



GeoCloud Status

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Platform as a Service Architectural Framework

Distinguishing Application, Platform and Infrastructure

Applications: 10 identified GeoSpatial instances/servers with agency specialization

Platform as a Service (PaaS)

Geospatial Cloud Platform

Catalog

Data Access

Data Viz

Processing/Transformation

Application Servers - Services

Platform Enablers (DB's, etc)

App Frameworks / Libraries

Runtime Systems

Infrastructure as a Service (IaaS)

Operating System

Virtual Machines / CPU

Storage

Application Servers: Provide the deployment environment for actual business applications with access to enablers, frameworks and runtimes, including interfaces and payload standards endorsed by the FGDC.

Platform Enablers: Platform enablers provide core supporting capabilities for developing, testing and deploying code, including DBMS, Directory, Queue, Service Bus, etc. A relational database is the most common enabler example but is not present in all platforms

Frameworks provide bundled access to common behaviors and services, which applications can rely upon.

Libraries are reusable code modules which can be called directly from an application.

Frameworks and Libraries save time and expense freeing developers from having to build common code and behaviors.

Runtimes: provide the execution support for developing and running the code. Examples include Java, Python, Microsoft Common Language Runtime, etc.

Service APIs and custom UIs

Agency Apps and extensions

Particles in the Cloud

TIGERline

THREDDS

Open Street Map

Geospatial Cloud Platforms:

Base + geo app servers

ArcGIS Server 10

*Wetlands Mapper
Lakes and Ponds*

OSGeo: GeoServer GeoNetwork

*IOOS Catalog
GEOSS
Clearinghouse*

Base Platforms:

Basic + enablers, Libraries, runtimes

Java, PHP, Tomcat, Apache, Postgres, FLEX

Java, PHP, Tomcat, Apache, Postgres, MySQL, RoR, Perl, Python

Basic Images

Windows 2008 Server R2

Linux CentOS V 5.5

GSA IaaS Infrastructure

Service APIs and custom UIs

Shared certification targets for each OS environment

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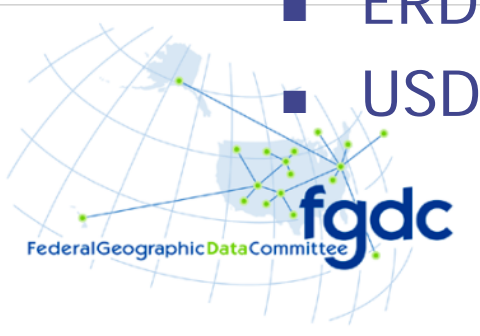
Basic + enablers,
Libraries,
runtimes

Basic Images

GSA IaaS Infrastructure

Linux platform status

- ◆ Census Bureau has sponsored the 'hardening' and C&A of Linux CentOS
 - TIGER Line 2009 is awaiting approval for public access – staged in Amazon
 - GEOSS Clearinghouse (GeoNetwork) is being provisioned with investigations on load balancing and failover underway
 - IOOS Catalog – deferring participation
 - Particles in the Cloud – testing
 - ERDDAP – testing instance in AWS
 - USDA plans on testing Esri Geoportal Server



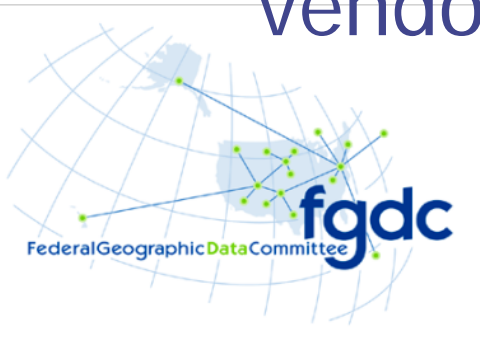
Windows platform status

- ◆ FGDC has developed a set of Windows security policies based on multi-agency input, sharing with Esri for testing
 - Team has agreed on Windows 2008 Server R2, FGDC coordinating the local security policies
 - Wetlands Mapper to be used as reference C&A for the Win/Esri reference platform, provided security settings as model for use by all agencies
 - EPA Lakes and Ponds – testing
 - USDA – CDSI web services, will test
 - USGS ArcGIS services – installed with R2 on Dell/VMWare, will test package and policies



Points of interest

- ◆ GeoCloud seeks to build on the GSA IaaS BPA awards (Apptis/Amazon) but infrastructure certification is not complete. This will provide GSA pricing and fed-wide certification.
- ◆ Establishing agreements (ICA, SLA) between the government and the right vendor is a current work item



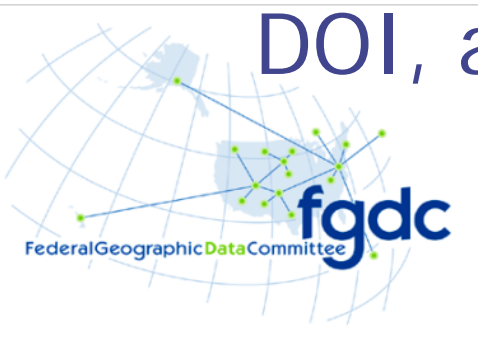
Transition

- ◆ The GeoCloud environment is intended to be the incubator for the current year after which agencies will assume their own operating costs
- ◆ Agency procurement mechanism:
 - Request bids from multiple BPA awardees
 - Establish small contract for multiple option years operation



Timelines

- ◆ Big push for summer operational period for all projects, reporting into fall
- ◆ Propose a FY2012 focus to provide assisted deployment of projects for Geospatial Platform (A-16) data using built reference platform solutions. Investigating coordination with GSA, DOI, and possibly HHS



Futures

- ◆ There is an opportunity to pursue a multi-year contract for cloud-based geospatial data and imagery hosting and dissemination services building on capabilities identified by NGA. There is interest from western states in a similar construct
- ◆ This is SaaS – a black-box capacity to securely ingest and serve geospatial data with standard public APIs (OGC services) that would not include applications like PaaS does

