

ArcGIS® Server

Comprehensive Server-Based GIS



www.esri.com/arcgisserver

Key Features of ArcGIS Server include the following:

Ability to Build and Deploy Web Applications

ArcGIS Server provides the Web Application Development Framework for building browser-based GIS applications using .NET or Java. End users can interact with the Web application using their Web browser. These end users might have little or no knowledge that they are using GIS functionality provided by the GIS server.

Ability to Publish Advanced GIS Web Services

Developers can use ArcGIS Server to build Web services based on XML/SOAP that can be consumed by other software programs throughout an organization including ArcGIS Desktop applications. ArcGIS Server includes a SOAP toolkit for building and hosting custom Web services that support request handling using an XML API. Developers can expose GIS functions in ArcObjects as SOAP Web services and can access Web services through distributed computing frameworks on the Internet.

Centralized, Multiuser Geodatabase Editing

ArcGIS Server applications can automatically ensure that remote editors are able to make their updates directly to multiuser geodatabases while maintaining data integrity.

Distributed Data Management Using Versioned Enterprise Geodatabases

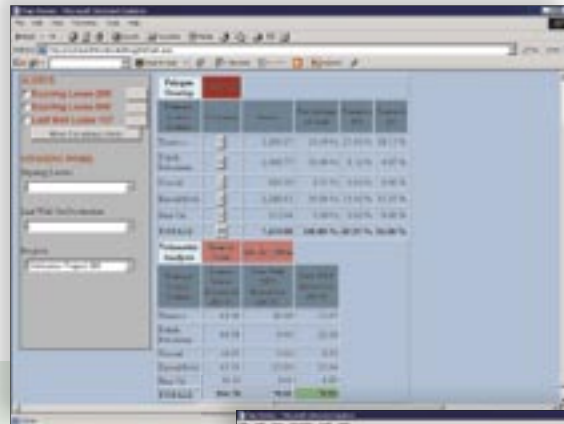
ArcGIS Server applications can manage geospatial data integrity by using the comprehensive geodatabase logic across all database transactions.

Focused Spatial Analysis Operations on a Server

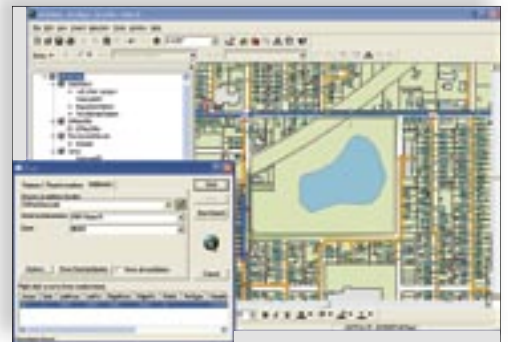
For end users who need to perform advanced GIS functions, such as analytical and spatial query operations, ArcGIS Server provides access to comprehensive GIS logic to support these focused spatial operations.

Integration of GIS and IT

ArcGIS Server supports a number of computing technology standards that enable it to work well with other enterprise information technology. It supports multitier computing, DBMS access and use, enterprise application servers such as .NET and J2EE, and a number of developer APIs (Java, .NET, C++, COM, SOAP) to build and integrate GIS logic with other enterprise technology.



Example of a Lease Management Web Application.
Data Courtesy of Tobin Corporation.



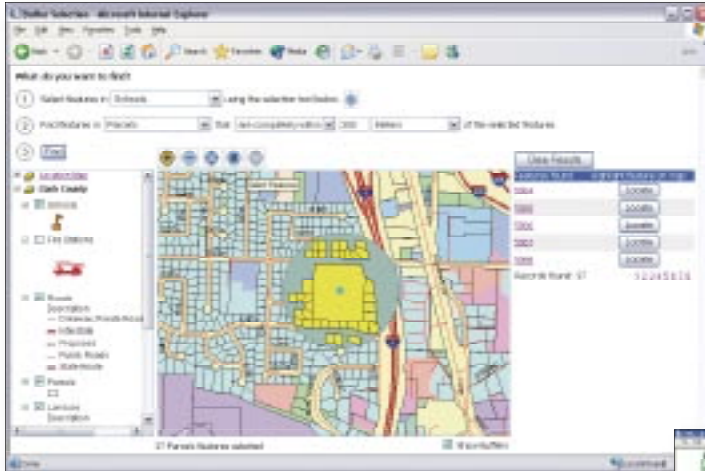
Access ArcGIS Server using a variety of clients including ArcGIS Desktop.



