# INTRODUCTION TO CLOUD COMPUTING

"Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics, three service models, and four deployment models.

# What is Cloud?

The term **Cloud** refers to a **Network** or **Internet**. In other words, we can say that Cloud is something, which is present at remote location. Cloud can provide services over network, i.e., on public networks or on private networks, i.e., WAN, LAN or VPN. Applications such as **e-mail, web conferencing, customer relationship management (CRM),** all run in cloud.

# What is Cloud Computing?

**Cloud Computing** refers to **manipulating, configuring,** and **accessing** the applications online. It offers online data storage, infrastructure and application.

**Cloud Computing** is both a combination of software and hardware based computing resources delivered as a network service.

# Deployment Models

Deployment models define the type of access to the cloud, i.e., how the cloud is located? Cloud can have any of the four types of access: Public, Private, Hybrid and Community.

**PUBLIC CLOUD** : The **Public Cloud** allows systems and services to be easily accessible to the general public. Public cloud may be less secure because of its openness, e.g., e-mail.

**PRIVATE CLOUD** : The **Private Cloud** allows systems and services to be accessible within an organization. It offers increased security because of its private nature.

**COMMUNITY CLOUD** : The **Community Cloud** allows systems and services to be accessible by group of organizations.

**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.
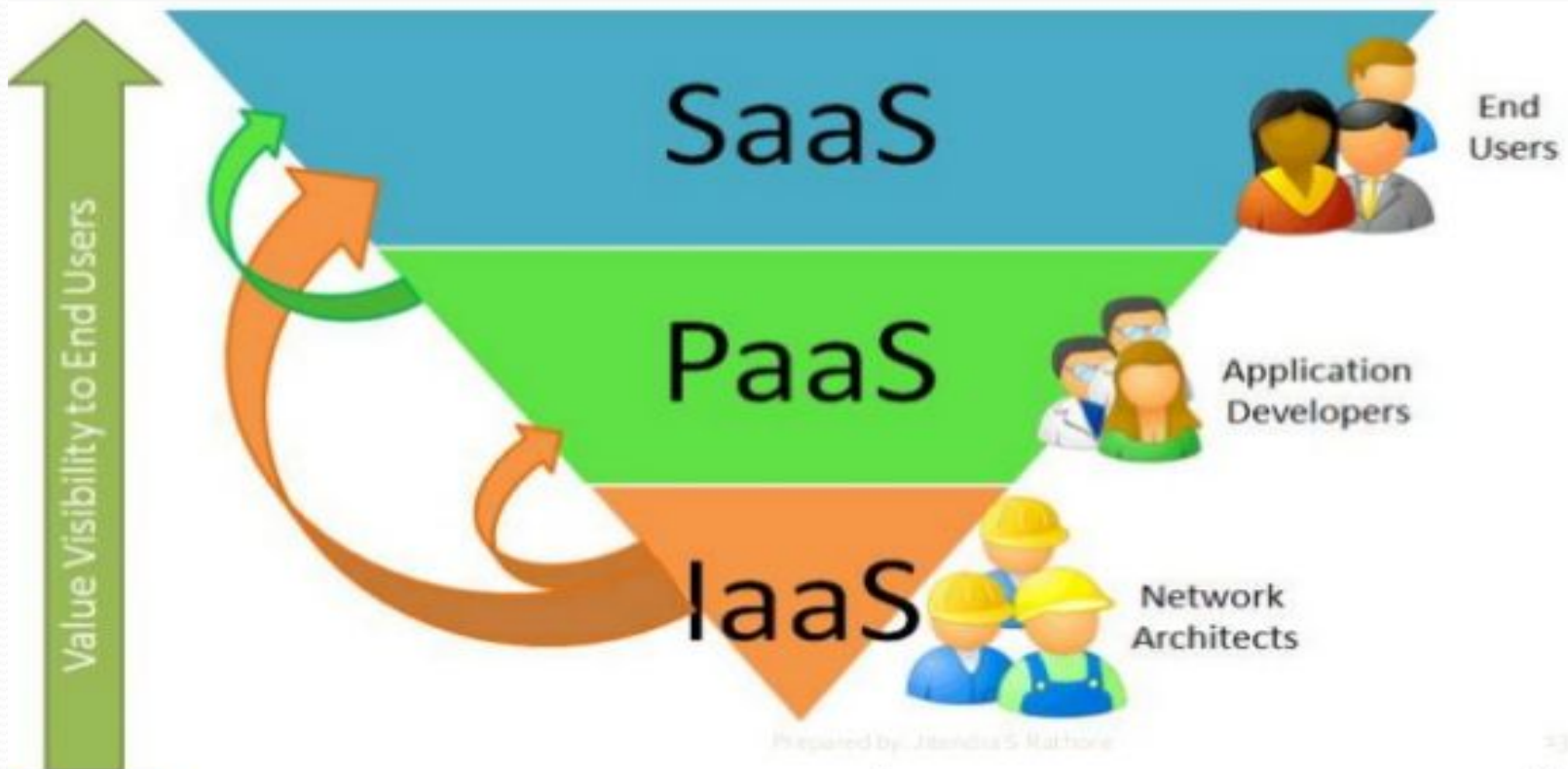
## Service Models

**•Software as a Service (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 a thin client interface such as a Web browser (e.g., Web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
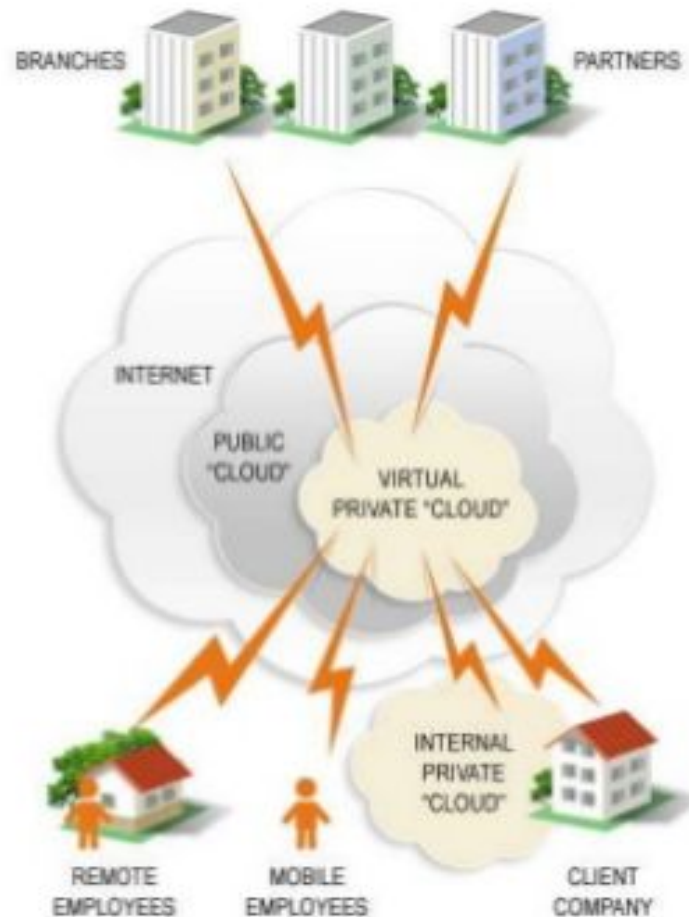
# Service Models

**•Platform as a Service (PaaS) -** The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or - acquired applications created using programming languages 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 application hosting environment configurations.

# Service Models

**•Infrastructure as a Service (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, deployed applications, and possibly limited control of select networking components (e.g., host firewalls).

Deployment Model

Hybrid Cloud - Combining a Private and Public Cloud

Public Internet

Cloud Services

Public Cloud

Private Cloud in Enterprise

Enterprise 1

Enterprise

Enterprise 2