Cloud Computing

Ranjit Karni

VPark Innovations

Ranjit.balu@gmail.com

Ph.No: 9676976662

Agenda

1. Understanding Cloud Computing
2. Characteristics of Cloud Computing
3. Cloud Computing Service Models
4. Cloud Computing Deployment Models
5. Advantages and Disadvantages of Cloud computing
6. Types of Cloud Computing Job Roles Available in Market

Understanding Cloud Computing

Cloud

- Cloud is just a metaphor for the internet

- Cloud means, just referring to internet

Cloud Computing

- Storing and accessing data and programs over the internet instead of our local computer's hard drive

Definition:

The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

- In simple words, it is a **type of internet-based computing** where different services like Servers, Storage and Applications are delivered to an organization's computer and devices through the internet

- It refers to variety of services available over the internet that deliver computing functionality on the **service provider's infrastructure**.

- It provides the services **anywhere, anyplace and anytime.**

- It avoids / minimizes licensing costs, protects the data, removed hurdles like frequent upgrades to latest technologies, maintenance and upgradation of hardware

Characteristics of Cloud When Compared With Traditional hosting

Remotely Hosted: Services or data are hosted on remote infrastructure

Ubiquitous: Services or data are available from anywhere through internet

Resiliency: Cloud providers generally mirrors solutions to multiple data centers to minimize downtime in the event of disaster

On-demand self-service: A consumer can himself provision computing capabilities, such as server time and network storage as needed automatically without requiring human intervention with each services's provider. It is sold on demand mostly by the minutes or hours (Pay as you go Model)

Rapid elasticity: A user can utilize as much or little of the cloud service as required. For example resources like webservers on the cloud can be scaled to meet high traffic in peak times or scaled down in times of less traffic

Broad network access: Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops and PDAs)

Fully managed by the provider: The user is abstracted from the details of how the service is managed in the cloud. For example the user need not worry about aspects such as hardware used, software updates and patches, plugins, web security. There is optimum utilization of resources and as well as sharing of resources. Everything taken care of by the provider.

Cloud Computing Service Models

Cloud Computing Comprises of 3 service models:

Iaas: Infrastructure as a Service

Paas: Platform as a Service

Saas: Software as a Service

Iaas (Infrastructure as a Service)

- Delivers computer infrastructure, typically a platform virtualization environment as a service

- Cloud providers build datacenters, managing power, scale hardware, networking, storage, distributed systems etc…

- Rather than purchasing servers, software, datacenter space or network equipment, clients instead buy those resources as a fully outsourced service

Ex: Amazon Web Services (AWS), Azure, Google Cloud, Alibaba

Paas (Platform as a Service)

- Provides **developers's** necessary tools to create, test, host and maintain created applications

- Cloud Providers offer an internet-based platform to developers who create services but don't want to build their own cloud

Ex: Microsoft Azure, AWS, Google Cloud

Saas (Software as a Service)

- SaaS is a software delivery methodology that provides licensed multi-tenant access to software and its functions remotely as a Web-based service

