SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Re-accredited by NAAC with A+ grade, Accredited by NBA(CSE, IT, ECE, EEE & Mechanical)

Approvedy by AICTE, New Delhi, Recognized by UGC, Affiliated to Anna University, Chennai

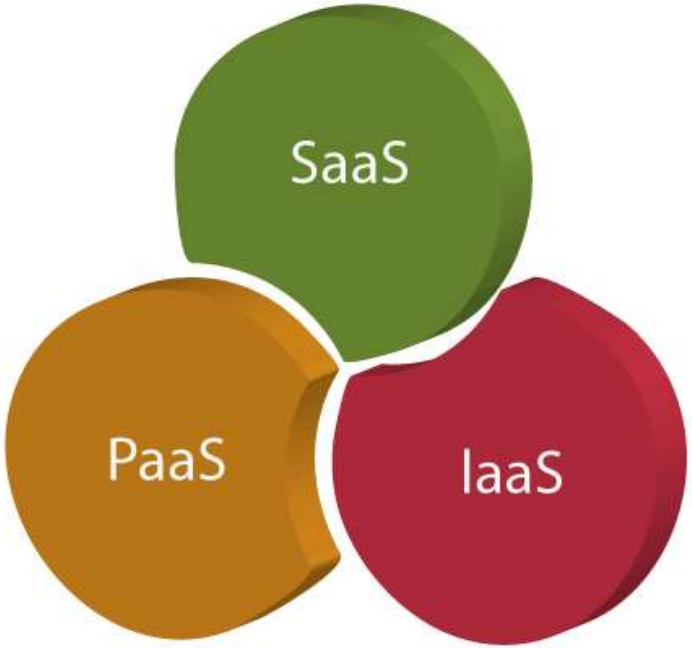
DEPARTMENT OF COMPUTER APPLICATIONS

COURSE	UNIT I	TOPIC	Semester
23CAE717 Cloud Computing	Cloud Architecture and Model	Cloud Models:- Characteristics – Cloud Services – Cloud models (IaaS, PaaS, SaaS)	II Semester / I MCA

UNIT I NETWORK TECHNOLOGIES

- Technologies for Network-Based System
- System Models for Distributed and Cloud Computing
- NIST Cloud Computing Reference Architecture
- Cloud Models:- Characteristics – Cloud Services Cloud models (IaaS, PaaS, SaaS)
- Public vs Private Cloud –Cloud Solutions
- Cloud ecosystem
- Service management
- Computing on demand

Cloud Models



Cloud Model Characteristics

01

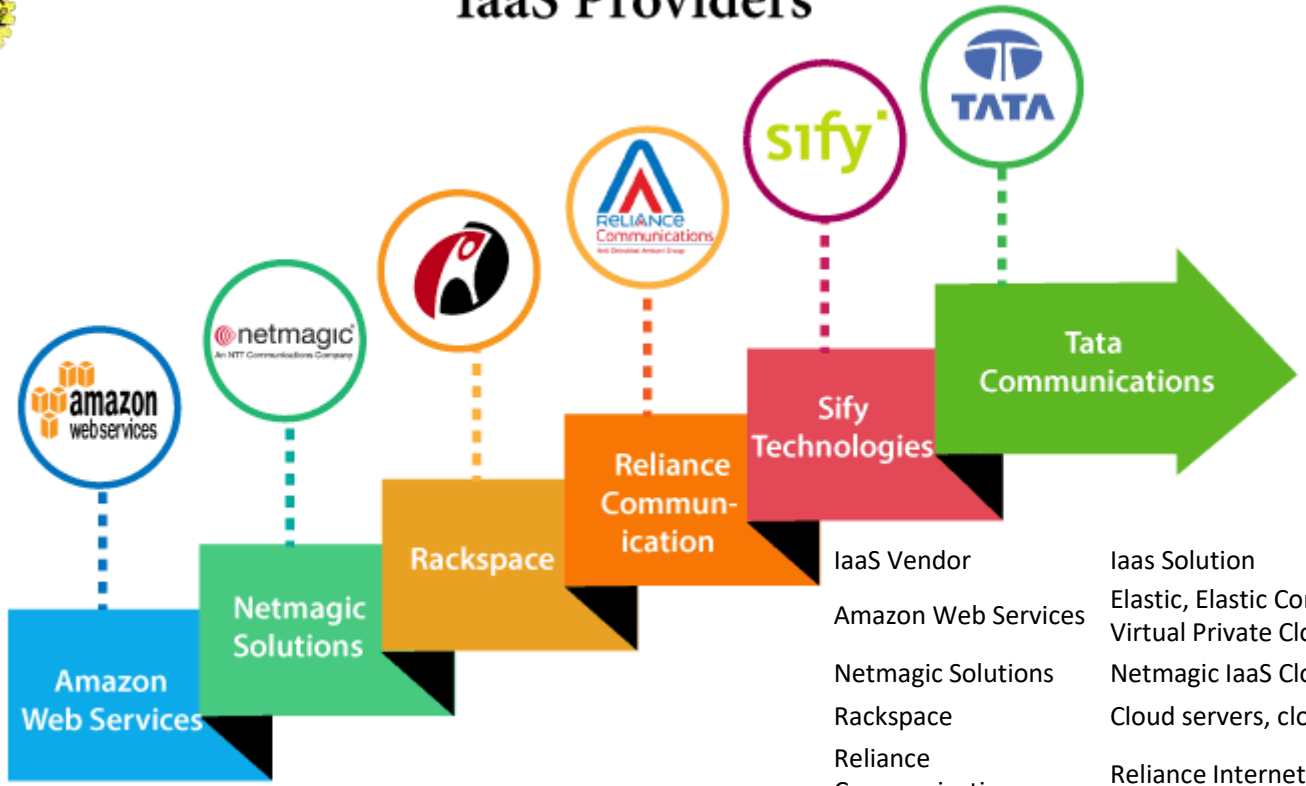
Infrastructure as a Service (Hardware as a Service)

