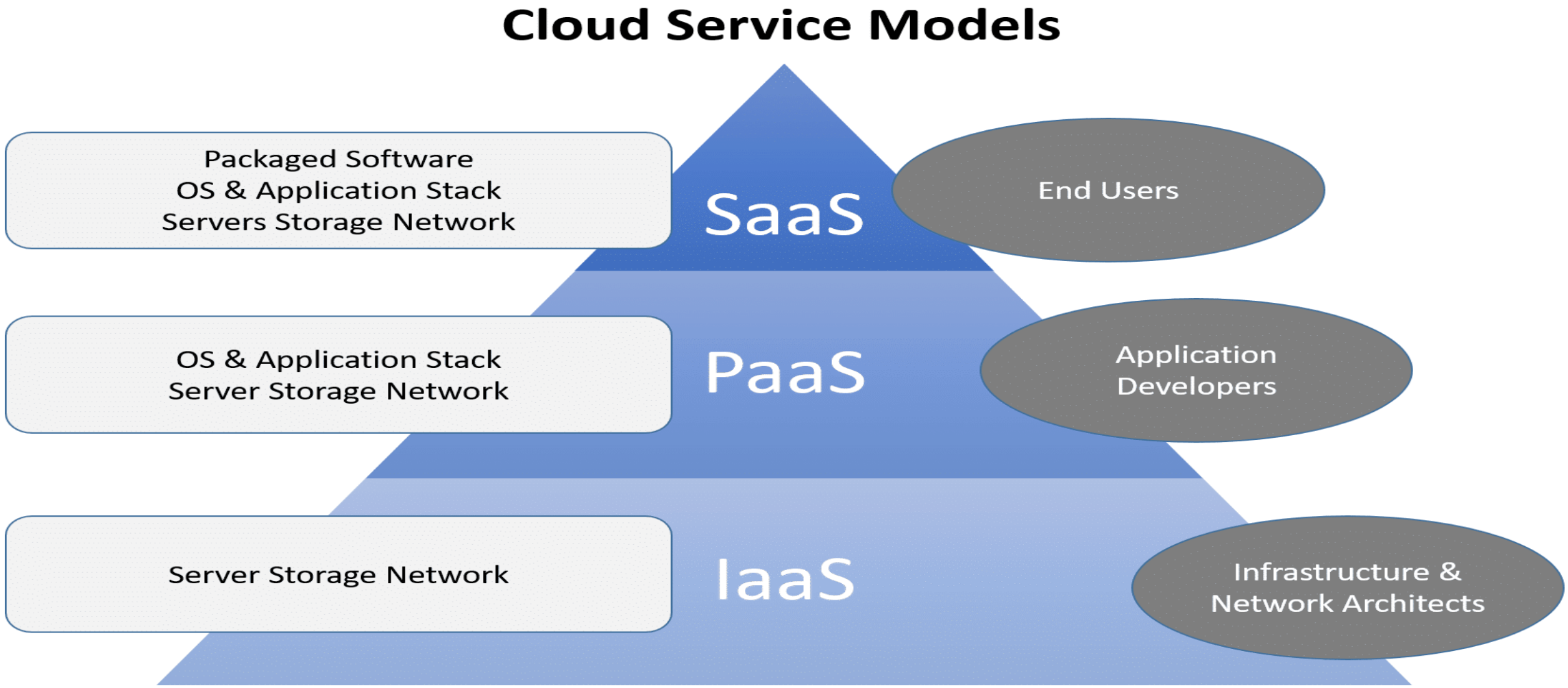
Lecture 3

Service models

Deployment models

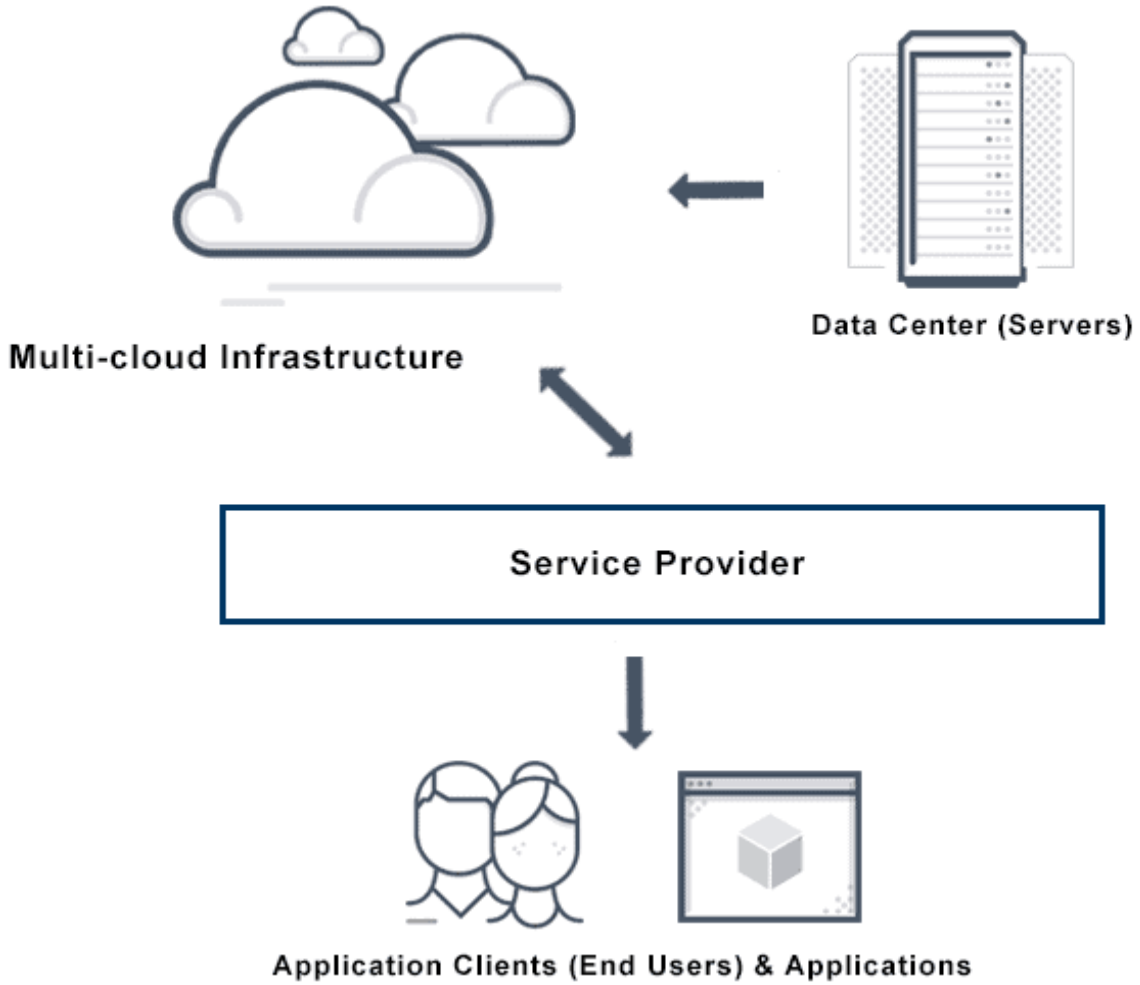
