

EXPERIMENT-4

AIM OF EXPERIMENT :- Working with EBS

Task 1: Create a New EBS Volume

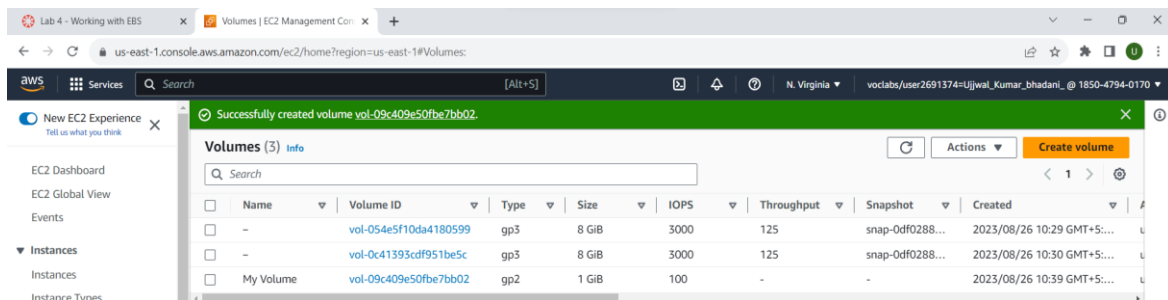
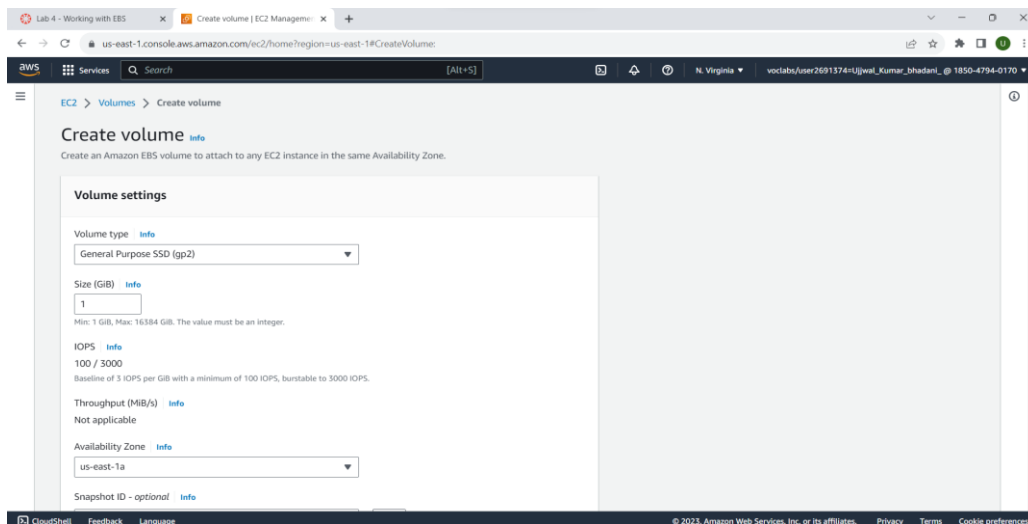
1. In the AWS Management Console, on the Services menu, click EC2.
2. In the left navigation pane, choose Instances.

An Amazon EC2 instance named Lab has already been launched for your lab.

3. Note the Availability Zone of the instance. It will look similar to *us-east-1a*.
4. In the left navigation pane, choose Volumes.

You will see an existing volume that is being used by the Amazon EC2 instance. This volume has a size of 8 GiB, which makes it easy to distinguish from the volume you will create next, which will be 1 GiB in size.

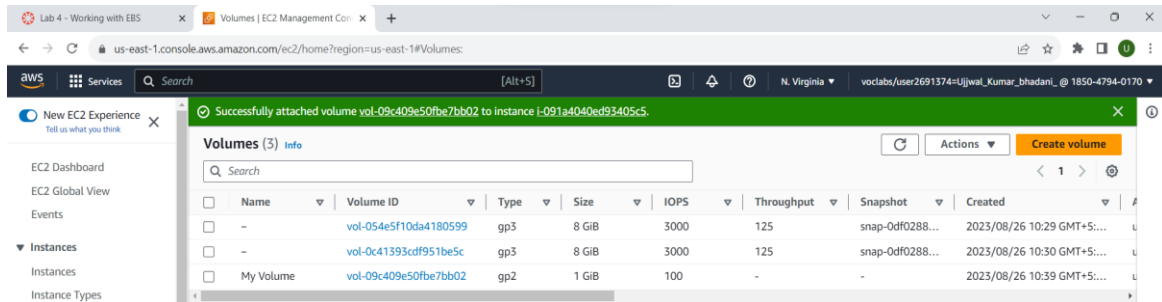
5. Choose **Create volume** then configure:
 - Volume Type: *General Purpose SSD (gp2)*
 - Size (GiB): 1. NOTE: You may be restricted from creating large volumes.
 - Availability Zone: Select the same availability zone as your EC2 instance.
 - Choose **Add Tag**
 - In the Tag Editor, enter:
 - Key: Name
 - Value: My Volume
6. Choose **Create Volume**



