Cloud Deployment Model

Department of Computer Science and Engineering

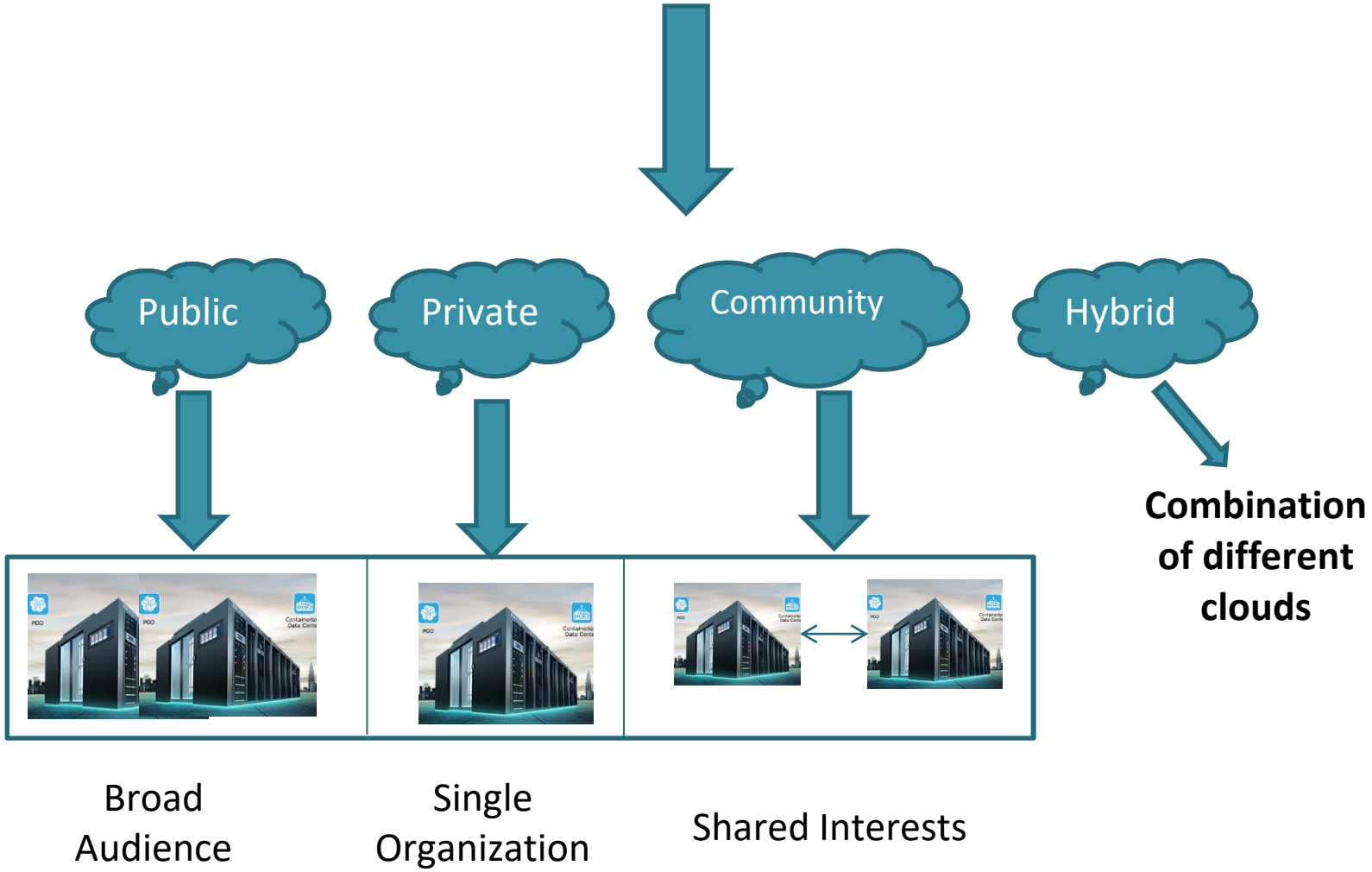
TIET

Introduction

- Clouds can be classified in terms of who owns and manages the cloud; Types of Cloud (Deployment Model)
- It defines the type of access to the cloud.

Cloud Deployment Models			
Public Clouds	Private Cloud	Community Cloud	Hybrid Cloud

Cloud Models



Customers are choosing a variety of cloud models to meet their unique needs and priorities.

