



ESRI California | Hawaii | Nevada

Regional User Group Conference

February 3–4, 2010 • ESRI • Redlands, CA

## ArcGIS Server - The Road Ahead (Part One)

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# Agenda

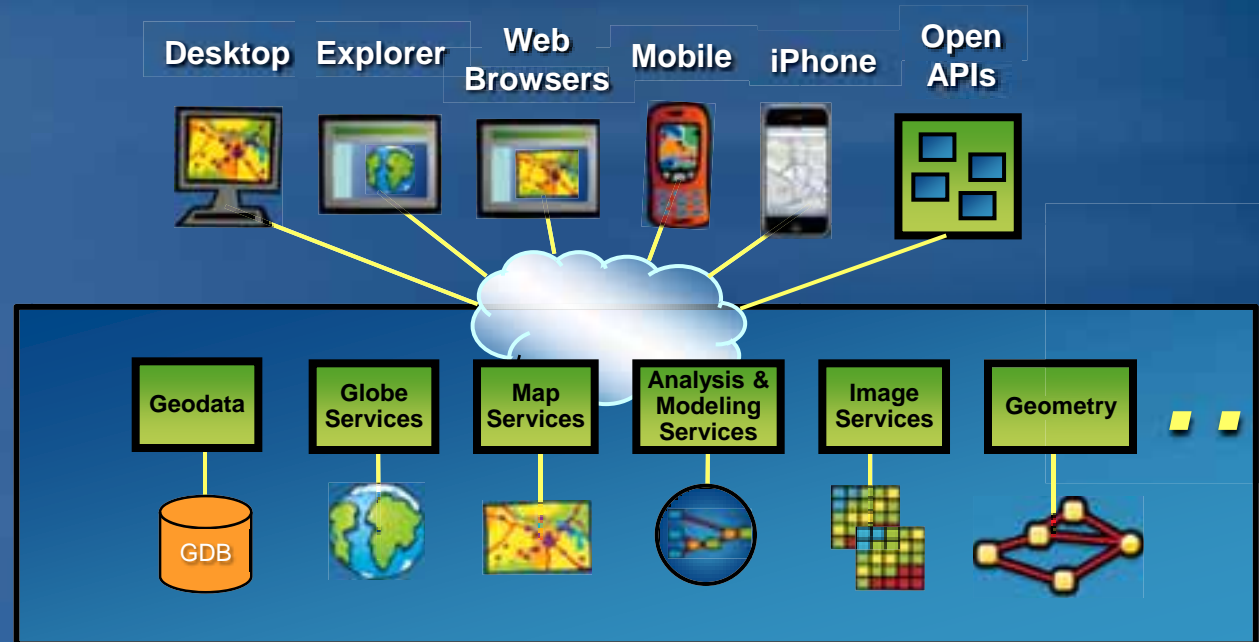
- **ArcGIS Server 10 overview**
- **Map service enhancements**
- **Caching workflow improvements**
- **New ArcGIS 10 Services**
- **More service enhancements**
- **Web application development**
- **Geodatabase enhancements**

# ArcGIS Server 10

Powerful **GIS Services** and widespread **Applications**

**Applications**

**Services**



# **MAP SERVICE ENHANCEMENTS**

# Optimized Map Services now support...

- **Maplex Labeling**

- Similar placement performance
- Reported as a high severity warning
- Recommended for cached services only

- **Cartographic Representations**

- Core geometric effects are supported
- Reported as a medium severity warning
- Recommended for cached services only





# Standalone Tables

- Are accessed as part of a Map service
- Can be queried using SOAP or REST
- Can be used to navigate related tables

Map contains a Stand-alone table (Meter fault)

OBJECTID	DETAILID	DESCRIPTION	CAUSETEXT	SWR_PNT_ID	PROBLEM
1	100131989	00000100	UNKNOWN - CANNOT BE DETERMINED	51481	500
2	8461989	00001938	WIND	347014	2388
3	1454989	00001207	WIND	37158	1823
4	7261989	00000000	WIND	8648	1569
5	751989	0000111	PRIMARY CABLE FAILURE	300903	2076
6	8021989	0000148	BROKEN CONDUCTOR	20143	448
7	8061989	0000026	TREE CONTACT	20667	2190
8	7011989	0000107	TRANSFORMER FAILURE	578489	600
9	8461989	0000140	POLE FAILURE	102911	867
10	8871989	0000042	PRIMARY CABLE FAILURE	378021	438

Table: METER\_FAULT (ID: 18)

Query METER\_FAULT:

Filter Geometry:

Where:

Result Options:

Return IDs only: ☐ True ☒ False

Return Geometry: ☐ True ☒ False

Output Spatial Reference:

Return Fields (Comma Separated):

