AWS

AWS Cloud Practitioner Essentials

EC2 (Elastic Cloud Computing)

- EC2 is nothing but a virtual laptop or computer with

1. Flexible
2. Reliable
3. Scalable

- Here you can dynamically spin up and spin down the instance
- Amazon EC2 Auto Scaling enables you to automatically add or remove Amazon EC2 instances in response to changing application demand.

ELB (Elastic Load Balancing)

- It is automatically scalable with design itself
- For example: If traffic comes from the client automatically scale it and handle the traffic
- Mainly used for directing traffic from the client to server with

1. Highly Perform
2. Cost Effective
3. Highly Available
4. Automatically Scalable

Amazon SQS (Simple Queue Service)

- Loosely Coupled Architecture and more reliable architecture
    (Means a single failure will not cause you cascading failures)
- **Cascading failures** refer to a situation where a failure in one part of a system triggers a series of subsequent failures
- **SQS allows you to send, store and receive messages between two s/w components at any volume**
- Queue is the place to store the request from client if server is down, request will be stored until they are processed

Amazon SNS (Simple Notification Service)

1. Which is the one notifying the information about request to client
2. SNS can deliver messages to an SQS queue
3. Enables the pub/sub messaging model for distributing notifications

Computing Services in AWS

- Comparison between computing with virtual servers (thinking about servers and code) and serverless

computing (thinking only about code).

- AWS Lambda a service that lets you run code without needing to provision or manage servers.
- **Amazon Elastic Container Service (Amazon ECS)** is a highly scalable, high-performance container management system that enables you to run and scale containerized applications on AWS.
- Amazon EKS a fully managed service that you can use to run Kubernetes on AWS.

- AWS Fargate is a serverless compute engine for containers. It works with both Amazon ECS and Amazon EKS.

AWS GLOBAL INFRASTRUCTURE

- **Region:** (Data centers across the world)

   Factors to choose the region:

1. **Compliance (**Major effect in choosing the region based on your rules and regulations)
2. **Proximity** (Choosing the region as per latency (latency is time take for data to be send and received)
3. **Feature Availability** (Choosing the region based on required feature)
4. **Pricing** (selecting the region based on costing)

- **Availability Zones** (A single data center or multiple data centers across a region)
- **Edge Locations** (It is place that **Amazon CloudFront (CDN)** uses to keep a copy of your data closer to customer locations for **low latency**)
- **AWS Outposts**

Ways to interact with AWS services

1. AWS Management Console (Using UI/UX to setup the provisions)
2. AWS CLI (Using Command Line to setup the provisions)
3. AWS SDKs (Using programming Languages to setup or use the services)
4. AWS Elastic Beanstalk (Using configurations and codes to setup the Infrastructre of the application)