

## Amqp User Manual

Learning RabbitMQ Erlang Programming Mastering CloudForms Automation Elementary Geometry for College Students Student Solutions Manual The Logstash Book Learning OpenStack Networking (Neutron) Industry 4.0 for SMEs DevOps with OpenShift Demystifying Internet of Things Security Advanced Splunk An Architectural and Practical Guide to IBM Hybrid Integration Platform Designing Data-Intensive Applications RabbitMQ Essentials Python Microservices Development AWS System Administration Interoperability and Open-Source Solutions for the Internet of Things Software Architecture with Python RabbitMQ in Action Acronyms, Initialisms & Abbreviations Dictionary Microsoft Azure Essentials - Fundamentals of Azure Instant Rabbitmq Messaging Application Development How-To RabbitMQ Cookbook Accelerating Modernization with Agile Integration Spring Integration in Action The Definitive Guide to HTML5 WebSocket ZeroMQ Distributed and Cloud Computing Learn Microservices with Spring Boot Programming Pearls RabbitMQ Essentials Enterprise Integration Patterns KVM Virtualization Cookbook Practical Microservices Architectural Patterns Designing Microservices with Django Mastering MongoDB 3.x Remote Sensing and Modeling Mastering RabbitMQ The Hitchhiker's Guide to Python OpenStack Operations Guide Enterprise Integration Patterns

### Learning RabbitMQ

### Erlang Programming

Offers instruction on how to use the flexible networking tool for exchanging messages among clusters, the cloud, and other multi-system environments.

### Mastering CloudForms Automation

When programmers list their favorite books, Jon Bentley's collection of programming pearls is commonly included among the classics. Just as natural pearls grow from grains of sand that irritate oysters, programming pearls have grown from real problems that have irritated real programmers. With origins beyond solid engineering, in the realm of insight and creativity, Bentley's pearls offer unique and clever solutions to those nagging problems. Illustrated by programs designed as much for fun as for instruction, the book is filled with lucid and witty descriptions of practical programming techniques and fundamental design principles. It is not at all surprising that Programming Pearls has been so highly valued by programmers at every level of experience. In this revision, the first in 14 years, Bentley has substantially updated his essays to reflect current programming methods and environments. In addition, there are three new essays on testing, debugging, and timing set representations string problems All the original programs have been rewritten, and an equal amount of new code has been generated. Implementations of all the programs, in C or C++, are now available on the Web. What remains the same in this new edition is Bentley's focus on the hard core of programming problems and his delivery of workable solutions to those problems. Whether you are new to Bentley's classic or are revisiting his work for

some fresh insight, the book is sure to make your own list of favorites.

### **Elementary Geometry for College Students Student Solutions Manual**

In order to remain competitive in today's world, companies need to be able to integrate internally and externally by connecting sensors, customers and partners with the information in their systems of record. In short, they need to integrate with everything. This IBM® Redbooks® publication describes how IBM Application Integration Suite and IBM Messaging portfolio can be used to satisfy the needs of core hybrid integration use cases, accelerating companies in their digital transformation journey. All concepts are explained within the context of these use cases: Joining the API economy Improving productivity Refactoring for innovation The target audience for this book is cloud and integration architects and specialists who are implementing hybrid integration solutions.

### **The Logstash Book**

With platforms designed for rapid adaptation and failure recovery such as Amazon Web Services, cloud computing is more like programming than traditional system administration. Tools for automatic scaling and instance replacement allow even small DevOps teams to manage massively scalable application infrastructures—if team members drop their old views of development and operations and start mastering automation. This comprehensive guide shows developers and system administrators how to configure and manage AWS services including EC2, CloudFormation, Elastic Load Balancing, S3, and Route 53. Sysadmins will learn to automate their favorite tools and processes; developers will pick up enough ops knowledge to build a robust and resilient AWS application infrastructure. Launch instances with EC2 or CloudFormation Securely deploy and manage your applications with AWS tools Learn to automate AWS configuration management with Python and Puppet Deploy applications with Auto Scaling and Elastic Load Balancing Explore approaches for deploying application and infrastructure updates Save time on development and operations with reusable components Learn strategies for managing log files in AWS environments Configure a cloud-aware DNS service with Route 53 Use AWS CloudWatch to monitor your infrastructure and applications

