

Devops With Kubernetes Non Programmer S Handbook

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The Docker Book - James Turnbull 2014-07-14

Updated for Docker Community Edition v18.09! Docker book designed for SysAdmins, SREs, Operations staff, Developers and DevOps who are interested in deploying the open source container service Docker. In this book, we'll walk you through installing, deploying, managing, and extending Docker. We're going to do that by first introducing you to the basics of Docker and its components. Then we'll start to use Docker to build containers and services to perform a variety of tasks. We're going to take you through the development lifecycle, from testing to production, and see where Docker fits in and how it can make your life easier. We'll make use of Docker to build test environments for new projects, demonstrate how to integrate Docker with continuous integration workflow, and then how to build application services and platforms. Finally, we'll show you how to use Docker's API and how to extend Docker yourself. We'll teach you how to: * Install Docker. * Take your first steps with a Docker container. * Build Docker images. * Manage and share Docker images. * Run and manage more complex Docker containers. * Deploy Docker containers as part of your testing pipeline. * Build multi-container applications and environments. * Learn about orchestration using Compose and Swarm for the orchestration of Docker containers and Consul for service discovery. * Explore the Docker API. * Getting Help and Extending Docker.

The DevOps Engineer's Career Guide - Stephen Fleming 2019-02-05

Hello! How are you and how is your Continuous Improvement journey going on? Are there any new skills that you want to acquire this year? My earlier books were on the following topics: DevOps, Microservices, and Kubernetes & Site Reliability Engineering. In the last four months, I have been heavily involved in the recruitment process of various DevOps related jobs in my current project. I have come across multiple Entry Level and Mid-Level career professionals inquisitive about expectations of the role and how their earlier experience would contribute to the DevOps role. Also, I have received several emails from readers asking how to switch from their existing roles (development, sys admin, etc.). Based on the interactions, I have included "DevOps Engineer" related queries in the below categories and in this book, I will give you complete information about the position, career path and skill set required. The main queries were the following: Why DevOps? What are the job duties and day-to-day activities of a DevOps Engineer? What did DevOps engineers do before DevOps? What technical and soft skills are required to be an expert-level DevOps Engineer? What are some standard tools a DevOps engineer uses? What are other similar roles from where one can make the transition to the DevOps world? What are the Certifications/Courses one can do to become a DevOps Engineer? How can I get DevOps interviews with top companies? What are the average Salary, companies to work for, and designations/roles? How is the career path of a "DevOps Engineer"? How is the career advancement of a DevOps engineer? The book covers most of this information. Over the course of the book, you will gather information on what DevOps is, and how you can use it to improve your processes. You will also identify the different roles that are linked to DevOps. If you are keen on becoming a DevOps engineer, the last few chapters include information on what skills you need to develop and what path you need to choose. Also, the last chapter contains sample interview questions, which are the most common ones asked during a DevOps interview. Overall, this book is aimed at professionals looking for DevOps role overview in limited timeframe. If you have to connect the dots regarding your existing experience, credentials and its fitment/relationship with the DevOps role, it would provide you much needed clarity. It also talks about other similar and related roles and its relationship with

DevOps role. Also, if you are part of Project Management Team or Business Development Team or recruitment team (HR) this book will provide you required information about the DevOps role. The Continuous Delivery is here to stay and evolve. The nomenclature would change; new buzzwords would come and go. So, if you are into this space, adapt to it and make it your growth engine. Cheers!

Machine Learning Design Patterns - Valliappa Lakshmanan 2020-10-15

The design patterns in this book capture best practices and solutions to recurring problems in machine learning. The authors, three Google engineers, catalog proven methods to help data scientists tackle common problems throughout the ML process. These design patterns codify the experience of hundreds of experts into straightforward, approachable advice. In this book, you will find detailed explanations of 30 patterns for data and problem representation, operationalization, repeatability, reproducibility, flexibility, explainability, and fairness. Each pattern includes a description of the problem, a variety of potential solutions, and recommendations for choosing the best technique for your situation. You'll learn how to: Identify and mitigate common challenges when training, evaluating, and deploying ML models Represent data for different ML model types, including embeddings, feature crosses, and more Choose the right model type for specific problems Build a robust training loop that uses checkpoints, distribution strategy, and hyperparameter tuning Deploy scalable ML systems that you can retrain and update to reflect new data Interpret model predictions for stakeholders and ensure models are treating users fairly

Kubernetes Patterns - Bilgin Ibryam 2019-04-09

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.

Accelerate - Nicole Forsgren PhD 2018-03-27

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.

Modern DevOps Practices - Gaurav Agarwal 2021-09-13

Enhance DevOps workflows by integrating the functionalities of Docker, Kubernetes, Spinnaker, Ansible, Terraform, Flux CD, CaaS, and more with the help of practical examples and expert tips
Key Features
Get up and running with containerization-as-a-service and infrastructure automation in the public cloud
Learn container security techniques and secret management with Cloud KMS, Anchore Grype, and Grafeas
Kritis
Leverage the combination of DevOps, GitOps, and automation to continuously ship a package of software
Book Description
Containers have entirely changed how developers and end-users see applications as a whole. With this book, you'll learn all about containers, their architecture and benefits, and how to implement them within your development lifecycle. You'll discover how you can transition from the traditional world of virtual machines and adopt modern ways of using DevOps to ship a package of software continuously. Starting with a quick refresher on the core concepts of containers, you'll move on to study the architectural concepts to implement modern ways of application development. You'll cover topics around Docker, Kubernetes, Ansible, Terraform, Packer, and other similar tools that will help you to build a base. As you advance, the book covers the core elements of cloud integration (AWS ECS, GKE, and other CaaS services), continuous integration, and continuous delivery (GitHub actions, Jenkins, and Spinnaker) to help you understand the essence of container management and delivery. The later sections of the book will take you through container pipeline security and GitOps (Flux CD and Terraform). By the end of this DevOps book, you'll have learned best practices for automating your development lifecycle and making the most of containers, infrastructure automation, and CaaS, and be ready to develop applications using modern tools and techniques. What you will learn
Become well-versed with AWS ECS, Google Cloud Run, and Knative
Discover how to build and manage secure Docker images efficiently
Understand continuous integration with Jenkins on Kubernetes and GitHub actions
Get to grips with using Spinnaker for continuous deployment/delivery
Manage immutable infrastructure on the cloud with Packer, Terraform, and Ansible
Explore the world of GitOps with GitHub actions, Terraform, and Flux CD
Who this book is for
If you are a software engineer, system administrator, or operations engineer looking to step into the world of DevOps within public cloud platforms, this book is for you. Existing DevOps engineers will also find this book useful as it covers best practices, tips, and tricks to implement DevOps with a cloud-native mindset. Although no containerization experience is necessary, a basic understanding of the software development life cycle and delivery will help you get the most out of the book.

