

**Security in Microsoft Azure**

**Virtualization and Cloud Computing**



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# Assignment

# Briefly discuss how Microsoft Azure provides security?

**Amazon Web Services (AWS) is one of the most competent cloud service providers in the world right now.** **Over the years, data storage has been diversified vastly to cater to varying needs. Ranging from the needs of a single person to a multinational company, data storage has become a must-have factor for everyone. Starting from ‘Punch Cards’ which are used to communicate information to equipment – even before computers evolved to ‘Cloud Storage’; which is the most popular storage option currently available – data storage technologies have transformed and are still evolving day by day.**

Among the hundreds of cloud service providers, Amazon Web Services (AWS) dominates the digital market and is a flexible, cost-effective, easy-to-use cloud computing platform.

## Amazon Simple Storage Service (Amazon S3)

Amazon S3 is an object storage model that is built to store and retrieve any amount of data from any place such as websites, mobile apps, corporate applications, and data from IoT sensors or devices. Amazon S3 is the most supported storage platform available, with the largest ecosystem.

### Usage –

In addition to object storing, Amazon S3 is particularly well suited for hosting web content that requires bandwidth along with high demand. S3 is also used to host entire static websites and storage for images, videos, and client-side scripts in formats such as JavaScript. You can easily move cold data (data that is not frequently accessed) to Amazon Glacier using lifecycle management rules on data stored in S3

### Durability & availability –

Amazon S3 runs upon the world’s largest global cloud infrastructure, and was built from the ground up to deliver a customer promise of 99.999999999% durability. Data is automatically distributed across a minimum of three physical facilities that are geographically separated within an AWS Region, and also automatically replicates data to any other AWS Region.

### Security –

Amazon S3 is a highly secure storage service. S3 is the only cloud storage platform that supports three different forms of encryption, including server-side-encryption and client-side-encryption. You can manage access to Amazon S3 by granting other AWS accounts and users permissions to perform resource operations by writing an access policy.

## Amazon Glacier

Amazon Glacier is a secure, durable, and extremely low-cost storage service for data archiving and long-term backup. Glacier provides ‘query-in-place functionality’, which allows you to run powerful analytics directly on archived data at rest. Glacier can make use of other AWS services such as S3, CloudFront etc. to move data in and out seamlessly for better and effective results.

### Usage –

Amazon Glacier stores data in the form of archives. An archive can represent a single file, or you can combine several files to be uploaded as a single archive, and archives are organized in vaults. AWS Glacier is the only cloud archive storage service that allows you to query data in place and retrieve only the subset of data that you need from within an archive.

### Durability & availability –

Since AWS Glacier is an archiving service, durability must be of utmost priority. Glacier is designed to provide average annual durability of 99.999999999% for archives. Data is automatically distributed across a minimum of three physical facilities that are geographically separated within an AWS Region.

### Security –

By default, only the account owner can access Amazon Glacier data. If other people or services need to access the data, you can set up data access controls in AWS Glacier by using the AWS Identity and Access Management (IAM) service. Similarly, Glacier uses server-side encryption to encrypt all data at rest. Amazon Glacier allows you to lock vaults where long-term records retention is mandated, along with the use of lockable policies.

## Amazon Elastic File System (Amazon EFS)

EFS delivers a simple, scalable, elastic, highly available, and highly durable network file system as-a-service to EC2 instances. Amazon EFS storage capacity is elastic and is capable of growing and shrinking automatically as you add and remove files without disrupting your EFS applications.

### Usage –

EFS is designed to provide a highly scalable network file system that can grow to petabytes and allows massively parallel access from EC2 instances. EFS supports Network File System versions 4 (NFSv4) and 4.1 (NFSv4.1).

When mounted up on Amazon EC2 instances, the EFS file system provides a standard file system interface and file system access. Multiple Amazon EC2 instances can access an Amazon EFS file system (as a shared storage location). Thus, applications that scale beyond a single instance can access a file system.You can mount your EFS file systems on your on-premises datacenter servers when connected to your Amazon Virtual Private Cloud (VPC) with AWS Direct Connect service.

### Durability & availability –

Each Amazon EFS file system object (such as a directory, file or link) is redundantly stored across multiple availability zones within a region. Amazon EFS is designed to be as highly durable and available as Amazon S3.

### Security –