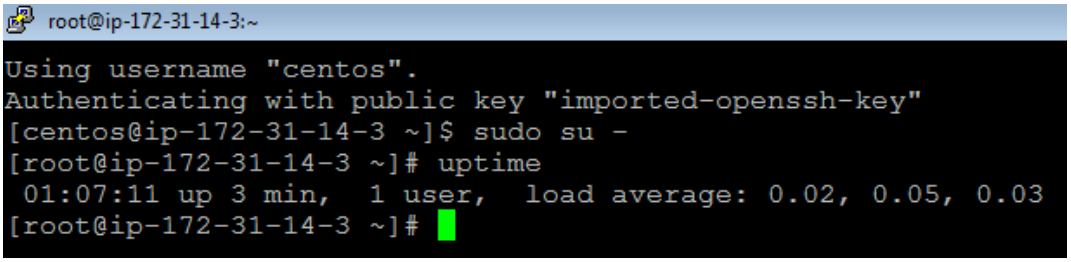
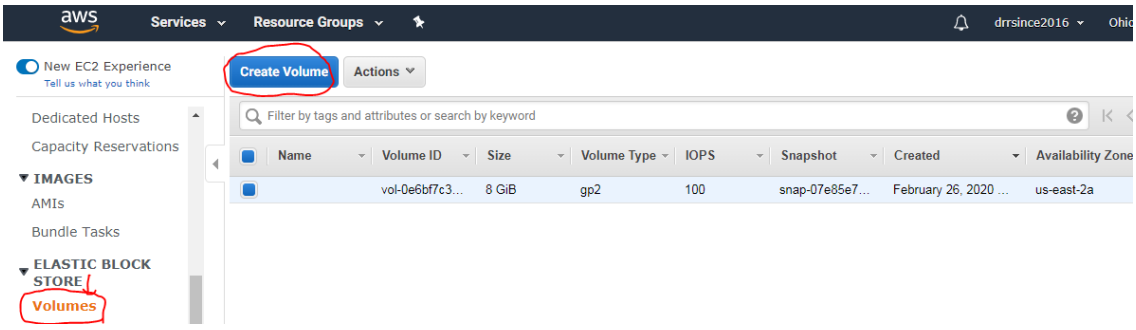
AWS - Volumes and snapshots

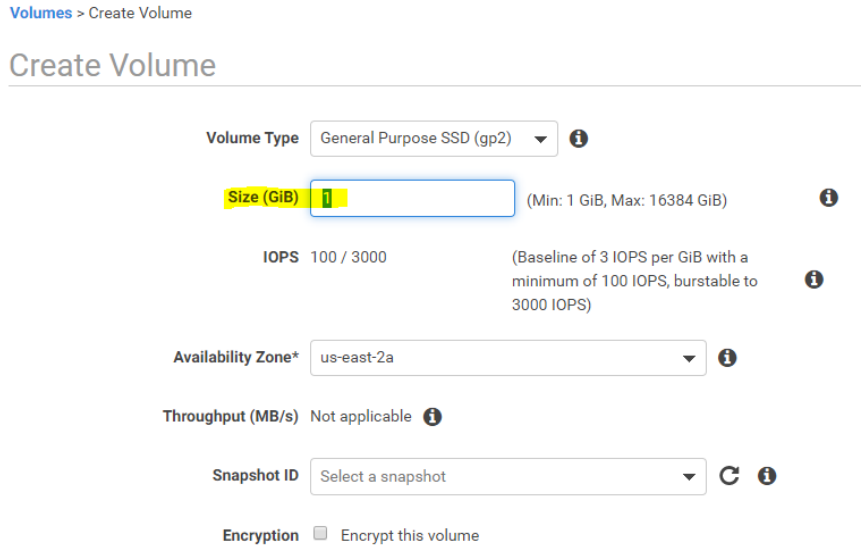
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-volumes.html

Step 1:- Launch the EC2 instance with help of (AWS_Launch-EC2instance.pdf)

