

twitter

When all you have is a hammer everything looks like an IT Infrastructure.

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botchagalupe

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Cloud Talk

Johnmwillis.com

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Whoami

- *Johnmwillis.com*
 - *Cloud Café Podcasts*
 - *Cloud Droplets*
- *Redmonk.com/cote*
 - *IT Management Guys Podcast*
- *Botchagalupe*
 - *Everywhere*



Cloud Talk

▲ *Overview*

▲ **What is a Cloud**

▲ **Do you need a Cloud**



Cloud Talk

▲ *What is a Cloud?*

- ▲ Ask 10 people get 10 answers.
- ▲ No one correct answer.
- ▲ All answers are correct.



Cloud Talk

▶ *The Myths* (*The Big Switch*)

- ▶ Cloud computing will eliminate the need for IT personnel.
- ▶ There will only be one super computer in the future.
- ▶ Watch out for cloud pretenders.



Cloud Talk

▲ *The Facts*

- ▲ **Cloud technology is real**
- ▲ **This technology should not be ignored**
- ▲ **This presentation will try to separate the hype**



Cloud Talk

- ▶ *What is a Cloud?*
- ▶ *Cloud as in network*
- ▶ *Cloud as in metaphor*
- ▶ *Cloud computing as in network*
- ▶ *Cloud computing as in metaphor*



Cloud Talk

▶ *What is a Cloud Computing?*

▶ *Not with your computer*

▶ *Word Processor, Spreadsheet*

▶ *Not with your laptop*

▶ *CRM, Customer Database*

▶ *Not with your data center*

▶ *No physical servers*



Cloud Talk

▶ *If Not Yours, Then Who's?*

▶ *Not with your computer*

▶ *Google Apps, Zoho, 37 Signals*

▶ *Not with your laptop*

▶ *Salesforce.com, Netsuite*

▶ *Not with your data center*

▶ *Amazon, Google, Microsoft*



Cloud Talk

▲ *Big “3” of Cloud Computing?*

▲ *Cost*

▲ *Clouds are renowned for being dirt cheap for storage and burst-y processing.*

▲ *Flexibility*

▲ *let someone else manage it for you.*

▲ *Elasticity*

▲ *Growth and shrinkage*



Cloud Talk

▲ *More on why Clouds?*

▲ *On Demand Business*

▲ *Unexpected loads, The <> effect*

▲ *Meeting Batch Load Demands*

▲ *Batch*

▲ *Parallelism*

▲ *Large clusters of parallel jobs*

▲ *Season Workloads*

▲ *Retail, Travel, Financial*

▲ *Backup Storage*



Cloud Talk

▲ *Success Stories*

▲ *Animoto*

- ▲ *25k customers to 750k in one week*
- ▲ *40 servers to 500 servers in one week*
- ▲ *No system administrators*

▲ *NY Times*

- ▲ *Convert 11 million files in one night*
- ▲ *4 TB's of data*
- ▲ *Total cost \$240*

▲ *Eli Lilly*

- ▲ *10 weeks to get a server now 5 minutes*
- ▲ *Amazon has redefined "Time" at Eli Lilly*

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Cloud Talk

- ▶ *What drives the cloud?*
 - ▶ **Infinitely fast networks.**
 - ▶ **Infinity scalable computers.**
 - ▶ **Doing a lot more with a lot less?**



Cloud Talk

- ▶ *Base Definition of a Cloud*
- ▶ **Abstraction of the hardware infrastructure from the service.**



Cloud Talk

- ▶ *What is my definition of a “Holy-Grail” Cloud*
- ▶ **Abstraction of the hardware infrastructure from the service.**
- ▶ **Abstraction of the software infrastructure from the service.**



Cloud Talk

- ▶ *Cloudy stuff*
- ▶ *Pay as you go*
- ▶ *No lock in*
- ▶ *Dynamic provisioning*



