

## Storage Linux - Volume

### Create and attach Volume to the instance

#### Navigate EC2->EBS->Volumes->Create Volume

**Create Volume** Actions

Volume ID: vol-0b1a56665e4cbeb77 Add filter

| Name       | Volume ID      | Size   | Volume Type | IOPS | Snapshot | Created                | Availability Zone | State     | Alarm Status |
|------------|----------------|--------|-------------|------|----------|------------------------|-------------------|-----------|--------------|
| UnixVol10g | vol-0b1a566... | 10 GiB | gp2         | 100  |          | January 28, 2020 at... | ap-south-1a       | available | None         |

Volumes: vol-0b1a56665e4cbeb77 (UnixVol10g)

Description Status Checks Monitoring Tags

|                        |   |                   |               |
|------------------------|---|-------------------|---------------|
| Volume ID              | vol-0b1a56665e4cbeb77                   | Alarm status      | None          |
| Size                   | 10 GiB                                  | Snapshot          | -             |
| Created                | January 28, 2020 at 7:40:09 PM UTC+5:30 | Availability Zone | ap-south-1a   |
| State                  | available                               | Encryption        | Not Encrypted |
| Attachment information |   | KMS Key ID        |               |
| Volume type            | gp2                                     | KMS Key Aliases   |               |
| Product codes          | -                                       | KMS Key ARN       |               |
| IOPS                   | 100                                     |                   |               |

#### Attach the volume to a instance, select Attach volume

**Create Volume** Actions

Volume ID: vol-0b1a56665e4cbeb77

| Name       | Volume ID      | Size   | Volume Type | IOPS | Snapshot | Created                | Availability Zone | State     | Alarm Status |
|------------|----------------|--------|-------------|------|----------|------------------------|-------------------|-----------|--------------|
| UnixVol10g | vol-0b1a566... | 10 GiB | gp2         | 100  |          | January 28, 2020 at... | ap-south-1a       | available | None         |

Volumes: vol-0b1a56665e4cbeb77 (UnixVol10g)

Modify Volume  
Create Snapshot  
Delete Volume  
Attach Volume  
Detach Volume  
Force Detach Volume  
Change Auto-Enable IO Setting  
Add/Edit Tags

Instances into same AZ are shown where Volume has been created

Select Instance name

Attach Volume

Volume ⓘ

vol-0b1a56665e4cbeb77 (UnixVol10g) in ap-south-1a

Instance ⓘ

in ap-south-1a

Device ⓘ

i-0266918ac78503eb8 (UnixServer) (running)

