



Esri International Developer Summit
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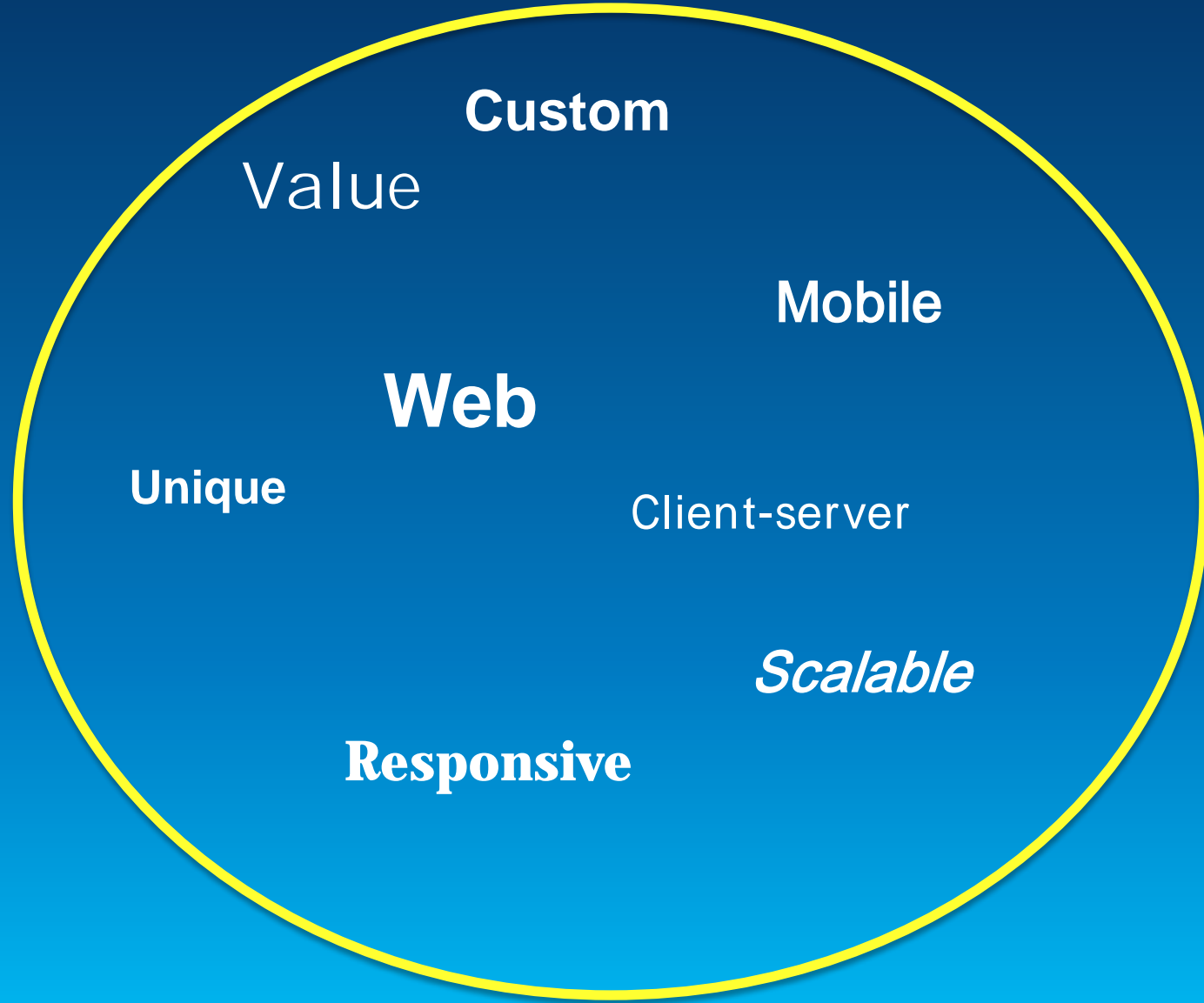
Extending Services in ArcGIS for Server

