

AWS-Elastic Block Store (EBS)

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Practical 1 - Create one instance and attached root & EBS volume

Step 1 – Created one instance with Root volume and EBS volume

- Name- EFS_Demo
- OS- Linux
- AMI- Ameen Linus AMI (Free tier)
- Instance type- T2.micro
- Keypair

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes EC2 Dashboard, EC2 Global View, Events, Instances, Images, and Elastic Block Store. The main content area displays the 'Instances (1/1)' page for the instance 'EBS_Demo' (ID: i-019f7c409346f0e93). The instance is in a 'Running' state. Below the instance list, the 'Storage' tab is selected, showing 'Root device details' and 'Block devices'. The root device is '/dev/xvda' (EBS, 8 GiB). The block devices table shows two attached volumes: 'vol-09192e963475ee88c' (8 GiB, /dev/xvda) and 'vol-068e82fb819ec0074' (10 GiB, /dev/sdb).

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
vol-09192e963475ee88c	/dev/xvda	8	Attached	2024/09/27 12:27 GMT+5:30	No	-
vol-068e82fb819ec0074	/dev/sdb	10	Attached	2024/09/27 12:27 GMT+5:30	No	-

```
login as: ec2-user
Authenticating with public key "imported-openssh-key"

#_
~\##### Amazon Linux 2023
~~\#####\
~~\###|
~~\#/ https://aws.amazon.com/linux/amazon-linux-2023
~~V~'-'>
~~~
~~~
~~~
[m/-'-'>

