Amazon web services

-it uses iaas that is infrastructure as a service

- this help us to store storage / security / database / servers etc
- here business man uses the aws to expand there buinesss
- it doesn't need to buy hardware units to store the data
- (the property is same as iaas)

Architecture

EC2 -elastic cloud compute

- it offers services like storing the data or security
- it works on virtual machine to offer services
- the user has a option of choosing hardware unit like cpu or ram
- it increase or decrease the storage according to the users that need to service
- users get credentials and password so they can access from everywhere
- users can create config and run the virtual machine on different operating system
- in EC2 we can use the memory /the hardware and everything
- the Amazon machine image uses preconfigured templates

S3

Simple storage services

-Here it stores the data in the cloud

- it stores image / video / documents
- it stores the data in the bucket

- it’s more realible because we don’t need physical system to store data
- its simple and fast
- it secure and provide security to our data
- it uses pay what you have use technique

SQS

Simple query storage
-it uses for communication between two process
- the communication is realible
- it communicate with others doesn’t matter they online or offline

Amazon machine image

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- Amazon machine image is the instance of EC2 that is it has preconfigured templates (like Canva this is for your understanding)
- it is stored is S3 for easy access
- it has predefined operating system and software
- it needs to install -
- Amazon kernal image (it will help us to start the software)
- Amazon rampdisk image (it will help us in storage)
- we can create new amis by using instance of EC2

* how to create new amis
1) Choose an ami from the selected Amazon templates that are available to us
2)launch and instance EC2 using the selected ami
3) then install and configured the software as u need
4) then configure the template using the aws tool
5) store this in the s3 for easy access
6) it’s optional if it’s for sale put a product code

AMI can be sell too

1) we can make it private so only we can see it
2) public so all the communities can use it
3) only to specific Aws accounts
4) we can sell this to other EC2 aws account

What is ECU ?

- electronic compute units it's used to measure the power of the EC2 instance
- here we don't measure power in htz or anything we use compute units
- so this how we can develop hardware overtime while users get the same experience

So remember this
Compute services it's asked u need to write about EC2 Matlab sab (what is EC2 phir what is ecu ? Phir what is ami how it's created how can we sell ami)

If they ask about storage services (its s3)

If the ask about communication services we need to write about sqs

Types of instance

- Standard instance
- It means it's used in general application of aws
- it uses three configured memory , cpu and storage
- aws provide three configured where each configured increases power , memory and storage

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Micro instance

- here the application need less memory and less power

- applicaton that has low traffic uses this micro kernal and it needs cpu when there is sudden increase of traffic

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High memory instance

- here the application need lot of memory and power
- the cpu power directly proportional to memory
- it provides three instances
- it’s used in database application and high traffic websites

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High cpu instance

- here the application only need power and not that much memory
- this do computational task such as data analytics : acidification calculator etc
- this uses only two configuration that is cpu power while memory remains low

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Cluster compute instance

-here the application need high power ,memory and fast input and output
-this application needs best and high performance

- it’s used in financial modeling like stock market

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Cluster gpu instance

- this is used in application which has heavy graphical processing

- this uses graphical processing units and in addition to high power and memory
- it's used in machine learning and graphics

Storage services

- it means simple storage services
- it can be accessed through rest api
- its simple , easy , accessible and reliable
- we store all the information like files data images etc
- there are three major components first (buckets objects and last is metadata)

Buckets

- this are like virtual containers of the s3
- buckets can be created but it can't have physical folders or subfolders it's not like computers
- buckets. Can be created through put request
- here we need to enter the name of the bucket
- is that location available or any other information
- buckets can't be renamed or modified or its directory can't be changed
- once made if we need to change the location or rename it it needs to be deleted
- we need to empty the entire bucket so it can be deleted easily
- we can get the bucket name through get method
- we can delete the bucket through delete method

Objects

- objects are the main contains of the bucket
- objects are made up to 5 gb
- objects can be accessed through rest api

- to create an object we need to use put request
- first we need to enter the name of the bucket
- then name of the object
- and then additional information
- same it can’t be deleted or modified or renamed
- it need to be deleted completely

