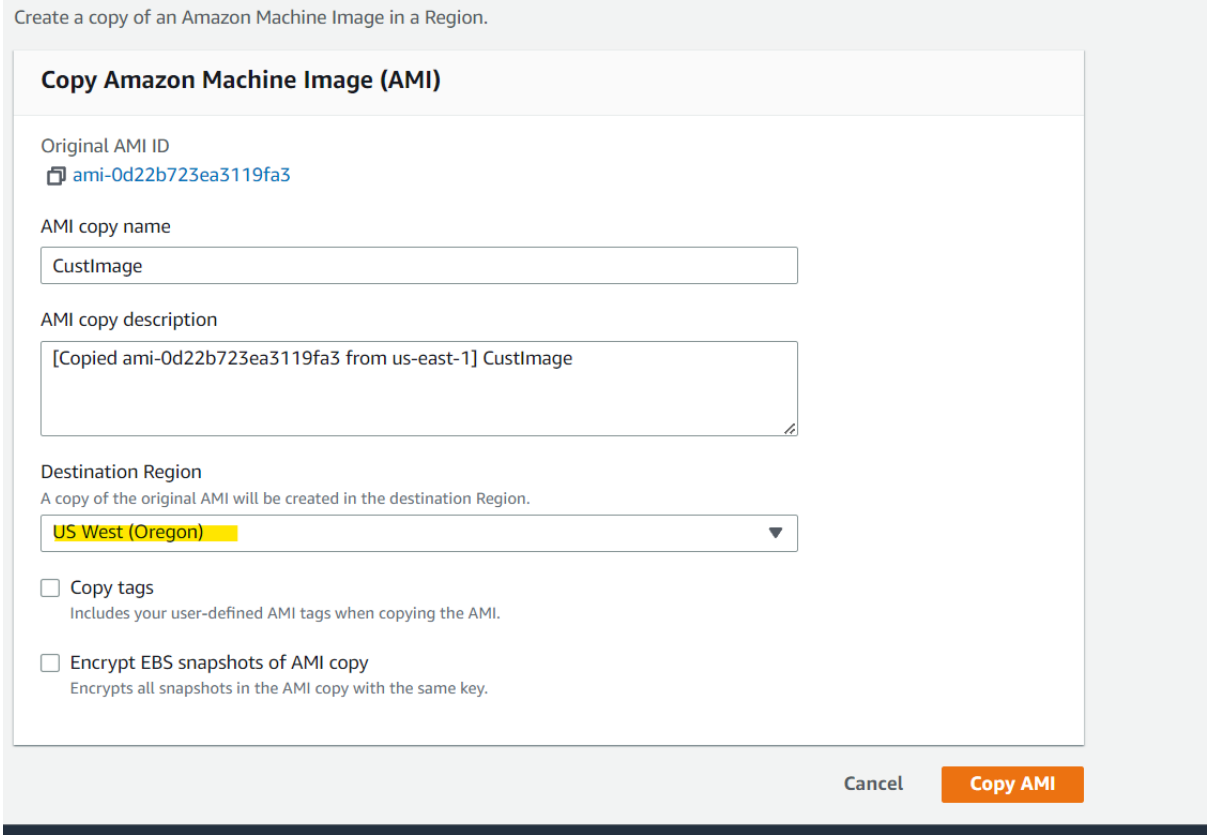
Module-2: Case Study

2. Replicate the instance in us-west-2 (Oregon) region

Creating Image from existing Instance :