Cancel

Attach

Attach Volume

Volume ⓘ

vol-0b1a56665e4cbeb77 (UnixVol10g) in ap-south-1a

Instance ⓘ

in ap-south-1a

Device ⓘ

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

Volume attached to the selected instance

Volume ID : vol-0b1a56665e4cbeb77

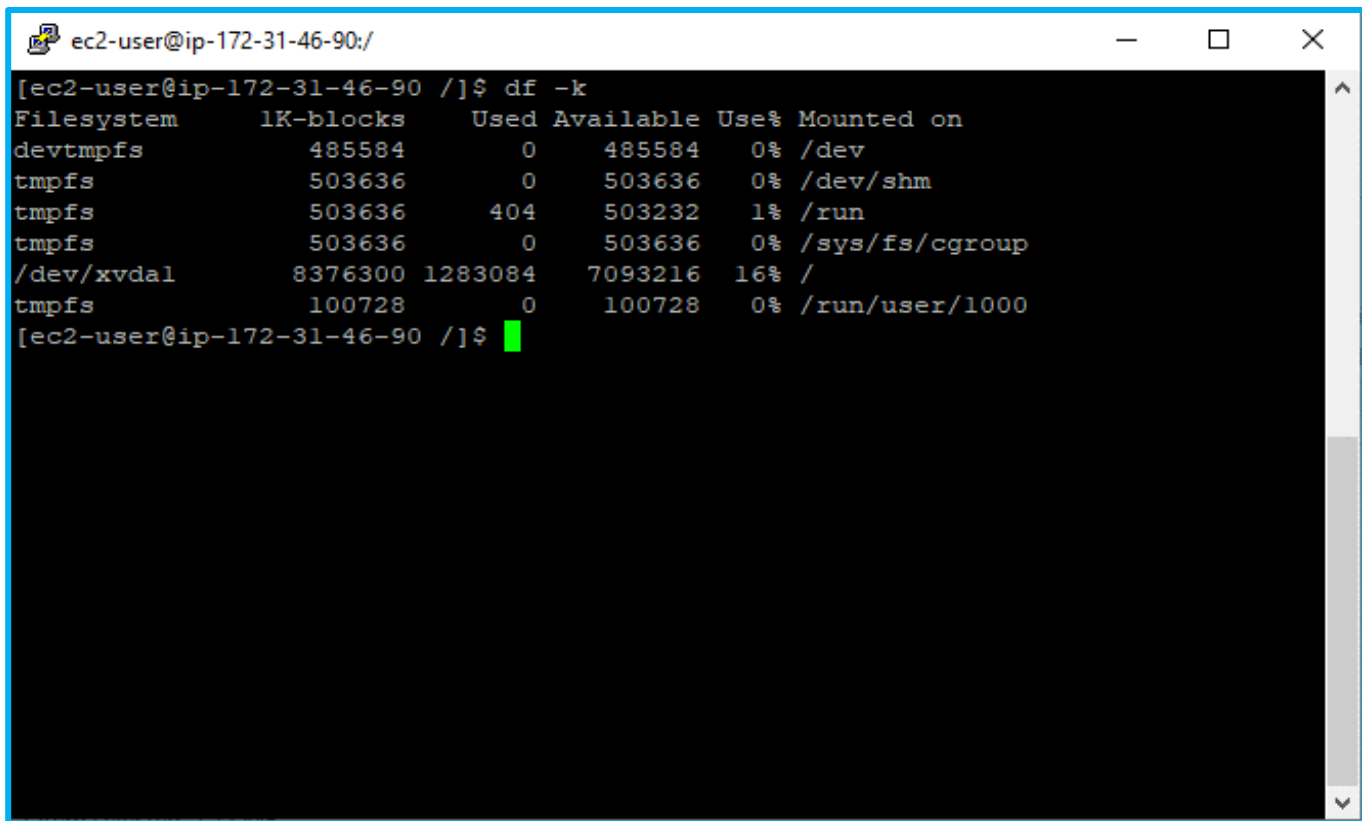
Add filter

1 to 1 of 1

|   | Name       | Volume ID      | Size   | Volume Type | IOPS | Snapshot | Created                | Availability Zone | State  | Alarm Status   |
|---|------------|----------------|--------|-------------|------|----------|------------------------|-------------------|--|--|
|  | UnixVol10g | vol-0b1a566... | 10 GiB | gp2         | 100  |          | January 28, 2020 at... | ap-south-1a       |  in-use | None  |

## Setup volume in the instance

Login to UixServer, to which Volume was attached

A terminal window titled 'ec2-user@ip-172-31-46-90:/' with standard window controls. The terminal displays the output of the 'df -k' command, showing disk usage for various filesystems. The output is as follows:

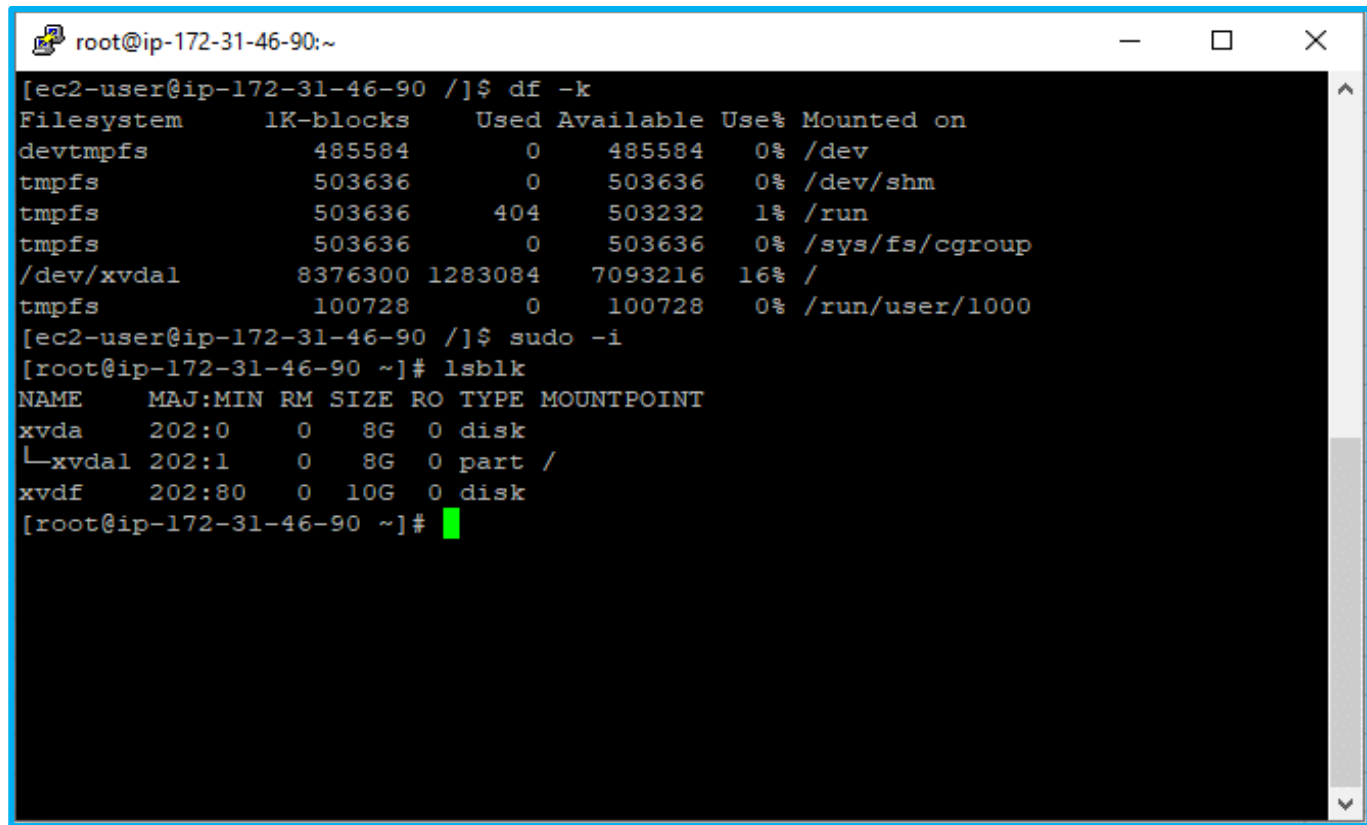
```
[ec2-user@ip-172-31-46-90 ~]$ df -k
Filesystem      1K-blocks    Used Available Use% Mounted on
devtmpfs         485584         0    485584   0% /dev
tmpfs            503636         0    503636   0% /dev/shm
tmpfs            503636      404    503232   1% /run
tmpfs            503636         0    503636   0% /sys/fs/cgroup
/dev/xvda1       8376300 1283084  7093216  16% /
tmpfs            100728         0    100728   0% /run/user/1000
```

The prompt is followed by a green cursor.

Enter following commands to see the unmounted volume

`sudo -i`

`lsblk`



```
root@ip-172-31-46-90:~  
[ec2-user@ip-172-31-46-90 ~]$ df -k  
Filesystem      1K-blocks    Used Available Use% Mounted on  
devtmpfs         485584         0    485584   0% /dev  
tmpfs            503636         0    503636   0% /dev/shm  
tmpfs            503636        404    503232   1% /run  
tmpfs            503636         0    503636   0% /sys/fs/cgroup  
/dev/xvda1       8376300 1283084   7093216  16% /  
tmpfs            100728         0    100728   0% /run/user/1000  
[ec2-user@ip-172-31-46-90 ~]$ sudo -i  
[root@ip-172-31-46-90 ~]# lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
xvda        202:0    0   8G  0 disk  
└─xvda1     202:1    0   8G  0 part /  
xvddf       202:80   0  10G  0 disk  
[root@ip-172-31-46-90 ~]#
```

