
Microservices Patterns Your Complete Handbook On

Design Patterns and Best Practices in Java
 Microservices Development Cookbook
 SRE with Java Microservices
 Cloud Native Microservices with Spring and Kubernetes
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 Designing Distributed Systems

Microservices Patterns Your Complete Handbook On

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Design Patterns and Best Practices in Java "O'Reilly Media, Inc."

The practice of enterprise application development has benefited from the emergence of many new enabling technologies. Multi-tiered object-oriented platforms, such as Java and .NET, have become commonplace. These new tools and technologies are capable of building powerful applications, but they are not easily implemented. Common failures in enterprise applications often occur because their developers do not understand the architectural lessons that experienced object developers have learned. *Patterns of Enterprise Application Architecture* is written in direct response to the stiff challenges that face enterprise application developers. The author, noted object-oriented designer Martin Fowler, noticed that despite changes in technology--from Smalltalk to CORBA to Java to .NET--the same basic design ideas can be adapted and applied to solve common problems. With the help of an expert group of contributors, Martin

distills over forty recurring solutions into patterns. The result is an indispensable handbook of solutions that are applicable to any enterprise application platform. This book is actually two books in one. The first section is a short tutorial on developing enterprise applications, which you can read from start to finish to understand the scope of the book's lessons. The next section, the bulk of the book, is a detailed reference to the patterns themselves. Each pattern provides usage and implementation information, as well as detailed code examples in Java or C#. The entire book is also richly illustrated with UML diagrams to further explain the concepts. Armed with this book, you will have the knowledge necessary to make important architectural decisions about building an enterprise application and the proven patterns for use when building them. The topics covered include · Dividing an enterprise application into layers · The major approaches to organizing business logic · An in-depth treatment of mapping between objects and relational databases · Using Model-View-Controller to organize a Web presentation · Handling concurrency for data that spans multiple transactions · Designing distributed object interfaces

Microservices Development Cookbook Addison-Wesley

Professional

Organizations today often struggle to balance business requirements with ever-increasing volumes of data. Additionally, the demand for leveraging large-scale, real-time data is growing rapidly among the most competitive digital industries. Conventional system architectures may not be up to the task. With this practical guide, you'll learn how to leverage large-scale data usage across the business units in your organization using the principles of event-driven microservices. Author Adam Bellemare takes you through the process of building an event-driven microservice-powered organization. You'll reconsider how data is produced, accessed, and propagated across your organization. Learn powerful yet simple patterns for unlocking the value of this data. Incorporate event-driven design and architectural principles into your own systems. And completely rethink how your organization delivers value by unlocking near-real-time access to data at scale. You'll learn: How to leverage event-driven architectures to deliver exceptional business value The role of microservices in supporting event-driven designs Architectural patterns to ensure success both within and between teams in your organization Application patterns for developing powerful event-driven microservices Components and tooling required to get your microservice ecosystem off the ground

SRE with Java Microservices Simon and Schuster

One of the biggest challenges for organizations that have adopted microservice architecture is the lack of architectural, operational, and organizational standardization. After splitting a monolithic application or building a microservice ecosystem from scratch, many engineers are left wondering what's next. In this practical book, author Susan Fowler presents a set of microservice standards in depth, drawing from her experience standardizing over a thousand microservices at Uber. You'll learn how to design microservices that are stable, reliable, scalable, fault tolerant, performant, monitored, documented, and prepared for any catastrophe. Explore production-readiness standards, including: Stability and Reliability: develop, deploy, introduce, and deprecate microservices; protect against dependency failures Scalability and Performance: learn essential components for achieving greater microservice efficiency Fault Tolerance and Catastrophe Preparedness: ensure availability by actively pushing microservices to fail in real time Monitoring: learn how to monitor, log, and display key metrics; establish alerting and on-call procedures Documentation and Understanding: mitigate tradeoffs that come with microservice adoption, including organizational sprawl and technical debt

