CLOUD COMPUTING

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When it's smarter to rent than to buy..

Presented by

D.Datta Sai Babu

4th Information Technology

Tenali Engineering College

What is Cloud Computing?.

- An environment created in a user's machine from an on-line application stored on the cloud and run through a web browser.
- In simple Cloud computing is using the internet to access someone else's software running on someone else's hardware in someone else's data center.

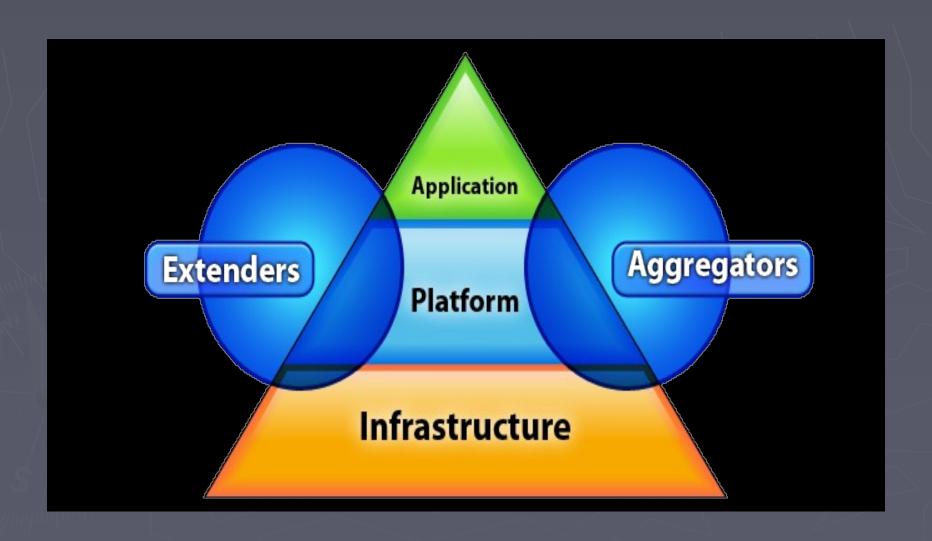
Cloud Computing Services

Software as a Service (SaaS)-End Users

Platform as a Service (PaaS)-Application Developers

Infrastructure as a Service (IaaS)-Network Architects

The NEW "Cloud Pyramid"



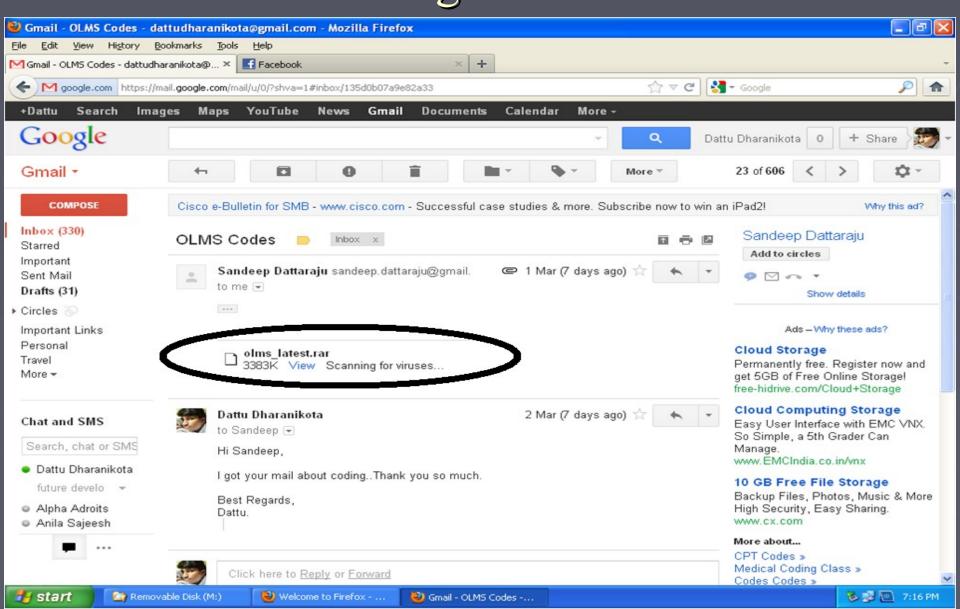
Software as a Service-End Users

- Just run it for me!
- also known as On-demand Service.



