Mount EBS to EC2

Attach and mount an EBS volume to an EC2 instance

Objectives:

1. Learn to create an EBS Volume and attach.

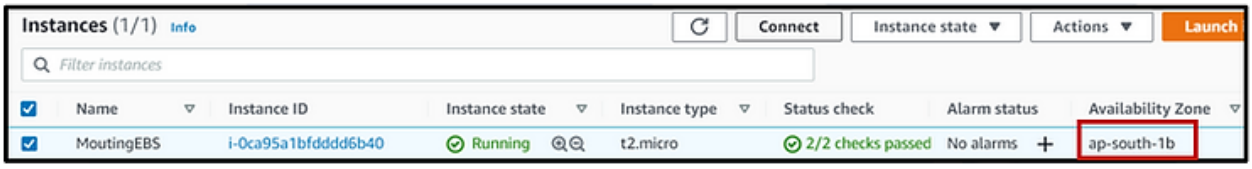
2. Mount this instance to an existing EC2 instance.

Step 1: Create a **RED HAT SERVER** in subnet us-east-1a

You can choose the subnet in **Step3: Configure Instance Details** of the instance creation.

You can refer to our **step wise blog here** for launching EC2 Red Hat Server.

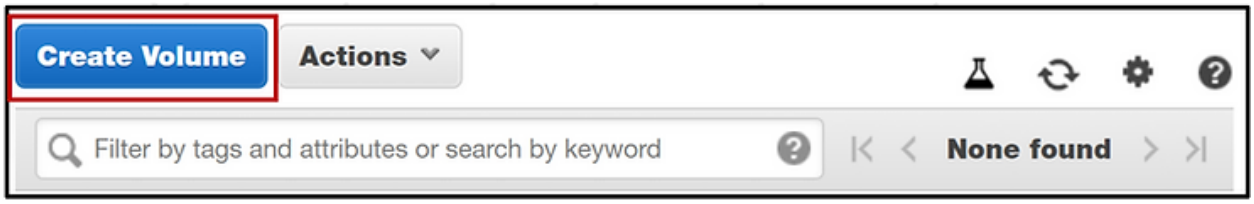
Confirm that the instance state is **Running**.



Step 2: Create an EBS volume and attach it to the EC2 instance.

From the Left Navigation Pane, open the dropdown for **Elastic Block Store** and click on Volumes.

Here, click on Create Volume for creating an EBS Volume.



Step 3: Fill the details as follows:

Make sure the **Volume Type** is General Purpose SSD (**gp2**)