Section 1: Service models

Service models

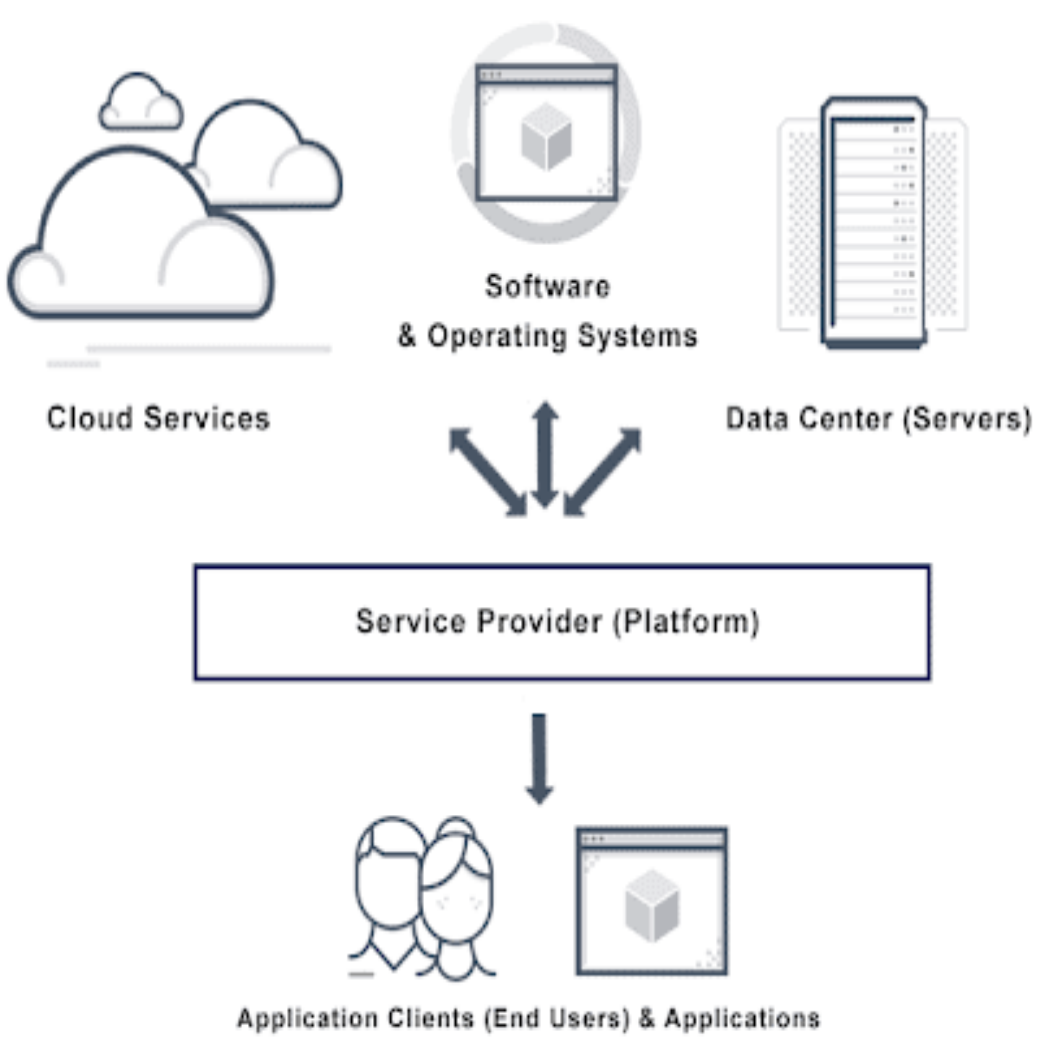


IaaS

The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).



