




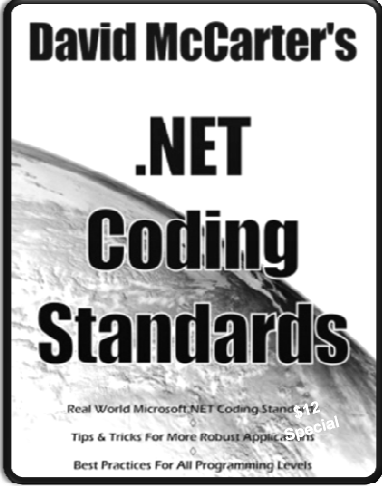
Building Rich & Interactive Web Applications with ASP.NET AJAX

David McCarter




About David McCarter

- Microsoft MVP
- David McCarter's .NET Coding Standards
 - <http://codingstandards.notlong.com/>
- dotNetTips.com
 - 700+ Tips, Tricks, Articles, Links!
- Open Source Projects:
 - <http://codeplex.com/dotNetTips>
- San Diego .NET Developers Group
 - www.sddotnetdg.org
- UCSD Classes
 - Building Rich & Interactive Web Applications with ASP.NET AJAX
 - Fundamentals of the .NET Framework
 - <http://dotnetdaveclasses.notlong.com>




Agenda

AJAX Overview	<ul style="list-style-type: none">•What is AJAX?•What is ASP.NET AJAX?•ASP.NET AJAX Architecture
Server Centric AJAX Development	<ul style="list-style-type: none">•Overview•Programming Model•Server Controls•Demo
Client Centric AJAX Development	<ul style="list-style-type: none">•Overview•Programming Model•AJAX Library•Web Services•Demo
Summary	<ul style="list-style-type: none">•What You Need•What's New in .NET 3.5 SP1•Resources•Questions



AJAX Overview



What is AJAX?

- **Asynchronous JavaScript and XML**
 - Term coined by Jesse James Garrett in February 2005
- **Advantages**
 - Asynchronous
 - Minimal data transfer
 - Smaller postbacks across the network
 - Limited Server Processing
 - Responsive
 - Asynchronous = perceived responsiveness
 - Context
 - Users are not moved to top of page during postback

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What is AJAX?

- Based on *Current* Technologies
 - XHTML, HTML, CSS
 - Dynamic HTML (DHTML),
 - Document Object Model (DOM)
 - JavaScript, JSON,
 - XMLHttpRequest
 - XML, XSLT
- Works with IE, Firefox, Safari web clients
 - *no* client install required

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What is ASP.NET AJAX?


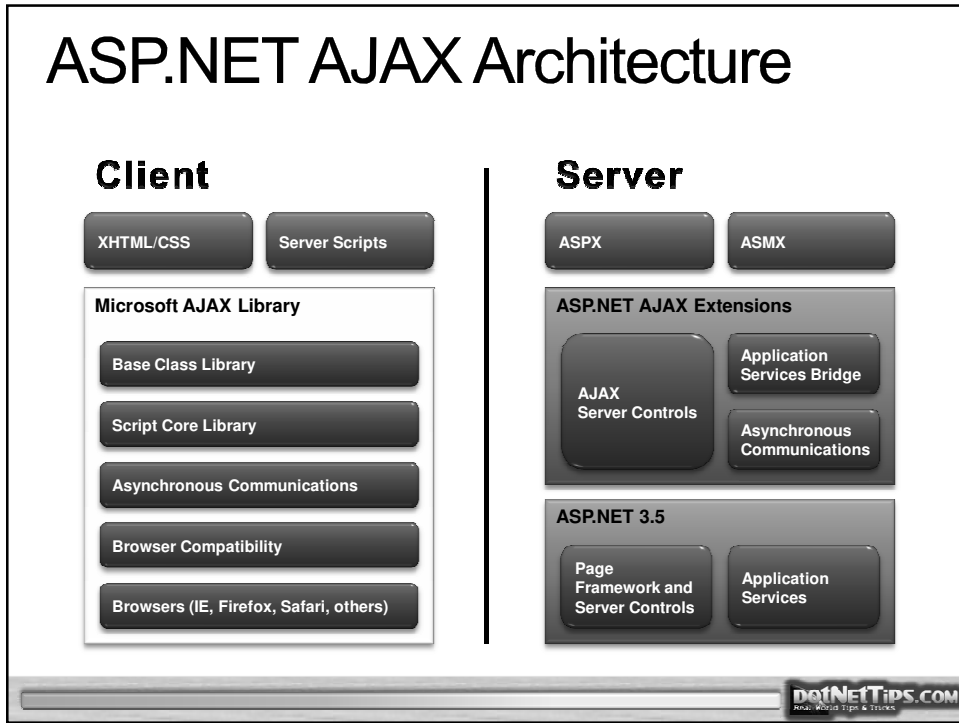
- A framework for building a new generation of richer, interactive, personalized standards-based web applications
- High-productivity platform for AJAX-style browser applications
 - Script component model and UI framework for browser-based web applications
 - Rich suite of components, controls, and behaviors to make Ajax easy

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What is ASP.NET AJAX?


