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Ajax and REST Recipes

A Problem-Solution Approach

Expert techniques to solve all your Ajax and REST architecture and development problems

Christian Gross

Apress®

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ISBN-13 (pbk): 978-1-59059-734-7

ISBN-10 (pbk): 1-59059-734-6

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

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Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013. Phone 1-800-SPRINGER, fax 201-348-4505, e-mail `orders-ny@springer-sbm.com`, or visit `http://www.springeronline.com`.

For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, e-mail `info@apress.com`, or visit `http://www.apress.com`.

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About the Author

Many people say that by looking at a person's dog, you can tell what the person is like. Well, the picture of me is my dog Louys, an English Bulldog. And yes, my English Bulldog and I have many common characteristics.

But what about my biography? It's pretty simple: I am a guy who has spent oodles of time strapped to a chair debugging and taking apart code. In fact, I really enjoy this business we call software development. I have ever since I learned how to peek and poke my first bytes. I have written various books, including *Ajax Patterns and Best Practices* and *How to Code .NET*, all available from Apress.

These days I enjoy coding and experimenting with .NET, as it is a fascinating environment. .NET makes me feel like a kid opening a present on Christmas morning. You had an idea what the gift was, but you were not completely sure. And with .NET, there is no relative giving you socks or a sweater. It's excitement all the way!

About the Technical Reviewers

NICK MCCOLLUM has more than 18 years of experience designing and developing enterprise applications on a variety of platforms. He is a principal consultant for NuSoft Solutions, Inc., and is currently the architect and lead developer for `http://www.spout.com`. Nick has acted as a technical editor for the following publications: *C# COM+ Programming* by Derek Beyer (John Wiley & Sons, 2001) and *Pro Ajax and the .NET 2.0 Platform* by Daniel Woolston (Apress, 2006). He is a Microsoft Certified Solution Developer and frequently speaks at Microsoft events and local user group meetings in the West Michigan area.

BERNHARD SEEFELD cofounded the Swiss search engine `http://search.ch` in 1995, where in October 2004, he released the first worldwide Ajax mapping application, `http://map.search.ch`. Bernhard holds an MSc in theoretical physics from the University of Berne, Switzerland.

Introduction

I wrote this, and I have a good feeling about it. It's an odd way to begin a book, but I like this book because of what it represents; the building of Asynchronous JavaScript and XML (Ajax) applications using Web services. I have been developing Web service-based applications since 1999. With Ajax, Web services has found its killer combination.

This book focuses on practical solutions for implementing Ajax, JavaScript, and Representational State Transfer (REST)–based Web services and functionality. I want to promote the development of applications that are decoupled (client code is separate from the server code), applications that can be adequately tested and maintained, and code that can be used by clients outside of the Ajax context. I believe in Ajax, but I also believe that if you can develop Ajax code that non-Ajax clients can access, then your application has a distinct advantage over others.

This book features the following chapters:

- Chapter 1—Getting Started: The focus of this chapter is on understanding the definitions of Ajax, REST, Web services, and service-oriented architecture (SOA). I've based the definitions on opinions in the industry, and understanding the definitions makes it simpler for you to understand the context of Ajax/REST and the rest of this book. This first chapter also covers how to test your Ajax/REST application using JavaScript. It shows you how to test Web service contracts and JavaScript client code.

- Chapter 2—JavaScript Recipes: The focus of this chapter is on explaining how to write more advanced JavaScript functionality. This chapter covers the following techniques (among others): using delegates that allow multiple methods or functions to be called, using functions as objects with state, and using functions to initialize and make decisions.

- Chapter 3—Dynamic Content Recipes: The focus of this chapter is on illustrating how you can build user interfaces that process dynamic content. Typically, dynamic content is form-based content, but not always. This chapter illustrates validation techniques, dynamic layout, and state-management techniques.

- Chapter 4—Implementing an SOA Architecture: The focus of this chapter is on explaining the topics of SOA and REST-based Web services in detail. This chapter discusses the details of how to use the various HTTP verbs (such as `GET` and `POST`), how to test a Web service, and how to upgrade an already existing system to expose its functionality using REST.

- Chapter 5—Implementing a Universal Web Service Architecture: The focus of this chapter is on using a REST-based Web service in a general context. This chapter illustrates the techniques necessary to implement Web services that you can integrate into a mashup, to generate multiple data formats, and to integrate dynamic URLs into static HTML pages.

- Chapter 6—Implementing Web Services for Large or Slow Data Sets: The focus of this chapter is on implementing REST-based Web services for situations where you have many results, or the results take a long time to generate. The recipe in this chapter focuses on solving one problem and illustrates how to describe the data, implement the URLs, and execute tasks on the server side.
- Chapter 7—Implementing an Ajax Shopping Cart: The focus of this chapter is on the general problem of the online shopping cart. In the abstract sense, the problem with current implementations of the shopping cart is the association of data with a specific user. This chapter illustrates how you can define and access non-user-associated URLs using authorization control.
- Chapter 8—Don't Submit Your Forms—Ajax Them: The focus of this chapter is on solving the dreaded back-button submit problem. The recipe illustrates how to manage the form submittal process and associate state with an HTML page, allowing for a more sophisticated content display.