

Unit - III

Cloud Platform Architecture:-

Cloud Computing and Service Models

Public Cloud Platforms

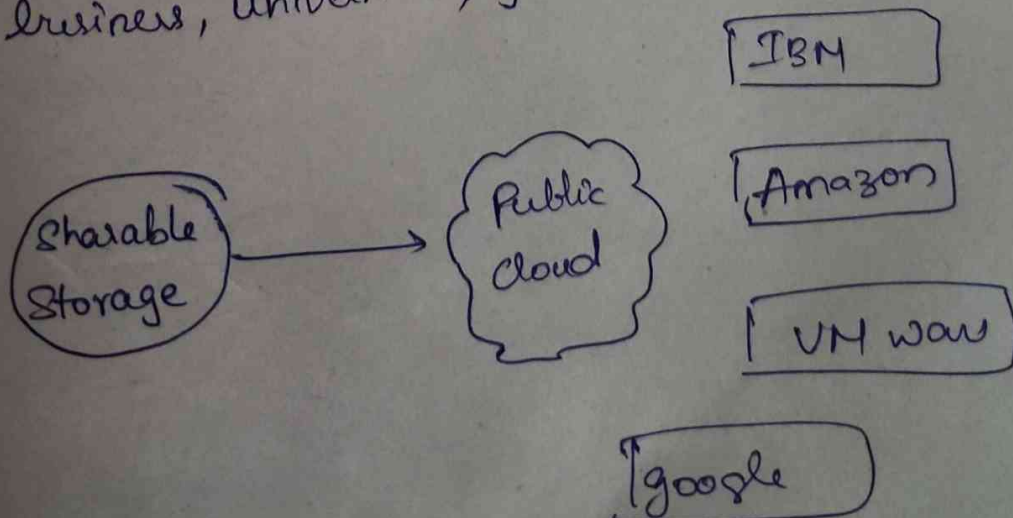
Service Oriented Architecture

Programming on Amazon AWS & Microsoft Azure

Public Cloud Platforms

public cloud is a range of platform services that are offered by platforms such as Amazon web services (AWS), Microsoft Azure and Google cloud platform (GCP) and making them available over the Internet

- => public cloud a shared platform that is accessible to the general public through an internet connection
- => public cloud operated on the pay-as-per-use model and administrated by the Third party i.e. cloud service provider.
- => public cloud is owned, managed and operated by business, universities, government organisations



Advantages of Public cloud

1. Low cost
2. Location Independent
3. Save time
4. Quickly and easily set up
5. Business Agility
6. Scalability and reliability

Disadvantages of public cloud.

1. Low Security
2. Performance
3. Less Customizable

③ Service Oriented architecture mod-1

③ Explain service oriented architecture and webservice

Ans Service Oriented Architecture:-

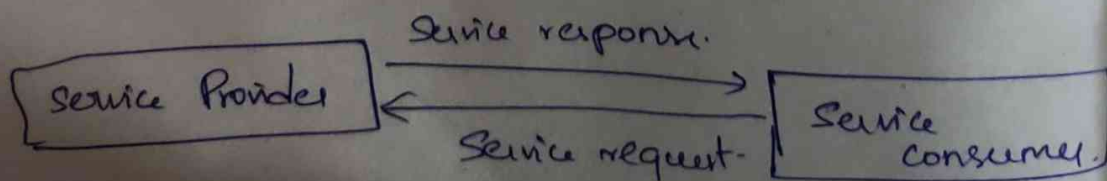
- SOA is a stage in the evolution of application development and integration.
- SOA is designed to build the distributed systems that deliver services to other applications through the protocol
- Service is a well defined, self contained function that represents a unit of functionality
- A service can exchange information from one service to another service.
- There are two major roles in SOA

① Service provider:-

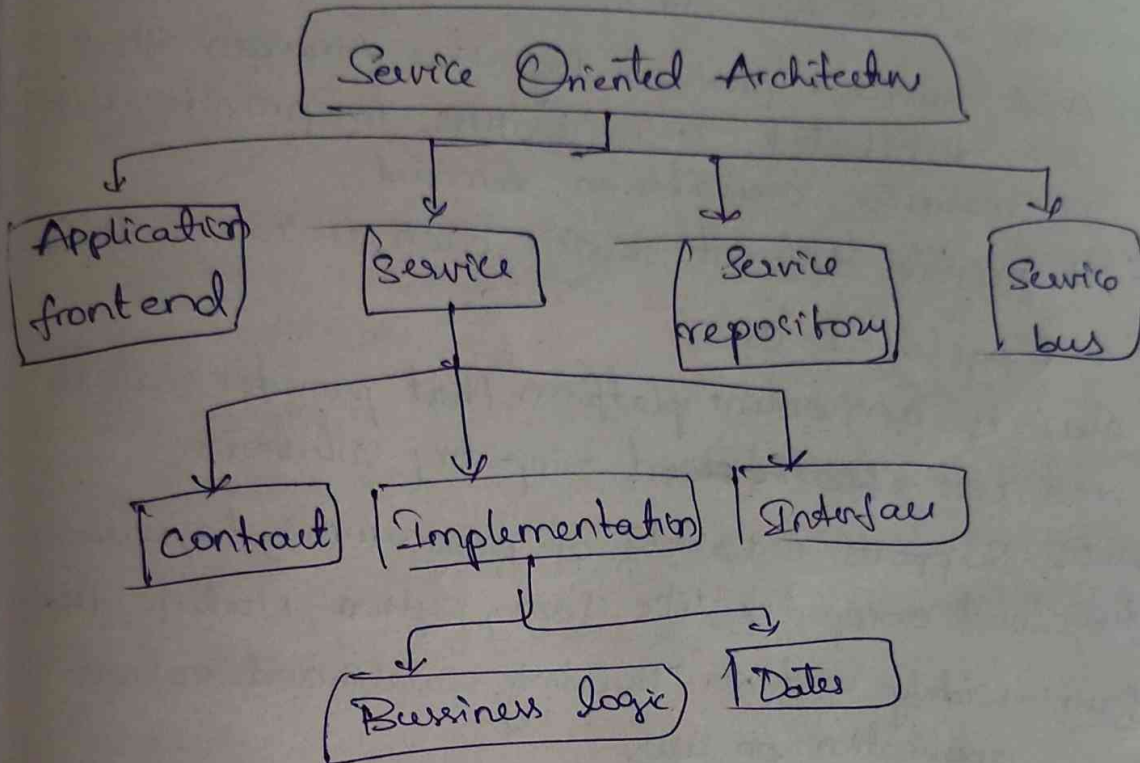
The service provider is the maintainer of the service and the organization of the service and the organization that makes available one or more services for others to use.