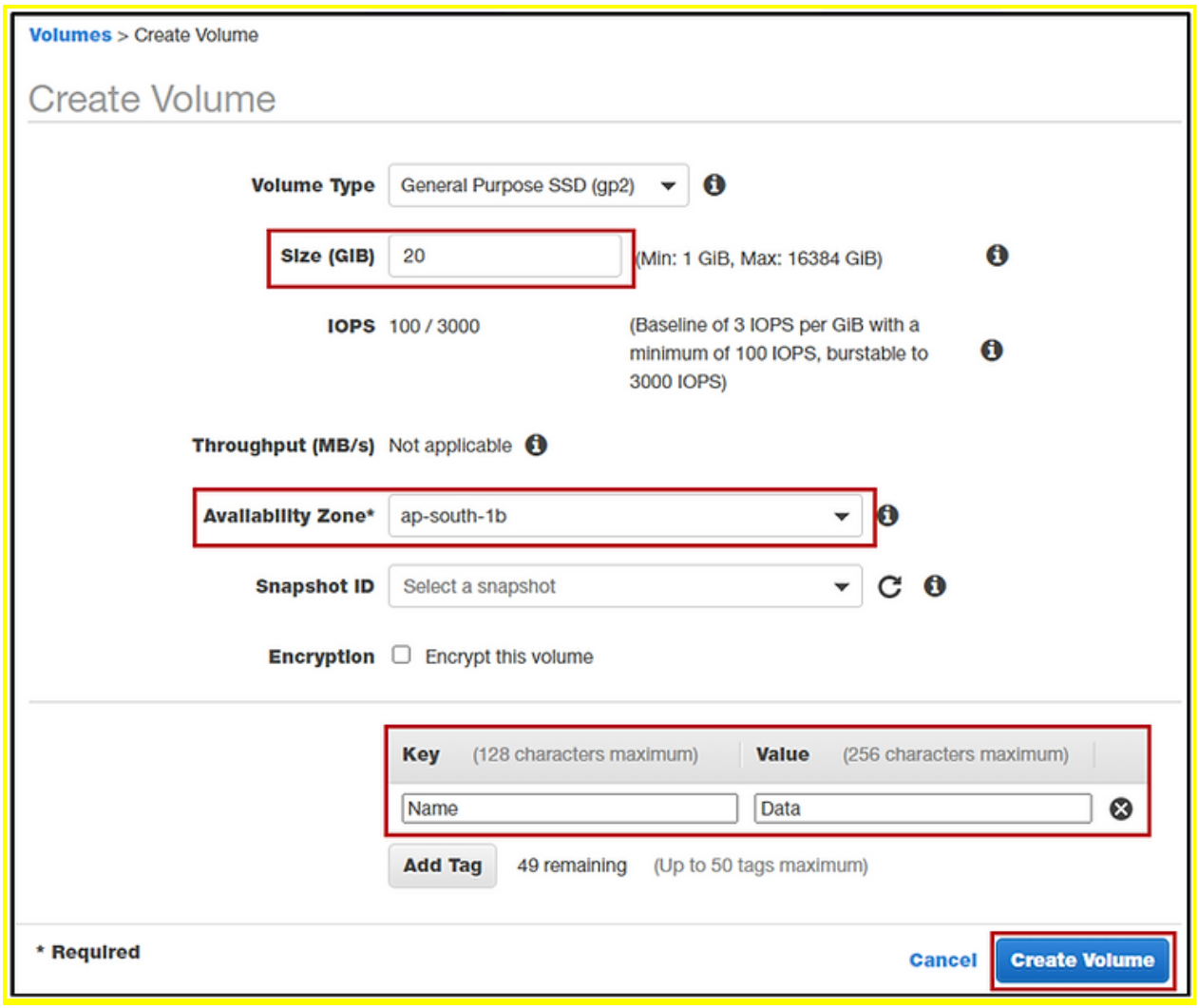
Size (GiB): 10

Availability Zone: us-east-1a (This zone should be the same as your EC2 instance).

Click on Add Tag and set:

Key: Name

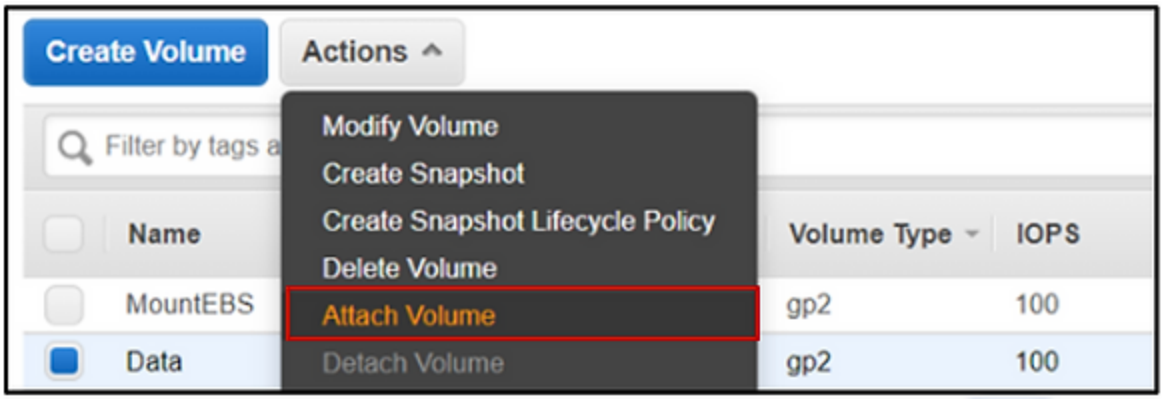
Value: Data



Click on Create Volume.

Step 4: After creating the volume, go back to your EBS volume page and select the volume named Data.

