Architecture Best Practices for the ArcGIS Platform

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Session Topics

- Best Practices – People
- Best Practices – Process
- Best Practices – Technology
Best Practice: People
How People Use the ArcGIS Platform

Use Patterns as Framework

A Complete Integrated System

**DATA MANAGEMENT**
Collect, organize, and exchange data

**ANALYSIS**
Transform data into actionable information

**FIELD ENABLEMENT**
Get information into and out of the field

**VISUALIZATION**
Disseminate information where and when it is needed

**CONSTITUENT ENGAGEMENT**
Get feedback and make informed decisions
People at work have an identity.
<table>
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<th>Identity</th>
<th>Description</th>
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<tbody>
<tr>
<td><a href="mailto:dwrazien@esri.com">dwrazien@esri.com</a></td>
<td>e-mail</td>
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<td>1616</td>
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<td>dave.wrazien</td>
<td>Cloud File Share</td>
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</tr>
<tr>
<td>@dwrazien</td>
<td>Twitter</td>
</tr>
</tbody>
</table>
Identity in the ArcGIS Platform

Connect Users to Apps

Users

- Bryce Harrison
- Emily Mars
- Jacob Ruiz
- Jason Key
- Jay Tomas
- Jon Connor
- Kelvin Hernandez

Esri Apps
- Portal
  - Portal for ArcGIS / ArcGIS Online

Partner Apps
- Server
- Server
- Server
Incorporating Identities in Your Apps

Adding Code

Users
- Bryce Harrison
- Emily Mars
- Jacob Ruiz
- Jason Key
- Jay Tomas
- Jon Connor
- Kelvin Hernandez

Java Script
WPF
Android

Name: Jon Connor
Title: Project Manager
Organization: Star Consulting
Role: User
Defining Identities

Organizational Roles

- User
- Publisher
- Administration
- Analyst
- Public
- Viewer
- Editor
- ...

Standard Roles

New Custom Roles

Configured by You—Based on Your Business
Adding Identities to the Platform

Small Organizations

Users

- Bryce Harrison
- Emily Mars
- Jacob Ruiz
- Jason Key
- Jay Tomas
- Jon Connor
- Kelvin Hernandez

Import XLS / CSV
Adding Identities to the Platform

Large Organizations

Enterprise Identity Management System

Users

- Bryce Harrison
- Emily Mars
- Jacob Ruiz
- Jason Key
- Jay Tomas
- Jon Connor
- Kelvin Hernandez

Small Organizations

Avery, Francis, Avery.Francis@star-con.com, User
Ben, Bentz, Ben.Bentz@star-con.com, Analyst
Britney, Brown, Britney.Wrazien@star-con.com, User
Bryce, Harrison, Bryce.Harrison@star-con.com, Publisher
Carter, Henritzy, Carter.Henritzy@star-con.com, User
Christian, Beebe, Christian.Beebe@star-con.com, Publisher
Emily, Strunk, Emily.Strunk@star-con.com, Analyst
Emily, Mars, Emily.Mars@star-con.com, Publisher
Javon, Key, Javon.Key@star-con.com, User
Leverage Identity

Many to One

Shared Identity

My Corporate Identity

- dwrazien@esri.com  e-mail
- 1616  Time Card
- dave.wrazien  Cloud File Share
- dwrazien  CRM
- dwrazien1616  Payroll
- davew  Active Directory
- d_wrazien  ArcGIS
- @dwrazien  Twitter
Leverage Identity

One Shared by Many

Shared Identity

ArcGIS Community

Esri Apps

Partner Apps
Well, technically Anarchy is a form of governance...
1. Configure First
2. Customize Second
3. Create New Last
Implementation Process

Rapid and Agile

- Understand / Engage Mission & Priorities
- Understand Business Processes & SLAs
  - Distill Processes
  - Define Services
- Construct Common Services
- Develop Applications
- Rapidly Prototype
- Consider Other Technologies
  - Bus & Orchestration Tools
- Implement Standards
  - WSDL, UDDI, REST, XML, SOAP,
Best Practice: Technology
NOTES
1 GIS application servers should be configured for high availability.
2 Web servers should be load balanced and configured for high availability.
3 One-way GDB replication from Transactional GDB to Publication GDB. ETL from other databases may be necessary to enrich the Publication GDB. However in many cases, service level access to data sources will be consumed at the application level, foregoing the need for an ETL process at the data level.
4 Web Clients should discover content via GIS Portal and access found GIS Services (internal and external) via SOAP or REST.
5 ArcGIS Mobile clients enabled with editing tasks would access the transactional GDB.
6 ArcGIS EDN subscribers should maintain a local GDB for development purposes.
7 Local Clients should connect to the Transactional GDB via "Direct Connect".
- Supports developer creativity
- Individual “build” environment
- Promotes creative development of new applications without the fear of impacting other systems.

Defined: a limited scale and scope environment sufficient for the development of primary code and data modeling.
- Allows insight into what may break with patching, software upgrades, & etc.
- Promotes use of a QC/QA environment
- Supports performance testing
- Ensures a stable, extensible, and high performing system
Pattern Segregation

Defined: separate technology deployments by solution pattern

- Reduce risks
- Improve service delivery
- Reduced system resource contention

Typically SLAs will often determine which server deployments need to be separated.
Publication Geodatabase

- improved performance
- reduce data security risks
- reduce system resource contention

Defined: a unique instance of a transactional geodatabase used to support the dissemination of geographic data, services and applications.
- reduce system resource contention
- support QA/QC of published map content

Caching Environment

Defined: separate server(s) to support map cache creation and maintenance.
• Best Practices: People – **Leverage Identity**
• Best Practices: Process - **Rapid / Agile Development (configure before customize)**
• Best Practices: Technology - **Use Conceptual Reference Architecture**