

Federal Cloud Computing Initiative Overview

Program Status

- To support the Federal Cloud Computing Direction and Deployment Approach, the ITI Line of Business PMO has been refocused as the Cloud Computing PMO
- Building on ITI LoB Initiative
 - Infrastructure defined
 - Consensus model
 - Metrics
 - Key Focus Areas
 - Key Themes: consolidation and virtualization
- Cloud Computing Initiative
 - Continue the migration towards a services-based environment that is technology and vendor-agnostic
 - Enable rapid deployment of technology solutions for the Federal government without developing stove-pipes
 - Enable scalability for existing and new capabilities
 - Increase savings through virtualization
 - Potentially reduce cost of infrastructure, buildings, power, and staffing
 - Improve the government's ability to create a transparent, open and participatory government

Building Upon the ITILoB Effort

ITILoB

Cloud Computing

GOAL: To achieve an optimized, cost-effective, government-wide information technology infrastructure that supports agency mission, while providing reliability and security in service delivery.

- ❑ Established a vision for Government-wide ITI Optimization
- ❑ Created a collaborative governance framework involving 23 Federal Agencies
- ❑ Captured and analyzed critical information in terms of:
 - Optimization strategies
 - Common Solutions
 - Performance Metrics
 - IT Infrastructure Tools used across Government
- ❑ Benchmarked Federal ITI Data



- ❑ Will use the information gathered through the ITILoB effort to deploy “Common Solutions” using a Cloud Computing technology platform
- ❑ This initiative will:
 - Follow a service oriented approach
 - Be based on agency business needs
 - Maintain a collaborative governance framework

Administration Priorities for Infrastructure Modernization and Cloud Computing

“The Federal technology environment requires a fundamental reexamination of investments in technology infrastructure.”

“The Infrastructure Modernization Program will be taking on new challenges and responsibilities. Pilot projects will be implemented to offer an opportunity to utilize more fully and broadly departmental and agency architectures to identify enterprise-wide common services and solutions with a new emphasis on cloud computing. “

“The Federal Government will transform its Information Technology Infrastructure by virtualizing data centers, consolidating data centers and operations, and ultimately adopting a cloud-computing business model.”

**FY2010 Federal Budget
Analytical Perspectives
Cross Cutting Programs**

<http://www.whitehouse.gov/omb/budget/fy2010/assets/crosscutting.pdf>

Cloud Computing Definition

“Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics, three delivery models, and four deployment models”.

NIST

Definition of Cloud Computing, Draft version 14

<http://csrc.nist.gov/groups/SNS/cloud-computing/index.html>

Cloud Computing Defined (continued)

Five Characteristics:

- On Demand Service
- Ubiquitous Network Access
- Location Independent Resource Pooling
- Rapid Elasticity
- Measured Service