Accelerated DevOps with AI, ML & RPA - Stephen Fleming 2020-07-14

What comes to your mind after reading the below statements from a renowned industry research firm? It is predicted that a large enterprise exclusive use of AIOps and digital experience monitoring tools to monitor applications and infrastructure will rise from 5% in 2018 to 30% in 2023. Also, Only 47% of machine learning models are making it into production (Comes MLOPS!) Do you have similar thoughts? Is it just a new Buzzword or repackaging of the existing system? If it's for real, how is it going to impact the Business/Industry? How my business or job would get impacted? If it has just started, how can I leverage from wherever I am? Which are the major players/startups in this area? Depending on your role, it may be useful for you to know about AIOps & MLOps: If you are a Business Consultant trying to make the system more efficient and profitable, reaping the benefits of Automation in your application development process If you are a Technology Consultant and want to make your operation more Agile, Automated and easily deployable If you are a Technology Professional looking for a role in these upcoming areas to be an early adopter in your organization or just starting your career and want to understand the ecosystem If you are from HR or Training field and want to understand the job/Training requirements for these upcoming roles
Beyond the apparent hustle and bustle of buzzwords and nomenclature every year, I genuinely believe that AI would drastically change the software development and deployment model in the next two years, and all these new startups would drive this change. It's astonishing how fast this cycle is moving. Especially for us who had seen the world before the internet came into our daily lives!! This book is my attempt to update you on the unfolding story of AIOps and MLOps as "story till now. " So here is to our Continuous Learning and

Progress! Cheers.

A Practical Guide to Continuous Delivery - Eberhard Wolff 2017-02-24

Using Continuous Delivery, you can bring software into production more rapidly, with greater reliability. A Practical Guide to Continuous Delivery is a 100% practical guide to building Continuous Delivery pipelines that automate rollouts, improve reproducibility, and dramatically reduce risk. Eberhard Wolff introduces a proven Continuous Delivery technology stack, including Docker, Chef, Vagrant, Jenkins, Graphite, the ELK stack, JBehave, and Gatling. He guides you through applying these technologies throughout build, continuous integration, load testing, acceptance testing, and monitoring. Wolff's start-to-finish example projects offer the basis for your own experimentation, pilot programs, and full-fledged deployments. A Practical Guide to Continuous Delivery is for everyone who wants to introduce Continuous Delivery, with or without DevOps. For managers, it introduces core processes, requirements, benefits, and technical consequences. Developers, administrators, and architects will gain essential skills for implementing and managing pipelines, and for integrating Continuous Delivery smoothly into software architectures and IT organizations. Understand the problems that Continuous Delivery solves, and how it solves them
Establish an infrastructure for maximum software automation
Leverage virtualization and Platform as a Service (PAAS) cloud solutions
Implement build automation and continuous integration with Gradle, Maven, and Jenkins
Perform static code reviews with SonarQube and repositories to store build artifacts
Establish automated GUI and textual acceptance testing with behavior-driven design
Ensure appropriate performance via capacity testing
Check new features and problems with exploratory testing
Minimize risk throughout automated production software rollouts
Gather and analyze metrics and logs with Elasticsearch, Logstash, Kibana (ELK), and Graphite
Manage the introduction of Continuous Delivery into your enterprise
Architect software to facilitate Continuous Delivery of new capabilities

Kubernetes in Action - Marko Luksa 2017-12-14

Summary
Kubernetes in Action is a comprehensive guide to effectively developing and running applications in a Kubernetes environment. Before diving into Kubernetes, the book gives an overview of container technologies like Docker, including how to build containers, so that even readers who haven't used these technologies before can get up and running. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology
Kubernetes is Greek for "helmsman," your guide through unknown waters. The Kubernetes container orchestration system safely manages the structure and flow of a distributed application, organizing containers and services for maximum efficiency. Kubernetes serves as an operating system for your clusters, eliminating the need to factor the underlying network and server infrastructure into your designs. About the Book
Kubernetes in Action teaches you to use Kubernetes to deploy container-based distributed applications. You'll start with an overview of Docker and Kubernetes before building your first Kubernetes cluster. You'll gradually expand your initial application, adding features and deepening your knowledge of Kubernetes architecture and operation. As you navigate this comprehensive guide, you'll explore high-value topics like monitoring, tuning, and scaling. What's Inside
Kubernetes' internals
Deploying containers across a cluster
Securing clusters
Updating applications with zero downtime
About the Reader
Written for intermediate software developers with little or no familiarity with Docker or container orchestration systems. About the Author
Marko Luksa is an engineer at Red Hat working on Kubernetes and OpenShift. Table of Contents
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Extending Kubernetes

Cloud Native DevOps with Kubernetes - John Arundel 2019-03-08

Kubernetes is the operating system of the cloud native world, providing a reliable and scalable platform for

running containerized workloads. In this friendly, pragmatic book, cloud experts John Arundel and Justin Domingus show you what Kubernetes can do—and what you can do with it. You'll learn all about the Kubernetes ecosystem, and use battle-tested solutions to everyday problems. You'll build, step by step, an example cloud native application and its supporting infrastructure, along with a development environment and continuous deployment pipeline that you can use for your own applications. Understand containers and Kubernetes from first principles; no experience necessary Run your own clusters or choose a managed Kubernetes service from Amazon, Google, and others Use Kubernetes to manage resource usage and the container lifecycle Optimize clusters for cost, performance, resilience, capacity, and scalability Learn the best tools for developing, testing, and deploying your applications Apply the latest industry practices for security, observability, and monitoring Adopt DevOps principles to help make your development teams lean, fast, and effective

[GitOps and Kubernetes](#) - Billy Yuen 2021-03-23

Part 1. Background. 1. Why GitOps? -- 2. Kubernetes and GitOps -- Part 2. Patterns and processes. 3. Environment management -- 4. Pipelines -- 5. Deployment strategies -- 6. Access control and security -- 7. Secrets -- 8. Observability -- Part 3. Tools. 9. Argo CD -- 10. Jenkins X -- 11. Flux.

