

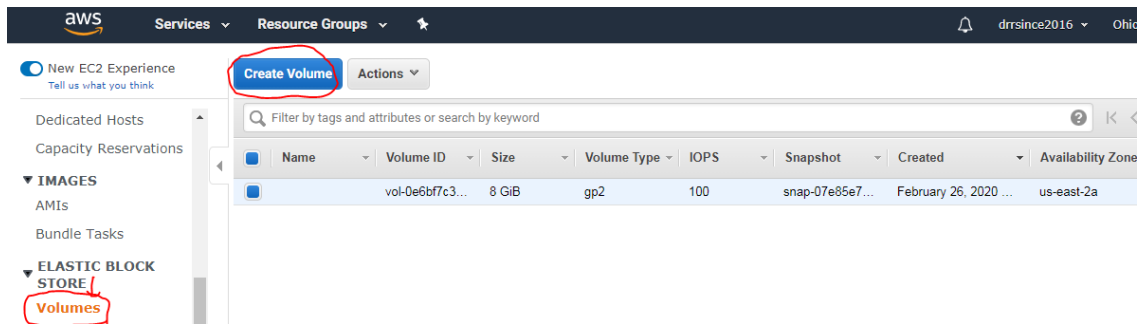
# AWS - Volumes and snapshots

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

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

```
root@ip-172-31-14-3:~  
Using username "centos".  
Authenticating with public key "imported-openssh-key"  
[centos@ip-172-31-14-3 ~]$ sudo su -  
[root@ip-172-31-14-3 ~]# uptime  
01:07:11 up 3 min, 1 user, load average: 0.02, 0.05, 0.03  
[root@ip-172-31-14-3 ~]#
```

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



[Volumes](#) > Create Volume

## Create Volume

Volume Type: General Purpose SSD (gp2) ⓘ

Size (GiB):  (Min: 1 GiB, Max: 16384 GiB) ⓘ

IOPS: 100 / 3000 (Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS) ⓘ

Availability Zone\*: us-east-2a ⓘ

Throughput (MB/s): Not applicable ⓘ

Snapshot ID:  ⓘ

Encryption: ☐ Encrypt this volume

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

Volumes > Create Volume

### Create Volume

✓ Volume created successfully

Volume ID `vol-0cccd2fb617e1a3ca4`

Close

Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information	Monitoring	Volume Status	Encryption
	February 26, 2020 ...	us-east-2a	available	None			✓ Okay	Not En

Note:- now volume is available with blue symbol.

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

Create Volume

Actions

- Modify Volume
- Create Snapshot
- Delete Volume
- Attach Volume
- Detach Volume

Name	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
	gp2	100		February 26, 2020 ...	us-east-2a	available

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

Create Volume

Actions

### Attach Volume

Volume `vol-0cccd2fb617e1a3ca4` in us-east-2a

Instance `i-03c01235f85678a8f` in us-east-2a

Device `/dev/sdf`

Linux Devices: `/dev/sdf` through `/dev/sdp`

Note: Newer Linux kernels may rename your devices to `/dev/xvdf` through `/dev/xvdp` internally, even when the device name entered here (and shown in the details) is `/dev/sdf` through `/dev/sdp`.

Cancel Attach

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

IOPS	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information
100		February 26, 2020 ...	us-east-2a	in-use	None	i-03c01235f85678a8f...

## 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 ~]#
```

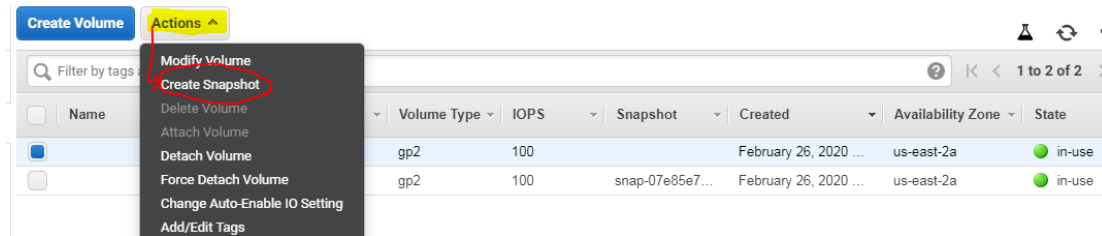
@create file for testing purpose by using #touch command

