AWS Assignment 2

1. Describe the significance of AWS?

Ans- As the lead cloud computing platform, Amazon Web Services (AWS) is the primary profit driver for Amazon. AWS provides servers, storage, networking, remote computing, email, mobile development, and security.

2. Explain what EC2 is?

Ans - Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) Cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster.

Amazon EC2 provides the following features:

a) Virtual computing environments, known as instances

b) Preconfigured templates for your instances, known as Amazon Machine Images (AMIs), that package the bits you need for your server (including the operating system and additional software)

c) Various configurations of CPU, memory, storage, and networking capacity for your instances, known as instance types

d) Secure login information for your instances using key pairs (AWS stores the public key, and you store the private key in a secure place)

e) Storage volumes for temporary data that's deleted when you stop, hibernate, or terminate your instance, known as instance store volumes

f) Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as Amazon EBS volumes

g) Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as Regions and Availability Zones

h) A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using security groups

i) Static IPv4 addresses for dynamic cloud computing, known as Elastic IP addresses

j) Metadata, known as tags, that you can create and assign to your Amazon EC2 resources

k) Virtual networks you can create that are logically isolated from the rest of the AWS Cloud, and that you can optionally connect to your own network, known as virtual private clouds (VPCs).

3. Explain the working of S3 and list various types of instances.

Ans- Amazon S3 is an object storage service that stores data as objects within buckets. An object is a file and any metadata that describes the file. A bucket is a container for objects.

To store your data in Amazon S3, you first create a bucket and specify a bucket name and AWS Region. Then, you upload your data to that bucket as objects in Amazon S3. Each object has a key (or key name), which is the unique identifier for the object within the bucket.

S3 provides features that you can configure to support your specific use case. For example, you can use S3 Versioning to keep multiple versions of an object in the same bucket, which allows you to restore objects that are accidentally deleted or overwritten.

Below is various types of S3 instances:

a) S3 Standard
b) S3 Intelligent-Tiering
c) S3 Standard-IA
d) S3 One Zone-IA
e) S3 Glacier Instant Retrieval
f) S3 Glacier Flexible Retrieval
g) S3 Glacier Deep Archive.

4. Explain the importance of IAM in AWS.

Ans - AWS Identity and Access Management (IAM) provides fine-grained access control across all of AWS. With IAM, you can specify who can access which services and resources, and under which conditions. With IAM policies, you manage permissions to your workforce and systems to ensure least-privilege permissions.

IAM helps protect against security incidents by allowing administrators to automate numerous user account related tasks. This includes the ability to have automated workflow for on-boarding of employees, granting access to systems and applications they are authorized access to, based on their role. It also includes "one button" control to remove employee access from all systems they were granted access to through the IAM platform.

IAM solutions help organizations meet industry compliance requirements and help them save costs by minimizing the time needed to deal with user account related issues. Identity and access management standardizes and even automates critical aspects of managing identities, authentication, and authorization, saving time and money while reducing risk to the business.