[Securing DevOps](#) - Julien Vehent 2018-08-20

Summary Securing DevOps explores how the techniques of DevOps and security should be applied together to make cloud services safer. This introductory book reviews the latest practices used in securing web applications and their infrastructure and teaches you techniques to integrate security directly into your product. You'll also learn the core concepts of DevOps, such as continuous integration, continuous delivery, and infrastructure as a service. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology An application running in the cloud can benefit from incredible efficiencies, but they come with unique security threats too. A DevOps team's highest priority is understanding those risks and hardening the system against them. About the Book Securing DevOps teaches you the essential techniques to secure your cloud services. Using compelling case studies, it shows you how to build security into automated testing, continuous delivery, and other core DevOps processes. This experience-rich book is filled with mission-critical strategies to protect web applications against attacks, deter fraud attempts, and make your services safer when operating at scale. You'll also learn to identify, assess, and secure the unique vulnerabilities posed by cloud deployments and automation tools commonly used in modern infrastructures. What's inside An approach to continuous security Implementing test-driven security in DevOps Security techniques for cloud services Watching for fraud and responding to incidents Security testing and risk assessment About the Reader Readers should be comfortable with Linux and standard DevOps practices like CI, CD, and unit testing. About the Author Julien Vehent is a security architect and DevOps advocate. He leads the Firefox Operations Security team at Mozilla, and is responsible for the security of Firefox's high-traffic cloud services and public websites. Table of Contents Securing DevOps PART 1 - Case study: applying layers of security to a simple DevOps pipeline Building a barebones DevOps pipeline Security layer 1: protecting web applications Security layer 2: protecting cloud infrastructures Security layer 3: securing communications Security layer 4: securing the delivery pipeline PART 2 - Watching for anomalies and protecting services against attacks Collecting and storing logs Analyzing logs for fraud and attacks Detecting intrusions The Caribbean breach: a case study in incident response PART 3 - Maturing DevOps security Assessing risks Testing security Continuous security

[The DevOps Handbook](#) - Gene Kim 2016-10-06

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.

[Kubeflow Operations Guide](#) - Josh Patterson 2020-12-04

Building models is a small part of the story when it comes to deploying machine learning applications. The entire process involves developing, orchestrating, deploying, and running scalable and portable machine learning workloads—a process Kubeflow makes much easier. This practical book shows data scientists, data engineers, and platform architects how to plan and execute a Kubeflow project to make their Kubernetes workflows portable and scalable. Authors Josh Patterson, Michael Katzenellenbogen, and Austin Harris demonstrate how this open source platform orchestrates workflows by managing machine learning pipelines. You'll learn how to plan and execute a Kubeflow platform that can support workflows from on-premises to cloud providers including Google, Amazon, and Microsoft. Dive into Kubeflow architecture and learn best practices for using the platform Understand the process of planning your Kubeflow deployment Install Kubeflow on an existing on-premises Kubernetes cluster Deploy Kubeflow on Google Cloud Platform step-by-step from the command line Use the managed Amazon Elastic Kubernetes Service (EKS) to deploy Kubeflow on AWS Deploy and manage Kubeflow across a network of Azure cloud data centers around the world Use KFServing to develop and deploy machine learning models

[Python for DevOps](#) - Noah Gift 2019-12-12

Much has changed in technology over the past decade. Data is hot, the cloud is ubiquitous, and many organizations need some form of automation. Throughout these transformations, Python has become one of the most popular languages in the world. This practical resource shows you how to use Python for everyday Linux systems administration tasks with today's most useful DevOps tools, including Docker, Kubernetes, and Terraform. Learning how to interact and automate with Linux is essential for millions of professionals. Python makes it much easier. With this book, you'll learn how to develop software and solve problems using containers, as well as how to monitor, instrument, load-test, and operationalize your software. Looking for effective ways to "get stuff done" in Python? This is your guide. Python foundations, including a brief introduction to the language How to automate text, write command-line tools, and automate the filesystem Linux utilities, package management, build systems, monitoring and instrumentation, and automated testing Cloud computing, infrastructure as code, Kubernetes, and serverless Machine learning operations and data engineering from a DevOps perspective Building, deploying, and operationalizing a machine learning project

[Kubernetes Operators](#) - Jason Dobies 2020-02-21

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

[DevOps For Dummies](#) - Emily Freeman 2019-08-20

Develop faster with DevOps DevOps embraces a culture of unifying the creation and distribution of technology in a way that allows for faster release cycles and more resource-efficient product updating. DevOps For Dummies provides a guidebook for those on the development or operations side in need of a primer on this way of working. Inside, DevOps evangelist Emily Freeman provides a roadmap for adopting the management and technology tools, as well as the culture changes, needed to dive head-first into

DevOps. Identify your organization's needs Create a DevOps framework Change your organizational structure Manage projects in the DevOps world DevOps For Dummies is essential reading for developers and operations professionals in the early stages of DevOps adoption.

Introducing MLOps - Mark Treveil 2020-11-30

More than half of the analytics and machine learning (ML) models created by organizations today never make it into production. Some of the challenges and barriers to operationalization are technical, but others are organizational. Either way, the bottom line is that models not in production can't provide business impact. This book introduces the key concepts of MLOps to help data scientists and application engineers not only operationalize ML models to drive real business change but also maintain and improve those models over time. Through lessons based on numerous MLOps applications around the world, nine experts in machine learning provide insights into the five steps of the model life cycle--Build, Preproduction, Deployment, Monitoring, and Governance--uncovering how robust MLOps processes can be infused throughout. This book helps you: Fulfill data science value by reducing friction throughout ML pipelines and workflows Refine ML models through retraining, periodic tuning, and complete remodeling to ensure long-term accuracy Design the MLOps life cycle to minimize organizational risks with models that are unbiased, fair, and explainable Operationalize ML models for pipeline deployment and for external business systems that are more complex and less standardized

Devops and Microservices Handbook - Stephen Fleming 2018-04-30

Are you a non-coder looking for insight into DevOps and Microservices Architecture? As the industry is moving towards maximum digitization there is consensus that DevOps practices help you deliver software faster, more reliably, and with fewer errors. You may be a consultant, Advisor, Project Manager or a novice into IT industry; after going through this guide you would be able to appreciate DevOps, Microservices and other related concepts like Kanban, Scrum, Agile, SOA, Monolith Architecture, DevOps, Docker, Kubernetes etc. You would also get to know about the leaders in DevOps and Microservices adoption and impact it had on the overall agility and hyper-growth of the adopters. This book covers the complete lifecycle for your understanding like: Integrating, Testing, Deploying DevOps and Microservices architecture and the Security concerns while deploying it. I am confident that after going through the book you would be able to navigate the discussion with any stakeholder and take your agenda ahead as per your role. Additionally, if you are new to the industry, and looking for an application development job, this book will help you to prepare with all the relevant information and understanding of the topic. ** I am also providing additional booklet containing all the relevant news, trends, and resources for DevOps and Microservices Architecture. "Grab your copy today along with DevOps and Microservices Booklet"