Cloud Native Microservices with Spring and Kubernetes Packt Publishing Ltd

Microservices: Patterns and Applications Microservices are the next big thing in designing scalable, easy to maintain applications. This book will explain everything you need to know about Microservices to make your next project successful. You will learn: Microservice Patterns This book goes into great detail on all of the Microservice Architecture patterns including * Monolithic Architecture* Microservice Architecture* Service Discovery* Gateway / Proxy API* Orchestrated API* Service Registration* CQRS and Event Sourcing* Bulk Heads* Circuit Breaker* Message Broker The most important thing about Microservices is when and how to apply a pattern, along with explaining what choices you must make and why. Every system is different so it is vital to understand a lot of basics before designing and developing your own Microservices. From Monolithic to Microservice The basics here are how to decompose a Monolithic system into a Microservice and this book shows exactly how this process is completed. Service Oriented Architecture to Microservice A more common need is to migrate

your system from a SOA based architecture to Microservices, there are many advantages and the process is not as straightforward as you would expect. New Microservices If you want to build a brand-new system and leverage the power of Microservices this book outlines the pitfalls, strategies and tactics needed to make this work for you. It is not as easy as it would seem and you will understand why after reading this book. Microservice Technologies You'll learn about what technologies you need to use and understand for successful Microservices. *Virtualization* Containers (Docker and Rocket)* Databases* Security (JSON Web Tokens)* Logging* Exceptions* Caching* Timeouts* Scalability (CAP, Cube)* Platform as a Service (PaaS)* Cloud architecture* Technology agnostic Why Microservices? Isn't this just the latest buzz word? While Microservices may be a recent trend and is gaining traction across the industry as a silver-bullet. It is not a silver-bullet. In this book you will learn important reasons why you cannot treat Microservices or any technology or technique as a silver-bullet. There are tradeoffs and advantages to every architectural decision, you will understand the details by reading this book. Most importantly you will understand how Microservices is what SOA had promised and never delivered. Author: Lucas Krause Lucas has been in the technology industry as a consultant, contractor, architect, engineer, and manager and understands and has used Microservices successfully to solve his client problems. Philosophy of Microservices You'll learn about what the philosophy of Microservices is and why this is important. It is critical to understand the philosophy as that is what makes Microservices work at so many other companies and solutions. If you are looking to gain an understanding of Microservices along with the patterns and application around the process to implementing them than, this is the book for you! Ready to learn about Microservices? Let's go! Want To Be brought up to speed on the latest innovations and techniques with Microservices? Want to Understand Why Microservices? What Makes Microservices so Special? What are the potential pitfalls? Why Are Microservices so popular? How do I make my projects successful? [Building Microservices](#) Simon and Schuster *Microservices in .NET Core, Second Edition* is a comprehensive guide to building microservice applications using the .NET stack. After a crystal-clear introduction to the microservices architectural style, it teaches you practical microservices development skills using MVC Core and ASP.NET Core. This second edition of the bestselling original has been revised with up-to-date tools for the .NET ecosystem, and more new coverage of scoping microservices and deploying to Kubernetes. about the technology Microservice applications are built by connecting single-capability, autonomous components that communicate via APIs. Microservice architectures boost productivity, support Agile workflows, and decrease the risks of catastrophic failures. However, they can be a big challenge to develop, as they demand clearly defined interfaces and reliable infrastructure. Luckily for developers, Microsoft's own MVC Core and ASP.NET Core frameworks help manage the tricky API and simplify the task of building microservice-based applications. about the book *Microservices in .NET Core, Second Edition* provides a complete guide to building microservice applications. You'll start by getting to grips with the unique architectural style of microservices, explained in a way that's clear and accessible. You'll move on quickly to practical development skills for building your own microservices using MVC Core and ASP.NET Core, working on real-world projects such as an ecommerce shopping cart. You'll design and build individual services in C# and learn how to compose them into a simple but functional application back end. In brand-new coverage for the second edition, you'll also learn

about scoping microservices and how to handle the complexities of deploying to Kubernetes. Along the way, you'll address production and operations concerns like monitoring, logging, and security. What's inside Build scalable microservices that are reliable in production Optimized microservices for continuous delivery Design event-based collaboration between microservices Deploy microservices to Kubernetes Set up Kubernetes in Azure about the reader This book is written for C# developers. No previous experience with microservices required. about the author Christian Horsdal is an independent consultant with 20 years of experience building systems from large scale microservice systems to tiny embedded systems--and lots of stuff in between. He is a .NET expert, author of the books *Microservices in .NET Core* and *Instant Nancy Web Development*, a trainer, and an occasional open source contributor.

