

Instant Apache Activemq Messaging Application Development How To

Every enterprise application creates data, whether it's log messages, metrics, user activity, outgoing messages, or something else. And how to move all of this data becomes nearly as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Kafka, this practical guide shows you how to use this open source streaming platform to handle real-time data feeds. The authors, Confluent and LinkedIn who are responsible for developing Kafka explain how to deploy production Kafka clusters, write reliable event-driven microservices, and build scalable stream-processing applications on this platform. Through detailed examples, you'll learn Kafka's design principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the controller, and the storage layer. Understand publish-subscribe messaging and how it fits in the big data ecosystem. Explore Kafka producers and consumers for writing and reading messages Understand Kafka patterns and use cases to ensure reliable data delivery Get best practices for building data pipelines and applications with Kafka Manage Kafka in production, and learn to perform monitoring, tuning, and maintenance tasks. Identify the most critical metrics among Kafka's operational measurements Explore how Kafka's stream delivery capabilities make it a perfect source for stream processing systems

Deliver lightning fast and reliable messaging for your distributed applications with the flexible and resilient Apache Pulsar platform. In Apache Pulsar in Action you will learn how to: Publish from Apache Pulsar into third-party data repositories and platforms Design and develop Apache Pulsar functions Perform interactive SQL queries against data stored in Apache Pulsar Apache Pulsar in Action is a comprehensive, practical guide to building high-traffic applications with Pulsar. You'll learn to use this mature and battle-tested platform to deliver extreme levels of speed and durability to your messaging. Apache Pulsar committer David Kjerrumgaard teaches you to apply Pulsar's seamless scalability through hands-on case studies, including IOT analytics applications and a microservices app based on Pulsar functions. The print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Reliable server-to-server messaging is the heart of a distributed application. Apache Pulsar is a flexible real-time messaging platform built to run on Kubernetes and deliver the scalability and resilience required for cloud-based systems. Pulsar supports both streaming and message queuing. Unlike other solutions, it can communicate over multiple protocols including MQTT, AMQP, and Kafka's binary protocol. About the book Apache Pulsar in Action teaches you to build scalable streaming messaging systems using Pulsar. You'll start with a rapid introduction to enterprise messaging and discover the unique benefits of Pulsar. Following crystal-clear explanations and engaging examples, you'll use the Pulsar Functions framework to develop a microservices-based application. Real-world case studies illustrate how to implement the most important messaging design patterns. What's inside Publish from Apache Pulsar into third-party data repositories and platforms Design and develop Apache Pulsar functions Create an event-driven food delivery application About the reader Written for experienced Java developers. No previous Pulsar experience required. About the author David Kjerrumgaard is a committer on the Apache Pulsar project. He currently serves as a Developer Advocate for StreamNative, where he develops Pulsar best practices and solutions. Table of Contents PART 1 GETTING STARTED WITH APACHE PULSAR 1 Introduction to Apache Pulsar 2 Pulsar concepts and architecture 3 Interacting with Pulsar PART 2 APACHE PULSAR IN ACTION: DEVELOPMENT ESSENTIALS 4 Pulsar functions 5 Pulsar IO connectors 6 Pulsar security 7 Schema registry PART 3 HANDS-ON APPLICATION DEVELOPMENT WITH APACHE PULSAR 8 Pulsar Functions patterns 9 Resiliency patterns 10 Data access 11 Machine learning in Pulsar 12 Edge analytics

Explore Kinesis managed services such as Kinesis Data Streams, Kinesis Data Analytics, Kinesis Data Firehose, and Kinesis Video Streams with the help of practical use cases Key FeaturesGet well-versed in the capabilities of Amazon KinesisExplore the monitoring, scaling, security, and deployment patterns of various Amazon Kinesis servicesLearn how other Amazon Web Services and third-party applications can be used as destinations for Kinesis dataBook Description Amazon Kinesis is a collection of secure, serverless, durable, and highly available purpose-built data streaming services. This data streaming service provides APIs and client SDKs that enable you to produce and consume data at scale. Scalable Data Streaming with Amazon Kinesis begins with a quick overview of the core concepts of data streaming with the essentials of the AWS Kinesis landscape. You'll then explore the requirements of the use case shown through the book to help you get started and cover the key pain points encountered in the data streaming cycle. As you advance, you'll get to grips with the architectural components of Kinesis, understand how they are configured to build data pipelines, and delve into the applications that connect to Kinesis for consumption and processing. You'll also build a Kinesis data pipeline from scratch and learn how to implement and apply practical solutions. Moving on, you'll learn how to configure Kinesis on a cloud environment. Finally, you'll learn how other AWS services can be integrated into Kinesis. These services include Redshift, Dynamo Database, AWS S3, Elastic Search, and third-party applications such as Splunk. In this AWS book, you'll be able to build and deploy your own Kinesis data pipelines with Kinesis Data Streams (KDS), Kinesis Data Firehose (KFS), Kinesis Video Streams (KVS), and Kinesis Data Analytics (KDA). What you will learnGet to grips with data streams, decoupled design, and real-time stream processingUnderstand the properties of KFS that differentiate it from other Kinesis servicesMonitor and manage Kinesis with CloudWatch metricsSecure KDA with identity and access management (IAM)Deploy KVS as infrastructure as code (IaC)Integrate services such as Redshift, Dynamo Database, and Splunk into Kinesis About the book This book is for solutions architects, developers, system administrators, data engineers, and data scientists looking to evaluate and choose the most performant, secure, scalable, and reliable data streaming technology to overcome their data ingestion and processing challenges on AWS. Prior knowledge of cloud architectures on AWS, data streaming technologies, and architectures is expected. About the author Enhance your Solr indexing experience with advanced techniques and the built-in functionalities available in Apache Solr About This Book Learn about distributed indexing and real-time optimization techniques to index data on fly Index data on fly Index data from various sources and web crawlers using built-in analyzers and tokenizers This step-by-step guide is packed with real-life examples on indexing data Who This Book is for developers who want to increase their experience of indexing in Solr by learning about the various index handlers, analyzers, and methods available in Solr. Beginner level Solr development skills are required. What You Will Learn Get to know the basic features of Solr indexing and the analyzers/tokenizers available Index XML/JSON data in Solr using the HTTP Post tool and CURL command Work with Data Import Handler to index data from a database Use Apache Tika with Solr to index word documents, PDFs, and much more Utilize Apache Nutch and Solr integration to index crawled data from web pages and feeds in real-time data feeds Discover techniques to index multi-language and distributed data in Solr Combine the various indexing techniques into a real-life working example of an online shopping website About the book Detail Apache Solr is a widely used, open source enterprise search server that delivers powerful indexing and searching features. These features help fetch relevant information from various sources and formats. Solr documentation. Solr also combines with other open source tools such as Apache Tika and Apache Nutch to provide more powerful features. This fast-paced guide starts by helping you set up Solr on a server with its basic building blocks, to give you a better understanding of Solr indexing. You'll quickly move on to indexing text and boosting the indexing time. Next, you'll focus on basic indexing techniques such as index handlers designed to modify documents, and indexing a structured data source through Data Import Handler. Moving on, you will learn techniques to perform real-time indexing and atomic updates, as well as advanced indexing techniques such as de-duplication. Later on, we'll help you set up a cluster of Solr servers that combine fault tolerance and high availability. You will also gain insights into working with Solr on different aspects of Solr and how to use Solr with e-commerce data. By the end of the book, you will be competent and confident working with indexing and will have a good knowledge base to tackle any indexing elements. Style and approach This fast-paced guide is packed with examples that are written in an easy-to-follow style, and are accompanied by detailed explanation. Working examples are included to help you get better results for your applications.

