AWS (Amazon Web Services)

1. What is cloud computing?

A, On demand delivery of IT resources & applications through the internet with Pay-as-you-go Pricing.

2. What is another name for on-premises deployement?

A, Private cloud computing!

3. How does the scale of cloud computing help you to save costs?

A, The aggregated cloud usage from a large number of customers results in lower Pay-as-you-go prices.

4. Memory Optimized → Ideal for high-Performance databases.

5. Storage Optimized → Suitable for data ware-housing application

6. General purpose → Balances Compute, memory & networking resources.

7. Compute Optimized → Offers high-Performance Processors.

Introduction to AWS cloud Practitioner

Module - 1:

Introduction to AWS

Benefits (Aws Services Offerings).

1. Compute
2. Storage
3. Network Security.
4. Blockchain
5. Machine learning
6. Artificial intelligent

Client - Server model. (Coffee shop)

1. Request
2. Responds

In Amazon EC2

→ Request to Server.

→ Validate the request

→ Next Responds.

* you only for what you use

Three cloud computing deployment

1. Cloud - based
2. On - Premises
3. hybrid

Amazon EC2 Instance types (Requirements for Compute, memory or Storage capabilities.)

1. General Purpose instances.

Provides a balance of compute, memory & networking, resources.

Uses them for a variety of workloads.

* application Servers.
* gaming Servers.
* Backend Servers for enterprises.
* Small & medium data bases.

2. Compute optimized instance.

* Are ideal for Compute - bond applications that benefit from high Performance Processors.
* Use for workloads as web, application & gaming Servic.

3. Memory optimized instance

* Are designed to deliver fast Performance for workloads that process large datasets in memory.

4. Accelerated computing instances:

* Use hardware accelerators, or coprocessors to perform some functions more efficiently than is possible in software running on CPUs.

* Accelerated computing instances are ideal for workloads such as graphics applications, game streaming & application streaming.

5. Storage optimized instances:

Designed for workloads that require high, sequential read & write access to large datasets on local storage

workloads include distributed file systems, data warehousing applications, & high-frequency online transaction processing system (OLTP)

Amazon EC2 Pricing:

1. On-Demand:

* Ideal for short-term, irregular workloads that cannot be interrupted

* No-upfront costs or min: Contracts apply.

* The instances run continuously until you stop them & you pay for only the compute time you use.

2. Savings plans:

* Enables you to reduce your compute costs by committing to a consistent amount of compute usage for a 1-year or 3-years

* Saving of upto 66% or 72% over on-Demand costs.

3. Reserved Instances:

* Are billing discount applied to use of on-Demand Instance in your account.
* you can purchases Standard Reserved & Convertible Reserved. Instance for a 1-year or 3-years & scheduled reserved intances for a 1-year term.
* you realise greater cost saving with the 3-year option.

4. Spot Instances:

* Ideal for workloads with flexible start & end time; or that can with stand interruptions.
* Spot Instances use unused Amazon EC2 computing capacity & offer you cost savings upto 90% off of on-Demand Price
* If Amazon EC2 capacity is available, Spot Instances lanches or not.

5. Dedicated Hosts:

* Are Physical Servers with Amazon EC2 instance capacity that is fully dedicated to your use.
* Dedicated Hosts are more expensive.
* Use your existis Per-Socket, Per-Core, Per-Volume Software licesh

Scalability:

* Involves begining with only the resources you need & designing your architecture to automatically respond to changing demand by scaling out or in.
* As a result, you pay for only the resources you use

* The AWS Services that provides this functionality for Amazon EC2 instances is Amazon EC2 auto scaling.

Amazon EC2 - Auto Scaling

* Try to access a website that wouldn't load & frequently timeout.
* Amazon EC2 Auto Scaling enables you to automatically add or remove Amazon EC2 instances in response to changing application demand

Dynamic Scales → responds to changing demand.

Predictive Scales → Automatically schedule the right number of amazon EC2 instances based on predicts demand.

* To scale faster, you can dynamic scaling & Predictive Scaling together.
* Minimum no. of Amazon EC2 instance at one.
* If you donot specify the desired number Amazon EC2 instance in an Auto Scaling group, the desired capacity defaults to your Minimum capacity.
* Max capacity.

Elastic Load Balancing

* Is the AWS Service that automatically distributes incoming application traffic across multiple resources such as Amazon EC2 instal.
* A load Balance acts as a single point of contact for all incoming web traffic to your Auto Scaling group..
* These request route to the load balancer first, distributes the workload across the multiple instance so that no single instance has no carry load