The Devops 2.3 Toolkit - Viktor Farcic 2018-09-12

Learn from an expert on how to use Kubernetes, the most adopted container orchestration platform. About This Book* Get a detailed, hands-on exploration of everything from the basic to the most advanced aspects of Kubernetes* Explore the tools behind not only the official project but also the third-party add-ons* Learn how to create a wide range of tools, including clusters, Role Bindings, and Ingress Resources with default backends, among many applicable, real-world creations* Discover how to deploy and manage highly available and fault-tolerant applications at scale with zero downtime Who This Book Is For This book is for professionals experienced with Docker, looking to get a detailed overview from the basics to the advanced features of Kubernetes. What You Will Learn* Let Viktor show you the wide range of features available in Kubernetes--from the basic to the most advanced features* Learn how to use the tools not only from the official project but also from the wide range of third-party add-ons* Understand how to create a pod, how to Scale Bids with Replica Sets, and how to install both Kubectl and Minikube* Explore the meaning of terms such as container scheduler and Kubernetes* Discover how to create a local Kubernetes cluster and what to do with it In Detail Building on The DevOps 2.0 Toolkit, The DevOps 2.1 Toolkit: Docker Swarm, and The DevOps 2.2 Toolkit: Self-Sufficient Docker Clusters, Viktor Farcic brings his latest exploration of the DevOps Toolkit as he takes you on a journey to explore the features of Kubernetes. The DevOps 2.3 Toolkit: Kubernetes is a book in the series that helps you build a full DevOps Toolkit. This book in the series looks at Kubernetes, the tool designed to, among other roles, make it easier in the creation and deployment of highly available and fault-tolerant applications at scale, with zero downtime. Within this book, Viktor will

cover a wide range of emerging topics, including what exactly Kubernetes is, how to use both first and third-party add-ons for projects, and how to get the skills to be able to call yourself a "Kubernetes ninja." Work with Viktor and dive into the creation and exploration of Kubernetes with a series of hands-on guides. Style and approach Readers join Viktor Farcic as he continues his exploration of DevOps and begins to explore the opportunities presented by Kubernetes.

Terraform: Up & Running - Yevgeniy Brikman 2019-09-06

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

DevOps with OpenShift - Stefano Picozzi 2017-07-10

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

The Complete Kubernetes Guide - Jonathan Baier 2019-05-20

Design, deploy, and manage large-scale containers using Kubernetes Key Features Gain insight into the latest features of Kubernetes, including Prometheus and API aggregation Discover ways to keep your clusters always available, scalable, and up-to-date Master the skills of designing and deploying large clusters on various cloud platforms Book Description If you are running a number of containers and want to be able to automate the way they're managed, it can be helpful to have Kubernetes at your disposal. This Learning Path guides you through core Kubernetes constructs, such as pods, services, replica sets, replication controllers, and labels. You'll get started by learning how to integrate your build pipeline and deployments in a Kubernetes cluster. As you cover more chapters in the Learning Path, you'll get up to speed with orchestrating updates behind the scenes, avoiding downtime on your cluster, and dealing with underlying cloud provider instability in your cluster. With the help of real-world use cases, you'll also explore options for network configuration, and understand how to set up, operate, and troubleshoot various Kubernetes networking plugins. In addition to this, you'll gain insights into custom resource development and utilization in automation and maintenance workflows. By the end of this Learning Path, you'll have the expertise you need to progress from an intermediate to an advanced level of understanding Kubernetes. This Learning Path includes content from the following Packt products: Getting Started with Kubernetes -

Third Edition by Jonathan Baier and Jesse White Mastering Kubernetes - Second Edition by Gigi Sayfan
What you will learn Download, install, and configure the Kubernetes code base Create and configure custom Kubernetes resources Use third-party resources in your automation workflows Deliver applications as standard packages Set up and access monitoring and logging for Kubernetes clusters Set up external access to applications running in the cluster Manage and scale Kubernetes with hosted platforms on Amazon Web Services (AWS), Azure, and Google Cloud Platform (GCP) Run multiple clusters and manage them from a single control plane Who this book is for If you are a developer or a system administrator with an intermediate understanding of Kubernetes and want to master its advanced features, then this book is for you. Basic knowledge of networking is required to easily understand the concepts explained.

Engineering DevOps - Marc Hornbeek 2019-12-06

This book is an engineering reference manual that explains "How to do DevOps?". It is targeted to people and organizations that are "doing DevOps" but not satisfied with the results that they are getting. There are plenty of books that describe different aspects of DevOps and customer user stories, but up until now there has not been a book that frames DevOps as an engineering problem with a step-by-step engineering solution and a clear list of recommended engineering practices to guide implementors. The step-by-step engineering prescriptions can be followed by leaders and practitioners to understand, assess, define, implement, operationalize, and evolve DevOps for their organization. The book provides a unique collection of engineering practices and solutions for DevOps. By confining the scope of the content of the book to the level of engineering practices, the content is applicable to the widest possible range of implementations. This book was born out of the author's desire to help others do DevOps, combined with a burning personal frustration. The frustration comes from hearing leaders and practitioners say, "We think we are doing DevOps, but we are not getting the business results we had expected." Engineering DevOps describes a strategic approach, applies engineering implementation discipline, and focuses operational expertise to define and accomplish specific goals for each leg of an organization's unique DevOps journey. This book guides the reader through a journey from defining an engineering strategy for DevOps to implementing The Three Ways of DevOps maturity using engineering practices: The First Way (called "Continuous Flow") to The Second Way (called "Continuous Feedback") and finally The Third Way (called "Continuous Improvement"). This book is intended to be a guide that will continue to be relevant over time as your specific DevOps and DevOps more generally evolves.

