2009 ESRI User Conference
Technical Workshops
July 14–17, 2009

Enterprise Architecture Special Interest Group (SIG)

Michael Young – ESRI

Doug Tidwell – IBM

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Agenda

- Intros
- Discuss Hot Issues from Last SIG
- Cloud Services
- EA Topics
- Conclusions / Action Items

Intros

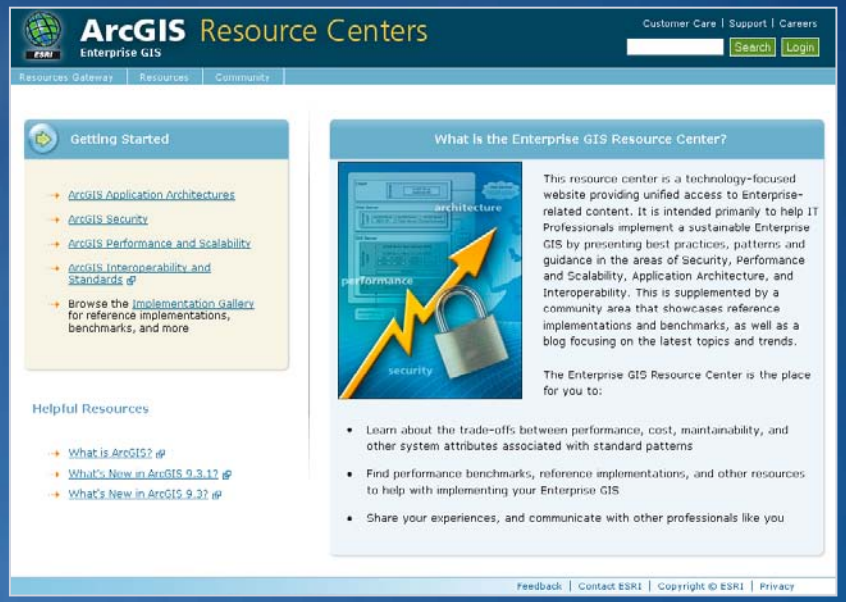
- Michael Young – ESRI Sr. Enterprise Architect
- Doug Tidwell – IBM – Cloud Computing Evangelist
- You
  - Less then 30 seconds please ☺
  - Name, Role, Key Enterprise Issues

Hot Issues From Last SIG

- Location for Exchanging Enterprise Architecture Issues / Knowledge
- Virtualization Support

Location for Exchanging Enterprise Architecture Issues / Knowledge

- During the last couple SIGs it was suggested to have an knowledge exchange area for Enterprise topics
  - In July the Enterprise GIS Resource Center went live
    - Your feedback and suggestions will be the driver for new content



Virtualization Support

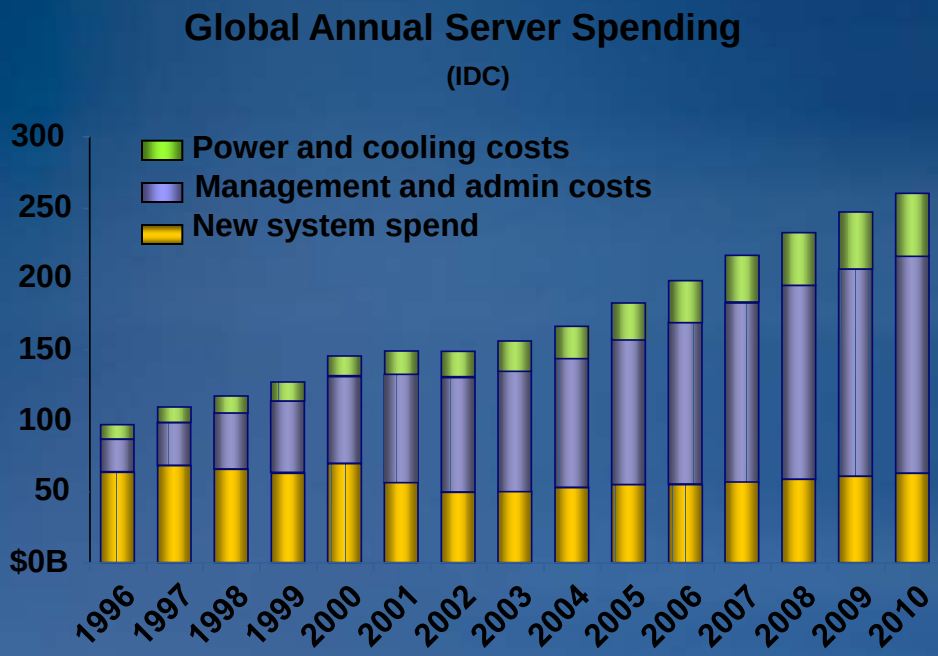
- ArcGIS Server now fully supported with virtualized platforms
  - Testing indicates 20-30% performance/throughput degradation due to high I/O demands of GIS imagery and functions
  - 60% degradation has been observed so testing is key to identifying your needs
  - Creating one VM per core increases performance and throughput sometimes.
  - Products being used now:
    - VMWare
    - Microsoft Hyper-V
    - Sun Microsystems Solaris Containers
    - Citrix XenServer and Citrix Essentials