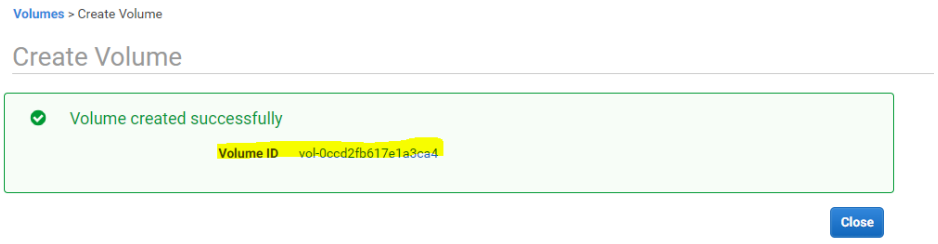


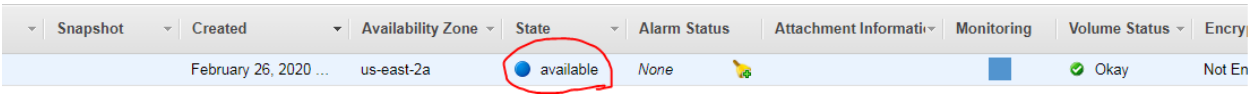
Step2:- Select **ELASTIC BLOCK STORE** → Volumes → Create Volumes → enter the size of the volume disk → click on Create volume





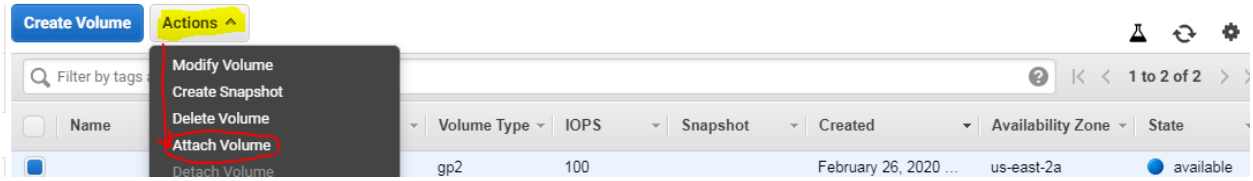
Step 2.1:- Volume has been create successfully and click on Volume ID



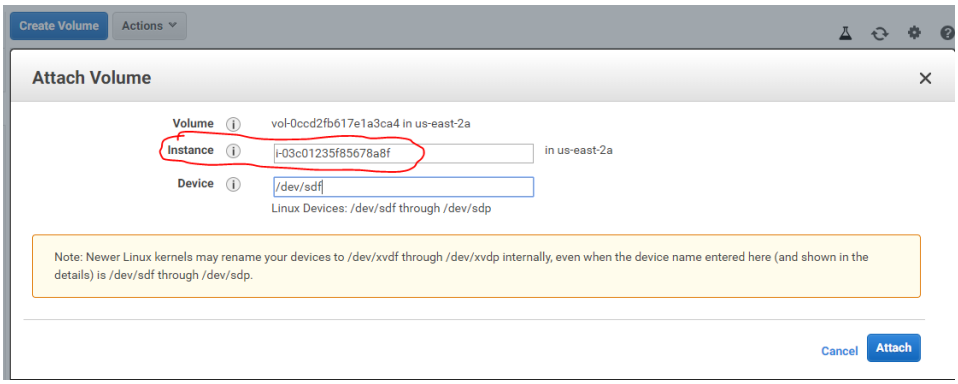


Note:- now volume is available with blue symbol.

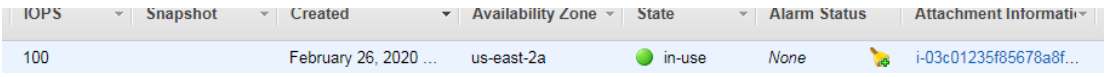
Step3:-Select available volume → click on Actions → then click Attach Volume



Step3.1:- select your instance where you need to attach the volume disk → click attach



Note:- Now volume is in-use state with green symbol.



Step4:- Go to server instance and verify whether attached 1GB disk is visible or not.

#fdisk -l |grep ^Disk

```
[root@ip-172-31-14-3 ~]# fdisk -l |grep ^Disk
Disk /dev/xvda: 8589 MB, 8589934592 bytes, 16777216 sectors
Disk label type: dos
Disk identifier: 0x000b956b
Disk /dev/xvdf: 1073 MB, 1073741824 bytes, 2097152 sectors
[root@ip-172-31-14-3 ~]#
```

Step4.1:- To verify the disk accessibility, use linux volume manager and try to access it.

@Create a volume Group by using below linux commands.

