10 Ways to Build Web Services in .NET
WCF AJAX Services

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Module Outline

- Introduction to WCF AJAX Web Services
- Introduction to Web API
- Understand WCF AJAX Configuration
- Understand Service and Operation Contracts
- Implement and test a WebGet method
- Implement and test a WebInvoke method
- Review the generated JavaScript Proxy Script
- Call the web service using JavaScript
- Review

WCF AJAX Web Service

- **Windows Communication Framework**
  - Framework for message-based communication on both client and server
- **… with a specific configuration**
  - EnableWebScript behavior
    - provides XML and JSON serialization instead of SOAP
    - creates a JavaScript Proxy for each service
  - WebHttpBinding service binding
    - Binds Get and Post endpoints to WebGet and WebInvoke attributed methods

WCF AJAX Web Service

- **AJAX = Asynchronous JavaScript And XML**
- **Used to send and receive data from the server after the initial page load of a browser**
- **Uses an XMLHTTPRequest to send an HTTP request to a specific server**
  - Most people use a JavaScript library instead (jQuery, MooTools, Prototype, etc.)
- **WCF AJAX Web Services automatically create a JavaScript proxy class**
  - Includes client code for sending and receiving data, as well as transport objects

WCF AJAX Web Service

- **Web API Web Service**
  - Uses HTTP standards to send and receive data, instead of Web Service Definition Language documents
  - Several different endpoints
  - Multiple HTTP verbs
  - Data sent and received in several different formats (usually XML or JSON)

WCF AJAX Web Service

Remote Procedure Call (SOAP)	Web API
Generated WSDL documents	No generated documentation
One endpoint for all service calls	A different verb & endpoint for each service call
One HTTP Verb (POST)	One or more HTTP Verbs (GET, PUT, POST, DELETE)
Data sent and received in SOAP envelopes	Data sent and received in one or more different formats

Review

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WCF AJAX Configuration

- **EnableWebScript**
  - Enables XML or JSON serialization of return values and deserialization of input parameters
  - Generates a JavaScript proxy file
- **WebHTTPBinding**
  - Binds methods tagged with WebGet or WebInvoke attributes to GET and POST verbs respectively

WebAPI Web Services

- **Unlike Remote Procedure Call (SOAP)-style web services, does not generate a Web Service Definition Language file**
  - Clients aren't able to generate proxy classes, because there's no definitive listing of methods or transport objects
- **Uses multiple endpoints and HTTP verbs**
- **Can use different serialization and deserialization formats**
  - XML or JSON, as opposed to SOAP

WCF AJAX Web Services

- **Lends themselves well to working with ASP.NET web pages**
  - Can use ScriptManager to include generated JavaScript proxy file
- **Can be accessed without JavaScript proxy file, but requires special serialization and deserialization**
  - WebGet can read parameters from the query string
  - WebInvoke expects parameters wrapped inside of an object, passed in the request body
  - Return type comes back as a wrapped object
    - JSON { d: }
    - XML root element