Fundamental Design Solutions for SOAP/WSDL and RESTful Web Services
Develop a scalable, reliable, and highly available cloud environment with AWS
Mastering Spring Cloud
Cloud Computing
Spring 5.0 By Example
Apache Pulsar in Action

This book is intended for developers who have some familiarity with Apache Karaf and who want a quick reference for practical, proven tips on how to perform common tasks such as configuring Pax modules deployed in Apache Karaf, Extending HttpService with Apache Karaf. You should have working knowledge of Apache karaf, as the book provides a deeper understanding of the capabilities of Apache Karaf.

This fast-paced guide will quickly enhance your skills to develop a highly scalable Cloud environment Key Features Efficiently build a highly scalable and reliable cloud environment for your applications with AWS Leverage the various AWS components and services to build a secure, reliable, and robust environment to host your applications on This quick-start guide will quickly enhance your skills to develop highly scalable services Book Description AWS is at the forefront of Cloud Computing today. Businesses are adopting AWS Cloud because of its reliability, versatility, and flexible design. The main focus of this book is teaching you how to build and manage highly reliable and scalable applications and services on AWS. It will provide you with all the necessary skills to design, deploy, and manage your applications and services on the AWS cloud platform. We'll start by exploring Amazon S3, EC2, and so on to get you well-versed with core Amazon services. Moving on, we'll teach you how to design and deploy highly scalable and optimized workloads. You'll also discover easy-to-follow, hands-on steps, tips, and recommendations throughout the book and get to know essential security and troubleshooting concepts. By the end of the book, you'll be able to create a highly secure, fault tolerant, and scalable environment for your applications to run on. What you will learn Find out about IAM to access AWS services securely Explore EC2 (virtual server) and scale up/down your application based on heavy traffic Learn about unlimited data storage service S3 and host a static website within minutes Get to grips with Relational Databases and NoSQL databases under the AWS ecosystem Understand the caching mechanism Get to know about notifications service and monitor AWS services Secure and troubleshoot your AWS architecture Who this book is for This book is for IT professionals and system administrators looking to design, deploy, and manage your applications and services on the AWS cloud platform. It's also ideal for developers looking to build highly scalable cloud-based services. A basic understanding of AWS would be beneficial.

The organization pursuing digital transformation must embrace new ways to use and deploy integration technologies, so they can move quickly in a manner appropriate to the goals of multicloud, decentralization, and microservices. The integration layer must transform to allow organizations to move boldly in building new customer experiences, rather than forcing models for architecture and development that pull away from maximizing the organization's productivity. Many organizations have started embracing agile application techniques, such as microservice architecture, and are now seeing the benefits of that shift. This approach complements and accelerates an enterprise's API strategy. Businesses should also seek to use this approach to modernize their existing integration and messaging infrastructure to achieve more effective ways to manage and operate their integration services in their private or public cloud. This IBM® Redbooks® publication explores the merits of what we refer to as agile integration; a container-based, decentralized, and microservice-aligned approach for integration solutions that meets the demands of agility, scalability, and resilience required by digital transformation. It also discusses how the IBM Cloud Pak for Integration marks a significant leap forward in integration technology by embracing both a cloud-native approach and container technology to achieve the goals of agile integration. The target audiences for this book are cloud integration architects, IT specialists, and application developers.