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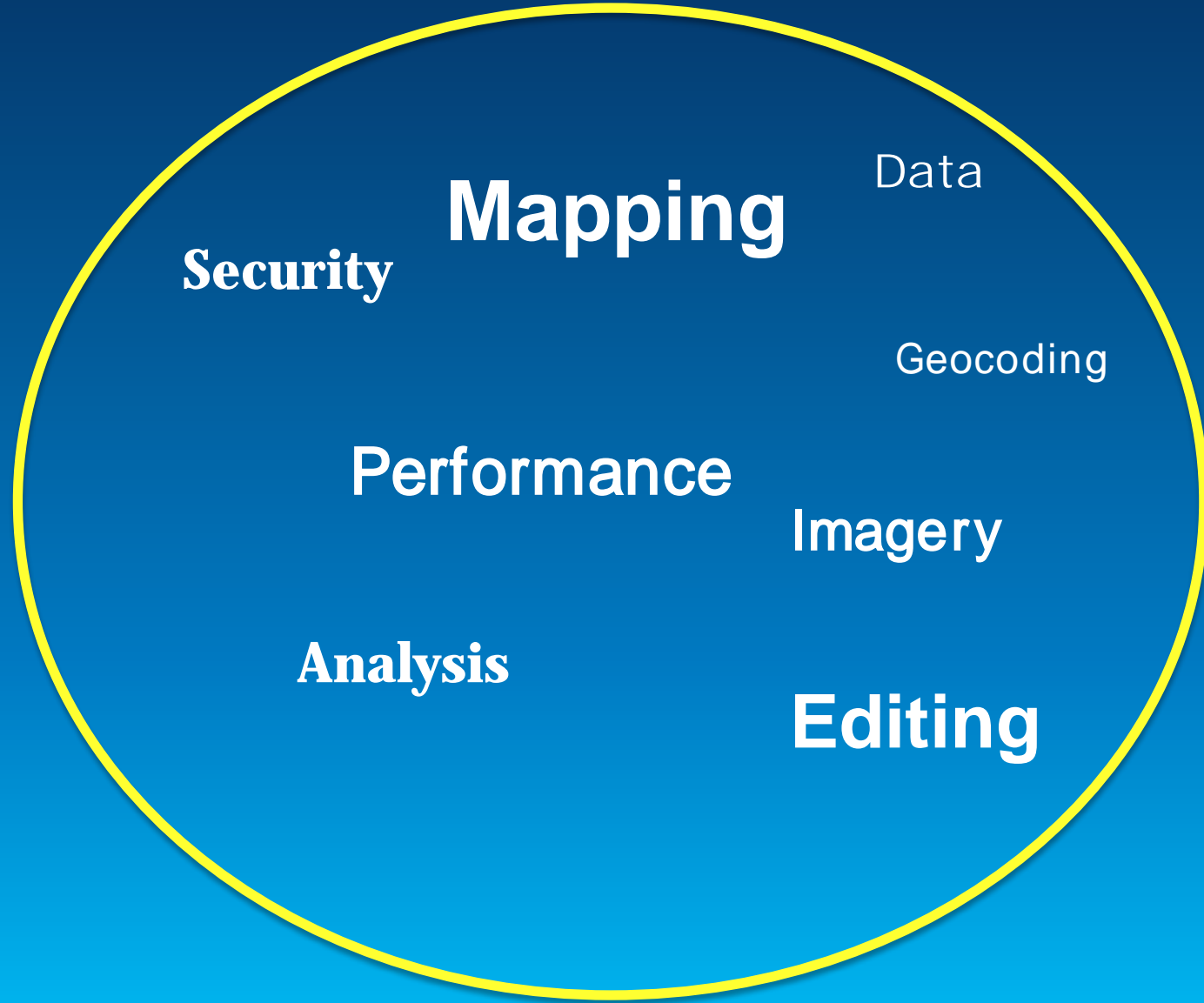
Introduction

- Hello
- What is an SOE?
- How do you create one?
- Advanced Topics

Does this sound like your application?



Server provides....



but if you need more....

Control over your edits.....

Security over my data....

Performance.....

Functionality....

then you may need to create an SOE.....