```
[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



Volumes > Create Snapshot

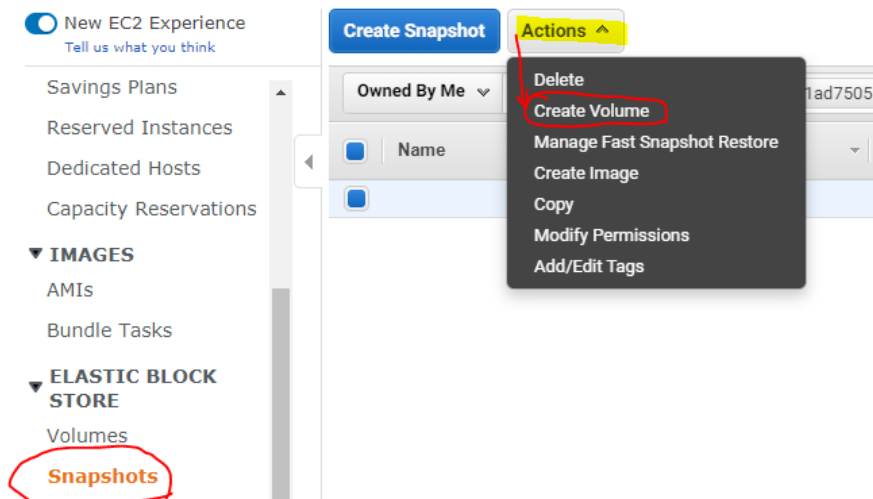
### Create Snapshot

Volume vol-0ccd2fb617e1a3ca4 ⓘ

Description  ⓘ

Encrypted Not Encrypted ⓘ

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



[Snapshots](#) > Create Volume

## Create Volume

Snapshot ID snap-003f84d59d1ad7505

Volume Type General Purpose SSD (gp2) ⓘ

Size (GiB) 1 (Min: 1 GiB, Max: 16384 GiB) ⓘ

IOPS 100 / 3000 (Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS) ⓘ

Availability Zone\* us-east-2a ⓘ

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

[Snapshots](#) > Create Volume

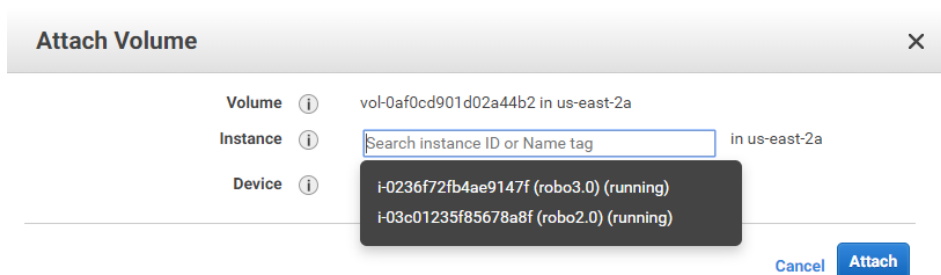
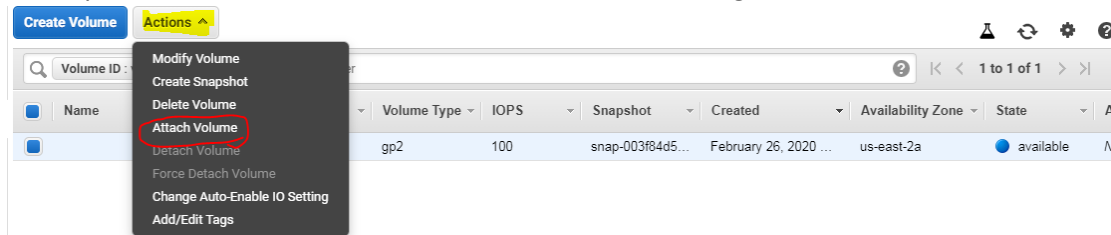
## Create Volume

✓ Create Volume Request Succeeded

Volume Id vol-0af0cd901d02a44b2

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.

