Release It Design And Deploy Production Ready Software

Managing data continues to grow as a necessity for modern organizations. There are seemingly infinite opportunities for organic growth, reduction of costs, and creation of new products and services. It has become apparent that none of these opportunities can happen smoothly without data governance. The cost of exponential data growth and privacy / security concerns are becoming burdensome. Organizations will encounter unexpected consequences in new sources of risk. The solution to these challenges is also data governance; ensuring balance between risk and opportunity. Data Governance, Second Edition, is for any executive, manager or data professional who needs to understand or implement a data governance program. It is required to ensure consistent, accurate and reliable data across their organization. This book offers an overview of why data governance is needed, how to design, initiate, and execute a program and how to keep the program sustainable. This valuable resource provides comprehensive guidance to beginning professionals, managers or analysts looking to improve their processes, and advanced students in Data Management and related courses. With the provided framework and case studies all professionals in the data governance field will gain key insights into launching successful and money-saving data governance program. Incorporates industry changes, lessons learned and new approaches Explores various ways in which data analysts and managers can ensure consistent, accurate and reliable data across their organizations Includes new case studies which detail real-world situations Explores all of the capabilities an organization must adopt to become data driven Provides guidance on various approaches to data governance, to determine whether an organization should be low profile, central controlled, agile, or traditional Provides guidance on using technology and separating vendor hype from sincere delivery of necessary capabilities Offers readers insights into how their organizations can improve the value of their data, through data quality, data strategy and data literacy Provides up to 75% brand-new content compared to the first edition
Release It!Design and Deploy Production-Ready SoftwarePragmatic Bookshelf
Learn continuous deployment and automation with code-signing, continuous testing, building, deploying, and releasing of your app. Key Features A practical guide on automating your mobile development pipeline with Fastlane, Jenkins, and Slack. Build, test, run and deploy your mobile application release with this end to end guide. Implement Continuous Integration, delivery, and deployment practices to optimize your application development workflow for faster and efficient release builds. Book Description Competitive mobile apps depend strongly on the development team's ability to deliver successful releases, consistently and often. Although continuous integration took a more mainstream priority among the development industry, companies are starting to realize the importance of continuity beyond integration and testing. This book starts off with a brief introduction to fastlane—a robust command-line tool that enables iOS and Android developers to automate their releasing workflow. The book then explores and guides you through all of its features and utilities; it provides the reader a comprehensive understanding of the tool and how to implement them. Themes include setting up and managing your certificates and provisioning and push notification profiles; automating the creation of apps and managing the app metadata on iTunes Connect and the Apple Developer Portal; and building, distributing and publishing your apps to the App Store. You will also learn how to automate the generation of localized screenshots and mesh your continuous delivery workflow into a continuous integration workflow for a more robust setup. By the end of the book, you will gain substantial knowledge on delivering bug free, developer-independent, and stable application release cycle. What you will learn Harness the fastlane tools for the

Continuous Deployment strategy Integrate Continuous Deployment with existing Continuous Integration. Automate upload of screenshots across all device screen-sizes Manage push notifications, provisioning profiles, and code-signing certificates Orchestrate automated build and deployments of new versions of your app Regulate your TestFlight users and on-board new testers Who this book is for This book is intended for mobile developers who are keen on incorporating Continuous integration and deployment practices in their workflow.

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.

Build Capability to Design, Deploy, Monitor, and Sustain Enterprise Software Systems at Scale (English Edition)

How to Create Tech Products Customers Love

Ship it!

How to Design, Deploy, and Sustain an Effective Data Governance Program

Reliable Software Releases through Build, Test, and Deployment Automation (Adobe Reader)

From Programmer to Software Architect

How to Create World-Class Agility, Reliability, and Security in Technology Organizations

Continuous delivery adds enormous value to the business and the entire software delivery lifecycle, but adopting this practice means mastering new skills typically outside of a developer's comfort zone. In this practical book, Daniel Bryant and Abraham Marín-Pérez provide guidance to help experienced Java developers master skills such as architectural design, automated quality assurance, and application packaging and deployment on a variety of platforms. Not only will you learn how to create a comprehensive build pipeline for continually delivering effective software, but you'll also explore how Java application architecture and deployment platforms have affected the way we rapidly and safely deliver new software to production environments. Get advice for beginning or completing your migration to continuous delivery Design architecture to enable the continuous delivery of Java applications Build application artifacts including fat JARs, virtual machine images, and operating system container (Docker) images Use continuous integration tooling like Jenkins, PMD, and find-sec-bugs to automate code quality checks Create a comprehensive build pipeline and design software to separate the deploy and release processes Explore why functional and system quality attribute testing is vital from development to delivery Learn how to effectively build and test