- is an application that can be accessed from anywhere on the world as long as you can have an computer with an Internet Connection.
- We can access this cloud hosted application without any additional hardware or software.
- E.g.: G-mail, Yahoo mail, Hotmail etc..,
- Also they can provide security features such as SSL encryption, a cryptographic protocol.

Application provided by Cloud Computing – Google Cloud



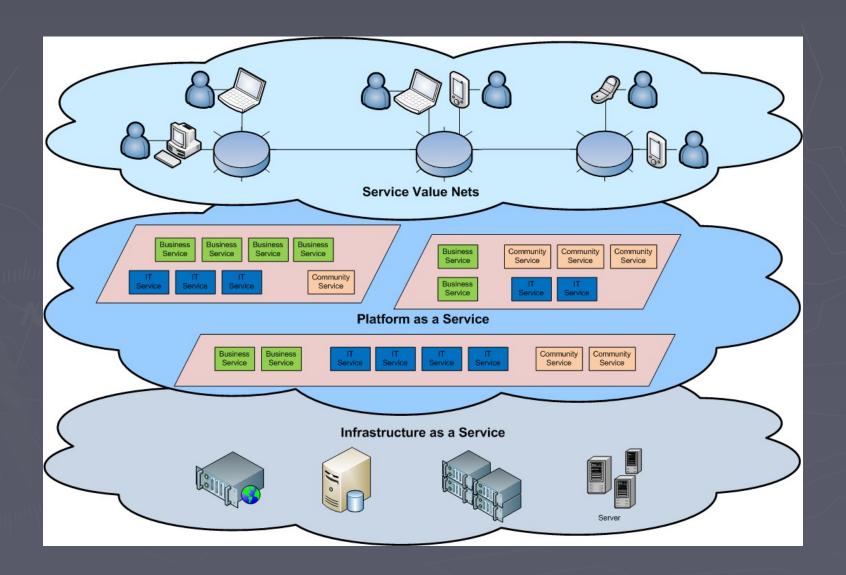
Platform as a Service (PaaS)-Application Developers

- ► Give us nice API (Application Programming Interface) and take care of the implementation.
- In the PaaS model, cloud providers deliver a computing platform and/or solution stack typically including operating system, programming language execution environment, database, and web server.
- is a platform for developers to write and create their own SaaS i.e. applications.
- which means rapid development at low cost.
- ► E.g.: Salesforce.com, Windows Azure etc.

Infrastructure as a Service (IaaS)Network Architect

- also known as hardware as a service.
- is a computing power that you can rent for a limited period of time.
- allows existing applications to be run on a cloud suppliers hardware.
- ► cloud providers offer computers as physical or more often as virtual machines raw (block) storage, firewalls, load balancers, and networks

Cloud Architecture



Modes of Clouds

Public Cloud

- Computing infrastructure is hosted by cloud vendor at the vendors premises.
- and can be shared by various organizations.
- E.g.: Amazon, Google, Microsoft, Sales force

Private Cloud

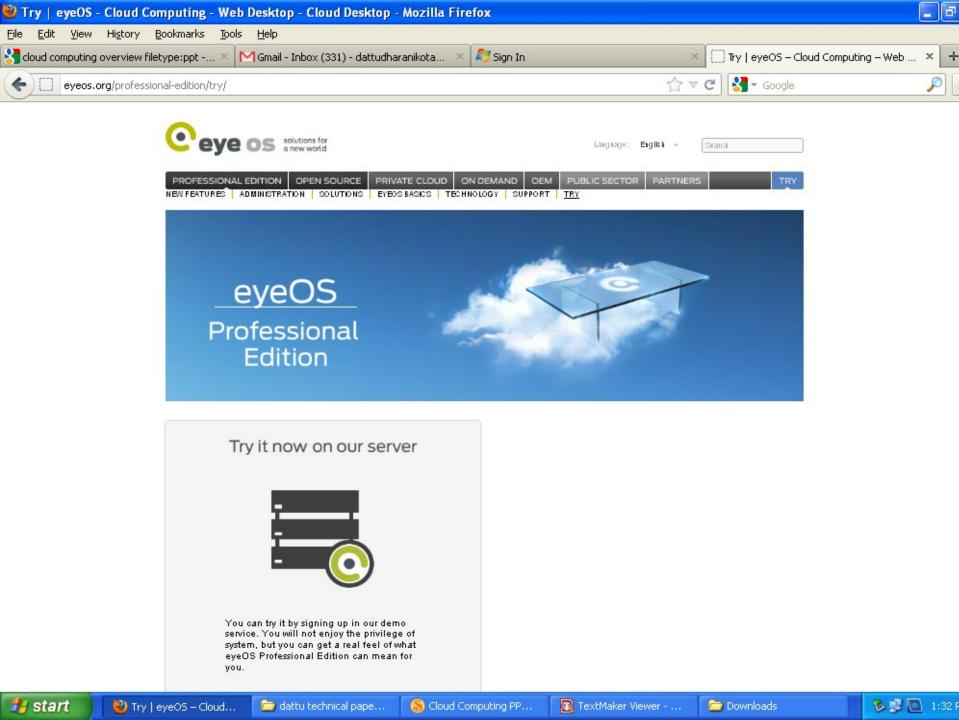
- The computing infrastructure is dedicated to a particular organization and not shared with other organizations.
- more expensive and more secure when compare to public cloud.
- ► E.g.: HP data center, IBM, Sun, Oracle, 3tera

