

# Cloud Deployment Model

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**Abstract:** CLOUD COMPUTING is a model for enabling ubiquitous, convenient, on demand network access to shared pools of configurable computing resources that can be rapidly provisioned and released with minimal management effort or server provider interaction,

**Ubiquitous:** Available anywhere there is an internet connection

**Convenient:** No server room required, no power provisioning required, no hardware installation required, sometime no software installation required.

**On demand:** - Available when required, scheduled availability, Create in minutes not hours- day

**Shared pool:** - Multi-tenant, more than one entity, Using a shared server, Automatic prioritization.

**IndexTerms** –Cloud Deployment, Cloud Architecture, Computing.

## Computing Resource:

- Processing
- Memory
- Storage
- Networking
- Special hardware

## Rapidly provisioned :-

Cloud provisioning is simplified through

- Single-click launch,
- Template-based launch,
- Solution-based launch,

## Minimal Management:-

- Automatic update /patch management.
- Integrated monitoring and reporting.
- Automatic scaling.
- Scheduled availability.



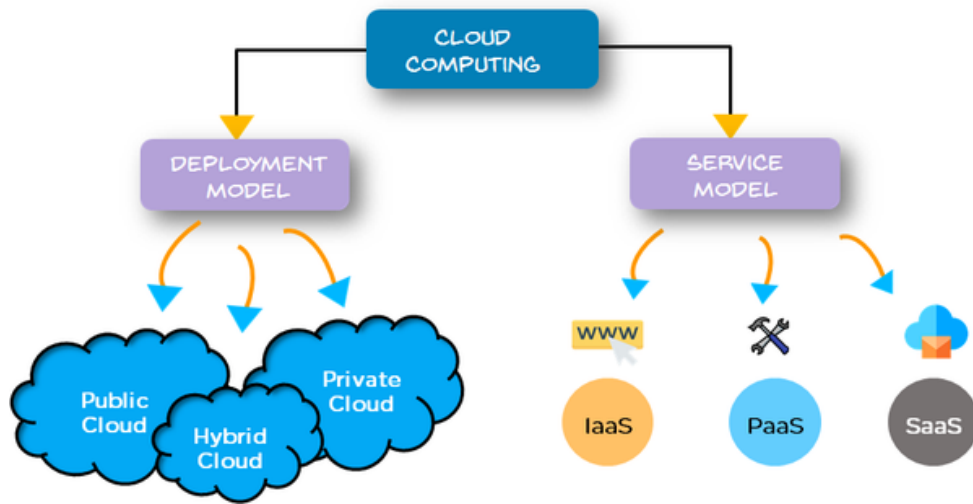


Fig 1.1 –Represent Deployment model, Service Model.

(Image Credit: Google)

## I. Cloud Deployment model :-

Deployed by:

- Other (Public/community cloud).
- Self (Private cloud)
- Both(Hybrid cloud)
  - \*public and community clouds are hosted online as a server provider
  - \*private clouds are hosted internally with in company
  - \*hybrid clouds are some combination of public community are provided

### 1.1 Public Cloud:- used by public consumers,

Pay-as-you-go / pay as you grow is provided by public cloud provider exp: Microsoft ,Amazon aws ,Google cloud platform

AWS is the market leader in public cloud.

All Public Cloud Providers offer a web based and command based line-based management interface.

### 1.2 Private cloud: Implemented in house

Hardware and software,

Everything managed in house,

Behind a firewall,

Possibly in a DMZ

Based a virtualization virtual machine to rapidly deploy server as needed.

Need extra physical hardware: -

Rapid deployment, storage space, Compute.

Private cloud implement a virtualization and a management layer.

OpenStack and cloudify are example of cloud management software.

### 1.3 Community cloud :

Community cloud and SaaS are similar but SaaS as a superset of community cloud.

Community cloud are exist for healthcare science, education government and more

Partner cloud are in the category of community cloud as well

Co-construct.com and penta.com are example of community clouds

**1.4 Hybrid cloud:**

Mixture of public and private cloud solutions.

Data in the private cloud, processing in the public cloud.

Processing in the private cloud, data in the public cloud.

