GIS

The Geographic Approach for the Nation

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Getting Started with ArcGIS Server

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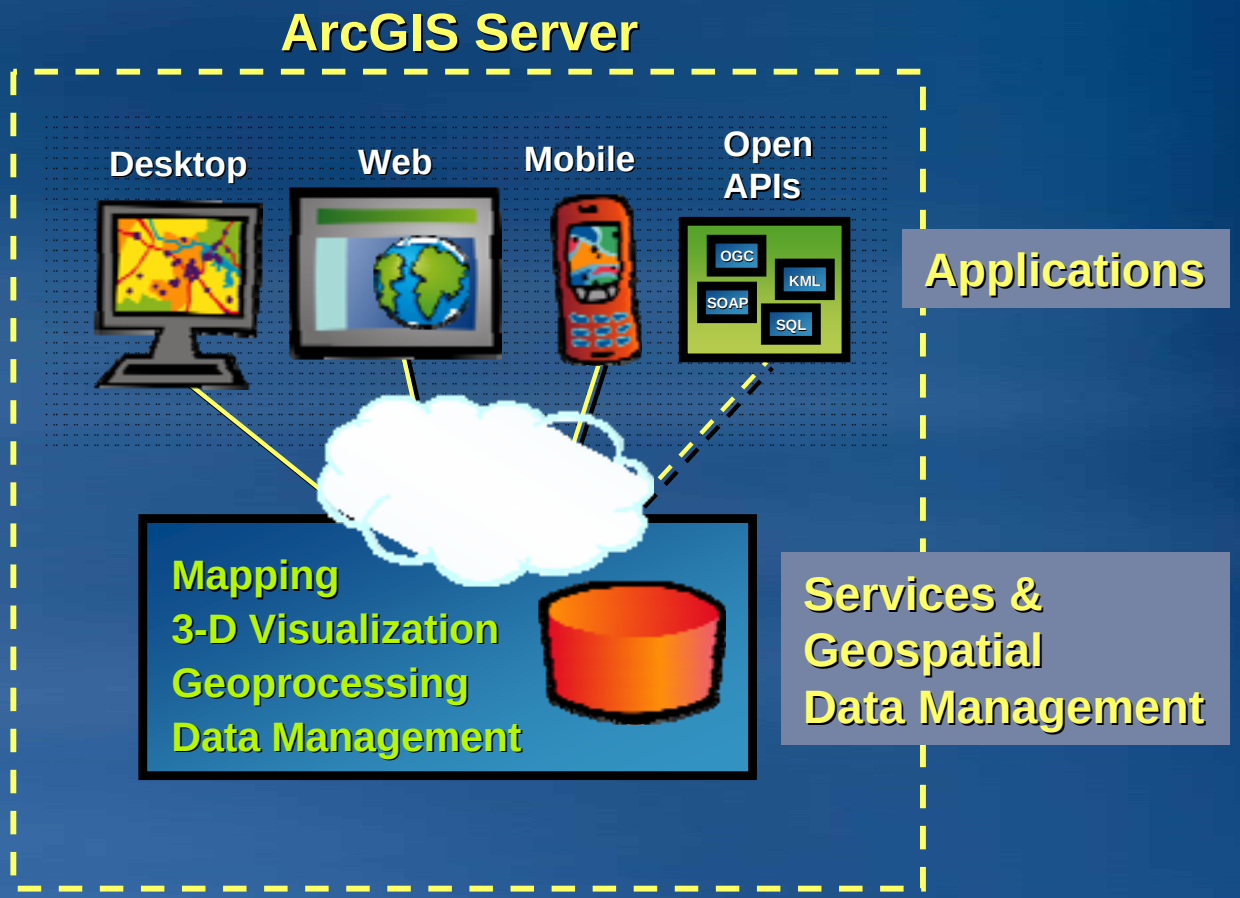
Presentation Roadmap

- Overview of ArcGIS Server 9.3.1
  - ArcGIS Server Resource Center
- What are GIS Services?
  - Publishing a Service
- Using GIS Services with Desktop and Web Clients
  - Creating a Web Mapping Application
- Types of GIS Services
  - Working with ArcGIS Server Services
- Options for Building Web Clients
  - Create a Mashup
- Installation and Configuration (time permitting)

ArcGIS Server

Complete & interoperable Server-Based GIS

- Enterprise ready
- Open API's
- Support for IT, Web and Industry standards
- Scalable
- High performance



Making GIS Knowledge Available To Anyone . . .

What is ArcGIS Server?

- **Author** ArcGIS files in a familiar environment (ArcMap, ArcGlobe, ModelBuilder)
- **Serve** ArcGIS files (.mxd, 3dd, .tbx, etc.) as Geoservices
- **Use** in a wide variety of clients
  - Desktop
  - Web
  - Mobile

What resources are available?