### **Learning OpenStack Networking (Neutron)**

An expert's guide to build fault tolerant MongoDB application About This Book Master the advanced modeling, querying, and administration techniques in MongoDB and become a MongoDB expert Covers the latest updates and Big Data features frequently used by professional MongoDB developers and administrators If your goal is to become a certified MongoDB professional, this book is your perfect companion Who This Book Is For Mastering MongoDB is a book for database developers, architects, and administrators who want to learn how to use MongoDB more effectively and productively. If you have experience in, and are interested in working with, NoSQL databases to build apps and websites, then this book is for you. What You Will Learn Get hands-on with advanced querying techniques such as

indexing, expressions, arrays, and more. Configure, monitor, and maintain highly scalable MongoDB environment like an expert. Master replication and data sharding to optimize read/write performance. Design secure and robust applications based on MongoDB. Administer MongoDB-based applications on-premise or in the cloud Scale MongoDB to achieve your design goals Integrate MongoDB with big data sources to process huge amounts of data In Detail MongoDB has grown to become the de facto NoSQL database with millions of users—from small startups to Fortune 500 companies. Addressing the limitations of SQL schema-based databases, MongoDB pioneered a shift of focus for DevOps and offered sharding and replication maintainable by DevOps teams. The book is based on MongoDB 3.x and covers topics ranging from database querying using the shell, built in drivers, and popular ODM mappers to more advanced topics such as sharding, high availability, and integration with big data sources. You will get an overview of MongoDB and how to play to its strengths, with relevant use cases. After that, you will learn how to query MongoDB effectively and make use of indexes as much as possible. The next part deals with the administration of MongoDB installations on-premise or in the cloud. We deal with database internals in the next section, explaining storage systems and how they can affect performance. The last section of this book deals with replication and MongoDB scaling, along with integration with heterogeneous data sources. By the end this book, you will be equipped with all the required industry skills and knowledge to become a certified MongoDB developer and administrator. Style and approach This book takes a practical, step-by-step approach to explain the concepts of MongoDB. Practical use-cases involving real-world examples are used throughout the book to clearly explain theoretical concepts.

### **Industry 4.0 for SMEs**

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.

### **DevOps with OpenShift**

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.

## **Demystifying Internet of Things Security**

Architect and design highly scalable, robust, clean, and highly performant applications in Python About This Book Identify design issues and make the necessary adjustments to achieve improved performance Understand practical architectural quality attributes from the perspective of a practicing engineer and architect using Python Gain knowledge of architectural principles and how they can be used to provide accountability and rationale for architectural decisions Who This Book Is For This book is for experienced Python developers who are aspiring to become the architects of enterprise-grade applications or software architects who would like to leverage Python to create effective blueprints of applications. What You Will Learn Build programs with the right architectural attributes Use Enterprise Architectural Patterns to solve scalable problems on the Web Understand design patterns from a Python perspective Optimize the performance testing tools in Python Deploy code in remote environments or on the Cloud using Python Secure

architecture applications in Python In Detail This book starts off by explaining how Python fits into an application architecture. As you move along, you will understand the architecturally significant demands and how to determine them. Later, you'll get a complete understanding of the different architectural quality requirements that help an architect to build a product that satisfies business needs, such as maintainability/reusability, testability, scalability, performance, usability, and security. You will use various techniques such as incorporating DevOps, Continuous Integration, and more to make your application robust. You will understand when and when not to use object orientation in your applications. You will be able to think of the future and design applications that can scale proportionally to the growing business. The focus is on building the business logic based on the business process documentation and which frameworks are to be used when. We also cover some important patterns that are to be taken into account while solving design problems as well as those in relatively new domains such as the Cloud. This book will help you understand the ins and outs of Python so that you can make those critical design decisions that not just live up to but also surpass the expectations of your clients. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to help you with everything it takes to become a successful software architect.

