

EC2-Assignment---2

Problem Statement:

You work for XYZ Corporation. Your corporation wants to launch a new web-based application using AWS Virtual Machines. Configure the resources accordingly with appropriate storage for the tasks.

Tasks To Be Performed:

1. Launch a Linux EC2 instance.
2. Create an EBS volume with 20 GB of storage and attach it to the created EC2 instance.
3. Resize the attached volume and make sure it reflects in the connected instance.

ANSWER:

1. Linux EC2 instance created with root volume alone

The screenshot displays the AWS Management Console for a Linux EC2 instance. The instance is named 'Linux-eks' and is in the 'Running' state. The 'Storage' tab is selected, showing the root device details and a table of block devices. The root device is an EBS volume with a size of 8 GiB. The block devices table shows the root volume attached to /dev/xvda. The recent root volume replacement tasks table is empty.

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on termination
vol-0b07edf07cadce62e	/dev/xvda	8	Attached	2024/01/27 21:37 GMT+5:30	No	-	Yes

a. The volume details are

```
Amazon Linux 2023
https://www.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-34-51 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/xvda1      8G    1M   8G   1% /
/dev/xvda128    100M  12K  100M   1% /boot/efi
```

2. EBS volume of 20GB created in the same AZ (us-east-1a)

Successfully created volume vol-0c6947508e05d0e26.

Volumes (1/2) [Info](#)

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm status
<input type="checkbox"/>	-	vol-0b07edf07cadce62e	gp3	8 GiB	3000	125	snap-0e2469d...	2024/01/27 21:37 GMT+5...	us-east-1a	✔ In-use	No alarm
<input checked="" type="checkbox"/>	Linux-EBS	vol-0c6947508e05d0e26	gp3	20 GiB	3000	125	-	2024/01/27 21:59 GMT+5...	us-east-1a	⌚ Available	No alarm

Volume ID: vol-0c6947508e05d0e26 (Linux-EBS)

Details | Status checks | Monitoring | Tags

Volume ID vol-0c6947508e05d0e26 (Linux-EBS)	Size 20 GiB	Type gp3	Volume status ✔ Okay
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendation s. Learn more	Volume state ⌚ Available	IOPS 3000	Throughput 125
Encryption Not encrypted	KMS key ID -	KMS key alias -	KMS key ARN -
Fast snapshot restored No	Snapshot -	Availability Zone us-east-1a	Created Sat Jan 27 2024 21:59:53 GMT+0530 (India Standard Time)
Multi-Attach enabled No	Attached resources -	Outposts ARN -	

a. Attach the 20GB volume to the Linux instance

EC2 > Volumes > vol-0c6947508e05d0e26 > 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-0c6947508e05d0e26 (Linux-EBS)

Availability Zone
us-east-1a

Instance [Info](#)
i-009e6a57e0eb661bd

Device name [Info](#)
/dev/sdf

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

ⓘ 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.

Cancel [Attach volume](#)

b. Volume attached successfully

Successfully attached volume vol-0c6947508e05d0e26 to instance i-009e6a57e0eb661bd.

Volumes (2) [Info](#)

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm status
<input type="checkbox"/>	-	vol-0b07edf07cadce62e	gp3	8 GiB	3000	125	snap-0e2469d...	2024/01/27 21:37 GMT+5...	us-east-1a	✔ In-use	No alarms
<input type="checkbox"/>	Linux-EBS	vol-0c6947508e05d0e26	gp3	20 GiB	3000	125	-	2024/01/27 21:59 GMT+5...	us-east-1a	✔ In-use	No alarms

c. Volume /dev/xvdf

```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-34-51 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0 80G 0 disk 
|--xvda1    202:1    0 80G 0 part /
|--xvda127 259:0    0 1M 0 part 
--xvda128 259:1    0 10M 0 part /boot/efi
[ec2-user@ip-172-31-34-51 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0 80G 0 disk 
|--xvda1    202:1    0 80G 0 part /
|--xvda127 259:0    0 1M 0 part 
--xvda128 259:1    0 10M 0 part /boot/efi
xvdf        202:80   0 200G 0 disk 
[ec2-user@ip-172-31-34-51 ~]$
```