- Resource Center
- ArcGIS Online
- Product documentation
- Support

ArcGIS Server Resource Center

- Central location for ArcGIS resources
- ArcGIS APIs
  - JavaScript
  - Flex
- Sample GIS Server
- ArcGIS Online
- Help
- Blog and Code Gallery
- Support
  - Forums
  - Technical articles
  - Software updates

http://resources.esri.com

DEMO: ArcGIS Server Resource Center

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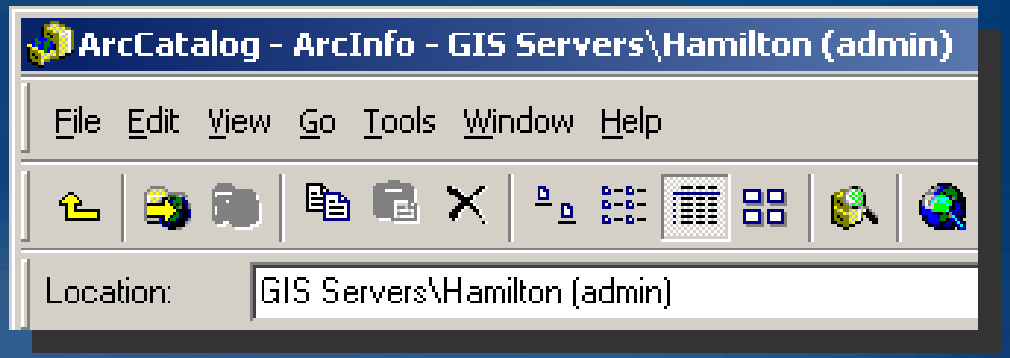
What are GIS services?

- GIS Service = GIS resource running on a server
  - vs. GIS application on your local computer
- Almost any GIS operation that you can do locally may also be run using a service

How do I Manage my server?

- **ArcCatalog (Desktop)**
  - Manage and publish services
  - Modify server configuration
- **ArcGIS Server Manager (Web)**
  - Manage and publish services
  - Modify server configuration
  - Create mobile and web applications
  - View logs
  - Manage security



What clients can I use with ArcGIS Server?

- **Desktop client**
  - ArcMap, ArcGIS Explorer, ArcReader, ArcGIS Engine application

- **Web Application**
  - Server based: .NET, JAVA
  - Browser based: JavaScript / Flex / Silverlight via REST

- **Mobile client**
  - ArcGIS Mobile application for Windows Mobile devices
  - .Net SDK for Mobile and Tablet platforms

- **OGC clients (via WMS, WFS, WCS, KML)**
  - OpenLayers, Gaia, Google Earth…

DEMO: Publishing a service

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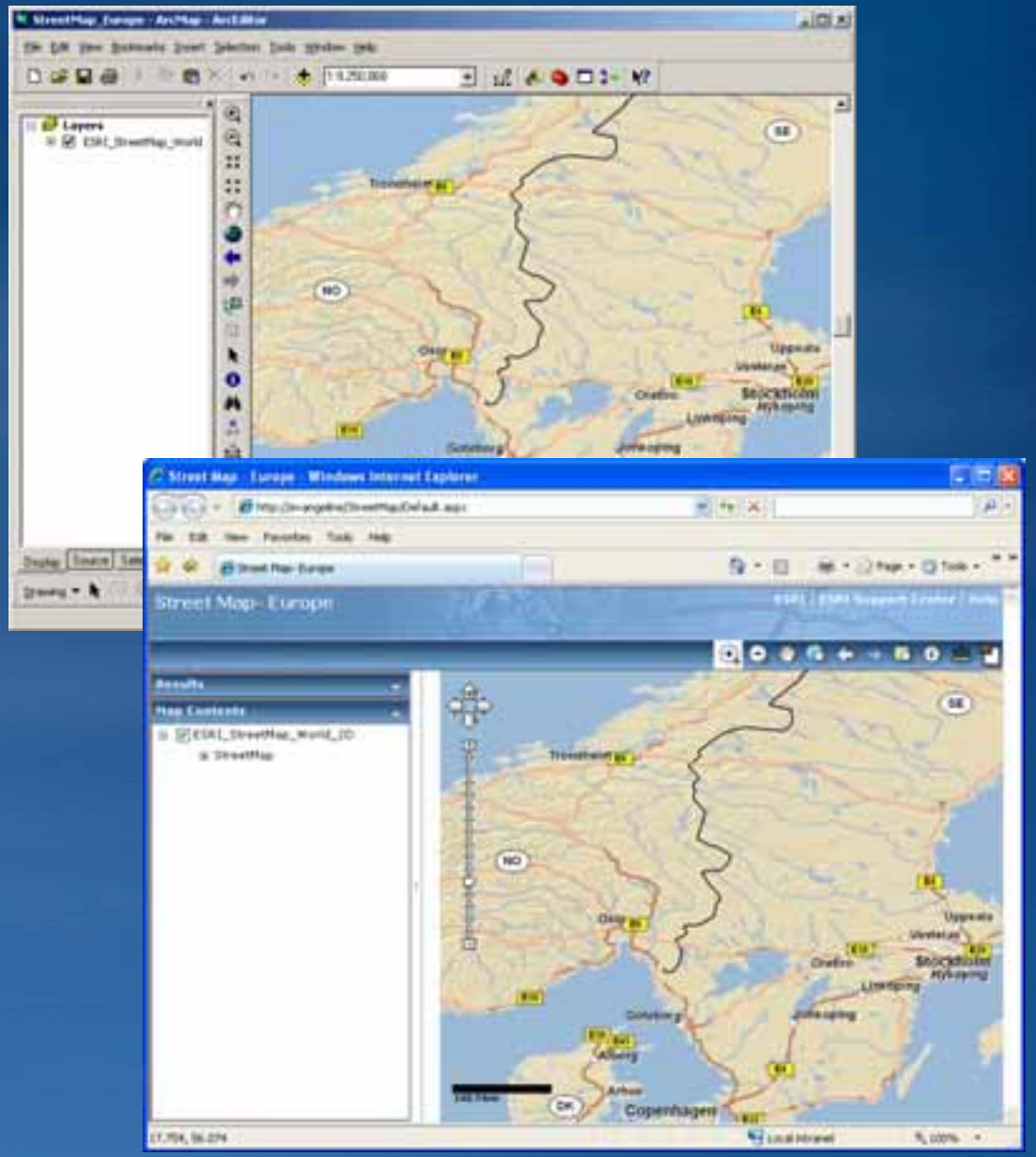
Using GIS services