- Seamlessly integrate with Microsoft platform and application model
 - Easily leverages services and components hosted in ASP.NET
- Delivers ubiquitous reach and easy deployment

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Ajax Development with ASP.NET AJAX

Server Centric

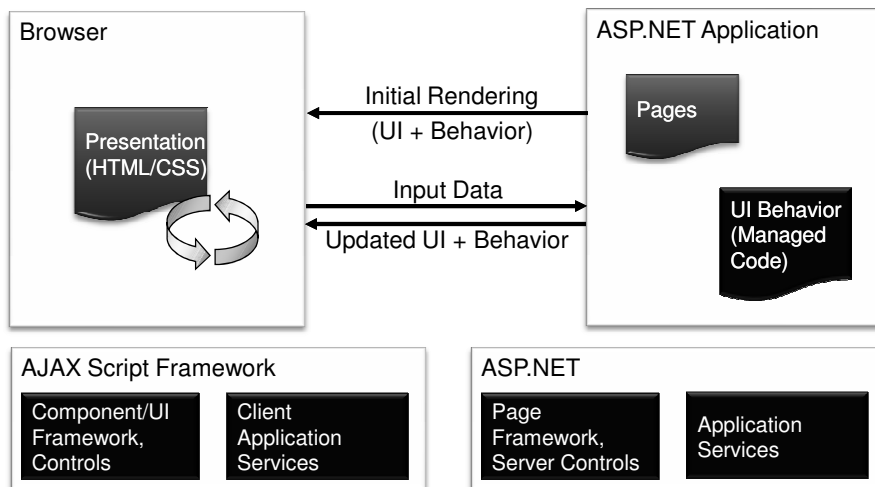


Overview

- Goal: Easily enhance any ASP.NET web application
 - Application UI and core logic still runs on server
 - *Avoid* need to master JavaScript and asynchronous programming
- Use AJAX techniques to reduce roundtrips
 - Enable incremental page UI updates (avoid full page refreshes)
 - Scenarios: data navigation and editing, form validation, auto refresh

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Server-Centric Programming Model



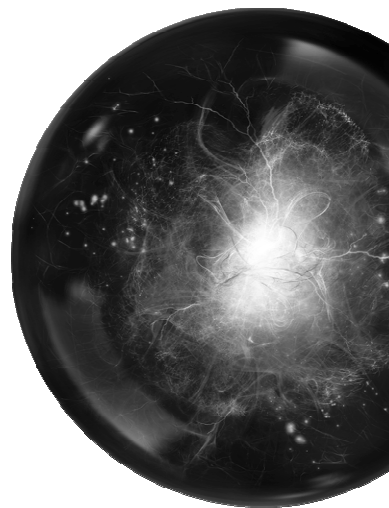
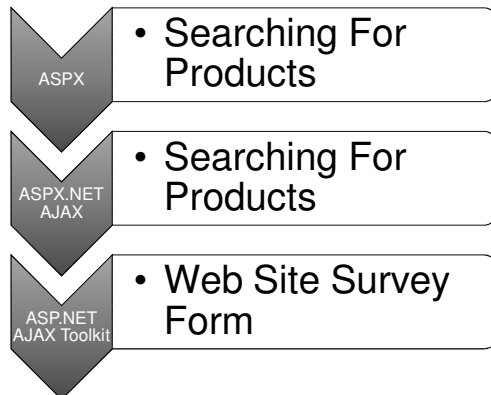
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Server Controls


- Enable richer interactivity for existing ASP.NET controls
 - Use the same controls, object model and events you already know
 - Extenders to add Atlas behaviors to many ASP.NET controls
- ASP.NET AJAX Toolkit
 - 30+ Controls and Extenders
 - Community project on CodePlex.com

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DEMO



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Ajax Development with ASP.NET AJAX

Client Centric

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Overview

- Easily develop rich interactive web applications
 - Application UI runs in browser, business logic runs on server
 - HTML/Ajax client accesses data and services from the web
- Scenarios
 - Mash-up applications
 - Composite applications, sites, and gadgets (e.g. Live.com)