Task 2: Attach the Volume to an Instance

You can now attach your new volume to the Amazon EC2 instance.

11. Select My Volume.
12. In the Actions menu, choose Attach volume.
13. Choose the Instance field, then select the instance that appears (Lab).
14. Choose **Attach volume**. The volume state is now *In-use*.



Task 3: Connect to Your Amazon EC2 Instance

15. Read through the three bullet points in this step before you start to complete the actions, because you will not be able to see these instructions when the Details panel is open.
 - Choose the **Details** drop down menu above these instructions you are currently reading, and then choose **Show**. A Credentials window will open.
 - Choose the Download PPK button and save the labsuser.ppk file. Typically your browser will save it to the Downloads directory.
 - Then exit the Details panel by choosing the X.
16. Download needed software.
 - You will use PuTTY to SSH to Amazon EC2 instances. If you do not have PuTTY installed on your computer, download it here.
17. Open putty.exe
18. Configure PuTTY to not timeout:
 - Choose Connection
 - Set Seconds between keepalives to **30**

This allows you to keep the PuTTY session open for a longer period of time.

19. Configure your PuTTY session:
 - Choose Session
 - Host Name (or IP address): Paste the *Public DNS or IPv4 address* of the Lab instance that you noted earlier.
 - Back in PuTTY, in the Connection list, expand SSH
 - Choose Auth and expand Credentials
 - Under Private key file for authentication: Choose Browse
 - Browse to the *labsuser.ppk* file that you downloaded, select it, and choose Open
 - Choose Open again
20. To trust and connect to the host, choose Accept.
21. When prompted login as, enter: **ec2-user**

This will connect you to the EC2 instance.


```

ec2-user@ip-10-1-11-33:~
[ec2-user@ip-10-1-11-33 ~]$ 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  1.5G  6.5G  19% /
tmpfs           475M  0  475M   0% /tmp
tmpfs           95M   0  95M   0% /run/user/1000
[ec2-user@ip-10-1-11-33 ~]$ sudo mkfs -t ext3 /dev/sdf
mke2fs 1.46.5 (30-Dec-2021)
Creating filesystem with 262144 4k blocks and 65536 inodes
Filesystem UUID: 36289e8a-c314-457c-ba6a-6cd1d08f82a2
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376

Allocating group tables: done
Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-10-1-11-33 ~]$ sudo mkdir /mnt/data-store
[ec2-user@ip-10-1-11-33 ~]$ sudo mount /dev/sdf /mnt/data-store
[ec2-user@ip-10-1-11-33 ~]$ echo "/dev/sdf /mnt/data-store ext3 echo "/dev/sdf /mnt
t/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab
> cat /etc/fstab
> df -h
> exit
> clear
> ^C
[ec2-user@ip-10-1-11-33 ~]$ rm /etc/fstab
rm: remove write-protected regular file '/etc/fstab'? yes
rm: cannot remove '/etc/fstab': Permission denied
[ec2-user@ip-10-1-11-33 ~]$ 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  1.5G  6.5G  19% /
tmpfs           475M  0  475M   0% /tmp
tmpfs           95M   0  95M   0% /run/user/1000
/dev/xvdf       975M  60K  924M   1% /mnt/data-store
[ec2-user@ip-10-1-11-33 ~]$ sudo sh -c "echo some text has been written > /mnt/data
-store/file.txt"
[ec2-user@ip-10-1-11-33 ~]$ cat /mnt/data-store/file.txt
some text has been written
[ec2-user@ip-10-1-11-33 ~]$

```

Task 5: Create an Amazon EBS Snapshot

38. In the AWS Management Console, choose Volumes and select My Volume.
39. In the Actions menu, select Create snapshot.
40. Choose **Add tag** then configure:
 - Key: Name
 - Value: My Snapshot
 - Choose **Create snapshot**
41. In the left navigation pane, choose Snapshots.

```

[ec2-user@ip-10-1-11-186 ~]$
sudo rm /mnt/data-store/file.txt
[ec2-user@ip-10-1-11-186 ~]$ ls /mnt/data-store/
lost+found