### **Advanced Splunk**

Break down the misconceptions of the Internet of Things by examining the different security building blocks available in Intel Architecture (IA) based IoT platforms. This open access book reviews the threat pyramid, secure boot, chain of trust, and the SW stack leading up to defense-in-depth. The IoT presents unique challenges in implementing security and Intel has both CPU and Isolated Security Engine capabilities to simplify it. This book explores the challenges to secure these devices to make them immune to different threats originating from within and outside the network. The requirements and robustness rules to protect the assets vary greatly and there is no single blanket solution approach to implement security. Demystifying Internet of Things Security provides clarity to industry professionals and provides an overview of different security solutions What You'll Learn Secure devices, immunizing them against different threats originating from inside and outside the network Gather an overview of the different security building blocks available in Intel Architecture (IA) based IoT platforms Understand the threat pyramid, secure boot, chain of trust, and the software stack leading up to defense-in-depth Who This Book Is For Strategists, developers, architects, and managers in the embedded and Internet of Things (IoT) space trying to understand and implement the security in the IoT devices/platforms.

### **An Architectural and Practical Guide to IBM Hybrid Integration Platform**

This book is a quick and concise introduction to RabbitMQ. Follow the unique case study of Clever Coney Media as they progressively discover how to fully utilize RabbitMQ, containing clever examples and detailed explanations. Whether you are someone who develops enterprise messaging products professionally or a hobbyist who is already familiar with open source Message Queuing software and you are

looking for a new challenge, then this is the book for you. Although you should be familiar with Java, Ruby, and Python to get the most out of the examples, RabbitMQ Essentials will give you the push you need to get started that no other RabbitMQ tutorial can provide you with.

### **Designing Data-Intensive Applications**

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.

### **RabbitMQ Essentials**

A practical approach to conquering the complexities of Microservices using the Python tooling ecosystem About This Book A very useful guide for Python developers who are shifting to the new microservices-based development A concise, up-to-date guide to building efficient and lightweight microservices in Python using Flask, Tox, and other tools Learn to use Docker containers, CoreOS, and Amazon Web Services to deploy your services Who This Book Is For This book is for developers who have basic knowledge of Python, the command line, and HTTP-based application principles, and those who want to learn how to build, test, scale, and manage Python 3 microservices. No prior experience of writing microservices in Python is assumed. What You Will Learn Explore what microservices are and how to design them Use Python 3, Flask, Tox, and other tools to build your services using best practices Learn how to use a TDD approach Discover how to document your microservices Configure and package your code in the best way Interact with other services Secure, monitor, and scale your services Deploy your services in Docker containers, CoreOS, and Amazon Web Services In Detail We often deploy our web applications into the cloud, and our code needs to interact with many third-party services. An efficient way to build applications to do this is through microservices architecture. But, in practice, it's hard to get this right due to the complexity of all the pieces interacting with each other. This book will teach you how to overcome these issues and craft applications that are built as

small standard units, using all the proven best practices and avoiding the usual traps. It's a practical book: you'll build everything using Python 3 and its amazing tooling ecosystem. You will understand the principles of TDD and apply them. You will use Flask, Tox, and other tools to build your services using best practices. You will learn how to secure connections between services, and how to script Nginx using Lua to build web application firewall features such as rate limiting. You will also familiarize yourself with Docker's role in microservices, and use Docker containers, CoreOS, and Amazon Web Services to deploy your services. This book will take you on a journey, ending with the creation of a complete Python application based on microservices. By the end of the book, you will be well versed with the fundamentals of building, designing, testing, and deploying your Python microservices. Style and approach This book is an linear, easy-to-follow guide on how to best design, write, test, and deploy your microservices. It includes real-world examples that will help Python developers create their own Python microservice using the most efficient methods.