applications locally and observe your system while it runs in production Build modular React web apps that are scalable, maintainable and powerful using design patterns and insightful practices Key Features Get familiar with design patterns in React like Render props and Controlled/uncontrolled inputs Learn about class/ functional, style and high order components with React Work through examples that can be used to create reusable code and extensible designs Book Description React is an adaptable JavaScript library for building complex UIs from small, detached bits called components. This book is designed to take you through the most valuable design patterns in React, helping you learn how to apply design patterns and best practices in real-life situations. You'll get started by understanding the internals of React, in addition to covering Babel 7 and Create React App 2.0, which will help you write clean and maintainable code. To build on your skills, you will focus on concepts such as class components, stateless components, and pure components. You'll learn about new React features, such as the context API and React Hooks that will enable you to build components, which will be reusable across your applications. The book will then provide insights into the techniques of styling React components and optimizing them to make applications faster and more responsive. In the concluding chapters, you'll discover ways to write tests more effectively and learn how to contribute to React and its ecosystem. By the end of this book, you will be equipped with the skills you need to tackle any developmental setbacks when working with React. You'll be able to make your applications more flexible, efficient, and easy to maintain, thereby giving your workflow a boost when it comes to speed, without reducing quality. What you will learn Get familiar with the new React features,like context API and React Hooks Learn the techniques of styling and optimizing React components Make components communicate with each other by applying consolidate patterns Use server-side rendering to make applications load faster Write a comprehensive set of tests to create robust and maintainable code Build high-performing applications by optimizing components Who this book is for This book is for web developers who want to increase their understanding of React and apply it to real-life application development. Prior experience with React and JavaScript is assumed.

One of the biggest challenges for organizations that have adopted microservice architecture is the lack of architectural, operational, and organizational standardization. After splitting a monolithic application or building a microservice ecosystem from scratch, many engineers are left wondering what's next. In this practical book, author Susan Fowler presents a set of microservice standards in depth, drawing from her experience standardizing over a thousand microservices at Uber. You'll learn how to design microservices that are stable, reliable, scalable, fault tolerant, performant, monitored, documented, and prepared for any catastrophe. Explore production-readiness standards, including: Stability and Reliability: develop, deploy, introduce, and deprecate microservices; protect against dependency failures Scalability and Performance: learn essential

components for achieving greater microservice efficiency Fault Tolerance and Catastrophe Preparedness: ensure availability by actively pushing microservices to fail in real time Monitoring: learn how to monitor, log, and display key metrics; establish alerting and on-call procedures Documentation and Understanding: mitigate tradeoffs that come with microservice adoption, including organizational sprawl and technical debt

Summary Microservices in Action is a practical book about building and deploying microservice-based applications. Written for developers and architects with a solid grasp of service-oriented development, it tackles the challenge of putting microservices into production. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Invest your time in designing great applications, improving infrastructure, and making the most out of your dev teams. Microservices are easier to write, scale, and maintain than traditional enterprise applications because they're built as a system of independent components. Master a few important new patterns and processes, and you'll be ready to develop, deploy, and run production-quality microservices. About the Book Microservices in Action teaches you how to write and maintain microservice-based applications. Created with day-to-day development in mind, this informative guide immerses you in real-world use cases from design to deployment. You'll discover how microservices enable an efficient continuous delivery pipeline, and explore examples using Kubernetes, Docker, and Google Container Engine. What's inside An overview of microservice architecture Building a delivery pipeline Best practices for designing multi-service transactions and queries Deploying with containers Monitoring your microservices About the Reader Written for intermediate developers familiar with enterprise architecture and cloud platforms like AWS and GCP. About the Author Morgan Bruce and Paulo A. Pereira are experienced engineering leaders. They work daily with microservices in a production environment, using the techniques detailed in this book. Table of Contents PART 1 - The lay of the land Designing and running microservices Microservices at SimpleBank PART 2 - Design Architecture of a microservice application Designing new features Transactions and queries in microservices Designing reliable services Building a reusable microservice framework PART 3 - Deployment Deploying microservices Deployment with containers and schedulers Building a delivery pipeline for microservices PART 4 - Observability and ownership Building a monitoring system Using logs and traces to understand behavior Building microservice teams

The DevOps Handbook
Automating the Container Orchestration Platform
Terraform: Up & Running
Building Standardized Systems Across an Engineering Organization
Kubernetes Patterns
Active Directory

Learning Serverless

Winner of the Shingo Publication Award Accelerate your organization to win in the marketplace. How can we apply technology to drive business value? For years, we've been told that the performance of software delivery teams doesn't matter?that it can't provide a competitive advantage to our companies. Through four years of groundbreaking research to include data collected from the State of DevOps reports conducted with Puppet, Dr. Nicole Forsgren, Jez Humble, and Gene Kim set out to find a way to measure software delivery performance?and what drives it?using rigorous statistical methods. This book presents both the findings and the science behind that research, making the information accessible for readers to apply in their own organizations. Readers will discover how to measure the performance of their teams, and what capabilities they should invest in to drive higher performance. This book is ideal for management at every level.

With their rapidly changing architecture and API-driven automation, cloud platforms come with unique security challenges and opportunities. This hands-on book guides you through security best practices for multivendor cloud environments, whether your company plans to move legacy on-premises projects to the cloud or build a new infrastructure from the ground up. Developers, IT architects, and security professionals will learn cloud-specific techniques for securing popular cloud platforms such as Amazon Web Services, Microsoft Azure, and IBM Cloud. Chris Dotson—an IBM senior technical staff member—shows you how to establish data asset management, identity and access management, vulnerability management, network security, and incident response in your cloud environment.