PaaS

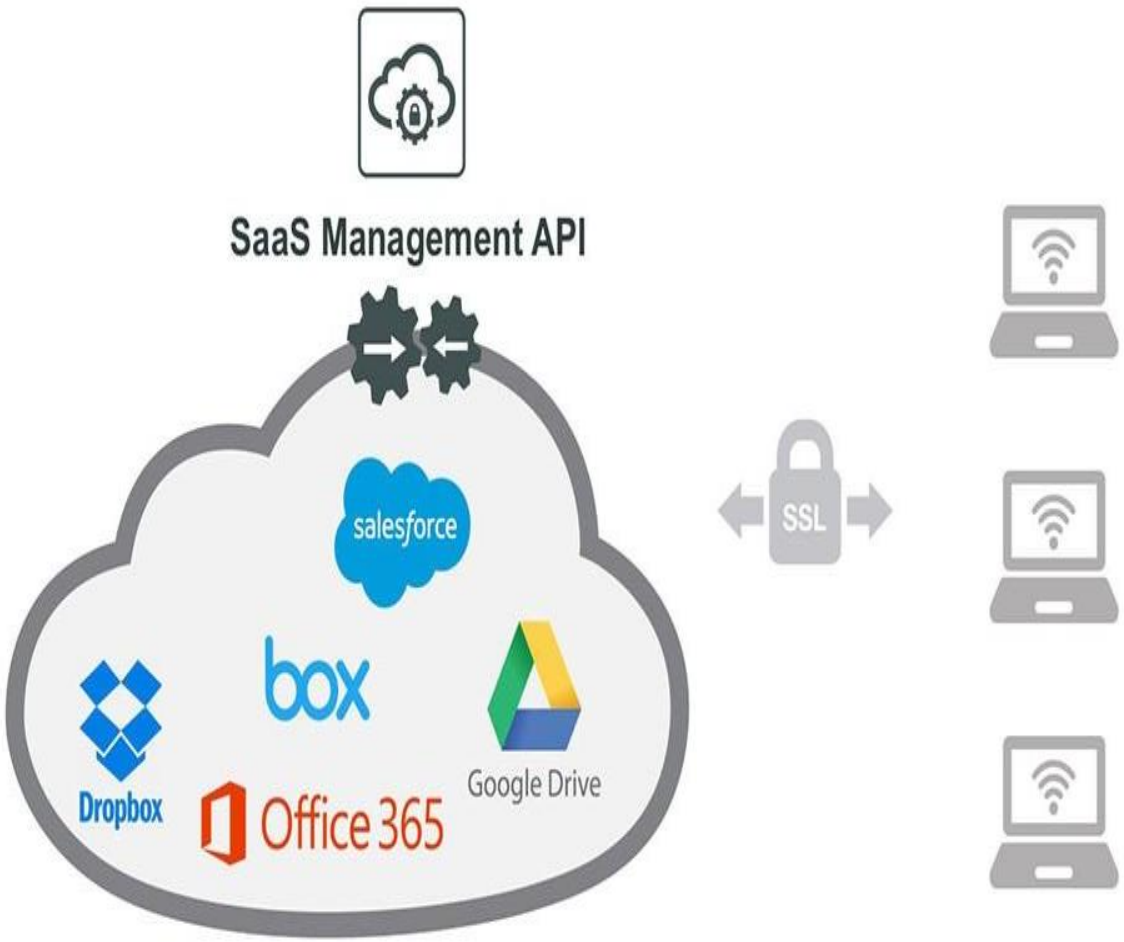


The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

Characteristics of PaaS

- Runtime framework: The runtime framework executes end-user code according to the policies set by the user and the provider.
- Abstraction: PaaS offer a way to deploy and manage applications on the cloud rather than a virtual