

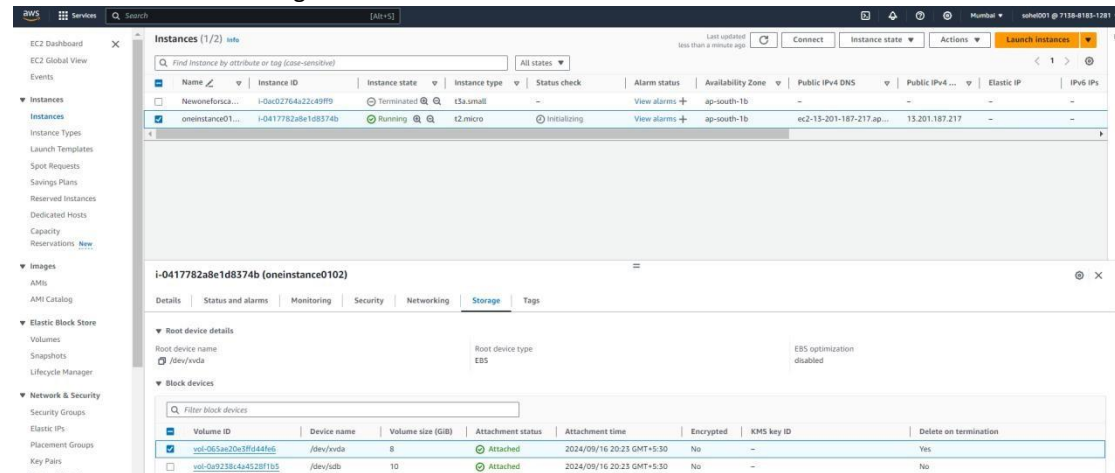
## EBS

### Extend the size of root EBS

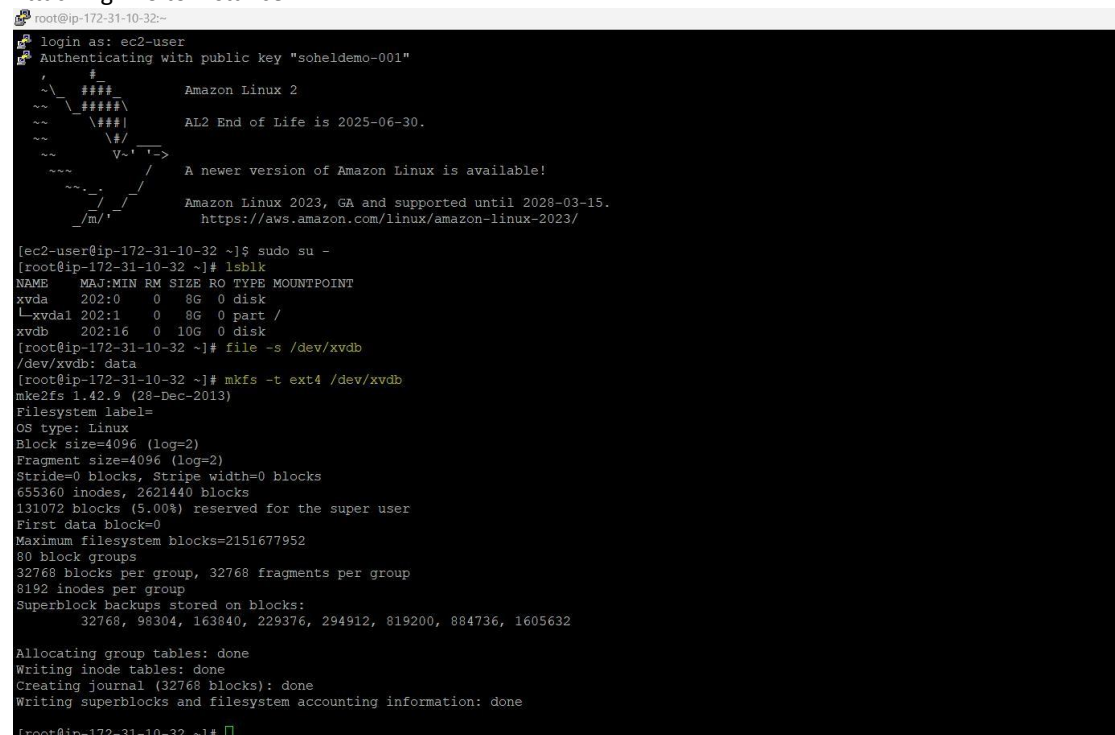
#### Task 1

#### Create One instance having attached root and ebs volume

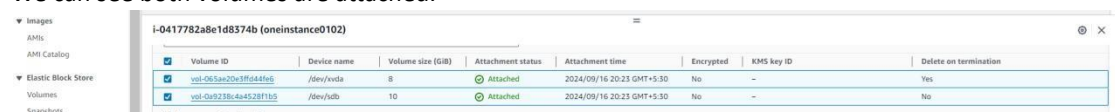
#### Create One instance having attached root and ebs volume



#### Attaching EBS to instance



We can see both volumes are attached.



#### Increase the size of root EBS volume

1. If we need to increase the size of root ebs volume snapshot is required. (Snapshot is chargeable).

Size of snapshot = size of volume)

Create snapshot of root ebs volume

Resource type: **Volume** (Create a snapshot from a specific volume.)

Volume ID: **vol-0a5ef20e3f1c44feb**

Snapshot details:

Description: **snapshots of root ebs volume**