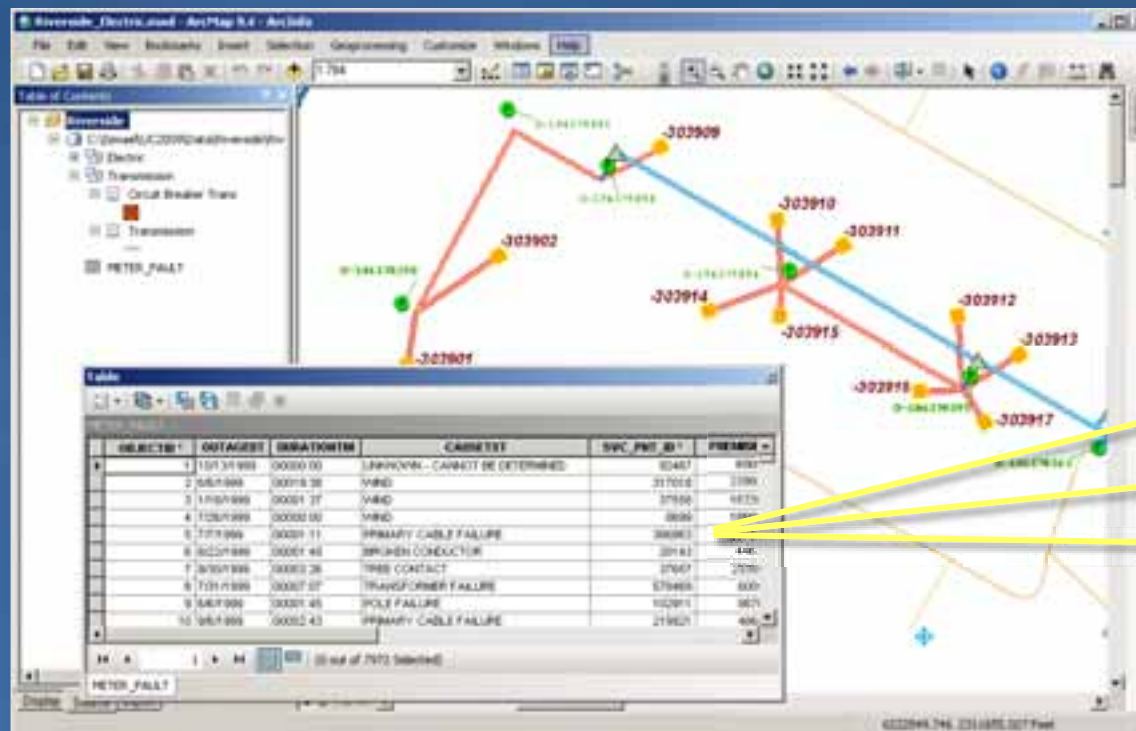
Format:

4 results: 400

Query capabilities available through REST and SOAP

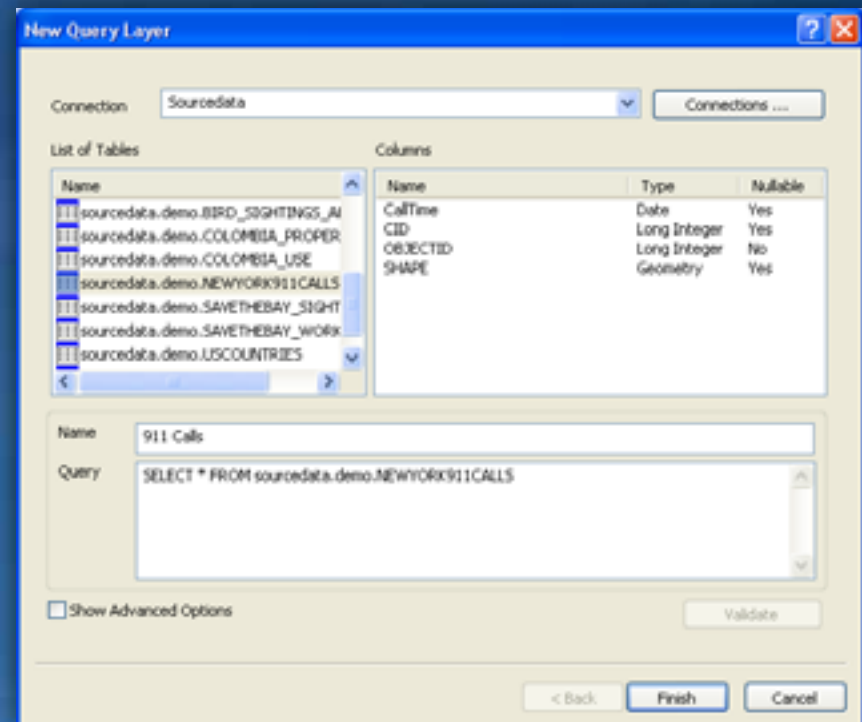
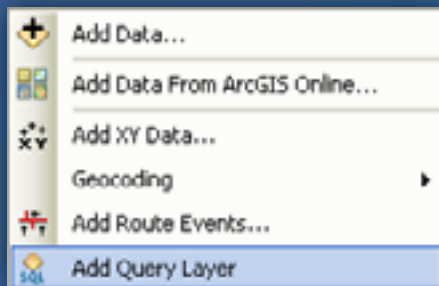
# Attachments

- Are associated with a feature
  - Features can have zero to many attachments
    - Images, video, PDF (or other valid MIME types)
- Can be queried and edited with web and mobile clients
- Are exposed using Map and Feature services



# Query Layers

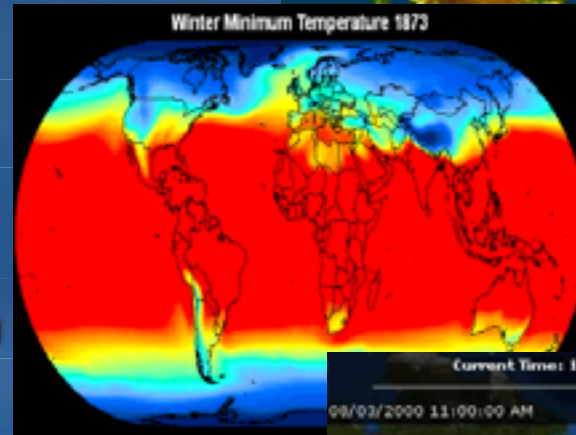
- Provide direct access to spatial data from a database
  - Data does not need to be registered with the geodatabase
- Are defined by a SQL query
- Are published as a layer in a Map service
- Can be used by developers in application development





# Time aware services

- Provides simple temporal mapping
  - Maps can now be time aware
    - Using time-enabled layers
- Enhances the existing ArcGIS system
  - Clients visualize the map by rendering data or displaying an image
    - Web API - FLEX, JavaScript, Silverlight
    - Desktop, Server, Engine products