#yum install lvm* -y
#pvs
#pvcreate /dev/xvdf

```
[root@ip-172-31-14-3 ~]# pvcreate /dev/xvdf
  Physical volume "/dev/xvdf" successfully created.
[root@ip-172-31-14-3 ~]# pvs
  PV         VG Fmt  Attr PSize PFree
  /dev/xvdf     lvm2 ---  1.00g 1.00g
[root@ip-172-31-14-3 ~]#
```

#vgcreate robo /dev/xvdf
#vgs

```
[root@ip-172-31-14-3 ~]# vgcreate robo /dev/xvdf
  Volume group "robo" successfully created
[root@ip-172-31-14-3 ~]# vgs
  VG    #PV #LV #SN Attr   VSize    VFree
  robo    1   0   0 wz--n- 1020.00m 1020.00m
[root@ip-172-31-14-3 ~]#
```

#lvcreate -L+512M -n chitti robo
#lvs

```
[root@ip-172-31-14-3 ~]# lvcreate -L+512M -n chitti robo
  Logical volume "chitti" created.
[root@ip-172-31-14-3 ~]# lvs
  LV     VG   Attr       LSize   Pool Origin Data%  Meta%  Move Log Cpy%Sync Convert
  chitti robo -wi-a----- 512.00m
[root@ip-172-31-14-3 ~]#
```

@make file system by using format option and mount it temporarily /mnt.

#mkfs.xfs /dev/mapper/robo-chitti

```
[root@ip-172-31-14-3 ~]# mkfs.xfs /dev/mapper/robo-chitti
meta-data=/dev/mapper/robo-chitti isize=512    agcount=4, agsize=32768 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=0, sparse=0
data     =                       bsize=4096   blocks=131072, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0 ftype=1
log      =internal log           bsize=4096   blocks=855, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
[root@ip-172-31-14-3 ~]#
```

#mount /dev/mapper/robo-chitti /mnt
#df -hTP /mnt

```
[root@ip-172-31-14-3 ~]# df -hTP /mnt
Filesystem              Type  Size  Used Avail Use% Mounted on
/dev/mapper/robo-chitti xfs   509M   26M  483M   6% /mnt
[root@ip-172-31-14-3 ~]#
```

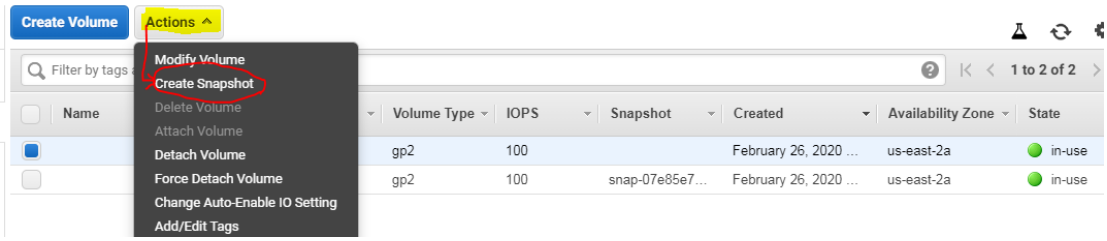
@create file for testing purpose by using #touch command

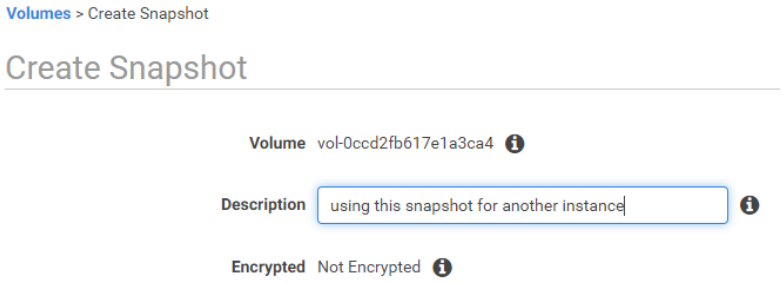
```
[root@ip-172-31-14-3 mnt]# touch test
[root@ip-172-31-14-3 mnt]# ls -lrt
total 0
-rw-r--r--. 1 root root 0 Feb 26 01:53 test
[root@ip-172-31-14-3 mnt]#
```

Note:- Temporarily we did mount on server, incase if you want to make permanent to mount across the reboot then you need to add mount details on /etc/fstab.