### **Python Microservices Development**

This book is an in-depth introduction to Erlang, a programming language ideal for any situation where concurrency, fault tolerance, and fast response is essential. Erlang is gaining widespread adoption with the advent of multi-core processors and their new scalable approach to concurrency. With this guide you'll learn how to write complex concurrent programs in Erlang, regardless of your programming background or experience. Written by leaders of the international Erlang community -- and based on their training material -- Erlang Programming focuses on the language's syntax and semantics, and explains pattern matching, proper lists, recursion, debugging, networking, and concurrency. This book helps you: Understand the strengths of Erlang and why its designers included specific features Learn the concepts behind concurrency and Erlang's way of handling it Write efficient Erlang programs while keeping code neat and readable Discover how Erlang fills the requirements for distributed systems Add simple graphical user interfaces with little effort Learn Erlang's tracing mechanisms for debugging concurrent and distributed systems Use the built-in Mnesia database and other table storage features Erlang Programming provides exercises at the end of each chapter and simple examples throughout the book.

### **AWS System Administration**

This book constitutes the thoroughly refereed post-conference proceedings of the International Workshop on Interoperability and Open-Source Solutions for the Internet of Things, FP7 OpenIoT Project, held in Conjunction with SoftCOM 2014, in Split, Croatia, in September 2014. The 11 revised full papers presented together with the extended abstracts of 2 keynote talks were carefully reviewed and selected from numerous submissions during two rounds of reviewing and improvement. The papers are organized in topical sections on OpenIoT platform, open platforms and standards, and IoT Applications.

### **Interoperability and Open-Source Solutions for the Internet of Things**

Summary RabbitMQ in Action is a fast-paced run through building and managing scalable applications using the RabbitMQ messaging server. It starts by explaining how message queuing works, its history, and how RabbitMQ fits in. Then it shows you real-world examples you can apply to your own scalability and interoperability challenges. About the Technology There's a virtual switchboard at the core of most large applications where messages race between servers, programs, and services. RabbitMQ is an efficient and easy-to-deploy queue that handles this message traffic effortlessly in all situations, from web startups to massive enterprise systems. About the Book RabbitMQ in Action teaches you to build and manage scalable applications in multiple languages using the RabbitMQ messaging server. It's a snap to get started. You'll learn how message queuing works and how RabbitMQ fits in. Then, you'll explore practical scalability and interoperability issues through many examples. By the end, you'll know how to make Rabbit run like a well-oiled machine in a 24 x 7 x 365 environment. Written for developers familiar with Python, PHP, Java, .NET, or any other modern programming language. No RabbitMQ experience required. 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 Learn fundamental messaging design patterns Use patterns for on-demand scalability Glue a PHP frontend to a backend written in anything Implement a PubSub-alerting service in 30 minutes flat Configure RabbitMQ's built-in clustering Monitor, manage, extend, and tune RabbitMQ

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Contents Pulling RabbitMQ out of the hat Understanding messaging Running and administering Rabbit Solving problems with Rabbit: coding and patterns Clustering and dealing with failure Writing code that survives failure Warrens and Shovels: failover and replication Administering RabbitMQ from the Web Controlling Rabbit with the REST API Monitoring: Houston, we have a problem Supercharging and securing your Rabbit Smart Rabbits: extending RabbitMQ

## Software Architecture with Python

Explore microservices using the Python-based Django framework and review the benefits and drawbacks of them. This book will examine what microservices look like, how they talk to each other, and how they are crafted using the Python programming language and the Django web framework. You'll start by understanding what the key differences are between microservices and monolithic architectures. The book then does a deep dive into how microservices are built and what common models have emerged in our industry. You'll also take an extensive look at communication and ownership patterns and examine methodologies to speed up your architecture evolution by writing less but more distributed code using the Python programming language and the Django web framework. By the end of the book, you'll have a solid understanding of microservices architectures. Armed with a comprehensive and solid toolset, you can begin working toward systems that are more scalable, resilient, and maintainable. What You'll Learn Understand the benefits and drawbacks of adopting microservices Design systems and architecture for resiliency and distributed ownership Work with tools for scaling distributed system both in technical and organizational dimensions Examine the essentials of the Django web framework

## RabbitMQ in Action

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.

