

Spring Boot Framework For Micro Services

"In this video course, you will learn to work on two themes of Spring Framework 5.0 - Reactive Programming and Microservices, which the most significant change coming up in Spring 5.0. Since Microservices was recently introduced with Spring Boot as the most popular micro service, a volume in this course is dedicated to introducing Spring Boot and Spring Cloud."--Resource description page.

Would you like to use a consistent visual notation for drawing integration solutions? "Look inside the front cover." Do you want to harness the power of asynchronous systems without getting caught in the pitfalls? "See "Thinking Asynchronously" in the Introduction." Do you want to know which style of application integration is best for your purposes? "See Chapter 2, Integration Styles." Do you want to learn techniques for processing messages concurrently? "See Chapter 10, Competing Consumers and Message Dispatcher." Do you want to learn how you can track asynchronous messages as they flow across distributed systems? "See Chapter 11, Message History and Message Store." Do you want to understand how a system designed using integration patterns can be implemented using Java Web services, .NET message queuing, and a TIBCO-based publish-subscribe architecture? "See Chapter 9, Interlude: Composed Messaging." Utilizing years of practical experience, seasoned experts Gregor Hohpe and Bobby Woolf show how asynchronous messaging has proven to be the best strategy for enterprise integration success. However, building and deploying messaging solutions presents a number of problems for developers. " Enterprise Integration Patterns " provides an invaluable catalog of sixty-five patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book. 0321200683B09122003

A single dramatic software failure can cost a company millions of dollars - but can be avoided with simple changes to design and architecture. This new edition of the best-selling industry standard shows you how to create systems that run longer, with fewer failures, and recover better when bad things happen. New coverage includes DevOps, microservices, and cloud-native architecture. Stability antipatterns have grown to include systemic problems in large-scale systems. This is a must-have pragmatic guide to engineering for production systems. If you're a software developer, and you don't want to get alerts every night for the rest of your life, help is here. With a combination of case studies about huge losses - lost revenue, lost reputation, lost time, lost opportunity - and practical, down-to-earth advice that was all gained through painful experience, this book helps you avoid the pitfalls that cost companies millions of dollars in downtime and reputation. Eighty percent of project life-cycle cost is in production, yet few books address this topic. This updated edition deals with the production of today's systems - larger, more complex, and heavily virtualized - and includes information on chaos engineering, the discipline of applying randomness and deliberate stress to reveal systematic problems. Build systems that survive the real world, avoid downtime, implement zero-downtime upgrades and continuous delivery, and make cloud-native applications resilient. Examine ways to architect, design, and build software - particularly distributed systems - that stands up to the typhoon winds of a flash mob, a Slashdotting, or a link on Reddit. Take a hard look at software that failed the test and find ways to make sure your software survives. To skip the pain and get the experience...get this book.

Written by the core development team of JHipster and fully updated for JHipster 6, Java 11, and Spring Boot 2.1, this book will show you how to build modern web applications with real-world examples and best practices Key Features Build full stack applications with modern JavaScript frameworks such as Angular, React, and Vue.js Explore the JHipster microservices stack, which includes Spring Cloud, Netflix OSS, and the Elastic Stack Learn advanced local and cloud deployment strategies using Docker and Kubernetes Book Description JHipster is an open source development platform that allows you to easily create web apps and microservices from scratch without spending time on wiring and integrating different technologies. Updated to include JHipster 6, Java 11, Spring Boot 2.1, Vue.js, and Istio, this second edition of Full Stack Development with JHipster will help you build full stack applications and microservices seamlessly. You'll start by understanding JHipster and its associated tools, along with the essentials of full stack development, before building a monolithic web app. You'll then learn the JHipster Domain Language (JDL) with entity modeling using JDL-Studio. With this book, you'll create production-ready web apps using Spring Boot, Spring Framework, Angular, and Bootstrap, and run tests and set up continuous integration pipelines with Jenkins. As you advance, you'll learn how to convert your monoliths to microservices and how to package your application for production with various deployment options, including Heroku and Google Cloud. You'll also learn about Docker and Kubernetes, along with an introduction to the Istio service mesh. Finally, you'll build your client-side with React and Vue.js and discover JHipster's best practices. By the end of the book, you'll be able to leverage the best tools available to build modern web apps. What you will learn Create full stack apps from scratch using the latest features of JHipster 6 and Spring Boot 2.1 Build business logic by creating and developing entity models using JDL Understand how to convert a

monolithic architecture into a full-fledged microservices architecture Build and package your apps for production using Docker Deploy your application to Google Cloud with Kubernetes Create continuous integration/continuous delivery pipelines with Jenkins Create applications using Angular, React, and Vue.js client-side frameworks Who this book is for This book is for full stack developers who want to build web applications and microservices speedily without writing a lot of boilerplate code. If you're a backend developer looking to learn full stack development with JavaScript frameworks and libraries such as Angular, React, and Vue.js, you'll find this book useful. Experience in building Java web applications is required. Some exposure to the Spring Framework would be beneficial but not necessary to get the most out of this book.