ArcGIS Server Spatial Extension

ArcGIS Server

Comprehensive Server-Based GIS



Use ArcGIS Server to develop focused Web applications.

What Is ArcGIS Server?

ESRI® ArcGIS® Server is a platform for building enterprise geographic information system (GIS) applications that are centrally managed, support multiple users, include advanced GIS functionality, and are built using industry standards. With ArcGIS Server, you can develop server-based, focused Web applications and Web services. These applications and services can be accessed across an organization using clients as thin as a Web browser or through thick clients such as ArcGIS Desktop or a custom client built with ArcGIS Engine Developer Kit. The entire enterprise can take advantage of the extensive GIS capabilities made available via ArcGIS Server without having to install any special software on the client and without any GIS knowledge required on the part of the end user.

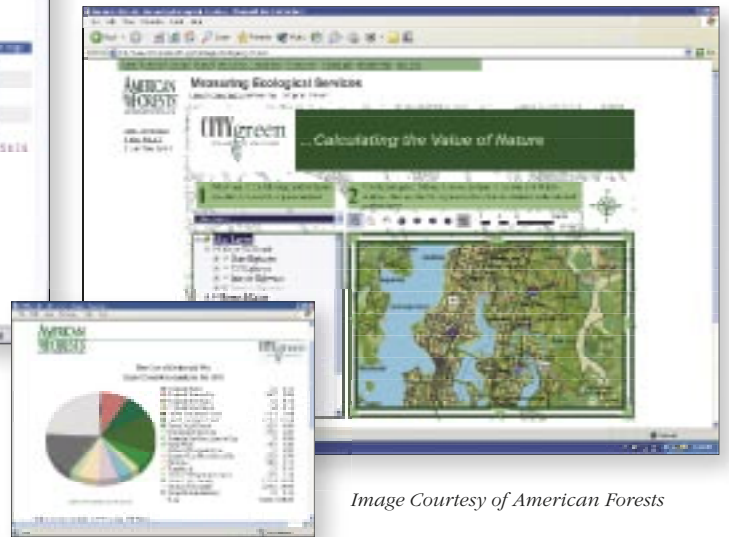


Image Courtesy of American Forests

"ArcGIS Server will change the way we do business. It provides a platform for delivering GIS capabilities to a much larger audience than was previously possible. That, by itself, is a fabulous move for us."

Kenneth Gorton
GIS Manager
American Forests

Why Use ArcGIS Server?

ArcGIS Server enables developers and system designers to implement a centrally managed GIS. Centralization offers the advantage of lower cost of ownership; a single GIS application can be scaled to support multiple users, reducing the cost of installing and maintaining desktop applications on disparate machines throughout the organization. Also, the open ArcGIS Server architecture allows GIS functionality to be easily integrated with other information technology (IT) systems.

Using ArcGIS Server, organizations can develop

- Web applications
- Web services
- Applications based on Enterprise JavaBeans
- Desktop applications that interact with the server in a client/server mode

Architecture

The entire ArcGIS system is built and extended using GIS software components called ArcObjects™. ArcObjects includes a wide variety of programmable components, ranging from fine-grained to coarse-grained objects. ArcGIS Server provides a way to deploy ArcObjects on a server. It consists of two main components: a GIS server and a Web Application Development Framework (ADF™) for .NET and Java.