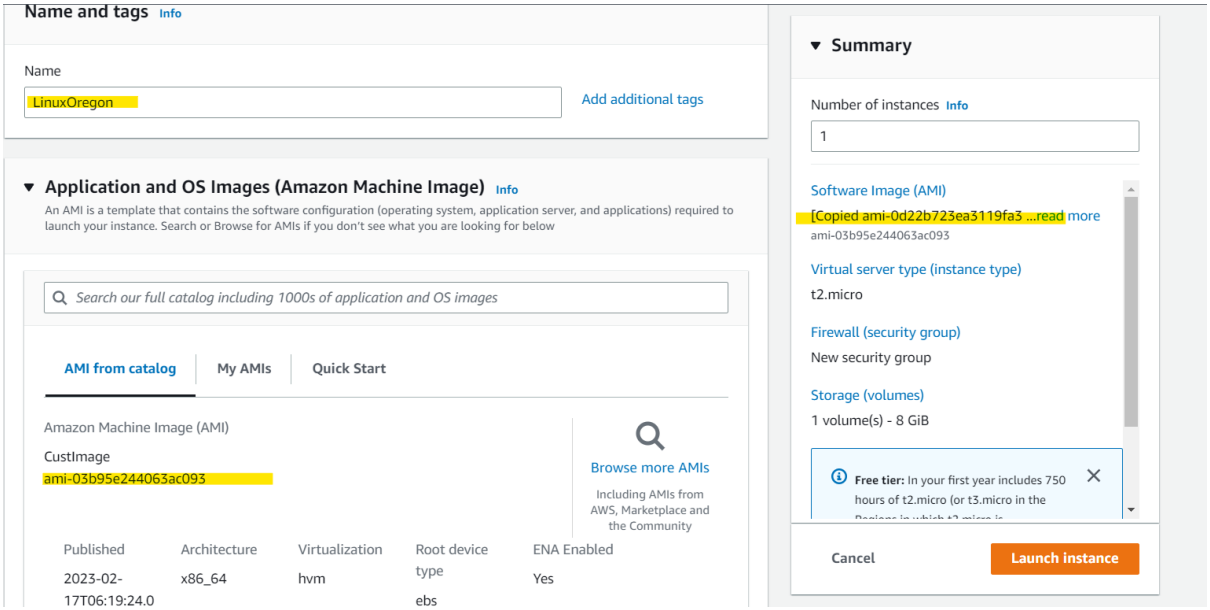


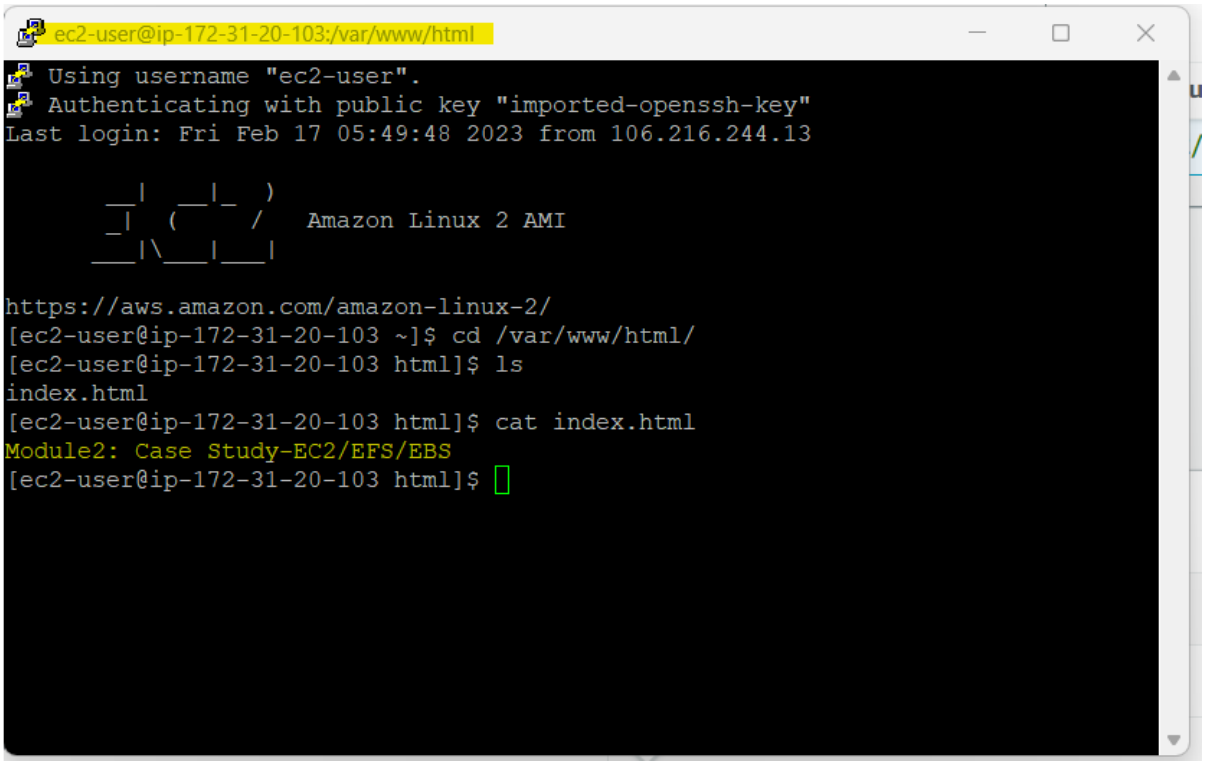
Copy image to US West Oregon:



Module-2: Case Study

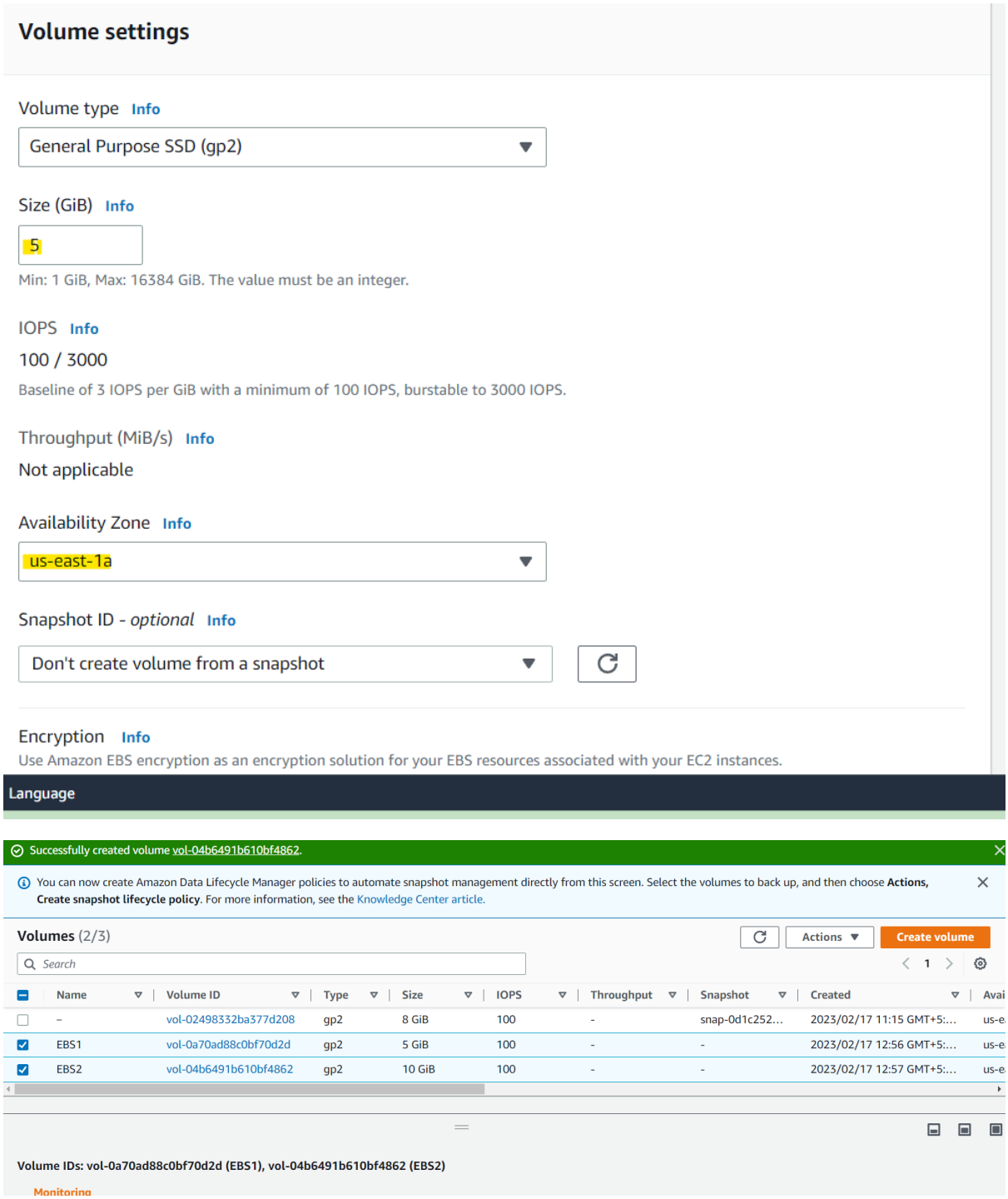
Instance Launch in Oregon from copied Image:





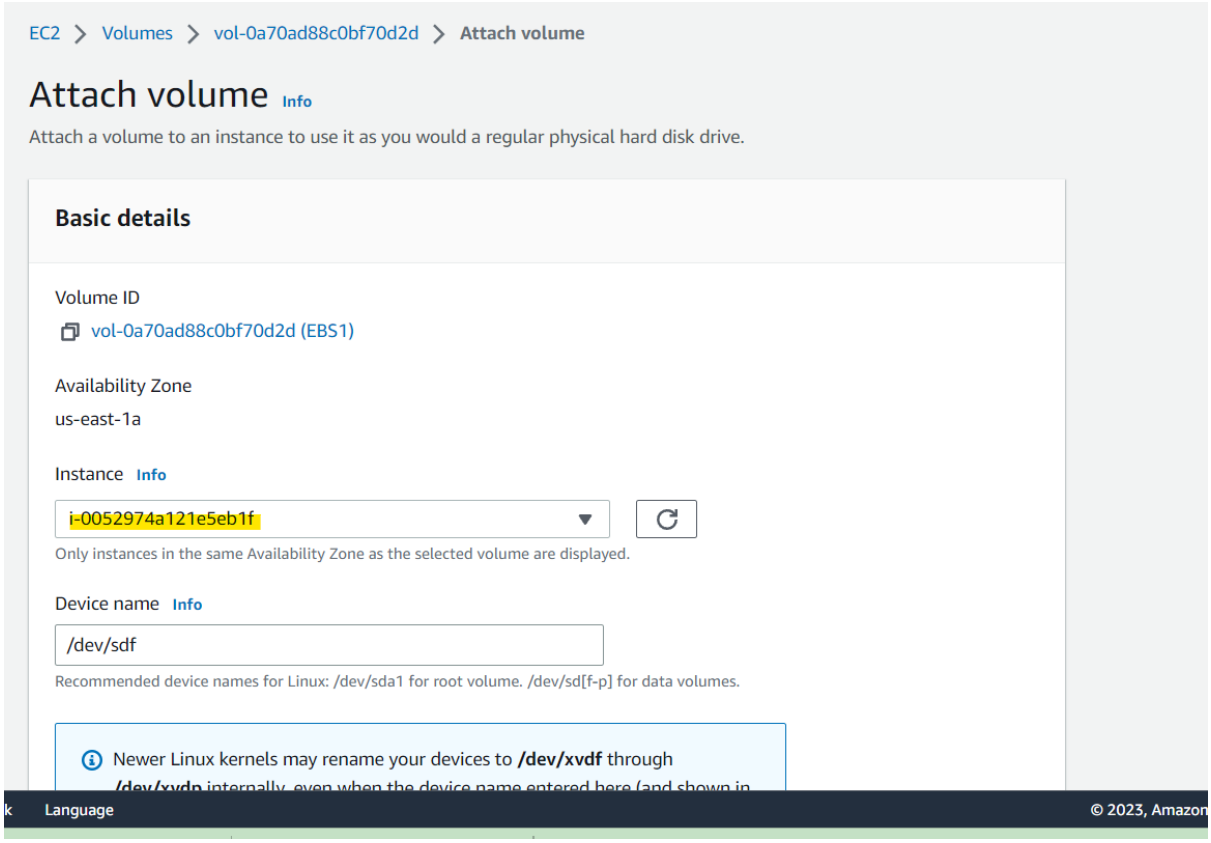
Module-2: Case Study

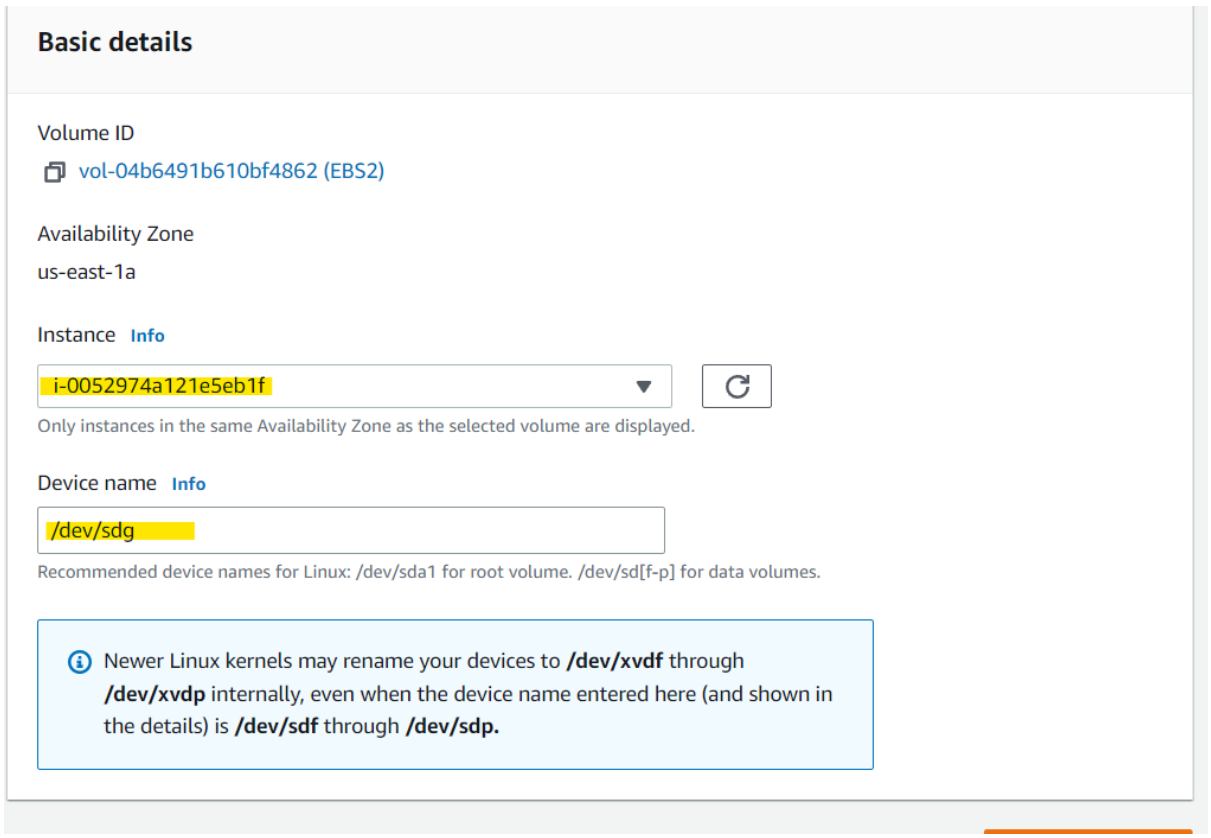
3. Build two EBS volumes