Build smart, efficient, and fast enterprise-grade web implementation of the microservices architecture that can be easily scaled. Key Features Write easy-to-maintain lean and clean code with Kotlin for developing better microservices Scale your Microservices in your own cloud with Docker and Docker Swarm Explore Spring 5 functional reactive web programming with Spring WebFlux Book Description With Google's inclusion of first-class support for Kotlin in their Android ecosystem, Kotlin's future as a mainstream language is assured. Microservices help design scalable, easy-to-maintain web applications; Kotlin allows us to take advantage of modern idioms to simplify our development and create high-quality services. With 100% interoperability with the JVM, Kotlin makes working with existing Java code easier. Well-known Java systems such as Spring, Jackson, and Reactor have included Kotlin modules to exploit its language features. This book guides the reader in designing and implementing services, and producing production-ready, testable, lean code that's shorter and simpler than a traditional Java implementation. Reap the benefits of using the reactive paradigm and take advantage of non-blocking techniques to take your services to the next level in terms of industry standards. You will consume NoSQL databases reactively to allow you to create high-throughput microservices. Create cloud-native microservices that can run on a wide range of cloud providers, and monitor them. You will create Docker containers for your microservices and scale them. Finally, you will deploy your microservices in OpenShift Online. What you will learn Understand microservice architectures and principles Build microservices in Kotlin using Spring Boot 2.0 and Spring Framework 5.0 Create reactive microservices that perform non-blocking operations with Spring WebFlux Use Spring Data to get data reactively from MongoDB Test effectively with JUnit and Kotlin Create cloud-native microservices with Spring Cloud Build and publish Docker images of your microservices Scaling microservices with Docker Swarm Monitor microservices with JMX Deploy microservices in OpenShift Online Who this book is for If you are a Kotlin developer with a basic knowledge of microservice architectures and now want to effectively implement these services on enterprise-level web applications, then this book is for you

Beginning Spring Boot 2 Applications and Microservices with the Spring Framework Apress

Work with all aspects of batch processing in a modern Java environment using a selection of Spring frameworks. This book provides up-to-date examples using the latest configuration techniques based on Java configuration and Spring Boot. The Definitive Guide to Spring Batch takes you from the "Hello, World!" of batch processing to complex scenarios demonstrating cloud native techniques for developing batch applications to be run on modern platforms. Finally this book demonstrates how you can use areas of the Spring portfolio beyond just Spring Batch 4 to collaboratively develop mission-critical batch processes. You'll see how a new class of use cases and platforms has evolved to have an impact on batch-processing. Data science and big data have become prominent in modern IT and the use of batch processing to orchestrate workloads has become commonplace. The Definitive Guide to Spring Batch covers how running finite tasks on cloud infrastructure in a standardized way has changed where batch applications are run. Additionally, you'll discover how Spring Batch 4 takes advantage of Java 9, Spring Framework 5, and the new Spring Boot 2 micro-framework. After reading this book, you'll be able to use Spring Boot to simplify the development of your own Spring projects, as well as take advantage of Spring Cloud Task and Spring Cloud Data Flow for added cloud native functionality. Includes a foreword by Dave Syer, Spring Batch project founder. What You'll Learn Discover what is new in Spring Batch 4 Carry out finite batch processing in the cloud using the Spring Batch project Understand the newest configuration techniques based on Java configuration and Spring Boot using practical examples Master batch processing in complex scenarios including in the cloud Develop batch applications to be run on modern platforms Use areas of the Spring portfolio beyond Spring Batch to develop mission-critical batch processes Who This Book Is For Experienced Java and Spring coders new to the Spring Batch platform. This definitive book will be useful in allowing even experienced Spring Batch users and developers to maximize the Spring Batch tool.

Learn Spring Boot and how to build Java-based enterprise, web, and microservice applications with it. In this book, you'll see how to work with relational and NoSQL databases, build your first microservice, enterprise, or web application, and enhance that application with REST APIs. You'll also learn how to build reactive web applications using Spring Boot along with Spring Web Reactive. Then you'll secure your Spring Boot-created application or service before testing and deploying it. After reading and learning with Beginning Spring Boot 2, you'll have the skills and techniques to start building your first Spring Boot applications and microservices with confidence to take the next steps in your career journey. What You'll Learn Use Spring Boot autoconfiguration Work with relational and NoSQL databases Build web applications with Spring Boot Apply REST APIs using Spring Boot Create reactive web applications using Spring Web Reactive Secure your Spring Boot applications or web services Test and deploy your Spring Boot applications Who This Book Is For Experienced Java and Spring Framework developers who are new to the new Spring Boot micro-framework.

Develop cloud native applications with microservices using Spring Boot, Spring Cloud, and Spring Cloud Data Flow About This Book Explore the new features and components in Spring Evolve towards micro services and cloud native applications Gain powerful insights into advanced concepts of Spring and Spring Boot to develop applications more effectively Understand the basics of Kotlin and use it to develop a quick service with Spring Boot Who This Book Is For This book is for an experienced Java developer who