[ec2-user@ip-172-31-33-84 ~]$ sudo su -
[root@ip-172-31-33-84 ~]# 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 444K   190M   1% /run
/dev/xvda1      8.0G  1.6G   6.4G  20% /
tmpfs           475M   0    475M   0% /tmp
/dev/xvda128    10M  1.3M   8.7M  13% /boot/efi
tmpfs           95M   0     95M   0% /run/user/1000
[root@ip-172-31-33-84 ~]#
```

Practical 2: - Increase the size of root EBS Volume.

Step 1: - To increase the root EBS volume, a snapshot is required (note that this is chargeable, and the snapshot size equals the volume size).

A snapshot for the root EBS volume has been created

The screenshot shows the AWS Management Console interface. On the left sidebar, the 'Instances' section is expanded. The main panel displays the 'Instances (1/1) Info' page. The instance 'EBS_Demo' (ID: i-019f7c409346f0e93) is shown in a 'Running' state. The 'Block devices' section is expanded, showing a table of attached volumes. The root volume 'vol-09192e963475ee88c' is highlighted with a red box. The table shows the volume is attached to '/dev/xvda' with a size of 8 GiB and an attachment status of 'Attached'.

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID
<input checked="" type="checkbox"/> vol-09192e963475ee88c	/dev/xvda	8	Attached	2024/09/27 12:27 GMT+5:30	No	-
<input type="checkbox"/> vol-068e82fb819ec0074	/dev/sdb	10	Attached	2024/09/27 12:27 GMT+5:30	No	-

Step 2: - Create Snapshot

- Click on Root EBS volume
- Select volume and go to action>Create snapshot

The screenshot shows the AWS Management Console interface. On the left sidebar, the 'Elastic Block Store' section is expanded. The main panel displays the 'Volumes (1/1) Info' page. The volume 'vol-09192e963475ee88c' is selected. The 'Actions' menu is open, and the 'Create snapshot' option is highlighted with a red box. The volume details show it is a gp3 type, 8 GiB in size, and in an 'In-use' state.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee...

- Go to “snapshot” section newly created snapshot will appear.

The screenshot shows the AWS Management Console interface. On the left sidebar, the 'Snapshots' link under the 'Elastic Block Store' section is highlighted with a red box. The main content area displays a table of snapshots. One snapshot, 'snap-0be62fc507bf02540', is highlighted with a red box. Below the table, the details for this snapshot are shown, including its source volume (vol-09192e963475ee88c) and its progress (Unavailable, 0%).

Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started
-	snap-0be62fc507bf02540	8 GiB	-	Standard	Pending	2024/09/27 12:35 G

Snapshot ID: snap-0be62fc507bf02540

Details | Snapshot settings | Storage tier | Tags

Snapshot ID: snap-0be62fc507bf02540

Progress: Unavailable (0%)

Snapshot status: Pending

Owner: 985539783646

Started: Fri Sep 27 2024 12:35:56 GMT+0530 (India Standard Time)

Product codes: -

Fast snapshot restore: -

