Practical 1

Introduction to cloud security Lab (CCP306)

AIM: Configure AWS S3 (Simple Storage Service) bucket for secure storage, versioning, and access control.

Task 1: To create an S3 bucket

Task 2: Upload an object to your bucket

Task 3: Download an object

Task 4: Copy your object to a folder

Task 5: Delete your objects and bucket

AWS S3: An Amazon S3 bucket is a public cloud storage resource available in Amazon Web Services (AWS) Simple Storage Service (S3) platform. It provides object-based storage, where data is stored inside S3 buckets in distinct units called objects instead of files.

Versioning in Amazon S3 is a means of keeping multiple variants of an object in the same bucket. You can use the S3 Versioning feature to preserve, retrieve, and restore every version of every object stored in your buckets.

There are three main cloud storage types: object storage, file storage, and block storage. Each offers its own advantages and has its own use cases.

Object storage

Organizations have to store a massive and growing amount of unstructured data, such as photos, videos, machine learning (ML), sensor data, audio files, and other types of web content, and finding scalable, efficient, and affordable ways to store them can be a challenge. Object storage is a data storage architecture for large stores of unstructured data. Objects store data in the format it arrives in and makes it possible to customize metadata in ways that make the data easier to access and analyze. Instead of being organized in files or folder hierarchies, objects are kept in secure buckets that deliver virtually unlimited scalability. It is also less costly to store large data volumes.

File storage

File-based storage or file storage is widely used among applications and stores data in a hierarchical folder and file format. This type of storage is often known as a network-attached storage (NAS) server with common file level protocols of Server Message Block (SMB) used in Windows instances and Network File System (NFS) found in Linux.

Block storage

Enterprise applications like databases or enterprise resource planning (ERP) systems often require dedicated, low-latency storage for each host. This is analogous to direct-attached storage (DAS) or a storage area network (SAN). In this case, you can use a cloud storage

service that stores data in the form of blocks. Each block has its own unique identifier for quick storage and retrieval.

AWS Documentation Links for the above mentioned tasks.

Task 1: To create an S3 bucket

https://docs.aws.amazon.com/AmazonS3/latest/userguide/creating-bucket.html?icmpid=docs_amazons3_console

Task 2: Upload an object to your bucket
https://docs.aws.amazon.com/AmazonS3/latest/userguide/uploading-an-object-bucket.html

Task 3: Download an object
https://docs.aws.amazon.com/AmazonS3/latest/userguide/accessing-an-object.html

Task 4: Copy your object to a folder
https://docs.aws.amazon.com/AmazonS3/latest/userguide/copying-an-object.html

Task 5: Delete your objects and bucket
https://docs.aws.amazon.com/AmazonS3/latest/userguide/deleting-object-bucket.html