Don't engineer by coincidence-design it like you mean it! Filled with practical techniques, Design It! is the perfect introduction to software architecture for programmers who are ready to grow their design skills. Lead your team as a software architect, ask the right stakeholders the right questions, explore design options, and help your team implement a system that promotes the right -ilities. Share your design decisions, facilitate collaborative design workshops that are fast, effective, and fun-and develop more awesome software! With dozens of design methods, examples, and practical know-how, Design It! shows you how to become a software architect. Walk through the core concepts every architect must know, discover how to apply them, and learn a variety of skills that will make you a better programmer, leader, and designer. Uncover the big ideas behind software architecture and gain confidence working on projects big and small. Plan, design, implement, and evaluate software architectures and collaborate with your team, stakeholders, and other architects. Identify the right stakeholders and understand their needs, dig for architecturally significant requirements, write amazing quality attribute scenarios, and make confident decisions. Choose technologies based on their architectural impact, facilitate architecture-centric design workshops, and evaluate architectures using lightweight, effective methods. Write lean architecture descriptions people love to read. Run an architecture design studio, implement the architecture you've designed, and grow your team's architectural knowledge. Good design requires good communication. Talk about your software architecture with stakeholders using whiteboards, documents, and code, and apply architecture-focused design methods in your day-to-day practice. Hands-on exercises, real-world scenarios, and practical team-based decision-making tools will get everyone on board and give you the experience you need to become a confident software architect.

Increase profitability, elevate work culture, and exceed productivity goals through DevOps practices. More than ever, the effective management of technology is critical for

business competitiveness. For decades, technology leaders have struggled to balance agility, reliability, and security. The consequences of failure have never been greater?whether it's the healthcare.gov debacle, cardholder data breaches, or missing the boat with Big Data in the cloud. And yet, high performers using DevOps principles, such as Google, Amazon, Facebook, Etsy, and Netflix, are routinely and reliably deploying code into production hundreds, or even thousands, of times per day. Following in the footsteps of The Phoenix Project, The DevOps Handbook shows leaders how to replicate these incredible outcomes, by showing how to integrate Product Management, Development, QA, IT Operations, and Information Security to elevate your company and win in the marketplace.
Comparing, Designing, and Deploying VPNs
Microservices in Action
Deploy, manage, and orchestrate cloud-native applications with ease

Cloud Foundry: The Definitive Guide
React Design Patterns and Best Practices
Essential Tools and Best Practices for Deploying Code to Production
Can a system be considered truly reliable if it isn't fundamentally secure? Or can it be considered secure if it's unreliable? Security is crucial to the design and operation of scalable systems in production, as it plays an important part in product quality, performance, and availability. In this book, experts from Google share best practices to help your organization design scalable and reliable systems that are fundamentally secure. Two previous O'Reilly books from Google—Site Reliability Engineering and The Site Reliability Workbook—demonstrated how and why a commitment to the entire service lifecycle enables organizations to successfully build, deploy, monitor, and maintain software systems. In this latest guide, the authors offer insights into system design, implementation, and maintenance from practitioners who specialize in security and reliability. They also discuss how building and adopting their recommended best practices requires a culture that's supportive of such change. You'll learn about secure and reliable systems through: Design strategies Recommendations for coding, testing, and debugging practices Strategies to prepare for, respond to, and recover from incidents Cultural best practices that help teams across your organization collaborate effectively
The First Complete Guide to DevOps for Software Architects DevOps promises to accelerate the release of new software features and improve monitoring of systems in production, but its crucial implications for software architects and architecture are often ignored. In DevOps: A Software Architect's Perspective, three leading architects address these issues head-on. The authors review decisions software architects must make in order to achieve DevOps' goals and clarify how other DevOps participants are likely to impact the architect's work. They also provide the organizational, technical, and operational context needed to deploy DevOps more efficiently, and review DevOps' impact on each development phase. The authors address cross-cutting concerns that link multiple functions, offering practical insights into compliance, performance, reliability, repeatability, and security. This guide demonstrates the authors' ideas in action with three real-world case studies: datacenter replication for business continuity, management of a continuous deployment pipeline, and migration to a microservice architecture. Comprehensive coverage includes • Why DevOps can require major changes in both system architecture and IT roles • How virtualization and the cloud can enable DevOps practices • Integrating operations and its service lifecycle into DevOps • Designing new systems to work well with DevOps practices • Integrating DevOps with agile methods and TDD • Handling failure detection, upgrade planning, and other key issues • Managing consistency issues arising from DevOps' independent deployment models • Integrating security controls,

roles, and audits into DevOps • Preparing a business plan for DevOps adoption, rollout, and measurement

Operators are a way of packaging, deploying, and managing Kubernetes applications. A Kubernetes application doesn't just run on Kubernetes; it's composed and managed in Kubernetes terms. Operators add application-specific operational knowledge to a Kubernetes cluster, making it easier to automate complex, stateful applications and to augment the platform. Operators can coordinate application upgrades seamlessly, react to failures automatically, and streamline repetitive maintenance like backups. Think of Operators as site reliability engineers in software. They work by extending the Kubernetes control plane and API, helping systems integrators, cluster administrators, and application developers reliably deploy and manage key services and components. Using real-world examples, authors Jason Dobies and Joshua Wood demonstrate how to use Operators today and how to create Operators for your applications with the Operator Framework and SDK. Learn how to establish a Kubernetes cluster and deploy an Operator Examine a range of Operators from usage to implementation Explore the three pillars of the Operator Framework: the Operator SDK, the Operator Lifecycle Manager, and Operator Metering Build Operators from the ground up using the Operator SDK Build, package, and run an Operator in development, testing, and production phases Learn how to distribute your Operator for installation on Kubernetes clusters