Hybrid Cloud

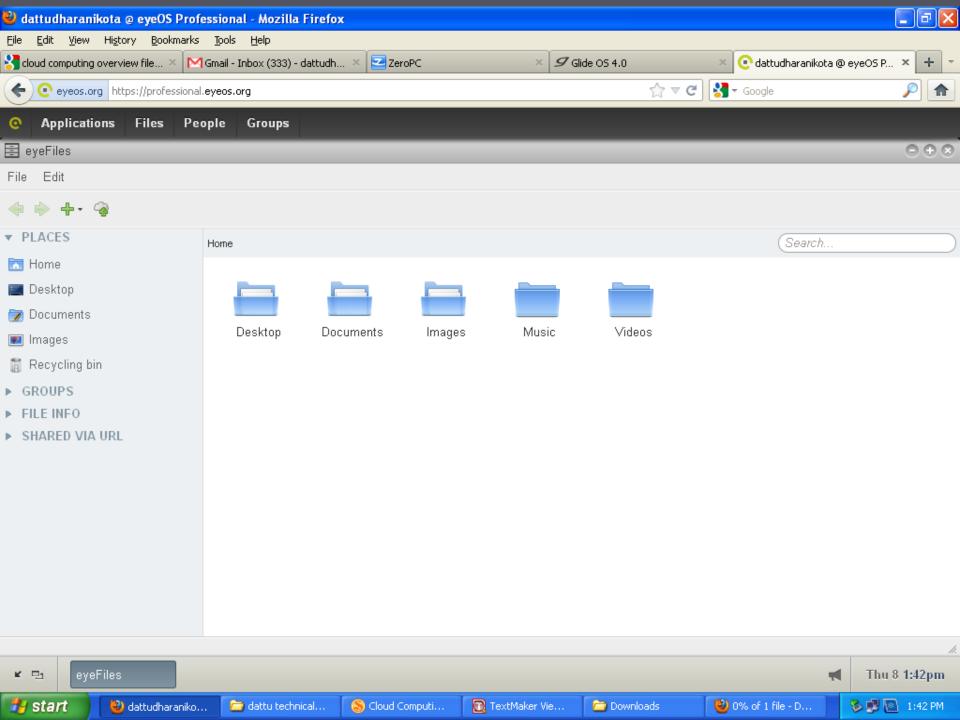
- Organizations may host critical applications on private clouds.
- where as relatively less security concerns on public cloud.
- usage of both public and private together is called hybrid cloud.

