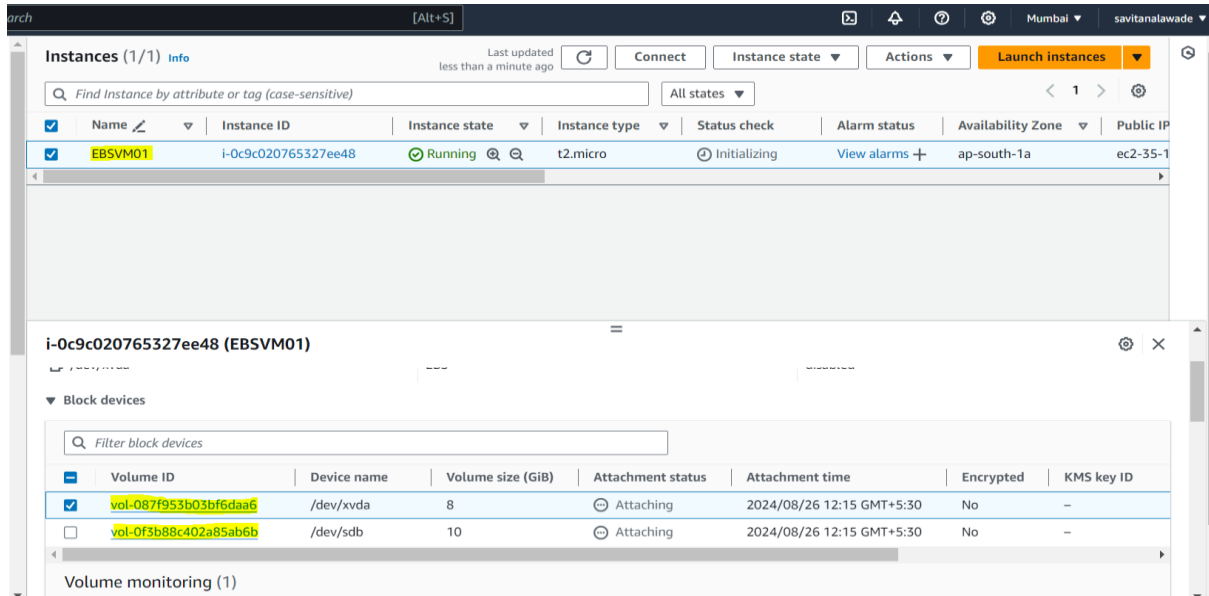


EBS- 26th August Practical – Savita Nalawade

Task1- create one instance and attached root & EBS volume

1) Created one instance with Root volume and EBS volume



The screenshot shows the AWS Management Console interface for an EC2 instance named EBSVM01. The instance is in a 'Running' state. Below the instance details, the 'Block devices' section is expanded, showing a table of attached volumes.

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
vol-087f953b03bf6daa6	/dev/xvda	8	Attaching	2024/08/26 12:15 GMT+5:30	No	-
vol-0f5b88c402a85ab6b	/dev/sdb	10	Attaching	2024/08/26 12:15 GMT+5:30	No	-

2) Attaching EBS to instance

```
[root@ip-172-31-33-225 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdb        202:16    0  10G  0 disk
[root@ip-172-31-33-225 ~]# file -s /dev/xvdb
/dev/xvdb: data
[root@ip-172-31-33-225 ~]# mkfs -t ext4 /dev/xvdb
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
655360 inodes, 2621440 blocks
131072 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2151677952
80 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

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

[root@ip-172-31-33-225 ~]# mkdir /home/ebs-file1
[root@ip-172-31-33-225 ~]# mount /dev/xvdb /home/ebs-file1
[root@ip-172-31-33-225 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdb        202:16    0  10G  0 disk /home/ebs-file1
[root@ip-172-31-33-225 ~]#
```

We can see both volumes are in attached state

i-0c9c020765327ee48 (EBSVM01)							
Filter block devices							
<input checked="" type="checkbox"/>	Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
<input checked="" type="checkbox"/>	vol-087f953b03bf6daa6	/dev/xvda	8	Attached	2024/08/26 12:15 GMT+5:30	No	–
<input checked="" type="checkbox"/>	vol-0f3b88c402a85ab6b	/dev/sdb	10	Attached	2024/08/26 12:15 GMT+5:30	No	–

Task2 – Increase the size of root EBS Volume.