**CACHING**

# Compact Caches

- **Store tiles in compact, continuous file streams (“bundles”)**
  - Bundle is 128 X 128 tiles, or 16,384 tiles
- **Use a tile handler web service to access tiles**
  - Virtual cache directory not used
- **Benefits**
  - Easier to transport
  - Less storage
  - Fewer files to manage
  - Smaller size on disk
  - Generally faster to create
  - Less fragmentation
- \* **Default is still Exploded**
  - Cannot mix exploded and compact storage formats in the same cache

- **Creates JPEG tiles unless transparent pixels detected**
  - If transparent pixels detected, PNG32 tiles created
- **Reduces storage space**



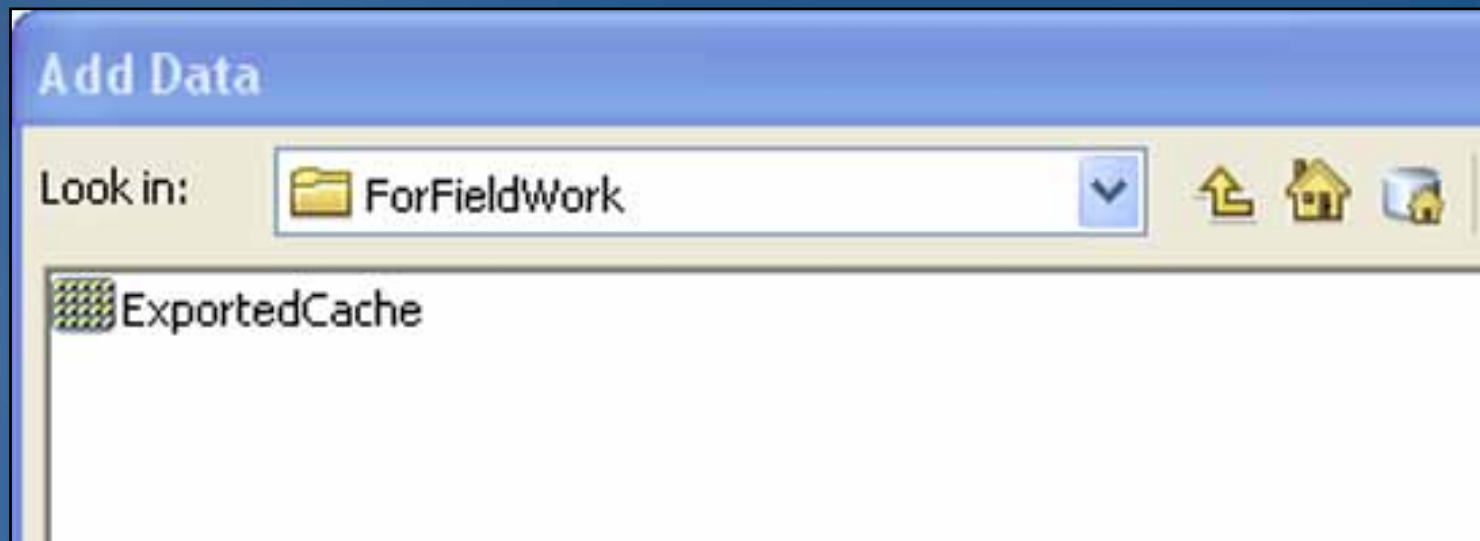
# Export and import caches

- **Move subsets of tiles between caches**
  - Export a subset of tiles to be imported into master cache
- **Use geoprocessing tools**
  - Export Map Server Cache
  - Import Map Server Cache
- **Tiling scheme should match**
- **Saves time**
  - Specifically with larger scales



# Disconnected Caches

- Export a cache for disconnected field work
  - Export to compact format is recommended
- Are represented as a raster dataset in ArcGIS
  - Browse to cache directory
  - Use the Add Data button or new Search interface