knows the basics of Spring, and wants to learn how to use Spring Boot to build applications and deploy them to the cloud. What You Will Learn Explore the new features in Spring Framework 5.0 Build microservices with Spring Boot Get to know the advanced features of Spring Boot in order to effectively develop and monitor applications Use Spring Cloud to deploy and manage applications on the Cloud Understand Spring Data and Spring Cloud Data Flow Understand the basics of reactive programming Get to know the best practices when developing applications with the Spring Framework Create a new project using Kotlin and implement a couple of basic services with unit and integration testing In Detail Spring 5.0 is due to arrive with a myriad of new and exciting features that will change the way we've used the framework so far. This book will show you this evolution—from solving the problems of testable applications to building distributed applications on the cloud. The book begins with an insight into the new features in Spring 5.0 and shows you how to build an application using Spring MVC. You will realize how application architectures have evolved from monoliths to those built around microservices. You will then get a thorough understanding of how to build and extend microservices using Spring Boot. You will also understand how to build and deploy Cloud-Native microservices with Spring Cloud. The advanced features of Spring Boot will be illustrated through powerful examples. We will be introduced to a JVM language that's quickly gaining popularity - Kotlin. Also, we will discuss how to set up a Kotlin project in Eclipse. By the end of the book, you will be equipped with the knowledge and best practices required to develop microservices with the Spring Framework. Style and approach This book follows an end-to-end tutorial approach with lots of examples and sample applications, covering the major building blocks of the Spring framework.

Develop diverse real-life projects including most aspects of Spring Boot Key Features Run production-grade based applications using the Spring WebFlux framework Learn to develop high performance, asynchronous applications with Spring Boot Create robust microservice-based applications with Kotlin using Spring Boot Book Description Spring is one of the best tools available on the market for developing web, enterprise, and cloud-ready software. The goal of Spring Boot is to provide a set of tools for quickly building Spring applications that are easy to configure, and that make it easy to create and run production-grade Spring-based applications. Spring Boot 2.0 Projects will get you acquainted with important features of the latest version of this application-building tool and will cover basic, as well as advanced topics. The book starts off by teaching you how to create a web application using Spring Boot, followed by creating a Spring Boot-based simple blog management system that uses Elasticsearch as the data store. As you make your way through the chapters, you'll build a RESTful web services application using Kotlin and the Spring WebFlux framework. Spring WebFlux is a new framework that helps in creating a reactive application in a functional way. Toward the end of the book, you will build a taxi-hailing API with reactive microservices using Spring Boot and a Twitter clone with a Spring Boot backend. Finally, you'll learn how to build an asynchronous email formatter. What you will learn Learn the fundamental features of Spring Boot 2.0 Customize Spring Boot 2.0 applications Build a basic web application Use Redis to build a taxi-hailing API Create a simple blog management system and a Twitter clone Develop a reactive RESTful web service with Kotlin using Spring Boot Who this book is for This book is for competent Spring developers who wish to understand how to develop complex yet scalable applications with Spring Boot. You must have a good knowledge of Java programming and be familiar with the basics of Spring.

See how Domain-Driven Design (DDD) combines with Jakarta EE MicroProfile or Spring Boot to offer a complete suite for building enterprise-grade applications. In this book you will see how these all come together in one of the most efficient ways to develop complex software. Practical Domain-Driven Design in Enterprise Java starts by building out the Cargo Tracker reference application as a monolithic application using the Jakarta EE platform. By doing so, you will map concepts of DDD (bounded contexts, language, and aggregates) to the corresponding available tools (CDI, JAX-RS, and JPA) within the Jakarta EE platform. Once you have completed the monolithic application, you will walk through the complete conversion of the monolith to a microservices-based architecture, again mapping the concepts of DDD and the corresponding available tools within the MicroProfile platform (config, discovery, and fault tolerance). To finish this section, you will examine the same microservices architecture on the Spring Boot platform. The final set of chapters looks at what the application would be like if you used the CQRS and event sourcing patterns. Here you'll use the Axon framework as the base framework. What You Will Learn Discover the DDD architectural principles and use the DDD design patterns Use the new Eclipse Jakarta EE platform Work with the Spring Boot framework Implement microservices design patterns, including context mapping, logic design, entities, integration, testing, and security Carry out event sourcing Apply CQRS Who This Book Is For Junior developers intending to start working on enterprise Java; senior developers transitioning from monolithic- to microservices-based architectures; and architects transitioning to a DDD philosophy of building applications.

Discover the latest features of Spring framework by building robust, fast, and reactive web applications Key Features Take advantage of all the features of Spring 5.0 with third party tools to build a robust back end Secure Spring based web application using Spring Security framework with LDAP and OAuth protocol Develop robust and scalable microservice based applications on Spring Cloud, using Spring Boot Book Description Spring makes it easy to create RESTful applications, merge with social services, communicate with modern databases, secure your system, and make your code modular and easy to test. With the arrival of Spring Boot, developers can really focus on the code and deliver great value, with minimal contour. This book will show you how to build various projects in Spring 5.0, using its features and third party tools. We'll start by creating a web application using Spring MVC, Spring Data, the World Bank API for some statistics on different countries, and MySQL database. Moving ahead, you'll build a RESTful web services application using Spring WebFlux framework. You'll be then taken through creating a Spring Boot-based simple blog management system, which uses Elasticsearch as the data store. Then, you'll use Spring Security with the LDAP libraries for authenticating users and create a central authentication and authorization server

using OAuth 2 protocol. Further, you'll understand how to create Spring Boot-based monolithic application using JHipster. Toward the end, we'll create an online book store with microservice architecture using Spring Cloud and Netflix OSS components, and a task management system using Spring and Kotlin. By the end of the book, you'll be able to create coherent and flexible real-time web applications using Spring Framework. What you will learn Build Spring based application using Bootstrap template and JQuery Understand the Spring WebFlux framework and how it uses Reactor library Interact with Elasticsearch for indexing, querying, and aggregating data Create a simple monolithic application using JHipster Use Spring Security and Spring Security LDAP and OAuth libraries for Authentication Develop a microservice-based application with Spring Cloud and Netflix Work on Spring Framework with Kotlin Who this book is for This book is for competent Spring developers who wish to understand how to develop complex yet flexible applications with Spring. You must have a good knowledge of Java programming and be familiar with the basics of Spring.