Encryption: **Not encrypted**

Tags: No tags associated with the resource.

**Create snapshot**

Successfully created snapshot snap-0924f9793da0952a0

Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started	Progress	Encryption	KMS key ID
-	snap-0924f9793da0952a0	8 GiB	snapshots of root ebs volume	Standard	Completed	2024/09/16 20:47 GMT+5:30	Available (100%)	Not encrypted	-

2. Create volume using snapshot **make Availability of zone and instance is same.**

Volume settings:

Snapshot ID: **snap-0924f9793da0952a0**

Volume type: **General Purpose SSD (gp3)**

Size (GiB): **15**

IOPS: **3000**

Throughput (MiB/s): **125**

Availability Zone: **ap-south-1b**

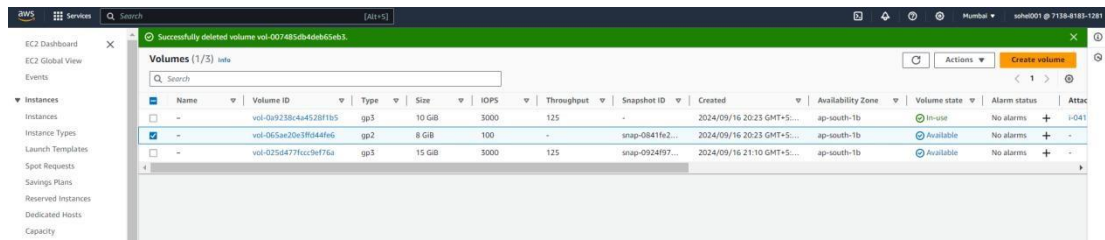
Fast snapshot restore: **Not enabled for selected snapshot**