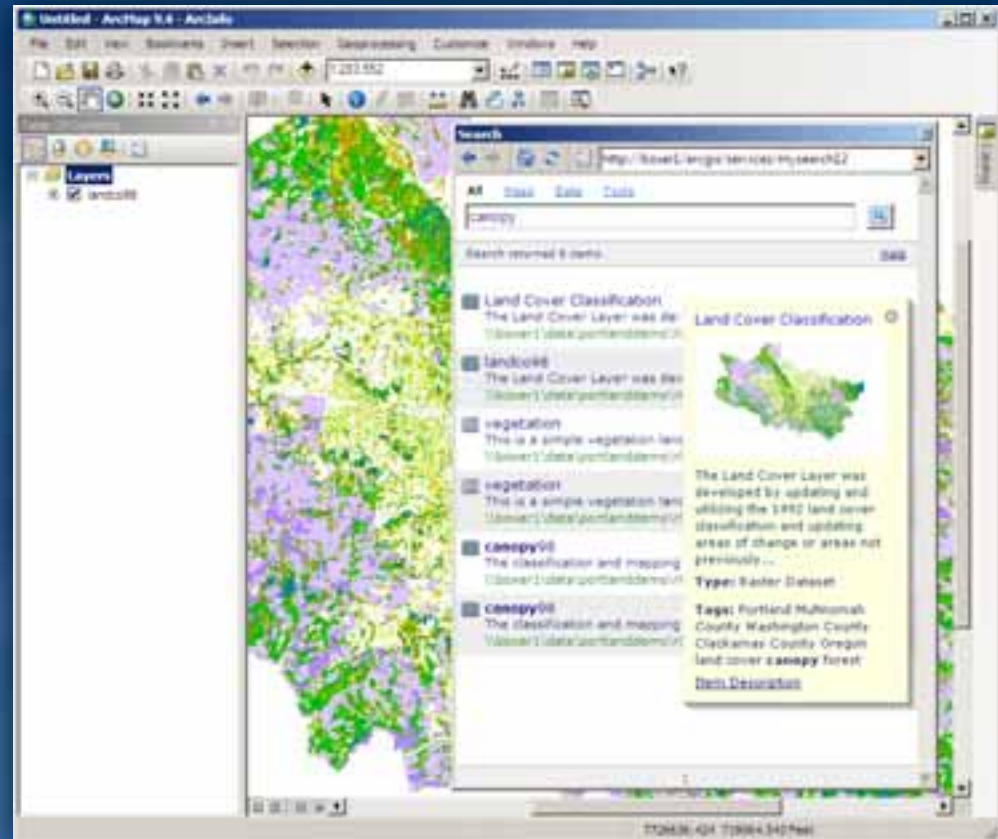


# **DEMO – CACHING ENHANCEMENTS**

# **NEW SERVICES AND MORE SERVICE ENHANCEMENTS**

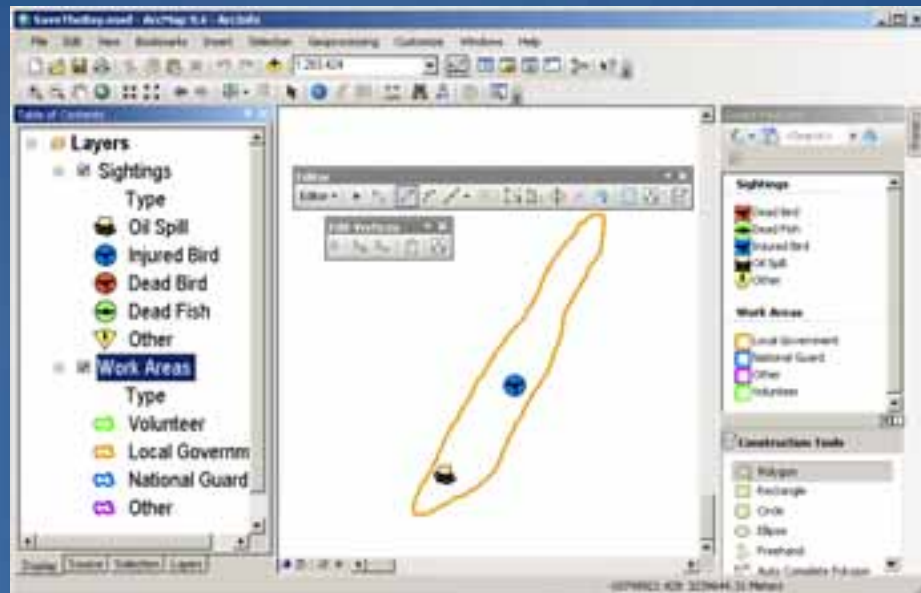
# Search service

- Can be used to:
  - Build a centralized Index of shared GIS Resources
    - Exposed as a centralized service in the enterprise
- Searches:
  - Local desktop resources
  - Shared enterprise resources
  - ArcGIS Online
  - ArcGIS Server Geoportal Application



# Feature service

- A new out-of-the-box service for web editing
- Uses template based editing over the web
- Provides clients a simple view of the Geodatabase
- Fast and Scalable
- Uses a last-in wins editing model





# **DEMO – FEATURE SERVICE EDITING**

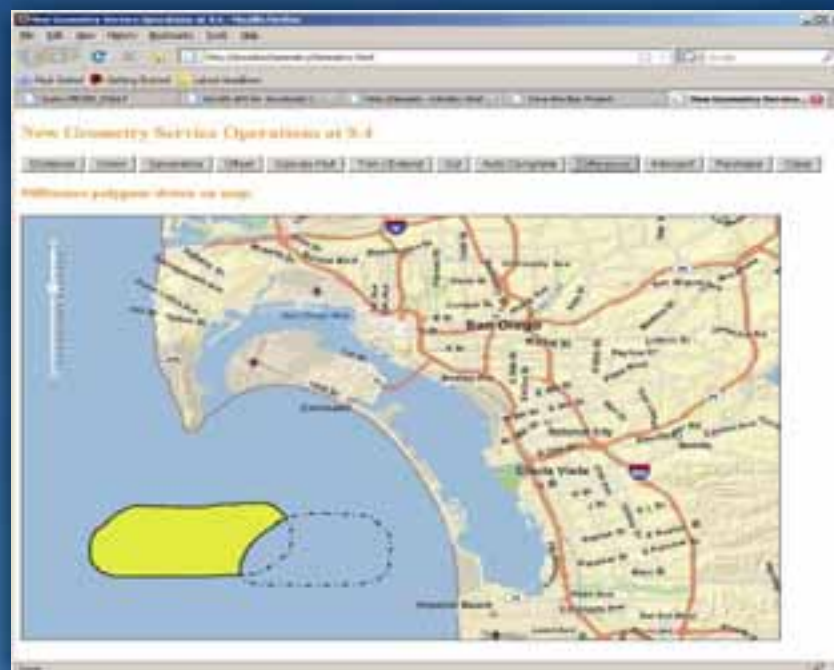
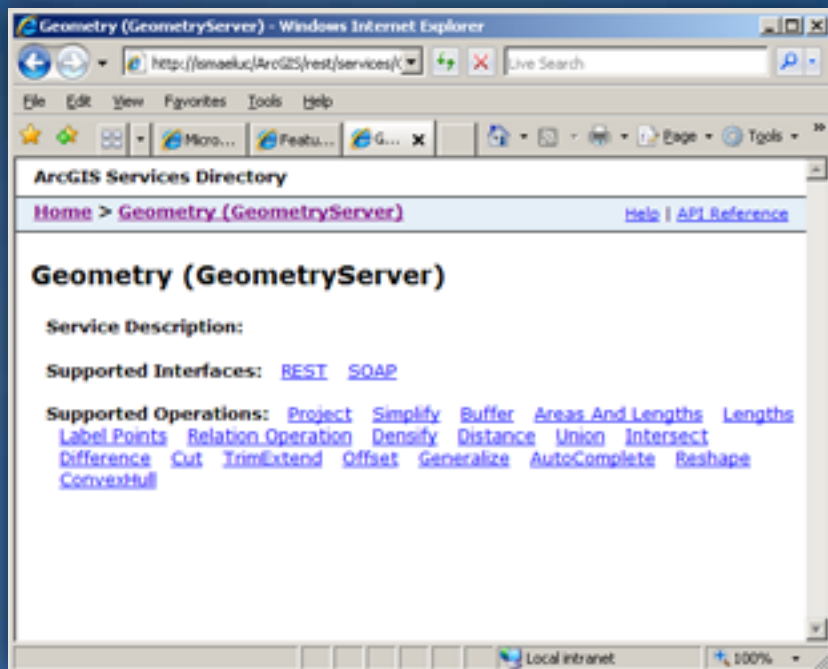
# Editing in ArcMap using the Feature service