- Resources are available as a service
- Services are highly scalable
- Dynamic and flexible
- GUI and API-based access
- Automated administrative tasks

Example

- DigitalOcean
- Linode
- Amazon Web Services (AWS)
- Microsoft Azure
- Google Compute Engine (GCE), Cisco Metacloud.

IaaS Providers



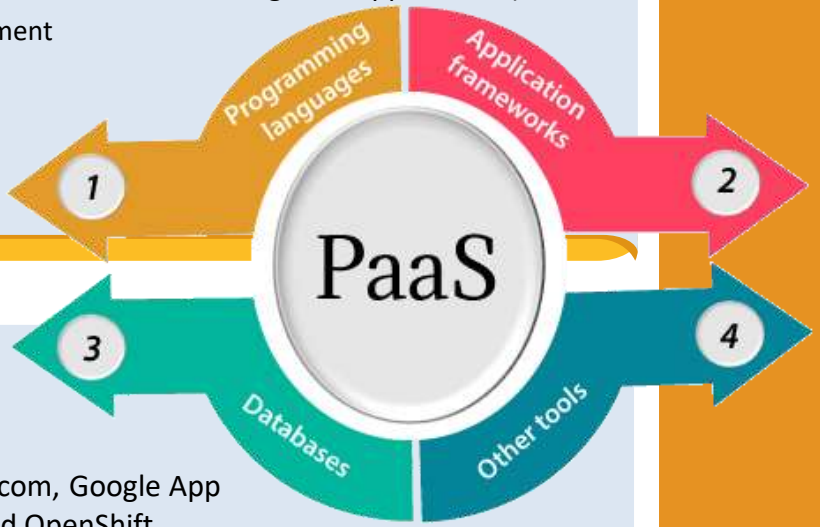
IaaS Vendor	Iaas Solution
Amazon Web Services	Elastic, Elastic Compute Cloud (EC2) MapReduce, Route 53, Virtual Private Cloud, etc.
Netmagic Solutions	Netmagic IaaS Cloud
Rackspace	Cloud servers, cloud files, cloud sites, etc.
Reliance Communications	Reliance Internet Data Center
Sify Technologies	Sify IaaS
Tata Communications	InstaCompute

Cloud Model Characteristics

02

Platform as a Service (programmer to develop, test, run, and manage the applications)

