

# SOLUTION

## 1. Created EBS Volume

Volumes (2) [Info](#)

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm stat
<input type="checkbox"/>	-	<a href="#">vol-01b54f4a60d8e35a4</a>	gp2	20 GiB	100	-	-	2023/09/11 11:28 GMT+2	us-east-1b	<span>Available</span>	No alarms

## 2. Attached to an instance

[EC2](#) > [Volumes](#) > [vol-01b54f4a60d8e35a4](#) > Attach volume

### Attach volume [Info](#)

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

**Basic details**

Volume ID  
 [vol-01b54f4a60d8e35a4](#)

Availability Zone  
us-east-1b

Instance [Info](#)

Only instances in the same Availability Zone as the selected volume are displayed.

Device name [Info](#)

Recommended device names for Linux: /dev/sda1 for root volume, /dev/sd[f-p] for data volumes.

**i** 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.

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state
<input type="checkbox"/>	-	<a href="#">vol-01b54f4a60d8e35a4</a>	gp2	20 GiB	100	-	-	2023/09/11 11:28 GMT+2	us-east-1b	<span>In-use</span>

## 3. Mounting EBS to EC2 instance

- List all block device on EC2 instance

```
[root@ip-172-31-37-213 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0   8G  0 disk
├─xvda1      202:1    0   8G  0 part /
├─xvda127    259:0    0   1M  0 part
└─xvda128    259:1    0  10M  0 part
xvdf        202:80    0  20G  0 disk
```

- Check if there is a new file system on the new volume

```
[root@ip-172-31-37-213 ~]# file -s /dev/xvdf
/dev/xvdf: data
```

- Add a file system on EC2 volume

```
[root@ip-172-31-37-213 ~]# mkfs -t xfs /dev/xvdf
meta-data=/dev/xvdf            isize=512    agcount=4, agsize=1310720 blks
               =                  sectsz=512   attr=2,    projid32bit=1
               =                  crc=1        finobt=1, sparse=1, rmapbt=0
               =                  reflink=1    bigtime=1 inobtcount=1
data      =                  bsize=4096   blocks=5242880, imaxpct=25
               =                  sunit=0     swidth=0 blks
naming     =version 2          bsize=4096   ascii-ci=0, ftype=1
log        =internal log      bsize=4096   blocks=16384, version=2
               =                  sectsz=512   sunit=0 blks, lazy-count=1
realtime   =none              extsz=4096   blocks=0, rtextents=0
[root@ip-172-31-37-213 ~]# file -s /dev/xvdf
/dev/xvdf: SGI XFS filesystem data (blksz 4096, inosz 512, v2 dirs)
```

- Creating a directory where I want to mount the volume

```
[root@ip-172-31-37-213 /]# mkdir /Backup/mydata/
[root@ip-172-31-37-213 /]#
```

- Mounting the volume to the created directory

```
[root@ip-172-31-37-213 /]# mount /dev/xvdf /Backup/mydata
[root@ip-172-31-37-213 /]#
```

```
[root@ip-172-31-37-213 /]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0   4.0M   0% /dev
tmpfs           475M   0   475M   0% /dev/shm
tmpfs           190M  2.8M  188M   2% /run
/dev/xvda1      8.0G  1.6G  6.5G  20% /
tmpfs           475M   0   475M   0% /tmp
tmpfs           95M    0    95M   0% /run/user/1000
/dev/xvdf       20G  175M   20G   1% /Backup/mydata
[root@ip-172-31-37-213 /]#
```

#### 4. Ensuring the volume is mounted at boot option

- List the block volume UUID

```
[root@ip-172-31-37-213 /]# blkid /dev/xvdf
/dev/xvdf: UUID="715be324-0ca9-4cb6-9654-094456290a96" BLOCK_SIZE="512" TYPE="xfs"
```

- Add the volume to `/etc/fstab`

```
#
UUID=78de5e87-1e4f-4e4a-abba-d469bbc45143 / xfs defaults,noatime 1 1
UUID=2594-F04B /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
UUID=715be324-0ca9-4cb6-9654-094456290a96 /dev/xvdf xfs defaults 0 0
```