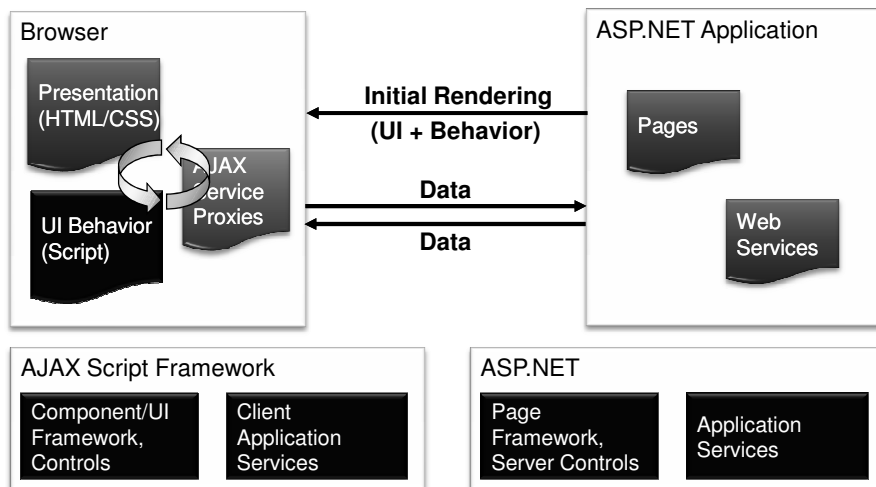
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Overview

- Powerful UI framework and component model for browsers
 - Declarative markup and component model
 - Rich client-side data access and data-binding
- Easily integrated with server application model
 - Easily consume any web service (ASMX, WCF) from browser
 - Proxy generation, serialization to consume .NET objects in script
 - Script access to ASP.NET application services
 - Server-side bridge to reuse 3rd party services

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Client-Centric Programming Model



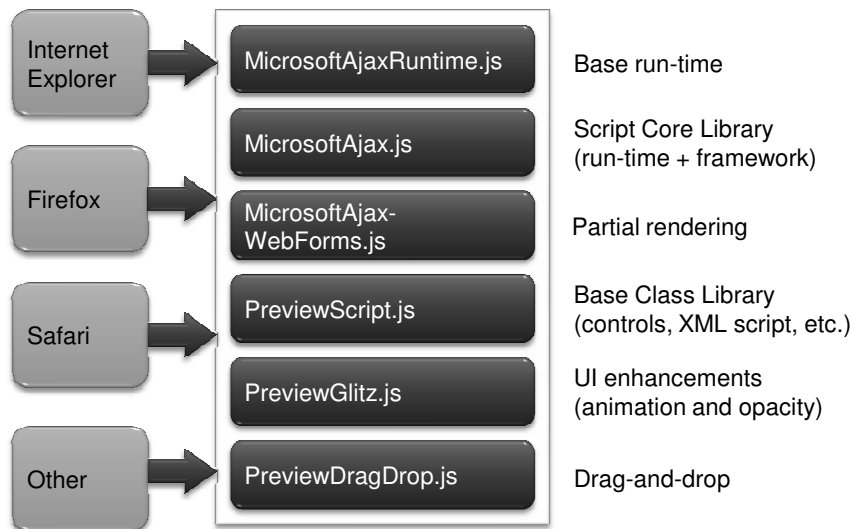
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Microsoft AJAX Library