- **GIS Server**—Hosts ArcObjects for use by Web and desktop applications. It includes the core ArcObjects library and provides a scalable environment for running ArcObjects in a central shared server.
- **ADF**—Lets you build and deploy .NET and Java desktop and Web applications, as well as Web services, that use ArcObjects running with the GIS server.

ArcGIS Server administration is performed using the ArcGIS Desktop ArcCatalog™ application, which can also be used to access ArcGIS Server over a LAN or the Internet. The ArcGIS ArcMap™ application is used to author maps that can be served via ArcGIS Server.



Example of an Enterprise Application Integration Solution. Image Courtesy of GeoNorth.

“With ArcGIS Server, ESRI has given us a very powerful and valuable tool to facilitate integration of GIS functionality with non-GIS applications.”

Marshall Payne
Principal
GeoNorth

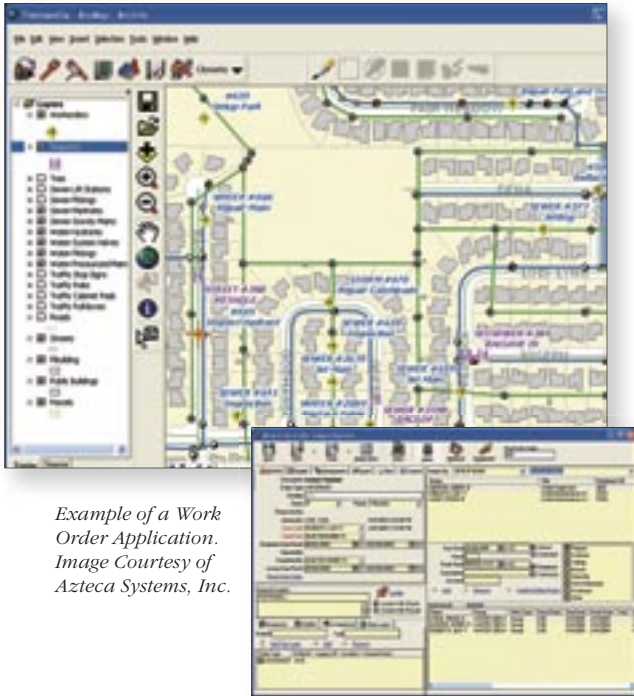


Example Showing a Trouble Ticket Application Built With ArcGIS Server

Extensions

You can add capabilities to your ArcGIS Server applications using these optional extensions.

- **ArcGIS Server Spatial Extension** provides a broad range of powerful spatial modeling and analysis features that allow developers to create and analyze cell-based raster data, perform integrated vector–raster analysis, and derive information about their data. These capabilities can be used to facilitate suitability analysis, calculate the accumulated cost of traveling from one point to another, and much more.
- **ArcGIS Server 3D Extension** provides advanced GIS functions for three-dimensional modeling such as cut–fill, line of sight, terrain modeling, and more. Developers can also analyze three-dimensional surface data in applications such as those that determine what is visible from a chosen location on a surface.
- **ArcGIS Server Network Extension** provides network-based spatial analysis capabilities including routing, travel directions, closest facility, and service area analysis.



Example of a Work Order Application. Image Courtesy of Azteca Systems, Inc.

“Our whole client base consists of nontraditional GIS users. The server-based architecture of ArcGIS Server allows us to create a front end that is customized and optimized for these end users. By simplifying the GIS and making it easier to use, we can more broadly deploy GIS so that it is used on a daily basis.”

Brian L. Haslam
President
Azteca Systems, Inc.



ArcGIS Server accommodates central, multiuser geodatabase editing.