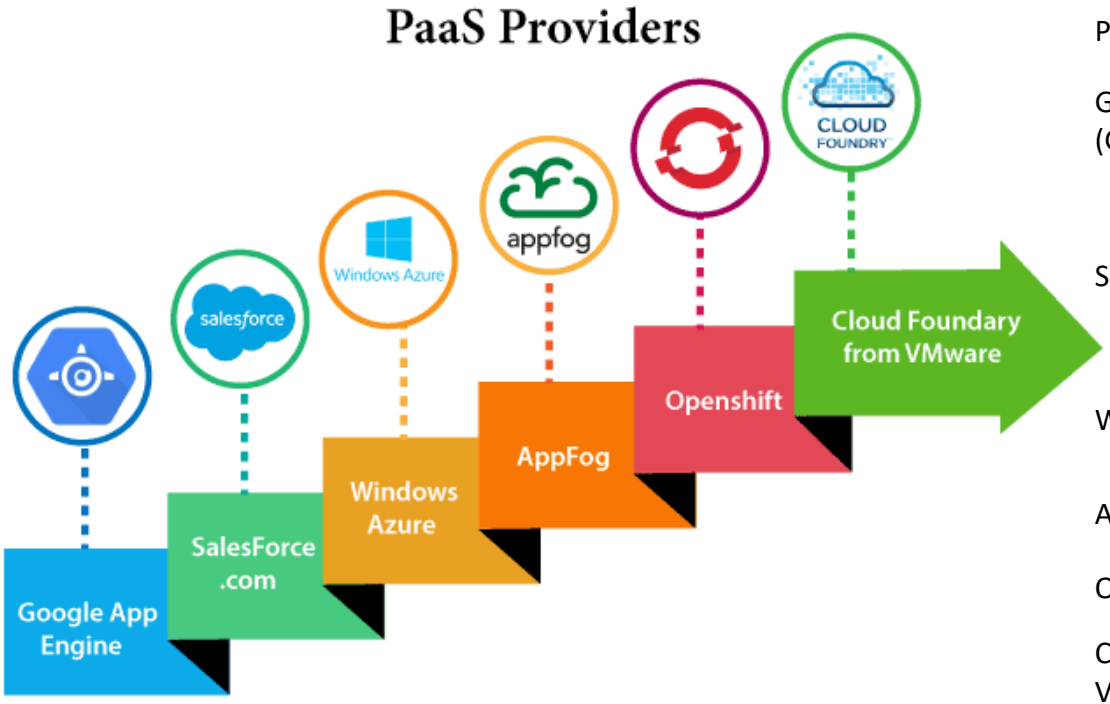
- Accessible to various users via the same development application.
- Integrates with web services and databases.
- Builds on virtualization technology
- Support multiple languages and frameworks.
- Provides an ability to "Auto-scale".



Example

- AWS Elastic Beanstalk, Windows Azure, Heroku, Force.com, Google App Engine, Apache Stratos, Magento Commerce Cloud, and OpenShift.

Popular PaaS Service Provider



Providers	Services
Google App Engine (GAE)	App Identity, URL Fetch, Cloud storage client library, Logservice
Salesforce.com	Faster implementation, Rapid scalability, CRM Services, Sales cloud, Mobile connectivity, Chatter.
Windows Azure	Compute, security, IoT, Data Storage.
AppFog	Justcloud.com, SkyDrive, GoogleDocs
Openshift	RedHat, Microsoft Azure.
Cloud Foundry from VMware	Data, Messaging, and other services.

Cloud Model Characteristics

03

Software as a Service (on-demand software)

- Managed from a central location
- Hosted on a remote server
- Accessible over the internet
- Users are not responsible for hardware and software updates. Updates are applied automatically.

Example

- BigCommerce, Google Apps, Salesforce, Dropbox, ZenDesk, Cisco WebEx, ZenDesk, Slack, and GoToMeeting

Popular SaaS Service Provider

rovider	Services
Salseforce.com	On-demand CRM solutions
Microsoft Office 365	Online office suite
Google Apps	Gmail, Google Calendar, Docs, and sites
NetSuite	ERP, accounting, order management, CRM, Professionals Services Automation (PSA), and e-commerce applications.
GoToMeeting	Online meeting and video-conferencing software
Constant Contact	E-mail marketing, online survey, and event marketing
Oracle CRM	CRM applications
Workday, Inc	Human capital management, payroll, and financial management.

Difference between IaaS, PaaS and SaaS

IaaS	Paas	SaaS
It provides a virtual data center to store information and create platforms for app development, testing, and deployment.	It provides virtual platforms and tools to create, test, and deploy apps.	It provides web software and apps to complete business tasks.
It provides access to resources such as virtual machines, virtual storage, etc.	It provides runtime environments and deployment tools for applications.	It provides software as a service to the end-users.
It is used by **network architects.**	It is used by **developers**.	It is used by **end users**.
IaaS provides only Infrastructure.	PaaS provides Infrastructure+Platform.	SaaS provides Infrastructure+Platform +Software.

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