

AWS-Elastic Block Store

Siddesh Mandhare

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. A table lists the instance 'EBS_Demo' with ID 'i-019f7c409346f0e93', state 'Running', type 't2.micro', and availability zone 'ap-south-1a'. Below this, the 'Storage' tab is selected, showing 'Root device details' and 'Block devices'. The root device is '/dev/xvda' of type 'EBS'. The block devices table shows two attached volumes: 'vol-09192e963475ee88c' (8 GiB, /dev/xvda) and 'vol-068e82fb819ec0074' (10 GiB, /dev/sdb), both in 'Attached' state.

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, and 'EBS Demo' is selected. The main panel displays the details for instance **i-019f7c409346f0e93 (EBS_Demo)**. Under the 'Block devices' section, a table lists the attached volumes:

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	-

The first row, representing the root volume, is highlighted with a red box. Below the table, there is a 'Volume monitoring (1)' section with a graph showing average read and write latency.

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, and 'Volumes' is selected. The main panel displays the details for volume **vol-09192e963475ee88c**. The volume is highlighted with a red box. The 'Actions' menu is open, and the 'Create snapshot' option is highlighted with a red box.

Volume ID: **vol-09192e963475ee88c**

Details:

Volume ID	Size	Type	Volume status
vol-09192e963475ee88c	8 GiB	gp3	Okay

Additional details:

Volume state	IOPS	Throughput	Multi-Attach enabled
In-use	3000	125	No

Created: Fri Sep 27 2024 12:27:24 GMT+0530 (India Standard Time)

- 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'.

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 ID: snap-0be62fc507bf02540
- Progress: Unavailable
- 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 'Create volume from snapshot' is selected, highlighted with a red box.

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

Snapshot ID: snap-0be62fc507bf02540

Details

- 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](#)

Search

<input type="checkbox"/>	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
<input type="checkbox"/>	-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee63d5...	2024/09/27 12:27 GMT+5:...
<input type="checkbox"/>	-	vol-068e82fb819ec0074	gp3	10 GiB	3000	125	-	2024/09/27 12:27 GMT+5:...
<input type="checkbox"/>	-	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](#)

Find Instance by attribute or tag (case-sensitive)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
<input checked="" type="checkbox"/>	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 interface. On the left, the navigation pane includes 'EC2 Dashboard', 'EC2 Global View', 'Events', and 'Instances'. The main content area is titled 'Volumes (1/3) Info'. A table lists three volumes:

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 first volume is selected. The 'Actions' dropdown menu is open, showing options like 'Modify volume', 'Create snapshot', 'Delete volume', 'Attach volume', 'Detach volume', 'Force detach volume', 'Manage auto-enabled I/O', 'Manage tags', and 'Fault injection'. The 'Detach volume' option is highlighted. Below the table, the 'Volume ID: vol-09192e963475ee88c' is displayed.

The screenshot shows the AWS Management Console interface after the volume detachment. A green notification banner at the top reads 'Successfully detached volume.' The main content area is titled 'Volumes (3) Info'. A table lists three volumes:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm status	Attached resources
-	vol-09192e963475ee88c	gp3	8 GiB	3000	125	snap-0ee63d5...	2024/09/27 12:27 GMT+5:30	ap-south-1a	Available	No alarms	+
-	vol-068e82fb819ec0074	gp3	10 GiB	3000	125	-	2024/09/27 12:27 GMT+5:30	ap-south-1a	In-use	No alarms	+
-	vol-020779cbb3e36772e	gp3	15 GiB	3000	125	snap-0be62fc...	2024/09/27 12:44 GMT+5:30	ap-south-1a	Available	No alarms	+

The volume 'vol-09192e963475ee88c' is now in the 'Available' state. The 'Volume state' column shows 'Available' for the first and third volumes, and 'In-use' for the second volume.

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

The screenshot shows the AWS Management Console interface. On the left, the navigation pane includes 'EC2 Dashboard', 'EC2 Global View', 'Events', and 'Instances'. The main content area is titled 'Volumes (1/3) Info'. A table lists three volumes:

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 third volume is selected. The 'Actions' dropdown menu is open, showing options like 'Modify volume', 'Create snapshot', 'Delete volume', 'Attach volume', 'Detach volume', 'Force detach volume', 'Manage auto-enabled I/O', 'Manage tags', and 'Fault injection'. The 'Attach volume' option is highlighted. Below the table, the 'Volume ID: vol-020779cbb3e36772e' is displayed.

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](#)

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 ~]#
```