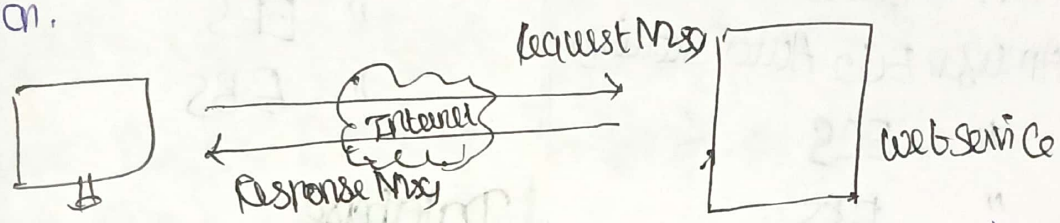
Day-2 24/2/26

**Web Services:-** It is any piece of s/w that makes itself available over the internet & uses a standardized format. such as XML (Extensible Markup Language). JSON (Javascript Object Notation). for the request & the response of an Application Programming Interface (API) interaction.



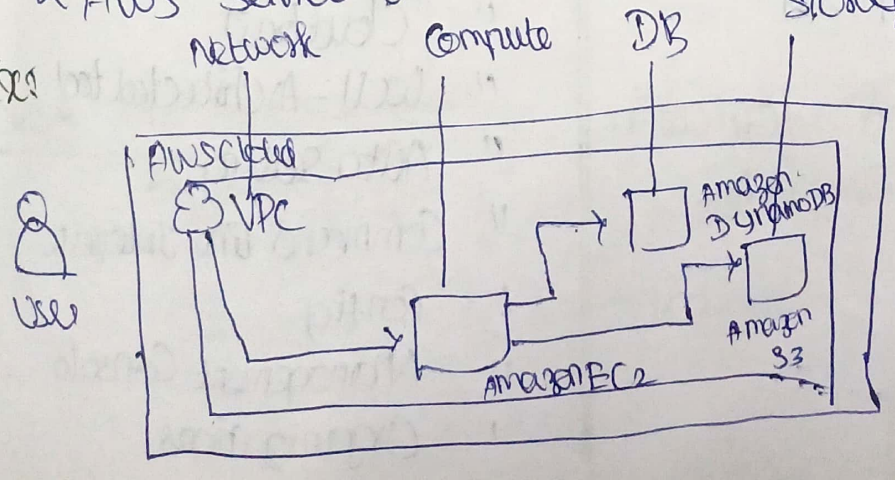

GUI → It act as interfacing agent b/w User & H/w

API → It act as interface b/w program &

**AWS**

* It is a secure cloud platform that offers a broad set of global cloud-based products.
* It provide you with on-demand access to compute, storage, network, DB & other IT resource & Management tools
* flexibility
* You pay only for the individual service you need, for as long as you use them.
* AWS service work together like building blocks

Ex:



# Service Covered In This Course

## Compute

- Amazon EC2
  - AWS Lambda
  - AWS Elastic Beanstalk
  - Amazon EC2 Auto Scaling
  - " ECS
  - " EKS
  - " ECR
  - AWS Fargate

## Storage

- Amazon S3
  - " S3 Glacier
  - " EFS
  - " EBS

## Database

- Amazon RDS
- Amazon DynamoDB
- " Redshift
- " Aurora

## Networking & Content Delivery

- Amazon VPC
- " Route 53
- " Cloud Front
- Elastic load Balancing

## Security, Identity & Compliance

- AWS IAM
- Amazon Cognito
- AWS Shield
- " Artifact
- " KMS

## AWS Cost Management

- AWS Cost & Usage Report
- " Budget
- " Cost Explorer

CFT → Cloud Formation Template

## Management & Governance

- AWS Trusted Advisor
- " Cloudwatch
- " Cloudtrail
- " Well-Architected tool
- " Auto Scaling
- " Command line Interface
- " Config
- " Management Console
- " Organizations

## Three way to interact with AWS

AWS Management Console - Easy to use Graphical interface

Command Line Interface (AWS CLI) → Access

S/w Development kits (SDKs)

## AMAZON EC2 (Elastic Compute Cloud)

* Provide virtual machine - reffered to as EC2 instance in the Cloud.
* Give you full control over the guest OS (windows or linux) on each instance
* launch instance from AMIs (Amazon Machine Image).
* " " with few clicks or a line of code & they are ready in min.
* You can control traffic from instance.

**AMI :-**

Is a template that is used to create an EC2 instance

Contain Window or Linux OS

Often also has some S/w pre-installed.

**Select An Instance Type**

The instance type that you choose determine

Instance type categories

| | General purpose | compute optimized | Memory | Accelerated computing | Storage |
|---|---|---|---|---|---|
| Instance Type | $A_1, M_4, M_5$ $t_2, t_3$ | $C_4, C_5,$ $C_6$ | $R_4, R_5,$ $R_6, X_1, z_1d$ | $P, G, F,$ $Inf$ | $D_2, I_3,$ $H_1$ |
| Use cases | Broad | High performance | Large dataset in memory | Efficient parallel processing | Deliver, high, low-latency |

3) Network Setting

VPC → Region

Subnet → Availability Zone

4) Storage optional

(root volume) EBS → Elastic Block Storage → Battable Storage

Instance Store → ephemeral, directly conn, Non-battable, temporary storage

EBS

You can stop the instance and start it again, and the data will still be there.

* Instance Store

It is provided on disks that are attached to the host can where the EC2 is running instance.

Other :-

Amazon EFS mount

Amazon S3 Connect

## Security Group (SG)

- A security group is a set of firewall rules that control traffic to the instance. It exist outside of the instance's guest OS. Create rules that specifies the source & which ports the network communication can use. Specify the port no & the protocol such TCP, UDP, ICMP.
- Specify the source that is allowed to use the rule

## 1) Identify or Create key pair

At instance launch, you specify an existing key pair or create a new key pair

Public key → AWS Store

Private key → file that you store

Enable secure connections to instance

For windows AMIs -

Use pri key to obtain the admin record that you need to login int to your instance

For Linux AMIs -

Use the pri key to use SSH to secure connect to your instance.

# Global Infrastructure

Select region

- Data governance, legal requirement
- Proximity to customer
- Service available within region
- Cost (vary by region)

## Availability Zone

Each Region has multiple AZ.

Each AZ is fully isolated partition of the AWS infra