Description: -

Source volume

Volume ID: vol-09192e963475ee88c

Volume size: 8 GiB

Encryption

Encryption: Not encrypted

KMS key ID: -

KMS key alias: -

KMS key ARN: -

Step 3: - Create volume from Snapshot (make sure availability zone should be same as instance)

- Select snapshot which is we created
- Go to “action” an select “Create volume from snapshot”

The screenshot shows the AWS Management Console interface. The snapshot 'snap-0be62fc507bf02540' is now in a 'Completed' state. The 'Actions' menu is open, and the 'Create volume from snapshot' option is highlighted with a red box.

Name	Snapshot ID	Volume size	Description	Storage tier	Snapshot status	Started
-	snap-0be62fc507bf02540	8 GiB	-	Standard	Completed	2024/09/27 12:35 G

Snapshot ID: snap-0be62fc507bf02540

Details | Snapshot settings | Storage tier | Tags

Snapshot ID: snap-0be62fc507bf02540

Progress: Available (100%)

Snapshot status: Completed

Owner: 985539783646

Started: Fri Sep 27 2024 12:35:56 GMT+0530 (India Standard Time)

Product codes: -

Fast snapshot restore: -

Description: -

Source volume

Volume ID: vol-09192e963475ee88c

Volume size: 8 GiB

Encryption

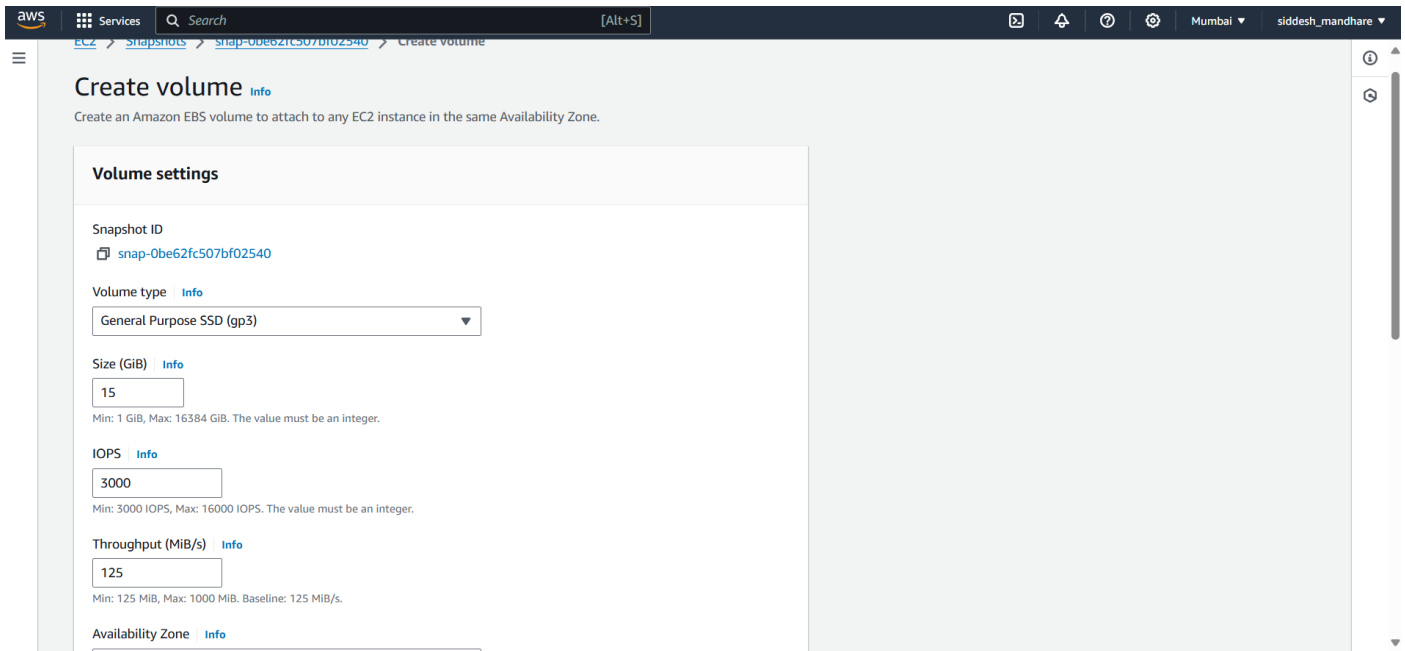
Encryption: Not encrypted

KMS key ID: -

KMS key alias: -

KMS key ARN: -

- Select as per below



Create volume [Info](#)

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

Volume settings

Snapshot ID
[snap-0be62fc507bf02540](#)

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

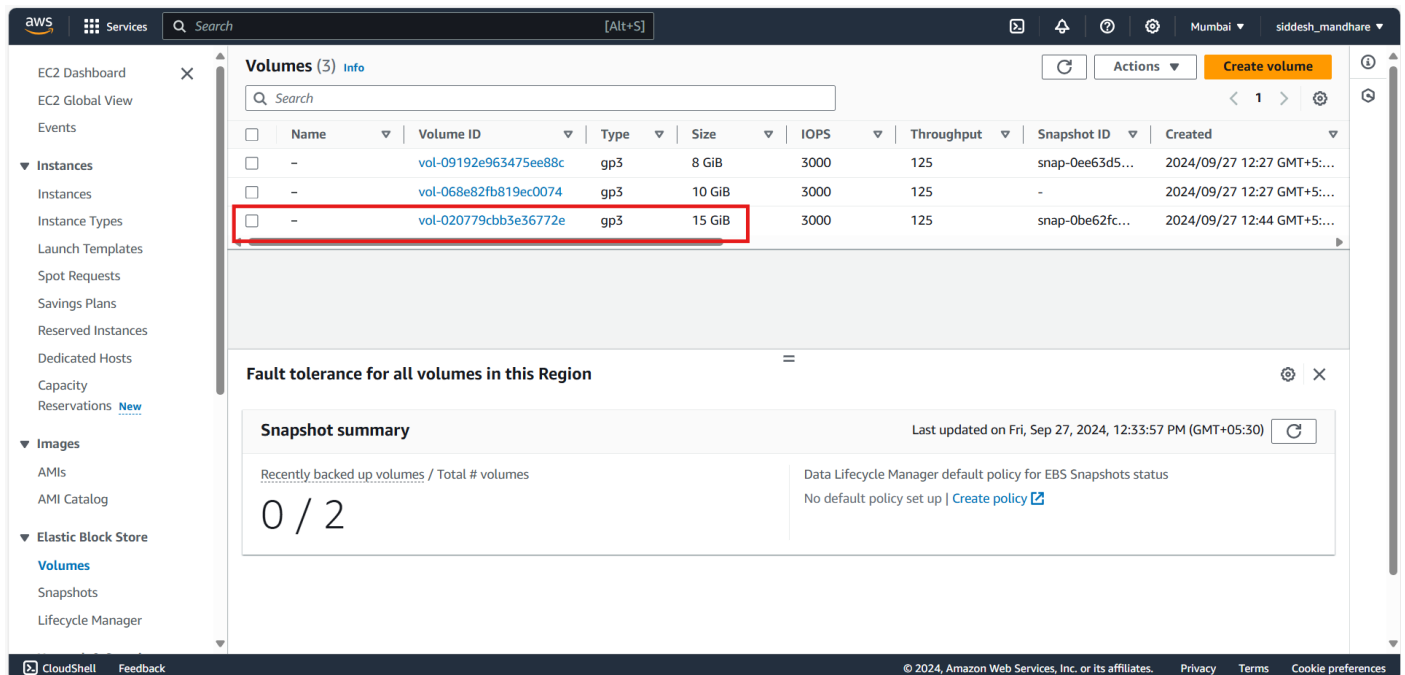
Size (GiB) [Info](#)
15
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS [Info](#)
3000
Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s) [Info](#)
125
Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.

Availability Zone [Info](#)

- New Volume is created



Volumes (3) [Info](#)

[Create volume](#)

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee63d5...	2024/09/27 12:27 GMT+5:...
-	vol-068e82fb819ec0074	gp3	10 GiB	3000	125	-	2024/09/27 12:27 GMT+5:...
-	vol-020779cbb3e36772e	gp3	15 GiB	3000	125	snap-0be62fc...	2024/09/27 12:44 GMT+5:...

Fault tolerance for all volumes in this Region

Snapshot summary Last updated on Fri, Sep 27, 2024, 12:33:57 PM (GMT+05:30)

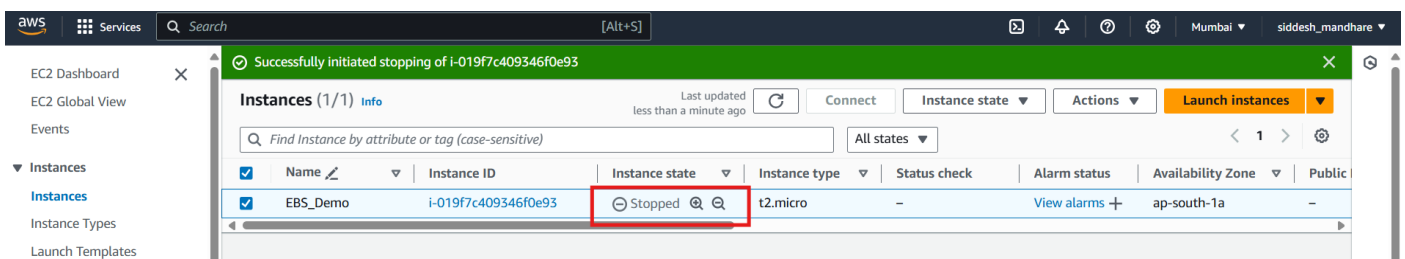
Recently backed up volumes / Total # volumes

0 / 2

Data Lifecycle Manager default policy for EBS Snapshots status
No default policy set up | [Create policy](#)

Note→ Now I want to detached old root EBS volume (8GB) and then attached new (15GB) volume

Step 4: – Stop Instance (EFS_Demo)



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

[Launch instances](#)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
EBS_Demo	i-019f7c409346f0e93	Stopped	t2.micro	-	View alarms	ap-south-1a	-

Step 5: - Go to the volume and click” action” > select old “root EBS volume” (8GM) and click on “detach volume.”

