Open Source Private Clouds – A Chimera?
Key Factors for Successful Deployments!

Thenalapadi S Mohan, PhD

9 March 2011   USC CSSE ARR 2011
Overview

Large Few Cloud Service Vendors... strait-jacketed offerings?

Does it satisfy all customers?

Open source Private Clouds - Transitory phenomenon?
What is the Difference?

Major Cloud Service Offerings vs Need for Private Clouds

All Incumbents (HP, IBM, AT&T etc) are betting on Private Hybrid Clouds

Shortcomings of Existing Public Cloud Services

- Security
- Vendor Lock-in (Interoperability, portability)
- Multi-Tenancy
- Five Nines?
- SLAs
- Policies
- Customizability
- Loss of Control
- Legacy Systems
- Monopoly Vendors
The Open Source Private Cloud EcoSystems within the Enterprises....

Managing the Strategic Use of IT and Information within the Enterprise
Scale, SLAs, Policies, Interoperability

Client Smart Devices
+ Firmware
(Android etc)

Infrastructure as a Service
Eucalyptus, OpenNebula, OpenStack etc

Software as a Service
Private Cloud

Public Cloud Services

Platform as a Service
Private Cloud
OpenSource Private Clouds – What are they?

Key Characteristics:
• Satisfy Organization Specific Needs
• Limited Transactionality,
• Custom Scale – using existing resources,
• Custom Security & Policies – internal to organization,
• Custom SLAs – for units within
• Data Security, Analytics and Information Privacy,
• Controlled Environment – Patching etc

Better Organizational IT Strategy Alignment
Opensource Cloudonomics at work

Several Success Stories: Eucalyptus, OpenNebula, OpenStack, ....
And Hadoop

Flip Side:
-- Interoperability and portability into Big Player’s cloud services
-- Limited Successes – IT Departments of Enterprises in using Legacy
Data Centers and IT Resources ← Typically immature approaches
The BigSwitch Contradiction...

Parallels from the world of Evolution of the generation, distribution and usage of Electrical Energy.

Why?
Computing services are varied and cannot be commoditized unlike electricity!
Key Pitfalls and Problems in Open Source Private Clouds

- IT departments tend to do an adhoc Proof of Concept
  - They do not go the whole length to:
    - Define the Intra-Enterprise Cloud Services
    - Define viable Policies and SLAs for Enterprise Users
    - Incomplete and incompatible systems architectures and components
      - Systems Integrity failures
- Lack of key IT strategy to leverage public clouds – Cloud Bursting
- Lack of successful Deployments to meet seasonal demands.
  - Lack of agility and adaptability in Policies, Resources and Deployments to meet demands
- Lack of letting go of right ‘Business Controls’ – within organization.
- Lack of Scale

In competition with Proprietary Private Clouds – VMWare, EMC, CA, CSC etc...

“When you hear Companies talk about Private Cloud, you need to understand: That is not the Cloud” – Google CIO Ben Fried
Key Success Factors include....

- Plan, Architect and Design Your Private Cloud fully
- Basic System Configurations – should be agile
  - Hypervisor Configurations, Installations, Deployments & Fine tuning
  - Administration Interfaces - seamless & integrated
- Interoperability with Existing Key Organizational Packages and Processes
- Continuous Deployment Tuning
  - Well thought out Security and Governance Policies
  - Intra-Enterprise SLAs for more rugged governance
THANK YOU!