- ArcGIS Server delivers layers, data, feature templates and symbology
- ArcMap has an easy to use local editing user experience
  - Streamlined replication under the hood
  - Supported by both the Feature and Geodata Service



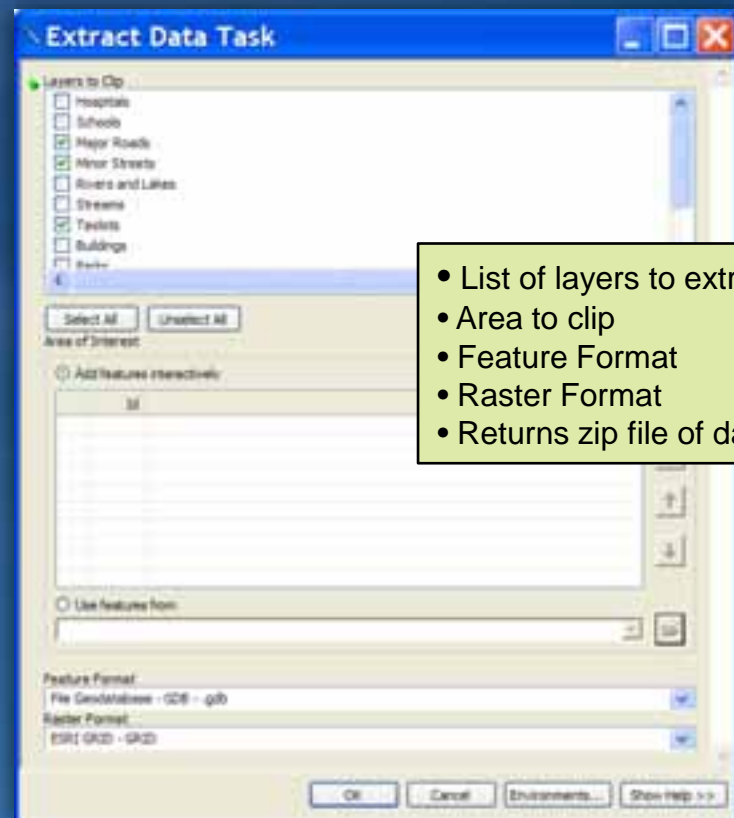
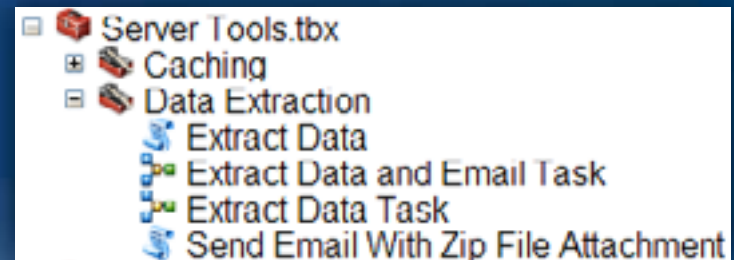
# Enhanced Geometry Service

- New operations to support web editing (and more...)
  - Union, Intersect
  - Trim / Extend, Autocomplete
  - Reshape, ConvexHull
  - Cut, Offset, ...



# Geoprocessing service enhancements

- **Extract Data Task**
- **Support for “Multivalue of String” data type**
  - Enables a list of layer names
- **Python Mapping Module**
  - Ability to write scripts tools that open, modify, print map documents
- **Improved performance of returning large feature sets**
  - Using JSON and AMF