- Desktop clients
  - ArcGIS Explorer
  - ArcMap
  - ArcReader
  - ArcGIS Engine application
  - Others…
- Mobile clients
  - ArcGIS Mobile application
- Web browsers
  - Web mapping application
  - Custom Web applications

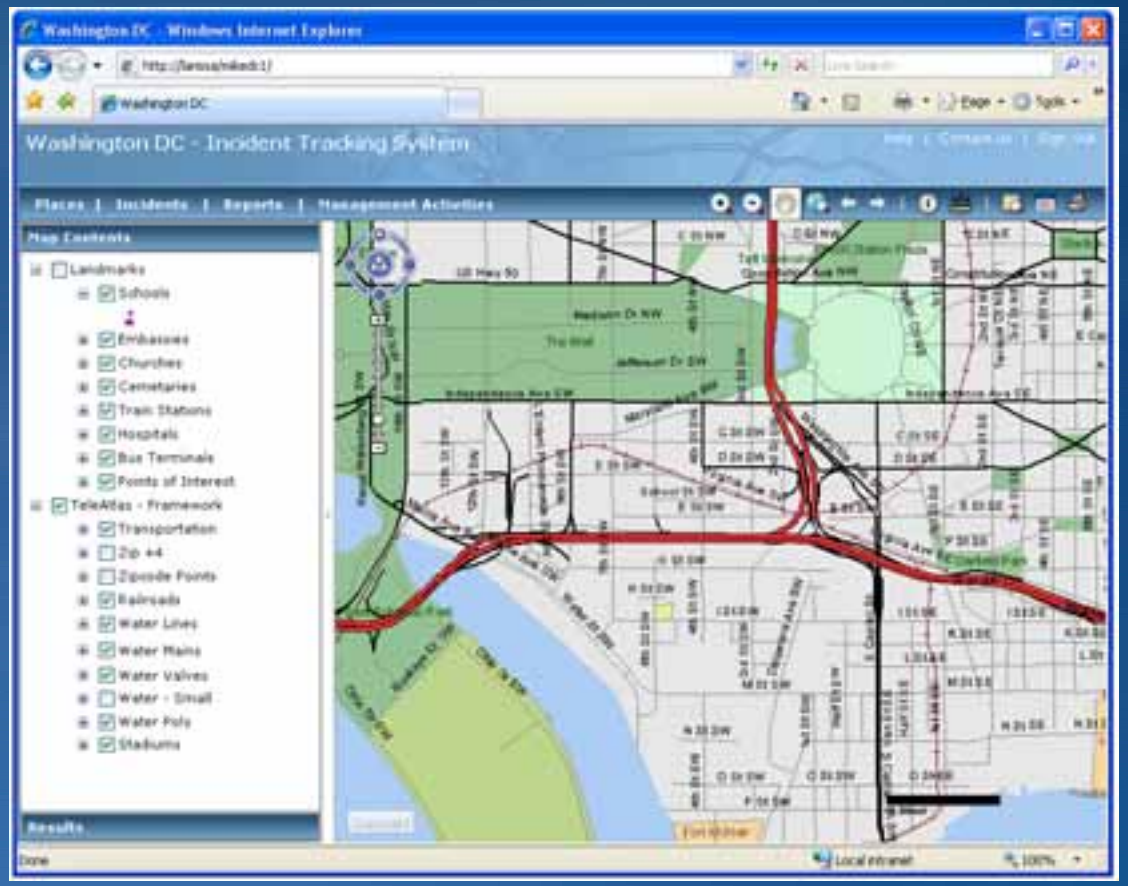


Using GIS services in web applications

- Server based
  - ArcGIS Server Web ADF for the Microsoft .NET Framework
  - ArcGIS Server Web ADF for the Java Platform
  - Create using
    - ArcGIS Server Manager
    - Development environment (Eclipse, Microsoft Visual Studio, etc.)
- Browser based using REST
  - ArcGIS JavaScript API
  - ArcGIS JavaScript API Extension for the Google Maps API
  - ArcGIS JavaScript API Extension for Microsoft Virtual Earth
  - ArcGIS Flex API
  - Create using
    - JavaScript editor or text editor
    - Adobe Flex Builder

What can you do with a server based Web Mapping Application?

- Use many kinds of services
  - ArcGIS Server, ArcIMS, WMS, ArcWeb Services, etc.
- Many tasks
  - Search and Query
  - Geoprocessing
  - Printing
  - Data editing
  - Finding addresses
  - Finding a place name



DEMO: Creating a Web Mapping Application

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What types of services can ArcGIS Server offer?

Map

View or query a 2D map on the server

