1.What is Amazon Elastic Block Store (EBS)?

Amazon Elastic Block Store offers raw block-level storage that could be attached to Amazon EC2 instances which is used by Amazon Relational Database Service. Amazon EBS offers a variety of storage performance and cost options. Amazon EBS is like a cloud-based hard drive that gives persistent block storage volumes to be used with Amazon EC2 instances.

2.What is a block storage volume?

A block storage volume operates in the same way that a hard drive does. It can be used to store any type of file or even to install an entire operating system. EBS volumes are placed in an availability zone and automatically replicated to protect data loss in the event of a single component failure. However, because they are only replicated across a single availability zone, you may lose data if the entire availability zone fails, which is extremely unlikely.

3.What are the various types of EBS volumes?

There are five types of EBS volumes available as below:

General Purpose SSD (gp2), Provisioned IOPS SSD (io1), Throughput Optimized HDD (st1), Cold HDD (sc1), Magnetic (standard).

4.What is the maximum size of an EBS storage device?

(16 TiB). The maximum volume size supported by EBS at the moment is 16 TiB. This implies how you can create an EBS volume with a capacity of up to 16 TiB, but whether the OS recognises all of that capacity is dependent on the OS's own design characteristics and how the volume is partitioned.

5.How to allow an EBS volume available with no downtime and attach it to an EC2 instance when the EBS volume fails?

You can add a load balancer and auto scaling, which will allow an EBS volume available with no downtime, and if the ec2 instance goes down due to auto scaling, a new instance will be created, and you can add commands to map to the EBS in the shell script. And when the EBS volume fails, we can take regular backups and replace the EBS with the most recent backup or snapshot if it fails.

6.What are the benefits of Amazon EBS?

Benefits of Amazon EBS are as follows:

Reliable and Secure Storage - It automatically respond to its availability zone protecting from component failure.

Secure - It allows us to specify access EBS volumes.

Higher Performance - Delivers data results with consistent performance.

Easy Data Backup - Takes taking point-in-time snapshots of Amazon EBS volumes.

7.How to Set Up Amazon EBS?

STEP 1 - Create Amazon EBS volume.

STEP 2 - Store EBS Volume from a snapshot.

STEP 3 - Attach EBS Volume to an Instance.

STEP 4 - Detach a volume from Instance.

8.General Purpose SSD (gp2)

SSD (Solid State Drive) is the volume with which EC2 chooses as the root volume of your instance by default. For small input/output operations, SSD is many times faster than HDD (Hard Disk Drive). It gives a balance between price and performance (measured in IOPS - Input-Output Operations per second).

9.Provisioned IOPS SSD (io1)

This is the most expensive and fastest EBS volume. They are intended for I/O-intensive applications like large Relational or NoSQL databases.

10.Throughput Optimized HDD (st1)

These are low-cost magnetic storage volumes whose performance is measured in terms of throughput.

11.Cold HDD (sc1)

These are even less expensive magnetic storage options than Throughput Optimized. They are intended for large, sequential cold workloads, such as those found on a file server.

12.Magnetic (standard)

These are older generation magnetic drives that are best suited for workloads with infrequent data access.

13.What is Amazon EBS encryption?

Amazon EBS encryption offers seamless encryption of EBS data volumes, boot volumes and snapshots, eliminating the need to build and maintain a secure key management infrastructure. EBS encryption enables data at rest security by encrypting your data using Amazon-managed keys.

14.what is ebs snapshot?

EBS Snapshots are a point-in-time copy of your data, and can be used to enable disaster recovery, migrate data across regions and accounts, and improve backup compliance. You can create and manage your EBS Snapshots through the AWS Management Console, AWS Command Line Interface (CLI), or the AWS SDKs.