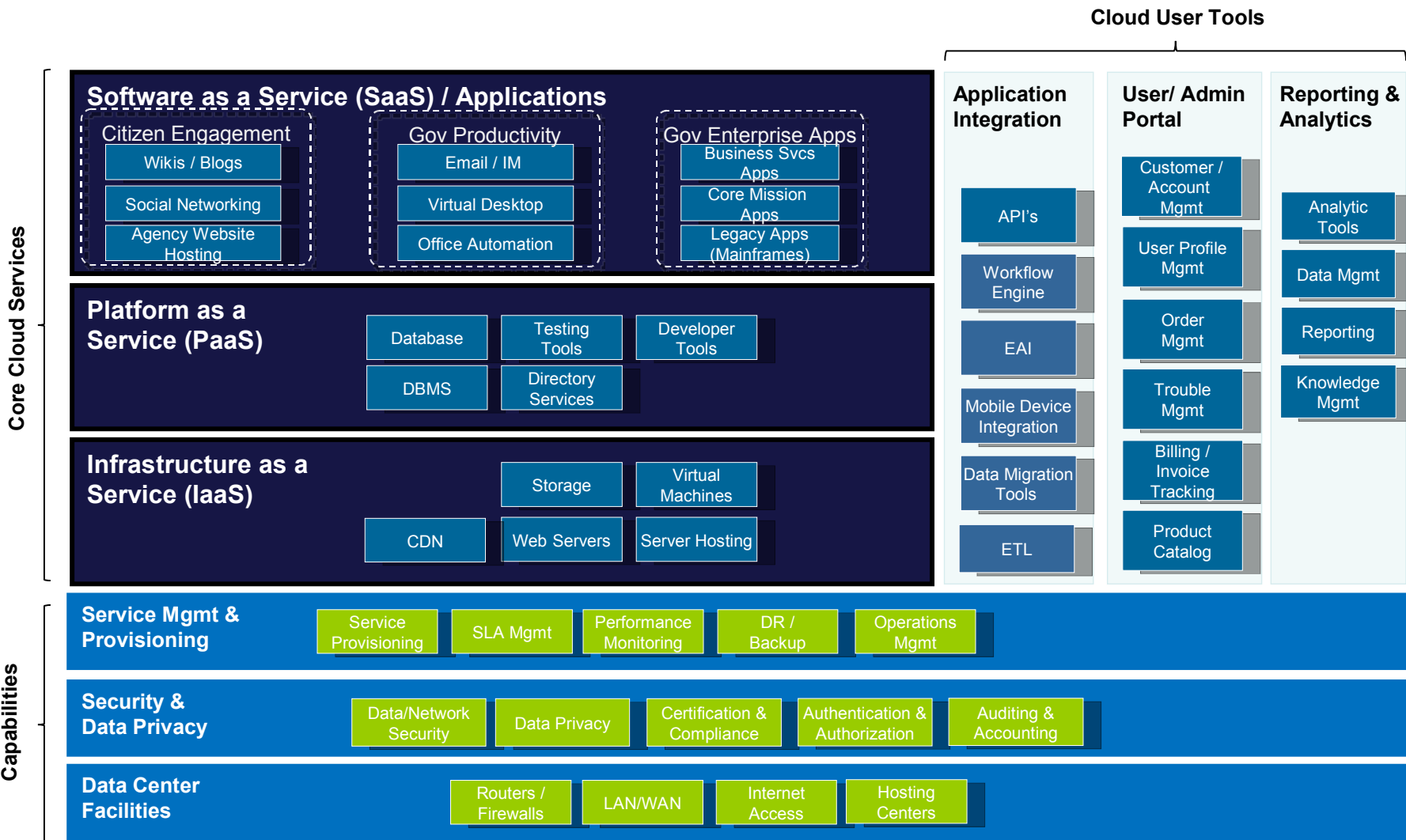
Delivery Models

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)

Deployment Models

- Private Cloud
- Community Cloud
- Public Cloud
- Hybrid Cloud

Government Cloud Computing Framework



Delivery Model Overview

Model	Capability Provided	Example Services
SaaS	To use the provider's applications running on a cloud infrastructure and accessible from various client devices through a thin client interface such as a Web browser	<ul style="list-style-type: none">▪ Citizen Engagement (Wikis, Blogs, Data.gov)▪ Government Productivity (Cloud based tools)▪ Business Enablement (Salesforce.com)▪ Enterprise Applications (Core Mission & Business Svcs)
PaaS	To deploy onto the cloud infrastructure consumer-created applications using programming languages and tools supported by the provider (e.g., java, python, .Net)	<ul style="list-style-type: none">▪ Database and Database Management Systems▪ Developer / Testing Tools▪ Virtual Environments
IaaS	To provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications	<ul style="list-style-type: none">• Computing• Storage• Application hosting

Deployment Model Overview

PRIVATE CLOUD

Operated solely for an organization.

COMMUNITY CLOUD

Shared by several organizations and supports a specific community that has shared concerns

PUBLIC CLOUD

Made available to the general public or a large industry group and is owned by an organization selling cloud services.

HYBRID CLOUD

Composition of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability

Benefits

- Rapid provisioning and deployment of services
- On-demand scalability and elasticity for new services and capabilities
- Creation of a services-based environment that is interoperable and standards-based
- Opportunity for Cost Savings
 - Leverages economies of scale
 - Promotes innovation and service sharing
 - Allows for “Measured” Payment (Pay per Use)
- Enables agencies to reinvest in, and concentrate on, core mission objective