Globe

View or query a 3D globe on the server

Geocode

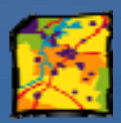
Perform address matching on the server

Geodata

Perform data replication, extraction, or query over the intranet or Internet

Geoprocessing

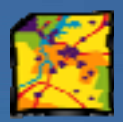
Run a tool or model on the server and get the results back



Image

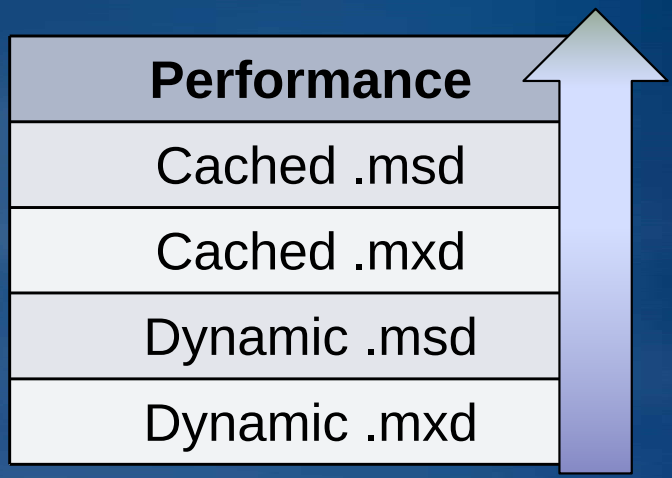
Provide access to raster data though a Web service

What do I need to author?

	Service type	Published using
	Map	Map document (.mxd, .msd, or .pmf)
	Globe	Globe document (.3dd)
	Geocode	Locator (.loc file or geodatabase)
	Geodata	Geodatabase connection (.sde) or Map document with geodatabase layer
	Geoprocessing	Toolbox (.tbx) or Map document (.mxd) with tool layer
	Image	Raster dataset or layer file (.lyr) or image service file (.iscdef)

Optimized map services for dynamic maps

- Use a new high performance map engine (9.3.1)
- Resource is map service definition file (.msd)
  - Map Service Publishing toolbar
  - Still based on a well-designed map document
- MSD-based map services support:
  - Mapping, WMS, KML
  - Dynamic drawing
  - Caching
- Still use MXD-based services for:
  - WFS, WCS, mobile data access, geodata access, geoprocessing, network analysis



