UNIT I
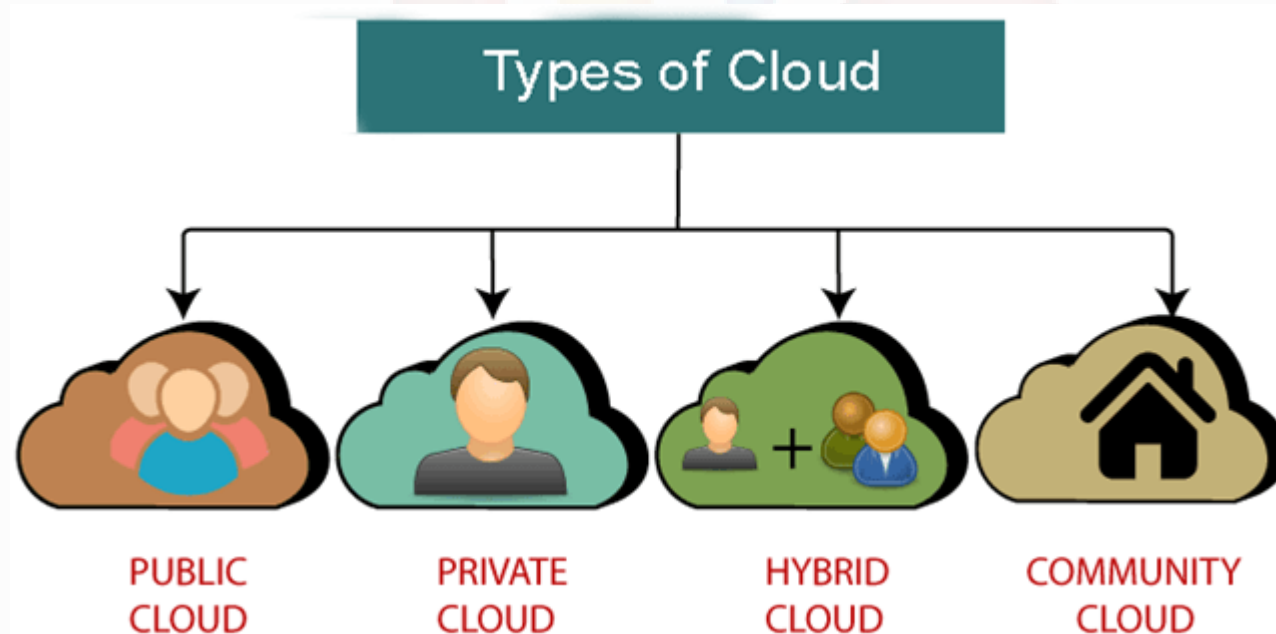# Types of Cloud

GALGOTIAS
UNIVERSITY

Cloud Types

➢ There are 4 types of cloud that you can deploy according to the organization's needs
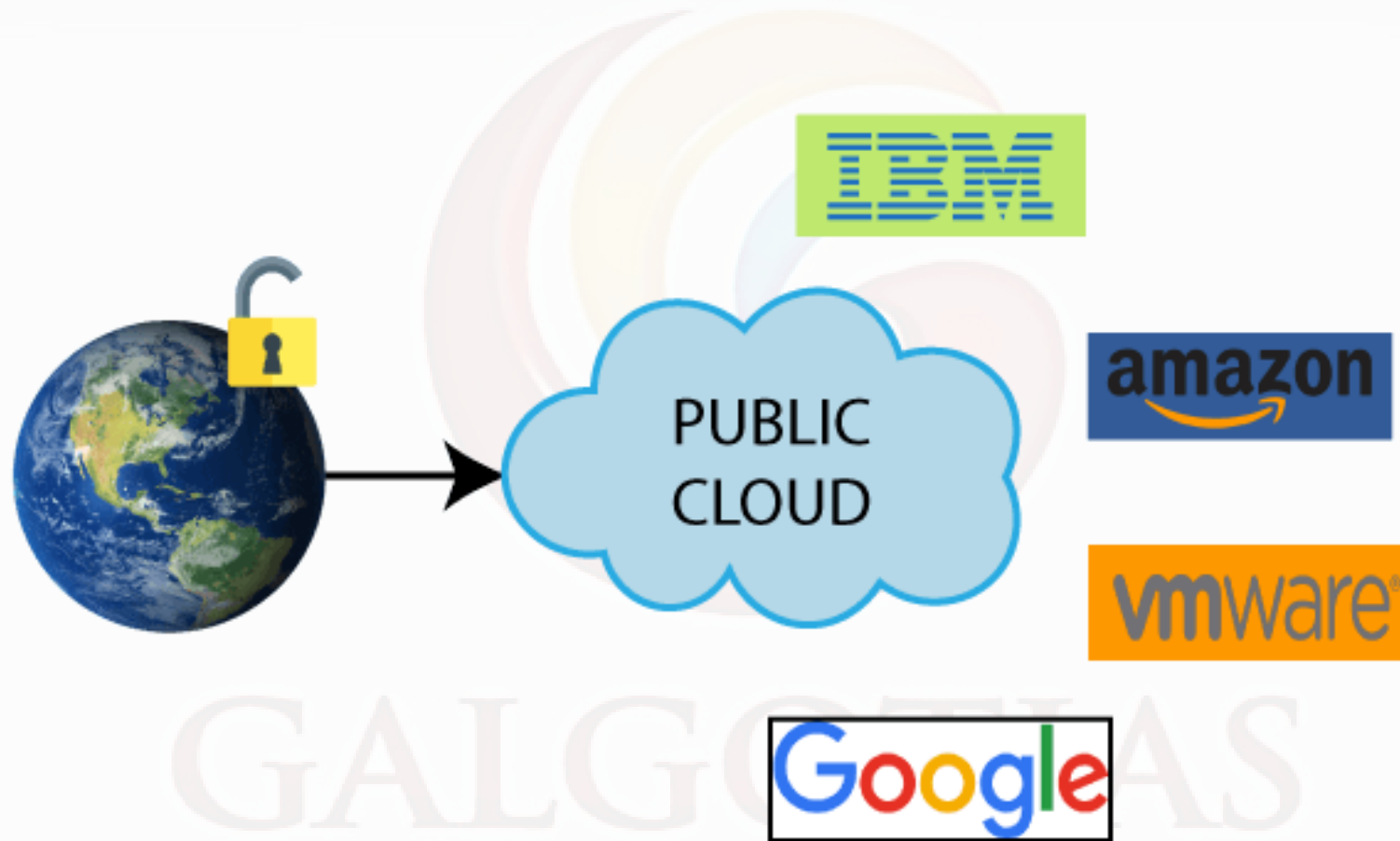
Public Cloud

➢ Public Cloud provides 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.

➢ In the Public cloud, the same storage is being used by multiple users at the same time. Public cloud is owned, managed, and operated by businesses, universities, government organizations, or a combination of them.

➢ Example: Amazon elastic compute cloud (EC2), IBM SmartCloud Enterprise, Microsoft, Google App Engine, Windows Azure Services Platform.

Advantages of Public Cloud

❖ Public cloud is owned at a lower cost than the private and hybrid cloud.

❖ Public cloud is maintained by the cloud service provider, so do not need to worry about the maintenance.

❖ Public cloud is easier to integrate. Hence it offers a better flexibility approach to consumers.

❖ Public cloud is location independent because its services are delivered through the internet.

❖ Public cloud is highly scalable as per the requirement of computing resources.

❖ It is accessible by the general public, so there is no limit to the number of users.

Disadvantages of Public Cloud

❖ Public Cloud is less secure because resources are shared publicly.