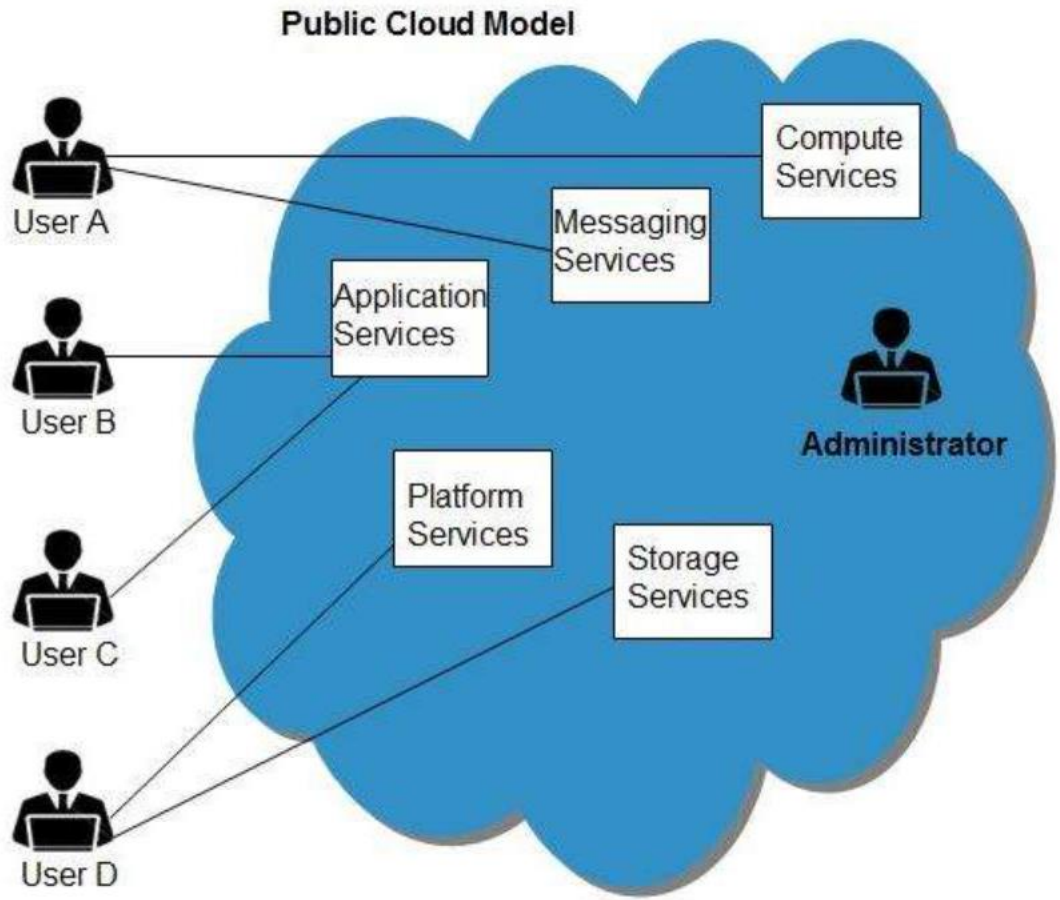
Private Cloud
On or off premises cloud infrastructure operated solely for an organization and managed by the organization or a third party

Public Cloud
Available to the general public or a large industry group and owned by an organization selling cloud services

Hybrid Cloud
Traditional IT and clouds (public and private) that remain separate but are bound together by technology that enables data and application portability

Traditional IT
Appliances, pre-integrated systems and standard hardware, software, and networking

Public Cloud



Public Cloud

- Most common form of cloud computing
- Services are made available to the general public in a pay-as-you-go manner.

- Customers – individual users or enterprises
- The **public cloud** model is widely accepted and adopted

- First deployment model of cloud services came in existence.

