Beginning JBoss® Seam

From Novice to Professional

Joseph Faisal Nusairat

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To the memory of my grandparents, Kasim Nusair and Kurdeih Rashdan;
To my grandparents, Henry Albert Baker and Mary Baker;
To my parents, Janette Darr and AJ Nusairat;
And to all my friends and family who supported me throughout the years.

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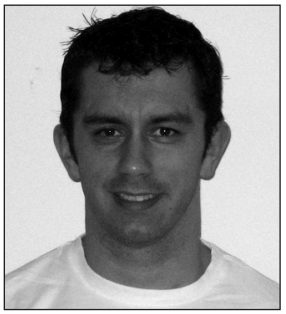
About the Author



JOSEPH FAISAL NUSAIRAT is a software developer who has been working full-time in the Columbus, Ohio, area since 1998, primarily focused on Java development. His career has taken him into a variety of Fortune 500 industries, including military applications, data centers, banking, Internet security, pharmaceuticals, and insurance. Throughout this experience, he has worked on all varieties of application development—from design to architecture to development. Joseph, like most Java developers, is particularly fond of open source projects and tries to use as much open source software as possible when working with clients.

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I am sure I left out someone, so just a general thanks to all those that helped.

And finally, you the reader, for picking this book to read out of all the Java books out there. I appreciate it and hope you come away with a better understanding of JBoss Seam.

Introduction

Agile, agile, agile, Ruby, Ruby, Ruby. It seems like every conference you go to these days talks about either agile or Ruby. Those are the big buzzwords in the industry. Everywhere you go, that's all you seem to hear. And as my friend Rob Stevenson says, that's all he wants to do. In fact, the only books he reads now are Ruby books. The real question is, why? Personally I think it's because he likes a limited selection of books. But the other reason is, Ruby is fun. It's fast, it's cool, it's new, and it makes development a pleasure. And computer-savvy developers seem to love anything new. I honestly get a bit tired of *everything* coming out calling itself agile. Its such a key word these days that I am just waiting for recruiters and sales managers of consulting companies to start telling their clients they need agile developers.

The real question has to be, what is meant by *agile*? What is needed to make something agile? Agile development keeps the ease of development while still making the code clean. And I think that's what every user is *really* looking for. It's why Ruby is popular, and it's the attraction to Trails. There is so much work going into plumbing these days that it's almost overwhelming. Every team seems to want to reinvent the wheel. Larger companies have extended frameworks such as Apache Struts and are using it for what they think are specific needs. Sometimes this is useful; other times all they have done is added a layer of confusion.

In today's business world, companies are trying to minimize cost and time while maximizing product. This often results in many shortcuts and can result in code that is even more difficult to maintain. This is where agile development comes into play. This is also where JBoss Seam comes into play. We as developers need to develop the business logic and the presentation tier as fast as possible. With agile development, this becomes possible.

I like refer to Seam as an enterprise agile framework, which to some people may seem like an oxymoron because *agile* precludes you to think something is small and easy, whereas *enterprise* often brings to mind bountiful amounts of code. However, I am hoping that is exactly what your experience will be while reading this book and using Seam.

Throughout this book, you will examine the concepts of web development, the parts of Seam, and various examples using Seam. By the end, you should have an appreciation that although Seam is complex behind the scenes, to the developer it can be fairly smooth. And although it may not have the kinks out of its armor yet, it is definitely proceeding down a path that is good for the Java community.

Items Covered in This Book

In this book, you will first learn some of the basics of web application design. You'll then learn about the JSF and EJB3 components. After that, the book will progressively move to more-advanced and interesting topics related to Seam. The following list outlines the contents of each chapter:

Chapter 1: What Is JBoss Seam?

This introductory chapter briefly explains Seam and provides an introduction to the Model View Controller (MVC) framework, Java 5, and JBoss 4. Both Java 5 and JBoss 4 are needed to run most of the applications in the book, and Java 5 is a must for Seam. If you know both of them, you can skip ahead.