The Tao of Microservices Addison-Wesley Professional Build and deploy scalable cloud native microservices using the Spring framework and Kubernetes. KEY FEATURES ● Complete coverage on how to design, build, run, and deploy modern cloud native microservices. ● Includes numerous sample code exercises on microservices, Spring and Kubernetes. ● Develop a stronghold on Kubernetes, Spring, and the microservices architecture. ● Complete guide of application containerization on Kubernetes containers. ● Coverage on managing modern applications and infrastructure using observability tools. DESCRIPTION The main objective of this book is to give an overview of cloud native microservices, their architecture, design patterns, best practices, real use cases and practical coverage of the fundamentals of microservices, API first approach, Testing, observability, API Gateway, Service Mesh and Kubernetes alternatives of Spring Cloud. This book covers the implementation of various design patterns of developing cloud native microservices using Spring framework docker and Kubernetes libraries. It covers containerization concepts and hands-on lab exercises like how to build, run and manage microservices applications using Kubernetes. After reading this book, the readers will have a holistic understanding of building, running, and managing cloud native microservices applications on Kubernetes containers. WHAT YOU WILL LEARN ● Learn fundamentals of microservice and design patterns. ● Learn microservices development using Spring Boot and Kubernetes. ● Learn to develop reactive, event-driven, and batch microservices. ● Perform end-to-end microservices testing using Cucumber. ● Implement API gateway, authentication & authorization, load balancing, caching, rate limiting. ● Learn observability and monitoring techniques of microservices. WHO THIS BOOK IS FOR This book is for the Spring Developers, Microservice Developers, Cloud Engineers, DevOps Consultants, Technical Architect and Solution Architects, who have some familiarity with application development, Docker and Kubernetes containers. TABLE OF CONTENTS 1. Overview of Cloud Native microservices 2. Microservice design patterns 3. API first approach 4. Build microservices using the Spring Framework 5. Batch microservices 6. Build reactive and event-driven microservices 7. The API gateway, security, and distributed caching with Redis 8. Microservices testing and API mocking 9. Microservices observability 10. Containers and Kubernetes overview and architecture 11. Run microservices on Kubernetes 12. Service Mesh and Kubernetes alternatives of Spring Cloud *Clean Architecture* Simon and Schuster Summary Cloud Native Patterns is your guide to developing strong applications that thrive in the dynamic, distributed, virtual world of the cloud. This book presents a mental model for cloud-native applications, along with the patterns, practices, and

tooling that set them apart. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Cloud platforms promise the holy grail: near-zero downtime, infinite scalability, short feedback cycles, fault-tolerance, and cost control. But how do you get there? By applying cloudnative designs, developers can build resilient, easily adaptable, web-scale distributed applications that handle massive user traffic and data loads. Learn these fundamental patterns and practices, and you'll be ready to thrive in the dynamic, distributed, virtual world of the cloud. About the Book With 25 years of experience under her belt, Cornelia Davis teaches you the practices and patterns that set cloud-native applications apart. With realistic examples and expert advice for working with apps, data, services, routing, and more, she shows you how to design and build software that functions beautifully on modern cloud platforms. As you read, you will start to appreciate that cloud-native computing is more about the how and why rather than the where. What's inside The lifecycle of cloud-native apps Cloud-scale configuration management Zero downtime upgrades, versioned services, and parallel deploys Service discovery and dynamic routing Managing interactions between services, including retries and circuit breakers About the Reader Requires basic software design skills and an ability to read Java or a similar language. About the Author Cornelia Davis is Vice President of Technology at Pivotal Software. A teacher at heart, she's spent the last 25 years making good software and great software developers. Table of Contents PART 1 - THE CLOUD-NATIVE CONTEXT You keep using that word: Defining "cloud-native" Running cloud-native applications in production The platform for cloud-native software PART 2 - CLOUD-NATIVE PATTERNS Event-driven microservices: It's not just request/response App redundancy: Scale-out and statelessness Application configuration: Not just environment variables The application lifecycle: Accounting for constant change Accessing apps: Services, routing, and service discovery Interaction redundancy: Retries and other control loops Fronting services: Circuit breakers and API gateways Troubleshooting: Finding the needle in the haystack Cloud-native data: Breaking the data monolith

Microservice Patterns and Best Practices Packt Publishing Ltd 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.