Enter following commands to create space in the volume

```
fdisk /dev/xvdf
```

```
n
```

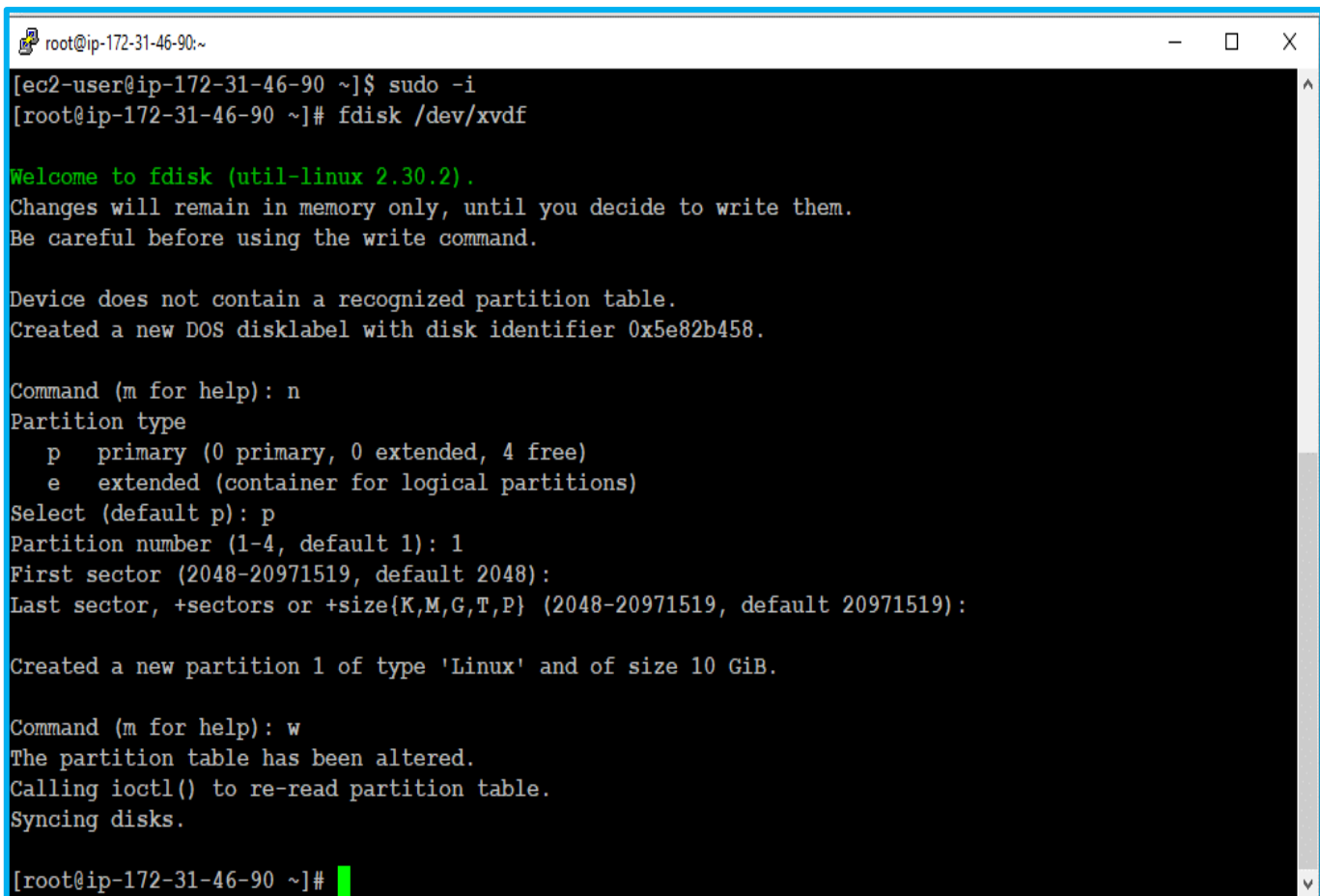
```
p
```

```
1
```

```
2048
```

```
w
```

```
#
```



```
root@ip-172-31-46-90:~  
[ec2-user@ip-172-31-46-90 ~]$ sudo -i  
[root@ip-172-31-46-90 ~]# fdisk /dev/xvdf  
  
Welcome to fdisk (util-linux 2.30.2).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Device does not contain a recognized partition table.  
Created a new DOS disklabel with disk identifier 0x5e82b458.  
  
Command (m for help): n  
Partition type  
   p   primary (0 primary, 0 extended, 4 free)  
   e   extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1): 1  
First sector (2048-20971519, default 2048):  
Last sector, +sectors or +size{K,M,G,T,P} (2048-20971519, default 20971519):  
  
Created a new partition 1 of type 'Linux' and of size 10 GiB.  
  
Command (m for help): w  
The partition table has been altered.  
Calling ioctl() to re-read partition table.  
Syncing disks.  
[root@ip-172-31-46-90 ~]#
```