IBM Cloud Computing Strategy

The cloud

- Cloud computing . . . is a style of computing where IT-related capabilities are provided ‘as a service,’ allowing users to access technology-enabled services ‘in the cloud’ without knowledge of, expertise with or control over the technology infrastructure that supports them.
  - From Wikipedia
- Everybody has a slightly different idea of what cloud computing really is.

A Crisis of Complexity



Uncontrolled management and energy costs

Steady CAPEX spend

To make progress, delivery organizations must address the server, storage and network **operating cost** problem, not just CAPEX

IBM Corporate Strategy analysis of IDC data

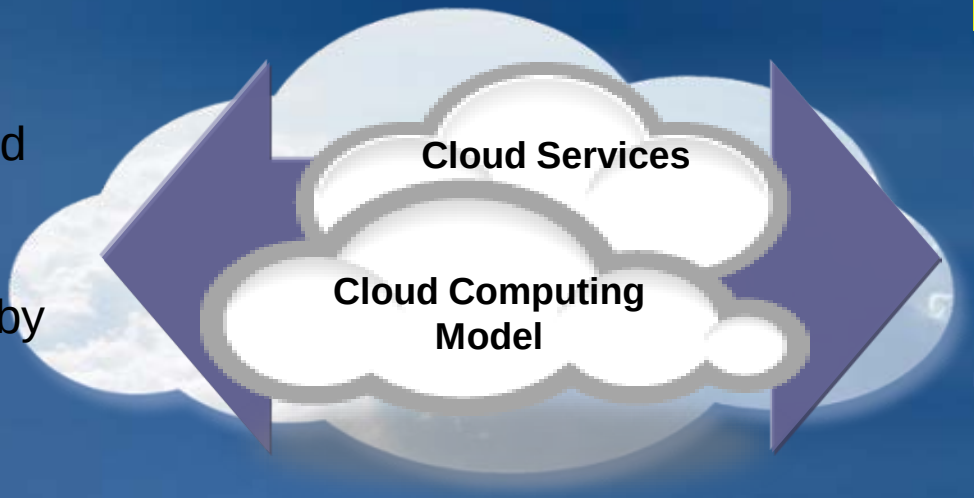
Similarities between SOA and the cloud

- Both started bottom-up
- Both started with massive hype
- Both don't work without governance
  - You need an architect, a blueprint, and an executive who is both enlightened and powerful.
- SOA and cloud computing aren't simply coding issues.

Cloud Drives New Sourcing Options

Private …

- Client owned and managed.
- Access defined by client.