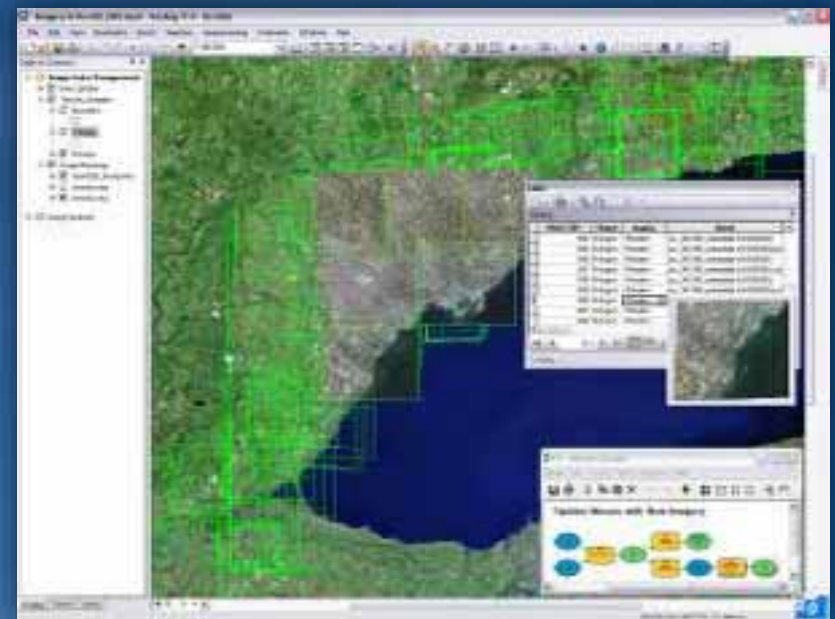
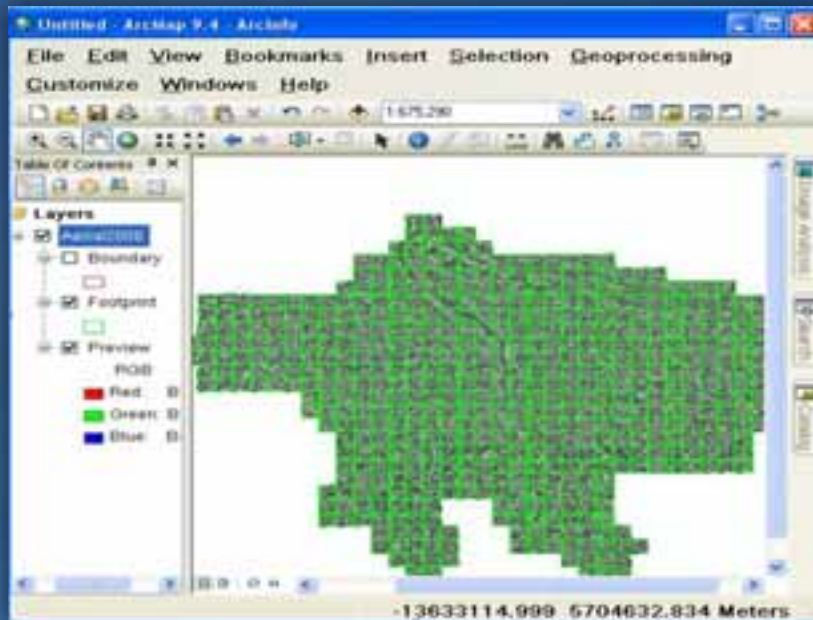


- List of layers to extract
- Area to clip
- Feature Format
- Raster Format
- Returns zip file of data



# Image Delivery and Analysis

- **New mosaic dataset**
  - Ability to manage large external image collections using the geodatabase
  - Publish as image services
  - Perform mosaicing and analysis on the fly
  - Integrated into ArcGIS Server
    - Exposed via Web APIs