d. Volume mounted

```
[ec2-user@ip-172-31-34-51 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0 80G 0 disk 
|--xvda1    202:1    0 80G 0 part /
|--xvda127 259:0    0 1M 0 part 
--xvda128 259:1    0 10M 0 part /boot/efi
[ec2-user@ip-172-31-34-51 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0 80G 0 disk 
|--xvda1    202:1    0 80G 0 part /
|--xvda127 259:0    0 1M 0 part 
--xvda128 259:1    0 10M 0 part /boot/efi
xvdf        202:80   0 200G 0 disk 
[ec2-user@ip-172-31-34-51 ~]$ sudo file -s /dev/xvdf
/dev/xvdf: data
[ec2-user@ip-172-31-34-51 ~]$ sudo mkfs -t ext4 /dev/xvdf
mkfs 1.46.5 (30-Dec-2021)
Creating filesystem with 5242880 4k blocks and 1310720 inodes
Filesystem UUID: 9b7133e7-6bdf-4525-ba23-a25c4f7a6c52
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
    4096000
Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

[ec2-user@ip-172-31-34-51 ~]$ ls
[ec2-user@ip-172-31-34-51 ~]$ sudo mkdir ebsvolume
[ec2-user@ip-172-31-34-51 ~]$ sudo mount /dev/xvdf ebsvolume
[ec2-user@ip-172-31-34-51 ~]$ lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0 80G 0 disk 
|--xvda1    202:1    0 80G 0 part /
|--xvda127 259:0    0 1M 0 part 
--xvda128 259:1    0 10M 0 part /boot/efi
xvdf        202:80   0 200G 0 disk /home/ec2-user/ebsvolume
[ec2-user@ip-172-31-34-51 ~]$
```

COMMAND HISTORY:

[ec2-user@ip-172-31-34-51 ~]\$ history

- 1 lsblk
- 2 sudo file -s /dev/xvdf
- 3 sudo mkfs -t ext4 /dev/xvdf
- 4 ls
- 5 sudo mkdir ebsvolume
- 6 sudo mount /dev/xvdf ebsvolume
- 7 lsblk
- 8 history

[ec2-user@ip-172-31-34-51 ~]\$

3. Resize the volume

The screenshot shows the 'Modify volume' page in the AWS Management Console. The page title is 'Modify volume' with a sub-header 'Modify the type, size, and performance of an EBS volume.' Below this, the 'Volume details' section shows the following information:

- Volume ID: vol-0c6947508e05d0e26 (Linux-EBS)
- Volume type: General Purpose SSD (gp3)
- Size (GiB): 25 (with a range of 1 to 16384 GiB)
- IOPS: 3000 (with a range of 3000 to 16000 IOPS)
- Throughput (MiB/s): 125 (with a range of 125 to 1000 MiB/s)

At the bottom of the form, there are 'Cancel' and 'Modify' buttons.

The screenshot shows the 'Volumes' page in the AWS Management Console. A blue banner at the top indicates 'Requested volume modification for volume vol-0c6947508e05d0e26. The volume is being modified.' Below the banner, there is a table of volumes.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm stat
-	vol-0b07edf07cadce62e	gp3	8 GiB	3000	125	snap-0e2469d...	2024/01/27 21:37 GMT+5...	us-east-1a	In-use	No alarms
Linux-EBS	vol-0c6947508e05d0e26	gp3	25 GiB	3000	125	-	2024/01/27 21:59 GMT+5...	us-east-1a	In-use - optimizi	No alarms

a. Resized volume 25 GB reflecting against /dev/xvdf

```
ec2-user@ip-172-31-34-51 ~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           202M  12K  202M   6% /dev/shm
/dev/xvda1      202G   12M  202G   1% /
/dev/xvda128    259G   10M  259G   1% /boot/efi
/dev/xvdf       202G   12M  202G   1% /home/ec2-user/ebavolume
```