Public …

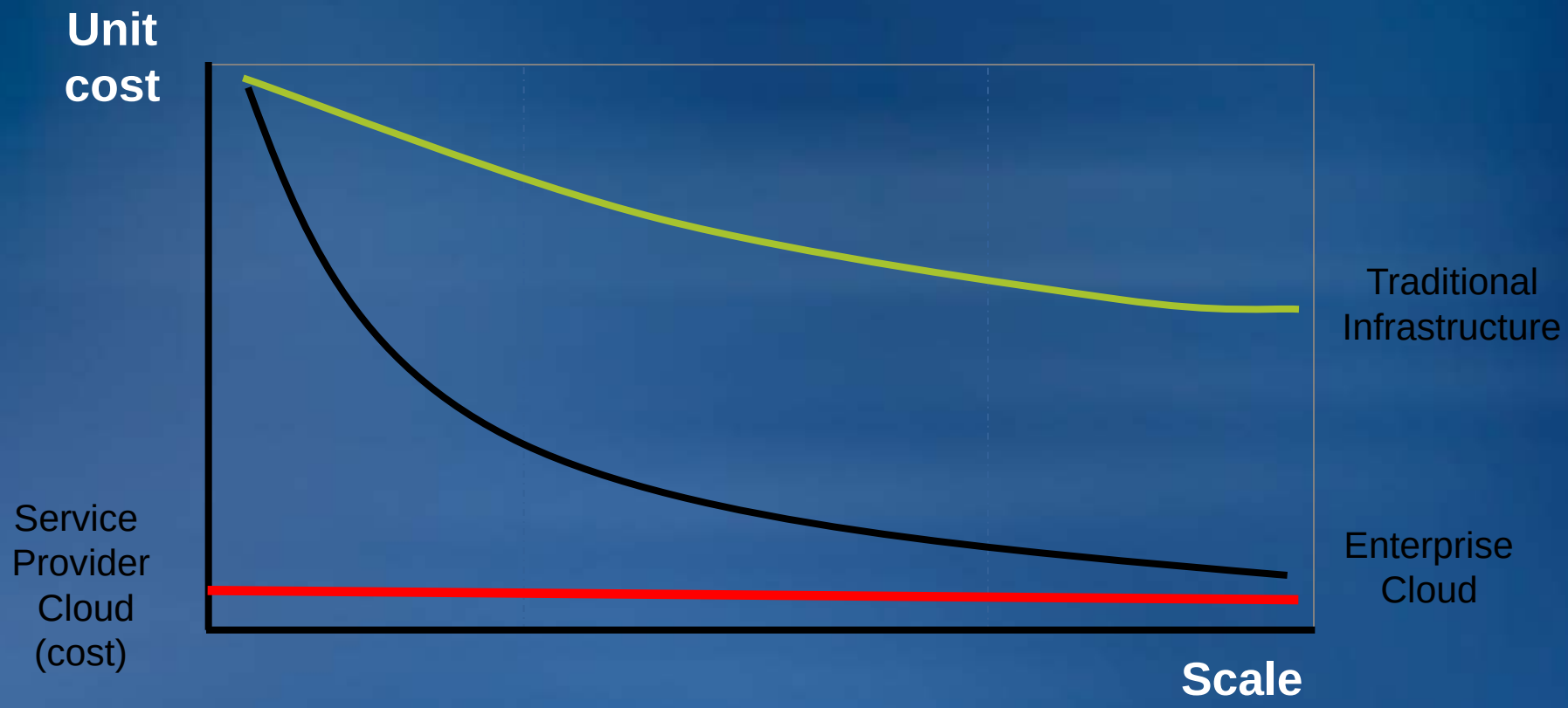
- Service provider owned and managed.
- Access by subscription.