machines on top of which the IT infrastructure is built and configured.
- Automation: PaaS deploy the applications automatically.
- Cloud services: Provide services for creation, delivery, monitoring, management, reporting of applications.

SaaS



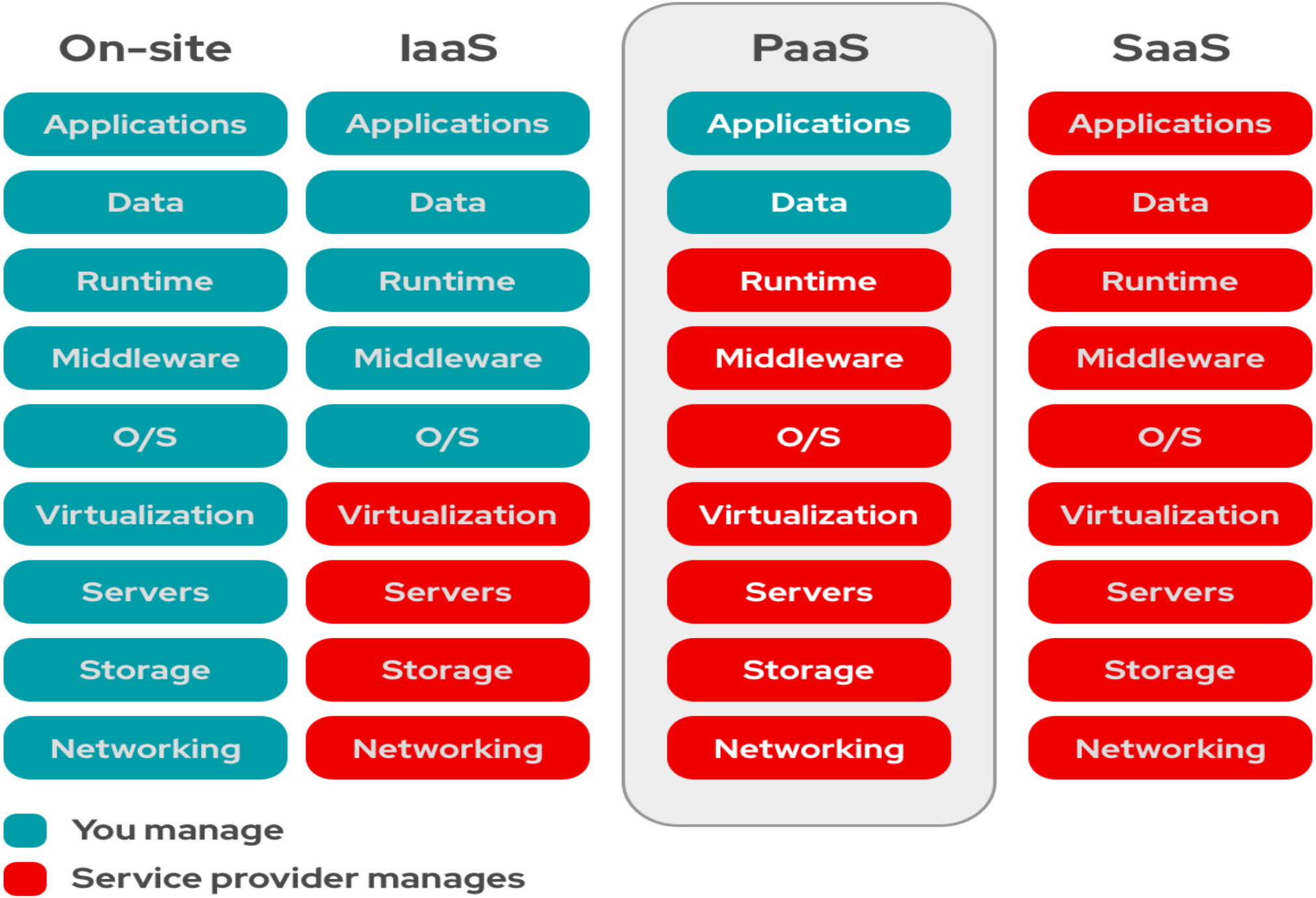
The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities.