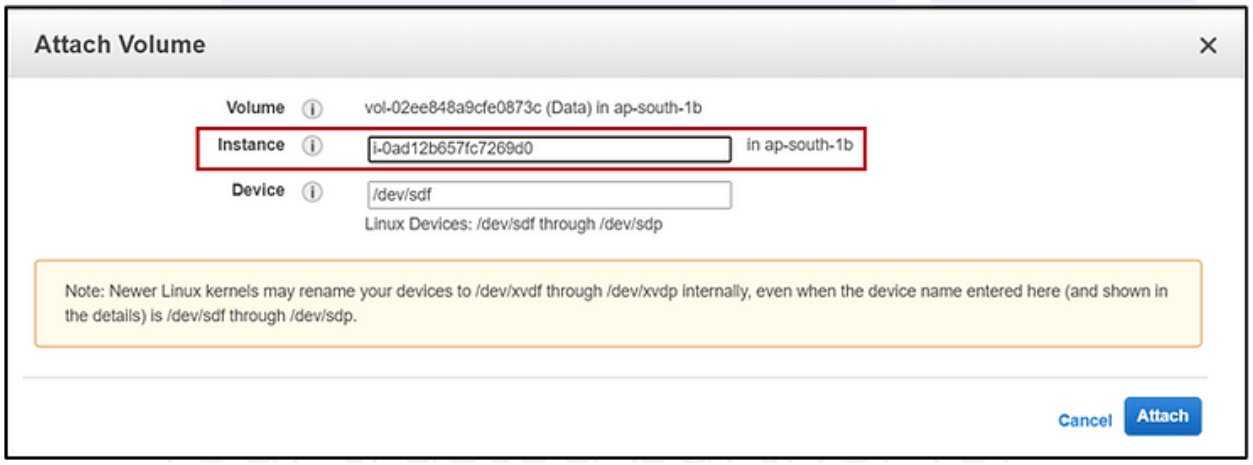
Open the dropdown for **Actions** and click on Attach Volume.



Click on the textbox for **Instance**.

It will show all the EC2 Instances we have in that particular availability zone.

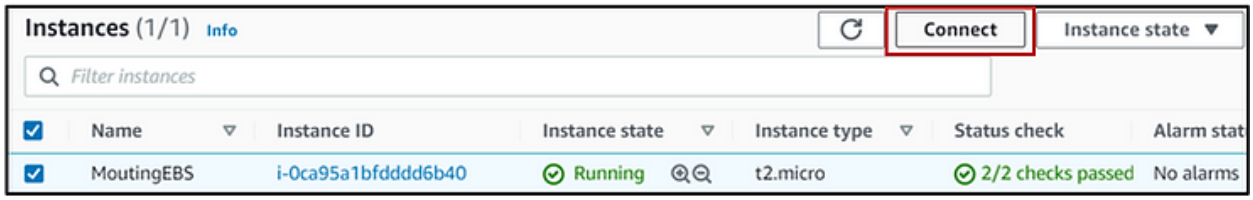
Select the instance in us-east-1a created above.



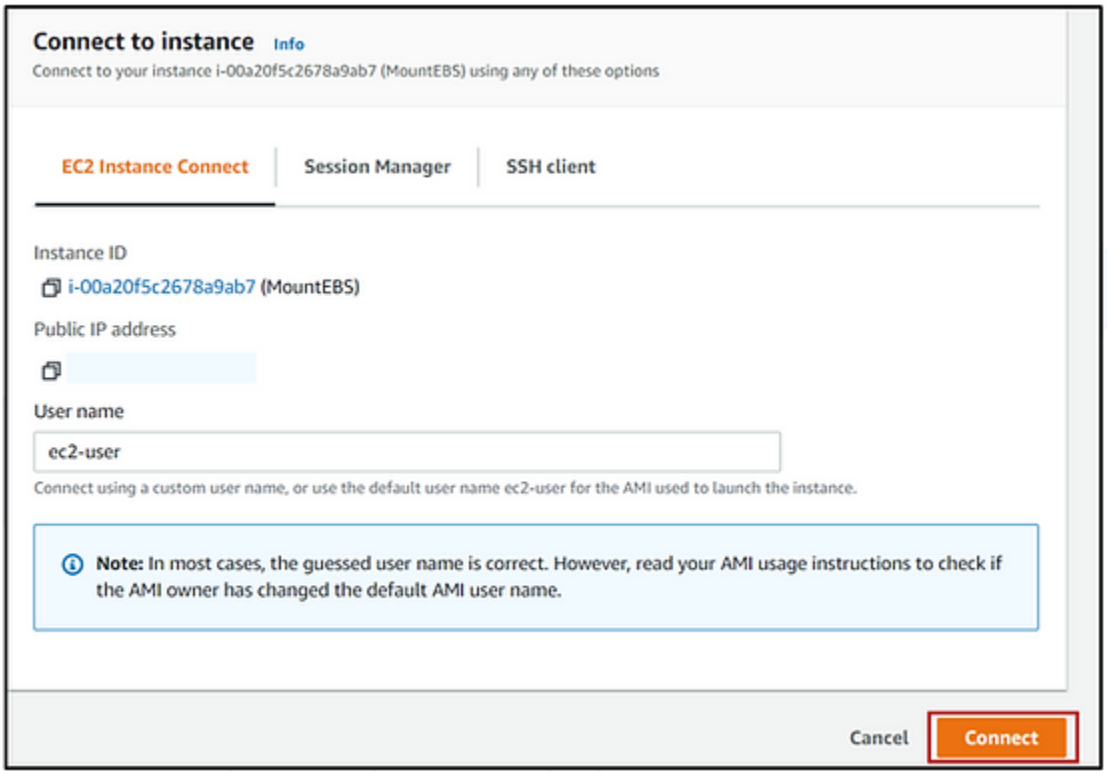
Click on Attach and now your EBS Volume is attached to your EC2 instance.