What is an SOE?

What is an SOE?

- **Clients send input, SOE sends output**
 - Like a “stored procedure” for GIS
- **Custom code you have written**
- **Runs in a map or image service process**
- **Exposed through Esri’s REST handler**

Two options for writing something like this

- Geoprocessing
- SOEs

Geoprocessing

- Python = Easy
- Re-use
- Analysis

SOEs

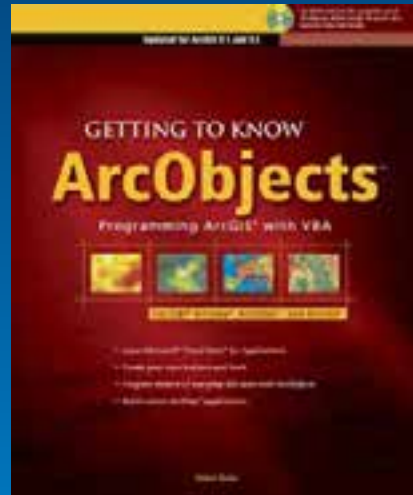
- **In Process = Fast**
- **Code re-use**
- **ArcObjects = Powerful**

Examples

- Enforce business rules on edits
- Restrict access, insert definition queries for each user
- Work with complex geodatabase features, topologies, networks, etc

Creating an SOE

Requirements



IServerObjectExtension

- **Init = get service references**
- **shutdown = clean up resources**

IRESTRequestHandler

- `handleRESTRequest` = code linking to your business logic
- `getSchema` = json about your SOE

Demo: Creating an SOE

Deploy an SOE

- Create *.soe file and deploy in Manager



The screenshot displays the ArcGIS Server Manager web interface. At the top, there is a navigation bar with tabs for 'Services', 'Site' (which is active), 'Security', and 'Logs'. Below this, a secondary navigation bar contains 'GIS Server', 'Web Adaptor', and 'Software Authorization'. On the left side, a sidebar menu lists various configuration options: 'Directories', 'Configuration Store', 'Clusters', 'Machines', 'Data Store', and 'Extensions' (which is highlighted). The main content area is titled 'Extensions' and includes a 'Help' link. It contains a paragraph explaining that ArcGIS Server supports extensions like SOEs and Geoprocessing tools. Below the text are two buttons: 'Add Extension' and 'Debug Settings'. At the bottom, there is a table with columns for 'Name', 'Extension', 'Description', and 'Type'. The table is currently empty, displaying the message 'No Extensions are currently registered on this site.' and navigation arrows at the bottom.

ArcGIS Server Manager Services **Site** Security Logs

GIS Server Web Adaptor Software Authorization

Directories
Configuration Store
Clusters
Machines
Data Store
Extensions

Extensions [Help](#)

ArcGIS Server supports extensions such as Server Object Extensions (SOEs) and Geoprocessing tools. SOEs allow you to add additional features to map services, while Geoprocessing tools allow you to create web services for performing analysis.

Click **Add Extension** to deploy your extension to ArcGIS Server.

Add Extension **Debug Settings**

Name	Extension	Description	Type
<i>No Extensions are currently registered on this site.</i>			

◀ ▶

Demo: Deploy an SOE

Debugging and Logging

Debug Settings

- How it works
- Delay Startup
- Port Range (Java)

Logging

- Log everything
- Unique error codes
- ServerUtilities (Java)
- SOESupport (.Net)

Demo: Logging and Debugging

Advanced: Getting user information

- Getting user name
 - For SOEs being built for security reasons

How to:

- Instantiate *EnvironmentManager*
- Call *getEnvironment*
- Call *getUserInfo* and get the *name* property.

Summary

- **SOEs**
 - **Allow you to take inputs, respond with your output**
 - **Powerful**
 - **Good performance**

Survey

- <http://www.esri.com/events/devsummit/session-rater>
- Enter: “Extending Services in ArcGIS for Server”
- 10 seconds
- Comments really welcome

FYI: Slides for this presentation are available at:

<http://1drv.ms/1fnkpTK>



Understanding our world.