```

Task 6: Restore the Amazon EBS Snapshot

Create a Volume Using Your Snapshot

44. In the AWS Management Console, select My Snapshot.
45. In the Actions menu, select Create volume from snapshot.
46. For Availability Zone Select the same availability zone that you used earlier.
47. Choose **Add tag** then configure:
 - Key: Name
 - Value: Restored Volume
 - Choose **Create volume**

Attach the Restored Volume to Your EC2 Instance

48. In the left navigation pane, choose Volumes.
49. Select Restored Volume.
50. In the Actions menu, select Attach volume.
51. Choose the Instance field, then select the (Lab) instance that appears.

Note that the Device field is set to `/dev/sdg`. You will use this device identifier in a later task.

52. Choose **Attach volume**

The volume state is now *in-use*.

The screenshot displays the AWS Management Console interface across three browser tabs, illustrating the steps to create and attach an EBS volume.

Top Tab: Snapshots

- Navigation pane: Snapshots (1/1) Info.
- Table of snapshots:

Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started
My Snapshot	snap-0239e69a07f0be719	1 GiB	-	Standard	Completed	2023/08/26 11:16 GMT+5:30

Middle Tab: Snapshot Details

- Snapshot ID: snap-0239e69a07f0be719 (My Snapshot)
- Details tab selected.
- Snapshot ID: snap-0239e69a07f0be719 (My Snapshot)
- Volume size: 1 GiB
- Progress: Available (100%)
- Snapshot status: Completed
- Owner: 185047940170
- Volume ID: vol-09c409e50f7be7bb02
- Started: Sat Aug 26 2023 11:16:25 GMT+05:30 (India Standard Time)
- Product codes: -
- Encryption: Not encrypted
- KMS key ID: -
- KMS key alias: -

Bottom Tab: Volumes

- Navigation pane: Volumes (4) Info.
- Table of volumes:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
-	vol-054e5f10da4180599	gp3	8 GiB	3000	125	snap-0df0288...	2023/08/26 10:29 GMT+5:30
-	vol-0c41393cdf951be5c	gp3	8 GiB	3000	125	snap-0df0288...	2023/08/26 10:30 GMT+5:30
My Volume	vol-09c409e50f7be7bb02	gp2	1 GiB	100	-	-	2023/08/26 10:39 GMT+5:30
Restored Volume	vol-0789fca0ac4fad1c4	gp2	1 GiB	100	-	snap-0239e69...	2023/08/26 11:22 GMT+5:30

Green status bars indicate successful actions: "Successfully created volume vol-0789fca0ac4fad1c4" and "Successfully attached volume vol-0789fca0ac4fad1c4 to instance i-091a040ed933405c5".