Benefits of Public Cloud

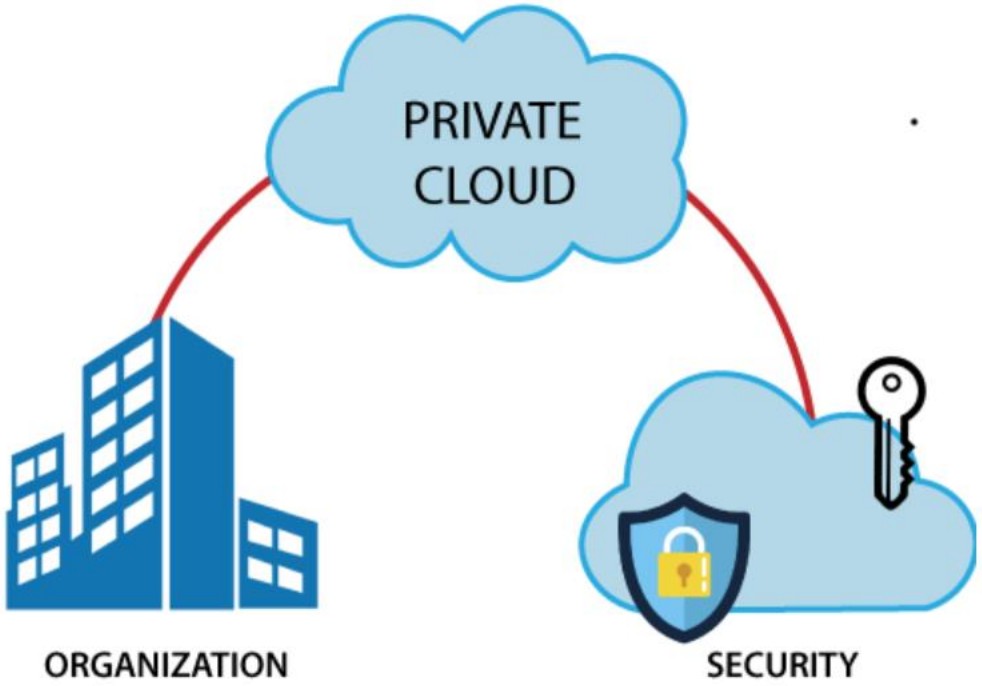
- Cost effective: Same resources are shared
- Reliability: Large number of resources are available
- Flexibility: Can be integrated with private cloud
- Location independence: It provides services throughout the internet
- Utility style costing: Based on pay per use.
- High scalability: Resources are available through demand.

Disadvantages of Public Cloud

- Data security and privacy: Users do not have any idea where the information is stored.
- Lack of options: One size fits all approach. If any user has unique needs, cannot meet the requirements.
- Loss of control: User's information is out of reach, when it is outsourced.


PUBLIC CLOUD
Microsoft Azure
vmware
amazon web services
Google Cloud Platform
SOFTLAYER
an IBM Company
ALERTLOGIC
SECURITY-AS-A-SERVICE

Private Cloud



Private Cloud

- Private Cloud is also known as internal cloud or corporate cloud
- provides computing services to a **private internal network (within the organization)** and **selected users** instead of the general public.
- It ensures that operational and sensitive data are not accessible to third-party providers.
- Most of the private clouds are large company or government departments who prefer to keep their data in a more controlled and secure environment.