Understand the key challenges and solutions around building microservices in the enterprise application environment. This book provides a comprehensive understanding of microservices architectural principles and how to use microservices in real-world scenarios. Architectural challenges using microservices with service integration and API management are presented and you learn how to eliminate the use of centralized integration products such as the enterprise service bus (ESB) through the use of composite/integration microservices. Concepts in the book are supported with use cases, and emphasis is put on the reality that most of you are implementing in a "brownfield" environment in which you must implement microservices alongside legacy applications with minimal disruption to your business. Microservices for the Enterprise covers state-of-the-art techniques around microservices messaging, service development and description, service discovery, governance, and data management technologies and guides you through the microservices design process. Also included is the importance of organizing services as core versus atomic, composite versus integration, and API versus edge, and how such organization helps to eliminate the use of a central ESB and expose services through an API gateway. What You'll LearnDesign and develop microservices architectures with confidence Put into practice the most modern techniques around messaging technologies Apply the Service Mesh pattern to overcome inter-service communication challenges Apply battle-tested microservices security patterns to address real-world scenarios Handle API management, decentralized data management, and observability Who This Book Is For Developers and DevOps engineers responsible for implementing applications around a microservices architecture, and architects and analysts who are designing such systems Design, build and deploy production-ready web applications using standard industry practices, 2nd Edition
Patterns and Paradigms for Scalable, Reliable Services
With examples in Java
Build, Design, and Deploy Cloud-Native Applications and Microservices with Jakarta EE (English Edition)
Reusable Elements for Designing Cloud-Native Applications
Design and Build Modern Cloud Native Applications using Spring and Kubernetes (English Edition)
Kafka: The Definitive Guide
A detailed guide for deploying PPTP, L2TPv2, L2TPv3, MPLS Layer-3, AToM, VPLS and IPSec

virtual private networks.

Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don't approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique, modular style of system building. You'll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You'll explore a design-based approach to microservice architecture with guidance for implementing various elements. And you'll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption. Learn how microservices can help you drive business objectives Examine the principles, practices, and culture that define microservice architectures Explore a model for creating complex systems and a design process for building a microservice architecture Learn the fundamental design concepts for individual microservices Delve into the operational elements of a microservices architecture, including containers and service discovery Discover how to handle the challenges of introducing microservice architecture in your organization

APIs are transforming the business world at an increasing pace. Gain the essential skills needed to quickly design, build, and deploy quality web APIs that are robust, reliable, and resilient. Go from initial design through prototyping and implementation to deployment of mission-critical APIs for your organization. Test, secure, and deploy your API with confidence and avoid the "release into production" panic. Tackle just about any API challenge with more than a dozen open-source utilities and common programming patterns you can apply right away. Good API design means starting with the API-First principle - understanding who is using the API and what they want to do with it - and applying basic design skills to match customers' needs while solving business-critical problems. Use the Sketch-Design-Build method to create reliable and scalable web APIs quickly and easily without a lot of risk to the day-to-day business operations. Create clear sequence diagrams, accurate specifications, and machine-readable API descriptions all reviewed, tested, and ready to turn into fully-functional NodeJS code. Create reliable test collections with Postman and implement proper identity and access control security with AuthO-without added cost or risk to the company. Deploy all of this to Heroku using a continuous delivery approach that pushes secure, well-tested code to your public servers ready for use by both internal and external developers. From design to code to test to deployment, unlock hidden business value and release stable and scalable web APIs that meet customer needs and solve important business problems in a consistent and reliable manner.

Unleash the combination of Docker and Jenkins in order to enhance the DevOps workflow About This Book Build reliable and secure applications using Docker containers. Create a complete Continuous Delivery pipeline using Docker, Jenkins, and Ansible. Deliver your applications directly on the Docker Swarm cluster. Create more complex solutions using multi-containers and database migrations. Who This Book Is For This book is indented to provide a full overview of deep learning. From the beginner in deep learning and artificial intelligence to the data scientist who wants to become familiar with Theano and its supporting libraries, or have an extended understanding of deep neural nets. Some basic skills in Python programming and computer science will help, as well as skills in elementary algebra and calculus. What You Will Learn Get to grips with docker fundamentals and how to dockerize an application for the Continuous Delivery process Configure Jenkins and scale it using Docker-based agents Understand the principles and the technical aspects of a successful Continuous Delivery pipeline Create a complete Continuous Delivery process using modern tools: Docker, Jenkins, and Ansible Write acceptance tests using Cucumber and run them in the Docker ecosystem using Jenkins Create multi-container applications using Docker Compose Managing database changes inside the Continuous Delivery process and understand effective frameworks such as Cucumber and Flyweight Build clustering

applications with Jenkins using Docker Swarm Publish a built Docker image to a Docker Registry and deploy cycles of Jenkins pipelines using community best practices In Detail The combination of Docker and Jenkins improves your Continuous Delivery pipeline using fewer resources. It also helps you scale up your builds, automate tasks and speed up Jenkins performance with the benefits of Docker containerization. This book will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. It will start with setting up a Docker server and configuring Jenkins on it. It will then provide steps to build applications on Docker files and integrate them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, and configuration management. Moving on you will learn how to ensure quick application deployment with Docker containers along with scaling Jenkins using Docker Swarm. Next, you will get to know how to deploy applications using Docker images and testing them with Jenkins. By the end of the book, you will be enhancing the DevOps workflow by integrating the functionalities of Docker and Jenkins. Style and approach The book is aimed at DevOps Engineers, developers and IT Operations who want to enhance the DevOps culture using Docker and Jenkins.