Annotation Over the past 10 years, distributed systems have become more fine-grained. From the large multi-million line long monolithic applications, we are now seeing the benefits of smaller self-contained services. Rather than heavy-weight, hard to change Service Oriented Architectures, we are now seeing systems consisting of collaborating microservices. Easier to change, deploy, and if required retire, organizations which are in the right position to take advantage of them are yielding significant benefits. This book takes an holistic view of the things you need to be cognizant of in order to pull this off. It covers just enough understanding of technology, architecture, operations and organization to show you how to move towards finer-grained systems.

With over 75 million downloads per month, Spring Boot is the most widely used Java framework available. Its ease and power have revolutionized application development from monoliths to microservices. Yet Spring Boot's simplicity can also be confounding. How do developers learn enough to be productive immediately? This practical book shows you how to use this framework to write successful mission-critical applications. Mark Heckler from VMware, the company behind Spring, guides you through Spring Boot's architecture and approach, covering topics such as debugging, testing, and deployment. If you want to develop cloud native Java or Kotlin applications with Spring Boot rapidly and effectively--using reactive programming, building APIs, and creating database access of all kinds--this book is for you. Learn how Spring Boot simplifies cloud native application development and deployment Build reactive applications and extend communication across the network boundary to create distributed systems Understand how Spring Boot's architecture and approach increase developer productivity and application portability Deploy Spring Boot applications for production workloads rapidly and reliably Monitor application and system health for optimal performance and reliability Debug, test, and secure cloud-based applications painlessly

Build a microservices architecture with Spring Boot, by evolving an application from a small monolith to an event-driven architecture composed of several services. This book follows an incremental approach to teach microservice structure, test-driven development, Eureka, Ribbon, Zuul, and end-to-end tests with Cucumber. Author Moises Macero follows a very pragmatic approach to explain the benefits of using this type of software architecture, instead of keeping you distracted with theoretical concepts. He covers some of the state-of-the-art techniques in computer programming, from a practical point of view. You'll focus on what's important, starting with the minimum viable product but keeping the flexibility to evolve it. What You'll Learn Build microservices with Spring Boot Use event-driven architecture and messaging with RabbitMQ Create RESTful services with Spring Master service discovery with Eureka and load balancing with Ribbon Route requests with Zuul as your API gateway Write end-to-end tests for an event-driven architecture using Cucumber Carry out continuous integration and deployment Who This Book Is For Those with at least some prior experience with Java programming. Some prior exposure to Spring Boot recommended but not required.

Microservices are the next big thing in designing scalable, easy-to-maintain applications. This latest edition of Mastering Microservices with Java, works on Java 11. It covers a wide range of exciting, new developments in the world of microservices such as microservices patterns, interprocess communication with gRPC, and service orchestration. Learn to develop, test, and deploy your Spring Boot distributed application and explore various best practices. Key Features Build and deploy your microservices architecture in the cloud Build event-driven resilient systems using Hystrix and Turbine Explore API management tools such as KONG and API documentation tools such as Swagger Book Description Spring is one of the best frameworks on the market for developing web, enterprise, and cloud ready software. Spring Boot simplifies the building of complex software dramatically by reducing the amount of boilerplate code, and by providing production-ready features and a simple deployment model. This book will address the challenges related to power that come with Spring Boot's great configurability and flexibility. You will understand how Spring Boot configuration works under the hood, how to overwrite default configurations, and how to use advanced techniques to prepare Spring Boot applications to work in production. This book will also introduce readers to a relatively new topic in the Spring ecosystem – cloud native patterns, reactive programming, and applications. Get up to speed with microservices with Spring Boot and Spring Cloud. Each chapter aims to solve a specific problem or teach you a useful skillset. By the end of this book, you will be proficient in building and deploying your Spring Boot application. What you will learn Build logically structured and highly maintainable Spring Boot applications Configure RESTful microservices using Spring Boot Make the application production and operation-friendly with Spring Actuator Build modern, high-performance distributed applications using cloud patterns Manage and deploy your Spring Boot application to the cloud (AWS) Monitor distributed applications using log aggregation and ELK Who this book is for The book is targeted at experienced Spring and Java developers who have a basic knowledge of working with Spring Boot. The reader should be familiar with Spring Boot basics, and aware of its benefits over traditional Spring Framework-based applications. Aimed at users who are familiar with Java development, "Spring Live" is designed to explain how to integrate Spring into your projects to make software development easier.

(Technology & Industrial)

Microservices is an architectural style in which large, complex software applications are composed of one or more smaller services. Each of these microservices focuses on completing one task that represents a small business capability. These microservices can be developed in any programming language. This IBM® Redbooks® publication covers Microservices best practices for Java. It focuses on creating cloud native applications using the latest version of IBM WebSphere® Application Server Liberty, IBM Bluemix® and other Open Source Frameworks in the Microservices ecosystem to highlight Microservices best practices for Java.