Learn Kubernetes Security - Kaizhe Huang 2020-07-09

Secure your container environment against cyberattacks and deliver robust deployments with this practical guide
Key Features Explore a variety of Kubernetes components that help you to prevent cyberattacks Perform effective resource management and monitoring with Prometheus and built-in Kubernetes tools Learn techniques to prevent attackers from compromising applications and accessing resources for crypto-coin mining
Book Description Kubernetes is an open source orchestration platform for managing containerized applications. Despite widespread adoption of the technology, DevOps engineers might be unaware of the pitfalls of containerized environments. With this comprehensive book, you'll learn how to use the different security integrations available on the Kubernetes platform to safeguard your deployments in a variety of scenarios. Learn Kubernetes Security starts by taking you through the Kubernetes architecture and the networking model. You'll then learn about the Kubernetes threat model and get to grips with securing clusters. Throughout the book, you'll cover various security aspects such as authentication, authorization, image scanning, and resource monitoring. As you advance, you'll learn about securing cluster components (the kube-apiserver, CoreDNS, and kubelet) and pods (hardening image, security context, and PodSecurityPolicy). With the help of hands-on examples, you'll also learn how to use open source tools such as Anchore, Prometheus, OPA, and Falco to protect your deployments. By the end of this Kubernetes book, you'll have gained a solid understanding of container security and be able to protect your clusters from cyberattacks and mitigate cybersecurity threats. What you will learn Understand the basics of Kubernetes architecture and networking Gain insights into different security integrations provided by the Kubernetes platform Delve into Kubernetes' threat modeling and security domains Explore different security configurations from a variety of practical examples Get to grips with using and deploying open source tools to protect your deployments Discover techniques to mitigate or prevent known Kubernetes

Who this book is for This book is for security consultants, cloud administrators, system administrators, and DevOps engineers interested in securing their container deployments. If you're looking to secure your Kubernetes clusters and cloud-based deployments, you'll find this book useful. A basic understanding of cloud computing and containerization is necessary to make the most of this book.

Hands-on DevOps with Linux - Alisson Machado de Menezes 2021-03-24

Manage Linux Servers on-premises and cloud with advanced DevOps techniques using Kubernetes
KEY FEATURES ● Detailed coverage on architecture of Web Servers, Databases, and Cloud Servers. ● Practical touch on deploying your application and managing cloud infrastructure using Docker and Terraform. ● Simplified implementation of Infrastructure as Code with Vagrant. ● Explore the use of different cloud services for better provisioning, scalability, and reliability of enterprise applications.
DESCRIPTION Hands-on DevOps with Linux brings you advanced learnings on how to make the best use of Linux commands in managing the DevOps infrastructure to keep enterprise applications up-to-date. The book begins by introducing you to the Linux world with the most used commands by DevOps experts and teaches how to set up your own infrastructure in your environment. The book covers exclusive coverage on production scenarios using Kubernetes and how the entire container orchestration is managed. Throughout the book, you will get accustomed to the most widely used techniques among DevOps Engineers in their routine. You will explore how infrastructure as code works, working with Vagrant, Docker and Terraform through which you can manage the entire cloud deployment of applications along with how to scale them on your own.
WHAT YOU WILL LEARN ● Create Infrastructure as Code to replicate the configuration to your infrastructure. ● Learn best methods and techniques to build continuous delivery pipeline using Jenkins. ● Learn to Distribute and scale your applications using Kubernetes. ● Get insights by analyzing millions of server logs using Kibana and Logstash.
WHO THIS BOOK IS FOR This book is best suited for DevOps Engineers and DevOps professionals who want to make best use of Linux commands in managing the DevOps infrastructure daily. It is a good handy guide for Linux administrators and system administrators too to get familiar with the use of Linux in DevOps and advance their skillset in DevOps.
TABLE OF CONTENTS 1. Getting started with Linux 2. Working with Bash 3. Setting up a service 4. Configuring a reverse proxy with Nginx 5. Deploying your application using Docker 6. Automating your Infrastructure as Code 7. Creating your infrastructure using cloud services 8. Working with Terraform 9. Working with Git 10. Continuous integration and Continuous Delivery using Jenkins 11. Deploying and scaling your application using Kubernetes 12. Logs with open source Tools

Wood Joinery for Beginners Handbook - Stephen Fleming 2020-07-02

"There would be no trees without branches, and there would be no furniture without joints." The one which binds together has always been special across cultures. Wood joinery has also evolved across various schools of woodworking in their unique ways. For example, in Japanese joinery, the whole wooden house was built on the strength of joinery. Joinery is used for both connecting the wood and also enhancing the aesthetics of the final product. My Journey: Back in the days when I was starting with Wood Craft, I was desperately looking for the go-to guide about the processes and the tools involved. Woodworking is a vast subject with many branches or verticals of this craft like Cabinet Making, Wood Carving, Joinery, Carpentry, and Woodturning. The online content was information overload and not presented in a sequential manner. The books I referred were either focused on a few processes or assumed that I had the necessary information. Also, I found that most of the books were a little aged. There are two ways of learning; one is learning from subject matter experts who have years of experience, and then there are people who are just a few steps ahead of you in their journey. I am the second one, five years into this hobby, and still learning from the experts. I still remember the initial doubts I had and the tips which helped me. This book comes after Woodworking for Beginners Handbook, and it focusses entirely on the joinery process. This book is for people who are in their first lap (0-3 years) of the wood-crafting journey and want to have a holistic idea of methods, tools and need help in their initial projects. I have included ample photographs of realistic projects of beginners explaining the process and standard operating procedure while starting. In the last chapter, I have provided a glossary of joinery terms and tips for beginners. Below is the flow of the information provided in the book: Introduction to Joinery Joinery tools: Type of tools and how to use them Detailed discussion on 15 types of joinery:

advantage,disadvantage,strength,usage etc. Japanese Joinery: Introduction, types, pros, cons, and application CNC wood joinery: Introduction, various kinds of CNC joinery, Five starter joinery projects with step by step instructions Glossary of joinery terms Tips for beginners So, what are you waiting for? As said in the woodworking community: Measure Twice and Cut Once and let's start the journey.