Cloud Talk

- ▶ *Cloud “Services” in Simple Terms*
 - ▶ *Applications*
 - ▶ *Software provided as a service*
 - ▶ *Middle-ware*
 - ▶ *Software stacks for developers LAMP, Java application servers, .Net*
 - ▶ *Servers*
 - ▶ *Hardware and an operating system, perhaps a hyper-visor*



Cloud Talk

- ▶ *Common Cloud Taxonomy (SPI)*
- ▶ *SaaS*
 - ▶ *SFC, LotusLive, NetSuite, Google Apps*
- ▶ *PaaS*
 - ▶ *GAE, Azure, Force, RightScale,*
 - ▶ *EngineYard, Heruko*
- ▶ *IaaS*
 - ▶ *Amazon, Flexiscale, GoGrid, Joyent,*
 - ▶ *Rackspace, EMC, Eucalyptus, 3Tera,*
 - ▶ *IBM, Vmware, ECP*



Cloud Talk

- ▶ *Cloud Taxonomy*

- ▶ *Infrastructure Based*

 - ▶ *Private*

 - ▶ *3Tera, IBM, Vmware, Eucalyptus*

 - ▶ *Public*

 - ▶ *Amazon, Rackspace, Gogrid, Joyent, Terramark*



Cloud Talk

▶ *Processing Large Datasets*

▶ *Map Reduce*

- ▶ *Jobs that run as hundreds or even thousands of separate parallel processes.*
- ▶ *Like counting the words in a book and break it up into multiple running parts (i.e., The Map)*
- ▶ *Then collect them all back into summary counts (i.e., The Reduce.)*



Cloud Talk

▶ *Processing Large Datasets*

▶ *Hadoop*

▶ *Google invented GFS*

▶ *Yahoo*

▶ *AOL*

▶ *IBM*

▶ *Facebook*

▶ *Last.fm*



Cloud Talk

- ▶ *Cloud Computing Challenges*
- ▶ *Retraining developers and operations people to deal with cloud computing*
- ▶ *Orchestration of multiple clouds*
- ▶ *24 by 7 by 365 operations in the cloud is usually more expensive*
- ▶ *Legacy applications might not port easily*
- ▶ *Virtualization project disruption*
- ▶ *Recent McKinsey Report \$366 vs \$150*



Cloud Talk

- ▶ *More Challenges*
- ▶ *Workload Affinities*
- ▶ *Standards (Lock-in)*
- ▶ *Weak SLA's compared to Corp*
- ▶ *Service Management*
- ▶ *Security*
- ▶ *Compliance*
- ▶ *Image Sprawl*
- ▶ *Trojan Virtual Images*
- ▶ *Governance*



Cloud Talk

▲ *Cloud Usage Models*

▲ *Web Apps*

▲ *Job queue (transcoding)*

▲ *Testing and QA Labs*

▲ *Map Reduce Processing*

▲ *Backup*



Cloud Talk

▲ *New Cloud Terms*

▲ *Cloud Bursting*

▲ *Analytics, Coding*

▲ *Hybrid Clouds*

▲ *VPN, Multiple Clouds*

▲ *Cloud Spillage*

▲ *An IBM Term*

▲ *Cloud Orchestration*

▲ *Managing multiple clouds*

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Cloud Talk

▶ *The Public Cloud “Big Four”*

▶ *Amazon*

▶ *Google*

▶ *Microsoft*

▶ *Salesforce.com*



Cloud Talk

▲ *The Private Cloud “Big Four”*

▲ *IBM*

▲ *VMware*

▲ *Sun/Oracle*

▲ *3Tera*



Cloud Talk

★ *Amazon (Infrastructure Based)*

- ★ *No min – pay as you go*
- ★ *Easy to get started*
- ★ *Market leader*
- ★ *All API based*
- ★ *Persistent storage and servers*
- ★ *Windows instances*

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Cloud Talk

- ▶ *Google App Engine*
(*Platform Based*)
 - ▶ *Python and Java*
 - ▶ *Transaction based*
 - ▶ *No OS level access*
 - ▶ *Secure Data Connector*



