Release It!: Design And Deploy Production Ready Software

Praise for the first edition: "This excellent text will be useful to everysystem engineer (SE) regardless of the domain. It covers ALLrelevant SE material and does so in a very clear, methodicalfashion. The breadth and depth of the author's presentation ofSE principles and practices is outstanding." –Philip Allen This textbook presents a comprehensive, step-by-step guide toSystem Engineering analysis, design, and development via anintegrated set of concepts, principles, practices, andmethodologies. The methods presented in this text apply to any typeof human system -- small, medium, and large organizational systemsand system development projects delivering engineered systems orservices across multiple business sectors such as medical,transportation, financial, educational, governmental, aerospace anddefense, utilities, political, and charity, among others. Provides a common focal point for "bridgingthe gap" between and unifying System Users, System Acquirers,multi-discipline System Engineering, and Project, Functional, andExecutive Management education, knowledge, and decision-making fordeveloping systems, products, or services Each chapter provides definitions of key terms,guiding principles, examples, author's notes, real-worldexamples, and exercises, which highlight and reinforce key SE&Dconcepts and practices Addresses concepts employed in Model-BasedSystems Engineering (MBSE), Model-Driven Design (MDD), UnifiedModeling Language (UMLTM) / Systems Modeling Language(SysMLTM), and Agile/Spiral/V-Model Development such asuser needs, stories, and use cases analysis; specificationdevelopment; system architecture development; User-Centric SystemDesign (UCSD); interface definition & control; systemintegration & test; and Verification & Validation(V&V) Highlights/introduces a new 21st Century SystemsEngineering & Development (SE&D) paradigm that is easy tounderstand and implement. Provides practices that are critical stagingpoints for technical decision making such as Technical StrategyDevelopment; Life Cycle requirements; Phases, Modes, & States;SE Process; Requirements Derivation; System ArchitectureDevelopment, User-Centric System Design (UCSD); EngineeringStandards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises andnumerous case studies and examples, Systems EngineeringAnalysis, Design, and Development, Second Edition is a primarytextbook for multi-discipline, engineering, system analysis, andproject management undergraduate/graduate level students and avaluable reference for professionals. A detailed guide for deploying PPTP, L2TPv2, L2TPv3, MPLS

Layer-3, AToM, VPLS and IPSec virtual private networks.
This book provides a comprehensive introduction to hardware
security, from specification to implementation. Applications
discussed include embedded systems ranging from small RFID tags
to satellites orbiting the earth. The authors describe a design
and synthesis flow, which will transform a given circuit into a
secure design incorporating counter-measures against fault
attacks. In order to address the conflict between testability
and security, the authors describe innovative design-for-
testability (DFT) computer-aided design (CAD) tools that support
security challenges, engineered for compliance with existing,
commercial tools. Secure protocols are discussed, which protect
access to necessary test infrastructures and enable the design
of secure access controllers.
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.
Microservice Architecture
Design and Deployment
Designing Fine-Grained Systems
From Programmer to Software Architect
Design and Build Modern Cloud Native Applications using Spring
and Kubernetes (English Edition)
Ship it!
A Practical Guide to Successful Software Projects

Despite the buzz surrounding the cloud computing, only a small percentage of
organizations have actually deployed this new style of IT—so far. If you're
planning your long-term cloud strategy, this practical book provides insider
knowledge and actionable real-world lessons regarding planning, design,
operations, security, and application transformation. This book teaches
business and technology managers how to transition their organization's
traditional IT to cloud computing. Rather than yet another book trying to sell or
convince readers on the benefits of clouds, this book provides guidance,
lessons learned, and best practices on how to design, deploy, operate, and
secure an enterprise cloud based on real-world experience. Author James Bond

provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

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

With the increasing global interest in leveraging cloud infrastructure, AWS Cloud from Amazon offers a cutting-edge platform for architecting, building, and deploying web-scale cloud applications. The variety of features available within AWS can reduce overall infrastructure costs and accelerate the development process for both large enterprises and startups alike. Beginning with basic cloud concepts, you'll learn about the various cloud services models and the design implications of multi-tenant applications. You'll then design, implement, and deploy a multi-tier, scalable, highly-available and secure application on the AWS platform. At every step, we explain the key guiding

principles driving real-world production-ready application architectures. Finally, you will learn how to automate your cloud infrastructure, set up operations, application monitoring, and DevOps pipeline.