### **Acronyms, Initialisms & Abbreviations Dictionary**

This open access book explores the concept of Industry 4.0, which presents a considerable challenge for the production and service sectors. While digitization initiatives are usually integrated into the central corporate strategy of larger companies, smaller firms often have problems putting Industry 4.0 paradigms into practice. Small and medium-sized enterprises (SMEs) possess neither the human nor financial resources to systematically investigate the potential and risks of introducing Industry 4.0. Addressing this obstacle, the international team of authors focuses on the development of smart manufacturing concepts, logistics solutions and managerial models specifically for SMEs. Aiming to provide methodological frameworks and pilot solutions for SMEs during their digital transformation, this innovative and timely book will be of great use to scholars researching technology management, digitization and small business, as well as practitioners within manufacturing companies.

### **Microsoft Azure Essentials - Fundamentals of Azure**

This book is geared for advanced level research in the general subject area of remote sensing and modeling as they apply to the coastal marine environment. The various chapters focus on the latest scientific and technical advances in the service of better understanding coastal marine environments for their care, conservation and management. Chapters specifically deal with advances in remote sensing coastal classifications, environmental monitoring, digital ocean technological advances, geophysical methods, geoacoustics, X-band radar, risk assessment models, GIS applications, real-time modeling systems, and spatial modeling. Readers will find this book useful because it summarizes applications of new research methods in one of the world's most dynamic and complicated environments. Chapters in this book will be of interest to specialists in the coastal marine environment who deals with aspects of environmental monitoring and assessment via remote sensing techniques and numerical modeling.

## **Instant Rabbitmq Messaging Application Development How-To**

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

## **RabbitMQ Cookbook**

A practical book filled with advanced recipes as well as plenty of code and real-life examples which will make your learning curve quick and easy. If you are a software developer who wants to develop distributed applications based on messaging [BISAC]; then this book is for you. It's assumed that you have some experience with multithreading applications and distributed applications. You are also expected to know the basic concepts of Web and cloud applications in order to follow the recipes effectively.

## **Accelerating Modernization with Agile Integration**

Master the art of getting the maximum out of your machine data using Splunk About This Book A practical and comprehensive guide to the advanced functions of Splunk,, including the new features of Splunk 6.3 Develop and manage your own Splunk apps for greater insight from your machine data Full coverage of high-level Splunk techniques including advanced searches, manipulations, and visualization Who This Book Is For This book is for Splunk developers looking to learn advanced strategies to deal with big data from an enterprise architectural perspective. It is expected that readers have a basic understanding and knowledge of using Splunk Enterprise. What You Will Learn Find out how to develop and manage apps in Splunk Work with important search commands to perform data analytics on uploaded data Create visualizations in Splunk Explore tweaking Splunk Integrate Splunk with any pre-existing application to perform data crunching efficiently and in real time Make your big data speak with analytics and visualizations using Splunk Use SDK and Enterprise integration with tools such as R and Tableau In Detail Master the power of Splunk and learn the advanced strategies to get the most out of your machine data with this practical advanced guide. Make sense of the hidden data of your organization – the insight of your servers, devices, logs, traffic and clouds. Advanced Splunk shows you how. Dive deep into Splunk to find the most efficient solution to your data problems. Create the robust Splunk solutions you need to make informed decisions in big data machine analytics. From visualizations to enterprise integration, this well-organized high level guide has everything you need for Splunk mastery. Start with a complete overview of all the

new features and advantages of the latest version of Splunk and the Splunk Environment. Go hands on with uploading data, search commands for basic and advanced analytics, advanced visualization techniques, and dashboard customizing. Discover how to tweak Splunk to your needs, and get a complete on Enterprise Integration of Splunk with various analytics and visualization tools. Finally, discover how to set up and use all the new features of the latest version of Splunk. Style and approach This book follows a step by step approach. Every new concept is built on top of its previous chapter, and it is full of examples and practical scenarios to help the reader experiment as they read.

### **Spring Integration in Action**

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

### **The Definitive Guide to HTML5 WebSocket**

The experts at CloudAMQP, managers of the largest fleet of RabbitMQ clusters in the world, have written this comprehensive guide on message queue architecture. From the basics to production, this book provides a deep understanding of

RabbitMQ through the experience of Complete Car, a taxi company building its app from the ground up.