Encrypt this volume: ☐

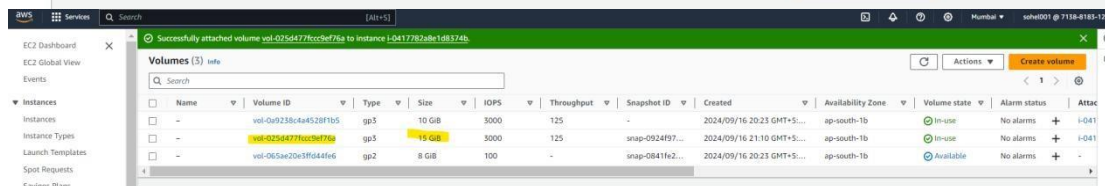
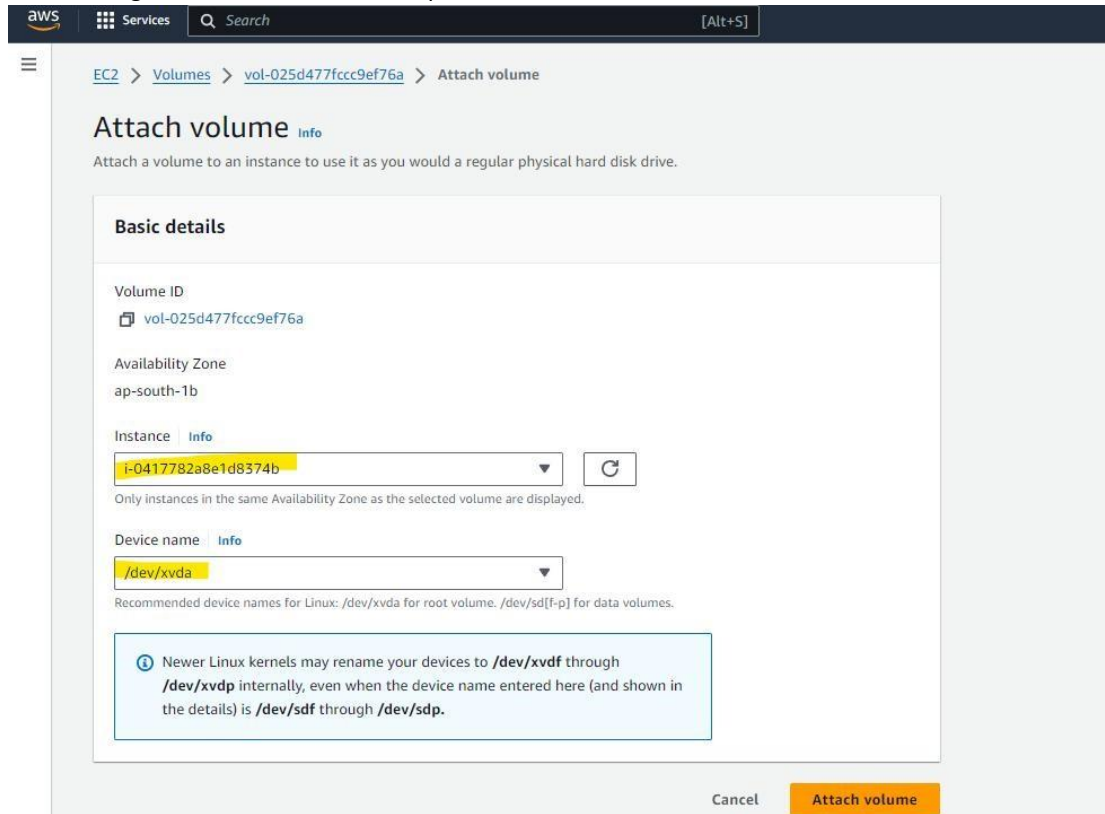
3. Stop instance

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
Newoneforca...	i-0a02764a23c49f9f9	Terminated	t3a.small	-	View alarms +	ap-south-1b	-	-	-	-
oneinstance01...	i-0417782ade1a8374b	Stopped	t2.micro	-	View alarms +	ap-south-1b	-	-	-	-