Phased Approach for Delivering Cloud Computing

	Phase 1	Phase 2	Phase 3
Target Apps	Light-weight collaboration & productivity tools and basic infrastructure / platform	Rich productivity tools, enhanced platform capabilities	Enterprise Applications in the cloud and integration services
Target Availability	Aug – Oct 2009	Nov 2009 – Feb 2010	Mar – Jun 2010
Cloud Delivery Models	Commercially Available Public Clouds	Public and Outsourced Private Clouds	Private and Hybrid Clouds
Procurement	Advantage, BPA	Smart-Buy, BPA, Directed RFP	Smart-Buy, BPA, Directed RFP
Security	Low-Impact FISMA Security	Low and Medium Impact FISMA Security	Low , Medium and High Impact FISMA Security
Software as a Service (SaaS)	TARGET AVAIL: Aug 2009	TARGET AVAIL: Nov 2009	TARGET AVAIL: Jun 2010
Platform as a Service (PaaS)	TARGET AVAIL: Sep 2009	TARGET AVAIL: Jan 2010	TARGET AVAIL: Apr 2010
Infrastructure as a Service (IaaS)	TARGET AVAIL: Sep 2009	TARGET AVAIL: Feb 2010	TARGET AVAIL: Mar 2010

Progress to Date

1. **Established and staffed the Cloud Computing PMO under the GSA OCIO**
2. **Created a Federal Cloud Computing Executive group comprised of Federal Agency CIOs and Executives**
3. **Attended Federal Cloud Computing Summit – sponsored by ACT/IAC**
 - Federal Cloud Computing Executive group and Executives of leading IaaS and SaaS service providers discussed the readiness and viability of private industry to accommodate Federal Government business needs and requirements.
4. **Developed a Federal Cloud Computing Technical Framework**
5. **Issued an RFI for IaaS**
<https://www.fbo.gov/index?s=opportunity&mode=form&id=d208ac8b8687dd9c6>
=
6. **Issued a data call to Federal Agencies requesting information on current Cloud Computing-related projects. Information will be used to:**
 - Assess projects for cross-agency use
 - Facilitate future Federal Cloud Computing service acquisition and deployment planning