Cost, Data, and Security may be driving factor that assist in selection of a hybrid cloud model,

**a. Single server**

A private cloud run by single powerfully server

A single physical server in the cloud

A single virtual server in the cloud

**b. Single cloud:** one cloud are provide all services, small and medium business partial security constraints are not in place

**c. Multicloud :** Multiple cloud , services, Departments, division/Companies, security constraints .

Orchestration platforms help manage multi-cloud deployment

**2. Cloud Architectures**

Software as a Service (SaaS)

Platform as a Service (PaaS)

Infrastructure as a Service (IaaS)

Everything as a service (XaaS)

**2.1 Software as a Service (SaaS):**

Software as a service, provide the software in the cloud, google apps, adobe cloud, Microsoft office 365, Salesforce automation, Inventory management, Project management, May be API as a service

**2.2 Platform as a Service (PaaS):** Simple implementation of platforms,

Runtime, Modules, Components

Easy application deployment.

**2.3 Infrastructure as a Service (IaaS):**

complete solution from hardware up,

VMs and operating system,

Network configuration,

Network services ,

Example: AWS, AZURE, GCP

**2.4 Everything as a Service (XaaS):**

Analytics

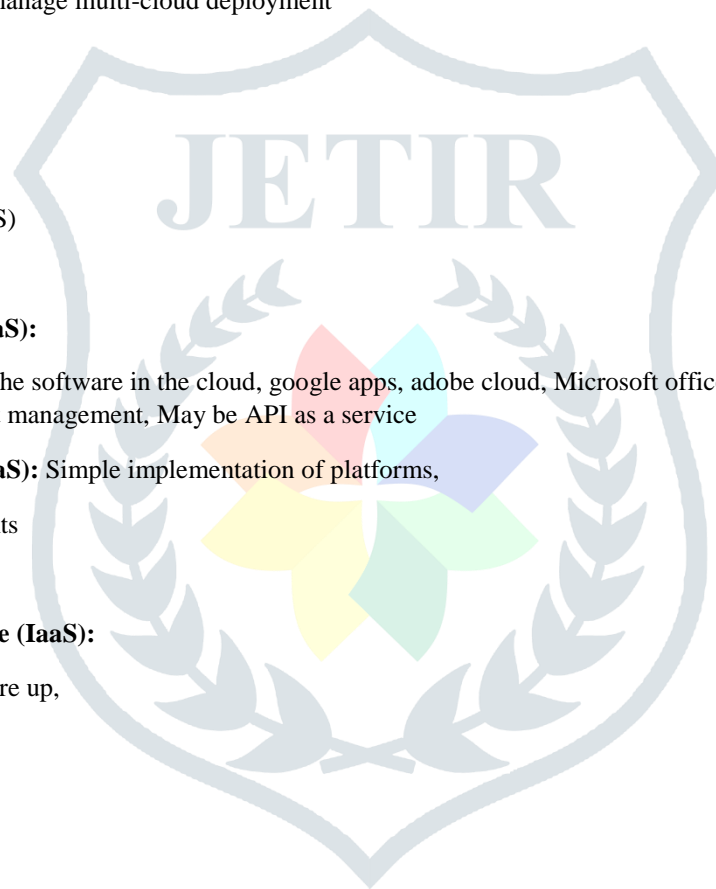
Artificial intelligence

Device management

Data extract transform, Load(ETL) Operations.

Example: DBaaS(Data base as a service)

WSaaS (Webserver as a service)



### 3. Capacity ,Elasticity and Support agreement.

#### 3.1 Capacity :-

The work load capacity of a server

Storage, amount, speed of read/write for I/O opration can currency

IOPS- input/output operation per second

Networking:

Speed of transfer/number of user,

Processing:

Speed of work load processing

#### 3.2 Elasticity-

The ability to expand and control as required

-CPU Resources

-storage

-server

-threads /request

#### 3.3 Service model Maintenance:

Metering mused to measure cloud resources consumption

Charge back can be made to departments other than IT :each department is charged for their IT resources

Pay-as-u-grow : allow for low cost entry.

Demand Driven Services: Service to be provisioned based on current demand.

Responsibility

You manage what you put in the cloud 'cloud provide manage the cloud itself.

Support Agreements.

- SLAS
- Response time
- Service contact method/mail/message.