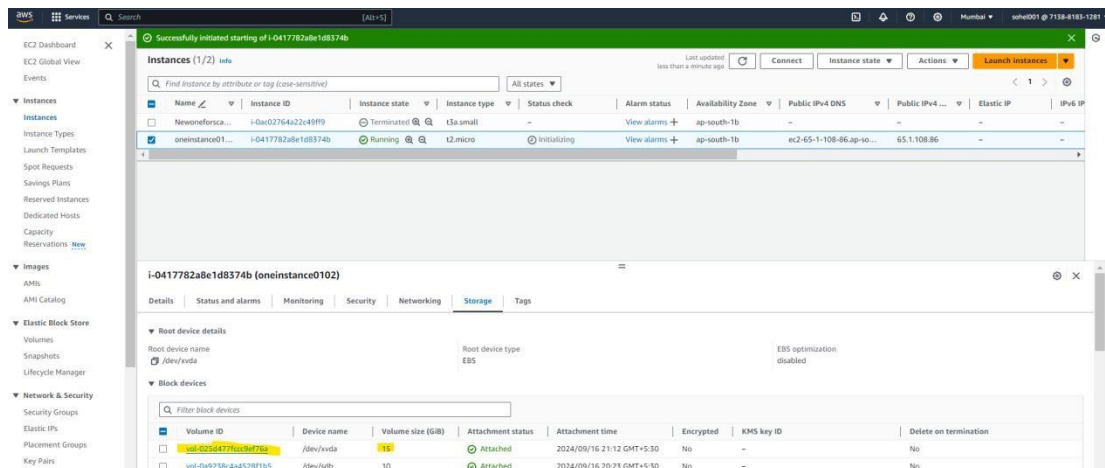
4. Detaching root ebs volume



## 5. Attaching root ebs volume from Snapshot to the instance



## 6. Start the instance we see the volume is extended



## Successfully extended root ebs volume to 15 gb

```
root@ip-172-31-10-32~  
login as: ec2-user  
Authenticating with public key "soheldemo-001"  
Last login: Mon Sep 16 14:57:12 2024 from 152.57.2.140  
  
#####  
Amazon Linux 2  
#####  
AL2 End of Life is 2025-06-30.  
#####  
A newer version of Amazon Linux is available!  
#####  
Amazon Linux 2023, GA and supported until 2028-03-15.  
https://aws.amazon.com/linux/amazon-linux-2023/  
/m/ ^  
[ec2-user@ip-172-31-10-32 ~]$ sudo su -  
Last login: Mon Sep 16 14:57:21 UTC 2024 on pts/0  
[root@ip-172-31-10-32 ~]# lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
xvda        202:0    0   15G  0 disk  
└─xvda1     202:1    0   15G  0 part /  
xvdb        202:16   0    10G  0 disk  
[root@ip-172-31-10-32 ~]# df -h  
Filesystem      Size  Used Avail Use% Mounted on  
devtmpfs        467M   0  467M   0% /dev  
tmpfs           477M   0  477M   0% /dev/shm  
tmpfs           477M  408K  476M   1% /run  
tmpfs           477M   0  477M   0% /sys/fs/cgroup  
/dev/xvda1      15G   1.8G   14G  12% /  
tmpfs           96M    0   96M   0% /run/user/1000  
[root@ip-172-31-10-32 ~]#
```

## 3. Increase the size of EBS Volume

Create one instance having Root EBS volume and EBS volume of 8gb & 5 gb each

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes sections like EC2 Dashboard, Instances, Elastic Block Store, and Network & Security. The main content area displays a list of EC2 instances. One instance, named 'extendebsvolume2020', is selected, and its details are shown in a modal window. The 'Storage' tab is active, showing the root device details and a list of attached block devices. The root device is an EBS volume of 15 GB. Two additional EBS volumes are attached: 'vol-086160989833c2edc' (8 GB) and 'vol-07a8d92863a2d2863' (5 GB).

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on termination
vol-086160989833c2edc	/dev/xvda	8	Attached	2024/09/16 23:03 GMT+5:30	No	-	Yes
vol-07a8d92863a2d2863	/dev/xvdb	5	Attached	2024/09/16 23:03 GMT+5:30	No	-	No

