**EBS - Elastic Block Storage**

Amazon Elastic Block Store (EBS) is a block-level storage service provided by Amazon Web Services (AWS) for use with Amazon EC2 (Elastic Compute Cloud) instances. It allows you to create persistent block-level storage volumes that can be attached to EC2 instances. These volumes can range in size from 1 GB to 16 TB and are suitable for a wide variety of use cases, including database storage, application storage, and file system storage.

EBS Snapshots are point-in-time copies of EBS volumes. They capture all the data at a specific moment in time and are stored in Amazon S3 (Simple Storage Service). These snapshots are incremental, which means that only the data that has changed since the last snapshot is stored. This helps in reducing storage costs and increasing efficiency.

Backup and Recovery: EBS snapshots are a primary method for backing up your EBS volumes. They provide a way to recover your data in case of accidental deletion or corruption.

Data Migration: Snapshots can be used for migrating data between regions or availability zones within AWS.

Creating New Volumes: You can create new EBS volumes from snapshots. This allows you to launch new instances with the same data as the original volume.

AMI Creation: Snapshots are often used as a basis for creating Amazon Machine Images (AMIs), which are templates for EC2 instances.

Cost-Efficient: Once you create a snapshot, it is stored in Amazon S3, which is a durable and low-cost storage solution.

Incremental Backups: As mentioned, snapshots are incremental, so only the changed data is stored. This helps in reducing storage costs.

Access Control: You can control who has access to your snapshots, making it possible to share them with other AWS accounts if needed.

Retention and Lifecycle Policies: You can define policies to manage the retention and deletion of your snapshots, making it easier to manage your backup strategy.

**Create a New EBS Volume**

In the EC2 Dashboard, select "Volumes" from the left-hand navigation menu under "ELASTIC BLOCK STORE".

Click the "Create Volume" button.

Choose your desired settings for the new volume, including:

Volume Type: Choose the type of volume (e.g., General Purpose SSD, Provisioned IOPS SSD, Magnetic).

Size (GiB): Specify the size of the volume.

Availability Zone: Select the availability zone where your EC2 instance resides.

Click "Create" to create the EBS volume.

**Attach the EBS Volume to an EC2 Instance**

In the EC2 Dashboard, select "Instances" from the left-hand navigation menu under "INSTANCES".

Locate the EC2 instance to which you want to attach the volume.

Select the instance, and then click on the "Actions" button.

From the dropdown menu, choose "Instance Settings" and then click "Attach/Replace IAM Role".

In the "Attach/Replace IAM Role" window, select the EBS volume that you created earlier.

Click "Attach".

**Connect to Your EC2 Instance**

If the EC2 instance is not already running, start it by selecting the instance, clicking "Actions", and choosing "Instance State" > "Start".

**Format and Mount the EBS Volume (Linux)**

lsblk or fdisk -l to identify the newly attached EBS volume (it will likely be something like /dev/xvdf).

Format the EBS volume with a file system of your choice (e.g., ext4, xfs):

sudo mkfs -t ext4 /dev/xvdf

**Create a mount point for the volume:**

sudo mkdir /mnt/my\_volume

sudo mount /dev/xvdf /mnt/my\_volume

update /etc/fstab to automatically mount the volume on system boot.

sudo nano /etc/fstab

/dev/xvdf /mnt/my\_volume ext4 defaults,nofail 0 2

—**user data for ubuntu ec2**

#!/bin/bash

sudo apt update

sudo apt install apache2 wget unzip -y

wget https://www.tooplate.com/zip-templates/2128\_tween\_agency.zip

unzip 2128\_tween\_agency.zip

sudo cp -r 2128\_tween\_agency/\* /var/www/html/

sudo systemctl restart apache2

**—-user data for centos**

#!/bin/bash

yum install httpd wget unzip -y

systemctl start httpd

systemctl enable httpd

cd /tmp

wget https://www.tooplate.com/zip-templates/2119\_gymso\_fitness.zip

unzip -o 2119\_gymso\_fitness.zip

cp -r 2119\_gymso\_fitness/\* /var/www/html/

systemctl restart httpd