② Service consumer:-

The Service consumer can locate the service metadata in the registry and develop the required client components to bind and use the service.



Components of SOA



Advantages

1. Service Reusability
2. Easy Maintenance
3. platform Independence
4. Availability
5. Reliability
6. Scalability

Disadvantages

1. High overhead
2. High investment
3. Complex Service management

What is AWS

- ⇒ AWS stands for Amazon web Services
- ⇒ AWS service is provided by the Amazon that uses distributed IT Infrastructure to provide different IT resources available on demand
- ⇒ It provides different services such as IaaS, PaaS and packaged SaaS
- ⇒ AWS is an online platform that provides scalable and cost effective cloud computing solutions
- ⇒ AWS supports a variety of programming languages for cloud computing like Java, Python, Node.js, PHP
- Java:- widely used for building scalable and robust application on AWS
- Python:- It is well supported on AWS for tasks like web development
- Node JS:- for building scalable network applications
- PHP:- Supported on AWS for building dynamic and scalable websites
- ⇒ Based on the Concept pay-as-you-go, AWS provides services to the customer.



Fig:- Amazon web services

what is Microsoft Azure

⇒ Azure is Microsoft's cloud platform, just like Google.

⇒ Microsoft Azure is a cloud computing platform that provides a wide variety of services that we can use without purchasing and arranging our hardware.

⇒ Azure services like compute, storage, network and application services allow us to put great solutions.

⇒ It will provide us with virtual machine, fast processing of data, analytical and monitoring tools.

Microsoft Azure Services

1. Compute

2. Networking

3. Storage

4. web + mobile

5. Containers

6. Data bases

7. Data + Analytics

8. AI + cognitive services

9. Internet of Things

10. Security + Identity

⇒ Microsoft Azure completely based on the concept of virtualization.

Request



Web
Server

8. Explain cloud service delivery models (IaaS, PaaS, SaaS etc.,)

As The three main cloud service delivery model

1. Infrastructure as a Service (IaaS)
2. Platform as a Service (PaaS)
3. Software as a Service (SaaS)

Infrastructure as a Service:

* IaaS is known as Hardware as a service.

- * IaaS provides virtualized computing resources such as storage, networking and server
- * IaaS offers a higher level of control than solution. It's often used for complex web projects, Big Data and development environment

eg :- 1. Digital Ocean

2. AWS

3. Microsoft Azure

Platform as a Service :-

- * PaaS provides hardware and software resources for developing applications including databases and a OS

- * PaaS makes it easier and more cost-effective to develop and deploy application

eg :- 1. AWS elastic Beanstalk

2. Windows Azure

3. Google App Engine

Software as a Service :-

- * SaaS is also known as on Demand Software

- * Provides Software applications over the internet, including updates, bug fixes and maintenance

- * Users can access these applications with the help of internet connection and web browser.

- Eg :-
1. Google Drive
 2. Deep box
 3. Netflix

Q) Explain cloud computing and different types of clouds.

Ans :- Cloud computing provides different services for the clients via Internet.

- * All the services provided by the cloud can be used by the clients requirements.
- * It allows users to access computing resources such as storage, Databases and servers.

Benefits:

1. Cost-effective :- Users can pay only for the used services, which can help lower cost.
2. Scalability :- User can change without any investment in new software/hardware.
3. Flexibility :- CC provides business services with more flexibility.
4. Security :- It provides high security by the help of login credentials.
5. Access :- Users can access cloud data from any device with an internet connection.

Types of clouds :-

They are 3 types :-

1. Private cloud
2. Public cloud
3. Hybrid cloud.

1. Public cloud :-

- * A third party provider owns and operates a public cloud, which offer computing resources like storage over internet.
- * These are cost effectiveness & good choice for startups.

Drawback :-

- Difficult to trust and maintain data
- lack of security

2. Private Cloud :-

- * A private cloud is a network or data center that provide services to the limited number of people
- * It is a good choice for business with sensitive data :-

Drawbacks :-

- High cost
- limited mobile access

3. Hybrid cloud :-

- * It is a combination of public and private clouds allowing data and application to be shared b/w them.
- * This model offers flexibility & data management

Drawback :-

- more complicated than any other.
- Hybrid systems are dependent over internet.

(4)

... create a virtual version