Non-SaaS Application
SaaS Application
Application logic runs
on user's computer
Application logic runs
in the cloud

Characteristics of SaaS

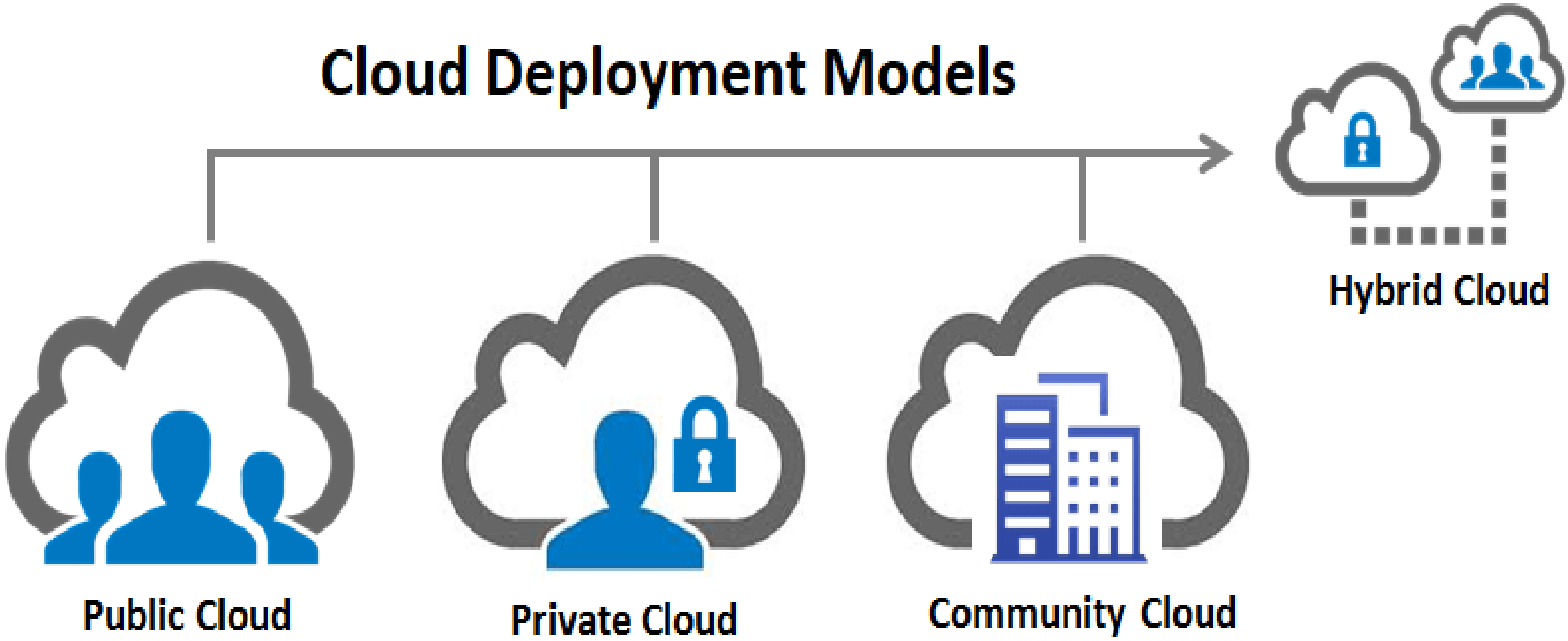
- The product sold to customer is application access.
- The application is centrally managed.
- The service delivered is one-to-many.
- The service delivered is an integrated solution delivered on the contract, which means provided as promised.