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

Patterns and Paradigms for Scalable, Reliable Services
Learning AWS
Pivot to the Future
Design, build, and deploy responsive applications using AWS Cloud components, 2nd Edition
Designing Big Data Platforms
How Google Runs Production Systems

Designing Distributed Systems

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 New from the official RSA Press, this expert resource explains how to design and deploy security successfully across your enterprise--and keep unauthorized users out of your network. You'll get full coverage of VPNs and intrusion detection systems, plus real-world case studies. 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.

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

Design, Deployment and Operation

Tackling Complexity in the Heart of Software

Comparing, Designing, and Deploying VPNs

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

EIGRP Network Design Solutions

Site Reliability Engineering

Kubernetes Patterns

Educational practices have seen a wide array of technological advancements in recent years. As learning methods making the transition to online and virtual settings, instructors are required to develop teaching plans that conform to the new era of e-learning. Designing, developing, and deploying these new instructional plans remain a challenge for educators due to a lack of research and knowledge in graphic design techniques. Visual Approaches to Instructional Design, Development, and Deployment is a collection of innovative research on visual-forward approaches to instructional design and applications of visual planning methods in creating

effective learning environments. This book focuses on the advancement of online learning techniques using visual design technologies. While highlighting topics including image curation, visual planning, and textual thinking, this book is ideal for instructional designers, researchers, practitioners, instructors, developers, administrators, graphic artists, academicians, and students seeking current research on advancements in instructional design through the use of visual thinking strategies.

Annotation "EIGRP Network Design Solutions uses case studies and real-world configuration examples to help you gain an in-depth understanding of the issues involved in designing, deploying, and managing EIGRP-based networks. It details proper designs that can be used to build large and scalable EIGRP-based networks and documents possible ways each EIGRP feature can be used in network design, implementation, troubleshooting, and monitoring."--BOOK JACKET. Title Summary field provided by Blackwell North America, Inc. All Rights Reserved.

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

Describes ways to incorporate domain modeling into software development.
How to Use, Deploy, and Maintain Big Data Systems
Design It!
A Practical Approach
Discovering Value and Creating Growth in a Disrupted World
Aligning Principles, Practices, and Culture
Continuous Delivery

Design Patterns for Cloud Native Applications

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.

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.

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

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

The Big Ideas Behind Reliable, Scalable, and Maintainable Systems
Hydrogen Supply Chain
System Engineering Analysis, Design, and Development
Essential Tools and Best Practices for Deploying Code to Production
Practical Cloud Security
Visual Approaches to Instructional Design, Development, and Deployment
Reusable Elements for Designing Cloud-Native Applications

Focusing on designing the right dashboards for use in an organization, this timely, full color book reveals how to successfully deploy dashboards by building the optimal software architecture and dashboard design. In addition, it describes the value of this popular technology to a business and how it can have a significant impact on performance improvement. A unique collection of more than 120 dashboard images are organized by category. One of the chapters provides a step-by-step description of the key performance indicator (KPIs) design process. One of the appendices contains more than 1,000 examples of KPIs to help design the content of dashboards. The book also describes all the steps in a dashboard implementation and offers related advice. Nils Rasmussen (West Hollywood, CA) is cofounder and Principal of Solver, Inc. Claire Y. Chen (Long Beach, CA) is a Senior Business Intelligence Architect at Solver, Inc. Manish Bansal (Irvine, CA) is Vice President of Sales at Solver, Inc.

Annotation Over the past 10 years, distributed systems have become more fine-

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

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.