### **ZeroMQ**

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. The first ebook in the series, Microsoft Azure Essentials: Fundamentals of Azure, introduces developers and IT professionals to the wide range of capabilities in Azure. The authors - both Microsoft MVPs in Azure - present both conceptual and how-to content for key areas, including: Azure Websites and Azure Cloud Services Azure Virtual Machines Azure Storage Azure Virtual Networks Databases Azure Active Directory Management tools Business scenarios Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the "Microsoft Azure Essentials" series.

### **Distributed and Cloud Computing**

Filled with practical, step-by-step instructions and clear explanations for the most important and useful tasks. Written in a practical, concise style, this book is complete with hands-on examples and the right amount of theory to get you started developing messaging applications with RabbitMQ. Although the examples in this book are written in Node.js, a server side JavaScript platform for building fast scalable network applications no knowledge of RabbitMQ or Node.js is required. If you want to build scalable message based applications using RabbitMQ, then this book is for you!

### **Learn Microservices with Spring Boot**

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

### **Programming Pearls**

## **RabbitMQ Essentials**

### **Enterprise Integration Patterns**

Learn how to work with the Automate feature of CloudForms, the powerful Red Hat cloud management platform that lets you administer your virtual infrastructure, including hybrid public and private clouds. This practical hands-on introduction shows you how to increase your operational efficiency by automating day-to-day tasks that now require manual input. Throughout the book, author Peter McGowan provides a combination of theoretical information and practical coding examples to help you learn the Automate object model. With this CloudForms feature, you can create auto-scalable cloud applications, eliminate manual decisions and operations when provisioning virtual machines and cloud instances, and manage your complete virtual machine lifecycle. In six parts, this book helps you:

- Learn the objects and concepts for developing automation scripts with CloudForms Automate
- Customize the steps and workflows involved in provisioning virtual machines
- Create and use service catalogs, items, dialogs, objects, bundles, and hierarchies
- Use CloudForm's updated workflow to retire and delete virtual machines and services
- Orchestrate and coordinate with external services as part of a workflow
- Explore distributed automation processing as well as argument passing and handling

### **KVM Virtualization Cookbook**

Deploy, manage, and scale virtual instances using Kernel-based Virtual Machines

About This Book Build, manage and scale virtual machines with practical step-by-step examples Leverage the libvirt user-space tools and libraries to manage the life-cycle of KVM instances Deploy and scale applications inside KVM virtual machines with OpenStack Who This Book Is For If you are a system administrator working KVM virtualization, this book will help you grow on your expertise of working with the infrastructure to manage things in a better way. You should have a knowledge of working with Linux based systems. What You Will Learn Deploy different workloads in isolation with KVM virtualization and better utilize the available compute resources Explore the benefits of running applications with KVM and learn to prevent the "bad-neighbor" effect Leveraging various networking technologies in the context of virtualization with Open vSwitch and the Linux bridge. Create KVM instances using Python and inspect running KVM instances Understand Kernel Tuning for enhanced KVM performance and better memory utilization In Detail Virtualization technologies such as KVM allow for better control over the available server resources, by deploying multiple virtual instances on the same physical host, or clusters of compute resources. With KVM it is possible to run various workloads in isolation with the hypervisor layer providing better tenant isolation and higher degree of security. This book will provide a deep dive into deploying KVM virtual machines using qemu and libvirt and will demonstrate practical examples on how to run, scale, monitor, migrate and backup such instances. You will also discover real production ready recipes on deploying KVM instances with OpenStack and how to programatically manage the life cycle of KVM virtual machines using Python. You will learn numerous tips and techniques which will

help you deploy & plan the KVM infrastructure. Next, you will be introduced to the working of libvirt libraries and the iPython development environment. Finally, you will be able to tune your Linux kernel for high throughput and better performance. By the end of this book, you will gain all the knowledge needed to be an expert in working with the KVM virtualization infrastructure. **Style and approach** This book takes a complete practical approach with many step-by-step example recipes on how to use KVM in production. The book assumes certain level of expertise with Linux systems and virtualization in general. Some knowledge of Python programming is encouraged, to fully take advantage of the code recipes.

