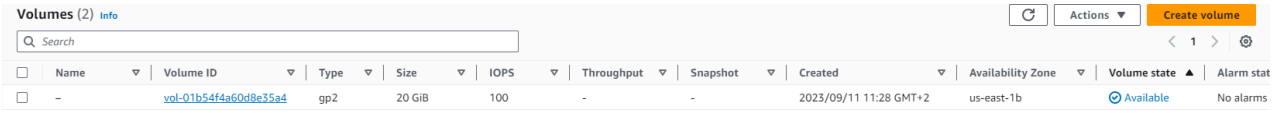
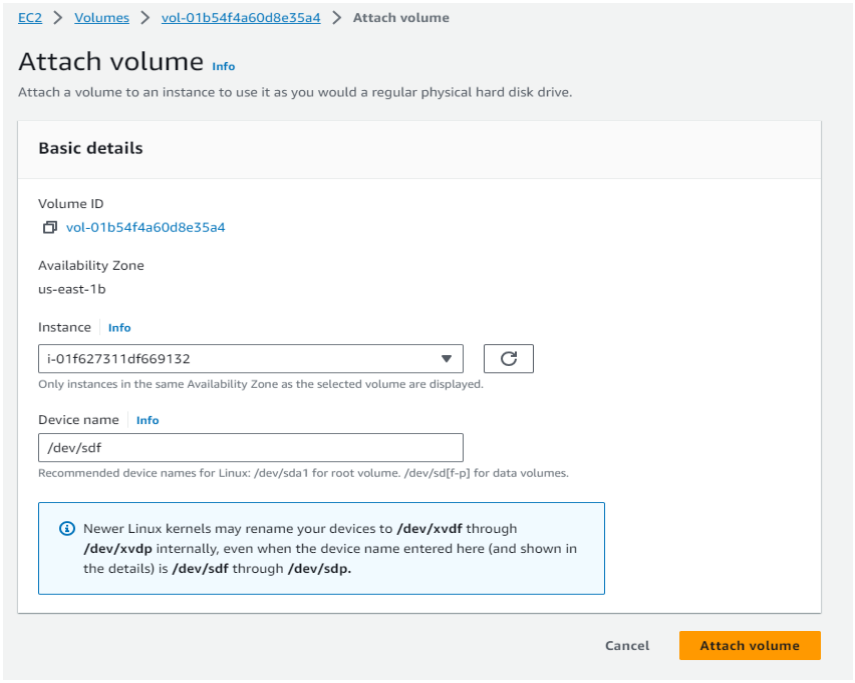
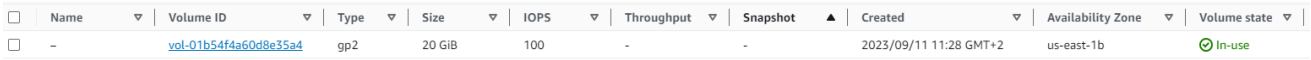
SOLUTION

1. Created EBS Volume



2. Attached to an instance





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

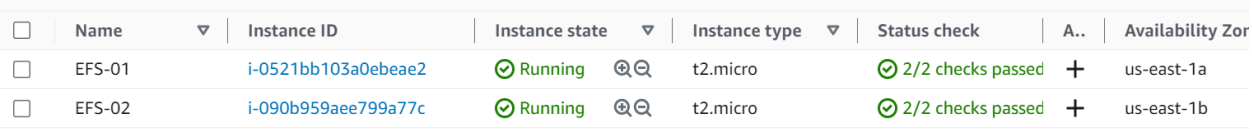
```
[root@ip-172-31-37-213 /]# blkid /dev/xvdf
/dev/xvdf: UUID="715be324-0ca9-4cb6-9654-094456290a96" BLOCK_SIZE="512" TYPE="xfs"
```

- Add the volume to **/etc/fstab**

```
#
UUID=78de5e87-1c4f-4c4a-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
```

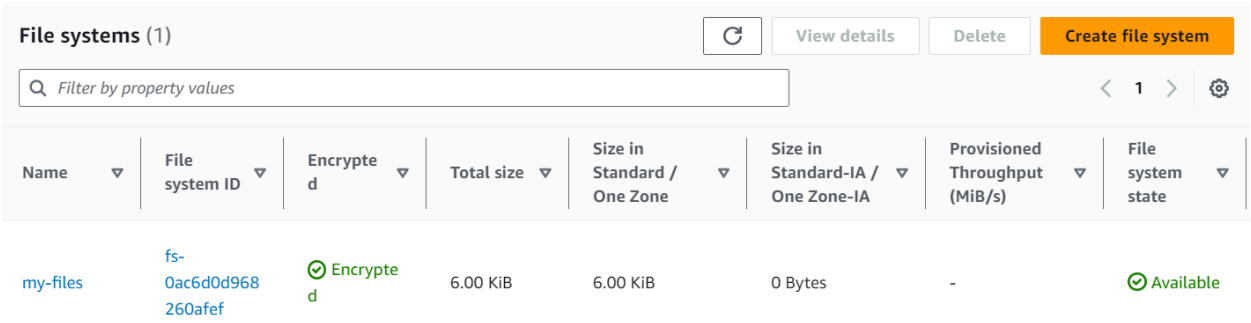
5. Amazon EFS Setup

- Created 2 instances in different availability zone



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

- Created File system



Name	File system ID	Encrypted	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	Encrypted	6.00 KiB	6.00 KiB	0 Bytes	-	Available

- 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.amz
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.amz
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]$
```