DEMO: Working with ArcGIS Server services

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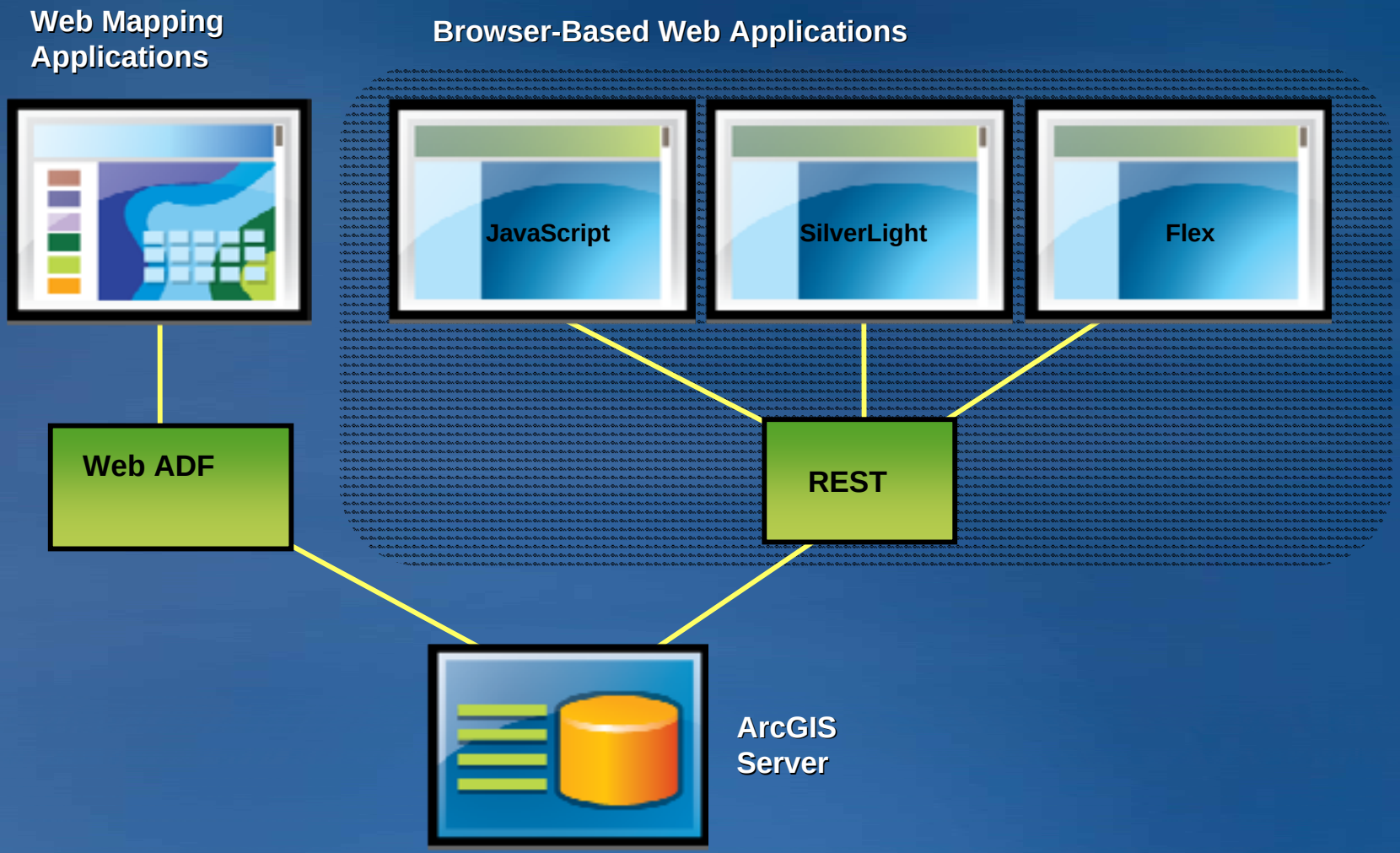
ArcGIS Server Web Development

- Options for building web clients



What are browser-based Web applications?

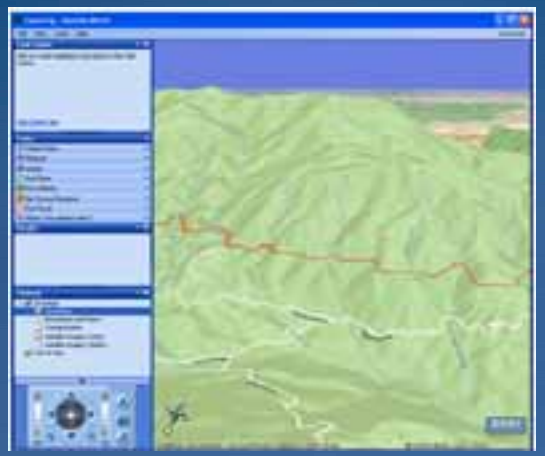
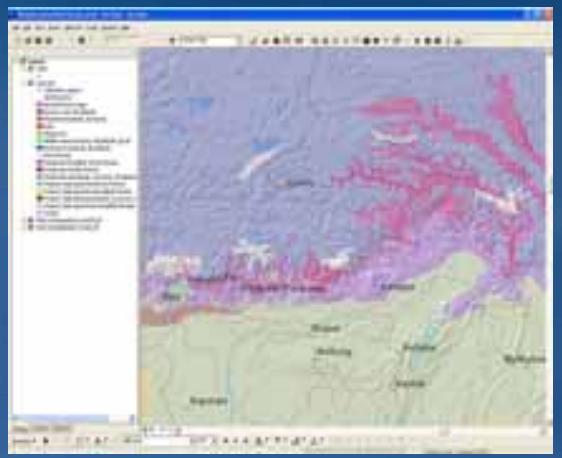
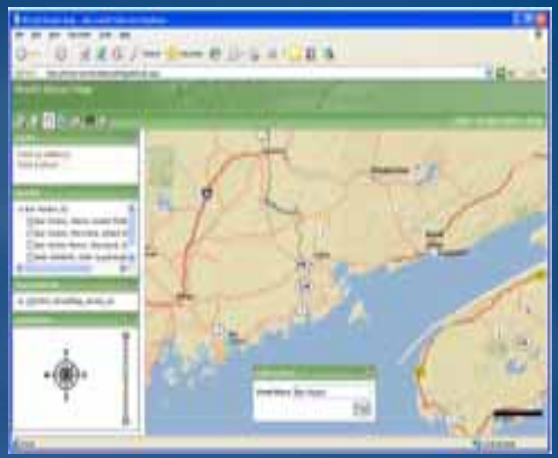
- Mashup with other services
  - ArcGIS Online
  - Google Maps
  - Microsoft Virtual Earth
- Embed maps in any existing HTML page
- Work with ArcGIS Services
  - Map
  - Geoprocessing
  - Find Address (geocoding)
- Build using the REST API