❖ Performance depends upon the high-speed internet network link to the cloud provider.
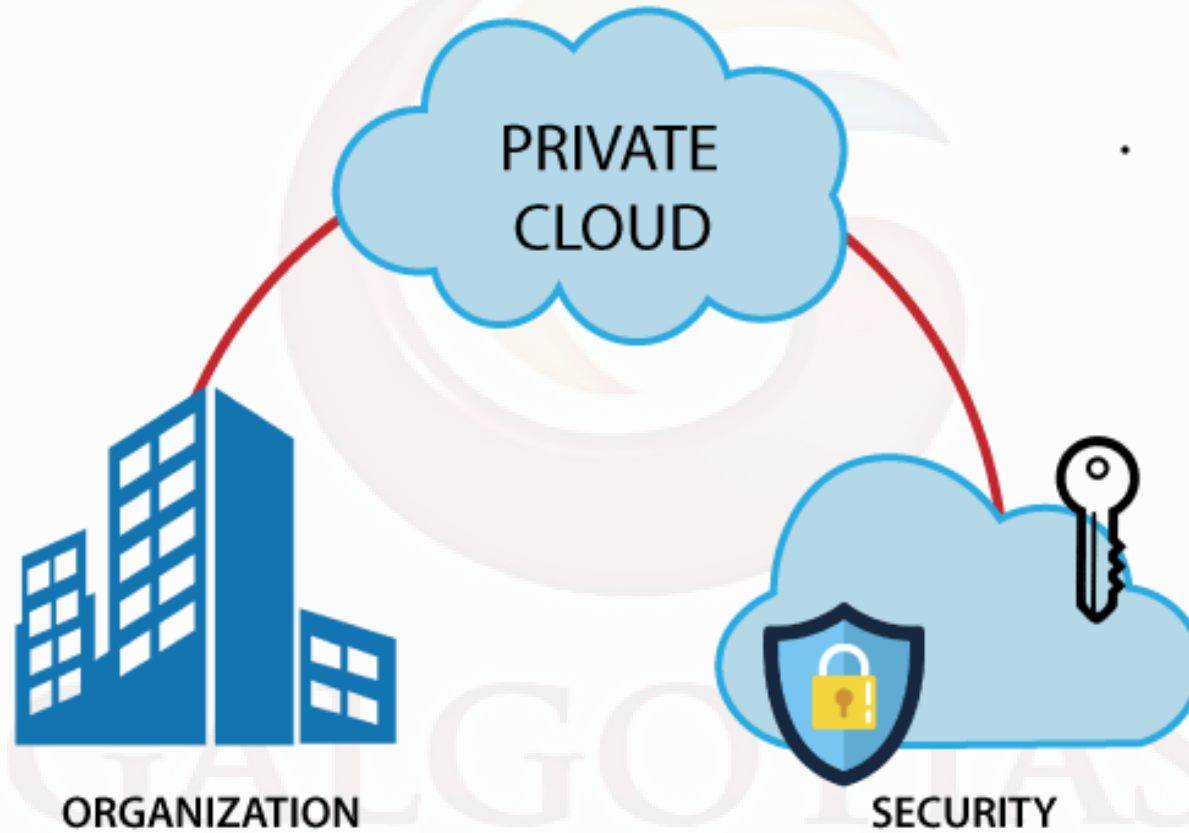
❖ The Client has no control of data

☐

☐

☐

☐

Private Cloud

❖ Private cloud is also known as an internal cloud or corporate cloud. It is used by organizations to build and manage their own data centers internally or by the third party. It can be deployed using Opensource tools such as Openstack and Eucalyptus.

❖ Based on the location and management, National Institute of Standards and Technology (NIST) divide private cloud into the following two parts-

- On-premise private cloud
- Outsourced private cloud

Advantages of Private Cloud

❖ Private cloud provides a high level of security and privacy to the users.

❖ Private cloud offers better performance with improved speed and space capacity.

❖ It allows the IT team to quickly allocate and deliver on-demand IT resources.

❖ The organization has full control over the cloud because it is managed by the organization itself. So, there is no need for the organization to depends on anybody.

❖ It is suitable for organizations that require a separate cloud for their personal use and data security is the first priority.