	Name	Instance ID	Instance Type	Availability Zone	Instance State
<input type="checkbox"/>	robo3.0	i-0236f72fb4ae9147f	t2.micro	us-east-2a	running
<input type="checkbox"/>	robo2.0	i-03c01235f85678a8f	t2.micro	us-east-2a	running

@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
```

#vgscan --mknodes

#vgchange -ay robo

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

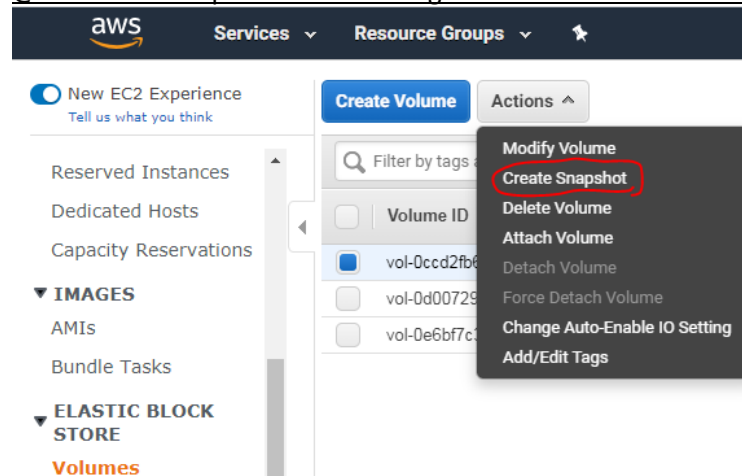
#mount /dev/mapper/robo-chitti /mnt

```
[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]#
```

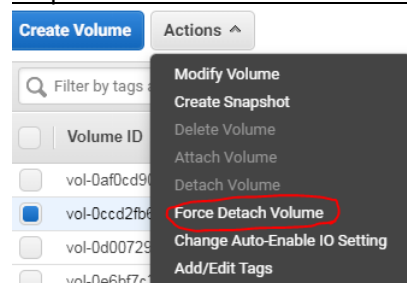
@Note: - same data is available on filesystem now.

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



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

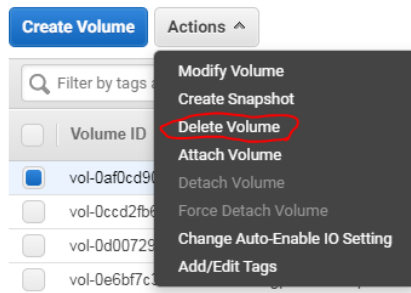


@Delete the file

```
[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.

Create Volume

A screenshot of the AWS 'Create Volume' form. The form has several fields: 'Volume Type' (General Purpose SSD (gp2)), 'Size (GiB)' (1), 'IOPS' (100 / 3000), 'Availability Zone\*' (us-east-2a), 'Throughput (MB/s)' (Not applicable), 'Snapshot ID' (snap-09aff0b928a500427), and 'Fast Snapshot Restore' (Not enabled). The 'Snapshot ID' field is circled in red.

## Create Volume

✓ Volume created successfully

Volume ID vol-01515f29c462af969

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

Create VolumeActions

Volume ID : vol-01515f29c462af969

Add filter

<input type="checkbox"/>	Volume ID	Size	Vol	Snapshot
<input type="checkbox"/>	vol-01515f29c462af969	1 GiB	gp2	snap-09aff0b928a500427

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

Create Volume

Actions ▾

Volume ID :

Volume ID

vol-01515f2

Snapshot

snap-09aff0b928a500427

Modify Volume

Create Snapshot

Delete Volume

**Attach Volume**

Detach Volume

Force Detach Volume

Change Auto-Enable IO Setting

Add/Edit Tags

## Attach Volume

Volume ⓘ vol-01515f29c462af969 in us-east-2a

Instance ⓘ  in us-east-2a

Device ⓘ

Linux Devices: /dev/sdf through /dev/sdp

@Now disk has been attached.

Create VolumeActions

Volume ID : vol-01515f29c462af969

Add filter

<input type="checkbox"/>	Volume ID	Size	Vol	Snapshot
<input type="checkbox"/>	vol-01515f29c462af969	1 GiB	gp2	snap-09aff0b928a500427

State	in-use
Attachment information	<input type="text" value="i-03c01235f85678a8f (robo2.0):/dev/sdf (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]#
```