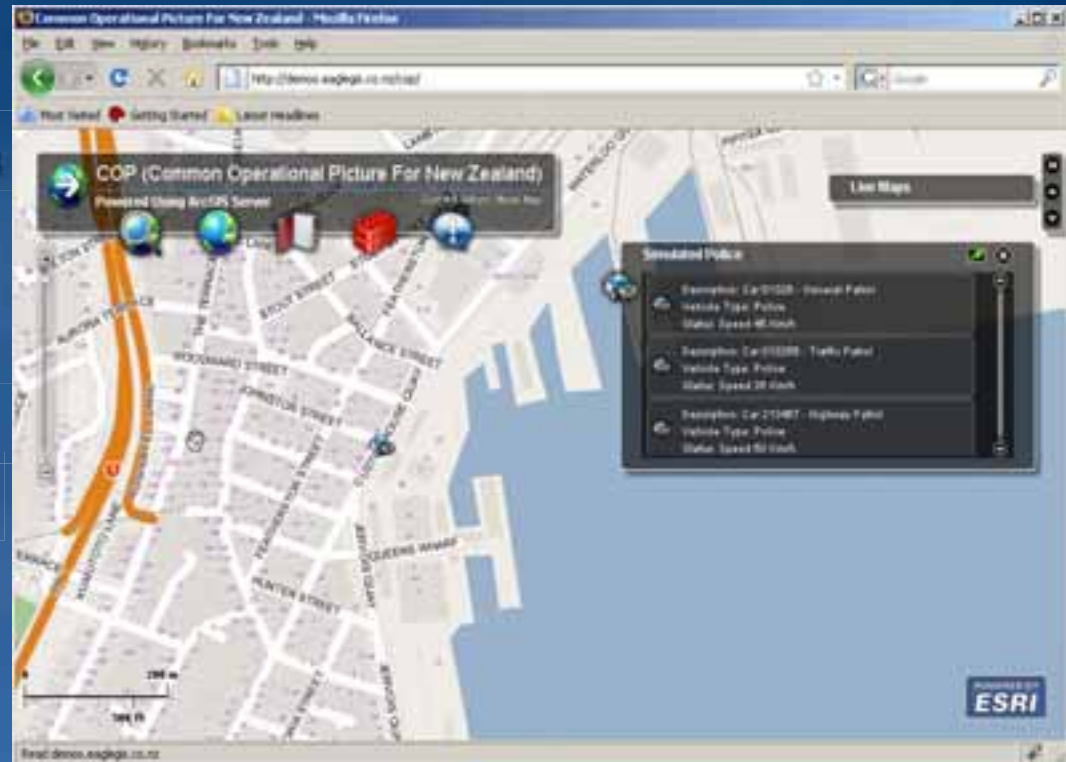




# WEB APPLICATIONS

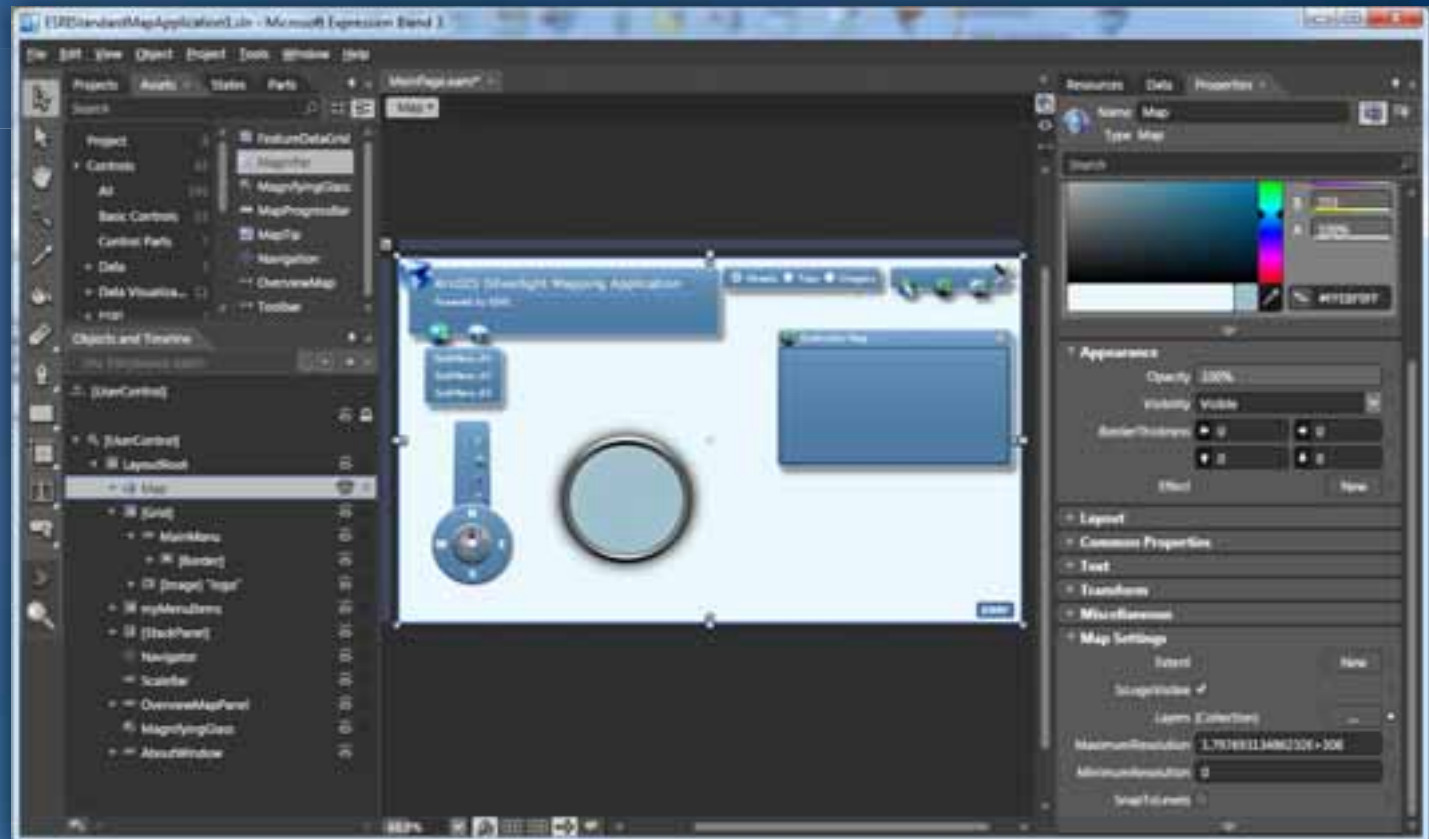
# Flex Viewer

- Configurable application
  - Via XML files
  - Add maps and widgets as needed
  - Skinable
- Extensible framework
  - Create your own widgets
- Powered by ArcGIS Web API
- Sample at 9.3.1
- Part of the product at 9.4



# Silverlight Web Mapping Templates

- Drag & Drop Application Creation Experience
- Builds on the Expression Interactivity SDK
  - Behaviors
  - Actions
  - Triggers



# Web Mapping APIs

- **JavaScript, Flex, Silverlight 2.0 releases**
- **Functionally enhanced to work with 10 GIS Services**
  - Editing
  - Time
  - Imagery
  - Network Analysis
- **Enhanced object model**
  - Uniform simple model across all APIs
  - Powerful Feature Layer
  - UE Widgets – Editor, Time Slider, ...
- **Upgraded to work with new technologies**
  - Silverlight 3, Flex 4, Dojo 1.3, FireFox 3.5, ...

# Web ADF enhancements

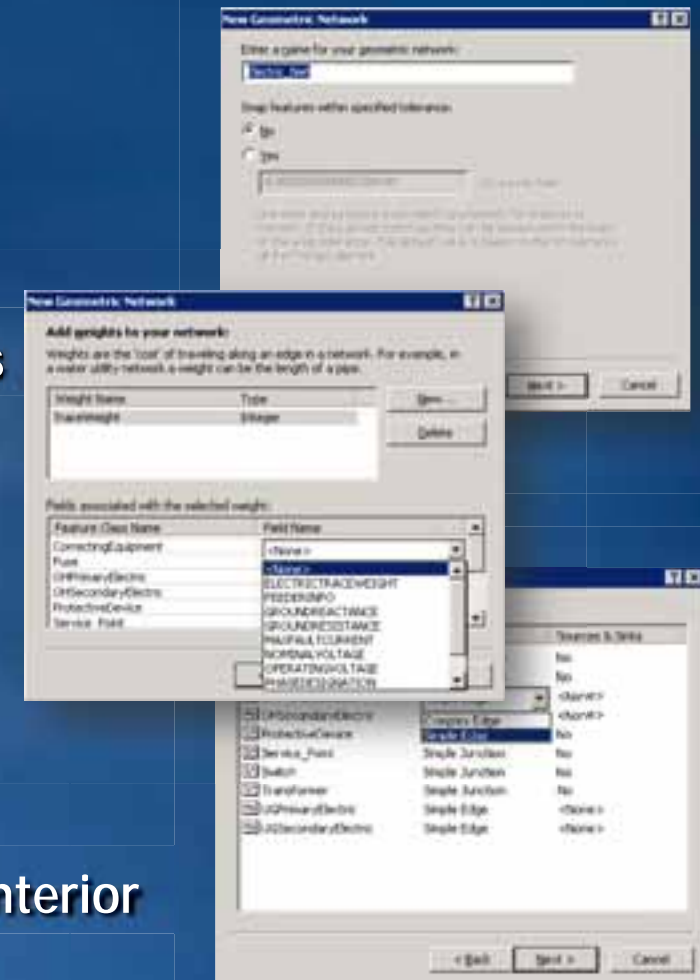
- **Key customer requested functional enhancements**
  - Tables, Relationships, Domains
- **Performance and Scalability Improvements**
- **Improved client side Javascript (*Java Web ADF*)**
- **Support for 64 Bit Applications**