Check with following command

lsblk

```
[root@ip-172-31-46-90 ~]# 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  10G  0 disk
└─xvdf1      202:81    0  10G  0 part
[root@ip-172-31-46-90 ~]#
```

Enter following command

mkfs.ext4 /dev/xvdf1

```
[root@ip-172-31-46-90 ~]# mkfs.ext4 /dev/xvdf1
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
655360 inodes, 2621184 blocks
131059 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2151677952
80 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, 1605632

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

[root@ip-172-31-46-90 ~]#
```

Mount the disk on /mnt directory

```
mount /dev/xvdf1 /mnt/
```

```
[root@ip-172-31-46-90 ~]# 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  10G  0 disk 
└─xvdf1      202:81    0  10G  0 part 
[root@ip-172-31-46-90 ~]# mount /dev/xvdf1 /mnt/
[root@ip-172-31-46-90 ~]# df -k
Filesystem      1K-blocks      Used Available Use% Mounted on
devtmpfs         485584         0    485584   0% /dev
tmpfs            503636         0    503636   0% /dev/shm
tmpfs            503636        472    503164   1% /run
tmpfs            503636         0    503636   0% /sys/fs/cgroup
/dev/xvda1       8376300 1283180   7093120  16% /
tmpfs            100728         0    100728   0% /run/user/1000
/dev/xvdf1       10189076   36888   9611568   1% /mnt
[root@ip-172-31-46-90 ~]#
```

