Cloud Computing for Beginners

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Content

What is Cloud Computing?

In late 90s or even now, ask any web developer, solution architect or anyone involved in web application development in any capacity:

Which symbol do you use to represent Internet on numerous white-board meetings? Obviously the most widely used metaphor for Internet was/is cloud. Cloud computing has derived its name from the same line of thinking.

Cloud Computing is a *style of computing which* must cater to the following computing needs:

1. **Dynamism**
2. **Abstraction**
3. **Resource Sharing**

Dynamism

Your business is growing exponentially. Your computing need & usage is getting bigger with every passing day. Would you add servers & other hardwares to meet the new demand?

Assume, Recession is back & your business is losing customers. The servers & hardwares you added during last quarter's peak season is now idle. Will you sale them?

Demand keeps on changing based on world/regional economy, sometimes seasonal traffic burst as well.

That's where Cloud Computing comes to your rescue! You just need to configure & your provider will take care of fluctuating demand.

Abstraction

Your business should focus on your core competency & should not worry about security, OS, software platform , updates and patches etc. Leave these chores to your provider.

From an end users perspective, you don't need to care for the OS, the plug-ins, web security or the software platform. Everything should be in place without any worry.

Resource Sharing

Resource Sharing is the beauty of Cloud Computing. This is the concept which helps the cloud providers to attain optimum utilization of resources. Say, a company dealing in gifts may require more server resources during festive season. A company dealing in Payroll management may require more resources during the end or beginning of the month.

The cloud architecture is implemented in such a way that it provides you the flexibility to share application as well as other network resources (hardware etc). This will lead to a need based flexible architecture where the resources will *expand* or *contract* with little configuration changes.

What are Cloud Stacks?

Cloud Services can be dived into **3 stacks:

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

***There are many other '?' as a Service viz. DaaS (Data as a Service)*

Infrastructure as a Service (IaaS)

This is the base layer of the cloud stack.

It serves as a foundation for the other two layers, for their execution. The keyword behind this stack is *Virtualization.*

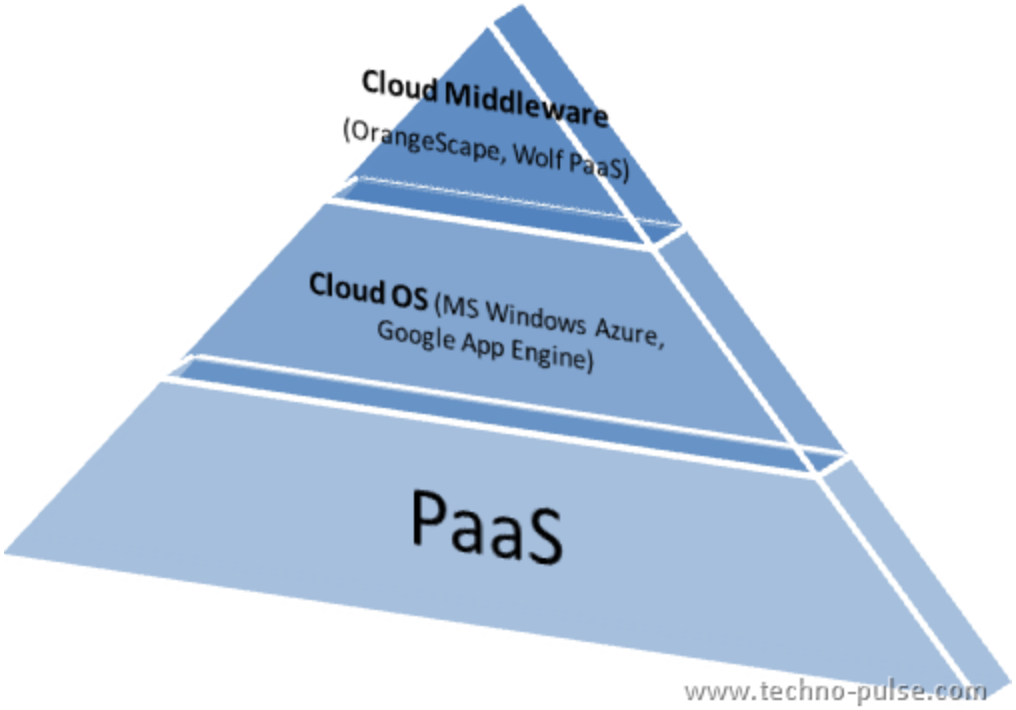
Let us try to understand this using Amazon EC2. In Amazon EC2 (Elastic Compute Cloud) your application will be executed on a virtual computer (instance). You have the choice of virtual computer, where you can select a configuration of CPU, memory & storage that is optimal for your application. The whole cloud infrastructure viz. servers, routers, hardware based load-balancing, firewalls, storage & other network equipments are provided by the IaaS provider. The customer buy these resources as a service on a need basis.