# **GEODATABASE ENHANCEMENTS**

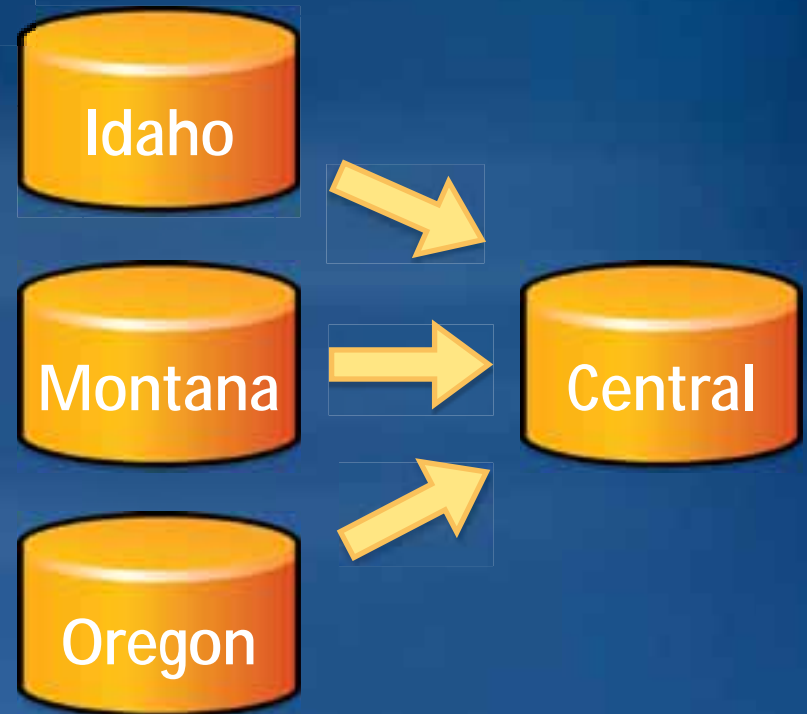
# Geodatabase behavior enhancements

- **Geometric networks**
  - New streamlined wizard
  - Scalable to larger number of features
- **Topology**
  - New topology rules
    - Area must contain one point
    - Line must be inside area
    - Point must be disjoint
    - Line must not intersect with line
    - Line must not intersect line or touch interior
    - Point must be coincident with point



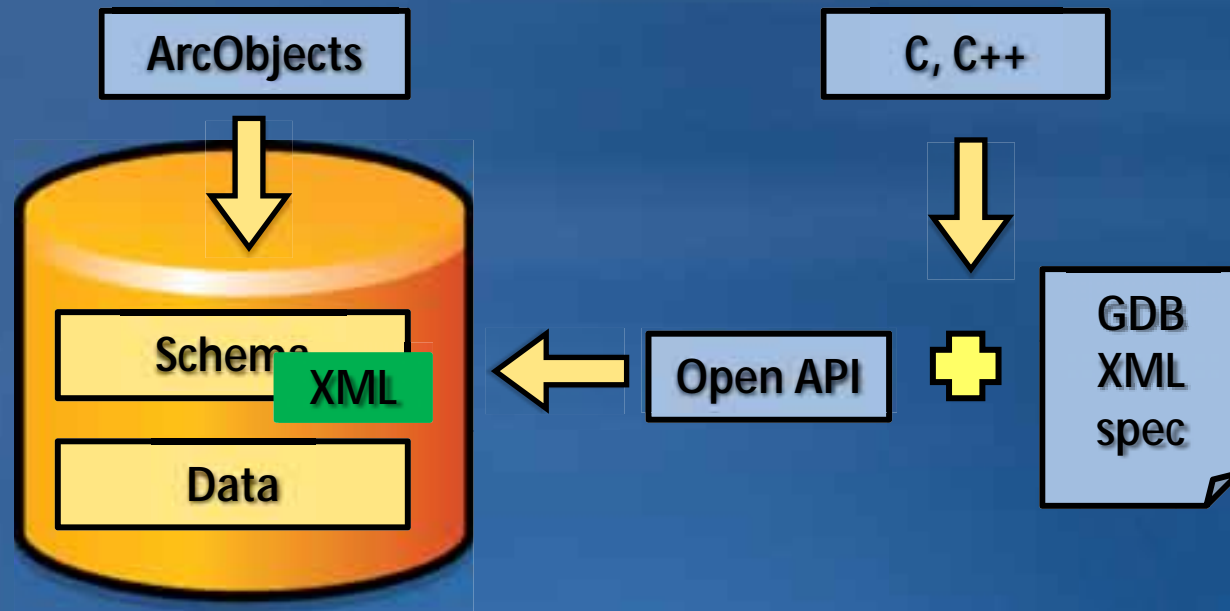
# Geodatabase Replication

- Improved workflows for centralized Geodatabases
  - One-way replication child to parent
  - One-way replicas using Archiving
  - Schema mapping across replicas
- Improved field workflows
  - Non-versioned data support



# Open File Geodatabase API

- Can be used to read geodatabase data, and update simple features
  - ArcObjects is not required
  - Uses XML schema of the geodatabase



***QUESTIONS***