Cloud Talk

★ *Azure (Platform Based)*

- ★ *Microsoft's Entry*
- ★ *.Net based*
- ★ *No OS level access*
- ★ *Storage Queues*



Cloud Talk

- ▶ *Salesforce.com*
 - ▶ *SaaS CRM*
 - ▶ *Sales Force Automation*
 - ▶ *Force.com (AppExchange)*
 - ▶ *Appex*



Cloud Talk

▶ *Other Cloud Providers*

▶ *Flexiscale*

▶ *Rackspace*



Cloud Talk

- ▶ *Rackspace/Mosso*
(Infrastructure Based)
- ▶ *CloudSites(PaaS)*
- ▶ *CloudFiles (DaaS)*
- ▶ *CloudServers (IaaS)*



Cloud Talk

- ▶ *Open Source IaaS Clouds*
 - ▶ *Enomaly ECP*
 - ▶ *Eucalyptus*
 - ▶ *Nimbus*
 - ▶ *OpenNebula*



Cloud Talk

- ▶ *Other Infrastructure Clouds*
 - ▶ *IBM Blue Cloud*
 - ▶ *HP (BTO Opsware)*
 - ▶ *SUN (Qlayers)*



Cloud Talk

▶ *Other Platform Based*

▶ *Rightscale*

▶ *Elastra*

▶ *CloudSwitch*

▶ *Heroku*

▶ *Engine Yard*

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Cloud Talk

▲ *Software for the Clouds*

▲ *Configuration Management*

▲ *Puppet (Ruby)*

▲ *Chef by Opscode*

▲ *LCFG (Perl)*

▲ *Bcfg2 (Python)*

▲ *Cfengine (“C”)*

▲ *Smartfrog (Java)*

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Cloud Talk

- ▲ *Software for the Clouds*

- ▲ *Configuration Automation*

 - ▲ *Capistrano (Ruby)*

 - ▲ *Open-ControlTeir (Java)*

 - ▲ *Nanite (ruby)*



Cloud Talk

▲ *Software for the Clouds*

▲ *Auto Scaling*

▲ *PoolParty (Ruby)*

▲ *Scalr (PHP)*

▲ *Cloudscale (Ruby)*

▲ *Sprinkle (Ruby)*

▲ *Moonshine (Ruby) (UPDATED)*



Cloud Talk

▲ *Storage Based Clouds*

▲ *EMC (Mozy)*

▲ *Nirvanix*

▲ *Amazon S3*

▲ *RackSpace Mosso Cloud Files*



Cloud Talk

▲ *Content Delivery Networks*

▲ *Akamai*

▲ *Limelight (partner w/Mosso)*



Cloud Talk

★ *Cloud Factories*

★ *CohesiveFT*

★ *rPath (JeOS)*

★ *Bitnami*



Cloud Talk

▶ *Who's using the cloud?*

▶ *The NY Times*
Amazon EC2

▶ *Nasdaq*
Amazon S3

▶ *Major League
Baseball*
Joyent

▶ *ESPN*
*Rightscale using
Amazon EC2*

▶ *Hasbro*
Amazon EC2

British Telecom
3Tera

Taylor Woodrow
Google Apps

CSS
Amazon EC2

Activision
Amazon EC2

Business Objects
*Rightscale using
Amazon EC2*

Eli Lilly
Research Clouds

Department of Defense



Cloud Talk

▲ *Cloud Standards?*

- ▲ *Elasta (ECML and EDML)*
- ▲ *3Tera (Cloudware)*
- ▲ *Citrix (C3)*
- ▲ *VMWare (Vcloud)*
- ▲ *DMTF (OVF)*
 - ▲ *Citrix, Vmware*
- ▲ *CCIF/UCI*



Cloud Talk

▶ *Enterprise Vendors in the Cloud?*

▶ *Red Hat*

▶ *GigaSpaces*

▶ *Oracle*

▶ *Vertica*

▶ *Sun MySQL*

▶ *IBM (Middle-ware) and TSAM*

