Geoportal Server: An Introduction

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The Big Picture
Spatial Data Infrastructures

US

Russi

India

Abu Dhabi

Bogotá, Colombia

Geneva, Switzerland

EU

China

Singapore

Indonesia
Geoportal Server: An Introduction
Many Disciplines Participate in SDI

Natural Resources
Transportation
Public Safety
Commercial
Utilities
Environment
Defense and Intel

Spatial Data Infrastructure
## Characteristics of SDI

- **SDI**
  - Diversity
  - Federation
  - Multiple CIO Collaborating
  - Data Discovery Across Community of Interest
  - Crosses Jurisdictional Boundaries
  - Focus on Data Exchange

- **Enterprise GIS**
  - Uniformity
  - Centralize
  - One CIO designs the system
  - Gravitating to Homogeneous IT Infrastructure
  - Shared Internet Domain
  - Focus on Data Production/Utilization
Esri Geoportal Server

https://github.com/Esri/geoportal-server
Esri Geoportal Server
Enabling discovery and use of geospatial resources in heterogeneous environments

- Search and use geospatial resources
- Manage, publish, and store metadata
- View live map services
- Download data
- Standards-compliant

- Open Source
  - Apache 2.0
  - Used globally
  - 75% outside US
Geospatial One-Stop (2004 – 2010)
Data.gov (2009 – present)

- Data.gov – Obama administration initiative to transparent government
- Should Data.gov build yet another catalog for data?
- Geodata.gov and Data.gov collaborated
- Geodata.gov supplied Data.gov with 450,000+ downloadable datasets through an OGC Web Service
Use Case: “I want to find data ...”

Solution:
- Simple keyword Search
- Spatial search
- Federated Search
- Advanced options for experts
- Smart matching and ranking
- Thesaurus Service
- Search results are simple to understand... yet contain detail for power users
Use Case: “I don’t want to search though...”

Solution:
- Analogous to Department Store
- Implementer Organizes Hierarchy
- Based on Metadata Content
- Filter/Paginate Within Category
- Classification and Relationships
- Search with facets
Use Case: “I want to make a map …”

• Solution:
  - Preview services:
    - ArcGIS Server Map Services
    - ArcIMS Image Services
    - OGC WMS, SOS
    - GeoRSS
    - KML
  - Provide integration points for map viewer platforms
    - Portal for ArcGIS/ArcGIS.com Viewer
    - JavaScript, Flex, Silverlight
    - ArcGIS Desktop  ArcMap
Use Case: “I want to download data …”

Solution:
- Select area
- Select data
- Set options
- Deliver download link through email

• Based on Clip-Zip-Ship Service
• Extensible in Python
Use Case: “I want to share my resource…”

Solution:
- Register Servers or Services Directly
- Create metadata online
- Upload metadata
- Register catalog service for harvesting

• Support metadata standards:
  - INSPIRE
  - North American Profile
  - Dublin Core
  - Configurable
Use Case: “Is new data is available...?”

Solution:

• User specifies search criteria
• Give user link to a GeoRSS feed
• User subscribes to GeoRSS feed
• Bookmark searches in the browser
Use Case: “Is my resource is available…?”

Solution:
- Monitor Services
- Verify Implementation

- Performance and Scalability:
  http://resources.esri.com/enterprisegis/index.cfm?fa=performance.main

- FGDC Service Status Checker:
  http://registry.fgdc.gov/statuschecker/
What’s new at Version 1.2.5

• Open Government Data Integration
  - DCAT serving and harvesting
• Portal for ArcGIS Integration
  - Metadata
  - Federated Search
  - Synchronize Portals and ArcGIS Online
• Updated Metadata Support
  - ISO 19115-2
  - UK Gemini 2.2
• Updated Viewer to ArcGIS for Flex 3.5
Geoportal Server is OPEN SOURCE

http://esriurl.com/geoportalserver
The Road Ahead
Geoportal Server Roadmap

**Version 1.2.5 – Early April**
- Full DCAT Support
- PKI Authentication
- Include Flex Viewer 3.5 + fixes
- Metadata Profile fixes...

**Version 1.2.4 – UC 2013**
- Open Government Support
- Portal for ArcGIS integration
- Faceted Search
- Include Flex Viewer 3.0
- FGDC Service Checker integration

Next
- ArcGIS Online Apps
  - Metadata
  - Federated Search
  - Harvesting
  - CSW
Geoportal Server 1.2.5
Geoportal Server Roadmap

2014
• ArcGIS Online Metadata
• ArcGIS Online Federated Search
• Harvesting enhancements
• Search algorithm enhancements

Next
• ArcGIS Online Harvesting
• ArcGIS Online CSW
• Your requests on GitHub

Version 1.2.5 – Early April
• Full DCAT Support
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Got API?

https://github.com/Esri/geoportal-server/wiki/Components
Data Discovery Swiss Army Knife (aka Broker)
Go Beyond Metadata Searching

- Find Features in Feature Services, Geodata Services
- Find Articles in RSS/Atom Feeds
- Find (Non-)Geospatial (Social) Media (Video, Photo, …)
Federate Search from ArcGIS Portal and ArcGIS Online

- Manage federated catalogs in Geoportal Server
- Retrieve list from Geoportal Server
  http://gptogc.esri.com/geoportal/rest/repositories
- Add widget to ArcGIS Portal/Online search page
- Supports any catalog Geoportal Server can search:
  - OGC CSW
  - OpenSearch
  - Proprietary search interfaces
Synchronize Portals

- Geoportal as Broker Between ArcGIS Portals/Online
OGC CS-W Interface to Portal for ArcGIS and ArcGIS Online

- Harvest ArcGIS Online Using ATOM Feed
- Expose Content Through Geoportal CS-W
- Example: http://geoss.esri.com/postXML
Standards-based Metadata for Portal for ArcGIS and ArcGIS Online

- Add Geoportal Metadata Editor to on-premises Portal for ArcGIS
- Use Geoportal Server configuration and validation
- Store metadata in Portal for ArcGIS using API
Support Open Government Initiatives

• Support DCAT
  - Expose Catalog As - http://gptogc.esri.com/geoportal/dcat.json
  - Harvest DCAT – for example: http://www.doi.gov/data.json

• Provided Patch to Users

• Complete and Compliant in 1.2.5
Better Results with Term Frequency – Inverse Document Frequency

- Optimize the relevancy of search results
- Facilitate users to visualize data in the form of clusters

- TF-IDF: Frequency based numerical statistic used to determine the importance of a word in a document.
- Clustering: Grouping of search results
  - Maximize similarity within cluster
  - Minimize similarity between clusters
Q&A
Thank you...

- Please fill out the session survey:

  **Offering ID: 1314**

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  Paper – pick up and put in drop box