A practical, comprehensive, and user-friendly approach to building microservices in Spring About This Book Update existing applications to integrate reactive streams released as a part of Spring 5.0 Learn how to use Docker and Mesos to push the boundaries and build successful microservices Upgrade the capability model to implement scalable microservices Who This Book Is For This book is ideal for Spring developers who want to build cloud-ready, Internet-scale applications, and simple RESTful services to meet modern business demands. What You Will Learn Familiarize yourself with the microservices architecture and its benefits Find out how to avoid common challenges and pitfalls while developing microservices Use Spring Boot and Spring Cloud to develop microservices Handle logging and monitoring microservices Leverage Reactive Programming in Spring 5.0 to build modern cloud native applications Manage internet-scale microservices using Docker, Mesos, and Marathon Gain insights into the latest inclusion of Reactive Streams in Spring and make applications more resilient and scalable In Detail The Spring Framework is an application framework and inversion of the control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions to build web applications on top of the Java EE platform. This book will help you implement the microservice architecture in Spring Framework, Spring Boot, and Spring Cloud. Written to the latest specifications of Spring that focuses on Reactive Programming, you'll be able to build modern, internet-scale Java applications in no time. The book starts off with guidelines to implement responsive microservices at scale. Next, you will understand how Spring Boot is used to deploy serverless autonomous services by removing the need to have a heavyweight application server. Later, you'll learn how to go further by deploying your microservices to Docker and managing them with Mesos. By the end of the book, you will have gained more clarity on the implementation of microservices using Spring Framework and will be able to use them in internet-scale deployments through real-world examples. Style and approach The book takes a step-by-step approach on developing microservices using Spring Framework, Spring Boot, and a set of Spring Cloud components that will help you scale your applications.

The things you need to do to set up a new software project can be daunting. First, you have to select the back-end framework to create your API, choose your database, set up security, and choose your build tool. Then you have to choose the tools to create your front end: select a UI framework, configure a build tool, set up Sass processing, configure your browser to auto-refresh when you make changes, and configure the client and server so they work in unison. If you're building a new application using Spring Boot and Angular, you can save days by using JHipster. JHipster generates a complete and modern web app, unifying: - A high-performance and robust Java stack on the server side with Spring Boot - A sleek, modern, mobile-first front-end with Angular and Bootstrap - A robust microservice architecture with the JHipster Registry, Netflix OSS, the ELK stack, and Docker - A powerful workflow to build your application with Yeoman, Webpack, and Maven/Gradle

As organizations shift from monolithic applications to smaller, self-contained microservices, distributed systems have become more fine-grained. But developing these new systems brings its own host of problems. This expanded second edition takes a holistic view of topics that you need to consider when building, managing, and scaling microservices architectures. Through clear examples and practical advice, author Sam Newman gives everyone from architects and developers to testers and IT operators a firm grounding in the concepts. You'll dive into the latest solutions for modeling, integrating, testing, deploying, and monitoring your own autonomous services. Real-world cases reveal how organizations today manage to get the most out of these architectures. Microservices technologies continue to move quickly. This book brings you up to speed. Get new information on user interfaces, container orchestration, and serverless Align system design with your organization's goals Explore options for integrating a service with your system Understand how to independently deploy microservices Examine the complexities of testing and monitoring distributed services Manage security with expanded content around user-to-service and service-to-service models

Learn various design patterns and best practices in Spring 5 and use them to solve common design problems. About This Book Explore best practices for designing an application Manage your code easily with Spring's Dependency Injection pattern Understand the benefits that the right design patterns can offer your toolkit Who This Book Is For This book is for developers who would like to use design patterns to address common problems while designing an app using the Spring Framework and Reactive Programming approach. A basic knowledge of the Spring Framework and Java is assumed. What You Will Learn Develop applications using dependency injection patterns Learn best practices to design enterprise applications Explore Aspect-Oriented Programming relating to transactions, security, and caching. Build web applications using traditional Spring MVC patterns Learn to configure Spring using XML, annotations, and Java. Implement caching to improve application performance. Understand concurrency and handle multiple connections inside a web server. Utilizing Reactive Programming Pattern to build Reactive web applications. In Detail Design patterns help speed up the development process by offering well tested and proven solutions to common problems. These patterns coupled with the Spring framework offer tremendous improvements in the development process. The book begins with an overview of Spring Framework 5.0 and design patterns. You will understand the Dependency Injection pattern, which is the main principle behind the decoupling process that Spring performs, thus making it easier to manage your code. You will learn how GoF patterns can be used in Application Design. You will then learn to

use Proxy patterns in Aspect Oriented Programming and remoting. Moving on, you will understand the JDBC template patterns and their use in abstracting database access. Then, you will be introduced to MVC patterns to build Reactive web applications. Finally, you will move on to more advanced topics such as Reactive streams and Concurrency. At the end of this book, you will be well equipped to develop efficient enterprise applications using Spring 5 with common design patterns Style and approach The book takes a pragmatic approach, showing various design patterns and best-practice considerations, including the Reactive programming approach with the Spring 5 Framework and ways to solve common development and design problems for enterprise applications.

