

## **Working with Elastic Block Store**

EBS

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Elastic Block Store

Its a block storage which is used for our EC2 instance.

Block Storage

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provides the volume which we can easily attach and detach to our EC2 instance.

These volumes are like unformatted block devices you can simply understand like physical hard drives.

SnapShots

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we can create snapshots which works as a backup of your block storage. so the backup you are taking in the forms blocks, partial backup.. whenever you required you can restore the same.

Let's Create one Volume

In EC2 services you can see the EBS option there click on Volume.

Capacity Reservations

[New](#)

▼ Images

AMIs

[AMI Catalog](#)

▼ Elastic Block Store

**Volumes**

Snapshots

Lifecycle Manager

▼ Network & Security



Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

| Volumes (2) <a href="#">Info</a>    |                |                                       |        |        |        |              |                 |         |  |  <a href="#">Actions</a> ▼ |  | <a href="#">Create volume</a> |
|-------------------------------------|----------------|---------------------------------------|--------|--------|--------|--------------|-----------------|---------|--|---|--|-------------------------------|
| <input type="text" value="Search"/> |                |                                       |        |        |        |              |                 |         |  | < 1 >                      |  |                               |
| <input type="checkbox"/>            | Name ▼         | Volume ID ▼                           | Type ▼ | Size ▼ | IOPS ▼ | Throughput ▼ | Snapshot ▼      | Created |  |   |  |                               |
| <input type="checkbox"/>            | ExternalVol    | <a href="#">vol-0c19b45a27dd56490</a> | gp3    | 12 GiB | 3000   | 125          | -               | 2024/02 |  |   |  |                               |
| <input type="checkbox"/>            | VolumeDemol... | <a href="#">vol-05dd82436b29f0f1d</a> | gp3    | 8 GiB  | 3000   | 125          | snap-0fc9d6b... | 2024/02 |  |   |  |                               |

Here you can click on create-volume button.



## Create volume [Info](#)

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

### Volume settings

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](#)

100

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.

You can give size as per your Req, IOPS is showing no of I/O handled in one Sec.

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

125

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

Availability Zone [Info](#)

us-east-1a ▼

Snapshot ID - optional [Info](#)

Don't create volume from a snapshot ▼



Encryption [Info](#)

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

☐ Encrypt this volume

Make sure you select the same zone where your instance was created.

Snapshot you can select If you want to take Backup for your Volume.

**Tags - optional** [Info](#)

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key

Value - optional

You can add 49 more tags.

Tags are optional but If you want to give Name to your volume use key as Name and volume name you can give in Value.

**Snapshot summary** [Info](#)

Click refresh to view backup information

The volume type that you select and the tags that you assign determine whether the volume will be backed up by any Data Lifecycle Manager policies.

If you have created a snapshot then check the summary and then create Volume.

**Volumes (3)** [Info](#)

< 1 >

| <input type="checkbox"/> | Name           | Volume ID                             | Type | Size   | IOPS | Throughput | Snapshot        | Created |
|--------------------------|----------------|---------------------------------------|------|--------|------|------------|-----------------|---------|
| <input type="checkbox"/> | ExternalVol    | <a href="#">vol-0c19b45a27dd56490</a> | gp3  | 12 GiB | 3000 | 125        | -               | 2024    |
| <input type="checkbox"/> | MyVol1         | <a href="#">vol-06d1b5050cf7140bb</a> | gp3  | 12 GiB | 3000 | 125        | -               | 2024    |
| <input type="checkbox"/> | VolumeDemo1... | <a href="#">vol-05dd82436b29f0f1d</a> | gp3  | 8 GiB  | 3000 | 125        | snap-0fc9d6b... | 2024    |

MyVol1 is created.

To use your volume first refresh by clicking on refresh Icon and check the volume availability.

If it's available then perform the next operations.

Now select Volume and click on actions and you can see multiple options like attach, detach, delete etc..

Successfully created volume [vol-06d1b5050cf7140bb](#).

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

|                                     | Name           | Volume ID             | Type | Size   | IOPS | Throu |
|-------------------------------------|----------------|-----------------------|------|--------|------|-------|
| <input type="checkbox"/>            | ExternalVol    | vol-0c19b45a27dd56490 | gp3  | 12 GiB | 3000 | 125   |
| <input checked="" type="checkbox"/> | MyVol1         | vol-06d1b5050cf7140bb | gp3  | 12 GiB | 3000 | 125   |
| <input type="checkbox"/>            | VolumeDemol... | vol-05dd82436b29f0f1d | gp3  | 8 GiB  | 3000 | 125   |

Volume ID: vol-06d1b5050cf7140bb (MyVol1)

Actions

- Modify volume
- Create snapshot
- Create snapshot lifecycle polic
- Delete volume
- Attach volume
- Detach volume
- Force detach volume
- Manage auto-enabled I/O

Click on attach volume.

When I am trying to select an instance it is not showing any instance so let's check our instance availability zone.

Click on your instance and check details.

▼ Networking details [Info](#)

|   |   |  |
|---|---|--|
| Public IPv4 address<br>54.210.81.220 <a href="#">open address</a>                         | Private IPv4 addresses<br>172.31.22.72                          | VPC ID<br>vpc-0f948378e4a353b74 <a href="#">open address</a> |
| Public IPv4 DNS<br>ec2-54-210-81-220.compute-1.amazonaws.com <a href="#">open address</a> | Private IP DNS name (IPv4 only)<br>ip-172-31-22-72.ec2.internal |  |
| Subnet ID<br>subnet-0a8581f9e366e8996 <a href="#">open address</a>                        | IPv6 addresses<br>-   | Secondary private IPv4 addresses<br>-                        |
| Availability zone<br>us-east-1d   | Carrier IP addresses (ephemeral)<br>-                           | Outpost ID<br>-  |
| Use RBN as guest OS hostname<br>Disabled  | Answer RBN DNS hostname IPv4<br>Enabled                         |  |

▼ Network Interfaces (1) [Info](#)

The zone is us-east-1d because of that I can not apply us-east-1a zone volume to it.

You need to create a new volume with zone us-east-1d and then you can attach.


Once the volume is created you can not edit its zone you can modify only below mentioned details.

## Modify volume [Info](#)

Modify the type, size, and performance of an EBS volume.

### Volume details

Volume ID

 vol-06d1b5050cf7140bb (MyVol1)

Volume type [Info](#)

General Purpose SSD (gp3) ▼

Size (GiB) [Info](#)

12

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.

Let's create another volume with the same zone and try to attach volume to instance.

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

Volume ID



### Availability Zone

us-east-1d

Instance Info

i-0b382afa3abe023ce  
(DemoVolume) (running)

If it's attached successfully you can see the volume status to inuse.

| Created                    | Availability Zone | Volume state   |
|----------------------------|-------------------|--|
| 2024/02/22 09:21 GMT+5:... | us-east-1d        |  In-use |
| 2024/02/22 09:51 GMT+5:... | us-east-1d        |  In-use |

In instance storage details you can find below details.

Details

Status and alarms [New](#)

Monitoring

Security


Networking

Storage

Tags

▼ 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           | Encrypt |
|---------------------------------------|-------------|-------------------|--|---------------------------|---------|
| <a href="#">vol-05dd82436b29f0f1d</a> | /dev/xvda   | 8                 |  Attached | 2024/02/22 09:21 GMT+5:30 | No      |
| <a href="#">vol-02daf6af74de381d2</a> | /dev/sdf    | 12                |  Attached | 2024/02/22 09:52 GMT+5:30 | No      |

Here /xvda is the default volume and /sdf is the externally attached volume to my instance.