- 1) To increase root EBS volume we need snapshot (Its chargeable, size of snapshot=size of volume)
- Created snapshot for root EBS volume

EC2 > Snapshots > Create snapshot

Create snapshot Info

Create a point-in-time snapshot of an EBS volume and use it as a baseline for new volumes or for data backup. You can create snapshots from an individual volume, or you can create multi-volume snapshots from all of the volumes attached to an instance.

Source

Resource type Info

☒ Volume
Create a snapshot from a specific volume.

☐ Instance
Create multi-volume snapshots from an instance.

Volume ID

The volume from which to create the snapshot.

vol-087f953b03bf6daa6

ap-south-1a

Snapshot details

Description

Add a description for your snapshot.

EBSRootVolumeSnap

255 characters maximum

Snapshot have been created

Snapshots (1) Info

Owned by me

Search

Refresh

Recycle Bin

Actions

Create snapshot

< 1 > Settings

<input type="checkbox"/>	Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started
<input type="checkbox"/>	-	snap-0631f9f55ba2777e6	8 GiB	EBSRootVolumeSnap	Standard	Completed	2024/08/26 12:35 GM

2) Create volume from Snapshot make sure availability zone should be same as instance

Create volume [Info](#)

Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.

Volume settings

Snapshot ID
 `snap-0631f9f55ba2777e6`

Volume type [Info](#)
General Purpose SSD (gp3) ▼

General Purpose SSD gp3 is now the default selection. gp3 provides up to 20% lower cost per GB than gp2.
[Learn More](#)

Size (GiB) [Info](#)

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS [Info](#)

Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s) [Info](#)

Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.

Availability Zone [Info](#)
 ▼

3) Stop the instance

Successfully initiated stopping of i-0c9c020765327ee48

Instances (1/1) [Info](#)

Last updated less than a minute ago [Connect](#) [Instance state](#) ▼ [Actions](#) ▼ [Launch instances](#) ▼

[All states](#) ▼

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
<input checked="" type="checkbox"/>	EBSVM01	i-0c9c020765327ee48	Stopped	t2.micro	-	View alarms	ap-south-1a	-	-

4) Detaching the EBS root volume

Successfully detached volume.

Volumes (1/3) [Info](#)

[Create volume](#)

Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state	Alarm status
vol-087f953b03bfedaa6	gp2	8 GiB	100	-	snap-0b5f827...	2024/08/26 12:15 GMT+5:...	ap-south-1a	Available	No alarms
vol-0f3b88c402a85ab6b	gp3	10 GiB	3000	125	-	2024/08/26 12:15 GMT+5:...	ap-south-1a	In-use	No alarms
vol-0c4ffc05185ade028	gp3	15 GiB	3000	125	snap-0631f9f...	2024/08/26 12:42 GMT+5:...	ap-south-1a	Available	No alarms

5) Attaching volume

aws Services Search [Alt+S]

EC2 > Volumes > vol-0c4ffc05185ade028 > 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-0c4ffc05185ade028

Availability Zone
ap-south-1a

Instance [Info](#)
i-0c9c020765327ee48

Only instances in the same Availability Zone as the selected volume are displayed.

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

Recommended device names for Linux: /dev/xvda for root volume. /dev/sd[f-p] for data volumes.

i 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**

6) Now start the instance and see the volume is extended.

Instances (1/1) [Info](#)

Find Instance by attribute or tag (case-sensitive) All states

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
<input checked="" type="checkbox"/>	EBSVM01	i-0c9c020765327ee48	Running	t2.micro	Initializing	View alarms	ap-south-1a	ec2-13-233-140-111.ap...	13.233.140.111

i-0c9c020765327ee48 (EBSVM01)

/dev/xvda EBS disabled

Block devices

<input type="checkbox"/>	Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete on te
<input type="checkbox"/>	vol-0c4ffc05185ade028	/dev/xvda	15	Attaching	2024/08/26 12:59 GMT+5:30	No	-	No
<input type="checkbox"/>	vol-0f3b88c402a85ab6b	/dev/sdb	10	Attaching	2024/08/26 12:15 GMT+5:30	No	-	No

Volume monitoring (1)