Step 5: Go back to Instances.

Select your EC2 instance and click on Connect.



Confirm the User name **ec2-user**. Click on Connect.



Step 6: Once you're in the SSH run the following command for getting any system updates.

sudo yum -y update

Run the command *lsblk* to get a list of all the block storage modules associated with the instance.

```
[ec2-user@ip-172-31-15-13 ~]$ 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  20G  0 disk
```

Now check if the volume has any data using the following command:

sudo file -s /dev/xvdf

```
[ec2-user@ip-172-31-15-13 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: data
```

If your volume is named something like **dev/xvdb** you might need to change the command with your respective storage name.

If the above command output shows **/dev/xvdf: data** it means your volume is empty.

Step 7: **Format** the volume to the "**ext4**" filesystem using the following command:

sudo mkfs -t ext4 /dev/xvdf

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

Again, Run the command *sudo file -s /dev/xvdf* to check if the file system has been mounted on the Block or not.

```
[ec2-user@ip-172-31-15-13 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: Linux rev 1.0 ext4 filesystem data, UUID=c974dbe3-f086-49d0-aacc-13e5cb5f1bda (extents)
(64bit) (large files) (huge files)
```

As you can see now we have the file system mounted on our EBS volume.

Step 8: Create a new directory named **newvolume** with the command

sudo mkdir newvolume

Now mount your EBS volume in this directory using the command

sudo mount /dev/xvdf newvolume/

Note: this command has no output text

Change directory into **newvolume** directory and check the disk space to validate the volume mount.

cd newvolume

This following command is used to display the disk space used in filesystem in a human readable format

df –h

```
[ec2-user@ip-172-31-15-13 ~]$ cd newvolume/
[ec2-user@ip-172-31-15-13 newvolume]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        482M     0  482M   0% /dev
tmpfs           492M     0  492M   0% /dev/shm
tmpfs           492M  476K  492M   1% /run
tmpfs           492M     0  492M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.5G  6.6G  19% /
tmpfs            99M     0   99M   0% /run/user/1000
/dev/xvdf        20G   45M   19G   1% /home/ec2-user/newvolume
[ec2-user@ip-172-31-15-13 newvolume]$
```

As you can see here the Block Volume dev/xvdf is successfully mounted on your EC2 Instance

Step 9: To unmount the EBS volume, first we need to go back to the main working directory using following command:

cd ..

After that put the following command to unmount the volume:

sudo umount /dev/xvdf

```
[ec2-user@ip-172-31-14-174 newvolume]$ cd ..
[ec2-user@ip-172-31-14-174 ~]$ sudo umount /dev/xvdf
[ec2-user@ip-172-31-14-174 ~]$
```

Note: Close the session, terminate the instance and delete the elastic volume if you no longer need it.

Document Done by Arun tiyyari , Trinadh , Manikanta.