A Software Architect's Perspective

Accelerate

Cloud Native Applications with Jakarta EE

Release It!

DevOps

Designing Distributed Systems

Microservice Architecture

How can Cloud Foundry help you develop and deploy business-critical applications and tasks with velocity? This practical guide demonstrates how this open source, cloud-native application platform not only significantly reduces the develop-to-deploy cycle time, but also raises the value line for application operators by changing the way applications and supporting services are deployed and run. Learn how Cloud Foundry can help you improve your product velocity by handling many of essential tasks required to run applications in production. Author Duncan Winn shows DevOps and operations teams how to configure and run Cloud Foundry at scale. You'll examine Cloud Foundry's technical concepts—including how various platform components interrelate—and learn how to choose your underlying infrastructure, define the networking architecture, and establish resiliency requirements. This book covers: Cloud-native concepts that make the app build, test, deploy, and scale faster How to deploy Cloud Foundry and the BOSH release engineering toolchain Concepts and components of Cloud Foundry's runtime architecture Cloud Foundry's routing mechanisms and capabilities The platform's approach to container tooling and orchestration BOSH concepts, deployments, components, and commands Basic tools and techniques for debugging the platform Recent and soon-to-emerge features of Cloud Foundry A comprehensive guide with basic to advanced SRE practices and hands-on examples. KEY FEATURES ● Demonstrates how to execute site reliability engineering along with fundamental concepts. ●

Illustrates real-world examples and successful techniques to put SRE into production. ● Introduces you to DevOps, advanced techniques of SRE, and popular tools in use. DESCRIPTION Hands-on Site Reliability Engineering (SRE) brings you a tailor-made guide to learn and practice the essential activities for the smooth functioning of enterprise systems, right from designing to the deployment of enterprise software programs and extending to scalable use with complete efficiency and reliability. The book explores the fundamentals around SRE and related terms, concepts, and techniques that are used by SRE teams and experts. It discusses the essential elements of an IT system, including microservices, application architectures, types of software deployment, and concepts like load balancing. It explains the best techniques in delivering timely software releases using containerization and CI/CD pipeline. This book covers how to track and monitor application performance using Grafana, Prometheus, and Kibana along with how to extend monitoring more effectively by building full-stack observability into the system. The book also talks about chaos engineering, types of system failures, design for high-availability, DevSecOps and AIOps. WHAT YOU WILL LEARN ● Learn the best techniques and practices for building and running reliable software. ● Explore observability and popular methods for effective monitoring of applications. ● Workaround SLIs, SLOs, Error Budgets, and Error Budget Policies to manage failures. ● Learn to practice continuous software delivery using blue/green and canary deployments. ● Explore chaos engineering, SRE best practices, DevSecOps and AIOps. WHO THIS BOOK IS FOR This book caters to experienced IT professionals, application developers, software engineers, and all those who are looking to develop SRE capabilities at the individual or team level. TABLE OF CONTENTS 1. Understand the World of IT 2. Introduction to DevOps 3. Introduction to SRE 4. Identify and Eliminate Toil 5. Release Engineering 6. Incident Management 7. IT Monitoring 8. Observability 9. Key SRE KPIs: SLAs, SLOs, SLIs, and Error Budgets 10. Chaos Engineering 11. DevSecOps and AIOps 12. Culture of Site Reliability Engineering
Build and deploy scalable cloud native microservices using the Spring framework and Kubernetes. KEY FEATURES ● Complete coverage on how to design, build, run, and deploy modern cloud native microservices. ● Includes numerous sample code exercises on microservices, Spring and Kubernetes. ● Develop a stronghold on Kubernetes, Spring, and the microservices architecture. ● Complete guide of application containerization on Kubernetes containers. ● Coverage on managing modern applications and infrastructure using observability tools. DESCRIPTION The main objective of this book is to

give an overview of cloud native microservices, their architecture, design patterns, best practices, real use cases and practical coverage of modern applications. This book covers a strong understanding of the fundamentals of microservices, API first approach, Testing, observability, API Gateway, Service Mesh and Kubernetes alternatives of Spring Cloud. This book covers the implementation of various design patterns of developing cloud native microservices using Spring framework docker and Kubernetes libraries. It covers containerization concepts and hands-on lab exercises like how to build, run and manage microservices applications using Kubernetes. After reading this book, the readers will have a holistic understanding of building, running, and managing cloud native microservices applications on Kubernetes containers. WHAT YOU WILL LEARN ● Learn fundamentals of microservice and design patterns. ● Learn microservices development using Spring Boot and Kubernetes. ● Learn to develop reactive, event-driven, and batch microservices. ● Perform end-to-end microservices testing using Cucumber. ● Implement API gateway,authentication & authorization,load balancing, caching, rate limiting. ● Learn observability and monitoring techniques of microservices. WHO THIS BOOK IS FOR This book is for the Spring Developers, Microservice Developers, Cloud Engineers, DevOps Consultants, Technical Architect and Solution Architects, who have some familiarity with application development, Docker and Kubernetes containers. TABLE OF CONTENTS 1. Overview of Cloud Native microservices 2. Microservice design patterns 3. API first approach 4. Build microservices using the Spring Framework 5. Batch microservices 6. Build reactive and event-driven microservices 7. The API gateway, security, and distributed caching with Redis 8. Microservices testing and API mocking 9. Microservices observability 10. Containers and Kubernetes overview and architecture 11. Run microservices on Kubernetes 12. Service Mesh and Kubernetes alternatives of Spring Cloud