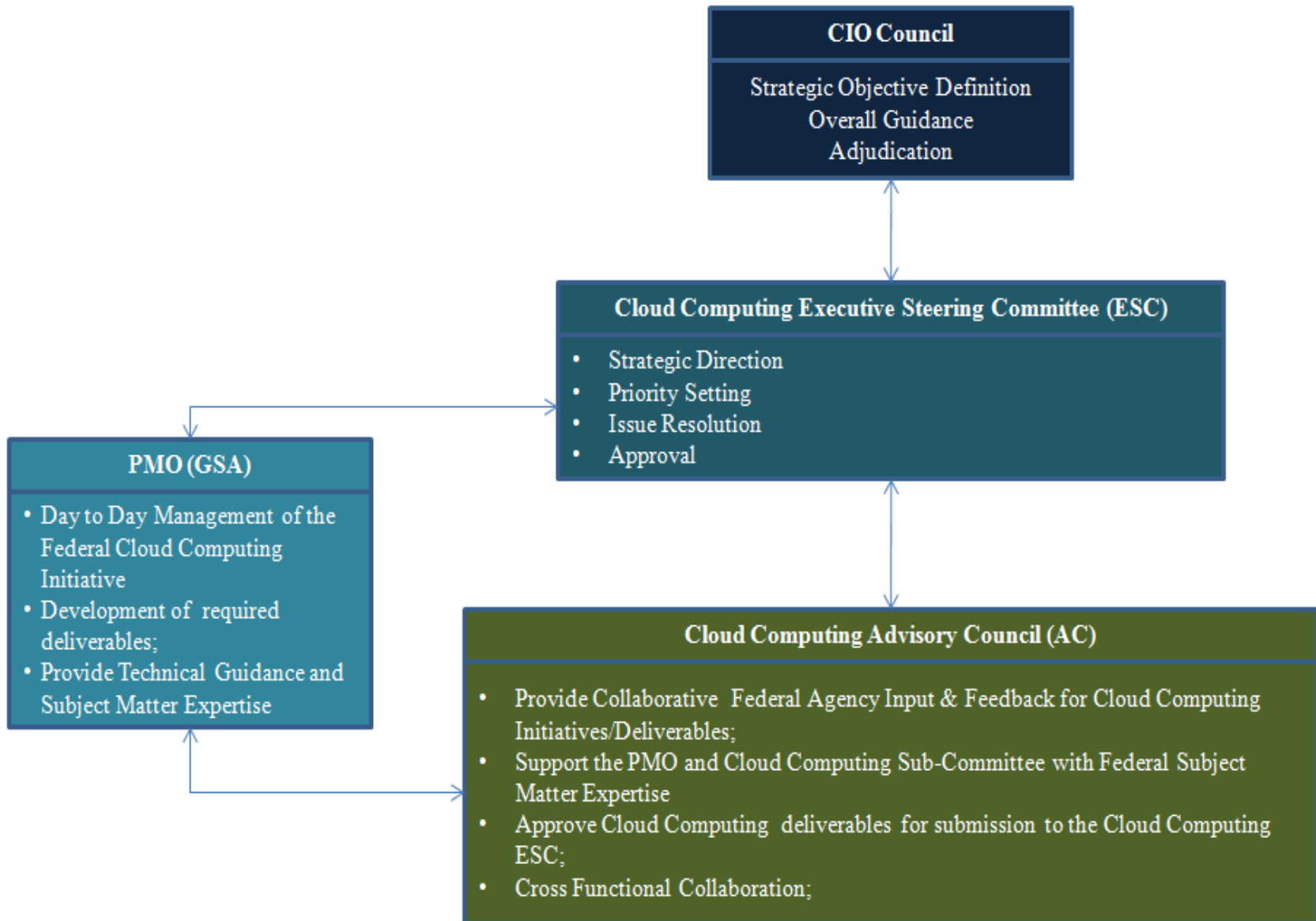
Progress to Date

- 1. Met with the FEA PMO to begin discussions on integrating Cloud Computing Planning with the Enterprise Architecture reporting cycle.**
- 2. Developing a Federal Cloud Computing Concept of Operations**
- 3. Developing a Web-Based GSA Cloud Computing Storefront**
 - Will allow Federal Agencies to buy Cloud Computing services through a GSA website, as needed**
- 4. RFQ for IaaS**

Upcoming Activities

- ❑ **Finalize Phase 1 Service Definition and Procurement**
- ❑ **Finalize Federal Cloud Computing Concept of Operations**
- ❑ **Continue Cross Agency Collaboration**
 - Meet with NASA and Department of Defense
 - Analyze Federal Agency responses to Cloud Computing Data Call
 - Continue Collaboration with FEA PMO
- ❑ **Launch GSA Cloud Computing Storefront**
- ❑ **Continue to Facilitate Cloud Computing Governance**
 - Weekly Executive Meetings
 - Monthly Cloud Computing Governance Meetings
 - Publish Activity Reports and Findings onto OMB's MAX

Governance Structure



Executive Committee Roles and Membership

Mission	Membership
<ul style="list-style-type: none"> <input type="checkbox"/> To provide executive level strategic guidance and direction for the Federal Cloud Computing Initiative <input type="checkbox"/> To provide review and approval of Cloud Computing PMO and Working Group deliverables, as appropriate <input type="checkbox"/> To provide a regular interface with OMB and the Federal CIO <input type="checkbox"/> To provide Executive-level sponsorship of the Cloud Computing initiative's plans and direction so that they are effectively carried out at the Agency-level. <input type="checkbox"/> To set priorities for the Federal Cloud Computing initiative, in consultation with OMB and the Federal CIO. 	<p>Chair: Casey Coleman, GSA CIO</p> <p>Carl Staton, DOE Deputy CIO</p> <p>Members:</p> <ul style="list-style-type: none"> •OMB •Federal Agency CIOs & Executives

Advisory Council Roles and Membership

Mission	Membership
<ul style="list-style-type: none"> <input type="checkbox"/> To provide Federal Agency subject matter expertise in support of the Federal Cloud Computing initiative and the ESC's strategic direction; <input type="checkbox"/> To provide/represent Federal Agency Cloud Computing issues, requirements, and business needs; <input type="checkbox"/> To effectively disseminate the approved Federal Cloud Computing vision, strategy, and plans throughout their respective agencies. Facilitate Agency outreach activities; <input type="checkbox"/> To review the Federal Cloud Computing PMO's deliverables, as appropriate and to provide specific feedback; <input type="checkbox"/> To execute specific tasks as assigned by the ESC and/or OMB. <input type="checkbox"/> To enable cross-functional collaboration with other related Federal initiatives – such as TIC, IPv6, FDCC, etc. <input type="checkbox"/> To share best practices and current activities 	<p>Chair: Peter Tseronis, Deputy Associate CIO, DOE</p> <p>Membership:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Federal Agency IT Infrastructure Representatives <input type="checkbox"/> Federal Enterprise Architects

Contact Information

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Questions / Open Discussion