Change the newly mounted disk and create a test.txt file

cd /mnt

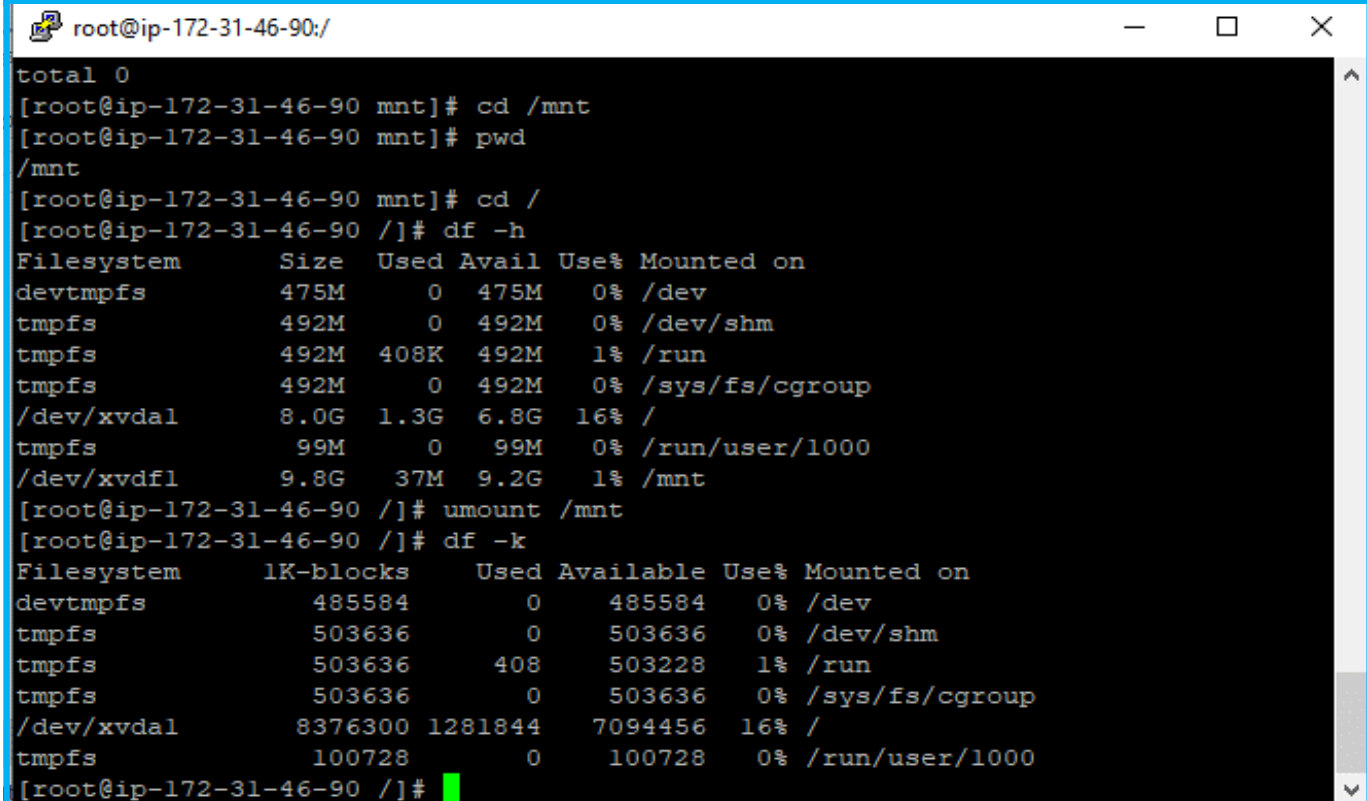
touch test.txt

ls -ltr

```
[root@ip-172-31-46-90 /]# cd /mnt
[root@ip-172-31-46-90 mnt]# touch test.txt
[root@ip-172-31-46-90 mnt]# ls -ltr
total 16
drwx----- 2 root root 16384 Jan 28 14:32 lost+found
-rw-r--r-- 1 root root      0 Jan 28 14:38 test.txt
```