and attach them to the instance in us-east-1 (N. Virginia) region



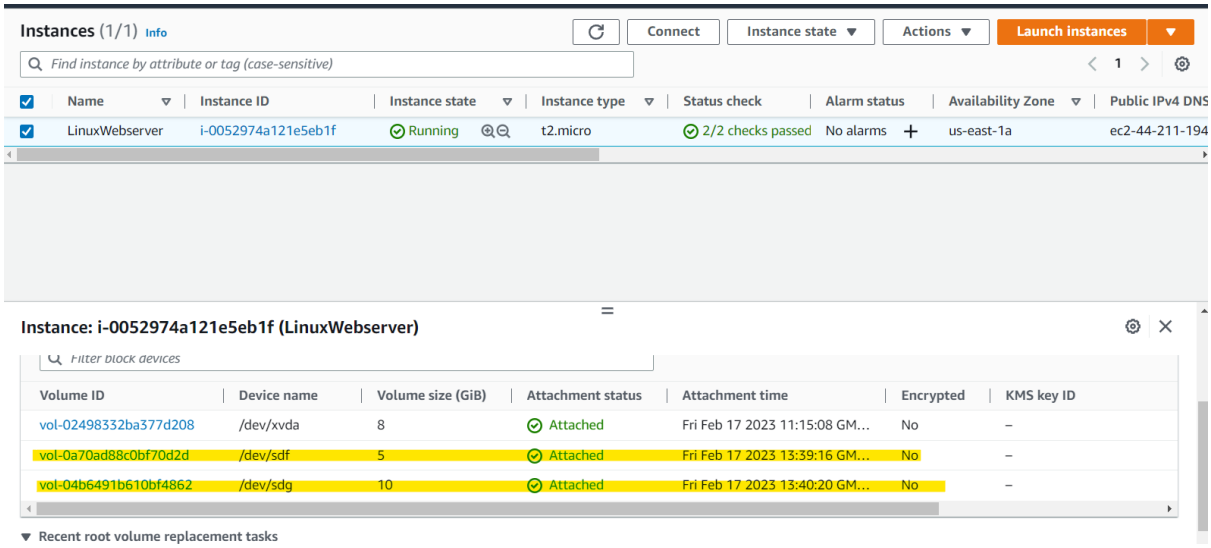
Attaching Volume:

Module-2: Case Study





Module-2: Case Study



Create file systems for both the ebs volumes as ext4 type:

Module-2: Case Study

```
[ec2-user@ip-172-31-93-238 ~]$ lsblk
NAME    MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda    202:0    0   8G  0 disk
└─xvda1 202:1    0   8G  0 part /
xvdf    202:80   0   5G  0 disk
xvdg    202:96   0  10G  0 disk
[ec2-user@ip-172-31-93-238 ~]$ file -s /dev/xvdf
/dev/xvdf: no read permission
[ec2-user@ip-172-31-93-238 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: data
[ec2-user@ip-172-31-93-238 ~]$ sudo file -s /dev/xvdg
/dev/xvdg: data
[ec2-user@ip-172-31-93-238 ~]$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
327680 inodes, 1310720 blocks
65536 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=1342177280
40 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-93-238 ~]$ sudo mkfs -t ext4 /dev/xvdg
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
```

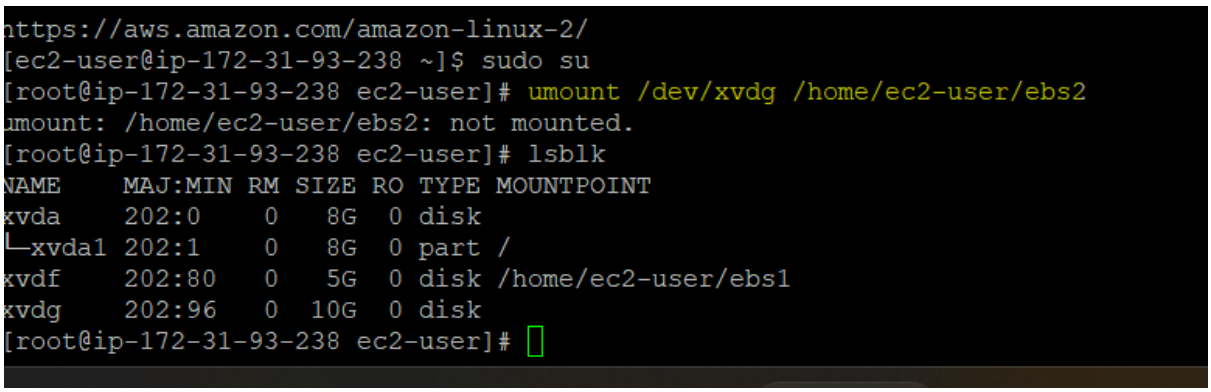
Mounting the volumes:

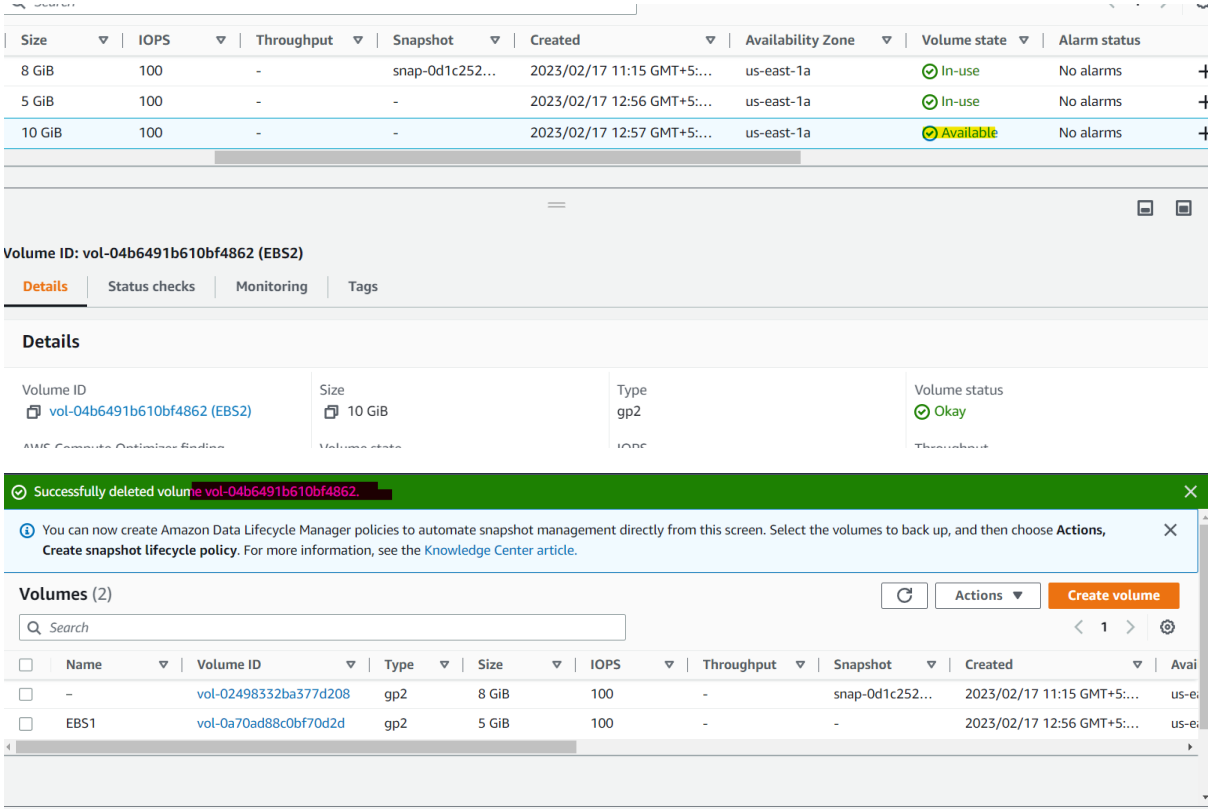
```
[ec2-user@ip-172-31-93-238 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: Linux rev 1.0 ext4 filesystem data, UUID=8c2c88af-bcfe-4dee-af9a-8d09047d256b (extents) (64bit) (large files) (huge files)
[ec2-user@ip-172-31-93-238 ~]$ sudo file -s /dev/xvdg
/dev/xvdg: Linux rev 1.0 ext4 filesystem data, UUID=49db7568-4ea2-42ef-8868-e9041a62d537 (extents) (64bit) (large files) (huge files)
[ec2-user@ip-172-31-93-238 ~]$ mkdir ebs1 ebs2
[ec2-user@ip-172-31-93-238 ~]$ ls
ebs1  ebs2
[ec2-user@ip-172-31-93-238 ~]$ pwd
/home/ec2-user
[ec2-user@ip-172-31-93-238 ~]$ sudo mount /dev/xvdf /home/ec2-user/ebs1
[ec2-user@ip-172-31-93-238 ~]$ sudo mount /dev/xvdg /home/ec2-user/ebs2
[ec2-user@ip-172-31-93-238 ~]$ lsblk
NAME    MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda    202:0    0   8G  0 disk
└─xvda1 202:1    0   8G  0 part /
xvdf    202:80   0   5G  0 disk /home/ec2-user/ebs1
xvdg    202:96   0  10G  0 disk /home/ec2-user/ebs2
[ec2-user@ip-172-31-93-238 ~]$
```