Apply microservices patterns to build resilient and scalable distributed systems Key Features Understand the challenges of building large-scale microservice landscapes Build cloud-native production-ready microservices with this comprehensive guide Discover how to get the best out of Spring Cloud, Kubernetes, and Istio when used together Book Description Microservices architecture allows developers to build and maintain applications with ease, and enterprises are rapidly adopting it to build software using Spring Boot as their default framework. With this book, you'll learn how to efficiently build and deploy microservices using Spring Boot. This microservices book will take you through tried and tested approaches to building distributed systems and implementing microservices architecture in your organization. Starting with a set of simple cooperating microservices developed using Spring Boot, you'll learn how you can add functionalities such as persistence, make your microservices reactive, and describe their APIs using Swagger/OpenAPI. As you advance, you'll understand how to add different services from Spring Cloud to your microservice system. The book also demonstrates how to deploy your microservices using Kubernetes and manage them with Istio for improved security and traffic management. Finally, you'll explore centralized log management using the EFK stack and monitor microservices using Prometheus and Grafana. By the end of this book, you'll be able to build microservices that are scalable and robust using Spring Boot and Spring Cloud. What you will learn Build reactive microservices using Spring Boot Develop resilient and scalable microservices using Spring Cloud Use OAuth 2.0/OIDC and Spring Security to protect public APIs Implement Docker to bridge the gap between development, testing, and production Deploy and manage microservices using Kubernetes Apply Istio for improved security, observability, and traffic management Who this book is for This book is for Java and Spring developers and architects who want to learn how to break up their existing monoliths into microservices and deploy them either on-premises or in the cloud using Kubernetes as a container orchestrator and Istio as a service Mesh. No familiarity with microservices architecture is required to get started with this book.

Quickly and productively develop complex Spring applications and microservices - out of the box - with minimal fuss on things like configurations. This book will show you how to fully leverage the Spring Boot productivity suite of tools and how to apply them through the use of case studies. Pro Spring Boot is your authoritative hands-on practical guide for increasing your Spring Framework-based enterprise Java and cloud application productivity while decreasing development time using the Spring Boot productivity suite of tools. It's a no nonsense guide with case studies of increasing complexity throughout the book. This book is written by Felipe Gutierrez, a Spring expert consultant who works with Pivotal, the company behind the popular Spring Framework. What You Will Learn Write your first Spring Boot application Configure Spring Boot Use the Spring Boot Actuator Carry out web development with Spring Boot Build microservices with Spring Boot Handle databases and messaging with Spring Boot Test and deploy with Spring Boot Extend Spring Boot and its available plug-ins Who This Book Is For Experienced Spring and Java developers seeking increased productivity gains and decreased complexity and development time in their applications and software services.

44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

Summary Spring Microservices in Action teaches you how to build microservice-based applications using Java and the Spring platform. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microservices break up your code into small, distributed, and independent services that require careful forethought and design. Fortunately, Spring Boot and Spring Cloud simplify your microservice applications, just as the Spring Framework simplifies enterprise Java development. Spring Boot removes the boilerplate code involved with writing a REST-based service. Spring Cloud provides a suite of tools for the discovery, routing, and deployment of microservices to the enterprise and the cloud. About the Book Spring Microservices in Action teaches you how to build microservice-based applications using Java and the Spring platform. You'll learn to do microservice design as you build and deploy your first Spring Cloud application. Throughout the book, carefully selected real-life examples expose microservice-based patterns for configuring, routing, scaling, and deploying your services. You'll see how Spring's intuitive tooling can help augment and refactor existing applications with micro services. What's Inside Core microservice design

principles Managing configuration with Spring Cloud Config Client-side resiliency with Spring, Hystrix, and Ribbon Intelligent routing using Netflix Zuul Deploying Spring Cloud applications About the Reader This book is written for developers with Java and Spring experience. About the Author John Carnell is a senior cloud engineer with twenty years of experience in Java. Table of contents Welcome to the cloud, Spring Building microservices with Spring Boot Controlling your configuration with Spring Cloud configuration server On service discovery When bad things happen: client resiliency patterns with Spring Cloud and Netflix Hystrix Service routing with Spring Cloud and Zuul Securing your microservices Event-driven architecture with Spring Cloud Stream Distributed tracing with Spring Cloud Sleuth and Zipkin Deploying your microservices

What separates the traditional enterprise from the likes of Amazon, Netflix, and Etsy? Those companies have refined the art of cloud native development to maintain their competitive edge and stay well ahead of the competition. This practical guide shows Java/JVM developers how to build better software, faster, using Spring Boot, Spring Cloud, and Cloud Foundry. Many organizations have already waded into cloud computing, test-driven development, microservices, and continuous integration and delivery. Authors Josh Long and Kenny Bastani fully immerse you in the tools and methodologies that will help you transform your legacy application into one that is genuinely cloud native. In four sections, this book takes you through: The Basics: learn the motivations behind cloud native thinking; configure and test a Spring Boot application; and move your legacy application to the cloud Web Services: build HTTP and RESTful services with Spring; route requests in your distributed system; and build edge services closer to the data Data Integration: manage your data with Spring Data, and integrate distributed services with Spring's support for event-driven, messaging-centric architectures Production: make your system observable; use service brokers to connect stateful services; and understand the big ideas behind continuous delivery