❑

❑

Disadvantages of Private Cloud

- ❖ Skilled people are required to manage and operate cloud services.
- ❖ Private cloud is accessible within the organization, so the area of operations is limited.
- ❖ Private cloud is not suitable for organizations that have a high user base, and organizations that do not have the prebuilt infrastructure, sufficient manpower to maintain and manage the cloud.
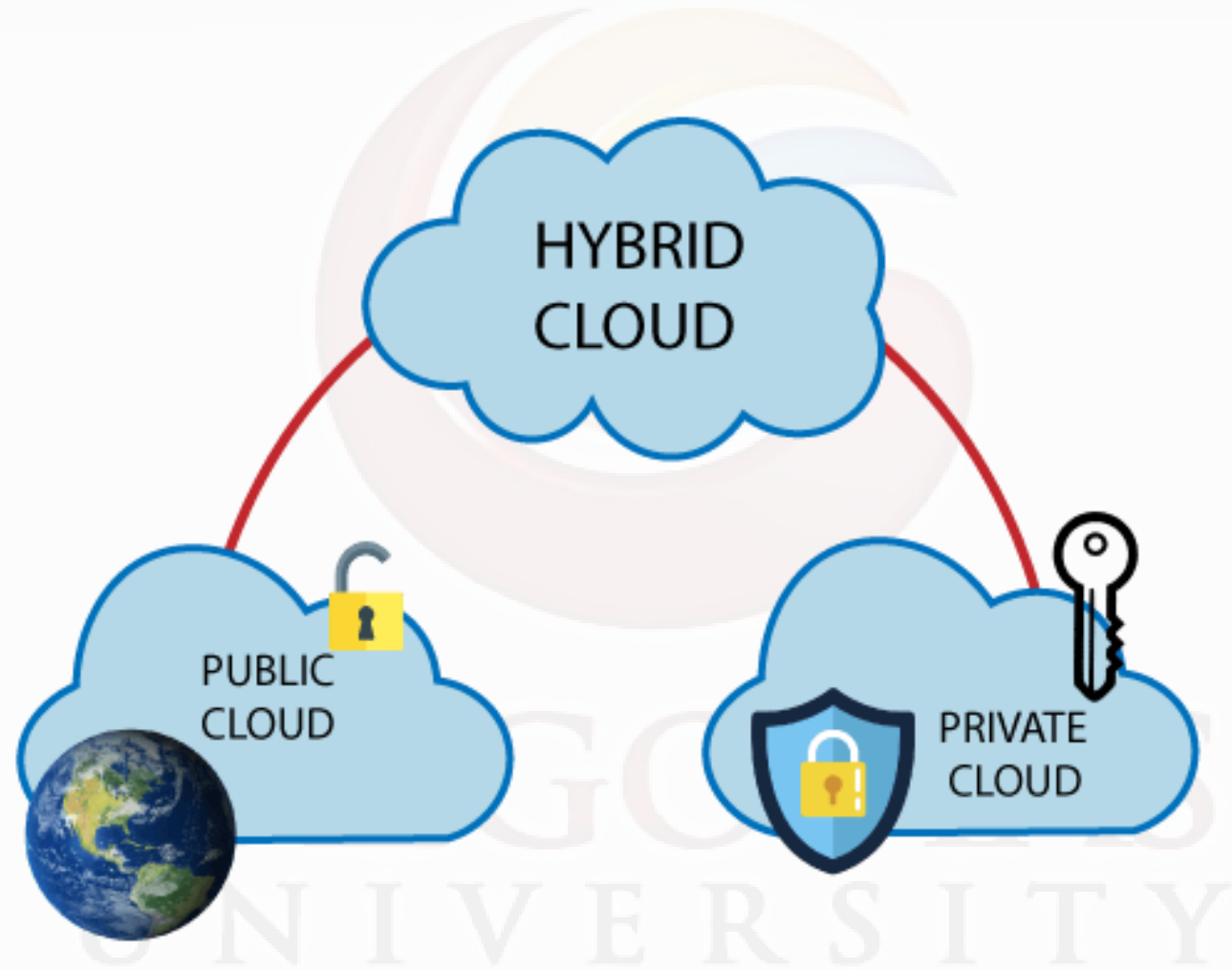
Hybrid Cloud

- ➢ Hybrid Cloud is a combination of the public cloud and the private cloud. we can say: ***Hybrid Cloud = Public Cloud + Private Cloud***
- ➢ Hybrid cloud is partially secure because the services which are running on the public cloud can be accessed by anyone, while the services which are running on a private cloud can be accessed only by the organization's users.
- ➢ **Example:** Google Application Suite (Gmail, Google Apps, and Google Drive), Office 365 (MS Office on the Web and One Drive), Amazon Web Services.

Advantages of Hybrid Cloud

- Hybrid cloud is suitable for organizations that require more security than the public cloud.
- Hybrid cloud helps you to deliver new products and services more quickly.
- Hybrid cloud provides an excellent way to reduce the risk.
- Hybrid cloud offers flexible resources because of the public cloud and secure resources because of the private cloud.