Mount the Restored Volume

53. Create a directory for mounting the new storage volume:

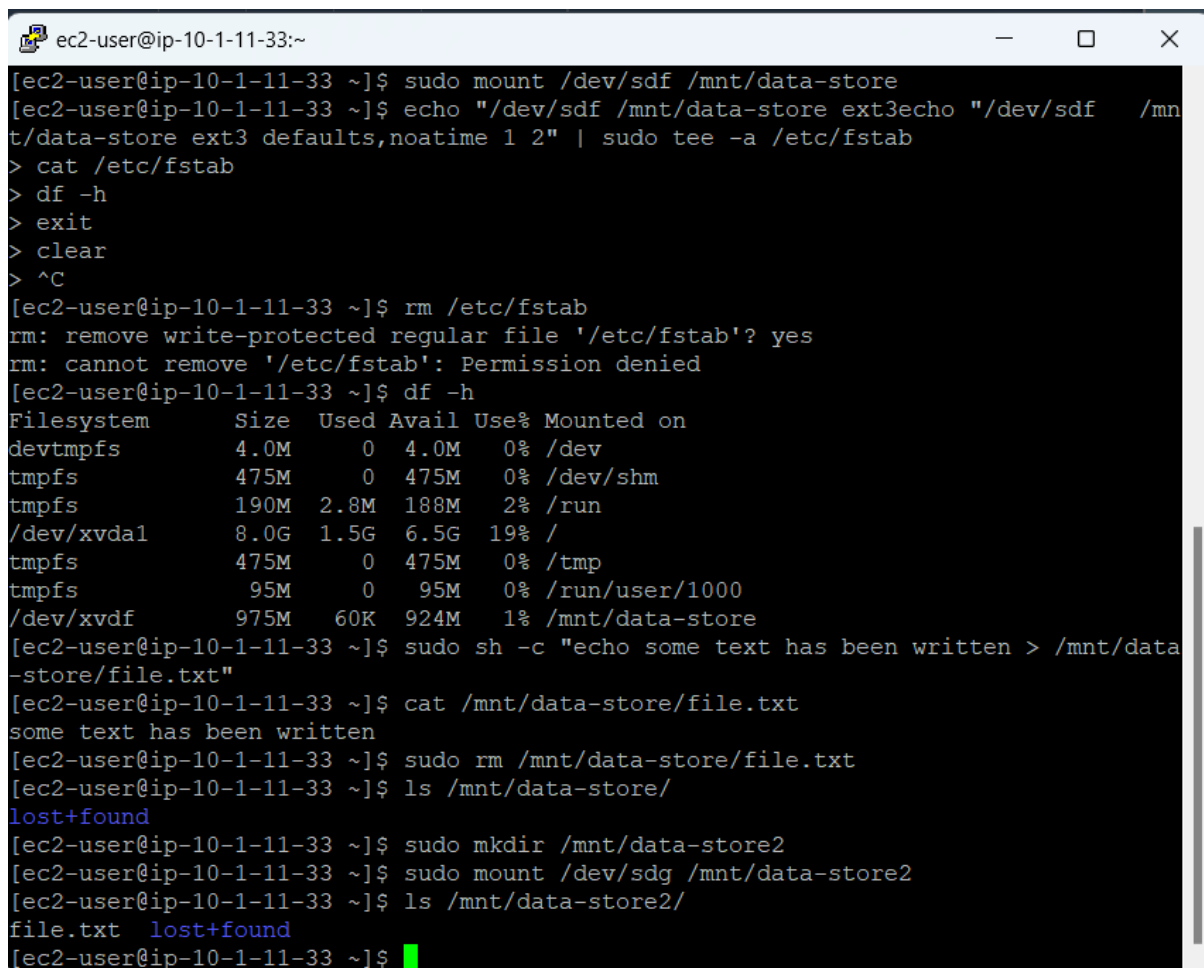
```
sudo mkdir /mnt/data-store2
```

53. Mount the new volume:

```
sudo mount /dev/sdg /mnt/data-store2
```

54. Verify that volume you mounted has the file that you created earlier.

```
ls /mnt/data-store2/
```



```
ec2-user@ip-10-1-11-33:~  
[ec2-user@ip-10-1-11-33 ~]$ sudo mount /dev/sdf /mnt/data-store  
[ec2-user@ip-10-1-11-33 ~]$ echo "/dev/sdf /mnt/data-store ext3echo "/dev/sdf /mn  
t/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab  
> cat /etc/fstab  
> df -h  
> exit  
> clear  
> ^C  
[ec2-user@ip-10-1-11-33 ~]$ rm /etc/fstab  
rm: remove write-protected regular file '/etc/fstab'? yes  
rm: cannot remove '/etc/fstab': Permission denied  
[ec2-user@ip-10-1-11-33 ~]$ 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  1.5G  6.5G  19% /  
tmpfs           475M   0   475M   0% /tmp  
tmpfs           95M    0    95M   0% /run/user/1000  
/dev/xvdf       975M  60K  924M   1% /mnt/data-store  
[ec2-user@ip-10-1-11-33 ~]$ sudo sh -c "echo some text has been written > /mnt/data  
-store/file.txt"  
[ec2-user@ip-10-1-11-33 ~]$ cat /mnt/data-store/file.txt  
some text has been written  
[ec2-user@ip-10-1-11-33 ~]$ sudo rm /mnt/data-store/file.txt  
[ec2-user@ip-10-1-11-33 ~]$ ls /mnt/data-store/  
lost+found  
[ec2-user@ip-10-1-11-33 ~]$ sudo mkdir /mnt/data-store2  
[ec2-user@ip-10-1-11-33 ~]$ sudo mount /dev/sdg /mnt/data-store2  
[ec2-user@ip-10-1-11-33 ~]$ ls /mnt/data-store2/  
file.txt  lost+found  
[ec2-user@ip-10-1-11-33 ~]$
```

Submitted by

Name	Ujjwal Kumar Bhadani
Regd. No	2101020286
Roll No.	CIT21046