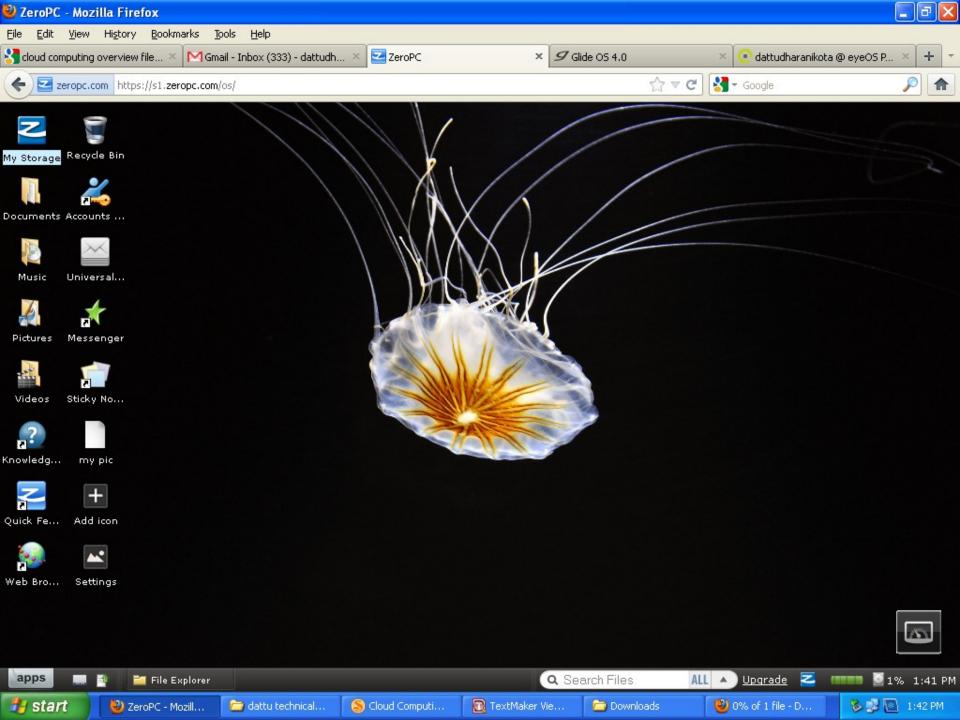
Cloud Operating Systems

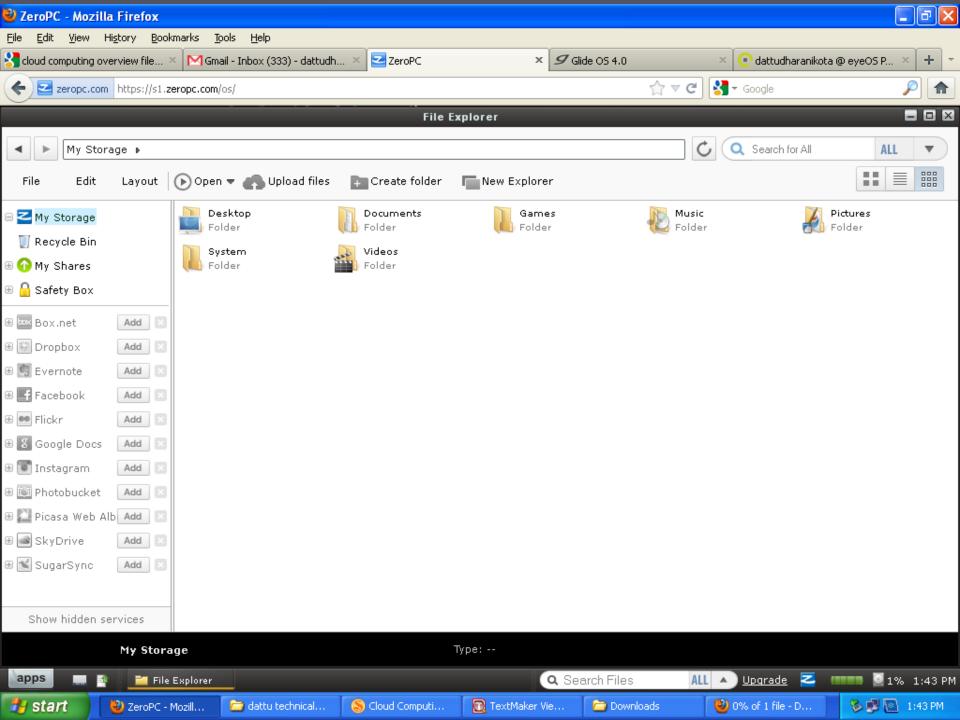
- Eye OS
- Amoeba OS
- Glide OS
- ► Start force
- myGoya
- CorneliOS
- Lucid Desktop
- Cloudo, Ghost, Zimdesk, Start force etc.,