…. Customization, efficiency, resiliency, security and privacy

….Standardization, capital preservation, flexibility and time-to-deploy

GOVERNANCE

Cloud Scale Economics

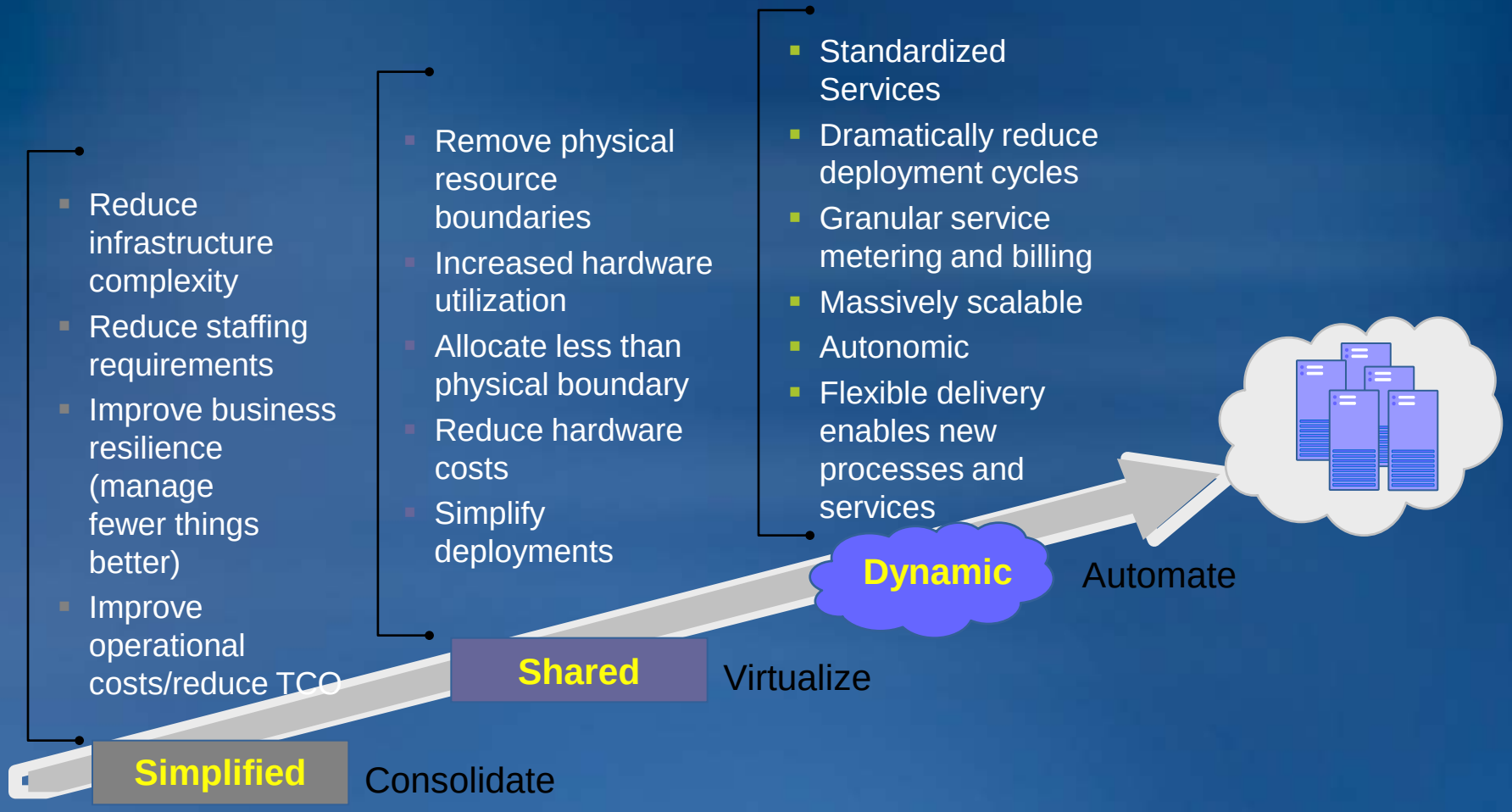


Large enterprises can significantly reduce costs for some workloads compared with traditional IT