Chapter 2: Web Applications

This chapter starts by covering the basics of web application design. We will step through basic design patterns when creating the presentation tier and compare and contrast them between Struts and Seam. The idea is to start the process of thinking how Seam will save you time as compared to traditional web application development. The end of the chapter presents the two basic samples we will use as the example applications throughout the book.

Chapter 3: JSF Fundamentals

Seam requires the use of JavaServer Faces (JSF) for its presentation tier component. Although you do not need the most advanced JSF knowledge to use Seam, you still need a basic understanding. This chapter provides the basic knowledge and architecture of JSF, while limiting discussion of certain topics, such as backing beans, because they do not have high reuse when using Seam.

Chapter 4: EJB3 Fundamentals

Seam requires Enterprise JavaBeans 3 (EJB3) for its business logic and persistence tiers. Although you could get away with having a limited or beginner's understanding of JSF to use Seam, an intermediate knowledge of EJB3 is more desirable. Because this is where the bulk of the coding takes place, this chapter introduces you to the three major facets of EJB3: the stateful session bean (SFSB), stateless session bean (SLSB), and entity bean (EB). I also go over the message-driven bean (MDB), but to a lesser extent. This chapter focuses more on the needs of the EB because those are radically different from the EJB 2.1 specification.

Chapter 5: Introduction to Seam

This is the first official chapter introducing you to Seam. The previous chapters presented background information required for beginners. In this chapter, you will learn how to write a basic Seam application. You will also learn the fundamentals of the Seam architecture. Near the end, you will learn about additional beginner components of Seam. By the end of this chapter, you will be able to write more-complex Seam applications.

Chapter 6: Seam Contexts

With basic Seam knowledge in hand, you will learn in this chapter more-advanced Seam topics, namely contexts. Contexts in Seam are essentially the same as they are in servlets. However, there are more of them and they have more functionality. This chapter discusses the Stateless, Event, Page, Conversation, Session, and Application contexts.

Chapter 7: Business Process in Seam

This chapter focuses on using JBoss Business Process Management (jBPM) with Seam. jBPM is JBoss's business process management system, which usually requires custom code to interact with. However, there is a Seam context specifically for Business Process components. This chapter covers the basics of jBPM and how to use it with Seam.

Chapter 8: Advanced Topics

By this point, all of the basics on using Seam and its various contexts have been covered. This chapter covers more-advanced topics, from internationalization and themes to Drools support. Although these topics may not be extremely difficult, they are necessary topics for users who want to make the most out of Seam.

Chapter 9: Advanced Configurations

Earlier I alluded to how you do not have to use EJB3 with Seam. This chapter starts by showing you how you can use EJB3 outside the application server. We will then go on to using Seam without EJB3 at all, just by using JavaBeans for our business logic and Hibernate for our persistence tier. This chapter will be especially helpful if your ability to deploy to a full application server is not quite there yet.

Chapter 10: Seam Tools

This chapter introduces you to free tools available to help create Seam applications. These are a mix of Seam-specific and non-Seam-specific tools that help make enterprise

development easier. This chapter also covers how to perform testing with Seam, specifically with TestNG.

Who This Book Is For

This book is a beginner's guide to Seam. However, the book also provides details on the components used by Seam such as JSF and EJB3. Although having a Java EE client/server developer background is not an absolute must, without it the benefit of using Seam may not be 100 percent clear, because most of its functionality deals with overcoming problems developers have had in the past. That being said, at the minimum, you should have the following:

- A beginner's understanding of Java (at least Java 1.2 and preferably Java 1.4)
- An understanding of basic web application development

Downloading and Running the Source Code

I have tried to include as much of the source code as I can in this book. The source code is also available from the Source Code/Download area of the Apress website (`http://www.apress.com`) and from my Integrallis website (`http://www.integrallis.com`). From the Integrallis site, click Publications and then select Beginning JBoss Seam. From either site, you can download a zip file that includes the following:

- Source code
- Dependent library JAR files
- Apache Ant build scripts
- Database build scripts (when applicable)

You can also find any notes or updates about the book on these websites.

Contacting the Author

If you have any questions or comments about this book, you can contact me via email at `jnusairat@integrallis.com`.