Combine advanced analytics including Machine Learning, Deep Learning Neural Networks and Natural Language Processing with modern scalable technologies including Apache Spark to derive actionable insights from Big Data in real-time Key Features Make a hands-on start in the fields of Big Data, Distributed Technologies and Machine Learning Learn how to design, develop and interpret the results of common Machine Learning algorithms Uncover hidden patterns in your data in order to derive real actionable insights and business value Book Description Every person and every organization in the world manages data, whether they realize it or not. Data is used to describe the world around us and can be used for almost any purpose, from analyzing consumer habits to fighting disease and serious organized crime. Ultimately, we manage data in order to derive value from it, and many organizations around the world have traditionally invested in technology to help process their data faster and more efficiently. But we now live in an interconnected world driven by mass data creation and consumption where data is no longer rows and columns restricted to a spreadsheet, but an organic and evolving asset in its own right. With this realization comes major challenges for organizations: how do we manage the sheer size of data being created every second (think not only spreadsheets and databases, but also social media posts, images, videos, music, blogs and so on)? And once we can manage all of this data, how do we derive real value from it? The focus of Machine Learning with Apache Spark is to help us answer these questions in a hands-on manner. We introduce the latest scalable technologies to help us manage and process big data. We then introduce advanced analytical algorithms applied to real-world use cases in order to uncover patterns, derive actionable insights, and learn from this big data. What you will learn Understand how Spark fits in the context of the big data ecosystem Understand how to deploy and configure a local development environment using Apache Spark Understand how to design supervised and unsupervised learning models Build models to perform NLP, deep learning, and cognitive services using Spark ML libraries Design real-time machine learning

pipelines in Apache Spark Become familiar with advanced techniques for processing a large volume of data by applying machine learning algorithms Who this book is for This book is aimed at Business Analysts, Data Analysts and Data Scientists who wish to make a hands-on start in order to take advantage of modern Big Data technologies combined with Advanced Analytics.

ActiveMQ in Action

Configuring and Deploying Open Source with IBM WebSphere Application Server Liberty Profile

Mastering Apache Camel

Apache Camel Developer's Cookbook

Reusable Elements for Designing Cloud-Native Applications

Build self-healing, microservices-based, distributed systems using Spring Cloud

This book will provide you with the skills you need to efficiently create routes using Apache Camel. After briefly introducing the key features and core concepts of Camel, the book will take you through all the important features and components, starting with routing and processors. You will learn how to use beans in Camel routes, covering everything from supported registries and annotations, to the creation of an OSGi bundle and writing route definitions with Blueprint DSL. Leverage the Enterprise Integration Patterns (EIPs) supported by Camel and implement them in your routes. You will then see how components and endpoints handle exchanges in Camel, and how you can use them to create a complete and powerful mediation framework. You will finally learn how to tackle errors and perform testing to ensure that your integration projects are working successfully.

Summary Spring Integration in Action is a hands-on guide to Spring-based messaging and integration. After addressing the core messaging patterns, such as those used in transformation and routing, the book turns to the adapters that enable integration with external systems. Readers will explore real-world enterprise integration scenarios using JMS, Web Services, file systems, and email. They will also learn about Spring Integration's support for working with XML. The book concludes with a practical guide to advanced topics such as concurrency, performance, system-management, and monitoring. The book features a foreword by Rod Johnson, Founder of the Spring Network. About the Technology Spring Integration extends the Spring Framework to support the patterns described in Gregor Hohpe and Bobby Woolf's Enterprise Integration Patterns. Like the Spring Framework itself, it focuses on developer productivity, making it easier to build, test, and maintain enterprise integration solutions. About the Book Spring Integration in Action is an introduction and guide to enterprise integration and messaging using the Spring Integration framework. The book starts off by reviewing core messaging patterns, such as those used in transformation and routing. It then drills down into real-world enterprise integration scenarios using JMS, Web Services, filesystems, email, and more.

You'll find an emphasis on testing, along with practical coverage of topics like concurrency, scheduling, system management, and monitoring. This book is accessible to developers who know Java. Experience with Spring and EIP is helpful but not assumed. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Realistic examples Expert advice from Spring Integration creators Detailed coverage of Spring Integration 2 features About the Authors Mark Fisher is the Spring Integration founder and project lead. Jonas Partner, Marius Bogoevici, and Iwein Fuld have all been project committers and are recognized experts on Spring and Spring Integration. Table of Contents PART 1 BACKGROUND Introduction to Spring Integration Enterprise integration fundamentals 24 PART 2 MESSAGING Messages and channels Message Endpoints Getting down to business Go beyond sequential processing: routing and filtering Splitting and aggregating messages PART 3 INTEGRATING SYSTEMS Handling messages with XML payloads Spring Integration and the Java Message Service Email-based integration Filesystem integration Spring Integration and web services Chatting and tweeting PART 4 ADVANCED TOPICS Monitoring and management Managing scheduling and concurrency Batch applications and enterprise integration Scaling messaging applications with OSGi Testing

Construct a robust end-to-end solution for analyzing and visualizing streaming data Real-time analytics is the hottest topic in data analytics today. In Real-Time Analytics: Techniques to Analyze and Visualize Streaming Data, expert Byron Ellis teaches data analysts technologies to build an effective real-time analytics platform. This platform can then be used to make sense of the constantly changing data that is beginning to outpace traditional batch-based analysis platforms. The author is among a very few leading experts in the field. He has a prestigious background in research, development, analytics, real-time visualization, and Big Data streaming and is uniquely qualified to help you explore this revolutionary field. Moving from a description of the overall analytic architecture of real-time analytics to using specific tools to obtain targeted results, Real-Time Analytics leverages open source and modern commercial tools to construct robust, efficient systems that can provide real-time analysis in a cost-effective manner. The book includes: A deep discussion of streaming data systems and architectures Instructions for analyzing, storing, and delivering streaming data Tips on aggregating data and working with sets Information on data warehousing options and techniques Real-Time Analytics includes in-depth case studies for website analytics, Big Data, visualizing streaming and mobile data, and mining and visualizing operational data flows. The book's "recipe" layout lets readers quickly learn and implement different techniques. All of the code examples presented in the book, along with their related data sets, are available on the companion website.

