AWS

1.Aws is a secure cloud service platform
2.offer service to its users like

- compute power
- database storage
- content delivery
- Help businesses scale and grow

Uses of AWS

1.Aws is used for running web applications and server
2.Stores users file safety in the cloud
3.It is used to deliver file quickly
4.Aws uses and provides databases to store data

Core AWS SERVICE

1.EC2
2.S3
3.VPC
4.Cloudwatch
5.IAM

Benefits of using AWS

1.Cost effective
2.Fast
3.No limit on storing data
4.Security
5.Dont need to pay and maintain data centre

Why do we need billing alarms

1.when the cpu utlization of a running instance crosses 70%
2.Usage of load balancer latencies,storage throughputs
3.As billing alerts are empowered through amazon cloudwatch

What is AWS AMI

- Amazon machine image
- Virtual image used to make a virtual machine
- Itis used to create virtual server
- Create several instance using one AMI

Simple storage service (S3)

- To store object or files,
- It stores data using the internet and can store and retrieve any amount of data

Elastic Compute Cloud (EC2)

- Users launch and run server instance
- Provide customizable and scalable server option
- system capability of adapting to varying workloads
- Increase or decrease resource on demand

Virtual private Cloud (VPC)

- Chance to launch amazon resources in a virtual network
- Resembles very much to real or traditional network
- Used for safety it keep users severe safe from damaging the public internet

Elastic Block Storage (EBS)

- Used for storing block level data.
- Even when server of EC2 are down
- Offers high availability and is known for its performance give a low latency performance
- Used for storing temporary data like cache buffers and files.

Elastic Load BALANCER (ELB)

- It helps to maintain the reliability and availability of the application

IAM

- Used to set users, permission and roles.
- To create multiple user and provides all user with their security credential,controlled and billed to a single AWS account

Feature of IAM

1.It is used to control AWS central
2.shared access
3.Granular authorization
4.multi factor Authentication
5.Networking controls.

EC2 (Elastic Compute Cloud)

- Aws EC2 is an Amazon web service that provides configurable compute capacity in the AWS cloud
- It shortens the time it taken to boot and obtain new server instance also know as amazon EC2 instance

Types of EBS Volumes

1.General purpose SSD(gp2):they were created to be low cost storage option

- gp2 volumes include system volumes development and test cases and a variety of low latency app

2.Provisioned IOPS SSD backed volumes:

- IOPS(Input/output operations per second) are used to measure the performance of such volume

3.HDD-Backed Volume:

HDD backed volume are interested for large sequential workload where throughput is critical (performance is measured in MiB/S)

- They are expensive
- volume are provides low cost storage

SSH :(secure socket shell)

Ssh is a protocol that work between a client and a server

- ❖ or login programmes such as

1.Telnet
2.rlogin(remote login)
3.rsh(remote shell)

- ❖ ssh performance the same function as these programs

Metadata:
Amazon web service EC2 instance metadata is information about the instance
*configure or mange a running instance
For EX : Instance hostnames events and security groups .
We can access the instance metdata

AMI (Amazon Machine Image) is used to create virtual server or EC2 instance

- ➔ We can also lunch different types of instance from a single AMI
- ➔ Different instance configuration we can create multiple instance we can create multiple instance using different AMIs t configuration
- ➔ **Explicit**-on specific accounts are granted launch permission.
- ➔ **Implicit**-permission to lunch is only granted for an AMI.

Benefits of using AMI
1.fast
2.no manual installation
3.chep to use
4.they are easy to use

Different AMI types

- **EBS**
  1.backed instance : EBS is simp;y a volume that provides persistent storage
    - When we delete an EC2 instance ,the data is available in a root device.

- ➔ **S3 (simple storage service)**
    - Store manage and retrieve any amount of data in where in the world in online
    - S3 stores data using the internet
    - Store our data or our files up to 5 terabytes in size

- ➔ **Companies using S3**
  1.Netflix
  2.Google Drive
  3.udemy
  4.Amazon
- ➔ **Features of S3**
  *can be used with other service

1.Amazon EC2

2.Amazon EBS

3.Amazon glacier

➔ To recovery old data that has been inadvertently lost

➔ **Benefits of using S3**

- To store as there is a lot of capacity and it can store large data very easily.
- **Security**:Amazon S3 offers bucket and object security
  - ❖ Users can create, update ,delete, or list objects while creating the buckets.

➔ Use the Amazon S3 buckets to store our documents, photos, videos and other data.

➔ No limit on storing the number of objects.

➔ **Components of an object**

- Keys
- Value
- Version Id

➔ **Access control lists (ACLS)**

- Assign specific permission to each object within a bucket.
- When we create a bucket or an object in Amazon S3,it generates a default ACL.

➔ **ARN (Amazon Resource number)**: Is used for identify the bucket

➔ **EC2 instance with S3 buckets:**

- To create the S3 bucket
- Next to create the IAM (role) in below click the EC2 service(the role name has EC2)
- To Create the EC2 after action in top go security and modi
  - ❖ action in top go security
  - ❖ Modify the Iam role option (role name is EC2)next create
- Go to EC2 Connect EC2
  - ❖ Sudo su
  - ❖ AWS S3 ls
  - ❖ Aws S3 mb S3://newbucketmy (is command is used create new bucket)

➔ **Snowball**:

- Physical storage devices.
- Transfer of large amounts of data.
- To create jobs, track the data and track the status of our jobs.

➔ **Features of snowball**

- Available in 50 TB model
- To purchase and maintain their own hardware device.

➔ **Snowball use:**

- Airlines.
- VFX house
- Studios
- Banks
- Hospitals

➔ **Cloudfront:**
- Amazon web service content delivery network (CDN)
- Speed up file delivery
- Connect with other AWS services.

➔ **Edge location:**
- AWS data centre where data is cached
- Deliver access to the users.

➔ **Data:**
- Data can be understood as information
- Any information form like text,number and media.

➔ **Database :**
- Collection of data that has been organised systematically.
- Store ,change and retrieve

➔ **NoSQL database**
- NoSQL database design allows configurable schemas for data storage
- To store massive amounts of data.
- By relational database, and NoSQL systems ca readily address such issues

➔ **DynamoDB:**
- Automated NoSQL database service provided by Amazon.
- Data traffic across numerous servers.

➔ **Companies use DynamoDB:**
- Toyota
- Samsung
- Redfin
- Lyft

➔ **Redshift:**
- Amazon Redshift is a service by AWS that provides a fully managed and scaled for petabyte warehousing with an enterprise-class relational database management system that supports client connections

➔ **Companies using Redshift:**
- Upstox
- Pizza Hut
- Dream11

➔ **Amazon Aurora:**
- Relational database for the cloud.
  - ❖ Supports MySQL and postgreSQL
- Combines the speed and availability of standard enterprise databases
- Five times faster than MySQL databases
- Three times faster than postgreSQL databases

➔ **Use cases of Amazon Aurora**
- Create web and mobile gaming application