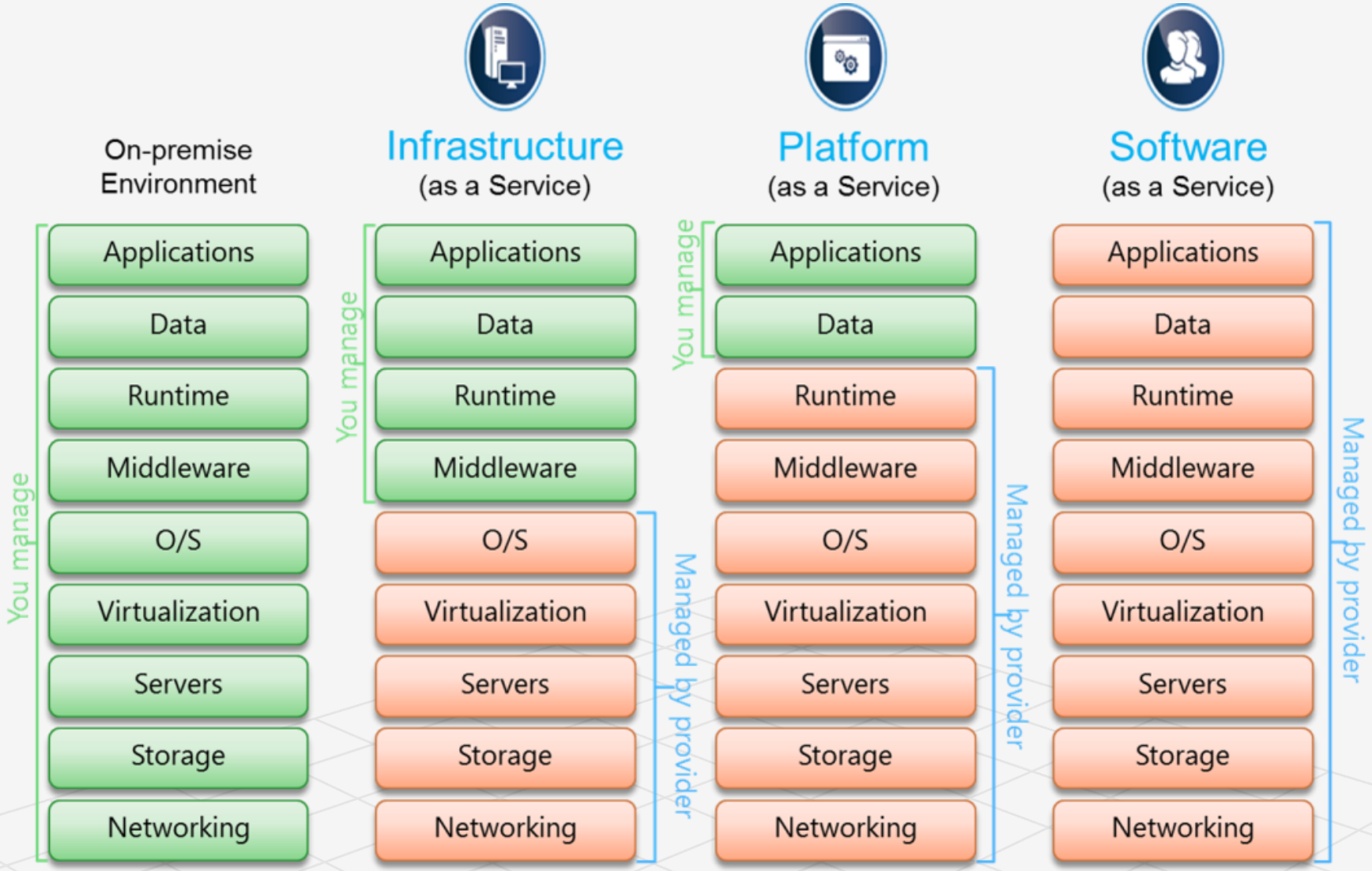
- From **end user's** point of view apps are located in the cloud and it is almost always accessible through a web browser

- Any application hosted on a remote server that can be accessed over the internet is considered as SaaS

- Usually billed based on usage and a multi-tenant environment

Ex: Microsoft Azure, Gmail, Google Apps (Office like features), Sales from CRM

Cloud Computing Service Models Summary



Cloud Computing Deployment Models

There are **three** main deployment models in Cloud Computing:

- **Private**
- **Public**
- **Hybrid**

Private Cloud

- A private cloud hosting solution, also known as an **Internal** or **enterprise** cloud, resides on company's intranet or hosted data center where all of your data is protected behind a firewall

- This can be a great option for companies who already have expensive data centers because they can use their current infrastructure

- You go for a private cloud when you have strict **security and data privacy** issues

Cons: The main drawback you see with a private cloud is that all management, maintenance and updating of data centers is the responsibility of the company

Public Cloud

- These are the clouds which are open for use by general public and they exist beyond the firewall of an organization, fully hosted and managed by vendors

- Yours data is stored in the provider's data center and the provider is responsible for the management and maintenance of the data center

- You can share the computing resources among a network of users, the public cloud offers greater flexibility and cost savings

- You can purchase the capacity on the basis of usage and can scale up or scale down server capabilities based on traffic and other dynamic requirements

Cons: They are more vulnerable than private clouds and there is no control of resources used or who shares them