The screenshot shows the AWS Management Console 'Volumes' page. A table lists three volumes. The first volume, 'vol-09192e963475ee88c', is selected. The 'Actions' dropdown menu is open, and 'Detach volume' is highlighted. Below the table, the 'Volume ID: vol-09192e963475ee88c' is displayed.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee63d5...
-	vol-068e82fb819ec0074	gp3	10 GiB	3000	125	-
-	vol-020779cbb3e36772e	gp3	15 GiB	3000	125	snap-0be62fc...

The screenshot shows the AWS Management Console 'Volumes' page after a successful detachment. A green notification banner at the top reads 'Successfully detached volume.' Below it, a table lists three volumes. The first volume, 'vol-09192e963475ee88c', is now in the 'Available' state.

Volume ID	Size	Throughput	IOPS	Snapshot ID	Created	Availability Zone	Volume state	Alarm status	Attached resources
vol-09192e963475ee88c	8 GiB	125	3000	snap-0ee63d5...	2024/09/27 12:27 GMT+5:30	ap-south-1a	Available	No alarms	+ -
vol-068e82fb819ec0074	10 GiB	125	3000	-	2024/09/27 12:27 GMT+5:30	ap-south-1a	In-use	No alarms	+ i-019f7c409346f0e...
vol-020779cbb3e36772e	15 GiB	125	3000	snap-0be62fc...	2024/09/27 12:44 GMT+5:30	ap-south-1a	Available	No alarms	+ -

Step 6: - Select new EBS volume (15GB) go to “action” > and click “Attach volume”

The screenshot shows the AWS Management Console 'Volumes' page. The 15 GiB volume, 'vol-020779cbb3e36772e', is selected. The 'Actions' dropdown menu is open, and 'Attach volume' is highlighted. Below the table, the 'Volume ID: vol-020779cbb3e36772e' is displayed.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee63d5...
-	vol-068e82fb819ec0074	gp3	10 GiB	3000	125	-
-	vol-020779cbb3e36772e	gp3	15 GiB	3000	125	snap-0be62fc...

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-020779cbb3e36772e

Availability Zone
ap-south-1a

Instance [Info](#)
i-019f7c409346f0e93

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.

ⓘ 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.

Successfully attached volume vol-020779cbb3e36772e to instance i-019f7c409346f0e93.

Volumes (3) [Info](#)

Search

Snapshot ID	Created	Availability Zone	Volume state	Alarm status	Attached resources	Volume sta...
snap-0ee63d5...	2024/09/27 12:27 GMT+5:...	ap-south-1a	Available	No alarms	+	Okay
-	2024/09/27 12:27 GMT+5:...	ap-south-1a	In-use	No alarms	+	Okay
snap-0be62fc...	2024/09/27 12:44 GMT+5:...	ap-south-1a	In-use	No alarms	+	Okay

Step 7: - Launch putty

- Go to root (sudo su -)
- For details ("Df -h")
- Now we can see root EBS volume will be 15 GB.

```
[ec2-user@ip-172-31-33-84 ~]$ sudo su -
[root@ip-172-31-33-84 ~]# 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  448K   190M   1% /run
/dev/xvda1      15G   1.6G   14G   11% /
tmpfs           475M   0    475M   0% /tmp
/dev/xvda128    10M   1.3M   8.7M  13% /boot/efi
tmpfs           95M   0     95M   0% /run/user/1000
[root@ip-172-31-33-84 ~]#
```