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

Summary Spring in Action, 5th Edition is the fully updated revision of Manning's bestselling Spring in Action. This new edition includes all Spring 5.0 updates, along with new examples on reactive programming, Spring WebFlux, and microservices. You'll also find the latest Spring best practices, including Spring Boot for application setup and configuration. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Spring Framework makes life easier for Java developers. New features in Spring 5 bring its productivity-focused approach to microservices, reactive development, and other modern application designs. With Spring Boot now fully integrated, you can start even complex projects with minimal configuration code. And the upgraded WebFlux framework supports reactive apps right out of the box! About the Book Spring in Action, 5th Edition guides you through Spring's core features, explained in Craig Walls' famously clear style. You'll roll up your sleeves and build a secure database-backed web app step by step. Along the way, you'll explore reactive programming, microservices, service discovery, RESTful APIs, deployment, and expert best practices. Whether you're just discovering Spring or leveling up to Spring 5.0, this Manning classic is your ticket! What's inside Building reactive applications Spring MVC for web apps and RESTful web services Securing applications with Spring Security Covers Spring 5.0 Over 100,000 copies sold! About the Reader For intermediate Java developers. About the Author Craig Walls is a principal software engineer at Pivotal, a popular author, an enthusiastic supporter of Spring Framework, and a frequent conference speaker. Table of Contents PART 1 - FOUNDATIONAL SPRING Getting started with Spring Developing web applications Working with data Securing Spring Working with configuration properties PART 2 - INTEGRATED SPRING Creating REST services Consuming REST services Sending messages asynchronously Integrating Spring PART 3 - REACTIVE SPRING Introducing Reactor Developing reactive APIs Persisting data reactively PART 4 CLOUD-NATIVE SPRING Discovering services Managing configuration Handling failure and latency PART 5 - DEPLOYED SPRING Working with Spring Boot Actuator Administering Spring Monitoring Spring with JMX Deploying Spring

Build scalable microservices with Spring, Docker, and Mesos About This Book Learn how to efficiently build and implement microservices in Spring, and how to use Docker and Mesos to push the boundaries of what you thought possible Examine a number of real-world use cases and hands-on code examples. Distribute your microservices in a completely new way Who This Book Is For If you are a Spring developers and want to build cloud-ready, internet-scale applications to meet modern business demands, then this book is for you Developers will understand how to build simple Restful services and organically grow them to truly enterprise grade microservices ecosystems. What You Will Learn Get to know the microservices development lifecycle process See how to implement microservices governance Familiarize yourself with the microservices architecture and its benefits Use Spring Boot to develop microservices Find out how to avoid common pitfalls when developing microservices Be introduced to end-to-end microservices written in Spring Framework and Spring Boot In Detail The Spring Framework is an application framework and inversion of the control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions to build web applications on top of the Java EE platform. This book will help you implement the microservice architecture in Spring Framework, Spring Boot, and Spring Cloud. Written to the latest specifications of Spring, you'll be able to build modern, Internet-scale Java applications in no time. We would start off with the guidelines to implement responsive microservices at scale. We will then deep dive into Spring Boot, Spring Cloud, Docker, Mesos, and Marathon. Next you will understand how Spring Boot is used to deploy autonomous services, server-less by removing the need to have a

heavy-weight application server. Later you will learn how to go further by deploying your microservices to Docker and manage it with Mesos. By the end of the book, you'll will gain more clarity on how to implement microservices using Spring Framework and use them in Internet-scale deployments through real-world examples. Style and approach The book follows a step by step approach on how to develop microservices using Spring Framework, Spring Boot, and a set of Spring Cloud components that will help you scale your applications.

Solve all your Spring Boot 2 problems using complete and real-world code examples. When you start a new project, you'll be able to copy the code and configuration files from this book, and then modify them for your needs. This can save you a great deal of work over creating a project from scratch. Using a problem-solution approach, Spring Boot 2 Recipes quickly introduces you to Pivotal's Spring Boot 2 micro-framework, then dives into code snippets on how to apply and integrate Spring Boot 2 with the Spring MVC web framework, Spring Web Sockets, and microservices. You'll also get solutions to common problems with persistence, integrating Spring Boot with batch processing, algorithmic programming via Spring Batch, and much more. Other recipes cover topics such as using and integrating Boot with Spring's enterprise services, Spring Integration, testing, monitoring and more. What You'll Learn Get reusable code recipes and snippets for the Spring Boot 2 micro-framework Discover how Spring Boot 2 integrates with other Spring APIs, tools, and frameworks Access Spring MVC and the new Spring Web Sockets for simpler web development Work with microservices for web services development and integration with your Spring Boot applications Add persistence and a data tier seamlessly to make your Spring Boot web application do more Integrate enterprise services to create a more complex Java application using Spring Boot Who This Book Is For Experienced Java and Spring programmers.