Module-2: Case Study

4. Delete one volume after detaching it and extend the size of other volume

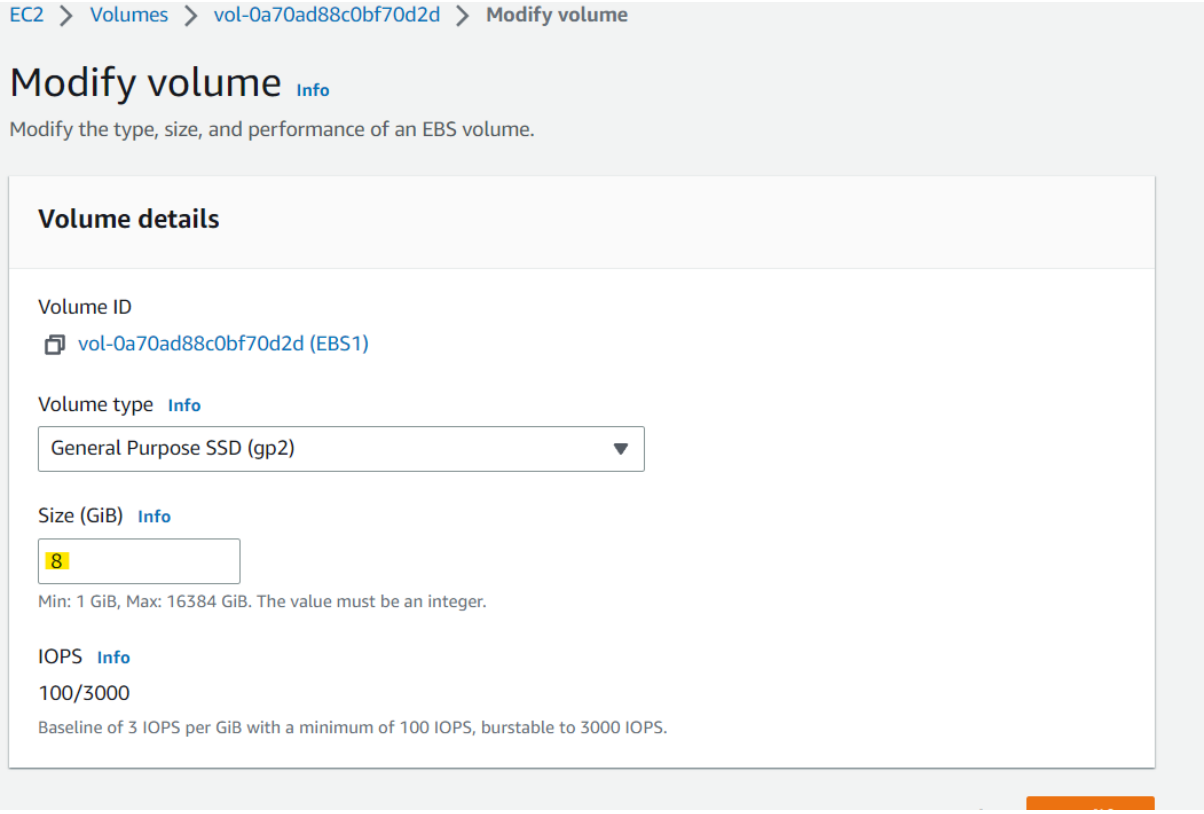
Unmounting and detaching and deleting ebs2 volume:

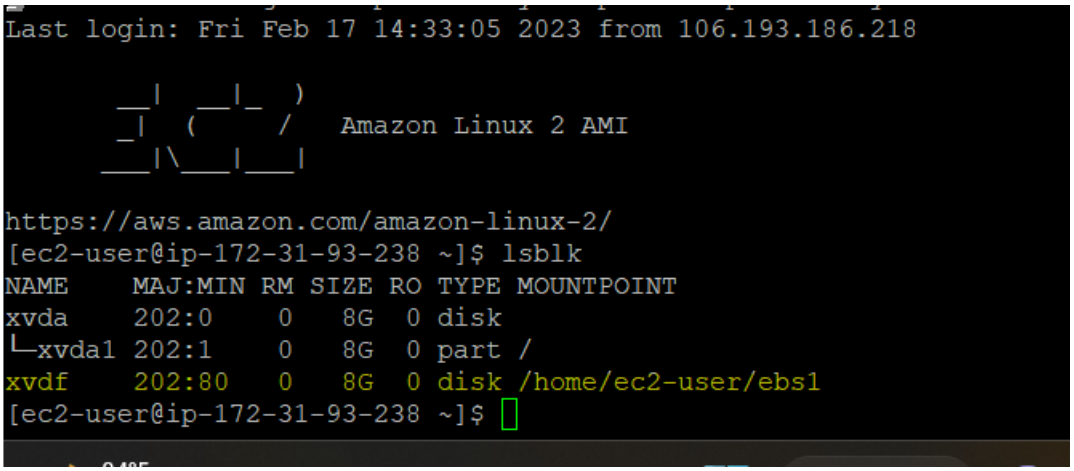




Extending size:

Module-2: Case Study





Module-2: Case Study

5. Take backup of this EBS volume