MODULE 6

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**Amazon Elastic Block Store (Amazon EBS):** Storage for specific Amazon Elastic Compute Cloud (Amazon EC2) instances. Think of it as the storage drive for your EC2 instance.

**Amazon Elastic Compute Cloud (Amazon EC2):** A web service that provides secure, resizable compute capacity in the cloud. Think of it as renting a computer in the cloud.

**Hard disk drive (HDD):** Slower storage that uses a spinning disk to store data.

**Input/Output Operations Per Second (IOPS):** A common performance measurement used to benchmark computer storage devices like hard disk drives (HDDs) and solid state drives (SSDs).

**Solid state drive (SSD):** Very fast storage that uses flash memory instead of a spinning disk.

Amazon EBS is storage for EC2 instances with major benefits:

* Data availability
* Data persistence
* Data encryption
* Snapshots

Amazon EBS storage is implements as a series of fixed-length blocks that can be read and written by the operating system. They can be accessed quickly.

Amazon S3 storage in implements as an object that has to be read and written by the application that used the object. Objects contain metadata - data about the object’s attributes that helps the system to catalog and identify the object. Objects cannot be processed incrementally. They have to be read and written in their entirety.This can have performance consistency implications.

There are two major types of EBS volumes, and each major type has two subtypes. Each type has benefits and drawbacks, so it is important to choose the type that fits with the work you are using it for.

Differences between Amazon S3 and Amazon EBS:

* Amazon EBS can only be used when attached to an EC2 instance. In contrast, AMazon S3 can be accessed on its own using HTTP
* Amazon EBS cannot hold as much data as Amazon S3
* Amazon EBS can only be attached to one EC2 instance, where data in an S3 bucket can be accessed by multiple EC2 instances.
* Amazon S3 experiences more delays than AMazon EBS when writing data
* EBS volumes are encrypted in their entirety, where Amazon S3 objects are encrypted individually by server-side encryption (SSE)
* Amazon EBS includes 3 types of volumes, whreas Amazon S3 includes more types.

**Lab 6**

1. Services > Compute > EC2
2. Create an instance with name: Web Server
3. Choose the default AMI as well as Instance Type
4. Use ‘**vockey’ for the Key Pair**
5. **Create a new security group with the name ‘web server’**
6. **Use the default storage settings**
7. **Wrote a custom html script in the user data field**
8. Launch the instance
9. Network & Security > Security Groups > web server > inbound rules
10. Create a new inbound rule to allow HTTP IPv4 access from anywhere
11. Elastic Block Store > Volumes
12. Create a new volume and attach your EC2 instance to this volume.