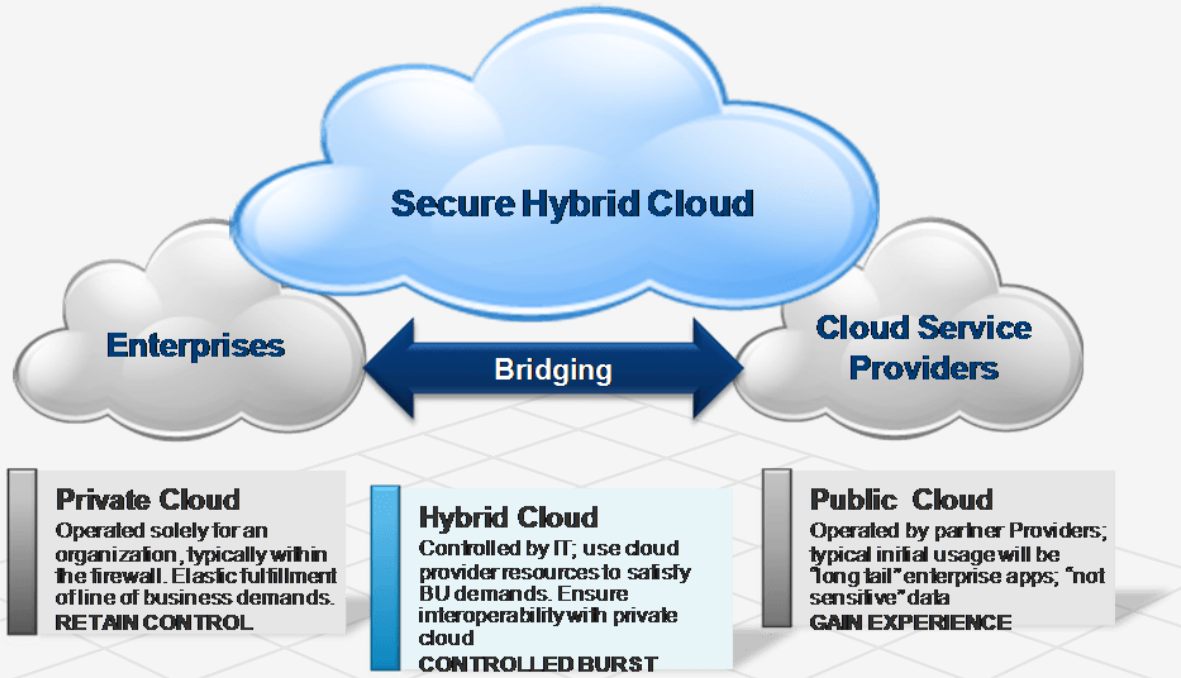
Note: Even though you don't control the security of public cloud, all of your data remains separate from others and security breaches of public cloud are extremely rare.

Hybrid Cloud

- They consist of external and internal providers, namely a mix of public and private clouds

- Secure and critical apps are managed by an organization and the not-so-critical and secure apps by the third party vendor. For example, you can use a public cloud to interact with the clients but keep their data secured within a private cloud. Most companies are not switching to Hybrid clouds.

- Ideal in situations where you have plans are to migrate to a complete cloud solution as existing hardware expires or you have some applications or hardware that are not ready for the cloud



Embrace the benefits of Cloud Computing via Private Clouds, then Hybrid Clouds

Advantages of Cloud Computing

- Lower Computer Cost
- Improved Performance
- Reduced Software Cost and Instant Software Updates
- Unlimited Storage Capacity
- Universal Document Access
- Increased Data Reliability
- Device Independence

Disadvantages of Cloud Computing

- Required a Constant Internet Connection
- Does not work well with low-speed connections
- Features might be limited based on provider you choose
- can be slow
- Stored data might not be secure

Types of Cloud Computing Job Roles

- Cloud System Engineer
- Application Developers with Cloud Knowledge
- Devops Engineers
- Cloud Architect
- Cloud Service Developer
- Cloud System Administrator
- Cloud Sales Executive
- Cloud Consultant
- Site Reliability Engineer (SRE)

Questions?

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Ph No: +91-9676976662