Cloud Native Applications with Ballerina - Dhanushka Madushan 2021-10-29

Learn how to build scalable cloud native applications with the new-generation Ballerina language using expert tips and best practices Key FeaturesWork with code samples based on the Ballerina Swan Lake Beta1 versionExplore the in-built networking protocol support in Ballerina to develop secure distributed appsBuild a Ballerina app with an automated CI/CD pipeline with observability to simplify maintenance and deploymentBook Description The Ballerina programming language was created by WSO2 for the modern needs of developers where cloud native development techniques have become ubiquitous. Ballerina simplifies how programmers develop and deploy cloud native distributed apps and microservices. Cloud Native Applications with Ballerina will guide you through Ballerina essentials, including variables, types, functions, flow control, security, and more. You'll explore networking as an in-built feature in Ballerina, which makes it a first-class language for distributed computing. With this app development book, you'll learn about different networking protocols as well as different architectural patterns that you can use to implement services on the cloud. As you advance, you'll explore multiple design patterns used in microservice architecture and use serverless in Amazon Web Services (AWS) and Microsoft Azure platforms. You will also get to grips with Docker, Kubernetes, and serverless platforms to simplify maintenance and the deployment process. Later, you'll focus on the Ballerina testing framework along with deployment tools and monitoring tools to build fully automated observable cloud applications. By the end of this book, you will have learned how to apply the Ballerina language for building scalable, resilient, secured, and easy-to-maintain cloud native Ballerina projects and applications. What you will learnUnderstand the concepts and models in cloud native architectureGet to grips with the high-level concepts of building applications with the Ballerina languageUse cloud native architectural design patterns to develop cloud native Ballerina applicationsDiscover how to automate, maintain, and observe cloud native Ballerina applicationsUse a container to deploy and maintain a Ballerina application with Docker and KubernetesExplore serverless architecture and use Microsoft Azure and the AWS platform to build serverless applicationsWho this book is for This Ballerina Swan Lake book is for cloud developers, integration developers, and microservices developers who are facing challenges with legacy tooling and are looking for the latest tools and technologies to solve them. Beginner-level programming knowledge is required before getting started with this Ballerina book.

Kubernetes: Up and Running - Kelsey Hightower 2017-09-07

Legend has it that Google deploys over two billion application containers a week. How's that possible? Google revealed the secret through a project called Kubernetes, an open source cluster orchestrator (based on its internal Borg system) that radically simplifies the task of building, deploying, and maintaining scalable distributed systems in the cloud. This practical guide shows you how Kubernetes and container technology can help you achieve new levels of velocity, agility, reliability, and efficiency. Authors Kelsey Hightower, Brendan Burns, and Joe Beda—who've worked on Kubernetes at Google and other organizations—explain how this system fits into the lifecycle of a distributed application. You will learn how to use tools and APIs to automate scalable distributed systems, whether it is for online services, machine-learning applications, or a cluster of Raspberry Pi computers. Explore the distributed system challenges that Kubernetes addresses Dive into containerized application development, using containers such as Docker Create and run containers on Kubernetes, using the docker image format and container runtime Explore specialized objects essential for running applications in production Reliably roll out new software versions without downtime or errors Get examples of how to develop and deploy real-world applications in Kubernetes

Kubernetes for Full-Stack Developers - 2020-02-04

This book is designed to help newcomers and experienced users alike learn about Kubernetes. Its chapters are designed to introduce core Kubernetes concepts and to build on them to a level where running an application on a production cluster is a familiar, repeatable, and automated process. From there, more

advanced topics are introduced, like how to manage a Kubernetes cluster itself.

Programming Kubernetes - Michael Hausenblas 2019-07-18

If you're looking to develop native applications in Kubernetes, this is your guide. Developers and AppOps administrators will learn how to build Kubernetes-native applications that interact directly with the API server to query or update the state of resources. AWS developer advocate Michael Hausenblas and Red Hat principal software engineer Stefan Schimanski explain the characteristics of these apps and show you how to program Kubernetes to build them. You'll explore the basic building blocks of Kubernetes, including the client-go API library and custom resources. All you need to get started is a rudimentary understanding of development and system administration tools and practices, such as package management, the Go programming language, and Git. Walk through Kubernetes API basics and dive into the server's inner structure Explore Kubernetes's programming interface in Go, including Kubernetes API objects Learn about custom resources—the central extension tools used in the Kubernetes ecosystem Use tags to control Kubernetes code generators for custom resources Write custom controllers and operators and make them production ready Extend the Kubernetes API surface by implementing a custom API server

DevOps with Kubernetes - Hideto Saito 2017-10-16

Learn to implement DevOps using Docker & Kubernetes. About This Book Learning DevOps, container, and Kubernetes within one book. Leverage Kubernetes as a platform to deploy, scale, and run containers efficiently. A practical guide towards container management and orchestration Who This Book Is For This book is targeted for anyone, who wants to learn containerization and clustering in a practical way using Kubernetes. No prerequisite skills required, however, essential DevOps skill and public/private Cloud knowledge will accelerate the reading speed. If you're advanced readers, you can also get a deeper understanding of all the tools and technique described in the book. What You Will Learn Learn fundamental and advanced DevOps skills and tools Get a comprehensive understanding for container Learn how to move your application to container world Learn how to manipulate your application by Kubernetes Learn how to work with Kubernetes in popular public cloud Improve time to market with Kubernetes and Continuous Delivery Learn how to monitor, log, and troubleshoot your application with Kubernetes In Detail Containerization is said to be the best way to implement DevOps. Google developed Kubernetes, which orchestrates containers efficiently and is considered the frontrunner in container orchestration. Kubernetes is an orchestrator that creates and manages your containers on clusters of servers. This book will guide you from simply deploying a container to administrate a Kubernetes cluster, and then you will learn how to do monitoring, logging, and continuous deployment in DevOps. The initial stages of the book will introduce the fundamental DevOps and the concept of containers. It will move on to how to containerize applications and deploy them into. The book will then introduce networks in Kubernetes. We then move on to advanced DevOps skills such as monitoring, logging, and continuous deployment in Kubernetes. It will proceed to introduce permission control for Kubernetes resources via attribute-based access control and role-based access control. The final stage of the book will cover deploying and managing your container clusters on the popular public cloud Amazon Web Services and Google Cloud Platform. At the end of the book, other orchestration frameworks, such as Docker Swarm mode, Amazon ECS, and Apache Mesos will be discussed. Style and approach Readers will be taken through fundamental DevOps skills and Kubernetes concept and administration with detailed examples. It introduces comprehensive DevOps topics, including microservices, automation tools, containers, monitoring, logging, continuous delivery, and popular public cloud environments. At each step readers will learn how to leverage Kubernetes in their everyday lives and transform their original delivery pipeline for fast and efficient delivery.