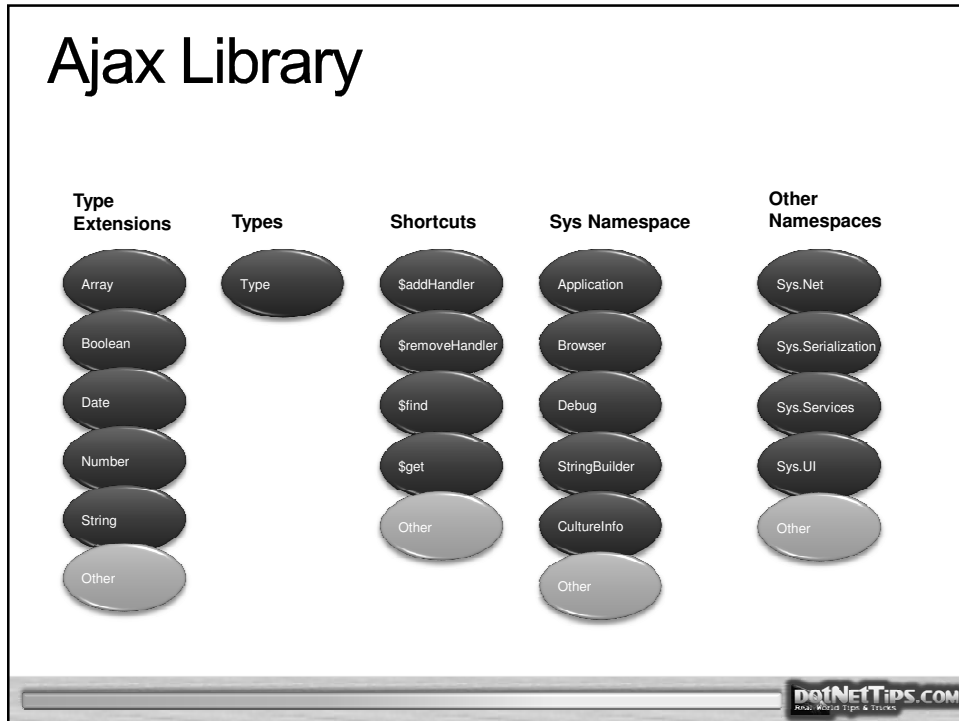
- Client half of ASP.NET AJAX
- Browser-agnostic and platform-agnostic
 - Internet Explorer, Firefox, Mozilla, Safari, etc.
 - Leverage it from PHP and other platforms
- Enhances JavaScript with .NET-like type system
 - Namespaces, classes, interfaces, inheritance, etc.
 - **100%** pure JavaScript implementation
- Includes core classes plus base class library (BCL) featuring controls, drag-and-drop, animation, and more
- Packaged in *.js files downloaded to clients

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AJAX Library Script Files



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Web Services

- ASP.NET AJAX clients can consume Web services
- ASMX model extended to support JSON endpoints
 - *.asmx/js - Generate client-side proxy
 - *.asmx/js/methodname - JSON call to ASMX endpoint
- Server framework includes JSON serializer
 - Microsoft.Web.Script.Serialization.JavaScriptConverter
- Also includes ASMX front-ends for ASP.NET profile service and authentication service

DEMO

Client Centric

- Search for Products

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This slide features a large, bold 'DEMO' header in the top left. Below it, a grey arrow-shaped graphic points downwards and contains the text 'Client Centric'. To the right of this graphic is a white rounded rectangle containing a bulleted list item: '• Search for Products'. Further to the right is a large, glowing sphere with a bright center and radiating lines, resembling a nebula or a data visualization. At the bottom right corner, there is a logo for 'dotNetTIPS.COM' with the tagline 'Real, World Tips & Tricks'.

Summary

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This slide is very simple, featuring a large, dark grey rectangular box in the center containing the word 'Summary' in white text. At the bottom right corner, there is a logo for 'dotNetTIPS.COM' with the tagline 'Real, World Tips & Tricks'.

What You Need

- Visual Studio 2008
 - ASP.NET
 - Base controls/ extensions needed for AJAX
- ASP.NET AJAX Control Toolkit
 - Contains powerful samples and components that make it easy to add client-side functionality to your ASP.NET Web site
- Visual Studio 2008 SP1
 - Provides additional features and functionality that work alongside the ASP.NET AJAX core

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What's New in .NET 3.5 SP1

- History
 - Creates custom history points
 - Server & client-side
 - Enable back/forward browser buttons
 - Allow users to bookmark state
- Script combining
 - Combine multiple JavaScript files into one
 - Saves server requests and bandwidth
- Improved JavaScript Intellisense
 - jQuery
 - Prototype
 - Scriptaculous

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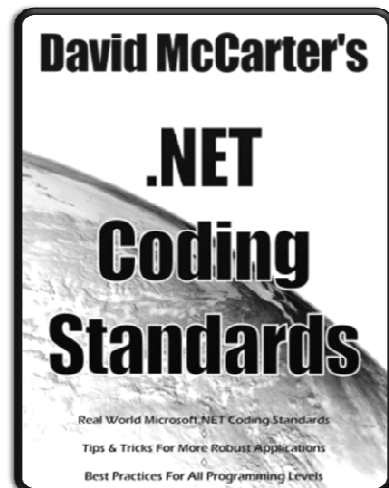
Resources

- **ASP.NET Ajax Website**
 - Has links to all required downloads, sample site, documentation and forums
 - <http://ajax.asp.net>
- **MSDN Documentation**
 - <http://msdn.microsoft.com/en-us/library/bb398822.aspx>
- **Visual Studio 2008 SP1**
 - <http://msdn.microsoft.com/en-us/vstudio/default.aspx>

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Questions?

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- Book & Geek Swag
 - <http://geekswag.notlong.com>
- Open Source Projects
 - <http://codeplex.com/dotnettips>
 - dotNetTips.Utility
 - All of my common code since I have been programming .NET!
 - More to come!



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