This book is a thorough introduction to Java Message Service (JMS), the standard Java application program interface (API) from Sun Microsystems that supports the formal communication known as "messaging" between computers in a network. JMS provides a common interface to standard messaging protocols and to special messaging services in support of Java programs. The messages exchange crucial data between computers, rather than between users--information such as event notification and service requests.

Messaging is often used to coordinate programs in dissimilar systems or written in different programming languages. Using the JMS interface, a programmer can invoke the messaging services of IBM's MQSeries, Progress Software's SonicMQ, and other popular messaging product vendors. In addition, JMS supports messages that contain serialized Java objects and messages that contain Extensible Markup Language (XML) pages. Messaging is a powerful new paradigm that makes it easier to uncouple different parts of an enterprise application. Messaging clients work by sending messages to a message server, which is responsible for delivering the messages to their destination. Message delivery is asynchronous, meaning that the client can continue working without waiting for the message to be delivered. The contents of the message can be anything from a simple text string to a serialized Java object or an XML document. Java Message Service shows how to build applications using the point-to-point and publish-and-subscribe models; how to use features like transactions and durable subscriptions to make an application reliable; and how to use messaging within Enterprise JavaBeans. It also introduces a new EJB type, the MessageDrivenBean, that is part of EJB 2.0, and discusses integration of messaging into J2EE.

Accelerating Modernization with Agile Integration

Spring Boot in Action

Service Design Patterns

Spring Integration in Action

Mule in Action

The Definitive Guide to HTML5 WebSocket

Filled with practical, step-by-step instructions and clear explanations for the most important and useful tasks. This is a Packt Instant How-to guide, which provides concise and practical recipes to help you get started writing applications with ActiveMQ using practical examples. Instant ActiveMQ Application Development How-to is for the developers who are new to Java Message Service application development or new to JMS development using ActiveMQ. Readers will come away ready to solve complicated messaging related problems using the JMS API and ActiveMQ.

Learn how to build, test, secure, deploy, and efficiently consume services across distributed systems. Key Features - Explore the wealth of options provided by Spring Cloud for wiring service dependencies in microservice systems. - Create microservices utilizing Spring Cloud's Netflix OSS - Architect your cloud-native data using Spring Cloud. Book Description Developing, deploying, and operating cloud applications should be as easy as local applications. This should be the governing principle behind any cloud platform, library, or tool. Spring Cloud—an open-source library—makes it easy to develop JVM applications for the cloud. In this book, you will be introduced to Spring Cloud and will master its features from the application developer's point of view. This book begins by introducing you to microservices for Spring and the available feature set in Spring Cloud. You will learn to configure the Spring Cloud server and run the Eureka server to enable service registration and discovery. Then you will learn about techniques related to load balancing and circuit breaking and utilize all features of the Feign client. The book now delves into advanced topics where you will learn to implement distributed tracing solutions for Spring Cloud and build message-driven microservice architectures. Before running an application on Docker containers, you will master testing and securing techniques with Spring Cloud. What you will learn - Abstract Spring Cloud's feature set - Create microservices utilizing Spring Cloud's Netflix OSS - Create synchronous API microservices based on a message-driven architecture. - Explore advanced topics such as distributed tracing, security, and contract testing. - Manage and deploy applications on the production environment Who this book is for This book appeals to developers keen to take advantage of Spring cloud, an open source library which helps developers quickly build distributed systems. Knowledge of Java and Spring Framework will be helpful, but no prior exposure to Spring Cloud is required.

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

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.

Instant Apache Activemq Messaging Application Development How-To

Messaging Protocols for Web and Mobile Devices

Learning Karaf Cellar

Mastering JBoss Enterprise Application Platform 7

Data Lake for Enterprises

Java EE 7 Development with WildFly

Summary Camel in Action, Second Edition is the most complete Camel book on the market. Written by core developers of Camel and the authors of the highly acclaimed first edition, this book distills their experience and practical insights so that you can tackle integration tasks like a pro. Forewords by James Strachan and Dr. Mark Little Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Apache Camel is a Java framework that implements enterprise integration patterns (EIPs) and comes with over 200 adapters to third-party systems. A concise DSL lets you build integration logic into your app with just a few lines of Java or XML. By using Camel, you benefit from the testing and experience of a large and vibrant open source community. About the Book Camel in Action, Second Edition is the definitive guide to the Camel framework. It starts with core concepts like sending, receiving, routing, and transforming data. It then goes in depth on many topics such as how to develop, debug, test, deal with errors, secure, scale, cluster, deploy, and monitor your Camel applications. The book also discusses how to run Camel with microservices, reactive systems, containers, and in the cloud. What's Inside Coverage of all relevant EIPs Camel microservices with Spring Boot Camel on Docker and Kubernetes Error handling, testing, security, clustering, monitoring, and deployment Hundreds of examples in Java and XML About the Reader Readers should be familiar with Java. This book is accessible to beginners and invaluable to experts. About the Author Claus Ibsen is a senior principal engineer working for Red Hat specializing in cloud and integration. He has worked on Apache Camel for the last nine years where he heads the project. Claus lives in Denmark. Jonathan Anstey is an engineering manager at Red Hat and a core Camel contributor. He lives in Newfoundland, Canada. Table of Contents Part 1 - First steps Meeting Camel Routing with Camel Part 2 - Core Camel Transforming data with Camel Using beans with Camel Enterprise integration patterns Using components Part 3 - Developing and testing Microservices Developing Camel projects Testing RESTful web services Part 4 - Going further with Camel Error handling Transactions and idempotency Parallel processing Securing Camel Part 5 - Running and managing Camel Running and deploying Camel Management and monitoring Part 6 - Out in the wild Clustering Microservices with Docker and Kubernetes Camel tooling Bonus online chapters Available at <https://www.manning.com/books/camel-in-?action=second-edition> and in electronic versions of this book:

Reactive Camel Camel and the IoT by Henryk Konsek

Create modular scalable enterprise-grade applications with JBoss Enterprise Application Platform 7 About This Book Leverage the power of JBoss EAP 7 along with Java EE 7 to create professional enterprise grade applications. Get you applications cloud ready and make them highly scalable using this advanced guide. Become a pro Java Developer and move ahead of the crowd with this advanced practical guide. Who This Book Is For The ideal target audience for this book is Java System Administrators who already have some experience with JBoss EAP and who now want explore in depth creating Enterprise grade apps with the latest JBoss EAP version. What You Will Learn Configure services using the Command Line Interface Deliver fault tolerant server configurations Harden the application server with advanced techniques Expand the application server's horizon with tools such as like Docker/OpenShift Create enterprise ready configurations using clustering techniques. Deliver advanced security solutions and learn how to troubleshoot common network/performance issues In Detail The JBoss Enterprise Application Platform (EAP) has been one of the most popular tools for Java developers to create modular, cloud-ready, and modern applications. It has achieved a reputation for architectural excellence and technical savvy, making it a solid and efficient environment for delivering your applications. The book will first introduce application server configuration and the management instruments that can be used to control the application server. Next, the focus will shift to enterprise solutions such as clustering, load balancing, and data caching; this will be the core of the book. We will also discuss services provided by the application server, such as database connectivity and logging. We focus on real-world example configurations and how to avoid common mistakes. Finally, we will implement the knowledge

gained so far in terms of Docker containers and cloud availability using RedHat's OpenShift. Style and approach If you are a Java developer who wants to level-up to modern day Java web development with the latest Java EE 7 and JBoss EAP 7, this book is the ideal solution for you. It addresses (in a clear and simple way) proof-of-concept scenarios such as clustering and cloud and container configurations, and explains how to solve common issues.

Web services have been used for many years. In this time, developers and architects have encountered a number of recurring design challenges related to their usage, and have learned that certain service design approaches work better than others to solve certain problems. In *Service Design Patterns*, Rob Daigneau codifies proven design solutions for web services that follow the REST architectural style or leverage the SOAP/WSDL specifications. This catalogue identifies the fundamental topics in web service design and lists the common design patterns for each topic. All patterns identify the context in which they may be used, explain the constituent design elements, and explore the relative strengths and trade-offs. Code examples are provided to help you better understand how the patterns work but are kept general so that you can see how the solutions may be applied to disparate technologies that will inevitably change in the years to come. This book will help readers answer the following questions: How do you create a web service API, what are the common API styles, and when should a particular style be used? How can clients and web services communicate, and what are the foundations for creating complex conversations in which multiple parties exchange data over extended periods of time? What are the options for implementing web service logic, and when should a particular approach be used? How can clients become less coupled to the underlying systems used by a service? How can information about a web service be discovered? How can generic functions like authentication, validation, caching, and logging be supported on the client or service? What changes to a service cause clients to break? What are the common ways to version a service? How can web services be designed to support the continuing evolution of business logic without forcing clients to constantly upgrade? This book is an invaluable resource for enterprise architects, solution architects, and developers who use web services to create enterprise IT applications, commercial or open source products, and Software as a Service (SaaS) products that leverage emerging Cloud platforms.

Develop Java EE 5 applications on Geronimo quickly and easily.

Methodology, Systems, and Applications

Grasp the fundamentals of Spring 5.0 to build modern, robust, and scalable Java applications

Kubernetes Patterns

Instant Apache Camel Message Routing

Apache Solr for Indexing Data

Enterprise Integration Patterns

Filled with practical, step-by-step instructions and clear explanations for the most important and useful tasks. This short, instruction-based guide shows you how to perform application integration using the industry standard Enterprise Integration Patterns. This book is intended for Java developers who are new to Apache Camel and message-oriented applications.

Learn how to use messaging technologies to build responsive and resilient applications for mobile devices and web browsers. With this hands-on guide, you'll use the STOMP and MQTT messaging protocols to write iOS and web applications capable of sending and receiving GPS and device sensor data, text messages, and alerts. Messaging protocols are not only simple to use, but also conserve network bandwidth, device memory, and batteries. Using this book's step-by-step format, author Jeff Mesnil helps you work with Objective-C and JavaScript libraries, as well as the protocols. All you need to get started are basic programming skills.

Understand basic messaging concepts and composition Learn two common messaging models: point-to-point and publish/subscribe Use STOMP to write an iOS application that sends GPS data, and a web app that consumes the data Build an iOS app with MQTT that tracks and broadcasts device motion data, and a web app that displays the data and sends alerts Extend STOMP to filter, prioritize, persist, and expire messages Take a complete tour of STOMP and MQTT, including features not used in the book's sample apps

The way developers design, build, and run software has changed significantly with the evolution of microservices and containers.

These modern architectures use new primitives that require a different set of practices than most developers, tech leads, and architects are accustomed to. With this focused guide, Bilgin Ibryam and Roland Huß from Red Hat provide common reusable elements,

patterns, principles, and practices for designing and implementing cloud-native applications on Kubernetes. Each pattern includes a description of the problem and a proposed solution with Kubernetes specifics. Many patterns are also backed by concrete code examples. This book is ideal for developers already familiar with basic Kubernetes concepts who want to learn common cloud native patterns. You'll learn about the following pattern categories: Foundational patterns cover the core principles and practices for building container-based cloud-native applications. Behavioral patterns explore finer-grained concepts for managing various types of container and platform interactions. Structural patterns help you organize containers within a pod, the atom of the Kubernetes platform. Configuration patterns provide insight into how application configurations can be handled in Kubernetes. Advanced patterns covers more advanced topics such as extending the platform with operators.

