SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
Accredited by NAAC-UGC with 'A' Grade
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Department of Information Technology

Course Name – Internet of Things

III Year / V Semester

Unit 3- INTERNET OF THINGS CHALLENGES

Introduction to Cloud Computing

What is Cloud Computing?

In addition, the platform provides on demand services, that are always on, anywhere, anytime and any place.

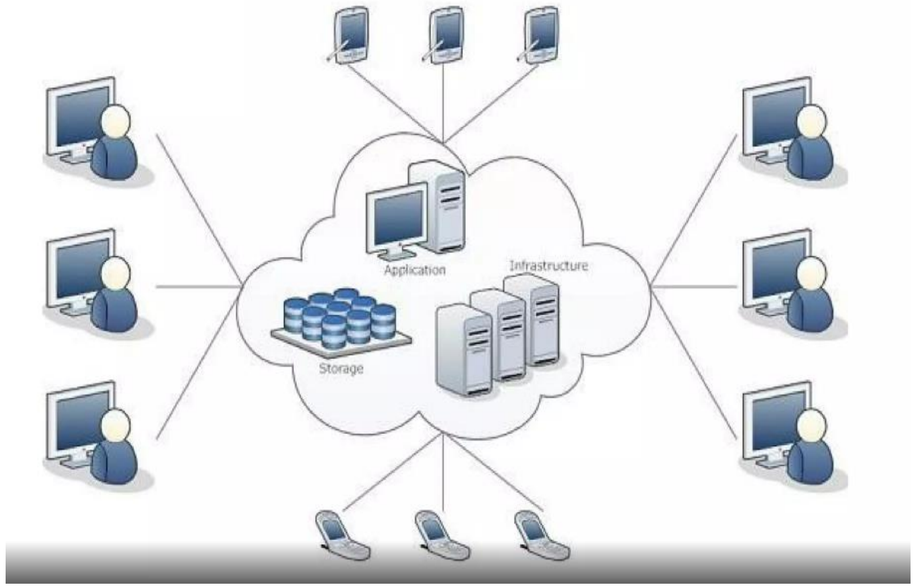
Pay for use and as needed, elastic

- scale up and down in capacity and functionalities

The hardware and software services are available to

- general public, enterprises, corporations and businesses markets

Cloud Computing Architecture



What is Cloud Computing?

Cloud computing is an umbrella term used to refer to Internet based development and services

A number of characteristics define cloud data, applications services and infrastructure:

- **Remotely hosted**: Services or data are hosted on remote infrastructure.
- **Ubiquitous**: Services or data are available from anywhere.
- **Commodified**: The result is a utility computing model similar to traditional that of traditional utilities, like gas and electricity - you pay for what you would want!

Basic Concepts

There are certain services and models working behind the scene making the cloud computing feasible and accessible to end users.

Following are the working models for cloud computing:

1. Deployment Models
2. Service Models

Deployment Models

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.

