

ASP.NET Web API

Build RESTful web applications and services on the .NET framework

Master ASP.NET Web API using .NET Framework 4.5 and Visual Studio 2013



ASP.NET Web API

Build RESTful web applications and services on the .NET framework

Master ASP.NET Web API using .NET Framework 4.5 and Visual Studio 2013

Joydip Kanjilal



BIRMINGHAM - MUMBAI

ASP.NET Web API

Build RESTful web applications and services on the .NET framework

Copyright © 2013 Packt Publishing

All rights reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without the prior written permission of the publisher, except in the case of brief quotations embedded in critical articles or reviews.

Every effort has been made in the preparation of this book to ensure the accuracy of the information presented. However, the information contained in this book is sold without warranty, either express or implied. Neither the author, nor Packt Publishing, and its dealers and distributors will be held liable for any damages caused or alleged to be caused directly or indirectly by this book.

Packt Publishing has endeavored to provide trademark information about all of the companies and products mentioned in this book by the appropriate use of capitals. However, Packt Publishing cannot guarantee the accuracy of this information.

First published: December 2013

Production Reference: 1121213

Published by Packt Publishing Ltd. Livery Place 35 Livery Street Birmingham B3 2PB, UK.

ISBN 978-1-84968-974-8

www.packtpub.com

Cover Image by Artie Ng (artherng@yahoo.com.au)

Credits

Author

Joydip Kanjilal

Reviewers

Santhosh Aravalli

Chandana N. Athauda

Anand Narayanaswamy

Pavel Volgarev

Acquisition Editor

Kartikey Pandey

Pramila Balan

Nikhil Chinnari

Lead Technical Editor

Anila Vincent

Technical Editors

Mrunmayee Patil

Faisal Siddiqui

Sonali S. Vernekar

Project Coordinator

Kranti Berde

Copy Editor

Roshni Banerjee

Sarang Chari

Mradula Hegde

Dipti Kapadia

Kirti Pai

Lavina Pereira

Proofreader

Clyde Jenkins

Indexer

Tejal Soni

Graphics

Ronak Dhruv

Abhinash Sahu

Production Coordinator

Nilesh R. Mohite

Cover Work

Nilesh R. Mohite

About the Author

Joydip Kanjilal is a Microsoft Most Valuable Professional in ASP.NET, a speaker, and the author of several books and articles. He has over 16 years of experience in the IT industry, with more than 10 years using Microsoft .NET and its related technologies. He was selected as the MSDN Featured Developer of the Fortnight a number of times and also as the Community Credit Winner by www.communitycredit.com several times. He has authored the following books:

- Visual Studio Six in One (Wrox Publishers)
- ASP.NET 4.0 Programming (Mc-Graw Hill Publishing)
- Entity Framework Tutorial (Packt Publishing)
- Pro Sync Framework (APRESS)
- Sams Teach Yourself ASP.NET Ajax in 24 Hours (Sams Publishing)
- ASP.NET Data Presentation Controls Essentials (Packt Publishing)

He has also authored more than 250 articles for some of the most reputable sites, such as www.msdn.microsoft.com, www.code-magazine.com, www.asptoday.com, www.devx.com, www.ddj.com, www.aspalliance.com, www.aspnetpro.com, www.sql-server-performance.com, and www.sswug.com. A lot of these articles have been selected at www.asp.net—Microsoft's official website on ASP.NET.

He has years of experience in designing and architecting solutions for various domains. His technical strengths include C, C++, VC++, Java, C#, Microsoft .NET, Ajax, WCF, REST, SOA, Design Patterns, SQL Server, Operating Systems, and Computer Architecture.

For more details, please refer to the following links:

- Blog: http://aspadvice.com/blogs/joydip
- Website: www.joydipkanjilal.com
- Twitter: https://twitter.com/joydipkanjilal
- Facebook: https://www.facebook.com/joydipkanjilal
- LinkedIn: http://in.linkedin.com/in/joydipkanjilal

I am thankful to the entire team at Packt Publishing for providing me the opportunity to author this book. I am also thankful to my wife, Sabita Kanjilal, for her encouragement throughout this project, as well as Shaik Tajuddin, Prithwish Ganguli, and my other family members for their continued support.

About the Reviewers

Santhosh Aravalli has over 10 years of programming experience in working with Microsoft technologies. In his professional career, he has developed solutions ranging from enterprise web applications to SOA applications, primarily using the Microsoft.NET platform. He has worked across many industry domains, including financial, mortgage, retail, and logistics companies in Chicago and the Los Angeles metro area. He has numerous industry certifications, including MCAD, MCTS, and MCPD and is on his way to get his MCSD shortly. He graduated from the Kakatiya University in India with a degree in Computer Science & Engineering.