Summary Mule in Action, Second Edition is a totally-revised guide covering Mule 3 fundamentals and best practices. It starts with a quick ESB overview and then dives into rich examples covering core concepts like sending, receiving, routing, and transforming data. About the Technology An enterprise service bus is a way to integrate enterprise applications using a bus-like infrastructure. Mule is the leading open source Java ESB. It borrows from the Hohpe/Woolf patterns, is lightweight, can publish REST and SOAP services, integrates well with Spring, is customizable, scales well, and is cloud-ready. About the Book Mule in Action, Second Edition is a totally revised guide covering Mule 3 fundamentals and best practices. It starts with a quick ESB overview and then dives into rich examples covering core concepts like sending, receiving, routing, and transforming data. You'll get a close look at Mule's standard components and how to roll out custom ones. You'll also pick up techniques for testing, performance tuning, and BPM orchestration, and explore cloud API integration for SaaS applications. Written for developers, architects, and IT managers, this book requires familiarity with Java but no previous exposure to Mule or other ESBs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Full coverage of Mule 3 Integration with cloud services Common transports, routers, and transformers Security, routing, orchestration, and transactions About the Authors David Dossot is a software architect and has created numerous modules and transports for Mule. John D'Emic is a principal solutions architect and Victor Romero a solutions architect, both at MuleSoft, Inc. Table of Contents PART 1 CORE MULE Discovering Mule Processing messages with Mule Working with connectors Transforming data with Mule Routing data with Mule Working with components and patterns PART 2 RUNNING MULE Integration architecture with Mule Deploying Mule Exception handling and transaction management with Mule Securing Mule Tuning Mule PART 3 TRAVELING FURTHER WITH MULE Developing with Mule Writing custom cloud connectors and processors Augmenting Mule with orthogonal technologies

Learning RabbitMQ

Apache Karaf Cookbook

Real-Time Analytics

Mobile and Web Messaging

Design and secure highly available, cost-effective data streaming applications with Amazon Kinesis

Uncover patterns, derive actionable insights, and learn from big data using MLlib

This IBM® Redbooks® publication explains the capabilities of IBM WebSphere® Application Server Liberty profile (Liberty profile), which is lightweight, easy to install, and fast to use. Liberty profile provides a convenient and capable platform for developing and testing your web and OSGi applications. The Liberty profile server is built by using OSGi technology and concepts. The fit-for-purpose nature of the run time relies on the dynamic behavior that is inherent in the OSGi framework and service registry. As bundles are installed or uninstalled from the framework, their services are automatically added or removed from the service registry. The result is a dynamic, composable run time that can be provisioned with only what your application requires and responds dynamically to configuration changes as your application evolves. This book can help you install, customize, and configure several popular open source technologies that can be deployed effectively with the Liberty profile server. The following popular open source toolkits for the Liberty profile server were selected for this book based on the significant enhancements they provide to the web application development process: Apache Maven Spring Framework Hibernate Jenkins Opscode Chef Arquillian MongoDB In this book, the Todo sample demonstrates the use of multiple open source frameworks or toolkits with the Liberty profile

server, including Maven, MongoDB, Spring, JPA, Arquillian, Wicket, and others. The Todo sample is a simple application that can be used to create, update, and delete todo items and todo lists, and put the todo items into a related todo list.

Discover the real power of Spring Framework 5.0 and learn to create powerful applications in its newest version Key Features Learn reactive programming by implementing a reactive application with Spring Webflux Create a robust and scalable messaging application with Spring messaging support Apply your knowledge to build three real-world projects in Spring Book Description With growing demands, organizations are looking for systems that are robust and scalable. Therefore, the Spring Framework has become the most popular framework for Java development. It not only simplifies software development but also improves developer productivity. This book covers effective ways to develop robust applications in Java using Spring. The book has three parts, where each one covers the building of a comprehensive project in Java and Spring. In the first part, you will construct a CMS Portal using Spring's support for building REST APIs. You will also learn to integrate these APIs with AngularJS and later develop this application in a reactive fashion using Project Reactor, Spring WebFlux, and Spring Data. In the second part, you'll understand how to build a messaging application, which will consume the Twitter API and perform filtering and transformations. Here, you will also learn about server-sent events and explore Spring's support for Kotlin, which makes application development quick and efficient. In the last part, you will build a real microservice application using the most important techniques and patterns such as service discovery, circuit breakers, security, data streams, monitoring, and a lot more from this architectural style. By the end of the book, you will be confident about using Spring to build your applications. What you will learn Implement REST APIs with Spring REST support Introduce the Spring Boot and understand how it makes creating robust applications extremely simple Understand how Spring Data helps us add persistence in MongoDB and SQL databases Introduce Reactive Programming and use this with Spring Webflux Implement a Reactive REST client and learn how it can create asynchronous applications Create a robust, scalable, and fault tolerant application with Spring Messaging Implement a websocket to add interactive behaviors in your applications Introduce the Spring Cloud projects Who this book is for If you're a developer starting out with Spring, then this book will help you learn about the new Spring 5.0 framework concepts followed by their implementation in Java and Kotlin. The book will also help experienced Spring developers gain insights into the new features added in Spring 5.0.

