

# Developing Application with ArcGIS Server Using the Microsoft .NET Framework

*Three days*

## Overview

ArcGIS Server provides a set of software components and a framework for developing centrally managed GIS Web applications. This advanced course introduces the ArcGIS Server Web Application Developer Framework (ADF) and teaches how to develop ArcGIS Server Web applications using the Web ADF. You learn how to use the Web controls, frameworks, and application programming interfaces (APIs) included with the Web ADF to integrate and use multiple data sources within an application. Strategies and techniques for leveraging Microsoft ASP .NET AJAX within the Web ADF are discussed. In course exercises, you build applications that use the Web ADF controls to interact with data from multiple data sources, utilize ADF capabilities and ArcGIS Server APIs to execute queries, and leverage the task framework to gather user input and generate interactive results. You also learn how to extend the Web ADF with custom buttons and tools.

## Audience

This course is designed for experienced Visual Studio VB.NET or C# programmers who have Internet development experience using ASP.NET and the Microsoft .NET Framework 2.0.

## Prerequisites and recommendations

Students should have completed Introduction to ArcGIS Server or have equivalent knowledge. Students should also have experience programming with ASP.NET 2.0 and JavaScript. Familiarity with Internet protocols and Web services is recommended. Knowledge of ArcObjects will be useful but is not essential. To learn about ArcObjects, take Introduction to Programming ArcObjects Using the Microsoft .NET Framework.

## Goals

- Understand the components of the ArcGIS Server Web ADF.
- Work with the Web Mapping Application template.
- Use the Web ADF to develop custom Web applications.
- Work with the AJAX frameworks.
- Develop custom applications using the ArcGIS Server APIs.
- Build custom Web tasks using the task framework.

## Topic Cover

**Building Web ADF applications:** Web ADF components; Web ADF controls; Web Mapping Application template organization.

**Using the Web ADF controls:** ResourceManager controls; Mapping controls; Web ADF JavaScript library; Layer definitions; ImageBlending options; Tiling schemes.

Programming the Web ADF: Using data sources, resources, and functionalities; Common data source API.

**Working with custom commands and tools:** Extending the Web ADF toolbar; Client and server actions.

**Working with ASP.NET and AJAX:** Working with asynchronous requests; ScriptManager and UpdatePanel controls; Implementing ASP.NET AJAX partial postbacks.

**Working with callback results and AJAX:** Web ADF controls and callback results; Managing callback results.

**Programming Web ADF graphics on the server:** Element and feature graphics layers; Geometry; Symbols; Using layer formats; Refreshing graphics layers.

**Programming Web ADF graphics on the client:** Client-tier Web ADF JavaScript graphics; Creating graphic features; Managing graphic features in the map.

**Programming ArcGIS Server APIs:** Programming with data source-specific APIs; Internet and local resources; Using the ArcGIS Server SOAP API; Working with ArcObjects on the server.

**Working with the Web ADF task framework:** Task controls included with the Web ADF; Using the TaskResults control to display results.

**Building custom Web tasks as server controls:** Integrating tasks into Visual Studio or ArcGIS Server Manager; Extending tasks with the Web ADF.