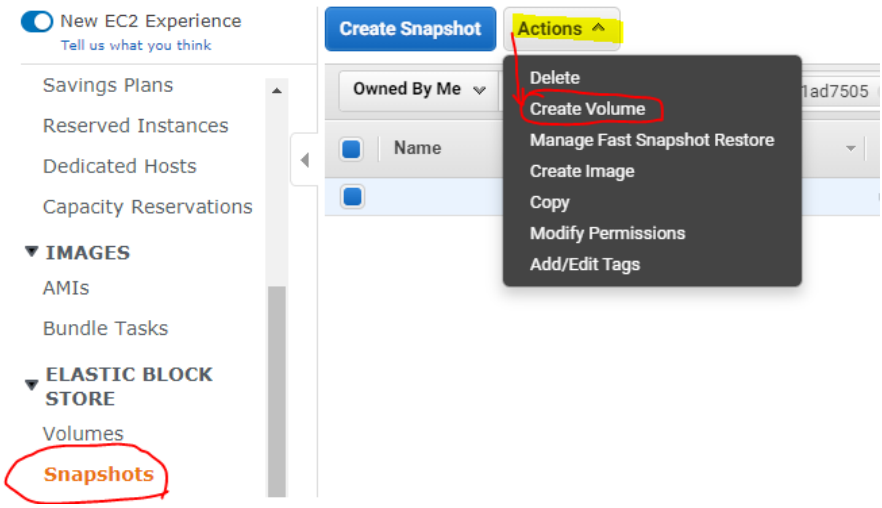
@@@Creating Snapshot@@@

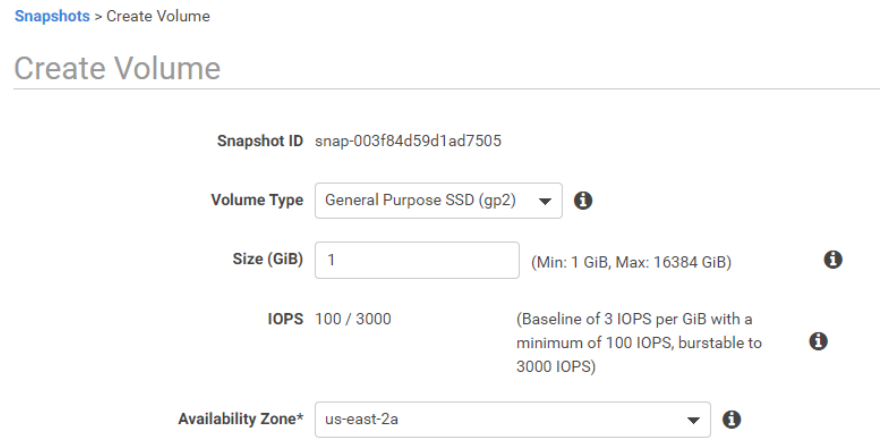
Step1:- Select volume → click on Actions → then select Create Snapshot