If you're interested in JRuby, you probably don't need a tutorial on Ruby, Rails, or Java -- you just need to know how to get things done. This Cookbook offers practical solutions for using the Java implementation of the Ruby language, with targeted recipes for deploying Rails web applications on Java servers, integrating JRuby code with Java technologies, developing JRuby desktop applications with Java toolkits, and more. Using numerous reusable code samples, JRuby Cookbook shows you how to: Install and update JRuby on Windows, Mac OS X, and Linux, and IDEs such as NetBeans and Eclipse Package and deploy Rails apps on Java Servlet containers and Java EE application servers, including JBoss, Tomcat, and GlassFish Integrate Ruby and Rails applications with popular Java EE technologies such as JMS, JMX, JPA, Spring, and Hibernate Develop desktop and client applications with cross-platform Java UI technologies and toolkits such as Swing, SWT, and Java 2D Maximize the flexibility of your testing and build environment, using both existing Java-based tools such as Ant and Maven and newer Ruby-based tools such as Rake, Raven, and Buildr The JRuby interpreter combines Ruby's simplicity and ease of use with Java's extensive libraries and technologies, a potent blend that opens new possibilities for Ruby, Rails, and Java. This Cookbook helps you take full advantage of JRuby's potential. "The JRuby Cookbook is an excellent book for any polyglot who is trying to bridge the gap between Java and Ruby. It provides solutions to specific problems developers face in both their development and testing environments, along with the applications they're building."-- Bob McWhirter, Research & Prototyping, Red Hat Middleware

Build and optimize efficient messaging applications with ease About This Book Learn to administer, configure, and manage RabbitMQ instances Discover ways to secure and troubleshoot RabbitMQ instances This book is fully up-to-date with all the latest changes to version 3.5 Who This Book Is For If you are a developer or system administrator with a basic knowledge of messaging who wants to learn RabbitMQ, or if you want to further enhance your knowledge in working with the message broker, then this book is ideal for you. To fully understand some examples in the book, a basic knowledge of the Java programming language is required. What You Will Learn Apply messaging patterns using the message broker Administer RabbitMQ using the command line, management Web console, or

management REST services Create a cluster of scalable, and highly-available, RabbitMQ instances Use RabbitMQ with the Spring Framework, MuleESB, WSO2, and Oracle databases Deploy RabbitMQ using Puppet, Vagrant, or Docker Fine-tune the performance of RabbitMQ Monitor RabbitMQ using Nagios, Munin, or Monit Secure, troubleshoot, and extend RabbitMQ In Detail RabbitMQ is Open Source Message Queuing software based on the Advanced Message Queue Protocol Standard written in the Erlang Language. RabbitMQ is an ideal candidate for large-scale projects ranging from e-commerce and finance to Big Data and social networking because of its ease of use and high performance. Managing RabbitMQ in such a dynamic environment can be a challenging task that requires a good understanding not only of how to work properly with the message broker but also of its best practices and pitfalls. Learning RabbitMQ starts with a concise description of messaging solutions and patterns, then moves on to concrete practical scenarios for publishing and subscribing to the broker along with basic administration. This knowledge is further expanded by exploring how to establish clustering and high availability at the level of the message broker and how to integrate RabbitMQ with a number of technologies such as Spring, and enterprise service bus solutions such as MuleESB and WSO2. We will look at advanced topics such as performance tuning, secure messaging, and the internals of RabbitMQ. Finally we will work through case-studies so that we can see RabbitMQ in action and, if something goes wrong, we'll learn to resolve it in the Troubleshooting section. Style and approach Each chapter of the book is an easy-to-follow guide that expands and builds on the knowledge already gained in previous chapters. Throughout the course of the book, a sample system called the CSN (Corporate Social Network) is used to illustrate the core principles described. At the end of each chapter, there is a Q&A session that covers practical questions that may arise in practice when working with RabbitMQ.

Scalable Data Streaming with Amazon Kinesis

Java Message Service

The Big Ideas Behind Reliable, Scalable, and Maintainable Systems

Real-Time Data and Stream Processing at Scale

Quick Reference

Designing Data-Intensive Applications

Part of Packt's cookbook series, this book is packed with easy to follow recipes containing step-by-step instructions. The book is designed in such a way that you can read it chapter by chapter, or refer to the tasks in no particular order. This book is for Drools developers who want to improve their current working methods and discover new features to apply to their projects. Readers are expected to be familiar with the basics of the Drools platform as well as Java.

*Cloud computing has created a shift from the use of physical hardware and locally managed software-enabled platforms to that of virtualized cloud-hosted services. Cloud assembles large networks of virtual services, including hardware (CPU, storage, and network) and software resources (databases, message queuing systems, monitoring systems, and load-balancers). As Cloud continues to revolutionize applications in academia, industry, government, and many other fields, the transition to this efficient and flexible platform presents serious challenges at both theoretical and practical levels—ones that will often require new approaches and practices in all areas. Comprehensive and timely, *Cloud Computing: Methodology, Systems, and Applications* summarizes progress in state-of-the-art research and offers step-by-step instruction on how to implement it. Summarizes Cloud Developments, Identifies Research Challenges, and Outlines Future Directions Ideal for a broad audience that includes researchers, engineers, IT professionals, and graduate students, this book is designed in three sections:*

Fundamentals of Cloud Computing: Concept, Methodology, and Overview Cloud Computing Functionalities and Provisioning Case Studies, Applications, and Future Directions It addresses the obvious technical aspects of using Cloud but goes beyond, exploring the cultural/social and regulatory/legal challenges that are quickly coming to the forefront of discussion. Properly applied as part of an overall IT strategy, Cloud can help small and medium business enterprises (SMEs) and governments in optimizing expenditure on application-hosting infrastructure. This material outlines a strategy for using Cloud to exploit opportunities in areas including, but not limited to, government, research, business, high-performance computing, web hosting, social networking, and multimedia. With contributions from a host of internationally recognized researchers, this reference delves into everything from necessary changes in users' initial mindset to actual physical requirements for the successful integration of Cloud into existing in-house infrastructure. Using case studies throughout to reinforce concepts, this book also addresses recent advances and future directions in methodologies, taxonomies, IaaS/SaaS, data management and

processing, programming models, and applications.