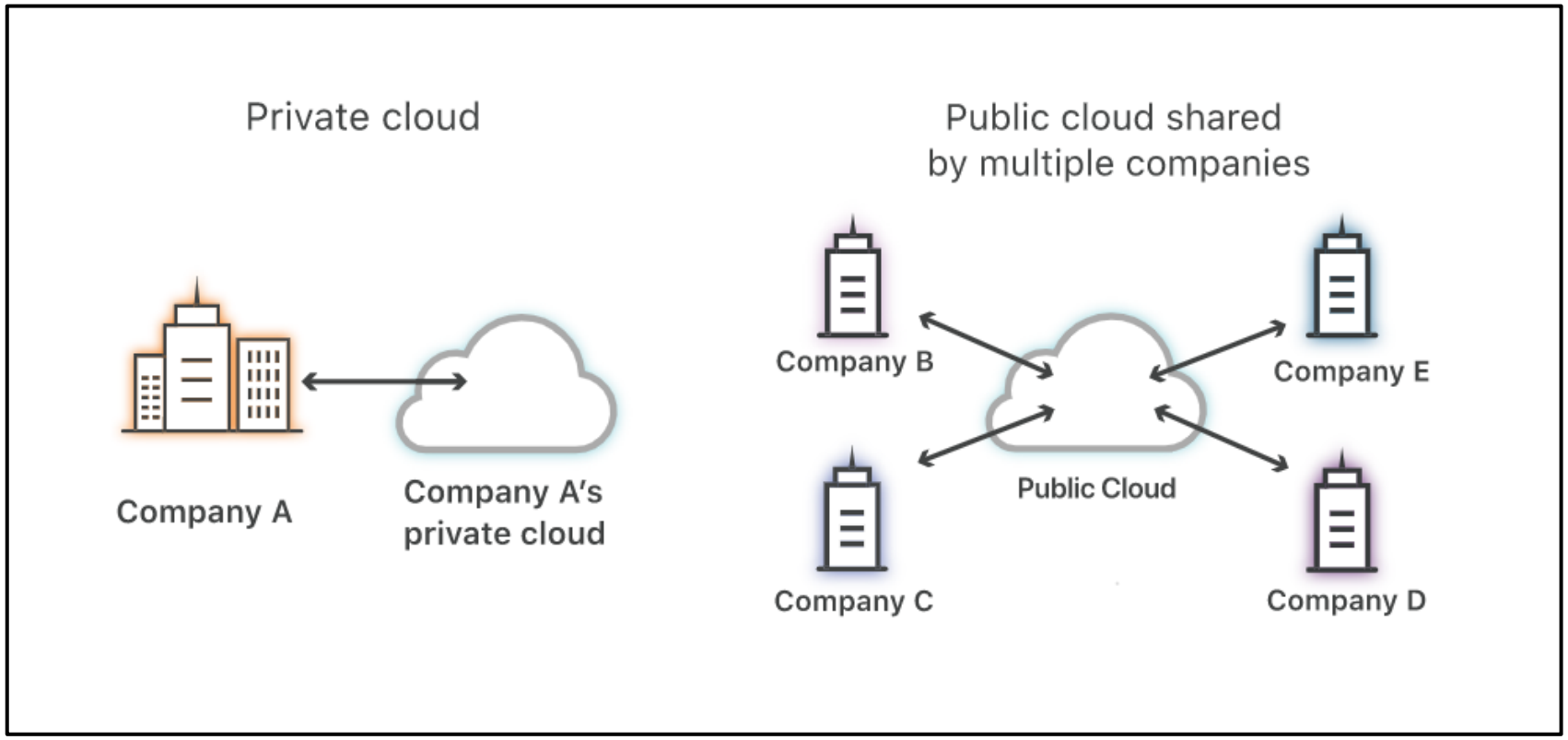
Benefits of Private Cloud

- High Security and Privacy: Highly secure.
- More Control: It is only for selected users. Hence, more control over hardware and resources.
- Better Performance: It offers better performance

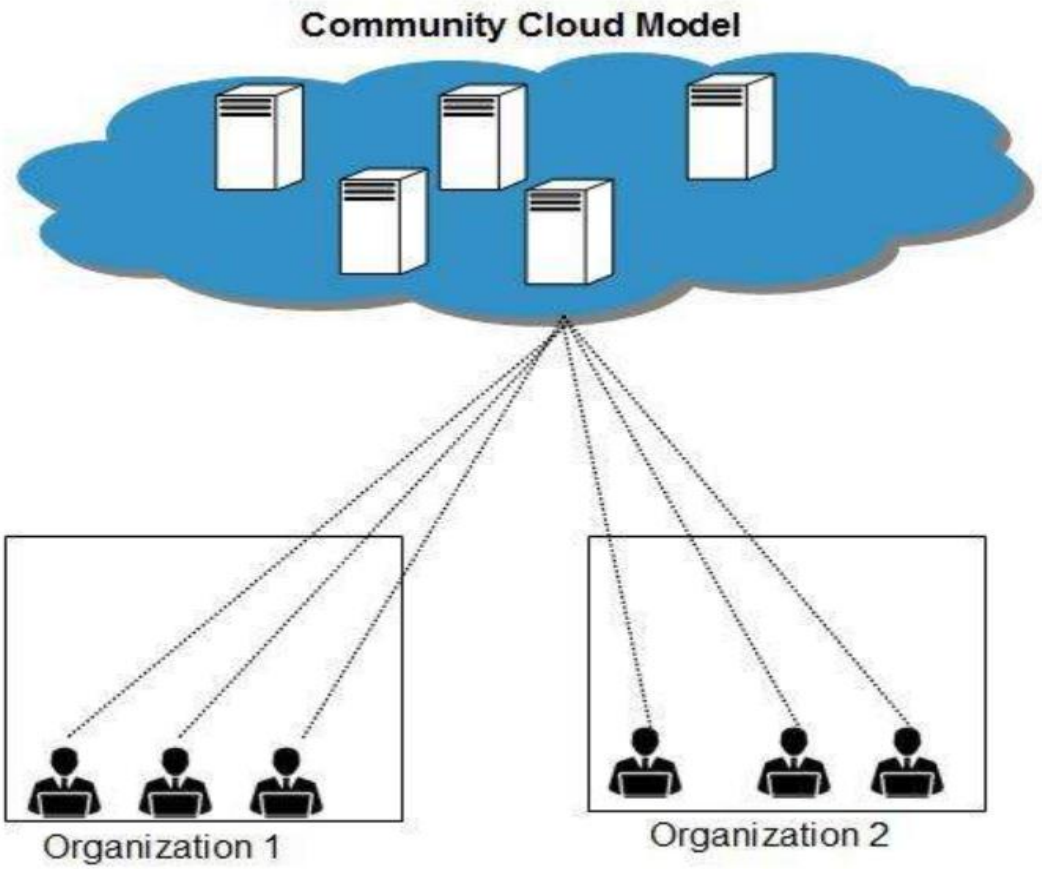
Disadvantages of Private Cloud

- High Cost: Cost is higher because of set up and maintaining the hardware resources.
- Restricted area of operation: Only within the organization, the resources are accessible.
- Limited Scalability: Resources are limited
- Requirement of skilled people: Skilled people are required to maintain the cloud services.