Building Evolutionary Architectures BPB Publications Explore different aspects of building modular microservices such as development, testing, maintenance, and deployment using the Micronaut framework Key Features Learn how to build scalable, fast, and resilient microservices with this concise guide Explore the many advantages of using reflection-free, compile-time dependency injections and aspect-oriented programming Build cloud-native applications easily with the Micronaut framework Book Description The open source Micronaut® framework is a JVM-based toolkit designed to create microservices quickly and easily. This book will help full-stack and Java developers build modular, high-performing, and reactive

microservice-based apps using the Micronaut framework. You'll start by building microservices and learning about the core components, such as ahead-of-time compilation, reflection-less dependency injection, and reactive baked-in HTTP clients and servers. Next, you will work on a real-time microservice application and learn how to integrate Micronaut projects with different kinds of relational and non-relational databases. You'll also learn how to employ different security mechanisms to safeguard your microservices and integrate microservices using event-driven architecture in the Apache Kafka ecosystem. As you advance, you'll get to grips with automated testing and popular testing tools. The book will help you understand how you can easily handle microservice concerns in Micronaut projects, such as service discovery, API documentation, distributed configuration management, fallbacks, and circuit breakers. Finally, you'll explore the deployment and maintenance aspects of microservices and get up to speed with the Internet of Things (IoT) using the Framework. By the end of this book, you'll be able to build, test, deploy, and maintain your own microservice apps using the framework. What you will learn

Understand why the Micronaut framework is best suited for building microservices

Build web endpoints and services in the Micronaut framework

Safeguard microservices using Session, JWT, and OAuth in Micronaut projects

Get to grips with event-driven architecture in Micronaut applications

Discover how to automate testing at various levels using built-in tools and testing frameworks

Deploy your microservices to containers and cloud platforms

Become well-versed with distributed logging, tracing, and monitoring in Micronaut projects

Get hands-on with the IoT using Alexa and the Micronaut framework

Who this book is for

This book is for developers who have been building microservices on traditional frameworks such as Spring Boot and are looking for a faster alternative. Intermediate-level knowledge of Java programming and implementing web services development in Java is required.

Microservices "O'Reilly Media, Inc."

Develop microservice-based enterprise applications with expert guidance to avoid failures and technological debt with the help of real-world examples

Key Features

Implement the right microservices adoption strategy to transition from monoliths to microservices

Explore real-world use cases that explain anti-patterns and alternative practices in microservices development

Discover proven recommendations for avoiding architectural mistakes when designing microservices

Book Description

Microservices have been widely adopted for designing distributed enterprise apps that are flexible, robust, and fine-grained into services that are independent of each other. There has been a paradigm shift where organizations are now either building new apps on microservices or transforming existing monolithic apps into microservices-based architecture. This book explores the importance of anti-patterns and the need to address flaws in them with alternative practices and patterns. You'll identify common mistakes caused by a lack of understanding when implementing microservices and cover topics such as organizational readiness to adopt microservices, domain-driven design, and resiliency and scalability of microservices. The book further demonstrates the anti-patterns involved in re-platforming brownfield apps and designing distributed data architecture. You'll also focus on how to avoid communication and deployment pitfalls and understand cross-cutting concerns such as logging, monitoring, and security. Finally, you'll explore testing pitfalls and establish a framework to address isolation, autonomy, and standardization. By the end of this book, you'll have understood critical mistakes to avoid while building microservices and the right practices to adopt early in

the product life cycle to ensure the success of a microservices initiative. What you will learn

Discover the responsibilities of different individuals involved in a microservices initiative

Avoid the common mistakes in architecting microservices for scalability and resiliency

Understand the importance of domain-driven design when developing microservices

Identify the common pitfalls involved in migrating monolithic applications to microservices

Explore communication strategies, along with their potential drawbacks and alternatives

Discover the importance of adopting governance, security, and monitoring

Understand the role of CI/CD and testing

Who this book is for

This practical microservices book is for software architects, solution architects, and developers involved in designing microservices architecture and its development, who want to gain insights into avoiding pitfalls and drawbacks in distributed applications, and save time and money that might otherwise get wasted if microservices designs fail. Working knowledge of microservices is assumed to get the most out of this book.