What is REST?

- REST = Representational State Transfer
  - API for Interacting with services via a URL
  - Example: use the World service to export a jpg image of France
    - http://server/ArcGIS/rest/services/World/MapServer/export?f=image&format=jpg&bbox=-9.8,34,3.5,44
- ArcGIS Services Directory exposes REST API
  - http://localhost/ArcGIS/rest
- REST Services power several APIs
  - JavaScript
  - Flex
  - Silverlight
- Build lightweight clients integrating GIS Services
  - ArcGIS Server
  - ArcGIS Online

ArcGIS Online

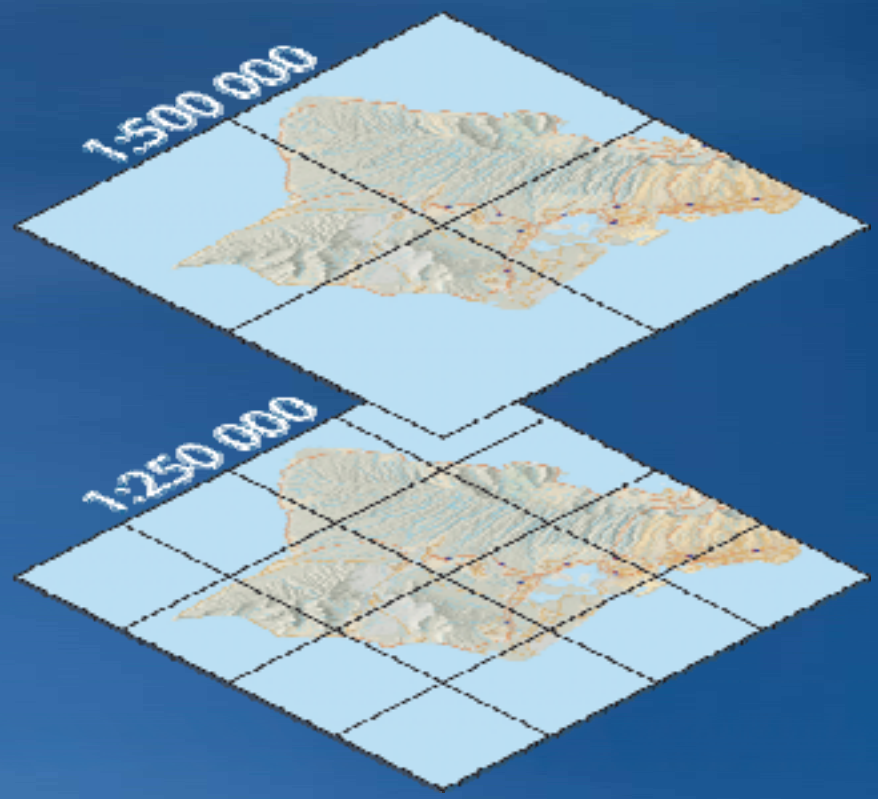
- ArcGIS Online provides GIS services to ArcGIS users
  - Imagery, street maps, physical features, etc.

- ArcGIS Online uses ArcGIS Server
  - Essentially a very large ArcGIS Server implementation
- You don't need ArcGIS Server to consume the services:
  - ArcMap, ArcGIS Explorer, ArcGlobe, ArcReader, and Web Mapping Applications are all supported clients

How can services be as fast as ArcGIS Online?