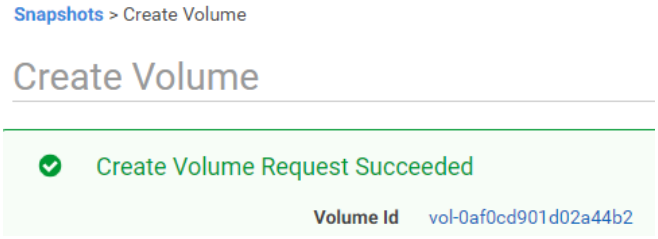


Step1.1:- Select the snapshot → click on Actions -> select Create Volume

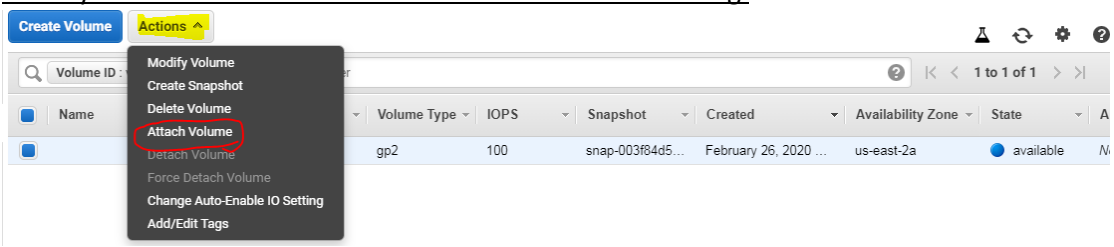


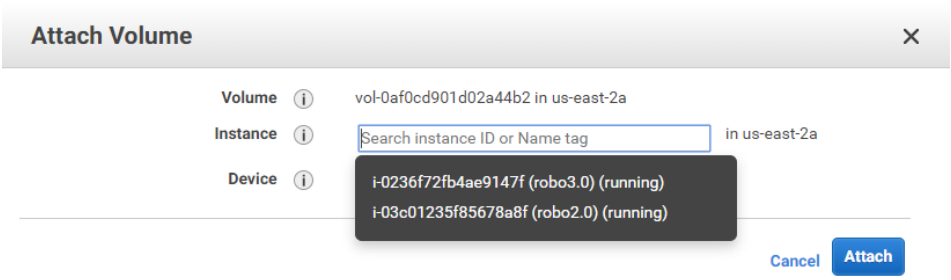


@From the snapshot, new volume disk has been created for another instance.



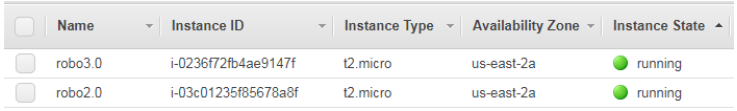
Step2:- Attached the volume to another instance (here I'm going to select robo3.0 instance ID)
Note:-you need to have one more instance created for testing.





@After adding volume to new instance, now volume has been changed the state from available to in-use

Step2.1:-Go to the instance and access the same via public ip.



@Take ssh of server and run below commands.

#yum update -y && yum install lvm2* -y

#fdisk -l |grep ^Disk

#pvs

#vgs

#lvs

```
[root@ip-172-31-8-25 ~]# fdisk -l |grep ^Disk
Disk /dev/xvda: 8589 MB, 8589934592 bytes, 16777216 sectors
Disk label type: dos
Disk identifier: 0x000b956b
Disk /dev/xvdf: 1073 MB, 1073741824 bytes, 2097152 sectors
[root@ip-172-31-8-25 ~]# pvs
  PV         VG   Fmt  Attr PSize    PFree
  /dev/xvdf  robo lvm2 a--  1020.00m 508.00m
[root@ip-172-31-8-25 ~]# vgs
  VG   #PV #LV #SN Attr   VSize    VFree
  robo   1   1   0 wz--n- 1020.00m 508.00m
[root@ip-172-31-8-25 ~]# lvs
  LV     VG   Attr       LSize   Pool Origin Data%  Meta%  Move Log Cpy%Sync Convert
  chitti robo -wi------- 512.00m
[root@ip-172-31-8-25 ~]#
```

#vgscan --mknodes

#vgchange -ay robo

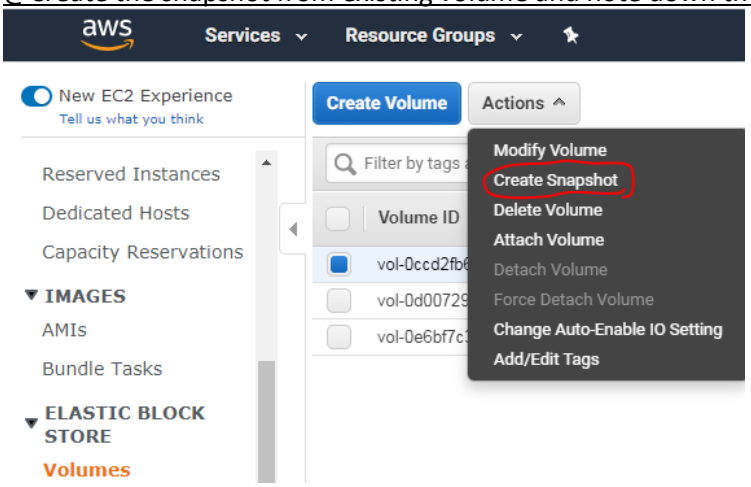
```
[root@ip-172-31-8-25 ~]# vgchange -ay robo
  1 logical volume(s) in volume group "robo" now active
```

#mount /dev/mapper/robo-chitti /mnt

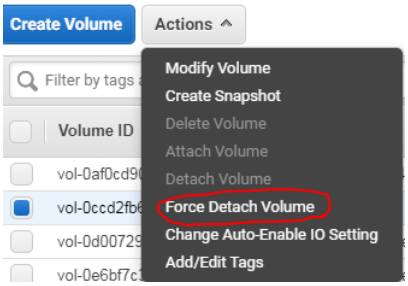
```
[root@ip-172-31-8-25 ~]# cd /mnt
[root@ip-172-31-8-25 mnt]# ls -rlt
total 0
-rw-r--r--. 1 root root 0 Feb 26 01:53 test
[root@ip-172-31-8-25 mnt]#
```

@Note: - same data is available on filesystem now.

