What is Cloud computing?

TechData-Infinity-Devops with MultiCloud

1. What is Cloud computing?

Cloud computing is the on-demand delivery of IT resources over the internet with pay-as-you-go pricing.

On-demand delivery indicates that AWS has the resources you need, when you need them. You don't need to tell us in advance that you're going to need them. Suddenly you find yourself needing 300 virtual servers. Well, just a few clicks and launch them. Or you need 2000 TB of storage. You don't have to tell us in advance, just start using the storage you need, when you need it. Don't need them anymore, just as quickly, you can return them and stop paying immediately. That kind of flexibility is just not possible when you're managing your own datacenters.

The idea of IT resources is actually a big part of the AWS philosophy. We often get asked why AWS has so many products and the answer is really simple: Because businesses need them. If there are IT elements that are common across a number of businesses, then this is not a differentiator.

What are public, private and hybrid clouds?

1. **Public Cloud-**

Public clouds are the most common type of cloud computing deployment. The cloud resources (like servers and storage) are owned and operated by a third-party cloud service provider and delivered over the internet. With a public cloud, all hardware, software and other supporting infrastructure are owned and managed by the cloud provider. In a public cloud, you share the same hardware, storage and network devices with other organisations

Ex. Microsoft Azure, Amazon Web Services, Google Cloud Platform

Advantages of public clouds:

Lower costs- No need to purchase hardware or software and you pay only for the service you use.

No maintenance- Your service provider provides the maintenance.

Near-unlimited scalability- On-demand resources are available to meet your business needs.

High reliability- a vast network of servers ensures against failure.

2. **Private Cloud-**

A private cloud consists of cloud computing resources used exclusively by one business or organisation. The private cloud can be physically located at your organisation's on-site datacenter or it can be hosted by a third-party service provider. But in a private cloud, the services and infrastructure are always maintained on a private network and the hardware and software are dedicated solely to your organisation.

In this way, a private cloud can make it easier for an organisation to customise its resources to meet specific IT requirements. Private clouds are often used by government agencies, financial institutions, any other mid- to large-size organisations with business-critical operations seeking enhanced control over their environment.

Advantages of a private cloud:

More flexibility – your organisation can customise its cloud environment to meet specific business needs.

More control – resources are not shared with others, so higher levels of control and privacy are possible.

More scalability – private clouds often offer more scalability compared to on-premises infrastructure.

3. **Hybrid Cloud-**

A hybrid cloud platform gives organisations many advantages—such as greater flexibility, more deployment options, security, compliance and getting more value from their existing infrastructure. When computing and

processing demand fluctuates, hybrid cloud computing gives businesses the ability to seamlessly scale up their on-premises infrastructure to the public cloud to handle any overflow—without giving third-party datacenters access to the entirety of their data. Organisations gain the flexibility and innovation the public cloud provides by running certain workloads in the cloud while keeping highly sensitive data in their own datacenter to meet client needs or regulatory requirements.

Advantages of the hybrid cloud:

Control—your organisation can maintain a private infrastructure for sensitive assets or workloads that require low latency.

Flexibility—you can take advantage of additional resources in the public cloud when you need them.

Cost-effectiveness—with the ability to scale to the public cloud, you pay for extra computing power only when needed.

Ease—transitioning to the cloud does not have to be overwhelming because you can migrate gradually—phasing in workloads over time.

What is cloud computing service model?

IaaS, PaaS and SaaS are the three most popular types of cloud service offerings. (They are sometimes referred to as cloud service models or cloud computing service models.)

1. **IAAS–**

Infrastructure As A Service (IAAS) is means of delivering computing infrastructure as on-demand services. It is one of the three fundamental cloud service model servers storage network operating system. In the user purchasing servers, software datacenter space, or network equipment and rent those resources as a fully outsourced service can demand model. It allows dynamic scaling and the resources are distributed as a service. It generally includes multiple-user on a single piece of hardware.

Advantages of IaaS –

- The resources can be deployed by the provider to a customer's environment at any given time.
- Its ability to offer the users to scale the business based on their requirements.
- The provider has various options when deploying resources including virtual machines , applications , storage , networks.
- Its potential to handle a immense number of users.
- It is easy to expand and saves a lot of money. Companies can afford the huge costs associated with implementation of advanced technologies.

2. **PAAS-**

Platform As A Service (PAAS) is a cloud delivery model for applications composed of services managed by a third party. It provides elastic scaling of your application which allows developers to build applications and services over the internet and the deployment models include public, private and hybrid.

Advantages of PaaS –

- Programmers need not worry about what specific database or language the application has been programmed in.
- It offers developers to build applications without overhead of the underlying operating system or infrastructure.
- Provides freedom to developers to focus on application's design while the platform takes care of the language and the database.

TechData-Infinity-Devops with MultiCloud

3. **SAAS-**

Software As A Service (SAAS) allows users to run existing online applications and it is a model software that is deployed as a hosting service and is accessed over Output Rephrased/Re-written Text the internet or software delivery model during which software and its associated data are hosted centrally and accessed using their client, usually an online browser over the web. SAAS services are used for the development and deployment of modern applications.

Advantages of SaaS –

- It is a cloud computing service category providing a wide range of hosted capabilities and services. These can be used to build and deploy web based software applications.
- It provides a lower cost of ownership than on premises software. The reason is it does not require the purchase or installation of hardware or licenses.
- It can be easily accessed through a browser along a thing client.