- Map and globe caches are the fastest way to serve your maps
- Pre-creates map/globe images as tiles at multiple scale levels
  - Choose scale levels of detail and tile size
  - Users retrieve files from server rather than dynamically creating maps
  - Queries still use dynamic data



Caching

- You create the cache in ArcCatalog
- Available for map services and globe services
- Best for public map and globe services
- Not the best for
  - Web editing applications
  - Desktop clients that need individual layer control

DEMO: Creating a mashup

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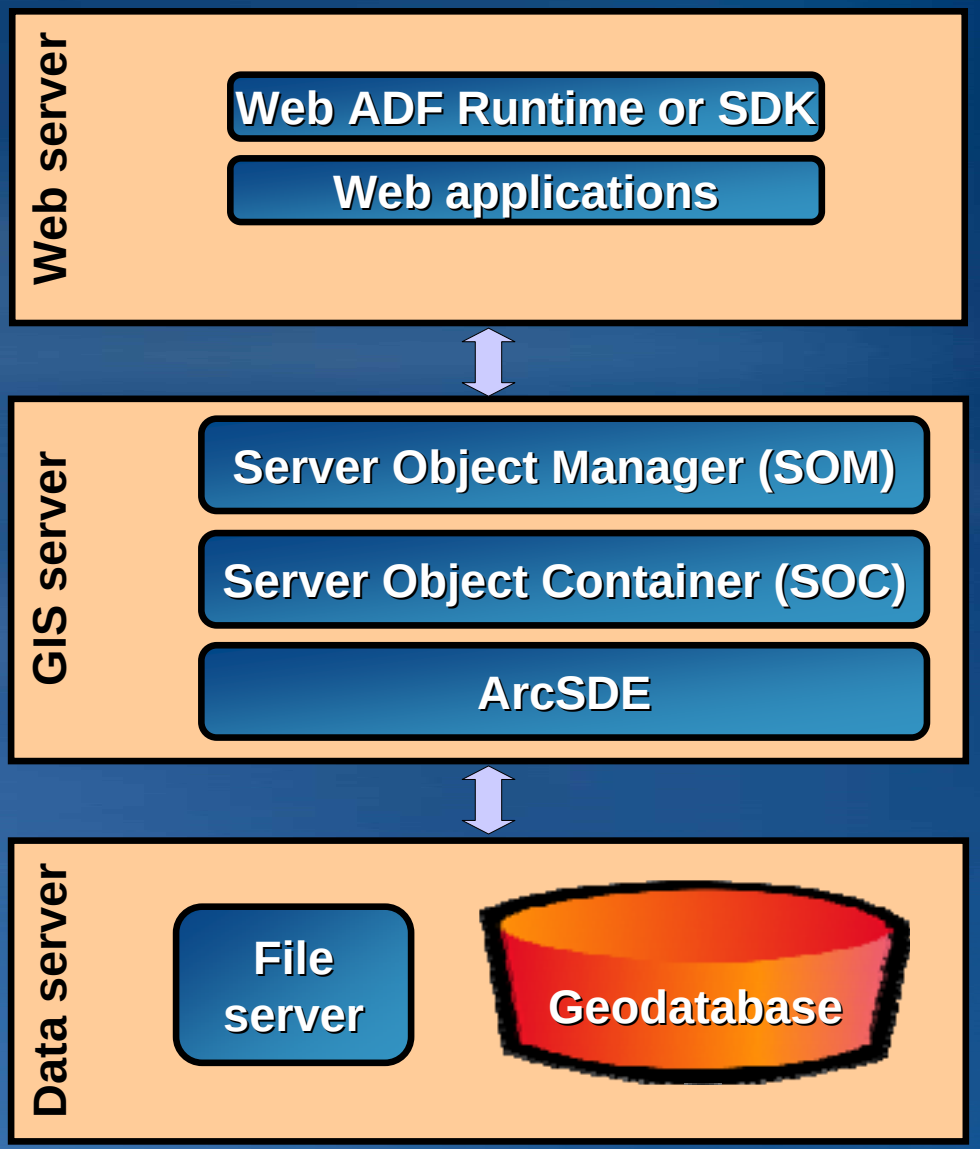
- **Installation and Configuration**

Installation and configuration

- Installation
  - Post-installation
- Getting the most from your deployment
- Security
- Scalability
- Licensing
- Extensions

How do I install ArcGIS Server?