Public Vs Private Cloud



Community Cloud



Community Cloud

- A **community cloud** is controlled and used by a group of organizations that have shared interests, such as specific security requirements or a common mission.
- The members of the community share access to the data and applications in the cloud.
- It may be managed internally by organization or by third party

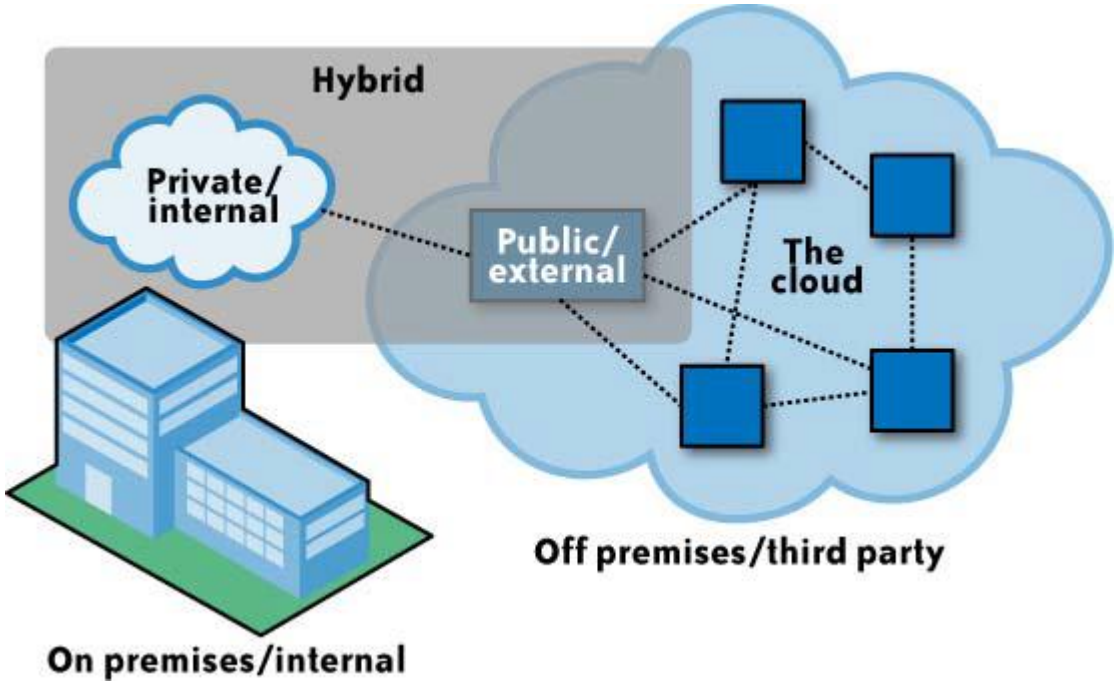
Benefits of Community Cloud

- Sharing among organizations: It provides infrastructure to share resources among different organizations.
- Cost effective: Same as private cloud.
- Security: More Secure than public cloud, but less secure than private cloud.

Disadvantages

All the data is located in one place. One organization's data can be accessed by others. Therefore, it is less secure than private cloud.

Hybrid Cloud



Hybrid Cloud

- A composition of the two types (**private and public**) is called a **Hybrid Cloud**, where a private cloud is able to maintain high services availability by scaling up their system with externally provisioned resources from a public cloud when there are rapid workload fluctuations or hardware failures.

- In the Hybrid cloud, an enterprise can keep their critical data and applications within their firewall, while hosting the less critical ones on a public cloud.

Continue…

- For example, an organization might store customer data within its own data center and have a public cloud service, such as Amazon's EC2, to provide the computing power in an on-demand manner when data processing is needed.

Benefits of Hybrid Cloud

- Scalability
- Flexibility
- Cost Efficiency
- Security

Assignment

Suppose Thapar University wants to shift it's services to Cloud, Suggest which cloud deployment model will be suitable for it and why? Explain your answer in detail.

Thank you