Tools for Getting Started

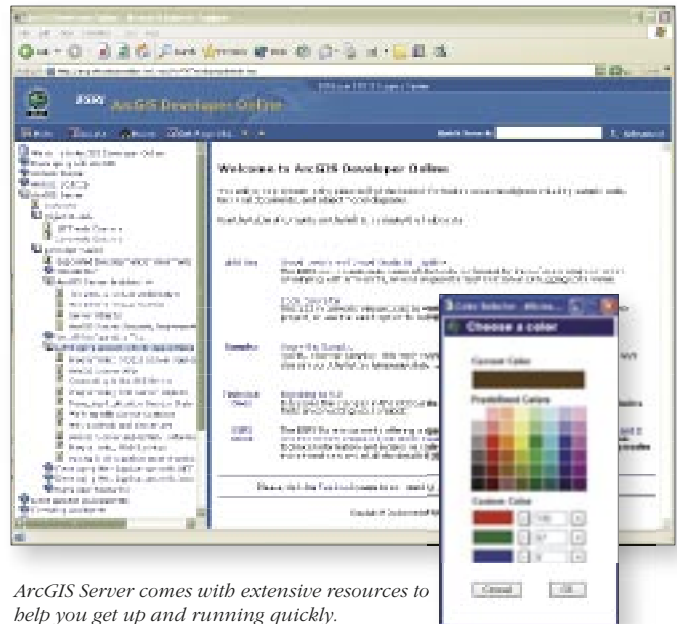
To help you get up and running with your applications, ArcGIS Server includes

Web controls—Simplify the programming model by including GIS functionality (such as interactive mapping) in your Web applications. Web controls consist of the user interface components commonly found on a map such as overview map, table of contents, and toolbar.

Web application templates—Provide a jump start for developers who want to build Web applications. The Web application templates also show you how to use the Web controls to build Web applications. Examples of included templates are MapViewer, Search, Page Layout, Buffer Search, and Web Catalog.

Extensive documentation—The ArcGIS Server Administrators and Developers Guide gives in-depth information on server administration and application development. It also provides a number of developer scenarios to help you build your applications and services and extend ArcGIS Server with serverside libraries.

Hundreds of samples—ArcGIS Server comes with hundreds of samples for Java™, .NET, C++, and more.



ArcGIS Server comes with extensive resources to help you get up and running quickly.

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For more than 35 years ESRI has been helping people manage and analyze geographic information. ESRI offers a framework for implementing GIS technology in any organization with a seamless link from personal GIS on the desktop to enterprisewide GIS client/server and data management systems. ESRI GIS solutions are flexible and can be customized to meet the needs of our users. ESRI is a full-service GIS company, ready to help you begin, grow, and build success with GIS.