In the race to compete in today's fast-moving markets, large enterprises are busy adopting new technologies for creating new products, processes, and business models. But one obstacle on the road to digital transformation is placing too much emphasis on technology, and not enough on the types of processes technology enables. What if different lines of business could build their own services and applications—and decision-making was distributed rather than centralized? This report explores the concept of a digital business platform as a way of empowering individual business sectors to act on data in real time. Much innovation in a digital enterprise will increasingly happen at the edge, whether it involves business users

(from marketers to data scientists) or IoT devices. To facilitate the process, your core IT team can provide these sectors with the digital tools they need to innovate quickly. This report explores: Key cultural and organizational changes for developing business capabilities through cross-functional product teams A platform for integrating applications, data sources, business partners, clients, mobile apps, social networks, and IoT devices Creating internal API programs for building innovative edge services in low-code or no-code environments Tools including Integration Platform as a Service, Application Platform as a Service, and Integration Software as a Service The challenge of integrating microservices and serverless architectures Event-driven architectures for processing and reacting to events in real time You'll also learn about a complete pervasive integration solution as a core component of a digital business platform to serve every audience in your organization.

Broadband Network Architectures

The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations

Design Patterns for Cloud Native Applications

Real-Time Data and Stream Processing at Scale

Designing, Developing, and Deploying

Kubernetes Operators

Microservices Patterns

Terraform has become a key player in the DevOps world for defining, launching, and managing infrastructure as code (IaC) across a variety of cloud and virtualization platforms, including AWS, Google Cloud, Azure, and more. This hands-on second edition, expanded and thoroughly updated for Terraform version 0.12 and beyond, shows you the fastest way to get up and running. Gruntwork cofounder Yevgeniy (Jim) Brikman walks you through code examples that demonstrate Terraform's simple, declarative programming language for deploying and managing infrastructure with a few commands. Veteran sysadmins, DevOps engineers, and novice developers will quickly go from Terraform basics to running a full stack that can support a massive amount of traffic and a large team of developers. Explore changes from Terraform 0.9 through 0.12, including backends, workspaces, and first-class expressions Learn how to write production-grade Terraform modules Dive into manual and automated testing for Terraform code Compare Terraform to Chef, Puppet, Ansible, CloudFormation, and Salt Stack Deploy server clusters, load balancers, and databases Use Terraform to manage the state of your infrastructure Create reusable infrastructure with Terraform modules Use advanced Terraform syntax to achieve zero-

downtime deployment

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

The overwhelming majority of a software system's lifespan is spent in use, not in design or implementation. So, why does conventional wisdom insist that software engineers focus primarily on the design and development of large-scale computing systems? In this collection of essays and articles, key members of Google's Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world. You'll learn the principles and practices that enable Google engineers to make systems more scalable, reliable, and efficient—lessons directly applicable to your organization. This book is divided into four sections: Introduction—Learn what site reliability engineering is and why it differs from conventional IT industry practices Principles—Examine the patterns, behaviors, and areas of concern

that influence the work of a site reliability engineer (SRE) Practices—Understand the theory and practice of an SRE's day-to-day work: building and operating large distributed computing systems Management—Explore Google's best practices for training, communication, and meetings that your organization can use Winner of the 2011 Jolt Excellence Award! Getting software released to users is often a painful, risky, and time-consuming process. This groundbreaking new book sets out the principles and technical practices that enable rapid, incremental delivery of high quality, valuable new functionality to users. Through automation of the build, deployment, and testing process, and improved collaboration between developers, testers, and operations, delivery teams can get changes released in a matter of hours— sometimes even minutes-no matter what the size of a project or the complexity of its code base. Jez Humble and David Farley begin by presenting the foundations of a rapid, reliable, low-risk delivery process. Next, they introduce the "deployment pipeline," an automated process for managing all changes, from check-in to release. Finally, they discuss the "ecosystem" needed to support continuous delivery, from infrastructure, data and configuration management to governance. The authors introduce state-of-the-art techniques, including automated infrastructure management and data migration, and the use of virtualization. For each, they review key issues, identify best practices, and demonstrate how to mitigate risks. Coverage includes • Automating all facets of building, integrating, testing, and deploying software • Implementing deployment pipelines at team and organizational levels • Improving collaboration between developers, testers, and operations • Developing features incrementally on large and distributed teams • Implementing an effective configuration management strategy • Automating acceptance testing, from analysis to implementation • Testing capacity and other non-functional requirements • Implementing continuous deployment and zero-downtime releases • Managing infrastructure, data, components and dependencies • Navigating risk management, compliance, and auditing Whether you're a developer, systems administrator, tester, or manager, this book will help your organization move from idea to release faster than ever—so you can deliver value to your business rapidly and reliably.