The proven, effective strategy for reinventing your business in the age of ever-present disruption Disruption by digital technologies? That's not a new story. But what is new is the "wise pivot," a replicable strategy for harnessing disruption to survive, grow, and be relevant to the future. It's a strategy for perpetual reinvention across the old, now, and new elements of any business. Rapid recent advances in technology are forcing leaders in every business to rethink long-held beliefs about how to adapt to emerging technologies and new markets. What has become abundantly clear: in the digital age, conventional wisdom about business transformation no longer works, if it ever did. Based on Accenture's own experience of reinventing itself in the face of disruption, the company's real world client work, and a rigorous two-year study of thousands of businesses across 30 industries, Pivot to the Future reveals methodical and bold moves for finding and releasing new sources of trapped value-unlocked by bridging the gap between what is technologically possible and how technologies are being used. The freed value enables companies to simultaneously reinvent their legacy, and current and new businesses. Pivot to the Future is for leaders who seek to turn the existential threats of today and tomorrow into sustainable growth, with the courage to understand that a wise pivot strategy is not a one-time event, but a commitment to a future of

perpetual reinvention, where one pivot is followed by the next and the next.
Design, Deployment and Performance of 4G-LTE Networks
Cloud Native Applications with Jakarta EE
Build Capability to Design, Deploy, Monitor, and Sustain Enterprise Software Systems at Scale (English Edition)
Continuous Delivery in Java
Business Dashboards
Release It!
Cloud Native Microservices with Spring and Kubernetes

DESIGNING BIG DATA PLATFORMS Provides expert guidance and valuable insights on getting the most out of Big Data systems An array of tools are currently available for managing and processing data—some are ready-to-go solutions that can be immediately deployed, while others require complex and time-intensive setups. With such a vast range of options, choosing the right tool to build a solution can be complicated, as can determining which tools work well with each other. Designing Big Data Platforms provides clear and authoritative guidance on the critical decisions necessary for successfully deploying, operating, and maintaining Big Data systems. This highly practical guide helps readers understand how to process large amounts of data with well-known Linux tools and database solutions, use effective techniques to collect and manage data from multiple sources, transform data into meaningful business insights, and much more. Author Yusuf Aytas, a software engineer with a vast amount of big data experience, discusses the design of the ideal Big Data platform: one that meets the needs of data analysts, data engineers, data scientists, software engineers, and a spectrum of other stakeholders across an organization. Detailed yet accessible chapters cover key topics such as stream data processing, data analytics, data science, data discovery, and data security. This real-world manual for Big Data technologies: Provides up-to-date coverage of the tools currently used in Big Data processing and management Offers step-by-step guidance on building a data pipeline, from basic scripting to distributed systems Highlights and explains how data is processed at scale Includes an introduction to the foundation of a modern data platform Designing Big Data Platforms: How to Use, Deploy, and Maintain Big Data Systems is a must-have for all professionals working with Big Data, as well researchers and students in computer science and related fields.

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

Discover techniques and tools for building serverless applications with AWS Key Features Get well-versed with building and deploying serverless APIs with microservices Learn to build distributed applications and microservices with AWS Step Functions A step-by-step guide that will get you up and running with building and managing applications on the AWS platform Book Description Amazon Web Services (AWS) is the most popular and widely-used cloud platform. Administering and deploying application on AWS makes the applications resilient and robust.

The main focus of the book is to cover the basic concepts of cloud-based development followed by running solutions in AWS Cloud, which will help the solutions run at scale. This book not only guides you through the trade-offs and ideas behind efficient cloud applications, but is a comprehensive guide to getting the most out of AWS. In the first section, you will begin by looking at the key concepts of AWS, setting up your AWS account, and operating it. This guide also covers cloud service models, which will help you build highly scalable and secure applications on the AWS platform. We will then dive deep into concepts of cloud computing with S3 storage, RDS and EC2. Next, this book will walk you through VPC, building realtime serverless environments, and deploying serverless APIs with microservices. Finally, this book will teach you to monitor your applications, and automate your infrastructure and deploy with CloudFormation. By the end of this book, you will be well-versed with the various services that AWS provides and will be able to leverage AWS infrastructure to accelerate the development process. What you will learn Set up your AWS account and get started with the basic concepts of AWS Learn about AWS terminology and identity access management Acquaint yourself with important elements of the cloud with features such as computing, ELB, and VPC Back up your database and ensure high availability by having an understanding of database-related services in the AWS cloud Integrate AWS services with your application to meet and exceed non-functional requirements Create and automate infrastructure to design cost-effective, highly available applications Who this book is for If you are an I.T. professional or a system architect who wants to improve infrastructure using AWS, then this book is for you. It is also for programmers who are new to AWS and want to build highly efficient, scalable applications. 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.
Cloud Foundry: The Definitive Guide
Learning Serverless
Hardware Security and Trust
Software Defined Networking
Design and Deployment of Integrated Circuits in a Threatened Environment
A Guide for Secure Design and Deployment
Developments in Current Game-Based Learning Design and Deployment
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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
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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.
This authoritative guidebook combines comprehensive coverage of Cisco SD-WAN with complete official preparation for Cisco's new CCNP Enterprise ENSDWI 300-415 certification exam. Authored by a team of Cisco architects responsible for training both Cisco and partner engineers on SD-WAN solutions, it covers all facets of the product: benefits, use cases, components, workings, configuration, support, and more. Throughout, practical examples demonstrate Cisco SD-WAN at work in diverse cloud and premises environments, and the authors show how to apply Cisco SD-WAN technologies and tools in their own real-world environments. As Cisco's official ENSDWI 300-415 study guide, this book covers all exam objectives and is organized to simplify and streamline preparation. It also contains an access code for two full practice exams delivered through Pearson's advanced test prep application.
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