### **Practical Microservices Architectural Patterns**

Design, deploy, and maintain your own private or public Infrastructure as a Service (IaaS), using the open source OpenStack platform. In this practical guide, experienced developers and OpenStack contributors show you how to build clouds based on reference architectures, as well as how to perform daily administration tasks. Designed for horizontal scalability, OpenStack lets you build a cloud by integrating several technologies. This approach provides flexibility, but knowing which options to use can be bewildering. Once you complete this book, you'll know the right questions to ask while you organize compute, storage, and networking resources. If you already know how to manage multiple Ubuntu machines and maintain MySQL, you're ready to: Set up automated deployment and configuration Design a single-node cloud controller Use metrics to improve scalability Explore compute nodes, network design, and storage Install OpenStack packages Use an example architecture to help simplify decision-making Build a working environment to explore an IaaS cloud Manage users, projects, and quotas Tackle maintenance, debugging, and network troubleshooting Monitor, log, backup, and restore

### **Designing Microservices with Django**

For many organizations, a big part of DevOps' appeal is software automation using infrastructure-as-code techniques. This book presents developers, architects, and infra-ops engineers with a more practical option. You'll learn how a container-centric approach from OpenShift, Red Hat's cloud-based PaaS, can help your team deliver quality software through a self-service view of IT infrastructure. Three OpenShift experts at Red Hat explain how to configure Docker application containers and the Kubernetes cluster manager with OpenShift's developer- and operational-centric tools. Discover how this infrastructure-agnostic container management platform can help companies navigate the murky area where infrastructure-as-code ends and application automation begins. Get an application-centric view of automation—and understand why it's important Learn patterns and practical examples for managing continuous deployments such as rolling, A/B, blue-green, and canary Implement continuous integration pipelines with OpenShift's Jenkins capability Explore mechanisms for separating and managing configuration from static runtime software Learn how to use and customize OpenShift's source-to-image capability Delve into management and operational considerations when working with OpenShift-based application workloads Install a self-contained local version of the OpenShift environment on your computer

## Mastering MongoDB 3.x

Wield the power of OpenStack Neutron networking to bring network infrastructure and capabilities to your cloud About This Book This completely up-to-date edition will show you how to deploy a cloud on OpenStack using community-driven processes. It includes rich examples that will help you understand complex networking topics with ease Understand every aspect of designing, creating, customizing, and maintaining the core network foundation of an OpenStack cloud using OpenStack Neutron all in one book Written by best-selling author James Denton, who has more than 15 years of experience in system administration and networking. James has experience of deploying, operating, and maintaining OpenStack clouds and has worked with top enterprises and organizations Who This Book Is For If you are an OpenStack-based cloud operator and administrator who is new to Neutron networking and wants to build your very own OpenStack cloud, then this book is for you. Prior networking experience and a physical server and network infrastructure is recommended to follow along with concepts demonstrated in the book. What You Will Learn Architect and install the latest release of OpenStack on Ubuntu Linux 14.04 LTS Review the components of OpenStack networking, including plugins, agents, and services, and learn how they work together to coordinate network operations Build a virtual switching infrastructure using reference architectures based on ML2 + Open vSwitch or ML2 + LinuxBridge Create networks, subnets, and routers that connect virtual machine instances to the network Deploy highly available routers using DVR or VRRP-based methods Scale your application with haproxy and Load Balancing as-a-Service Implement port and router-level security using Security Groups and Firewall as-a-Service Provide connectivity to tenant networks with Virtual Private Networking as-a-Service (VPNaaS) Find out how to manage OpenStack networking resources using CLI and GUI-driven methods In Detail OpenStack Neutron is an OpenStack component that provides networking as a service for other OpenStack services to architect networks and create virtual machines through its API. This API lets you define network connectivity in order to leverage network capabilities to cloud deployments. Through this practical book, you will build a strong foundational knowledge of Neutron, and will architect and build an OpenStack cloud using advanced networking features. We start with an introduction to OpenStack Neutron and its various components, including virtual switching, routing, FWaaS, VPNaaS, and LBaaS. You'll also get hands-on by installing OpenStack and Neutron and its components, and use agents and plugins to orchestrate network connectivity and build a virtual switching infrastructure. Moving on, you'll get to grips with the HA routing capabilities utilizing VRRP and distributed virtual routers in Neutron. You'll also discover load balancing fundamentals, including the difference between nodes, pools, pool members, and virtual IPs. You'll discover the purpose of security groups and learn how to apply the security concept to your cloud/tenant/instance. Finally, you'll configure virtual private networks that will allow you to avoid the use of SNAT and floating IPs when connecting to remote networks. Style and approach This easy-to-follow guide on networking in OpenStack follows a step-by-step process to installing OpenStack and configuring the base networking components. Each major networking component has a dedicated chapter that will build on your experience gained from prior chapters.