Continuous Delivery for Mobile with fastlane
Cloud Foundry for Developers
Aligning Principles, Practices, and Culture
Design and Deploy Production-ready Software
Site Reliability Engineering
A Practical Guide to Successful Software Projects

`Best Practices for Designing, Implementing, and Maintaining Systems`

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine some of the tools and technologies you'll need for building cloud native systems

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

Provides information on ways to effectively design and release an application.

Service providers are increasingly focused on delivering triple-play bundles that incorporate Internet, video, and VoIP services—as well as multi-play bundles containing even more advanced services. Broadband Network Architectures is the first comprehensive guide to

designing, implementing, and managing the networks that make triple-play services possible. Hellberg, Greene, and Boyes present their field-tested industry best practices and objectively evaluate the tradeoffs associated with key up-front architectural decisions that balance the complexities of bundled services and sophisticated traffic policies. Broadband Network Architectures not only documents what is possible on this rapidly changing field of networking, but it also details how to divide Internet access into these more sophisticated services with specialized Quality of Service handling. Coverage includes · An in-depth introduction to next-generation triple-play services: components, integration, and business connectivity · Triple-play backbone design: MPLS, Layer 3 VPNs, and Broadband Network Gateways (BNGs)/Broadband Remote Access Servers (B-RAS) · Protocols and strategies for integrating BNGs into robust triple-play networks · Triple-play access network design: DSLAM architectures, aggregation networks, transport, and Layer 2 tunneling · VLAN-per-customer versus service-per-VLAN architectures: advantages and disadvantages · PPP or DHCP: choosing the right access protocol · Issues associated with operating in wholesale, unbundled environments · IP addressing and subscriber session management · Broadband network security, including Denial of Service attacks and VoIP privacy · The future of wireless broadband: IMS, SIP, and non-SIP based fixed mobile convergence and wireless video

Production-Ready Microservices
Design It!
Design and Build Great Web APIs
Data Governance
Building Secure and Reliable Systems
How Google Runs Production Systems
Continuous Delivery with Docker and Jenkins

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. Engineers from 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 with 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-case requirements 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 Learn 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

Ship It! is a collection of tips that show the tools andtechniques a successful project team has to use, and how to use themwell. You'll get quick, easy-to-follow advice on modernpractices: which to use, and when they should be applied. This bookavoids current fashion trends and marketing hype; instead, readersfind page after page of solid advice, all tried and tested in thereal world. Aimed at beginning to intermediate programmers, Ship It! will show you: Which tools help, and which don't How to keep a project moving Approaches to scheduling that work How to build developers as well as product What's normal on a project, and what's not How to manage managers, end-users and sponsors Danger signs and how to fix them Few of the ideas presented here are controversial or extreme; most experiencedprogrammers will agree that this stuff works. Yet 50 to 70 percent of allproject teams in the U.S. aren't able to use even these simple, well-acceptedpractices effectively. This book will help you get started. Ship It! begins by introducing the common technicalinfrastructure that every project needs to get the job done. Readerscan choose from a variety of recommended technologies according totheir skills and budgets. The next sections outline the necessarysteps to get software out the door reliably, using well-accepted,easy-to-adopt, best-of-breed practices that really work. Finally, and most importantly, Ship It! presents commonproblems that teams face, then offers real-world advice on how tosolve them.

Deploy and scale applications on Cloud Foundry About This Book Gain hands-on experience using Cloud Foundry Implement deployment, management and scaling of applications on Cloud Foundry Learn best practices and troubleshooting tips for running applications on Cloud Foundry Who This Book Is For This book is aimed at developers, engineers and architects who want to learn key aspects of developing and running applications on the Cloud Foundry Platform. Prior knowledge Cloud Foundry is not necessary. What You Will Learn Understand Cloud Foundry (CF) tools and concepts. Understand the breadth of possibilities unleashed through a lightweight agile approach to building and deploying applications. Design and deploy cloud native applications that run well on Cloud Foundry. Learn Microservice design concepts and worker applications. Customize service brokers to publish your services in the Cloud Foundry marketplace. Using, managing and creating buildpacks for the Cloud Foundry Platform. Troubleshoot applications on Cloud Foundry Perform zero-downtime deployments using blue/green

routes, A/B testing, and painless rollbacks to earlier versions of the application. In Detail Cloud Foundry is the open source platform to deploy, run, and scale applications. Cloud Foundry is growing rapidly and a leading product that provides PaaS (Platform as a Service) capabilities to enterprise, government, and organizations around the globe. Giants like Dell Technologies, GE, IBM, HP and the US government are using Cloud Foundry innovate faster in a rapidly changing world. Cloud Foundry is a developer's dream. Enabling them to create modern applications that can leverage the latest thinking, techniques and capabilities of the cloud, including: DevOps Application Virtualization Infrastructure agnosticism Orchestrated containers Automation Zero downtime upgrades A/B deployment Quickly scaling applications out or in This book takes readers on a journey where they will first learn the Cloud Foundry basics, including how to deploy and scale a simple application in seconds. Readers will build their knowledge of how to create highly scalable and resilient cloud-native applications and microservices running on Cloud Foundry. Readers will learn how to integrate their application with services provided by Cloud Foundry and with those external to Cloud Foundry. Readers will learn how to structure their Cloud Foundry environment with orgs and spaces. After that, we'll discuss aspects of continuous integration/continuous delivery (CI/CD), monitoring and logging. Readers will also learn how to enable health checks, troubleshoot and debug applications. By the end of this book, readers will have hands-on experience in performing various deployment and scaling tasks. Additionally, they will have an understanding of what it takes to migrate and develop applications for Cloud Foundry. Style and Approach A practitioner's guide to Cloud Foundry that covers the areas of application development, deployment and services.
Provides information on the features, functions, and implementation of Active Directory.
Secure by Design
Develop, Deploy, and Scale
Automating mobile application development and deployment for iOS and Android
Continuous Delivery in Java
Cloud Native Microservices with Spring and Kubernetes
Practical Cloud Security
Hands-on Site Reliability Engineering