Need to increase size of EBS volume Before increasing the size:

```
root@ip-172-31-0-178:~
login as: ec2-user
Authenticating with public key "soheldemo-001"

#
##### Amazon Linux 2
#####
##### AL2 End of Life is 2025-06-30.
#####
##### A newer version of Amazon Linux is available!
#####
##### Amazon Linux 2023, GA and supported until 2028-03-15.
##### https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-0-178 ~]$ sudo su -
[root@ip-172-31-0-178 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda         202:0    0   8G  0 disk
└─xvda1      202:1    0   8G  0 part /
xvdb         202:16   0   5G  0 disk
[root@ip-172-31-0-178 ~]#
```

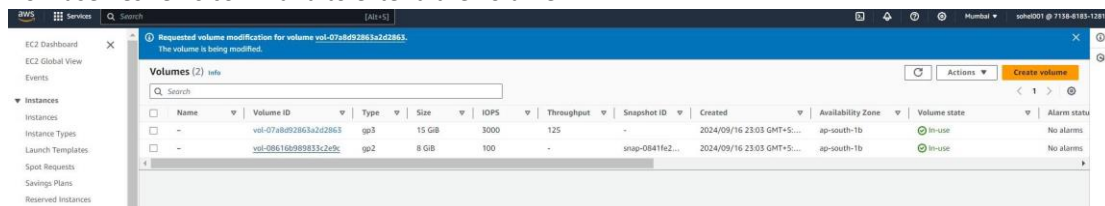
Modify the size of as per we want:  
Successfully extended the size of EBS Volume

```
root@ip-172-31-0-178:~
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda         202:0    0   8G  0 disk
└─xvda1      202:1    0   8G  0 part /
xvdb         202:16   0   5G  0 disk
[root@ip-172-31-0-178 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda         202:0    0   8G  0 disk
└─xvda1      202:1    0   8G  0 part /
xvdb         202:16   0   5G  0 disk
[root@ip-172-31-0-178 ~]# file -s /dev/xvdb
/dev/xvdb: data
[root@ip-172-31-0-178 ~]# mkfs -t ext4 /dev/xvdb
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, 96304, 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

[root@ip-172-31-0-178 ~]# mkdir /home/sohel
[root@ip-172-31-0-178 ~]# mount /dev/home/sohel
mount: /dev/home/sohel: can't find in /etc/fstab.
[root@ip-172-31-0-178 ~]# mount /dev/xvdb/home/sohel
mount: /dev/xvdb/home/sohel: can't find in /etc/fstab.
[root@ip-172-31-0-178 ~]# mount /dev/xvdb /home/sohel
[root@ip-172-31-0-178 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        467M   0  467M   0% /dev
tmpfs           477M   0  477M   0% /dev/shm
tmpfs           477M 412K  476M   1% /run
tmpfs           477M   0  477M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.8G  6.3G  23% /
tmpfs           96M   0   96M   0% /run/user/1000
/dev/xvdb       4.8G  24K  4.6G   1% /home/sohel
[root@ip-172-31-0-178 ~]#
```

Now use Resize2fs command to extend the volume



```

[root@ip-172-31-0-178 ~]# resize2fs dev/xvdb
resize2fs 1.42.9 (28-Dec-2013)
open: No such file or directory while opening dev/xvdb
[root@ip-172-31-0-178 ~]# resize2fs /dev/xvdb
resize2fs 1.42.9 (28-Dec-2013)
Filesystem at /dev/xvdb is mounted on /home/sohel: on-line resizing required
old_desc_blocks = 1, new_desc_blocks = 2
The filesystem on /dev/xvdb is now 3932160 blocks long.

[root@ip-172-31-0-178 ~]# lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda        202:0    0  8G  0 disk
Lxvda1     202:1    0  8G  0 part /
xvdb        202:16   0 15G  0 disk /home/sohel
[root@ip-172-31-0-178 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        467M   0  467M   0% /dev
tmpfs           477M   0  477M   0% /dev/shm
tmpfs           477M 412K  476M   1% /run
tmpfs           477M   0  477M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.8G  6.3G  23% /
tmpfs          96M   0   96M   0% /run/user/1000
/dev/xvdb       15G  24K  14G   1% /home/sohel
[root@ip-172-31-0-178 ~]#

```