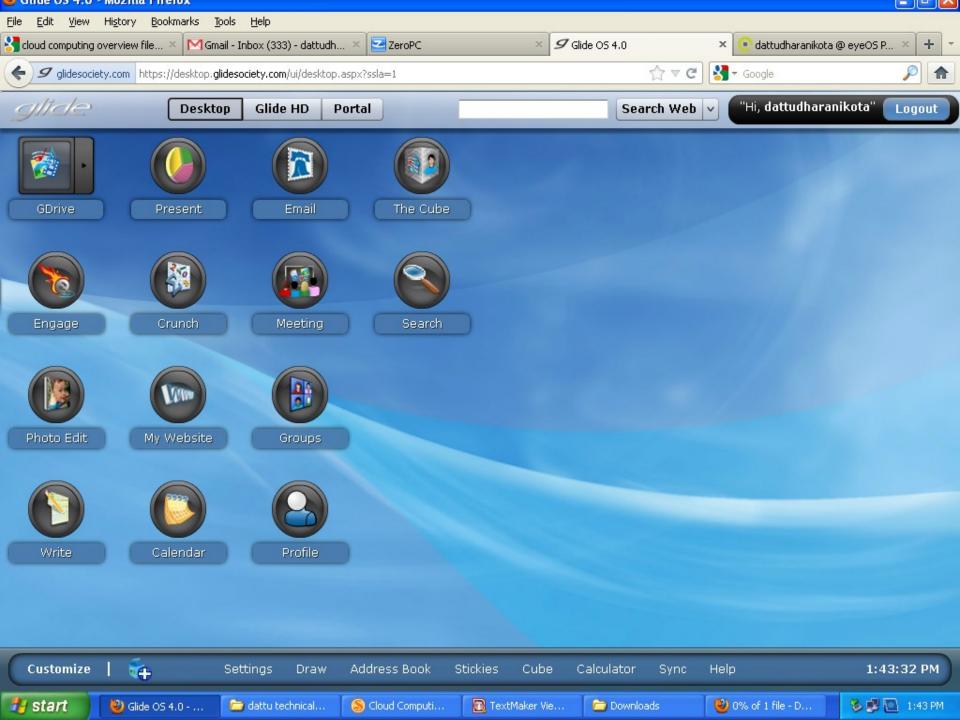


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Distributed vs. Grid vs. Cloud

	D is trib u te d	G rid	C lo u d
Tim e	W eeks to Months	Days to Weeks	M in u te s
S c a la b ility	Slowest, Rigid & Costly	S lower, somewhat flexible, Costly	Instant, Flexible, Pay- per-usage
Cost	High CapEx	Costly, sometimes month/yearcontracts, no CapEx	No contracts, usage based, no upfront costs
"Green"	Low	Low	High - virtualized
Pricing model	Buy Servers & Colocosts whether used or not	Rent Servers & Hosting costs whether used or not	Rent based on usage only

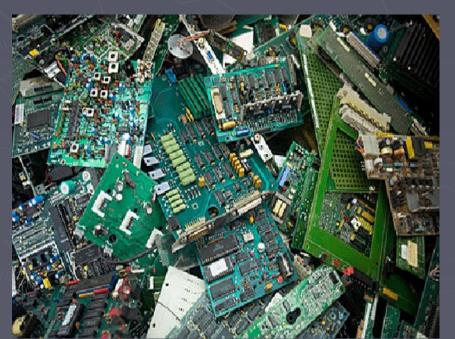
Is Cloud Computing reduces E-Waste?.

- Green IT Cloud Computing
- Cloud Computing is Eco-Friendly.
- We can reduce E-waste by using Cloud Computing i.e. by Infrastructure as a Service (laaS).
- Cloud Computing Helps to Accelerate Green IT
- Can reduce Global Warming too...





Facebook DateCenter





Google Server

Disadvantages of Cloud Computing

- Cloud computing is impossible if you cannot connect to the Internet.
- Since you use the Internet to connect to both your applications and documents, if you do not have an Internet connection you cannot access anything, even your own documents.
- A dead Internet connection means no work and in areas where Internet connections are few or inherently unreliable, this could be a deal-breaker.
- ▶ When you are offline, cloud computing simply does not work.

Commercial Clouds



Amazon Elastic Compute Cloud (Amazon EC2) - Beta





































CONCLUSION

