Pro ADO.NET Data Services

Working with RESTful Data

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To Lori
Thanks for being understanding while I worked on this during our honeymoon . . . it proves to me how much you love me.
—John Shaw

To Angharad
Your soul makes me complete and your true friendship makes me love you more each passing day.
—Simon Evans

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Foreword

It's amazing to see the things you can build with a mashup today. You run into a mashup tool, grab a couple of data sources, feed them into one of these fancy display options, and you end up with a working application that would have been really hard to build just a few years ago. Statistical data, visual maps, real-time activity of social networks, all right there, consolidated and displayed nicely after just 5 minutes of work.

When you think about the example of mashups, the technology to move data around and display it in nice visual representations has been around for a long time. The key element that enables all of these scenarios is availability of data. Ubiquity and simplicity add to the broad availability to complete the picture of a game-changing scenario where mashups are not only possible, but also trivial to build and effective in their application.

While this may sound easy and natural, sharing data effectively at the scale of the Web comes with its challenges. First of all, the Web is a big place, with lots of people and computers in it, so scalability is a big challenge. It's also a very diverse place, where keeping things simple and using low coupling is important. Finally, it's made of a bunch of smaller pieces, making composability and layering essential to make things work.

A number of folks have spent a lot of time reflecting about all this and documenting what makes the Web work well and what gets in the way of that. Things such as the REST architectural style observe and articulate the traits of applications that can satisfy the scale, layering, and long-term availability requirements of good web applications and services.

The goal of Project Astoria, which has become the ADO.NET Data Services framework, was to bridge the world of data locked in databases and other traditionally proprietary data sources with the world of the Web. We wanted to make it easy to create systems that expose data in a way that naturally followed the principles that make the Web work. We picked a resource model such that items of interesting granularity would become *resources* and the associations between those resources would be *links*. Every resource in the system is addressable with a URL, like any other web resource. Agents act on resources by using well-known verbs that client and server systems, as well as intermediaries, can understand and consider.

We tried hard not to invent anything. That way we could reuse everything out there, from proxies to authentication to representations. This could open the door to more data being available on the Web for applications to build on top of. Sometimes these will be simple applications in closed systems, sometimes large systems made of clients and servers exchanging data with minimum coupling, and sometimes they will involve shared data for anybody out there to use.

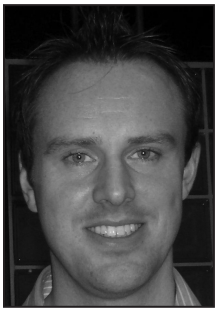
A small set of core principles is what makes the Web tick. We tried hard to capture them in the data services framework. But in order to successfully build applications that are good web citizens and benefit from its architecture, you must know these principles explicitly and know how the various APIs and options in the data services framework help you implement them.

In this book you'll find a discussion of these principles followed by a practical description of what the ADO.NET Data Services framework can do, how it does it, and what it means for your application. Hopefully the combination of principles, framework, and the guidance in this book will help you in your next data application or service undertaking, and you'll have the Web and its goodness working for you.

Pablo Castro
Software Architect
Microsoft Corporation

About the Authors

SIMON EVANS has worked for ten years as a software developer and technical architect. He has architected enterprise-scale applications and services for clients that are household names. Simon is a managing consultant for Conchango in the U.K., part of EMC Consulting Services. He is an expert in .NET development, and more specifically in WCF and ASP.NET, having participated in several Microsoft early adoption programs. Simon believes deeply that a broad understanding of key technology concepts is an essential foundation to being a gifted designer and builder of solutions. Simon is a regular contributor to the blogosphere through his blog at `http://blogs.conchango.com/simonevans`, where he writes about all .NET technologies including ADO.NET Data Services.



JOHN SHAW has worked in business processing and integration for over ten years and has architected some of the largest Microsoft integration projects in the U.S., U.K., and Australia. His technical expertise includes implementing Microsoft BizTalk and messaging standards for a variety of clients in finance, supply chain, and other sectors. Most recently, he founded SphereGen, a niche company that provides a blended model of low-cost onshore and offshore solutions for its clients. Prior to that, John worked as the U.S. BizTalk Practice Lead for Conchango Plc., where he obtained BizTalk Virtual Technical Specialist (VTS) status within Microsoft.

John is a regular contributor to the blogosphere through his blog at `http://blogs.spheregen.com/johnshaw`, where he writes about all .NET technologies including ADO.NET Data Services.

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DAMIEN FOGGON is a freelance developer and technical author based in Newcastle, England. When not wondering why the Newcastle Falcons can never win at home or away, he spends his spare time writing, playing rugby, scuba diving, or pretending that he can cook.

If he could be consistent (or interesting), his blog might not be three months out of date. You never know, you may be lucky. See for yourself at `http://www.littlepond.co.uk`.

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Simon Evans

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John Shaw