In his spare time, he practices meditation, collects aphorisms, visits the library, watches TED Talks, and works on his pet projects.

Visit his blog at http://visualstudio99.blogspot.com or contact him at saravalli9@gmail.com.

Chandana N. Athauda is currently employed at Brunei Accenture Group (BAG) Networks, Brunei. He serves as a Technical Consultant and focuses on adopting new technologies toward solid solutions. He has been working professionally in the IT industry for more than 12 years (he's also an ex-Microsoft Most Valuable Professional (MVP) and Microsoft Ranger for TFS). His roles in the IT industry have spanned the entire spectrum from programming to technical consulting. Technology has always been a passion for him. In his spare time, Chandana enjoys watching association football.

If you would like to talk to Chandana about this book, feel free to write to him at info@inzeek.net or tweet him at @inzeek.

I dedicate this book to my son, Binuk, and also in memory of my father, Samson.

Anand Narayanaswamy, an ASPInsider, works as a freelance writer based in Trivandrum, Kerala, India. He was a Microsoft Most Valuable Professional (MVP) from 2002 to 2011 and has worked as the Chief Technical Editor for www. ASPAlliance.com for a period of five years.

Anand has worked as a technical editor for several popular publishers, such as Sams, Addison-Wesley Professional, Wrox, Deitel, Packt Publishing, and Manning. His technical editing skills have helped the authors of Sams Teach Yourself the C# Language in 21 Days, Core C# and .NET, Professional ADO.NET 2, ASP.NET 2.0 Web Parts in Action, and Internet and World Wide Web (Fourth Edition) to fine-tune the content.

He has also contributed articles for Microsoft's Knowledge Base, www.c-sharpcorner.com, www.developer.com, and www.codeguru.com, and has delivered podcast shows.

Anand runs his own blog at Learnxpress (www.learnxpress.com) and provides web hosting (www.netans.com) and blog installation services.

Pavel Volgarev is a software engineer with several years of experience in working with Microsoft technologies and developing for the Web. The majority of his time includes working with languages and technologies such as C#, ASP.NET MVC, RESTful Web Services, as well as HTML5-related APIs and Rich Internet Applications (RIA). He is also very keen about web design, UX, interaction design, and typography.

Prior to joining Infusion, Pavel was working as a System Architect, evolving and improving one of the finest CMS and e-commerce systems in Denmark and Europe.

Apart from being a developer, Pavel is also very passionate about blogging, public speaking, as well as startups and entrepreneurship. Pavel's complete profile is available at http://volgarev.me.

www.PacktPub.com

Support files, eBooks, discount offers, and more

You might want to visit www.PacktPub.com for support files and downloads related to your book.

Did you know that Packt offers eBook versions of every book published, with PDF and ePub files available? You can upgrade to the eBook version at www.PacktPub.com and as a print book customer, you are entitled to a discount on the eBook copy. Get in touch with us at service@packtpub.com for more details.

At www.PacktPub.com, you can also read a collection of free technical articles, sign up for a range of free newsletters and receive exclusive discounts and offers on Packt books and eBooks.



http://PacktLib.PacktPub.com

Do you need instant solutions to your IT questions? PacktLib is Packt's online digital book library. Here, you can access, read and search across Packt's entire library of books.

Why Subscribe?

- · Fully searchable across every book published by Packt
- Copy and paste, print and bookmark content
- On demand and accessible via web browser

Free Access for Packt account holders

If you have an account with Packt at www.PacktPub.com, you can use this to access PacktLib today and view nine entirely free books. Simply use your login credentials for immediate access.

Instant Updates on New Packt Books

Get notified! Find out when new books are published by following @PacktEnterprise on Twitter, or the *Packt Enterprise* Facebook page.

Table of Contents

Preface	1
Chapter 1: Understanding Representational State Transfer Service	s 5
Understanding REST	6
Resources in REST-based architecture	7
The REST architectural constraints	9
Client-server	9 9
Stateless	9
Cacheable	5
Code on demand	
Uniform interface	10
Resource management	10
SOAP, REST, and XML-RPC – a closer look	10
Understanding Windows Communication Foundation	14
REST attributes	16
WebServiceHost	16
WebHttpBinding	17
WebHttpBehavior	17 18
WebOperationContext WebMessageFormat	19
WebGet	19
Weblnvoke	20
UriTemplate	20
REST-based web services	21
Learning RESTful web services	21
Implementing RESTful services in .NET 4.5	22
The UserNamePasswordValidator class	23
Simplified configuration	24
Standard endpoints	27
•	27
Discovery	
Simplified IIS hosting	29
Improvements in REST	30