Embracing Microservices Design Simon and Schuster

Your one-stop guide to the common patterns and practices, showing you how to apply these using the Go programming language

About This Book

This short, concise, and practical guide is packed with real-world examples of building microservices with Go. It is easy to read and will benefit smaller teams who want to extend the functionality of their existing systems. Using this practical approach will save your money in terms of maintaining a monolithic architecture and demonstrate capabilities in ease of use.

Who This Book Is For

You should have a working knowledge of programming in Go, including writing and compiling basic applications. However, no knowledge of RESTful architecture, microservices, or web services is expected. If you are looking to apply techniques to your own projects, taking your first steps into microservice architecture, this book is for you.

What You Will Learn

Plan a microservice architecture and design a microservice

Write a microservice with a RESTful API and a database

Understand the common idioms and common patterns in microservices architecture

Leverage tools and automation that helps microservices become horizontally scalable

Get a grounding in containerization with Docker and Docker-Compose, which will greatly accelerate your development lifecycle

Manage and secure Microservices at scale with monitoring, logging, service discovery, and automation

Test microservices and integrate API tests in Go

In Detail

Microservice architecture is sweeping the world as the de facto pattern to build web-based applications. Golang is a language particularly well suited to building them. Its strong community, encouragement of idiomatic style, and statically-linked binary artifacts make integrating it with other technologies and managing microservices at scale consistent and intuitive. This book will teach you the common patterns and practices, showing you how to apply these using the Go programming language. It will teach you the fundamental concepts of architectural design and RESTful communication, and show you patterns that provide manageable code that is supportable in development and at scale in production. We will provide you with examples on how to put these concepts and patterns into practice with Go. Whether you are planning a new application or working in an existing monolith, this book will explain and illustrate with practical examples how teams of all sizes can start solving problems with microservices. It will help you understand Docker and Docker-Compose and how it can be used to isolate microservice dependencies and build environments. We finish off by showing you various techniques to monitor, test, and secure your microservices. By the end, you will know the benefits of system resilience of a microservice and the advantages of Go stack. Style and approach

The step-by-step

tutorial focuses on building microservices. Each chapter expands upon the previous one, teaching you the main skills and techniques required to be a successful microservice practitioner.

[Learn Microservices with Spring Boot](#) O'Reilly Media

An enterprise Java developer's guide to learning JAX-RS, context and dependency injection, JavaServer Faces (JSF), and microservices with Eclipse MicroProfile using the latest features of Jakarta EE Key Features Explore Jakarta EE's latest features and API specifications and discover their benefits Build and deploy microservices using Jakarta EE 8 and Eclipse MicroProfile Build robust RESTful web services for various enterprise scenarios using the JAX-RS, JSON-P, and JSON-B APIs Book Description Jakarta EE is widely used around the world for developing enterprise applications for a variety of domains. With this book, Java professionals will be able to enhance their skills to deliver powerful enterprise solutions using practical recipes. This second edition of the Jakarta EE Cookbook takes you through the improvements introduced in its latest version and helps you get hands-on with its significant APIs and features used for server-side development. You'll use Jakarta EE for creating RESTful web services and web applications with the JAX-RS, JSON-P, and JSON-B APIs and learn how you can improve the security of your enterprise solutions. Not only will you learn how to use the most important servers on the market, but you'll also learn to make the best of what they have to offer for your project. From an architectural point of view, this Jakarta book covers microservices, cloud computing, and containers. It allows you to explore all the tools for building reactive applications using Jakarta EE and core Java features such as lambdas. Finally, you'll discover how professionals can improve their projects by engaging with and contributing to the community. By the end of this book, you'll have become proficient in developing and deploying enterprise applications using Jakarta EE. What you will learn Work with Jakarta EE's most commonly used APIs and features for server-side development Enable fast and secure communication in web applications with the help of HTTP2 Build enterprise applications with reusable components Break down monoliths into microservices using Jakarta EE and Eclipse MicroProfile Improve your enterprise applications with multithreading and concurrency Run applications in the cloud with the help of containers Get to grips with continuous delivery and deployment for shipping your applications effectively Who this book is for This book is for Java EE developers who want to build enterprise applications or update their legacy apps with Jakarta EE's latest features and specifications. Some experience of working with Java EE and knowledge of web and cloud computing will assist with understanding the concepts covered in this book.

