1.3 Cloud Deployment Model

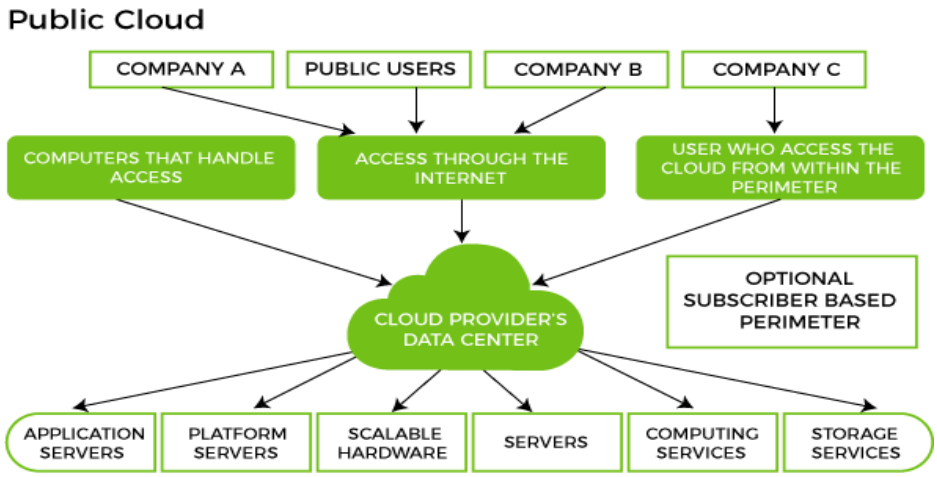
It works as your virtual computing environment with a choice of deployment model depending on how much data you want to store and who has access to the infrastructure.

Types of Deployment Model

- Public Cloud
- Private Cloud
- Hybrid Cloud

Public Cloud

- The Public Cloud allows systems and services to be easily accessible to the general public. Public cloud maybe less secure because of its openness, e.g., e-mail, Microsoft Azure, AWS, Google Cloud etc.
- Public deployment models in the cloud are perfect for organizations with growing and fluctuating demands.
- It also makes a great choice for companies with low-security concerns. Thus, you pay a cloud service provider for networking services, compute virtualization & storage available on the public internet.
- It is also a great delivery model for the teams with development and testing.
- Its configuration and deployment are quick and easy, making it an ideal choice for test environments.



Benefits of Public Cloud

- **Minimal Investment** -As a pay-per-use service, there is no large upfront cost and is ideal for businesses who need quick access to resources.

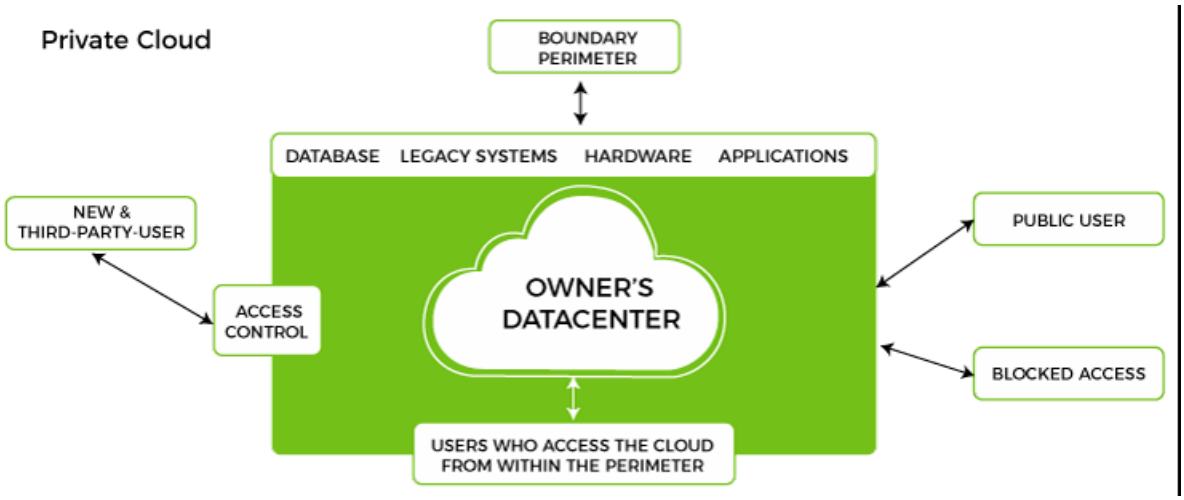
- **No Hardware Setup**-The cloud service providers fully fund the entire Infrastructure
- **No Infrastructure Management**-This does not require an in-house team to utilize the public cloud.

Limitations of Public Cloud

- **Data Security and Privacy Concerns** - Since it is accessible to all, it does not fully protect against cyber-attacks and could lead to vulnerabilities.
- **Reliability Issues**-Since the same server network is open to a wide range of users, it can lead to malfunction and outages
- **Service/License Limitation** - While there are many resources you can exchange with tenants, there is a usage cap.

Private Cloud

- The Private Cloud allows systems and services to be accessible within an organization. It offers increased security because of its private nature.
- Companies that look for cost efficiency and greater control over data & resources will find the private cloud a more suitable choice.
- It means that it will be integrated with your data center and managed by your IT team.
- The private cloud offers bigger opportunities that help meet specific organizations' requirements when it comes to customization.