Controls on service models


On-site
IaaS
PaaS
SaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
You manage
Service provider manages

Section 2: Deployment models

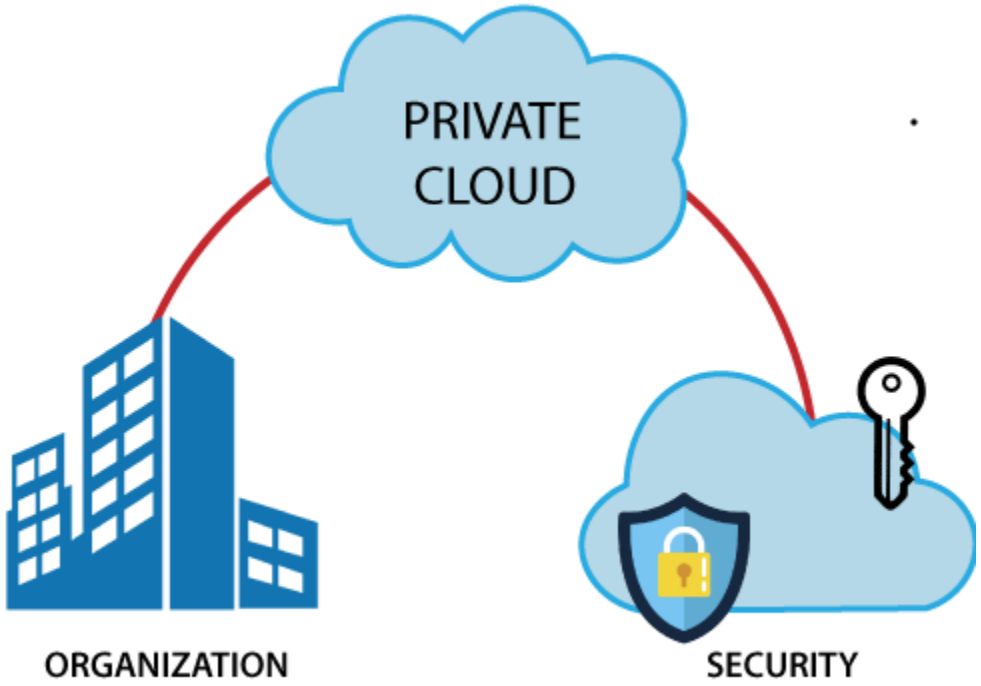
Deployment models



Public Cloud

The cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

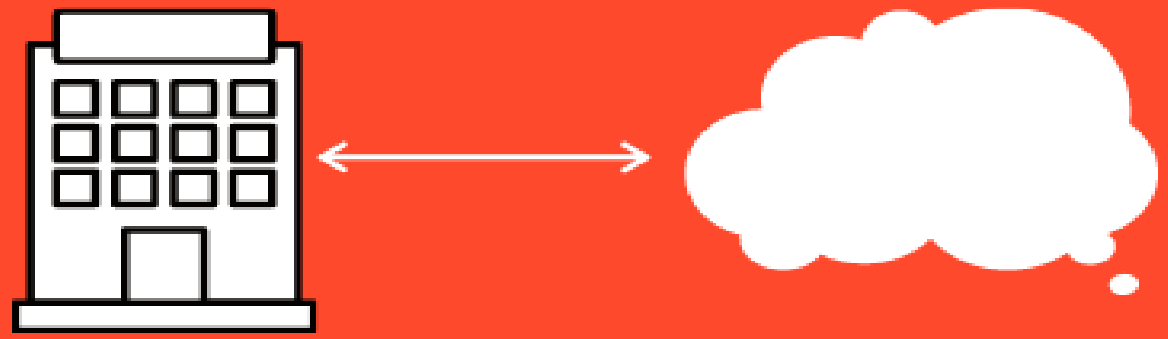
Private Cloud



The cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

Private v/s public cloud

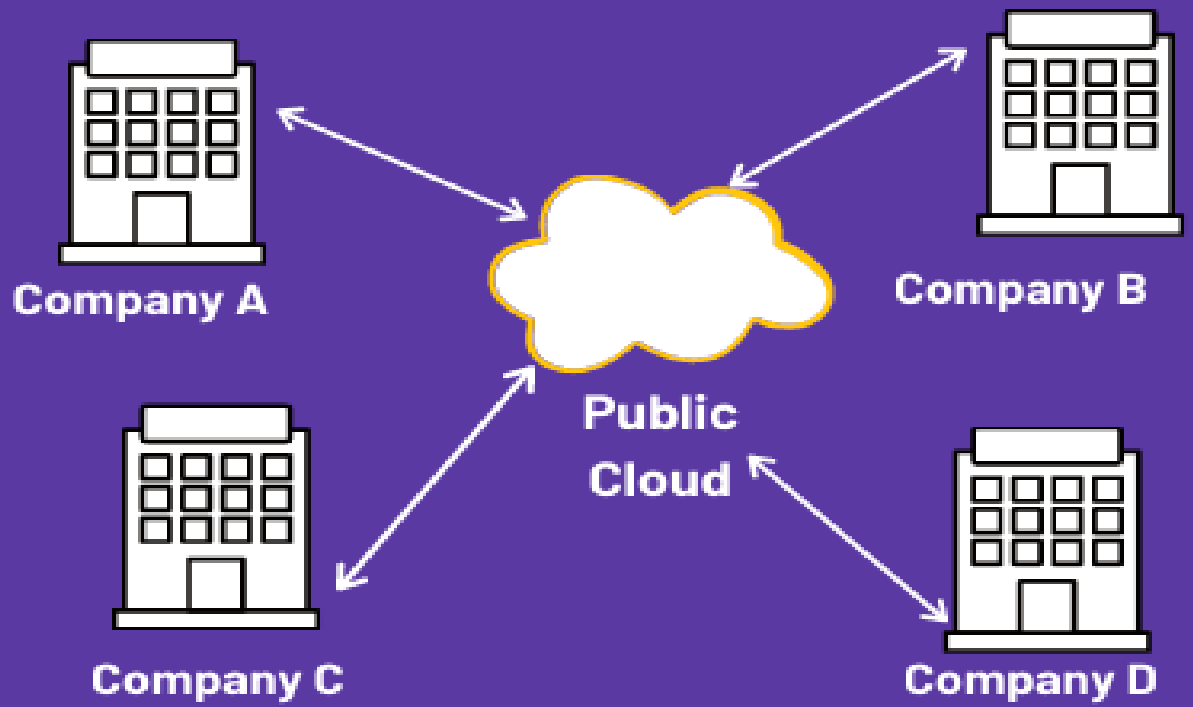
Private Cloud



Company A

Company A's Private Cloud

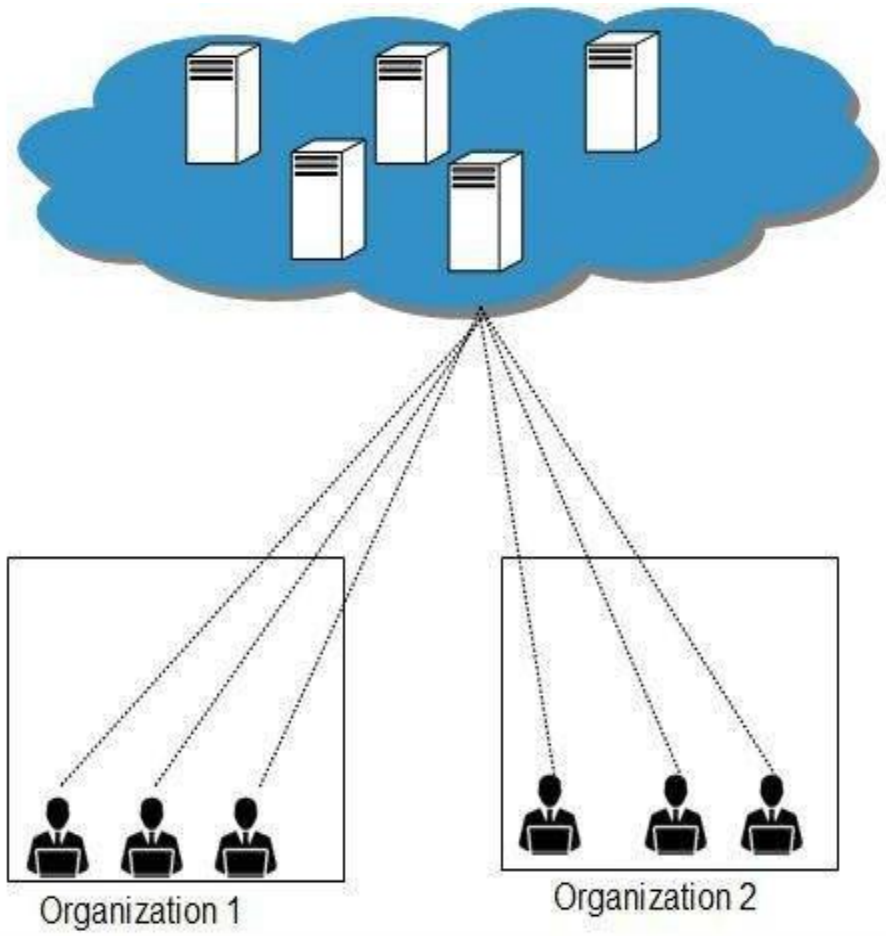