Build microservices-based enterprise applications with the latest version of Java EE Key Features Create microservices in Spring and deploy them with Docker and Mesos Examine a number of real-world use cases and hands-on code examples Develop distributed applications based on microservices architecture Book Description Cloud-based applications have been increasingly in demand, and this has caused a shift from monolithic to microservice applications. With the help of Java EE 8 Microservices, you'll get to grips with the components of Java EE 8 and understand how they are used to implement microservices. This book explains how a monolithic application is transformed into a microservice application, then helps you connect it in a traditional way and use advanced approaches for asynchronous communication. Once you have learned the basics, you'll explore advanced topics to make your microservices robust, scalable, and secure. Microservices form distributed applications, and by the end of this book you'll have discovered how to develop, pack, ship, and support distributed applications using Java EE. What you will learn Build microservices from the ground up with Java EE 8 Implement and deploy microservices with Spring Boot Develop reactive pipelines for asynchronous communication Use caching mechanisms and JSON Web Token (JWT) to create scalable and secure microservices Empower microservices with the Micro Profile effort and implement health checks, fault tolerance, and monitoring mechanisms Use containers to build and deploy microservices Create contract-first documentation with Swagger and API Blueprint Who this book is for Java EE 8 Microservices is for Java EE developers keen to build microservice-based enterprise applications.

This book takes you through tried and tested approaches to building distributed systems and implementing microservices architecture. It follows a single real-world project from start to finish, using Spring Boot, Spring Cloud, and a full suite of related tools and frameworks for development, security, testing, and deployment.

Spring Boot is an open source Java-based framework used to create a Micro Service. It is developed by Pivotal Team. It is easy to create a stand-alone and production ready spring applications using Spring Boot. Spring Boot contains a comprehensive infrastructure support for developing a micro service and enables you to develop enterprise-ready applications that you can "just run". This book is designed for Java developers to understand and develop production-ready spring applications with minimum configurations. It explores major features of Spring Boot such as Starters, Auto-configuration, Beans, Actuator and more. By the end of this book, you will gain an intermediate level of expertise in Spring Boot. This book is written for readers who have a prior experience of Java, Spring, Maven, and Gradle. You can easily understand the concepts of Spring Boot if you have knowledge on these concepts. It would be an additional advantage if you have an idea about writing a RESTful Web Service. If you are a beginner, we suggest you to go through books related to these concepts before you start with Spring Boot.

Microservices and big-data increasingly confront us with the limitations of traditional input/output. In traditional IO, work that is IO-bound dominates threads. This wouldn't be such a big deal if we could add more threads cheaply, but threads are expensive on the JVM, and most other platforms. Even if threads were cheap and infinitely scalable, we'd still be confronted with the faulty nature of networks. Things break, and they often do so in subtle, but non-exceptional ways. Traditional approaches to integration bury the faulty nature of networks behind overly simplifying abstractions. We need something better. Join Spring Developer Advocate Josh Long for an introduction to reactive programming in the Spring ecosystem, leveraging the reactive streams specification, Reactor, Spring Boot, Spring Cloud and so much more. This book will cover important concepts in reactive programming including project Reactor and the reactive streams specification, data access, web programming, RPC with protocols like RSocket, testing, and integration and composition, and more.

You can choose several data access frameworks when building Java enterprise applications that work with relational databases. But what about big data? This hands-on introduction shows you how Spring Data makes it relatively easy to build applications across a wide range of new data access technologies such as NoSQL and Hadoop. Through several sample projects, you'll learn how Spring Data provides a consistent programming model that retains NoSQL-specific features and capabilities, and helps you develop Hadoop applications across a wide range of use-cases such as data analysis, event stream processing, and workflow. You'll also discover the features Spring Data adds to Spring's existing JPA and JDBC support for writing RDBMS-based data access layers. Learn about Spring's template helper classes to simplify the use of database-specific functionality Explore Spring Data's repository abstraction and advanced query functionality Use Spring Data with Redis (key/value store), HBase (column-family), MongoDB (document database), and Neo4j (graph database) Discover the GemFire distributed data grid solution Export Spring Data JPA-managed entities to the Web as RESTful web services Simplify the development of HBase applications, using a lightweight object-mapping framework Build example big-data pipelines with Spring Batch and Spring Integration

Summary A developer-focused guide to writing applications using Spring Boot. You'll learn how to bypass the tedious configuration steps so that you can concentrate on your application's behavior. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology The Spring Framework simplifies enterprise Java development, but it does require lots of tedious configuration work. Spring Boot radically streamlines spinning up a Spring application. You get automatic configuration and a model with established conventions for build-time and runtime dependencies. You also get a handy command-line interface you can use to write scripts in Groovy. Developers who use Spring Boot often say that they can't imagine going back to hand configuring their applications. About the Book Spring Boot in Action is a developer-focused guide to writing applications using Spring Boot. In it, you'll learn how to bypass configuration steps so you can focus on your application's behavior. Spring expert Craig Walls uses interesting and practical examples to teach you both how to use the default settings effectively and how to override and customize Spring Boot for your unique environment. Along the way, you'll pick up insights from Craig's years of Spring development experience. What's Inside Develop Spring apps more efficiently Minimal to no configuration Runtime

metrics with the Actuator Covers Spring Boot 1.3 About the Reader Written for readers familiar with the Spring Framework. About the Author Craig Walls is a software developer, author of the popular book Spring in Action, Fourth Edition, and a frequent speaker at conferences. Table of Contents Bootstarting Spring Developing your first Spring Boot application Customizing configuration Testing with Spring Boot Getting Groovy with the Spring Boot CLI Applying Grails in Spring Boot Taking a peek inside with the Actuator Deploying Spring Boot applications APPENDIXES Spring Boot developer tools Spring Boot starters Configuration properties Spring Boot dependencies

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