Detaching the volume (unmount) from the Instance

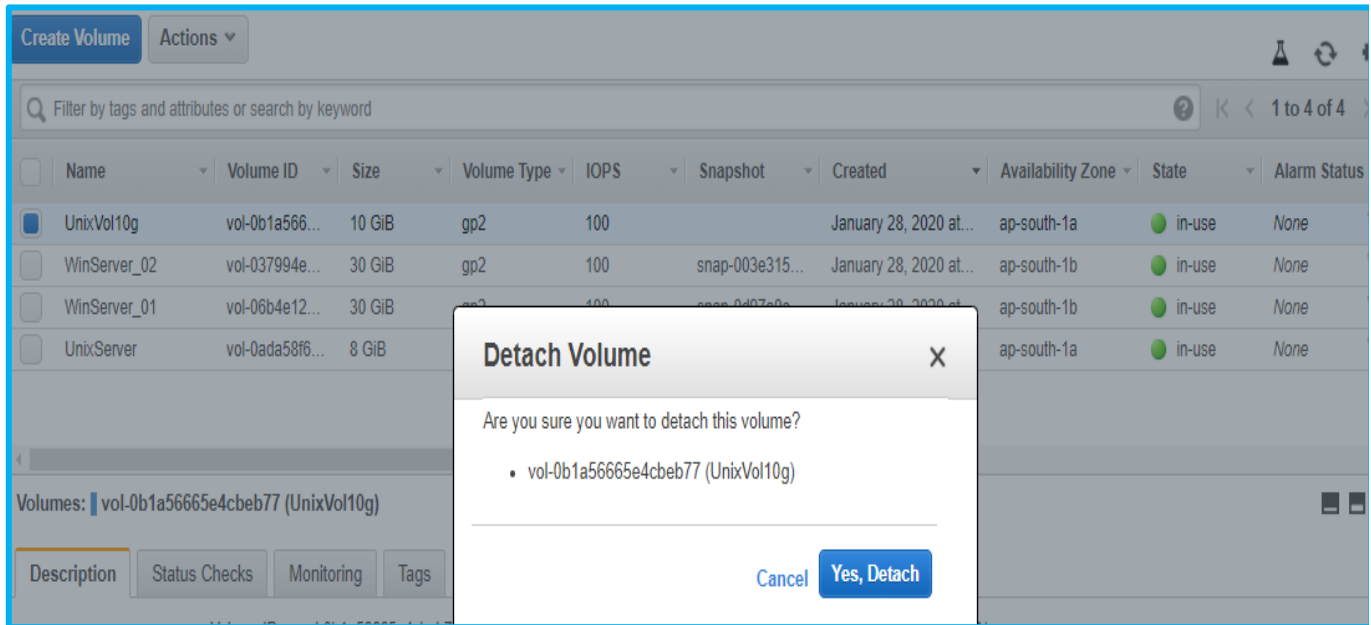
umount /mnt



```
root@ip-172-31-46-90:/
total 0
[root@ip-172-31-46-90 mnt]# cd /mnt
[root@ip-172-31-46-90 mnt]# pwd
/mnt
[root@ip-172-31-46-90 mnt]# cd /
[root@ip-172-31-46-90 /]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        475M   0  475M   0% /dev
tmpfs           492M   0  492M   0% /dev/shm
tmpfs           492M 408K  492M   1% /run
tmpfs           492M   0  492M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.3G   6.8G  16% /
tmpfs           99M   0   99M   0% /run/user/1000
/dev/xvdf1      9.8G  37M   9.2G   1% /mnt
[root@ip-172-31-46-90 /]# umount /mnt
[root@ip-172-31-46-90 /]# df -k
Filesystem      1K-blocks    Used Available Use% Mounted on
devtmpfs        485584         0   485584    0% /dev
tmpfs           503636         0   503636    0% /dev/shm
tmpfs           503636      408   503228    1% /run
tmpfs           503636         0   503636    0% /sys/fs/cgroup
/dev/xvda1     8376300 1281844  7094456   16% /
tmpfs          100728         0   100728    0% /run/user/1000
[root@ip-172-31-46-90 /]#
```



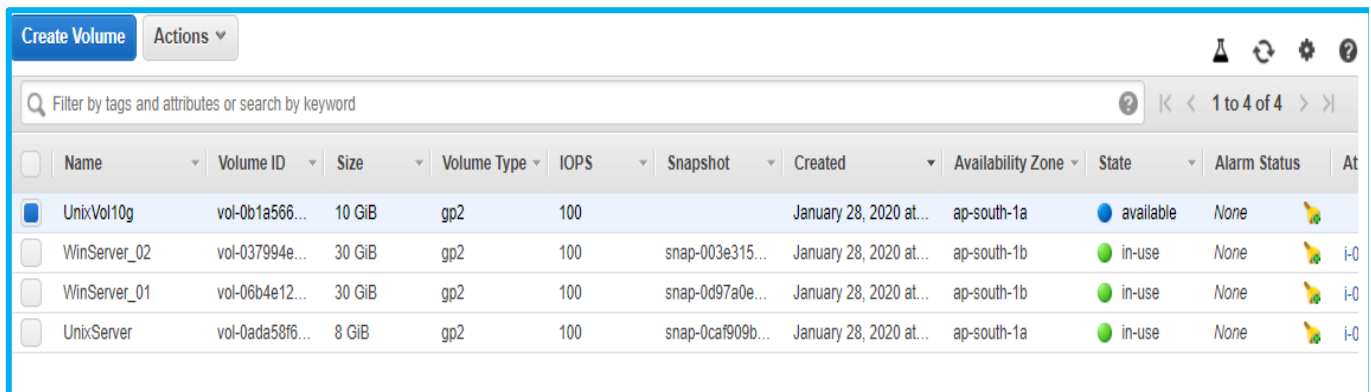
## EBS->Volume->Action->Detach Volume



The screenshot shows the AWS Management Console interface for EBS volumes. A modal dialog titled "Detach Volume" is open, asking for confirmation to detach the volume "vol-0b1a56665e4cbeb77 (UnixVol10g)". The background shows a table of EBS volumes.

