



P r o f e s s i o n a l E x p e r t i s e D i s t i l l e d

Applied Architecture Patterns on the Microsoft Platform

An in-depth, scenario-driven approach to architecting
systems using Microsoft technologies

*Foreword by Ofer Ashkenazi,
Senior Technical Product Manager, Microsoft*

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BIRMINGHAM - MUMBAI

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Foreword

To understand is to perceive patterns.

-Isaiah Berlin

Architecting a good software solution is in many ways very much like the art of cooking a great meal. Just like a chef needs to have a broad knowledge of various ingredients that go into a meal, an architect needs to have a broad understanding of potential technologies and tools that he would need for a software solution. Just like a good chef masters the techniques of combining his raw ingredients into a delicious course, a good architect should know when and how to use and blend various software components to come up with elegant and efficient solutions. Just like a chef's work is confined by physical conditions and customer requirements, so is the work of a software architect. Both need the right kind of discipline and structure to cope with external constraints. So knowledge, experience, discipline, and structure are critical, but as any good chef or architect will tell you, the art of cooking or architecting requires something extra, and that is creativity. To put it simply in the words of the author John Updike:

Any activity becomes creative when the doer cares about doing it right, or better.

The book you are holding is a good example of the outcome of such creativity. I personally know the authors to be very experienced and knowledgeable on the topics they write – yet, it is a way they have chosen to distill their experience and know-how that make this book a very valuable resource for any software architect. Artfully transforming use-cases and requirements into recognizable patterns while discussing alternative architectures for implementing these patterns, this book provides you with an effective framework to handle the complexities of modern distributed applications.

Unlike cooking, where the basic raw ingredients do not change as much or as often over time, dealing with software architecture involves constant and frequent changes. New paradigms and methodologies for developing and delivering software solutions are constantly evolving. Innovative new technologies, some with overlapping capabilities, are introduced at an increasing pace into an already crowded marketplace. Making sense out of this dynamic and sometimes confusing domain, even when focusing only on Microsoft technologies, is quite a challenge. A great team of contributors was assembled to tackle the job. Together, they have produced an appealing guide by discussing a collection of common architectural patterns in software development and their implementation using Microsoft technologies.

This may seem like a book of "recipes" devised by a team of highly qualified "software chefs", but this is where again the analogy falls short: in the world of software, things are a more complex. In many cases, you'll find that you need to treat these recipes as the basis to build on. You will need to step into the role of the "chef" and start "cooking" your own solution by combining patterns or adjusting the suggested solutions to fit into your project's specific needs. Happy "software cooking"!

Ofer Ashkenazi
Senior Technical Product Manager
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About the Authors

Richard Seroter is a solutions architect for an industry-leading biotechnology company, a Microsoft MVP for BizTalk Server, and a Microsoft Connected Technology Advisor. He has spent the majority of his career consulting customers as they plan and implement their enterprise software solutions. Richard first worked for two global IT consulting firms, which gave him exposure to a diverse range of industries, technologies, and business challenges. Richard then joined Microsoft as a SOA/BPM technology specialist where his sole objective was to educate and collaborate with customers as they considered, designed, and architected BizTalk solutions. One of those customers liked him enough to bring him onboard, full time, as an architect after they committed to using BizTalk Server as their enterprise service bus. Once the BizTalk environment was successfully established, Richard transitioned into a solutions architect role where he now helps identify enterprise best practices and applies good architectural principles to a wide set of IT initiatives.

Richard is the author of the book *SOA Patterns with BizTalk Server 2009* (Packt Publishing), released in April 2009. Richard maintains a semi-popular blog of his exploits, pitfalls, and musings with BizTalk Server and enterprise architecture at <http://seroter.wordpress.com>.

I want to thank my gifted co-authors and technical reviewer who brought an insightful amount of experience and knowledge to this project. I also have to thank my wonderful co-workers whose architectural brilliance constantly inspires and challenges me. Finally, thanks to my family for their support on this project. My dog, Watson, unexpectedly offered to proofread my chapters, and I eagerly accepted his invitation. Thanks buddy. But this book is for my son Noah who makes me want to be a better man.