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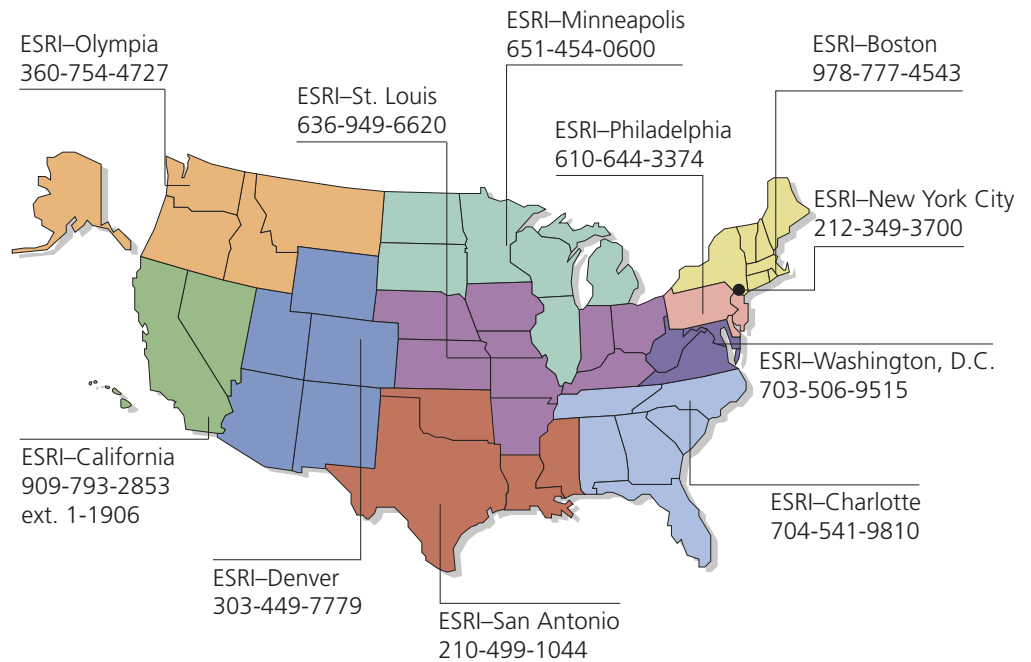
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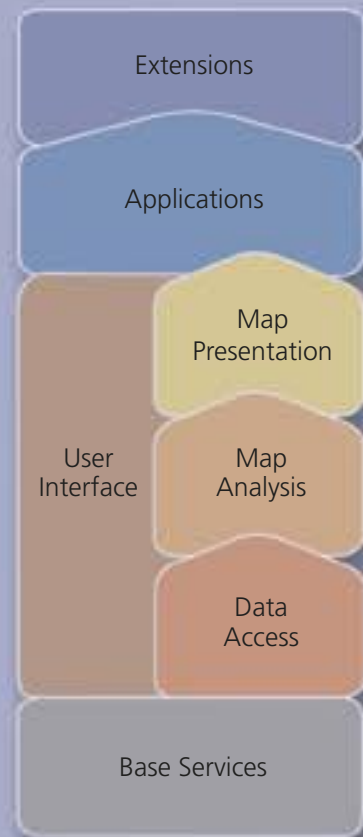