- Plan for installation
  - Review system requirements
    - http://support.esri.com > Software > ArcGIS Server > System Requirements
- Install components on appropriate server
  - One box – single tier
  - Many boxes – Multi tier
- Post installation
  - Configures and authorizes ArcGIS Server

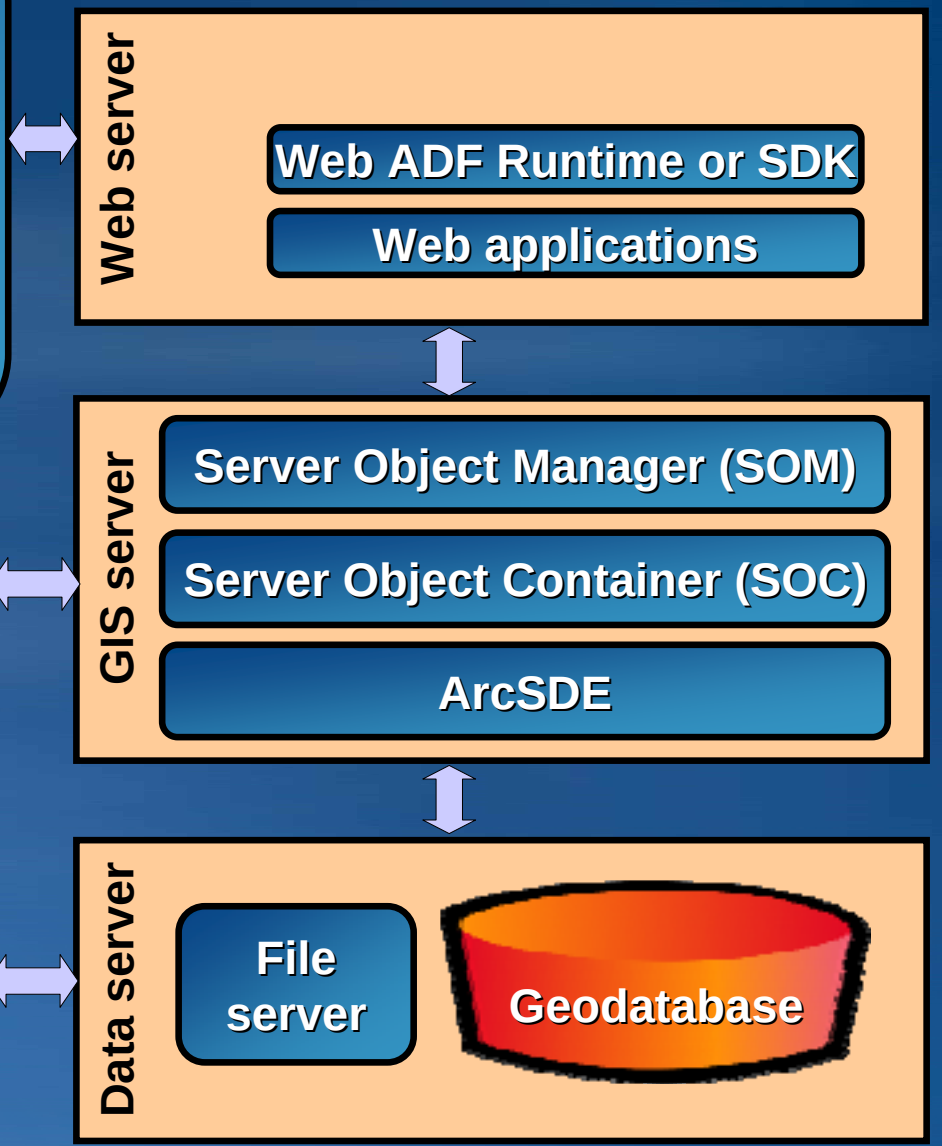


How do I secure my services and applications?

Web clients (Internet)
- Examples
  - Web Browsers
  - Server based web applications
  - Desktop and mobile applications
- Role base security
  - Users are in Roles that are granted access
  - Administered from ArcGIS Server Manager
  - Stored in a database or operating system

Local clients (Intranet)
- Examples
  - Server based web applications
  - Desktop and mobile applications
- Operating system users in agsusers/agsadmin

Database clients
- Operating System
- Database Authentication



Editions and Levels of ArcGIS Server

Capacity →

Functionality ↓

Edition	Edition includes	Level	
		Workgroup	Enterprise
Basic	• ArcSDE • Geodata services for replication	• SQL Server Express • 10 users	• Any supported database • Unlimited users
Standard	Basic features plus • Map, globe, geocoding, geoprocessing (ArcView tools) • Web ADF •Web Editing	"	"
Advanced	Standard features plus • Advanced geoprocessing • Mobile ADF (Enterprise level)	"	"

What extensions are available?

- Standard or Advanced editions
  - Network
  - Data Interoperability
  - Image
  - Job Tracking
- Advanced edition
  - Spatial
  - 3D Analyst
  - Geostatistical
  - Schematics

Learn More

http://www.esri.com/training

- Instructor-Led Training
  - Introduction to ArcGIS Server
  - Building Web Maps Using the ArcGIS API for JavaScript
- Free Web Training Seminars
  - Authoring and Deploying Fast Web Maps
  - Getting Started with Map Templates
  - Sharing Your Maps Using ArcGIS Online

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Thank you

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Patrisha Wells
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