Engineering MLOps - Emmanuel Raj 2021-04-19

Get up and running with machine learning life cycle management and implement MLOps in your organization Key FeaturesBecome well-versed with MLOps techniques to monitor the quality of machine learning models in productionExplore a monitoring framework for ML models in production and learn about end-to-end traceability for deployed modelsPerform CI/CD to automate new implementations in ML pipelinesBook Description Engineering MLps presents comprehensive insights into MLOps coupled with real-world examples in Azure to help you to write programs, train robust and scalable ML models, and build ML pipelines to train and deploy models securely in production. The book begins by familiarizing you with

the MLOps workflow so you can start writing programs to train ML models. Then you'll then move on to explore options for serializing and packaging ML models post-training to deploy them to facilitate machine learning inference, model interoperability, and end-to-end model traceability. You'll learn how to build ML pipelines, continuous integration and continuous delivery (CI/CD) pipelines, and monitor pipelines to systematically build, deploy, monitor, and govern ML solutions for businesses and industries. Finally, you'll apply the knowledge you've gained to build real-world projects. By the end of this ML book, you'll have a 360-degree view of MLOps and be ready to implement MLOps in your organization. What you will learn

Formulate data governance strategies and pipelines for ML training and deployment
Get to grips with implementing ML pipelines, CI/CD pipelines, and ML monitoring pipelines
Design a robust and scalable microservice and API for test and production environments
Curate your custom CD processes for related use cases and organizations
Monitor ML models, including monitoring data drift, model drift, and application performance
Build and maintain automated ML systems

Who this book is for
This MLOps book is for data scientists, software engineers, DevOps engineers, machine learning engineers, and business and technology leaders who want to build, deploy, and maintain ML systems in production using MLOps principles and techniques. Basic knowledge of machine learning is necessary to get started with this book.

[Managing Kubernetes](#) - Brendan Burns 2018-11-12

While Kubernetes has greatly simplified the task of deploying containerized applications, managing this orchestration framework on a daily basis can still be a complex undertaking. With this practical book, site reliability and DevOps engineers will learn how to build, operate, manage, and upgrade a Kubernetes cluster—whether it resides on cloud infrastructure or on-premises. Brendan Burns, cofounder of Kubernetes, and Craig Tracey, staff field engineer at Heptio, dissect how Kubernetes works internally and demonstrate ways to maintain, adjust, and improve the cluster to suit your particular use case. You'll learn how to make architectural choices for designing a cluster, managing access control, monitoring and alerting, and upgrading Kubernetes. Dive in and discover how to take full advantage of this orchestration framework's capabilities. Learn how your cluster operates, how developers use it to deploy applications, and how Kubernetes can facilitate a developer's job

Adjust, secure, and tune your cluster by understanding Kubernetes APIs and configuration options
Detect cluster-level problems early and learn the steps necessary to respond and recover quickly
Determine how and when to add libraries, tools, and platforms that build on, extend, or otherwise improve a Kubernetes cluster

[Cloud Native Microservices with Spring and Kubernetes](#) - Rajiv Srivastava 2021-07-03

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
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[The Phoenix Project](#) - Gene Kim 2018-02-06

Over a half-million sold! The sequel, The Unicorn Project, is coming Nov 26 "Every person involved in a failed IT project should be forced to read this book."—TIM O'REILLY, Founder & CEO of O'Reilly Media

"The Phoenix Project is a must read for business and IT executives who are struggling with the growing complexity of IT."—JIM WHITEHURST, President and CEO, Red Hat, Inc. Five years after this sleeper hit took on the world of IT and flipped it on its head, the 5th Anniversary Edition of The Phoenix Project continues to guide IT in the DevOps revolution. In this newly updated and expanded edition of the bestselling The Phoenix Project, co-author Gene Kim includes a new afterword and a deeper delve into the Three Ways as described in The DevOps Handbook. Bill, an IT manager at Parts Unlimited, has been tasked with taking on a project critical to the future of the business, code named Phoenix Project. But the project is massively over budget and behind schedule. The CEO demands Bill must fix the mess in ninety days or else Bill's entire department will be outsourced. With the help of a prospective board member and his mysterious philosophy of The Three Ways, Bill starts to see that IT work has more in common with a manufacturing plant work than he ever imagined. With the clock ticking, Bill must organize work flow streamline interdepartmental communications, and effectively serve the other business functions at Parts Unlimited. In a fast-paced and entertaining style, three luminaries of the DevOps movement deliver a story that anyone who works in IT will recognize. Readers will not only learn how to improve their own IT organizations, they'll never view IT the same way again. "This book is a gripping read that captures brilliantly the dilemmas that face companies which depend on IT, and offers real-world solutions."—JEZ HUMBLE, Co-author of Continuous Delivery, Lean Enterprise, Accelerate, and The DevOps Handbook

———— "I'm delighted at how The Phoenix Project has reshaped so many conversations in technology. My goal in writing The Unicorn Project was to explore and reveal the necessary but invisible structures required to make developers (and all engineers) productive, and reveal the devastating effects of technical debt and complexity. I hope this book can create common ground for technology and business leaders to leave the past behind, and co-create a better future together."—Gene Kim, November 2019

[Learning DevOps](#) - Mikael Krief 2019-10-25

Simplify your DevOps roles with DevOps tools and techniques

Key Features

- Learn to utilize business resources effectively to increase productivity and collaboration
- Leverage the ultimate open source DevOps tools to achieve continuous integration and continuous delivery (CI/CD)
- Ensure faster time-to-market by reducing overall lead time and deployment downtime

Book Description The implementation of DevOps processes requires the efficient use of various tools, and the choice of these tools is crucial for the sustainability of projects and collaboration between development (Dev) and operations (Ops). This book presents the different patterns and tools that you can use to provision and configure an infrastructure in the cloud. You'll begin by understanding DevOps culture, the application of DevOps in cloud infrastructure, provisioning with Terraform, configuration with Ansible, and image building with Packer. You'll then be taken through source code versioning with Git and the construction of a DevOps CI/CD pipeline using Jenkins, GitLab CI, and Azure Pipelines. This DevOps handbook will also guide you in containerizing and deploying your applications with Docker and Kubernetes. You'll learn how to reduce deployment downtime with blue-green deployment and the feature flags technique, and study DevOps practices for open source projects. Finally, you'll grasp some best practices for reducing the overall application lead time to ensure faster time to market. By the end of this book, you'll have built a solid foundation in DevOps, and developed the skills necessary to enhance a traditional software delivery process using modern software delivery tools and techniques

What you will learn

- Become well versed with DevOps culture and its practices
- Use Terraform and Packer for cloud infrastructure provisioning
- Implement Ansible for infrastructure configuration
- Use basic Git commands and understand the Git flow process
- Build a DevOps pipeline with Jenkins, Azure

Pipelines, and GitLab CIContainerize your applications with Docker and KubernetesCheck application quality with SonarQube and PostmanProtect DevOps processes and applications using DevSecOps toolsWho this book is for If you are a developer or a system administrator interested in understanding continuous integration, continuous delivery, and containerization with DevOps tools and techniques, this book is for you.

