

## Task 1: Create a New EBS Volume

In this task, you will create and attach an Amazon EBS volume to a new Amazon EC2 instance.

5. In the AWS Management Console, select the **Services** menu, and then select **EC2** under **Compute**.
6. In the left navigation pane, click **Instances**.

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

7. Note the **Availability Zone** of the instance. It will look similar to *us-west-2a*.
8. In the left navigation pane, click **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.

9. Click 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.
  - Click Add Tag
  - In the Tag Editor, enter:
    - **Key:** Name
    - **Value:** My Volume
10. Click Create Volume then click Close

Your new volume will appear in the list, and will move from the *creating* state to the *available* state. You may need to click **refresh** to see your new 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, click **Attach Volume**.
13. Click in the **Instance** field, then select the instance that appears (Lab).

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

14. Click Attach The volume state is now *in-use*.

## Task 3: Connect to Your Amazon EC2 Instance using SSH

## Task 4: Create and Configure Your File System

In this task, you will add the new volume to a Linux instance as an ext3 file system under the /mnt/data-store mount point.


If you are using PuTTY, you can paste text by right-clicking in the PuTTY window.

30. View the storage available on your instance:



```
df -h
```

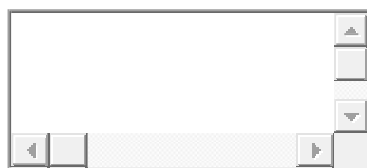
You should see output similar to:



```
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        488M    60K  488M   1% /dev
tmpfs           497M     0  497M   0% /dev/shm
/dev/xvda1      7.8G  982M   6.7G  13% /
```


This is showing the original 8GB disk volume. Your new volume is not yet shown.

31. Create an ext3 file system on the new volume:



```
sudo mkfs -t ext3 /dev/sdf
```

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




```
sudo mkdir /mnt/data-store
```

33. Mount the new volume:



```
sudo mount /dev/sdf /mnt/data-store
```

To configure the Linux instance to mount this volume whenever the instance is started, you will need to add a line to */etc/fstab*.



```
echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" | sudo tee  
-a /etc/fstab
```

34. View the configuration file to see the setting on the last line:




```
cat /etc/fstab
```

35. View the available storage again:




```
df -h
```

The output will now contain an additional line - */dev/xvdf*:



Filesystem	Size	Used	Avail	Use%	Mounted on
devtmpfs	488M	60K	488M	1%	/dev
tmpfs	497M	0	497M	0%	/dev/shm
/dev/xvda1	7.8G	982M	6.7G	13%	/
/dev/xvdf	976M	1.3M	924M	1%	/mnt/data-store

36. On your mounted volume, create a file and add some text to it.



```
sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"
```

37. Verify that the text has been written to your volume.



```
cat /mnt/data-store/file.txt
```

## Task 5: Create an Amazon EBS Snapshot

In this task, you will create a snapshot of your EBS volume.

You can create any number of point-in-time, consistent snapshots from Amazon EBS volumes at any time. Amazon EBS snapshots are stored in Amazon S3 with high durability. New Amazon EBS volumes can be created out of snapshots for cloning or restoring backups. Amazon EBS snapshots can also be easily shared among AWS users or copied over AWS regions.

38. In the **AWS Management Console**, click on **Volumes** and select **My Volume**.

39. In the **Actions** menu, click **Create Snapshot**.

40. Click Add Tag then configure:

- **Key:** Name
- **Value:** My Snapshot
- Click Create Snapshot then click Close

Your snapshot will be listed in the **Snapshots** console.

41. In the left navigation pane, click **Snapshots**.

Your snapshot is displayed. It will start with a state of *pending*, which means that the snapshot is being created. It will then change to a state of *completed*. Only used storage blocks are copied to snapshots, so empty blocks do not take any snapshot storage space.

42. In your remote SSH session, delete the file that you created on your volume.

```
sudo rm /mnt/data-store/file.txt
```

43. Verify that the file has been deleted.

```
ls /mnt/data-store/
```

Your file has been deleted.

## Task 6: Restore the Amazon EBS Snapshot

If you ever wish to retrieve data stored in a snapshot, you can **Restore** the snapshot to a new EBS volume.

### Create a Volume Using Your Snapshot

44. In the **AWS Management Console**, select **My Snapshot**.

45. In the **Actions** menu, click **Create Volume**.

46. For **Availability Zone** Select the same availability zone that you used earlier.

47. Click **Add Tag** then configure:

- **Key:** Name
- **Value:** Restored Volume
- Click **Create Volume**
- Click **Close**

When restoring a snapshot to a new volume, you can also modify the configuration, such as changing the volume type, size or Availability Zone.

### Attach the Restored Volume to Your EC2 Instance

48. In the left navigation pane, click **Volumes**.

49. Select **Restored Volume**.

50. In the **Actions** menu, click **Attach Volume**.

51. Click in the **Instance** field, then select the instance that appears (Lab).

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

52. Click Attach

The volume state is now *in-use*.

## Mount the Restored Volume

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

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

54. Mount the new volume:

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

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

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

You should see file.txt.

## Conclusion

Congratulations! You now have successfully:

- Created an Amazon EBS volume
- Attached the volume to an EC2 instance
- Created a file system on the volume
- Added a file to volume
- Created a snapshot of your volume
- Created a new volume from the snapshot
- Attached and mounted the new volume to your EC2 instance
- Verified that the file you created earlier was on the newly created volume