| Name         | Volume ID       | Size   | Volume Type | IOPS | Snapshot         | Created                | Availability Zone | State  | Alarm Status |
|--------------|-----------------|--------|-------------|------|------------------|------------------------|-------------------|--------|--------------|
| UnixVol10g   | vol-0b1a566...  | 10 GiB | gp2         | 100  |                  | January 28, 2020 at... | ap-south-1a       | in-use | None         |
| WinServer_02 | vol-037994e...  | 30 GiB | gp2         | 100  | snap-003e315...  | January 28, 2020 at... | ap-south-1b       | in-use | None         |
| WinServer_01 | vol-06b4e12...  | 30 GiB | gp2         | 100  | snap-0d97a0e...  | January 28, 2020 at... | ap-south-1b       | in-use | None         |
| UnixServer   | vol-0ada58f6... | 8 GiB  | gp2         | 100  | snap-0caf909b... | January 28, 2020 at... | ap-south-1a       | in-use | None         |

Now the storage is available to be reused or to be deleted



The screenshot shows the AWS Management Console interface for EBS volumes. The volume "UnixVol10g" is now in the "available" state, indicated by a blue dot and the word "available". The background shows a table of EBS volumes.

| Name         | Volume ID       | Size   | Volume Type | IOPS | Snapshot         | Created                | Availability Zone | State     | Alarm Status | At  |
|--------------|-----------------|--------|-------------|------|------------------|------------------------|-------------------|-----------|--------------|-----|
| UnixVol10g   | vol-0b1a566...  | 10 GiB | gp2         | 100  |                  | January 28, 2020 at... | ap-south-1a       | available | None         |     |
| WinServer_02 | vol-037994e...  | 30 GiB | gp2         | 100  | snap-003e315...  | January 28, 2020 at... | ap-south-1b       | in-use    | None         | i-0 |
| WinServer_01 | vol-06b4e12...  | 30 GiB | gp2         | 100  | snap-0d97a0e...  | January 28, 2020 at... | ap-south-1b       | in-use    | None         | i-0 |
| UnixServer   | vol-0ada58f6... | 8 GiB  | gp2         | 100  | snap-0caf909b... | January 28, 2020 at... | ap-south-1a       | in-use    | None         | i-0 |

## Deletion of volume

The screenshot shows the AWS Management Console interface for managing EBS volumes. A modal dialog titled "Delete Volume" is open, asking for confirmation to delete the volume "vol-0b1a56665e4cbeb77 (UnixVol10g)". The background shows a table of volumes with columns: Name, Volume ID, Size, Volume Type, IOPS, Snapshot, Created, Availability Zone, State, and Alarm Status. The volume "UnixVol10g" is selected.

| Name         | Volume ID       | Size   | Volume Type | IOPS | Snapshot        | Created                | Availability Zone | State     | Alarm Status |
|--------------|-----------------|--------|-------------|------|-----------------|------------------------|-------------------|-----------|--------------|
| UnixVol10g   | vol-0b1a566...  | 10 GiB | gp2         | 100  |                 | January 28, 2020 at... | ap-south-1a       | available | None         |
| WinServer_02 | vol-037994e...  | 30 GiB | gp2         | 100  | snap-003e315... | January 28, 2020 at... | ap-south-1b       | in-use    | None         |
| WinServer_01 | vol-06b4e12...  | 30 GiB | gp2         | 100  | snap-0407e9e... | January 28, 2020 at... | ap-south-1b       | in-use    | None         |
| UnixServer   | vol-0ada58f6... | 8 GiB  | gp2         | 100  |                 | January 28, 2020 at... | ap-south-1a       | in-use    | None         |

Volumes: | vol-0b1a56665e4cbeb77 (UnixVol10g)

Buttons: Description, Status Checks, Monitoring, Tags, Cancel, Yes, Delete