Benefits of Private Cloud

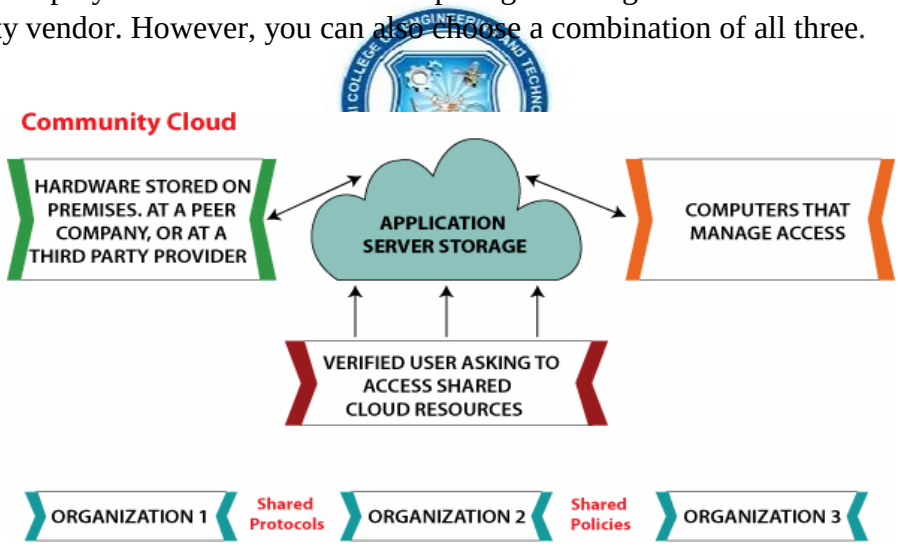
- **Data Privacy** - It is ideal for storing corporate data where only authorized person neglects access
- **Security**-Segmentation of resources within the same Infrastructure can help with better access and higher levels of security.
- **Supports Legacy Systems**-This model supports legacy systems that cannot access the public cloud.

Limitations of Private Cloud

- **Higher Cost** - With the benefits you get, the investment will also be larger than the public cloud. Here, you will pay for software, hardware, and resources for staff and training.
- **Fixed Scalability** - The hardware you choose will accordingly help you scale in a certain direction
- **High Maintenance**-Since it is managed in-house, the maintenance costs also increase.

Community Cloud

- The Community Cloud allows systems and services to be accessible by group of organizations.
- The community cloud operates in a way that is similar to the public cloud. There's just one difference - it allows access to only a specific set of users who share common objectives and use cases.
- This type of deployment model of cloud computing is managed and hosted internally or by a third-party vendor. However, you can also choose a combination of all three.



Benefits of Community Cloud

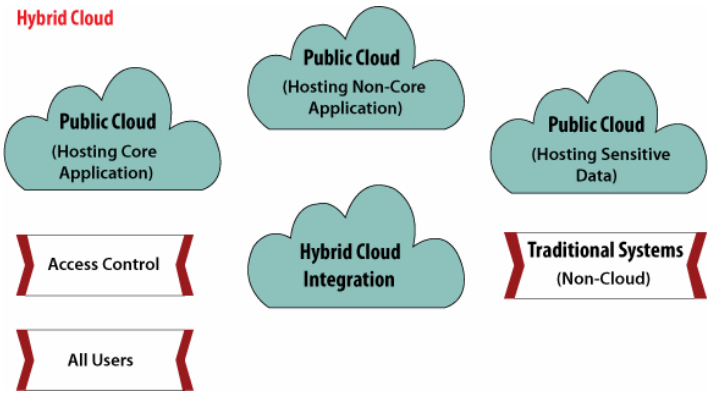
- Smaller Investment - A community cloud is much cheaper thanthe private & public cloud and provides great performance
- Setup Benefits-The protocols and configuration of a community cloud must align with industry standards, allowing customers to work much more efficiently.

Limitations of Community Cloud

- Shared Resources-Due to restricted bandwidth and storage capacity, community resources often pose challenges.
- Not as Popular-Since this is a recently introduced model, it is not that popular or available across industries.

Hybrid Cloud

- The Hybrid Cloud is mixture of public and private cloud.
- However, the critical activities are performed using private cloud while the non- critical activities are performed using public cloud.
- A hybrid cloud is a combination of two or more cloud architectures.
- While each model in the hybrid cloud functions differently, it is all part of the same architecture.
- Further, as part of this deployment of the cloud computing model, the internal external providers can offer resources.
- Consider a company with critical data will prefer storing on a private cloud, while less sensitive data can be stored on a public cloud. The hybrid cloud is also frequently used for 'cloud bursting'. It means, supposes an organization runs an application on-premises, but due to heavy load, it can burst into the public cloud.



Benefits of Hybrid Cloud

- Cost-Effectiveness - The overall cost of a hybrid solution decreases since it majorly uses the public cloud to store data.
- Security – Since data is properly segmented, the chances of data theft from attackers are significantly reduced.
- Flexibility -With higher levels of flexibility, businesses can create custom solutions that fit their exact requirements

Limitations of Hybrid Cloud

- Complexity-It is complex setting up a hybrid cloud since it needs to integrate two or more cloud architectures
- Specific Use Case-This model makes more sense for organizations that have multiple use cases or need to separate critical and sensitive data.