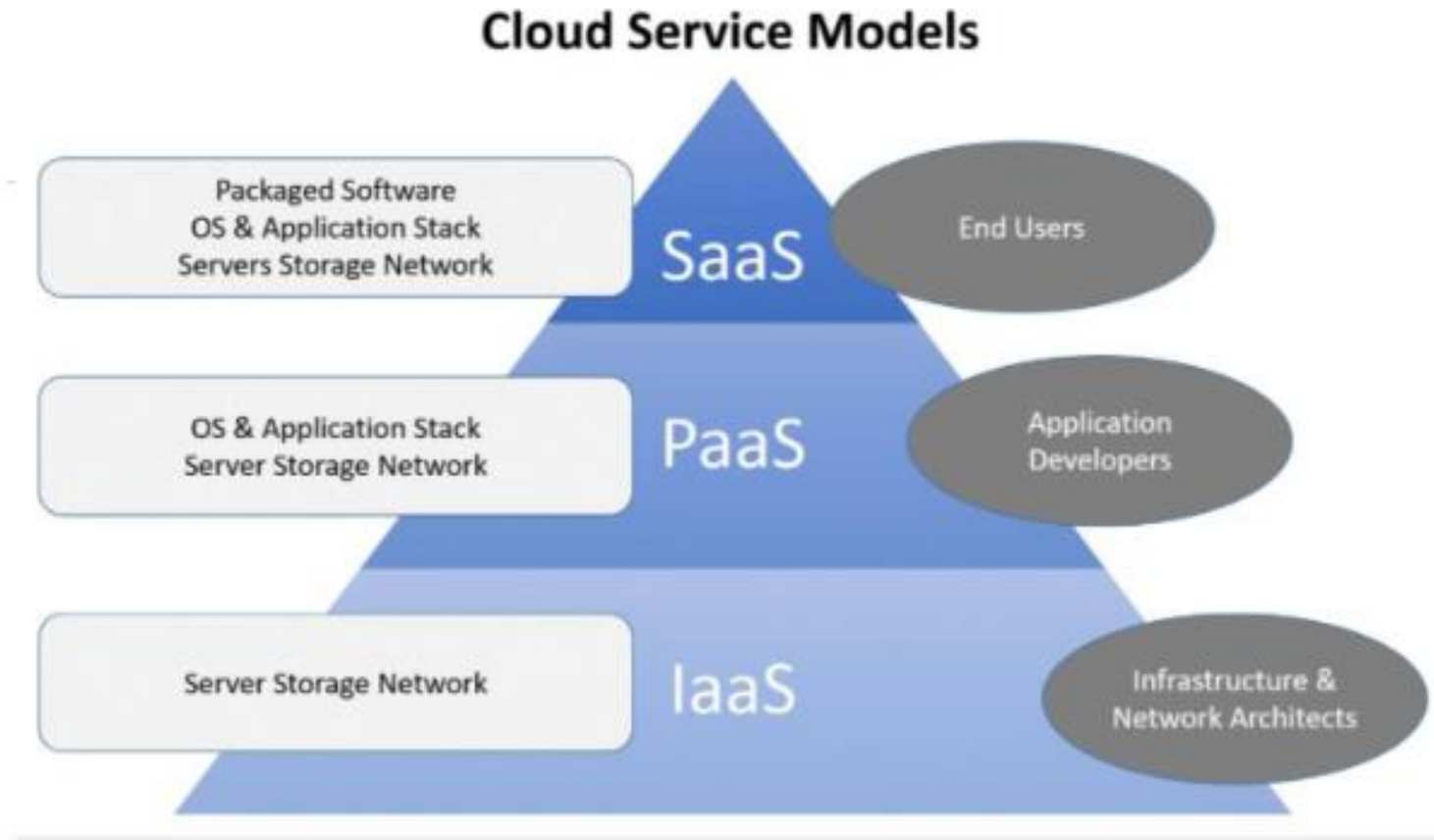
HYBRID CLOUD : The Hybrid Cloud is mixture of public and private cloud. However, the critical activities are performed using private cloud while the non-critical activities are performed using public cloud.

Service Models

Service Models are the reference models on which the Cloud Computing is based.

These can be categorized into three basic service models as listed below:

1. Infrastructure as a Service (IaaS)
2. Platform as a Service (PaaS)
3. Software as a Service (SaaS)


Cloud Service Models
Packaged Software
OS & Application Stack
Servers Storage Network
SaaS
End Users
OS & Application Stack
Server Storage Network
PaaS
Application
Developers
Server Storage Network
IaaS
Infrastructure &
Network Architects

Infrastructure as a Service (IaaS)

IaaS is the delivery of technology infrastructure as an on demand scalable service. IaaS provides access to fundamental resources such as physical machines, virtual machines, virtual storage, etc.

- Usually billed based on usage
- Usually multi tenant virtualized environment
- Can be coupled with Managed Services for OS and application support

Best IaaS providers of 2019

amazon web services

Microsoft Azure

Google Cloud Platform

IBM Cloud

Platform as a Service (PaaS)

PaaS provides the runtime environment for applications, development & deployment tools, etc. PaaS provides all of the facilities required to support the complete life cycle of building and delivering web applications and services entirely from the Internet.

Typically applications must be developed with a particular platform in mind.

- Multi tenant environments
- Highly scalable multi tier architecture

Top Paas Provider 2019

AWS Lambda

Morpheus

Software as a Service (SaaS)

SaaS model allows to use software applications as a service to end users. SaaS is a software delivery methodology that provides licensed multi-tenant access to software and its functions remotely as a Web-based service.

- Usually billed based on usage
- Usually multi tenant environment
- Highly scalable architecture

Top Saas for Company

Microsoft Office 365

salesforce

Google Apps