Applications in enterprises need to communicate, most commonly done by messaging. Apache ActiveMQ is an open-source implementation of the Java Message Service (JMS), which provides messaging in Java applications. ActiveMQ in Action is a thorough, practical guide to implementing message-oriented systems using ActiveMQ and Java. Co-authored by one of the leading ActiveMQ developers, Bruce Snyder, the book starts with the anatomy of a core Java message, then moves quickly through fundamentals including data persistence, authentication and authorization. Later chapters cover advanced features such as configuration and performance tuning, illustrating each concept with a running real-world stock portfolio application. Readers will learn to integrate ActiveMQ with Apache Geronimo and JBoss, and tie into both Java and non-Java technologies including AJAX, .NET, C++, Ruby, and the Spring framework. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

This book is a tutorial written with a step-by-step approach to help you implement an optimum clustering solution in Apache Karaf Cellar quickly and efficiently. If you are new to Karaf and want to install and manage multiple Karaf instances by farming or clustering, then this book is for you. If you are a Java developer or a system administrator with basic knowledge of Karaf, you can use this book as a guide. Some background knowledge of OSGi and/or Karaf would be preferred but is not mandatory.

Camel Design Patterns

Apache Geronimo 2.1

Spring Data

Amazon Web Services Bootcamp

Camel in Action

Kafka: The Definitive Guide

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

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

If you are a Java developer who wants to learn about Java EE, this is the book for you. It's also ideal for developers who already have experience with the Java EE platform but would like to learn more about the new Java EE 7 features by analyzing fully functional sample applications using the new application server WildFly.

A practical guide to implementing your enterprise data lake using Lambda Architecture as the base About This Book Build a full-fledged data lake for your organization with popular big data technologies using the Lambda architecture as the base Delve into the big data technologies required to meet modern day business strategies A highly practical guide to implementing enterprise data lakes with lots of examples and real-world use-cases Who This Book Is For Java developers and architects who would like to implement a data lake for their enterprise will find this book useful. If you want to get hands-on experience with the Lambda Architecture and big data technologies by implementing a practical solution using these technologies, this book will also help you. What You Will Learn Build an enterprise-level data lake using the relevant big data technologies Understand the core of the Lambda architecture and how to apply it in an enterprise Learn the technical details around Sqoop and its functionalities Integrate Kafka with Hadoop components to acquire enterprise data Use flume with streaming technologies for stream-based processing Understand stream-based processing with reference to Apache Spark Streaming Incorporate Hadoop components and know the advantages they provide for enterprise data lakes Build fast, streaming, and high-performance applications using Elasticsearch Make your data ingestion process consistent across various data formats with configurability Process your data to derive intelligence using machine learning algorithms In Detail The term "Data Lake" has recently emerged as a prominent term in the big data industry. Data scientists can make use of it in deriving meaningful insights that can be used by businesses to redefine or transform the way they operate. Lambda architecture is also emerging as one of the very eminent patterns in the big data landscape, as it not only helps to derive useful information from historical data but also correlates real-time data to enable business to take critical decisions. This book tries to bring these two important aspects – data lake and lambda architecture—together. This book is divided into three main sections. The first introduces you to the concept of data lakes, the importance of data lakes in enterprises, and getting you up-to-speed with the Lambda architecture. The second section delves into the principal components of building a data lake using the Lambda architecture. It introduces you to popular big data technologies such as Apache Hadoop, Spark, Sqoop, Flume, and Elasticsearch. The third section is a highly practical demonstration of putting it all together, and shows you how an enterprise data lake can be implemented, along with several real-world use-cases. It also shows you how other peripheral components can be added to the lake to make it more efficient. By the end of this book, you will be able to choose the right big data technologies using the lambda architectural patterns to build your enterprise data lake. Style and approach The book takes a pragmatic approach, showing ways to leverage big data technologies and lambda architecture to build an enterprise-level data lake.

Techniques to Analyze and Visualize Streaming Data

JRuby Cookbook

Drools Developer's Cookbook

Designing, Building, and Deploying Messaging Solutions

Machine Learning with Apache Spark Quick Start Guide

The Definitive Guide to HTML5 WebSocket is the ultimate insider's WebSocket resource. This revolutionary new web technology enables you to harness the power of true real-time connectivity and build responsive, modern web applications. This book contains everything web developers and architects need to know about WebSocket. It discusses how WebSocket-based architectures provide a dramatic reduction in unnecessary network overhead and latency compared to older HTTP (Ajax) architectures, how to layer widely used protocols such as XMPP and STOMP on top of WebSocket, and how to secure WebSocket connections and deploy WebSocket-based applications to the enterprise. Build real-time web applications with HTML5. This book: Introduces you to the WebSocket API and protocol Describes and provides real-world examples of protocol communication over WebSocket Explains WebSocket security and enterprise deployment

This book is written in a Cookbook style with short recipes showing developers how to effectively implement EIP without breaking everything in the process. It is concise and to the point, and it helps developers get their data flowing between different components without the need to read through page upon page of theory, while also enabling the reader to learn how to create exciting new projects. Camel Enterprise Integration Cookbook is intended for developers who have some familiarity with Apache

Camel and who want a quick lookup reference to practical, proven tips on how to perform common tasks. Every recipe also includes a summary and reference pointers for more details that make it easy for you to get a deeper understanding of the Apache Camel capabilities that you will use day to day.