## Remote Sensing and Modeling

The Hitchhiker's Guide to Python takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, The Hitchhiker's Guide is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

### **Mastering RabbitMQ**

Master the art of developing message-based applications with RabbitMQ About This Book Learn how to administer, manage, and extend your own message broker, RabbitMQ Develop clients to make a message bridge between your software systems using RabbitMQ Discover how to achieve proficiency with RabbitMQ with the well-defined descriptions of the topics Who This Book Is For If you are an intermediate-level RabbitMQ developer, who wants to achieve professional-level expertise in the subject, this book is for you. You'll also need to have a decent understanding of message queuing. What You Will Learn Administer RabbitMQ using different tools Understand the roots and details of messaging, message brokers, and AMQP protocol Scale the RabbitMQ server using the clusters and high availability techniques Extend RabbitMQ by developing the Erlang OTP-based applications that use the RabbitMQ API Manage the RabbitMQ server using its powerful tools Monitor the RabbitMQ Server using different open source tools such as Nagios, Munin, and Zabbix Ensure your RabbitMQ's security using SSL, SASL, and access control Develop RabbitMQ clients using Java, Python, and C# with an industry example In Detail RabbitMQ is one of the most powerful Open Source message broker software, which is widely used in tech companies such as Mozilla, VMware, Google, AT&T, and so on. RabbitMQ gives you lots of fantastic and easy-to-manage functionalities to control and manage the messaging facility with lots of community support. As scalability is one of our major modern problems, messaging with RabbitMQ is the main part of the solution to this problem. This book explains and demonstrates the RabbitMQ server in a detailed way. It provides you with lots of real-world examples and advanced solutions to tackle the scalability issues. You'll begin your journey with the installation and configuration of the RabbitMQ server, while also being given specific details pertaining to the subject. Next, you'll study the major problems that our server faces, including scalability and high availability, and try to get the solutions for both of these issues by using the RabbitMQ mechanisms. Following on from this, you'll get to design and develop your own plugins using the Erlang language and RabbitMQ's internal API. This knowledge will help you to start with the management and monitoring of the messages, tools, and applications. You'll also gain an understanding of the security and integrity of the messaging facilities that RabbitMQ provides. In the last few chapters, you will build and keep track of your clients (senders and receivers) using Java, Python, and C#. Style and approach An easy-to-follow guide, full of hands-on examples based around managing, monitoring, extending, and securing RabbitMQ and its internal tools. You will learn how to develop your own clients using Java, Python, and C#.

## **The Hitchhiker's Guide to Python**

A new book designed for SysAdmins, Operations staff, Developers and DevOps who are interested in deploying a log management solution using the open source tool Logstash. In this book we will walk you through installing, deploying, managing and extending Logstash. We'll teach you how to: \* Install and deploy Logstash. \* Ship events from a Logstash Shipper to a central Logstash server. \* Filter incoming events using a variety of techniques. \* Output those events to a selection of useful destinations. \* Use Logstash's awesome web interface Kibana. \* Scale out your Logstash implementation as your environment grows. \* Quickly and easily extend Logstash to deliver additional functionality you might need. By the end of the book you should have a functional and effective log management solution that you can deploy into your own environment.

## **OpenStack Operations Guide**

"Spring Integration in Action" is a hands-on guide to Spring-based messaging and integration. Readers explore real-world enterprise integration scenarios using JMS, Web Services, file systems, and e-mail.

## **Enterprise Integration Patterns**

Distributed and Cloud Computing: From Parallel Processing to the Internet of Things offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include: facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online

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