When objects are created what happens
- multiple copies are made for security reason
- so when we upload any object we can’t see it directly because sometimes it take time to get uploaded
- objects which are very large files take lot of time and need strong internet connection

When aws fail or request is failed
Because of high infrastructure
Sometimes due to this our request is failed internally
It’s not error in aws because of heavy traffic
Metadata
-They are like additional features of objects
-When object is created or put In The bucket, metadata also gets attach to it
- we can retrieve through head or request

Communication services
1) virtual communication
2) Amazon notification services
3)Amazon message services
4) Amazon query services
Additional features

Amazon cloud watch
Amazon payment services
Difference between s3 and Ebs
Amazon storage
-EC2 ami storage

- ready to use database
- uses Ebs for storage
- we promote sql , MySQL
- charged on hourly based
- user must manage security updates and everything

Amazon relational database services
It completely avaible on Aws
The handles the backup. Security and updates
It support same MySQL , sql
Easy to set up
It’s more convenient than ec2 amis because everythhhg is done so less of errors

Database instance
Database engine
Amazon simple db

- it’s simple database
- for high performance

Amazon dynomo database

- best performance
- no need to update or maintain backups

If they ask services models

XAAS
SAAS
PAAS
IAAS

THEY ASK DEPLOYMENT MODEL
PUBLIC
PROVATE
HYBRID
AND COMMUNITY

Hadoop

- **Hadoop** is a tool for handling **big data**.
- It stores and processes **huge amounts of data** across many computers.
- Uses **MapReduce**, which breaks tasks into smaller parts and processes them in parallel.
- **HDFS (Hadoop Distributed File System)** stores data across multiple computers.
- Can handle **structured and unstructured data** like text, images, and videos.
- Helps companies like Yahoo! and Facebook manage large data sets.
- Works on **cloud and on-premises** systems.
- Scales easily by adding more computers.
- Used in **search engines, recommendation systems, and fraud detection**.
- Open-source and supported by the **Apache community**.

Google Search Engine

- A tool to **find information** on the internet quickly.
- Uses **web crawlers** to scan and store web pages.
- Ranks results using a smart algorithm based on **keywords and relevance**.
- Shows **text, images, videos, and maps** in search results.
- Provides **instant answers, weather updates, and currency conversions**.
- Uses AI to understand **user intent** and give better results.
- Offers **voice search and autocomplete suggestions**.
- Helps businesses with **SEO (Search Engine Optimization)** to appear higher in results.

Google App Engine (GAE)

- A **cloud platform** for building and running web applications.
- Supports **Python and Java** programming languages.
- Developers can test apps locally using the **App Engine SDK**.
- Automatically **scales apps** based on demand.
- Helps businesses save money with **cost control features**.
- Provides built-in **security and data storage**.
- Used for **hosting websites, APIs, and cloud applications**.

Force.com & Salesforce.com

- **Force.com** is a platform to create **custom business applications**.
- Uses ready-made **components** to speed up development.
- Supports **drag-and-drop tools** for easy app building.

- **Salesforce.com** is a **CRM (Customer Relationship Management)** software.
- Helps companies manage **sales, marketing, and customer service**.
- Has three main products: **Sales Cloud, Service Cloud, and Marketing Cloud**.
- Businesses can track leads, automate tasks, and improve **customer interactions**.

Manjrasoft Aneka

- A **cloud platform** for building and running applications.
- Helps developers use spare **computer power** from different machines.
- Works with **Windows and .NET technologies**.
- Used for **big data processing, AI, and business analytics**.
- Provides tools for **task automation and parallel computing**.
- Businesses use it to **scale applications easily** on different cloud systems.

Microsoft Azure

- A **cloud platform** for creating and managing apps.
- Supports **web, mobile, and enterprise applications**.
- **Web role**: Hosts websites and web applications.
- **Worker role**: Handles background tasks and processes.
- **Virtual Machine role**: Provides a customizable computing environment.
- Provides **storage, networking, security, and database services**.
- Works with **Windows, Linux, and open-source technologies**.

- Used for **AI, machine learning, and big data analytics**.
- Ensures **high availability, backup, and disaster recovery**.