## 5. Amazon EFS Setup

- Created 2 instances in different availability zone

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	A..	Availability Zor
<input type="checkbox"/>	EFS-01	i-0521bb103a0ebeae2	Running	t2.micro	2/2 checks passed	+	us-east-1a
<input type="checkbox"/>	EFS-02	i-090b959aee799a77c	Running	t2.micro	2/2 checks passed	+	us-east-1b

- Created File system

File systems (1)

Filter by property values

< 1 >

Name	File system ID	Encryption	Total size	Size in Standard / One Zone	Size in Standard-IA / One Zone-IA	Provisioned Throughput (MiB/s)	File system state
my-files	fs-0ac6d0d968260afef	<div><div></div>Encrypted</div>	6.00 KiB	6.00 KiB	0 Bytes	-	<div><div></div>Available</div>

- Create a mount point and download EFS utilities on 2 instances

```
[root@ip-172-31-26-224 /]# mkdir efs
```

```
[root@ip-172-31-39-39 /]# mkdir efs02
```

```
[root@ip-172-31-26-224 /]# sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:52:03 ago on Mon Sep 11 14:20:42 2023.
Dependencies resolved.
=====
Package                        Architecture      Version
=====
Installing:
amazon-efs-utils              noarch            1.35.0-1.amzn2
Installing dependencies:
stunnel                      x86_64            5.58-1.amzn2
Transaction Summary
-----
Install 2 Packages

Total download size: 212 k
Installed size: 556 k
Downloading Packages:
=====
```

```
[root@ip-172-31-39-39 /]# sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:59:18 ago on Mon Sep 11 14:21:50 2023.
Dependencies resolved.
=====
Package                        Architecture      Version
=====
Installing:
amazon-efs-utils              noarch            1.35.0-1.amzn2
Installing dependencies:
stunnel                      x86_64            5.58-1.amzn2
Transaction Summary
-----
Install 2 Packages

Total download size: 212 k
Installed size: 556 k
Downloading Packages:
(1/2): amazon-efs-utils-1.35.0-1.amzn2023.noarch.rpm
(2/2): stunnel-5.58-1.amzn2023.0.2.x86_64.rpm
=====
```

- Mounted the file to an instance

```
[root@ip-172-31-26-224 /]# sudo mount -t efs -o tls fs-0f46374e512a850cc:/ efs
```

```
[root@ip-172-31-26-224 /]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0    4.0M   0% /dev
tmpfs           475M   0    475M   0% /dev/shm
tmpfs           190M  2.9M   188M   2% /run
/dev/xvda1      8.0G  1.6G   6.5G  19% /
tmpfs           475M   0    475M   0% /tmp
tmpfs           95M    0     95M   0% /run/user/1000
127.0.0.1:/     8.0E   0    8.0E   0% /efs
```

- Created a file one instance to be reflected to another

#### First instance

```
[root@ip-172-31-26-224 efs]# ls
shared.txt
[root@ip-172-31-26-224 efs]#
```

```
[root@ip-172-31-26-224 efs]# ls
shared.txt
[root@ip-172-31-26-224 efs]# cat shared.txt
Welcome to AWS file system
```

#### Second instance

```
[ec2-user@ip-172-31-39-39 efs02]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0  4.0M   0% /dev
tmpfs            475M   0  475M   0% /dev/shm
tmpfs            190M  2.9M  188M   2% /run
/dev/xvda1       8.0G  1.6G  6.5G  19% /
tmpfs            475M   0  475M   0% /tmp
tmpfs            95M    0   95M   0% /run/user/1000
127.0.0.1:/      8.0E   0   8.0E   0% /efs02
```

```
[ec2-user@ip-172-31-39-39 efs02]$ ls
shared.txt
[ec2-user@ip-172-31-39-39 efs02]$ cat shared.txt
Welcome to AWS file system
[ec2-user@ip-172-31-39-39 efs02]$
```