Step3:-Now we can try to restore from snapshot, before that need to follow below steps for testing.
@Create the snapshot from existing volume and note down the snapshot ID details



Step3.1Then select volume on AWS console → do force detach volume →then delete volume

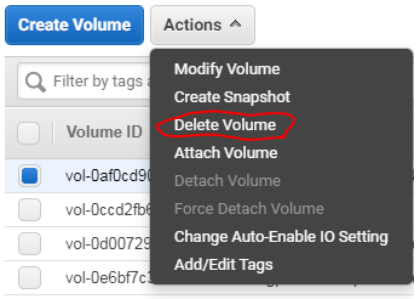


@Delete the file

```
[root@ip-172-31-8-25 ~]# cd /mnt
[root@ip-172-31-8-25 mnt]# ls -rlt
total 0
-rw-r--r--. 1 root root 0 Feb 26 01:53 test
[root@ip-172-31-8-25 mnt]# rm test
rm: remove regular empty file 'test'? y
[root@ip-172-31-8-25 mnt]#
```

#umount /mnt

@Delete the volume.



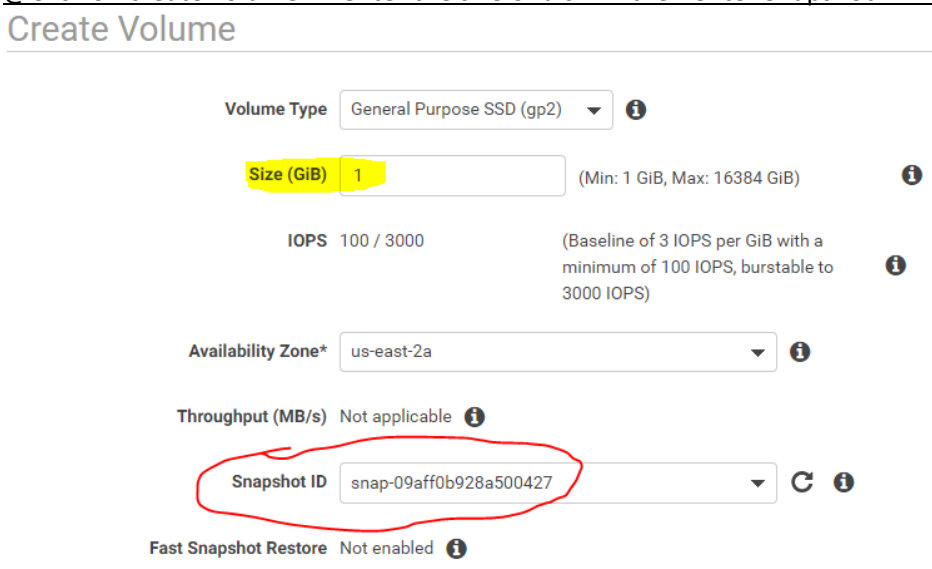
@Login to instance and run below command to verify the volume disk.

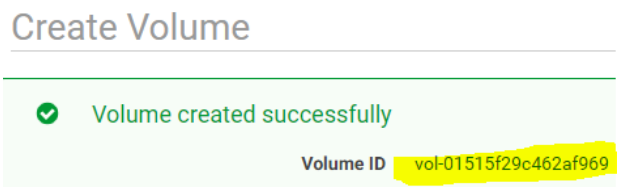
```
[root@ip-172-31-8-25 ~]# pvs
  WARNING: Device for PV VJc8Uy-POFS-YSyv-zP9v-qUDJ-ihBk-QpKzD6 not found or rejected by a filter.
  WARNING: Device for PV VJc8Uy-POFS-YSyv-zP9v-qUDJ-ihBk-QpKzD6 not found or rejected by a filter.
  WARNING: Device for PV VJc8Uy-POFS-YSyv-zP9v-qUDJ-ihBk-QpKzD6 not found or rejected by a filter.
  Couldn't find device with uuid VJc8Uy-POFS-YSyv-zP9v-qUDJ-ihBk-QpKzD6.
  PV         VG   Fmt  Attr PSize    PFree
  [unknown]  robo lvm2 a-m  1020.00m 508.00m
```

Note: -you can see the error because we have deleted the volume disk. (incase required, reboot the instance to cleanup the error.