Design, Deployment and Operation of a Hydrogen Supply Chain introduces current energy system and the challenges that may hinder the large-scale adoption of hydrogen as an energy carrier. It covers the different aspects of a methodological framework for designing a HSC, including production, storage, transportation and infrastructure. Each technology's advantages and drawbacks are evaluated, including their technology readiness level (TRL). The multiple applications of hydrogen for energy are presented, including use in fuel cells, combustion engines, as an alternative to natural gas and power to gas.

Through analysis and forecasting, the authors explore deployment scenarios, considering the dynamic aspect of HSCs. In addition, the book proposes methods and tools that can be selected for a multi-criteria optimal design, including performance drivers and economic, environmental and societal metrics. Due to its systems-based approach, this book is ideal for engineering professionals, researchers and graduate students in the field of energy systems, energy supply and management, process systems and even policymakers. Explores the key drivers of hydrogen supply chain design and performance evaluation, including production and storage facilities, transportation, information, sourcing, pricing and sustainability Presents multi-criteria tools for the optimization of hydrogen supply chains and their integration in the overall energy system Examines the available technology, their strengths and weaknesses, and their technology readiness levels (TRL), to draw future perspectives of hydrogen markets and propose deployment scenarios Includes international case studies of hydrogen supply chains at various scales
Design and Build Great Web APIs
Design and Deploy Microsoft Azure Virtual Desktop
Security Architecture
Reliable Software Releases through Build, Test, and Deployment Automation (Adobe Reader)
Design, Deployment, and Operations
Build, Design, and Deploy Cloud-Native Applications and Microservices with Jakarta EE (English Edition)
Domain-driven Design

This book provides an insight into the key practical aspects and best practice of 4G-LTE network design, performance, and deployment Design, Deployment and Performance of 4G-LTE Networks addresses the key practical aspects and best practice of 4G networks design, performance, and deployment. In addition, the book focuses on the end-to-end aspects of the LTE network architecture and different deployment scenarios of commercial LTE networks. It describes the air interface of LTE focusing on the access stratum protocol layers: PDCP, RLC, MAC, and Physical Layer. The air interface described in this book covers the concepts of LTE frame structure, downlink and uplink scheduling, and detailed illustrations of the data flow across the protocol layers. It describes the details of the optimization process including performance measurements and troubleshooting mechanisms in addition to demonstrating common issues and case studies based on actual field results. The book provides detailed