Disadvantages of Hybrid Cloud

❖ In Hybrid Cloud, security feature is not as good as the private cloud.
❖ Managing a hybrid cloud is complex because it is difficult to manage more than one type of deployment model.
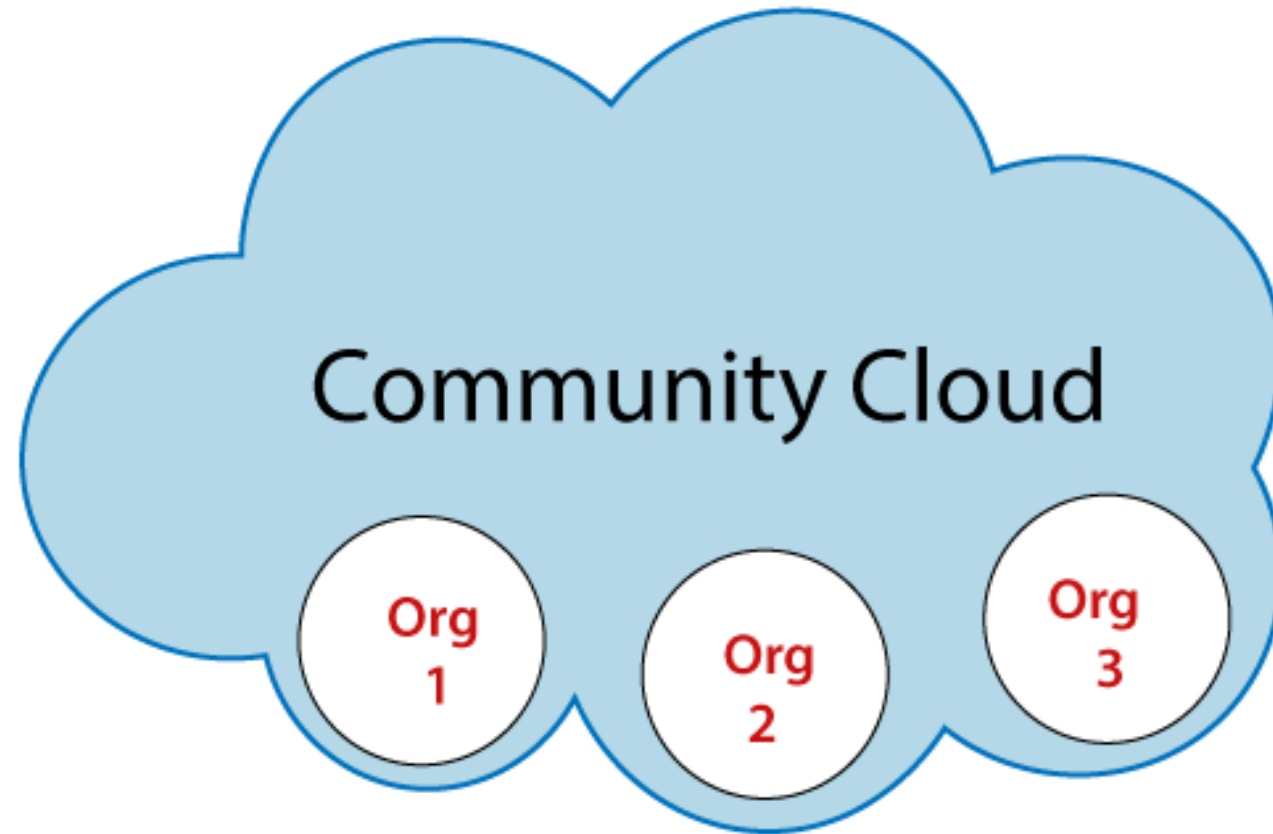❖ In the hybrid cloud, the reliability of the services depends on cloud service providers.

Community Cloud

❖ Community cloud allows systems and services to be accessible by a group of several organizations to share the information between the organization and a specific community. It is owned, managed, and operated by one or more organizations in the community, a third party, or a combination of them.

❖ **Example:** Health Care community cloud

Advantages of Community Cloud

- ❖ Community cloud is cost-effective because the whole cloud is being shared by several organizations or communities.
- ❖ Community cloud is suitable for organizations that want to have a collaborative cloud with more security features than the public cloud.
- ❖ It provides better security than the public cloud.
- ❖ It provides collaborative and distributive environment.
- ❖ Community cloud allows us to share cloud resources, infrastructure, and other capabilities among various organizations.

Disadvantages of Community Cloud

- ❖ Community cloud is not a good choice for every organization.
- ❖ Security features are not as good as the private cloud.
- ❖ It is not suitable if there is no collaboration.
- ❖ The fixed amount of data storage and bandwidth is shared among all community members.

Difference between public cloud, private cloud, hybrid cloud, and community cloud

Parameter	Public Cloud	Private Cloud	Hybrid Cloud	Community Cloud
Host	Service provider	Enterprise (Third party)	Enterprise (Third party)	Community (Third party)
Users	General public	Selected users	Selected users	Community members
Access	Internet	Internet, VPN	Internet, VPN	Internet, VPN
Owner	Service provider	Enterprise	Enterprise	Community

☐

☐

References:

1. Rajkumar Buyya, Christian Vecchiola, S.Thamarai Selvi, "Mastering Cloud Computing", McGraw Hill Education; First edition, July 2017.
2. Ray J Rafaels "Cloud Computing: From Beginning to End", Createspace Independent Publishing Platform, April 2015.
3. Anthony T .Velte, Toby J.Velte, Robert Elsenpeter, "Cloud Computing: A Practical Approach", Tata McGraw Hill Edition, Fourth Reprint, 2010.
4. https://www.javatpoint.com

Thank You