Ewan Fairweather has worked for Microsoft for six years. He currently works as a program manager in the Business Platform Division on the Customer Advisory Team (CAT) working on large scale integration and OLTP SQL applications. Prior to this, Ewan spent three years working for Microsoft UK, in the Premier Field Engineering team where he worked with enterprise customers, helping them maintain and optimize their BizTalk applications. This included working in a dedicated capacity on some of the world's largest BizTalk deployments, predominantly within financial services. Ewan co-authored the successful *Professional BizTalk Server 2006* (Wrox, 2007) and has written many white papers for Microsoft including the *Microsoft BizTalk Server Performance Optimization Guide*, which is available on the Microsoft Developers Network (MSDN) website. Prior to joining Microsoft, Ewan worked as a Cisco Certified Academy Instructor (CCAI) for a regional training organization, delivering advanced routing and networking courses. Ewan holds a bachelor's degree in computing with management from the University of Leeds. Apart from work, Ewan's hobbies include reading and going to the gym. He has also recently found a fond interest for Jiu Jitsu. Ewan maintains his blog at <http://blogs.msdn.com/ewanf>.

Mum, Dad thanks for always believing in me, Shona and Kieran, and giving us the strength to do whatever we set our minds on.

Stephen W. Thomas is an independent consultant specializing in BizTalk Server and other Microsoft Server technologies including Workflow and AppFabric. He has been working with BizTalk for over eight years. For the past six years, Stephen has been recognized as a Microsoft Most Valuable Professional (MVP) in BizTalk Server. In addition to being an MVP, Stephen is a Microsoft Connected Technology Advisor.

Stephen has done consulting work for numerous clients including many in the Fortune 500. Stephen runs the BizTalk community site <http://www.BizTalkGurus.com>. The site offers a community forum, over 50 BizTalk samples, various how-to videos, and Stephen's blog. Stephen has presented at several Microsoft TechEd events, multiple SOA Conferences, and various user groups.

I would like to thank my loving wife, Angel, who has supported me over the many months of working on this book and to the new little BizTalkGuru scheduled to arrive in February 2011. I would also like to remember my furry babies Kendall and Jordan who lost out on valuable play time as I was working on sample code.

Stunningly handsome, yet surprisingly humble, **Mike Sexton** spent the first ten years of his career as a public defender in New York. Upon learning the discrepancies between his salary and the salary of newly minted college graduates working in IT, he had an epiphany and immediately learned how to program database applications. He has designed and built database applications for 12 years in both SQL Server and Oracle-based systems; he has published in SQL Server Magazine and blogs on a semi-regular basis. He currently works for Avanade, the premier integrator of Microsoft technologies in the enterprise. Mike's role as a database architect has him traveling the USA, bestowing his database wisdom on the less fortunate. Mike can be found with a gorgeous blonde on his arm, living the high life in Colorado.

I would like to thank my wife of 25 years for not giving in to the numerous temptations to murder me that I have provided over the years. I would also like to thank the management of Avanade for their patience and support while writing this book.

Rama Ramani has built experience, over the last decade, in enterprise server products across databases, RFID middleware, and application server caching technologies. The roles have ranged from systems programming, feature PM in product teams, and now as part of the Customer Advisory Team working with some of the largest customer deployments. He has a bachelors degree in computer science from the University of Madras and a masters degree in computer science from the University of Florida.

In this free time, he likes to read books or watch motivational videos on leadership and entrepreneurship.

I would like to acknowledge my co-authors for their excellent teamwork in getting this book to fruition. I would like to thank my wife for letting me spend some of the weekends and evenings alone, working on the book. Finally, I would like to thank my parents, who have been a great source of inspiration and for providing me with excellent education.

About the Reviewer

Yossi Dahan has been involved in professional software development for 13 years. Starting with the development of e-commerce systems for companies worldwide, he soon faced challenges involved in creating systems with complex business processes and both in-house and third party integration requirements. Drawn by these challenges, Yossi has decided to focus in these areas and so, since 2000, has been working almost exclusively on projects with significant BPM and EAI aspects.

In 2005, Yossi had founded Sabra Ltd in the UK. Created specifically to help organizations build better business processes and integration solutions, Sabra has worked with enterprises of all sizes, all over the UK, helping them architect, design, and build BPM and EAI solutions using Microsoft technologies.

Sabra also works to build in-house capabilities for its customers' training and mentoring teams; on design, development, and operations of complex systems, arming them with its experience gained through many projects, well-proven patterns, and best practices picked up in their field.

I'd like to thank the authors for asking me to review this book, I was flattered by their trust in me on this product of their hard work, and for the opportunity to learn so much in the process; this exercise has certainly been (as book writing/reviewing often is) thought provoking.

Of course I thank Iva, my wife, for dealing with long evenings of solitude while I worked on the chapters of this book and for putting up with my constant whining about missing my deadlines.

Last, I'd like to thank Packt, and in particular, Shubhanjan Chatterjee, for all the help during the whole process and for accepting my excuses for not meeting my deadlines.

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