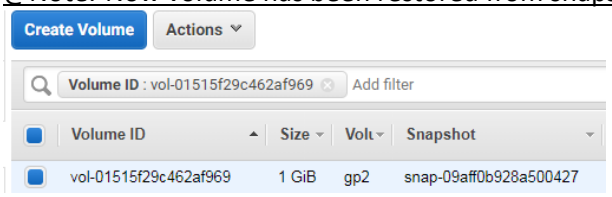
Step4: Restore the volume from snapshot.

@Click on create volume → enter the size of disk → then enter Snapshot ID → click Create Volume.

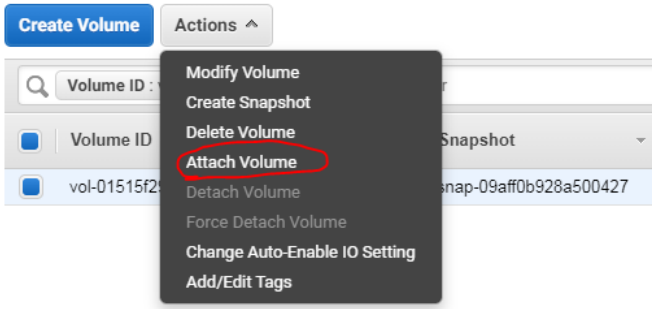




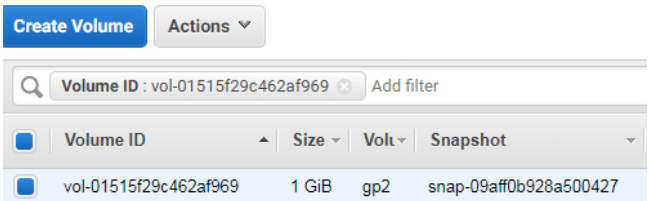
@Note:-Now volume has been restored from snapshot.

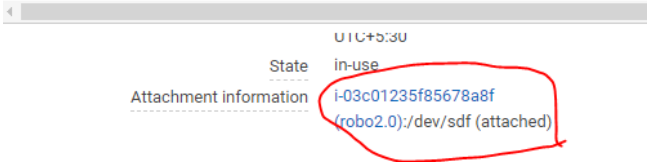


Step5:- Attached the restored volume to instance and check whether it's working.



@Now disk has been attached.





@@Go to the instance and run below commands.

#pvs

#vgs

#lvs

```
[root@ip-172-31-14-3 ~]# pvs
  PV         VG   Fmt  Attr PSize    PFree
  /dev/xvdf  robo lvm2 a--  1020.00m 508.00m
[root@ip-172-31-14-3 ~]# vgs
  VG   #PV #LV #SN Attr   VSize    VFree
  robo   1   1   0 wz--n- 1020.00m 508.00m
[root@ip-172-31-14-3 ~]# lvs
  LV     VG   Attr       LSize   Pool Origin Data%  Meta%  Move Log Cpy%Sync Convert
  chitti robo -wi-a----- 512.00m
[root@ip-172-31-14-3 ~]#
```

#ls -rlt /dev/mapper/robo-chitti

#mount /dev/mapper/robo-chitti /mnt

#df -hTP /mnt

```
[root@ip-172-31-14-3 ~]# ls -rlt /dev/mapper/robo-chitti
lrwxrwxrwx. 1 root root 7 Feb 26 05:20 /dev/mapper/robo-chitti -> ../dm-0
[root@ip-172-31-14-3 ~]# mount /dev/mapper/robo-chitti /mnt
[root@ip-172-31-14-3 ~]# df -hTP /mnt
Filesystem              Type  Size  Used Avail Use% Mounted on
/dev/mapper/robo-chitti xfs   509M   26M  483M   6% /mnt
[root@ip-172-31-14-3 ~]#
```

#cd /mnt

#ls -rlt

```
[root@ip-172-31-14-3 mnt]# ls -rlt
total 0
-rw-r--r--. 1 root root 0 Feb 26 04:47 test
[root@ip-172-31-14-3 mnt]# cat test
[root@ip-172-31-14-3 mnt]#
```