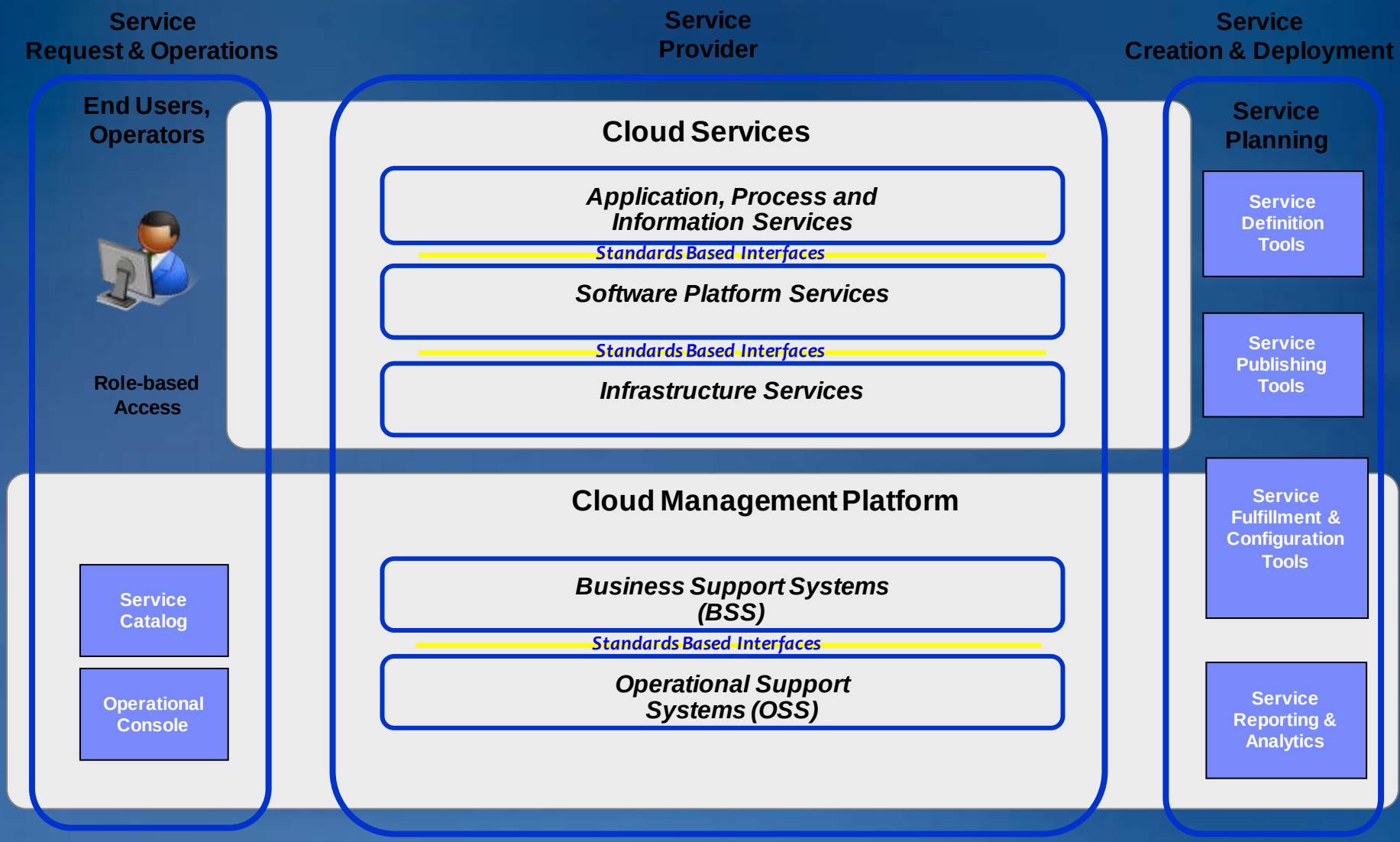
Introducing Cloud Computing in the Enterprise

- Transformation Roadmap
- Architectural Model for Cloud Computing
- Workload Analysis
- Deciding the Right Mix of Delivery Models
- Implementation

IT Transformation Roadmap



Architectural Model for Cloud Computing



Workload Analysis

EXAMINE FOR RISK

Database
Transaction processing
ERP workloads

TEST FOR STANDARDIZATON

Web infrastructure applications
Collaborative infrastructure
Development and test
High Performance Computing

EXPLORE NEW WORKLOADS

High volume, low cost analytics
Collaborative Business Networks
Industry scale “smart” applications

Three choices to deploy workloads that matter to you for greater efficiency, productivity and control

Smart Business Services **– cloud services delivered**

1. ***Standardized services on the IBM cloud***
2. ***Private cloud services, behind your firewall,*** **built and/or run by IBM**

Smart Business Systems **– purpose-built infrastructure**

3. ***Pre-integrated, workload optimized systems***


Analytics


Collaboration


Development and Test


Desktop and Devices


Infrastructure


Business Services

Design and implementation for test environments

Key Features

- Assessment of current test environment to project savings and ROI
- Strategy, planning, design and implementation services of the solution
- Create self-service portal with catalog of services
- Integrated platform combining service request management, provisioning / de-provisioning and change and configuration management

Benefits

- **Reduce IT labor cost by 50% +** - reduce labor for configuration, operations, management and monitoring of the test environment
- **75% + Capital utilization improvement**; Significant license cost reduction
- **Reduce Test Provisioning cycle times from weeks to minutes**
- **Improve Quality-** eliminate 30% + of all defects that come from faulty configurations.