The ArcGIS Server System

ArcGIS 9

ArcObjects Categories by Product

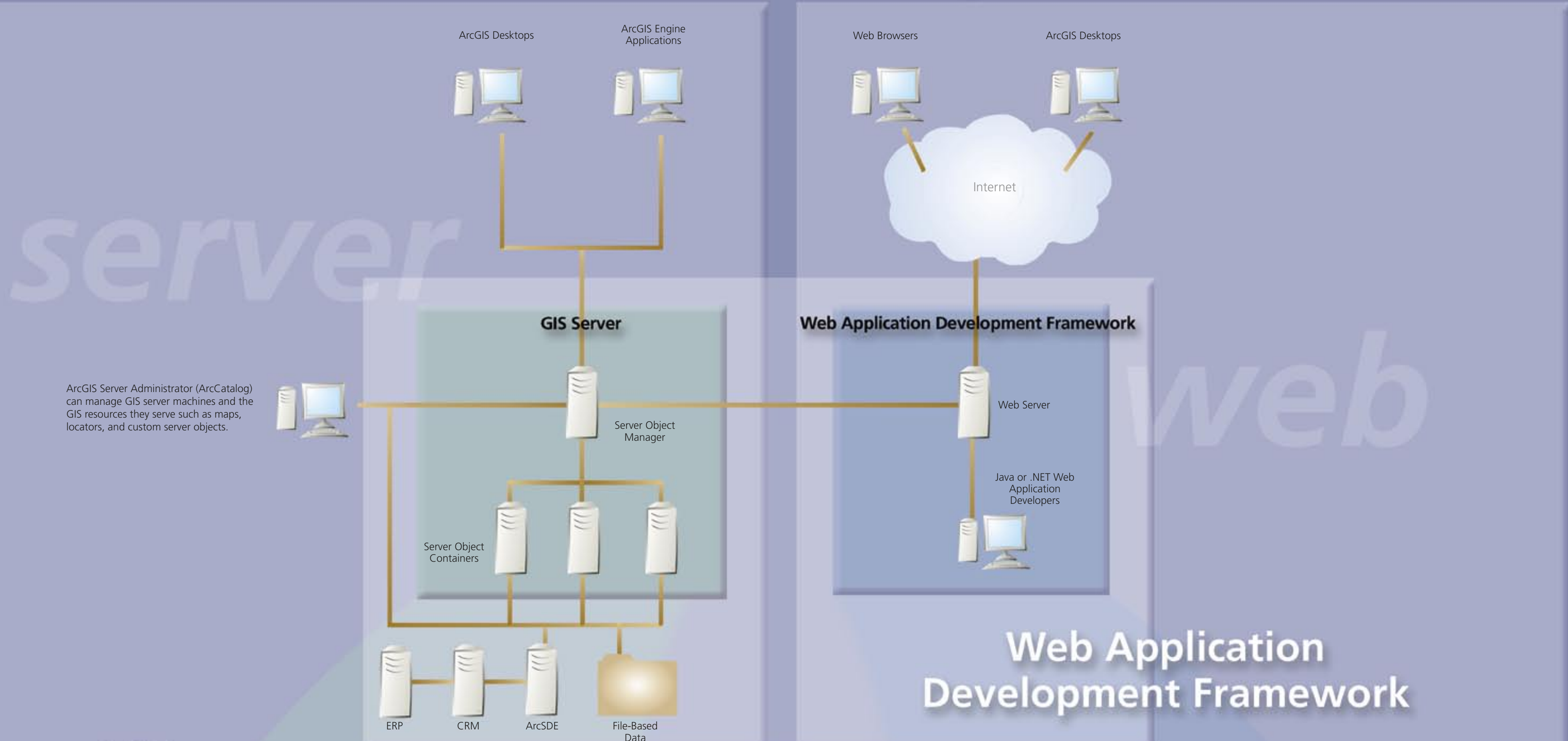
ArcGIS Desktop (ArcView®, ArcEditor™, ArcInfo)



