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Deputy Associate Administrator,  
Office Of Citizen Services and Innovative Technologies  
GSA  

NIST Cloud Computing Forum & Workshop II  
November 15, 2010
“Data is the flint for the next 25 years.”

Ray Ozzie
Chief Software Architect
Microsoft

Volume of digital information increases tenfold every 5 years

Plus: the data is replicated many times over!
The United States Government is the largest purchaser of IT goods and services in the world.

Source: [http://www.cio.gov](http://www.cio.gov)
Improve Performance & Deliver Better Service

**RATIONALIZE SERVICE DELIVERY MODELS**
- Private sector is consolidating data centers while government data centers are growing
- Government needs to reverse this trend and consolidate

**SHIFT SERVICES TO THE CLOUD**
- Leverage shared services through the cloud
- Launched Apps.gov to simplify procurement of cloud services

**SIMPLIFY ACCESS TO SERVICES**
- End-to-end digital service platforms
- New platforms for delivery – e.g., Mobile Computing

http://www.cio.gov

![Graph showing data center growth from 1998 to 2010](http://www.cio.gov)
How Big is Mobile?


Mobile will be bigger than desktop internet in 5 years
-- Mary Meeker, Morgan Stanley, April 2010
Program Overview


- Mission: Drive the government-wide adoption of cost effective, green, and sustainable Federal cloud computing solutions.

- The Cloud Computing Program Management Office (PMO) was established at GSA in April 2009.
  
  - PMO manages the Cloud Computing Executive Steering Committee, which reports to the Federal CIO Council.
  - 4 additional government-wide governance groups were established within the program:
    - SaaS Email Working Group.
First Federal storefront site to commoditize cloud services so that buyers may cross-compare products and purchase (launched September, 2009). Currently offering SaaS and social media products.
Launched in April 2010, Info.Apps.gov is a central Government site providing information about cloud computing and how to procure/use cloud services. It helps create sustainable, more cost-effective IT Services for the Federal Government. It is built on open source and it is hosted in the Cloud!
Infrastructure-as-a-Service (IaaS)

IaaS Services

- **Storage**
  - Online Web Based Storage
  - Store Files & Data Objects

- **Virtual Machines**
  - Online VMs / Computing
  - Multiple CPU & OS Types

- **Server Hosting**
  - Online Server Hosting
  - DNS and CDN Capabilities

- **On-demand Self Service**
  - Online, self service provisioning capabilities for services

- **Ubiquitous Network Access**
  - Accessible via the Internet with a sufficiently robust architecture

- **Location Independent Resource Pooling**
  - Massively scalable services, independent of location of resources

- **Rapid Elasticity**
  - Scale up or down dynamically based on consumption and/or request

- **Measured Service**
  - Utilization and consumption GUI dashboard and electronic interfaces

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- **IaaS Awarded (October 2010)**
- **Awardees will complete security authorizations with GSA to support Moderate Level Security for Government**
- **Services will be made available through purchase on apps.gov**

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RFQ Required
Cloud Computing Characteristics
Software-as-a-Service (SaaS): Email

- Inter-agency SaaS Email Working Group established in June 2010.

- Developing an RFQ for a government-wide BPA of SaaS email solutions.

- RFI completed.
  - 13 respondents.
  - RFI responses will be leveraged to create RFQ requirements.
  - Pre-solicitation day to be held November 1 to solicit vendor and government feedback on draft SOW.

- GSA completed security authorization of Google Apps which may be leveraged by other agencies.
  - USAID leveraged Google Apps security authorization package to greatly reduce timeline for system implementation
Large pool of agency applications identified for cloud migration

Federal Platform Reference Implementations

Apps Need Platforms

Platforms Amplify IaaS Savings

GeoCloud Community Platform

Platform Savings
- Platform building time & effort
- Reduced maintenance costs
- Faster deployment
- Cost effective development / test

Infrastructure as A Service Savings
- Hardware Savings
- Operations Savings
- Scalability Savings
FedRAMP – Federal Risk And Authorization Management Program

Unified Government-wide Risk Management Program

• Provides joint security authorization and continuous monitoring
• Agencies participate by leveraging the results for covered products
• Agencies *retain their responsibility and authority* to ensure their security needs are met in the use of systems

Vendor Benefits

• Government-wide authorization and security compliance cost reduction

Agency Benefits

• Cost savings through reduced duplication
• Rapid acquisition
• Increased security assurance
Federal Data Center Consolidation Initiative

The Initiative’s Six Key Phases

- Phase 1: IT Asset Inventory Baseline (Complete)
- Phase 2: Application Mapping & Quick Wins
- Phase 3: Analysis & Strategic Decisions
- Phase 4: Design & Transition Planning
- Phase 5: Consolidation & Optimization Execution
- Phase 6: On-going Optimization Support

Milestones – Phase 1

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Due Date</th>
<th>Status – Phase 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Data Center Asset Inventory</td>
<td>April 30, 2010</td>
<td>Complete</td>
</tr>
<tr>
<td>Initial Data Center Consolidation Plan</td>
<td>June 30, 2010</td>
<td>Complete</td>
</tr>
<tr>
<td>Final Data Center Asset Inventory</td>
<td>July 30, 2010</td>
<td>Complete</td>
</tr>
<tr>
<td>Final Data Center Consolidation Plan</td>
<td>August 30, 2010</td>
<td>Complete</td>
</tr>
<tr>
<td>Approval of Final Data Center Consolidation Plans</td>
<td>December 31, 2010</td>
<td>OMB will work with agencies to review, adjust and approve final consolidation plans.</td>
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</tbody>
</table>

- The scope of the Initiative is limited to CIO Council agencies
- In February 2010, the Administration launched this Initiative
- Three agency guidance workshops were provided by the team as well as peer reviews were conducted of the agency’s Initial and Final Plans
- Per the CIO Council Memo published October 1, 2010; “As of July 30, 2010, based on agency submissions, there are 2,094 Federal data centers”
Cloud Services Improves Citizen Focus and Efficiency for Government Portal, USA.gov

**Problem**

GSA wanted to reduce costs, add scalability and flexibility to USA.gov

**Solution**

Migrate to a cloud platform that resulted in significant lower cost, improved scalability.

<table>
<thead>
<tr>
<th>Hardware-Based Hosting</th>
<th>Cloud-Based Hosting</th>
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</thead>
<tbody>
<tr>
<td>Time to upgrade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 months including procurement</td>
</tr>
<tr>
<td>Service Cost</td>
<td></td>
</tr>
<tr>
<td></td>
<td>~$2M per year hardware and service</td>
</tr>
<tr>
<td>Downtime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 hour/month average</td>
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</tbody>
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Cloud Computing Improves Flexibility and Reduces Cost at USA.GOV