Public Cloud



PUBLIC VS PRIVATE

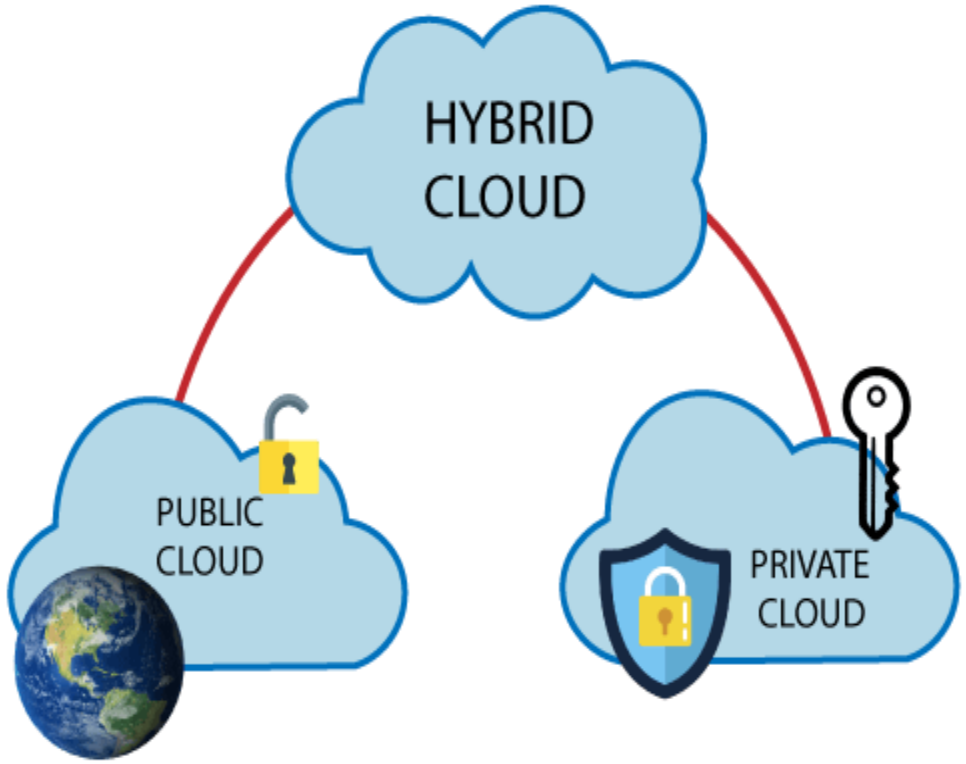
PUBLIC		PRIVATE
Publicly Shared Virtualized Resources		Privately Shared Virtualized Resources
Supports Multiple Customers		Cluster of Dedicated Customers
Supports Internet Connectivity		Connectivity Over Internet, Fiber, and Private Network
Suited for Less Confidential Information		Suited for Secured Confidential Information and Core Systems

Community Cloud



The cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

Hybrid Cloud



The cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds)

On Premise v/s cloud

On-premise vs Cloud-based

Features	On-premise	Cloud-based
Security	Organization's responsibility	Service provider responsibility
Customization	Difficult	Simple
Updates	Organization has choice	No choice
Ownership	Complete ownership of server and data	Only data ownership
Audit	Difficult	Simple
Connectivity	Might be difficult after working hours	Data acess from anywhere anytime
Affordability	Only big size organization	All size organization

Key Takeaways

- Cloud Service Models
- Cloud Deployment Models

Thanks