Certified Kubernetes Administrator (CKA) Exam Guide - Melony Qin 2022-11-04

Develop a deep understanding of Kubernetes and the cloud native ecosystem, and pass the CKA exam with confidence with this end-to-end study guide Key Features Get to grips with the core concepts of Kubernetes API primitives Deploy, configure, manage, and troubleshoot Kubernetes clusters Cement your credibility in the job market by becoming a Certified Kubernetes Administrator Book Description Kubernetes is the most popular container orchestration tool in the industry. The Kubernetes Administrator certification will help you establish your credibility and enable you to efficiently support the business growth of individual organizations with the help of this open source platform. The book begins by introducing you to Kubernetes architecture and the core concepts of Kubernetes. You'll then get to grips with the main Kubernetes API primitives, before diving into cluster installation, configuration, and management. Moving ahead, you'll explore different approaches while maintaining the Kubernetes cluster, perform upgrades for the Kubernetes cluster, as well as backup and restore etcd. As you advance, you'll deploy and manage workloads on Kubernetes and work with storage for Kubernetes stateful workloads with the help of practical scenarios. You'll also delve into managing the security of Kubernetes applications and understand how different components in Kubernetes communicate with each other and with other applications. The concluding chapters will show you how to troubleshoot cluster- and application-level logging and monitoring, cluster components, and applications in Kubernetes. By the end of this Kubernetes book, you'll be fully prepared to pass the CKA exam and gain practical knowledge that can be applied in your day-to-day work. What you will learn Understand the fundamentals of Kubernetes and its tools Get hands-on experience in installing and configuring Kubernetes clusters Manage Kubernetes clusters and deployed workloads with ease Get up and running with Kubernetes networking and storage Manage the security of applications deployed on Kubernetes Find out how to monitor, log, and troubleshoot Kubernetes clusters and apps among others Who this book is for This book is for application developers, DevOps engineers, data engineers, and cloud architects who want to pass the CKA exam and certify their Kubernetes Administrator skills in the market. Basic knowledge of Kubernetes is recommended to get the most out of this book.

DevOps - Mark Reed 2020-08-21

Do you want to improve your operational support and get faster fixes?Do you want your team to more agile and flexible?DevOps could be the answer you've been searching for!We all want to be better at what we do. Leaner, faster, more productive and able to adapt to changing demands all help us towards the path to success. DevOps is a relatively new concept and set of practices that aims to reduce the time between committing a change to a system and that change being implemented.Now, with DEVOPS, you can discover why so many people are enthusing about this idea, with chapters covering: - What DevOps really means- How the lifecycle and workflow could benefit you- The exciting tools that will be at your disposal- How to adopt DevOps into your current practices- The future that DevOps is looking towards and how it will affect

you- And more...That DevOps can achieve its aims without suffering any loss of quality in the end product, is just one of the main reasons why so many people are turning to it to help their business change to a more streamlined and efficient model.If you want a happier team, more improvement and a new-found respect from senior management, DevOps could be the book that will get that for you!Get a copy and see what difference it could make to you!

Pipeline as Code - Mohamed Labouardy 2021-11-23

Start thinking about your development pipeline as a mission-critical application. Discover techniques for implementing code-driven infrastructure and CI/CD workflows using Jenkins, Docker, Terraform, and cloud-native services. In Pipeline as Code, you will master: Building and deploying a Jenkins cluster from scratch Writing pipeline as code for cloud-native applications Automating the deployment of Dockerized and Serverless applications Containerizing applications with Docker and Kubernetes Deploying Jenkins on AWS, GCP and Azure Managing, securing and monitoring a Jenkins cluster in production Key principles for a successful DevOps culture Pipeline as Code is a practical guide to automating your development pipeline in a cloud-native, service-driven world. You'll use the latest infrastructure-as-code tools like Packer and Terraform to develop reliable CI/CD pipelines for numerous cloud-native applications. Follow this book's insightful best practices, and you'll soon be delivering software that's quicker to market, faster to deploy, and with less last-minute production bugs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Treat your CI/CD pipeline like the real application it is. With the Pipeline as Code approach, you create a collection of scripts that replace the tedious web UI wrapped around most CI/CD systems. Code-driven pipelines are easy to use, modify, and maintain, and your entire CI pipeline becomes more efficient because you directly interact with core components like Jenkins, Terraform, and Docker. About the book In Pipeline as Code you'll learn to build reliable CI/CD pipelines for cloud-native applications. With Jenkins as the backbone, you'll programmatically control all the pieces of your pipeline via modern APIs. Hands-on examples include building CI/CD workflows for distributed Kubernetes applications, and serverless functions. By the time you're finished, you'll be able to swap manual UI-based adjustments with a fully automated approach! What's inside Build and deploy a Jenkins cluster on scale Write pipeline as code for cloud-native applications Automate the deployment of Dockerized and serverless applications Deploy Jenkins on AWS, GCP, and Azure Grasp key principles of a successful DevOps culture About the reader For developers familiar with Jenkins and Docker. Examples in Go. About the author Mohamed Labouardy is the CTO and co-founder of Crew.work, a Jenkins contributor, and a DevSecOps evangelist. Table of Contents PART 1 GETTING STARTED WITH JENKINS 1 What's CI/CD? 2 Pipeline as code with Jenkins PART 2 OPERATING A SELF-HEALING JENKINS CLUSTER 3 Defining Jenkins architecture 4 Baking machine images with Packer 5 Discovering Jenkins as code with Terraform 6 Deploying HA Jenkins on multiple cloud providers PART 3 HANDS-ON CI/CD PIPELINES 7 Defining a pipeline as code for microservices 8 Running automated tests with Jenkins 9 Building Docker images within a CI pipeline 10 Cloud-native applications on Docker Swarm 11 Dockerized microservices on K8s 12 Lambda-based serverless functions PART 4 MANAGING, SCALING, AND MONITORING JENKINS 13 Collecting continuous delivery metrics 14 Jenkins administration and best practices