Platform as a Service (PaaS)

Now you don't need to invest millions of $$$ to get that development foundation ready for your developers. The PaaS provider will deliver the platform on the web, and in most of the cases you can consume the platform using your browser, i.e. no need to download any software. It has definitely empowered small & mid-size companies or even an individual developer to launch their own SaaS leveraging the power of these platform providers, without any initial investment.

PaaS Layers

- **Cloud OS**
- **Cloud Middleware**



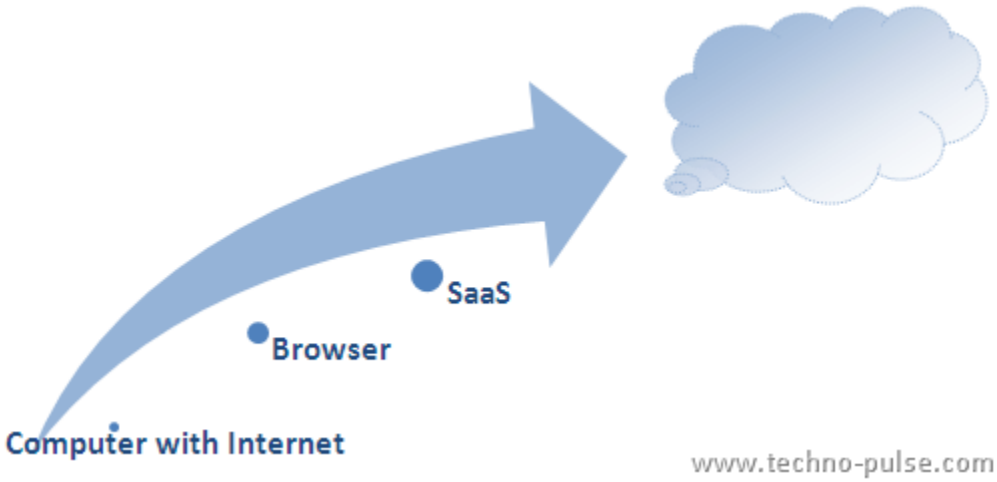
Google App Engine and Windows Azure are examples of Cloud OS. OrangesScape & Wolf PaaS are cloud middleware. Windows Azure is gradually evolving into IaaS+PaaS

Software as a Service (SaaS)

This is the Top most layer of the cloud computing stack - directly consumed by end user – i.e. SaaS (Software as a Service).

On-Premise applications are quite expensive, affordable only to big enterprises. Why?

Cause On-Premise applications had a very high upfront CapEx(Capital Expenditure); which results in a high TCO (Total Cost of Ownership). On-Premise apps also require a higher number of skilled developers to maintain the application. In its current avatar SaaS is going to be the best bet for SMEs/SMBs (Small & Mid size businesses). Now, they can afford best software solution for their business without investing anything at all on the infrastructure or development platform or skilled manpower. The only requirement for SaaS is a computer with browser, quite basic. SaaS is a recurring subscription based model delivered to customer on demand **– *Pay as you use*.**



Best SaaS Examples

- SalesForce CRM
- Google Apps
- ZOHO Support
- Deskaway
- ImpelCRM
- Wipro w-SaaS

Cloud Computing Resources

- Cloud Computing Service: A Basic Introduction – 1
- Cloud Computing: A Basic Introduction – 2
- Infrastructure as a Service – IaaS: Cloud Computing
- Cloud Computing Platform Introduction - PaaS
- SaaS Introduction with Example – Cloud Service
- Top 10 Cloud Computing Service Providers of 2009
- Best & Free Cloud Computing Applications
- Kaavo: Application Centric Management & Security for Cloud Computing
- India Based Cloud Computing Service Providers
- Cloud Based Project Management – DeskAway SaaS
- Develop SaaS on OrangeScape PaaS to Run on any Cloud Infrastructure
- Cloud based on-Demand SaaS CRM for India: Impel
- Develop Cloud based SaaS Applicatios on Wolf Platform
- Sync.in Review - Real-time Collaboration in Cloud
- Cloud Computing: A Catalyst for IT adoption in SMEs/SMBs
- Comparison between On-Premise and Cloud Anti-Spam Solutions
- Cloud Computing: A Catalyst for IT adoption in SMEs/SMBs
- Sync.in Review - Real-time Collaboration in Cloud
- 4 + 1 Reasons Companies are Moving to Cloud
- Microsoft leaps into the Cloud – Office Web Apps