As a developer, you need to build software in a secure way. But you can't spend all your time focusing on security. The answer is to use good design principles, tools, and mindsets that make security an implicit result - it's secure by design. Secure by

Design teaches developers how to use design to drive security in software development. This book is full of patterns, best practices, and mindsets that you can directly apply to your real world development. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

How do today's most successful tech companies—Amazon, Google, Facebook, Netflix, Tesla—design, develop, and deploy the products that have earned the love of literally billions of people around the world? Perhaps surprisingly, they do it very differently than the vast majority of tech companies. In INSPIRED, technology product management thought leader Marty Cagan provides readers with a master class in how to structure and staff a vibrant and successful product organization, and how to discover and deliver technology products that your customers will love—and that will work for your business. With sections on assembling the right people and skillsets, discovering the right product, embracing an effective yet lightweight process, and creating a strong product culture, readers can take the information they learn and immediately leverage it within their own organizations—dramatically improving their own product efforts. Whether you're an early stage startup working to get to product/market fit, or a growth-stage company working to scale your product organization, or a large, long-established company trying to regain your ability to consistently deliver new value for your customers, INSPIRED will take you and your product organization to a new level of customer engagement, consistent innovation, and business success. Filled with the author's own personal stories—and profiles of some of today's most-successful product managers and technology-powered product companies, including Adobe, Apple, BBC, Google, Microsoft, and Netflix—INSPIRED will show you how to turn up the dial of your own product efforts, creating technology products your customers love. The first edition of INSPIRED, published ten years ago, established itself as the primary reference for technology product managers, and can be found on the shelves of nearly every successful technology product company worldwide. This thoroughly updated second edition shares the same objective of being the most valuable resource for technology product managers, yet it is completely new—sharing the latest practices and techniques of today's most-successful tech product companies, and the men and women behind every great product. Whether your company is considering serverless computing or has already made the decision to adopt this model, this practical book is for you. Author Jason Katzer shows early- and mid-career developers what's required to build and ship maintainable and

scalable services using this model. With this book, you'll learn how to build a modern production system in the cloud, viewed through the lens of serverless computing. You'll discover how serverless can free you from the tedious task of setting up and maintaining systems in production. You'll also explore new ways to level up your career and design, develop, and deploy with confidence. In three parts, this book includes: The Path to Production: Examine the ins and outs of distributed systems, microservices, interfaces, and serverless architecture and patterns The Tools: Dive into monitoring, observability and alerting, logging, pipelines, automation, and deployment Concepts: Learn how to design security and privacy, how to manage quality through testing and staging, and how to plan for failure

Deploy serverless and scalable cloud-native applications with Jakarta EE KEY FEATURES ● Example-driven approach crafted specially for developers and architects. ● Covers all core areas for cloud-native development. ● Step-by-step implementation of core concepts, including application scalability and security, serverless, and containerization. DESCRIPTION The book helps readers to get a basic understanding of features provided by the cloud and core concepts of cloud native development. A hands-on approach makes sure that after reading the book, one can straight away implement the concepts in their daily design and development activities. The book starts with the basics of cloud computing and moves on to understanding the core concepts to create a production-ready cloud-native application. The book helps readers to develop a code that is testable and maintainable to support Agile cloud native development. This book also talks about the security and scalability aspects of applications which are the backbone of any large-scale application. The book covers advanced cloud-native application development approaches using containers and serverless approaches. The book will help readers to get ready for a cloud-native development journey. Whether one is creating a small application or a large-scale application, core concepts explained in this book remain relevant and will work as a guiding light for developers and architects. WHAT YOU WILL LEARN ● Explains the core features that are part of cloud computing. ● Build applications that are fast to market due to testability and maintainability. ● Build applications that are secured against vulnerabilities. ● Build applications that are easy to scale. WHO THIS BOOK IS FOR The book is meant for software developers, architects, and technical readers who want to learn about Cloud-based application development. Basic knowledge of the Java programming language or Jakarta EE platform is expected

to understand code examples used in the book. TABLE OF CONTENTS 1. Introduction to Cloud Computing 2. Design for Cloud 3. Major Players in Cloud Computing 4. Sample Application Using Jakarta EE 5. Testing Cloud-Native Applications 6. Continuous Integration and Continuous Delivery 7. Securing Cloud-Based Applications 8. Scalability 9. Monitoring, Alerting, and Reporting 10. Containers 11. Serverless Computing 12. Best Practices for Developing Cloud-Native Applications
Writing Infrastructure as Code
Continuous Delivery
A Guide for Secure Design and Deployment
Microservices for the Enterprise
Design and Deploy Production-Ready Software
Designing and Deploying Triple-Play Services
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