**Amazon S3**

***Amazon S3***

· Amazon Simple Storage Service (Amazon S3), provides secure, durable, highly-scalable object storage.

* Amazon S3 stores data as objects within resources called "buckets." You can store as many objects as you want within a bucket, and write, read,  and delete objects in your bucket. Objects can be up to **5 terabytes in size**.

· Amazon S3 is easy to use, with a **simple web service interface** to store and retrieve any amount of data from anywhere on the web.

***S3 Benefits***

***Durable***

Amazon S3 provides durable infrastructure to store important data and is designed for durability of 99.999999999% of objects.

***Low Cost***

Amazon S3 allows you to store large amounts of data at a very low cost.

***Available***

Amazon S3 Standard is designed for up to 99.99% availability of objects over a given year and is backed by the Amazon S3 Service Level Agreement, ensuring that you can rely on it when needed.

***Secure***

Amazon S3 supports data transfer over SSL and automatic encryption of your data once it is uploaded. You can also configure bucket policies to manage object permissions and control access to your data using AWS Identity and Access Management (IAM).

***Scalable***

With Amazon S3, you can store as much data as you want and access it when needed. You can stop guessing your future storage needs and scale up and down as required, dramatically increasing business agility.

***Versioning***

Amazon S3 allows you to enable versioning so you can preserve, retrieve, and restore every version of every object stored in an Amazon S3 bucket.

***Lifecycle Management***

Amazon S3 provides a number of capabilities to manage the lifecycle of your data, including automated migration of older data from S3 Standard to S3 Standard - Infrequent Access and Amazon Glacier

***Encryption***

Amazon S3 encrypts data in transit via SSL-encrypted endpoints and can also encrypt data at rest with three options for managing encryption keys: directly by S3, through AWS Key Management Service (AWS KMS), or you can provide your own keys

***Security and Access Management***

Amazon S3 provides several mechanisms to control and monitor who can access your data as well as how, when, and where they can access it. VPC endpoints allow you to create a secure connection without a gateway or NAT instances

***S3 Storage Classes***

***Amazon S3 Storage Classes***

Amazon S3 offers a range of storage classes designed for different use cases. These include

**• Amazon S3 Standard for general-purpose storage** of frequently accessed data,

**• Amazon S3 Standard - Infrequent Access for long-lived**, but less frequently accessed data, and

**• Amazon Glacier** for long-term archive.

Amazon S3 also offers configurable lifecycle policies for managing your data throughout its lifecycle. Once a policy is set, your data will automatically migrate to the most **appropriate storage class without any changes to your application**

***Amazon Glacier - Archive***

· Amazon Glacier is a secure, durable, and extremely low-cost storage service for data archiving.

· Amazon Glacier is optimized for data that is rarely accessed and a **retrieval time of several hours**.

· But from Nov 2017 onwards retrieval time is reduced to minutes.

***Key Features***

· Designed for durability of 99.999999999% of objects

· Supports SSL encryption of data in transit and at rest

· Vault Lock feature enforces compliance via a lockable policy

· Extremely low cost design is ideal for long-term archive

· Lifecycle management for automatic migration of objects

***To create S3 bucket for storing objects which are files and folders***

· Login to AWS console

· Click on storage service

· Click on S3

· Click on create bucket

· Give the bucket name

· Give the region

· Click on create

· Check the bucket is created or not

***To upload files***

· Right click on empty space

· Click on upload

· We can upload up to 5GB

· If we cross 5GB, it will be charged

· Click on create bucket

· Click on add files

· Select files

· Click on upload

· Verify the files are uploaded

· Select file click on properties

· Click on link

· It cannot access due to lack of permissions

***Add the bucket policy to make your bucket content publicly available***

· Select bucket

· Click on properties

· Click on permissions

· Click on add bucket policy

· Copy the bucket policy and paste in the bucket policy editor

· Click on save

· Now verify the website

· Click on end point under static website hosting

· Verify the website