ArcGIS Engine



ArcGIS Server



ArcGIS Server Administrator (ArcCatalog) can manage GIS server machines and the GIS resources they serve such as maps, locators, and custom server objects.

ArcGIS Server is standards based, allowing it to integrate with other IT technologies such as an enterprise resource planning system, a customer relationship management system, and ArcSDE®.

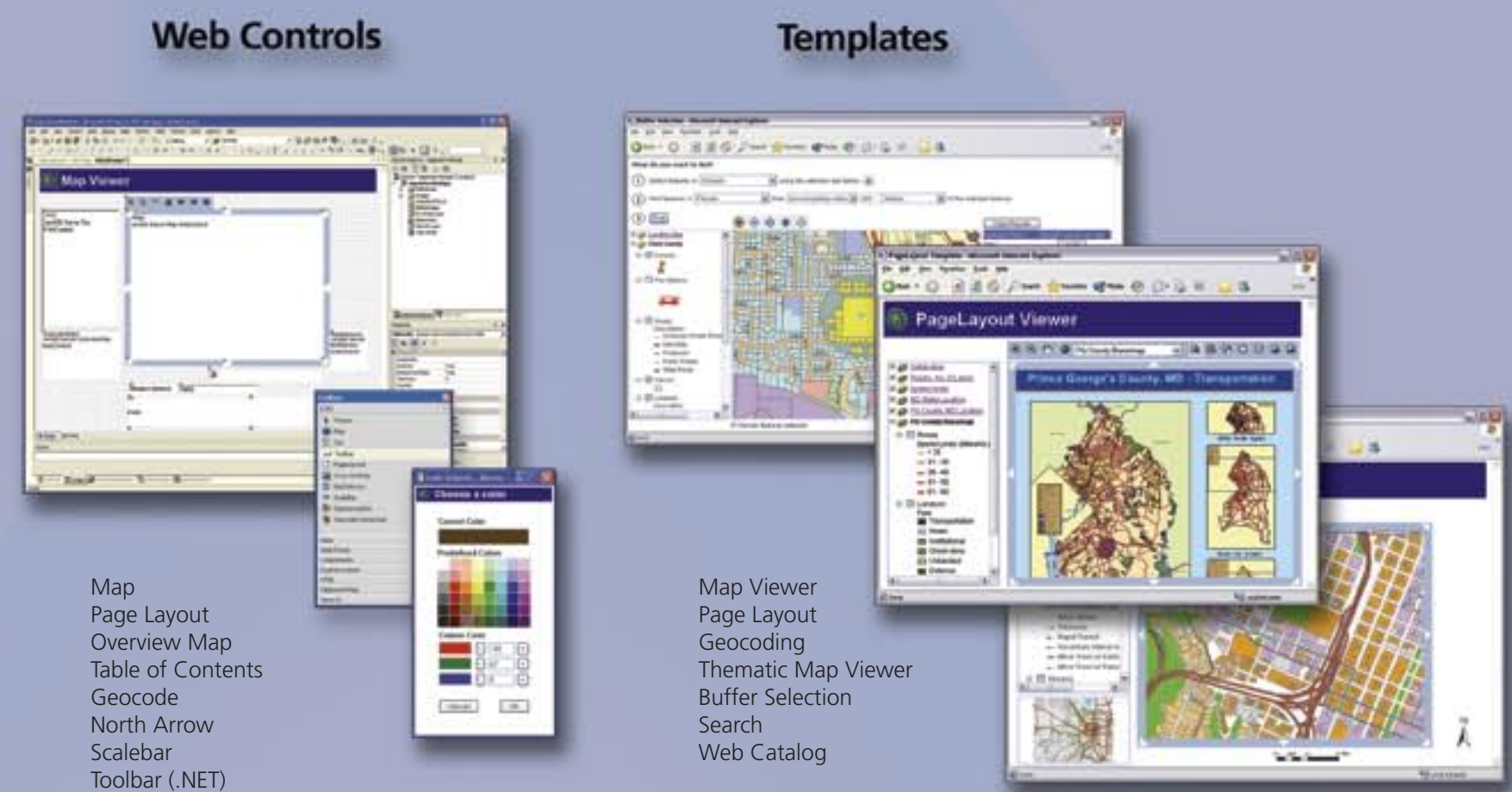
ArcObjects



GIS server hosts the core ArcObjects Library.

GISClient	Contains objects for working with remote GIS services provided by ArcIMS® or ArcGIS Server.	Server	Contains the objects used to obtain a connection to an ArcGIS Server machine and served objects.	Carto	Contains the objects for displaying data. The PageLayout and Map objects exist in this library along with map layers and renderers for all supported data types.
Display	Contains components that support drawing symbology to an output device.	3DAnalyst	Performs 3D analysis of data.	GeoAnalyst	Contains core spatial analysis operations that are used by the Spatial Analyst and 3D Analyst options.
GlobeCore	Contains additional objects for performing analysis on 3D data.	Location	Contains the objects related to working with location data route events or geocoding locations.	Network-Analysis	Supports the creation and analysis of utility networks.
Spatial Analyst	Provides interfaces to support objects contained in the Spatial Analyst library.	DataSources File	Provides workspaces for working with file-based data sources.	DataSource-GDB	Provides workspace factories and workspaces for vector and raster data formats supported by the geodatabase that are stored within an RDBMS.
DataSources OledB	Provides workspaces for working with OledB-based data sources.	DataSource-Raster	Provides workspace factories and workspaces for working with the file-based raster data formats.	GeoDatabase	Contains types for all the definitions relating to data access: features, tables, networks, and TINs.
GeoDatabase Distributed	Contains the objects required that support a distributed geodatabase.	Geometry	Contains the core geometry objects and defines and implements the spatial reference objects for coordinate systems.	Output	Contains the objects required to generate output to both printers and plotters or exporting to files.
System	Contains components that expose services used by the other libraries composing ArcGIS.	System UI	Contains defined types used by user interface components in the ArcGIS system such as ICommand and ITool.		

Web Application Development Framework



Help, Samples, Object Model Diagrams