[Microservices Security in Action](#) Prentice Hall

Summary The Tao of Microservices guides you on the path to understanding how to apply microservice architectures to your own real-world projects. This high-level book offers a conceptual view of microservice design, along with core concepts and their application. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology An application, even a complex one, can be designed as a system of independent components, each of which handles a single responsibility. Individual microservices are easy for small teams without extensive knowledge of the entire system design to build and maintain. Microservice applications rely on modern patterns like asynchronous, message-based communication, and they can be optimized to work well in cloud and container-centric environments. About the Book The Tao of Microservices guides you on the path to understanding and building microservices. Based on the invaluable experience of microservices guru Richard Rodger, this book exposes the

thinking behind microservice designs. You'll master individual concepts like asynchronous messaging, service APIs, and encapsulation as you learn to apply microservices architecture to real-world projects. Along the way, you'll dig deep into detailed case studies with source code and documentation and explore best practices for team development, planning for change, and tool choice. What's Inside Principles of the microservice architecture Breaking down real-world case studies Implementing large-scale systems When not to use microservices About the Reader This book is for developers and architects. Examples use JavaScript and Node.js. About the Author Richard Rodger, CEO of voxig, a social network for the events industry, has many years of experience building microservice-based systems for major global companies. Table of Contents PART 1 - BUILDING MICROSERVICES Brave new world Services Messages Data Deployment PART 2 - RUNNING MICROSERVICES Measurement Migration People Case study: Nodezoo.com

Cloud Native Patterns "O'Reilly Media, Inc."

The Most Complete, Practical, and Actionable Guide to Microservices Going beyond mere theory and marketing hype, Eberhard Wolff presents all the knowledge you need to capture the full benefits of this emerging paradigm. He illuminates microservice concepts, architectures, and scenarios from a technology-neutral standpoint, and demonstrates how to implement them with today's leading technologies such as Docker, Java, Spring Boot, the Netflix stack, and Spring Cloud. The author fully explains the benefits and tradeoffs associated with microservices, and guides you through the entire project lifecycle: development, testing, deployment, operations, and more. You'll find best practices for architecting microservice-based systems, individual microservices, and nanoservices, each illuminated with pragmatic examples. The author supplements opinions based on his experience with concise essays from other experts, enriching your understanding and illuminating areas where experts disagree. Readers are challenged to experiment on their own the concepts explained in the book to gain hands-on experience. Discover what microservices are, and how they differ from other forms of modularization Modernize legacy applications and efficiently build new systems Drive more value from continuous delivery with microservices Learn how microservices differ from SOA Optimize the microservices project lifecycle Plan, visualize, manage, and evolve architecture Integrate and communicate among microservices Apply advanced architectural techniques, including CQRS and Event Sourcing Maximize resilience and stability Operate and monitor microservices in production Build a full implementation with Docker, Java, Spring Boot, the Netflix stack, and Spring Cloud Explore nanoservices with Amazon Lambda, OSGi, Java EE, Vert.x, Erlang, and Seneca Understand microservices' impact on teams, technical leaders, product owners, and stakeholders Managers will discover better ways to support microservices, and learn how adopting the method affects the entire organization. Developers will master the technical skills and concepts they need to be effective. Architects will gain a deep understanding of key issues in creating or migrating toward microservices, and exactly what it will take to transform their plans into reality.

[Hands-On Microservices – Monitoring and Testing](#) "O'Reilly Media, Inc."

The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical

guide ties those parts together with a new way to think about architecture and time.