performance analysis of key features/enhancements such as C-DRX for Smartphones battery saving, CSFB solution to support voice calls with LTE, and MIMO techniques. The book presents analysis of LTE coverage and link budgets alongside a detailed comparative analysis with HSPA+. Practical link budget examples are provided for data and VoLTE scenarios. Furthermore, the reader is provided with a detailed explanation of capacity dimensioning of the LTE systems. The LTE capacity analysis in this book is presented in a comparative manner with reference to the HSPA+ network to benchmark the LTE network capacity. The book describes the voice options for LTE including VoIP protocol stack, IMS Single Radio Voice Call Continuity (SRVCC). In addition, key VoLTE features are presented: Semi-persistent scheduling (SPS), TTI bundling, Quality of Service (QoS), VoIP with C-DRX, Robust Header Compression (RoHC), and VoLTE Vocoders and De-Jitter buffer. The book describes several LTE and LTE-A advanced features in the evolution from Release 8 to 10 including SON, eICIC, CA, CoMP, HetNet, Enhanced MIMO, Relays, and LBS. This book can be used as a reference for best practices in LTE networks design and deployment, performance analysis, and evolution strategy. Conveys the theoretical background of 4G-LTE networks Presents key aspects and best practice of 4G-LTE networks design and deployment Includes a realistic roadmap for evolution of deployed 3G/4G networks Addresses the practical aspects for designing and deploying commercial LTE networks. Analyzes LTE coverage and link budgets, including a detailed comparative analysis with HSPA+. References the best practices in LTE networks design and deployment, performance analysis, and evolution strategy Covers infrastructure-sharing scenarios for CAPEX and OPEX saving. Provides key practical aspects for supporting voice services over LTE, Written for all 4G engineers/designers working in networks design for operators, network deployment engineers, R&D engineers, telecom consulting firms, measurement/performance tools firms, deployment subcontractors, senior undergraduate students and graduate students interested in understanding the practical aspects of 4G-LTE networks as part of their classes, research, or projects.
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.
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

Design and build the new desktop service from Microsoft. This book offers a modern framework, design methodology, and best practices of design and deployment for virtual apps and desktops. Microsoft Azure Virtual Desktop (AVD) is a Desktop as a Service (DaaS) which is simple to deploy, accessible from any device, easy to manage, and secure. The book starts with AVD essentials and its critical features, followed by the planning and method of preparing for AVD. You will go through defining the requirements and assessing by setting the AVD application baseline, network requirements, and security requirements. Next, you will learn how to design and deploy the core infrastructure of Microsoft AVD to understand its Access Layer, Control Layer, Resource Layer, Hosting Layer, and User Layer. You will also learn how to design the desktop and Host Pool of AVD. And you will learn the modern way to manage and secure AVD components. After reading this book, you will have the right blend of knowledge and skills to set up and run the Azure cloud-based virtual desktop and virtual applications. What You Will Learn Understand the key design and deployment essentials of AVD Plan, gather requirements, and assess for AVD Design and deploy Core Infrastructure of Microsoft AVD Integrate with profile and personalization management Monitor and secure Azure virtual desktops Who Is This Book For: AVD system administrators and AVD system architects

Hands-on Site Reliability Engineering
Develop, Deploy, and Scale
Software Defined Wide Area Networks
Design and Deploy Production-Ready Software
A Visual Catalog for Design and Deployment
Best Practices for Transforming Legacy IT
Designing Data-Intensive Applications

Software Defined Networking: Design and Deployment provides a comprehensive treatment of software defined networking (SDN) suitable for new network managers and experienced network professionals. Presenting SDN in context with more familiar network services and challenges, this accessible text: Explains the importance of virtualization, particularly the impact of virtualization on servers and networks Addresses SDN, with an

emphasis on the network control plane Discusses SDN implementation and the impact on service providers, legacy networks, and network vendors Contains a case study on Google's initial implementation of SDN Investigates OpenFlow, the hand-in-glove partner of SDN Looks forward toward more programmable networks and the languages needed to manage these environments Software Defined Networking: Design and Deployment offers a unique perspective of the business case and technology motivations for considering SDN solutions. By identifying the impact of SDN on traffic management and the potential for network service growth, this book instills the knowledge needed to manage current and future demand and provisioning for SDN.

Educational gaming is becoming more popular at universities, in the military, and in private business. Multidisciplinary research which explores the cognitive and psychological aspects that underpin successful educational video games is therefore necessary to ensure proper curriculum design and positive learning outcomes. Developments in Current Game-Based Learning Design and Deployment highlights the latest research from professionals and researchers working in the fields of educational games development, e-learning, multimedia, educational psychology, and information technology. It promotes an in-depth understanding of the multiple factors and challenges inherent to the design and integration of game-based Learning environments.

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
Concepts, Principles, and Practices
Design and Deployment of Small Cell Networks
Data Governance
Building Microservices
An Essential Guide for Architects and Administrators
The Enterprise Cloud