WebSphere Cloudburst – A private cloud in a box

- Works with images of WAS Hypervisor Edition
- See ibm.com/software/webservers/cloudburst/

IBM CloudBurst

Highlights:

- Self contained: Prepackaged hardware / software, based on Phoenix platform and Service Management extensions
- Plug and Play Workload Service Catalog – Allows clients to allocate, start and stop application workloads on "available" servers w/o requiring deep technical analysis
- Self-service: Zero touch administration
- "Lights-out" automated operation

Service Management stack serves as the Presentation and Runtime layer that the client uses to request driven provisioning of virtual computing resources through:

- a Web 2.0 Self-Service portal
- management of multi-customer, multi-project collections of virtual systems
- providing end-user reservation of compute and storage resources
- automated provisioning and de-provisioning of resources
- real-time monitoring of virtual resources
- Software sourced from HIPODS and Tivoli products

EMBEDDED BILL OF MATERIALS

Base Hardware Configuration:

- **1 42U rack**
- **1 3650M2 Mgmt Server, 8 cores, 32GB Ram**
- **1 H22 Blade for Thundercloud stack, 8 cores, 48GB RAM**
- **Base configuration:**
  - **1x BladeCenter chassis**
  - **3 – 13 managed H22 blades, 8 cores, 48GB RAM**
- **DS3400 FC attached storage**

Cloud Software Configuration:

- **Phoenix stack runs on 3650M2 management server**
  - **Windows 2003R2 Enterprise**
  - **Systems Director 6.1.1, ToolsCenter 1.1, DS Storage Manager, VMware VirtualCenter 2.5, VMware ESXi, MS SQL Server**
- **BlueCloud v1.6.1 including appliance wizards**
- **Tivoli Provisioning Manager v7.1**
  - **DB2 9.5; WebSphere Application Server 6.1, Tivoli Directory Server 6.1**
- **Tivoli Monitoring v6.2**
  - **OS pack (active), Green Energy Manager (inactive)**
- **Tivoli Storage Manager client**
  - **OS, DB2, potentially WebSphere**
- **SUSE Enterprise Linux 10 sp2**
- **Thundercloud software stack will ship as VMware images to run on the H22 management blade**

IBM's 9 Cloud Labs support clients world-wide

Technology Incubation, Customer Engagements, In-Market Experimentation

The Open Cloud Manifesto

- A statement of principles for openness in cloud computing
- More than 225 supporters and growing
- Join the "Open Cloud LinkedIn" group
- Visit opencloudmanifesto.org.
- Join us at groups.google.com/group/cloud-computing-use-cases.

The principles in action

- The Cloud Computing Use Cases Google group is building a white paper of common use cases.
- The identified use cases will be used to drive standards efforts.
- Draft 2 of the whitepaper is out now; the final version will be released July 31st.
- Join us at groups.google.com/group/cloud-computing-use-cases.

In Summary…

- Enterprise cloud opportunity is early, but real
- Economics of private clouds are compelling
- Adoption of cloud computing will be driven by workload affinity
- Open standards are crucial
- IBM offers deployment choices for workloads that matter to you

EA Topics

EA Topics

- Enterprise Architecture Frameworks
  - Which ones are working best for you now?
    - FEAF
    - NIST
    - DODAF
    - TOGAF
    - EA3 Cubed
    - Zachman
    - Others?

EA Tools

- What EA tools are working best for you?
  - Visio
  - System Architect (Telelogic/IBM)
  - Enterprise Architect (Sparx)
  - IBM Rational Software Architect
  - Others?
- Useful overview of Enterprise Architecture Tools Updated for 2009
  - http://www.enterprise-architecture.info/Images/EA%20Tools/Enterprise%20Architecture%20Tool%20Selection%20Guide%20v50.pdf

EA Topics

- What technology standards are important to your org now?
  - SOAP
  - REST (yes, it's not a standard ☺)
  - UDDI – Is it mostly dead?
  - WSDL – Are dynamically generated service listings better?
  - Java CSA - Any usage yet?
  - MS WCF?
  - OGC?

EA Topics

- Anyone want to talk about Cloud Computing?

Conclusions / Action Items