Successfully extended the root ebs volume (15GB)

```

[root@ip-172-31-33-225 /]# lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda        202:0    0  15G  0 disk
└─xvda1     202:1    0   15G  0 part /
xvdb        202:16   0  10G  0 disk
[root@ip-172-31-33-225 /]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        467M   0    467M   0% /dev
tmpfs           477M   0    477M   0% /dev/shm
tmpfs           477M 404K    476M   1% /run
tmpfs           477M   0    477M   0% /sys/fs/cgroup
/dev/xvda1      15G  1.8G   14G  12% /
tmpfs           96M   0    96M   0% /run/user/1000
[root@ip-172-31-33-225 /]#

```

Task-3 Increase the size of EBS Volume.

1) Creating one instance which having Root EBS and EBS volume with 8 GB space

Instances (1/2) Info Last updated less than a minute ago Connect Instance state Actions Launch instance

Find instance by attribute or tag (case-sensitive) All states < 1

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
EBSVM01	i-0c9c020765327ee48	Stopped	t2.micro	-	View alarms +	ap-south-1a	-
EBSExtendVolume	i-032ded9865cd46c88	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-3-111-186-187.ap-...

i-032ded9865cd46c88 (EBSExtendVolume)

▼ Root device details

Root device name /dev/xvda	Root device type EBS	EBS optimization disabled
-------------------------------	-------------------------	------------------------------

▼ Block devices

Filter block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Dele
vol-023ba0daecd5f9629	/dev/xvda	8	Attached	2024/08/26 13:10 GMT+5:30	No	-	Yes
vol-08c2ab62b528c1995	/dev/sdb	8	Attached	2024/08/26 13:10 GMT+5:30	No	-	No

Volume monitoring (1)

2) Need to increase the size of EBS volume

Before increase size:

```

[root@ip-172-31-33-132 ~]# lsblk
NAME        MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdb        202:16   0   8G  0 disk
[root@ip-172-31-33-132 ~]#

```

Modifying the volume size as per requirement:

3) Successfully extended the EBS Volume

Q Search									
i-0ea7415a08df062e2 X Clear filters									
	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created	Avail
<input checked="" type="checkbox"/>	-	vol-0c6e27d948e5e239f	gp3	15 GiB	3000	125	-	2024/08/27 22:41 GMT+5:...	ap-
<input type="checkbox"/>	-	vol-0f9a1d1232cb4f748	gp2	8 GiB	100	-	snap-0b5f827...	2024/08/27 22:41 GMT+5:...	ap-

```
[root@ip-172-31-42-164 ~]# file -s /dev/xvdb
/dev/xvdb: data
[root@ip-172-31-42-164 ~]# mkfs -t ext4 /dev/xvdb
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
524288 inodes, 2097152 blocks
104857 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=2147483648
64 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

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

[root@ip-172-31-42-164 ~]# mkdir /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]# mount /dev/xvdb /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdb        202:16   0   8G  0 disk /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        467M   0  467M   0% /dev
tmpfs           477M   0  477M   0% /dev/shm
tmpfs           477M 408K  476M   1% /run
tmpfs           477M   0  477M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.8G  6.3G  23% /
tmpfs           96M   0   96M   0% /run/user/1000
/dev/xvdb       7.8G  24K  7.3G   1% /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]#
[root@ip-172-31-42-164 ~]# lsblk
```

Now use resize2fs command to extend volume size

```
[root@ip-172-31-42-164 ~]# resize2fs /dev/xvdb
resize2fs 1.42.9 (28-Dec-2013)
Filesystem at /dev/xvdb is mounted on /home/EBSVolume.txt; on-line resizing requ
ired
old_desc_blocks = 1, new_desc_blocks = 2
The filesystem on /dev/xvdb is now 3932160 blocks long.

[root@ip-172-31-42-164 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdb        202:16   0  15G  0 disk /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        467M    0  467M   0% /dev
tmpfs           477M    0  477M   0% /dev/shm
tmpfs           477M  408K  476M   1% /run
tmpfs           477M    0  477M   0% /sys/fs/cgroup
/dev/xvda1      8.0G  1.8G  6.3G  23% /
tmpfs           96M    0   96M   0% /run/user/1000
/dev/xvdb       15G   24K   14G   1% /home/EBSVolume.txt
[root@ip-172-31-42-164 ~]#
```