Microservices: Up and Running Packt Publishing Ltd

How do you detangle a monolithic system and migrate it to a microservice architecture? How do you do it while maintaining business-as-usual? As a companion to Sam Newman's extremely popular *Building Microservices*, this new book details a proven method for transitioning an existing monolithic system to a microservice architecture. With many illustrative examples, insightful migration patterns, and a bevy of practical advice to transition your monolith enterprise into a microservice operation, this practical guide covers multiple scenarios and strategies for a successful migration, from initial planning all the way through application and database decomposition. You'll learn several tried and tested patterns and techniques that you can use as you migrate your existing architecture. Ideal for organizations looking to transition to microservices, rather than rebuild Helps companies determine whether to migrate, when to migrate, and where to begin Addresses communication, integration, and the migration of legacy systems Discusses multiple migration patterns and where they apply Provides database migration examples, along with synchronization strategies Explores application decomposition, including several architectural refactoring patterns Delves into details of database decomposition, including the impact of breaking referential and transactional integrity, new failure modes, and more

Building Event-Driven Microservices Manning Publications
 "A comprehensive overview of the challenges teams face when moving to microservices, with industry-tested solutions to these problems." - Tim Moore, Lightbend
 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*.
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The Complete Handbook of Golang Microservices: Best Practices and Techniques "O'Reilly Media, Inc."

"A complete guide to the challenges and solutions in securing microservices architectures." —Massimo Siani, FinDynamic
 Key Features
 Secure microservices infrastructure and code
 Monitoring, access control, and microservice-to-microservice communications
 Deploy securely using Kubernetes, Docker, and the Istio service mesh.
 Hands-on examples and exercises using Java and Spring Boot
 Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.
Microservices Security in Action teaches you how to address microservices-specific security challenges throughout the system. This practical guide includes plentiful hands-on exercises using industry-leading open-source tools and examples using Java and Spring Boot.
 About The Book
 Design and implement security into your microservices from the start. *Microservices Security in Action* teaches you to assess and address security challenges at every level of a Microservices application, from APIs to infrastructure. You'll find effective solutions to common security problems, including throttling and monitoring, access control at the API gateway, and microservice-to-microservice communication. Detailed Java code samples, exercises, and real-world business use cases ensure you can put what you've learned into action immediately.
 What You Will Learn
 Microservice security concepts
 Edge services with an API gateway
 Deployments with Docker, Kubernetes, and Istio
 Security testing at the code level
 Communications with HTTP, gRPC, and Kafka
 This Book Is Written For
 For experienced microservices developers with intermediate Java skills.
 About The Author
 Prabath Siriwardena is the vice president of security architecture at WSO2. Nuwan Dias is the director of API architecture at WSO2. They have designed secure systems for many Fortune 500 companies.
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 13 Secure coding practices and automation

Microservices: Patterns and Applications "O'Reilly Media, Inc."

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 in Action](#) "O'Reilly Media, Inc."

Explore the concepts and tools you need to discover the world of microservices with various design patterns Key Features Get to grips with the microservice architecture and build enterprise-ready microservice applications Learn design patterns and the best practices while building a microservice application Obtain hands-on techniques and tools to create high-performing microservices resilient to possible fails Book Description Microservices are a hot trend in the development world right now. Many enterprises have adopted this approach to achieve agility and the continuous delivery of applications to gain a competitive advantage. This book will take you through different design patterns at different stages of the microservice application development along with their best practices. Microservice Patterns and Best Practices starts with the learning of microservices key concepts and showing how to make the right choices while designing microservices. You will then move onto internal microservices application patterns, such as caching

strategy, asynchronism, CQRS and event sourcing, circuit breaker, and bulkheads. As you progress, you'll learn the design patterns of microservices. The book will guide you on where to use the perfect design pattern at the application development stage and how to break monolithic application into microservices. You will also be taken through the best practices and patterns involved while testing, securing, and deploying your microservice application. At the end of the book, you will easily be able to create interoperable microservices, which are testable and prepared for optimum performance. What you will learn How to break monolithic application into microservices Implement caching strategies, CQRS and event sourcing, and circuit breaker patterns Incorporate different microservice design patterns, such as shared data, aggregator, proxy, and chained Utilize consolidate testing patterns such as integration, signature, and monkey tests Secure microservices with JWT, API gateway, and single sign on Deploy microservices with continuous integration or delivery, Blue-Green deployment Who this book is for This book is for architects and senior developers who would like implement microservice design patterns in their enterprise application development. The book assumes some prior programming knowledge.

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