

Kubernetes With Terraform Ansible And Openshift On

Among the many configuration management tools available, Ansible has some distinct advantages—it's minimal in nature, you don't need to install anything on your nodes, and it has an easy learning curve. This practical guide shows you how to be productive with this tool quickly, whether you're a developer deploying code to production or a system administrator looking for a better automation solution. Author Lorin Hochstein shows you how to write playbooks (Ansible's configuration management scripts), manage remote servers, and explore the tool's real power: built-in declarative modules. You'll discover that Ansible has the functionality you need and the simplicity you desire. Understand how Ansible differs from other configuration management systems Use the YAML file format to write your own playbooks Learn Ansible's support for variables and facts Work with a complete example to deploy a non-trivial application Use roles to simplify and reuse playbooks Make playbooks run faster with ssh multiplexing, pipelining, and parallelism Deploy applications to Amazon EC2 and other cloud platforms Use Ansible to create Docker images and deploy Docker containers

Terraform in Action shows you how to automate and scale infrastructure programmatically using the Terraform toolkit. Summary In Terraform in Action you will learn: Cloud architecture with Terraform Terraform module sharing and the private module registry Terraform security in a multitenant environment Strategies for performing blue/green deployments Refactoring for code maintenance and reusability Running Terraform at scale Creating your own Terraform provider Using Terraform as a continuous development/continuous delivery platform Terraform in Action introduces the infrastructure-as-code (IaC) model that lets you instantaneously create new components and respond efficiently to changes in demand. You'll use the Terraform automation tool to design and manage servers that can be provisioned, shared, changed, tested, and deployed with a single command. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Provision, deploy, scale, and clone your entire stack to the cloud at the touch of a button. In Terraform, you create a collection of simple declarative scripts that define and manage application infrastructure. This powerful infrastructure-as-code approach automates key tasks like versioning and testing for everything from low-level networking to cloud services. About the book Terraform in Action shows you how to automate and scale infrastructure programmatically using the Terraform toolkit. Using practical, relevant examples, you'll use Terraform to provision a Kubernetes cluster, deploy a multiplayer game, and configure other hands-on projects. As you progress to advanced techniques like zero-downtime deployments, you'll discover how to think in Terraform rather than just copying and pasting scripts. What's inside Cloud architecture with Terraform Terraform module sharing and the private module registry Terraform security in a multitenant environment Strategies for performing blue/green deployments About the reader For readers experienced with a major cloud platform such as AWS. Examples in JavaScript and Golang. About the author Scott Winkler is a DevOps engineer and a distinguished Terraform expert. He has spoken multiple times at HashiTalks and HashiConf, and was selected as a HashiCorp Ambassador and Core Contributor in 2020. Table of Contents PART 1 TERRAFORM BOOTCAMP 1 Getting started with Terraform 2 Life cycle of a Terraform resource 3 Functional programming 4 Deploying a multi-tiered web application in AWS PART 2 TERRAFORM IN THE WILD 5 Serverless made easy 6 Terraform with friends 7 CI/CD pipelines as code 8 A multi-cloud MMORPG PART 3 MASTERING TERRAFORM 9 Zero-downtime deployments 10 Testing and refactoring 11 Extending Terraform by writing a custom provider 12 Automating Terraform 13 Security and secrets management

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Introductory book designed for SysAdmins, Operations staff, Developers and DevOps who are interested in building images using the open source tool Packer.

Summary The best way to learn microservices development is to build something! Bootstrapping Microservices with Docker, Kubernetes, and Terraform guides you from zero through to a complete microservices project, including fast prototyping, development, and deployment. You'll get your feet wet using industry-standard tools as you learn and practice the practical skills you'll use for every microservices application. Following a true bootstrapping approach, you'll begin with a simple, familiar application and build up your knowledge and skills as you create and deploy a real microservices project. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Taking microservices from proof of concept to production is a complex, multi-step operation relying on tools like Docker, Terraform, and Kubernetes for packaging and deployment. The best way to learn the process is to build a project from the ground up, and that's exactly what you'll do with this book! About the book In Bootstrapping Microservices with Docker, Kubernetes, and Terraform, author Ashley Davis lays out a comprehensive approach to building microservices. You'll start with a simple design and work layer-by-layer until you've created your own video streaming application. As you go, you'll learn to configure cloud infrastructure with Terraform, package microservices using Docker, and deploy your finished project to a Kubernetes cluster. What's inside Developing and testing microservices applications Working with cloud providers Applying automated testing Implementing infrastructure as code and setting up a continuous delivery pipeline Monitoring, managing, and troubleshooting About the reader Examples are in JavaScript. No experience with microservices, Kubernetes, Terraform, or Docker required. About the author Ashley Davis is a software developer, entrepreneur, stock trader, and the author of Manning's Data Wrangling with JavaScript. Table of Contents 1 Why microservices? 2 Creating your first microservice 3 Publishing your first microservice 4 Data management for microservices 5 Communication between microservices 6 Creating your production environment 7 Getting to continuous delivery 8 Automated testing for microservices 9 Exploring FlixTube 10 Healthy microservices 11 Pathways to scalability

Deploy a SharePoint farm in a repeatable, predictable, and reliable fashion using Infrastructure as Code (IaC) techniques to automate provisioning. Savvy IT pros will learn how to use DevOps practices and open source tools to greatly reduce costs, and streamline management operations for SharePoint farms deployed via Amazon Web Services (AWS), Azure, or on premise. DevOps for SharePoint will help you navigate the complex challenges of deploying and managing SharePoint Server farms. You will learn how to reduce time-consuming tasks and errors when generating development, testing, or production environments. And you will benefit from learning proven methods to apply Microsoft updates with minimal downtime and productivity loss. Whether you are a SharePoint architect, IT pro, or developer helping customers with the SharePoint platform, this book will teach you the most useful DevOps practices to tackle those issues and broaden your skill set. What You'll Learn Understand the basics of the most popular open source tools—Vagrant, Packer, Terraform, and Ansible—and how to use them in the context of deploying and scaling a SharePoint farm Use Vagrant to build SharePoint development environments in less than an hour, and add automated testing Use Packer to create a “golden image” with preconfigured settings, and then use it as the base image in your Terraform configuration for both AWS and Azure farms Use Terraform to scale your SharePoint farm topology Use Red Hat's Ansible Playbooks to perform configuration management on your farm Use Terraform to deploy immutable infrastructure environments using IaC (Infrastructure as Code) Use InSpec 2.0 to stay in compliance by testing your cloud infrastructure Use Ansible to apply Microsoft updates and patches Who This Book Is For IT pros and developers who are looking to expand their knowledge and take a modern approach by using

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open source technologies to work with Microsoft products. Experience installing SharePoint, and a basic understanding of either Azure or AWS, is helpful.

An expert guide to helping you use DevOps techniques with the latest GitLab version to optimize and manage your software workflow

Key Features

- Delve into GitLab's architecture, and install and configure it to fit your environment
- Learn about the underlying principles of Agile software development and DevOps
- Explore Gitlab's features to manage enterprise cloud-native applications and services

Book Description

GitLab is an open source repository management and version control toolkit with functions for enterprises and personal software projects. It offers configurability options, extensions, and APIs that make it an ideal tool for enterprises to manage the software development life cycle. This book begins by explaining GitLab options and the components of the GitLab architecture. You will learn how to install and set up GitLab on-premises and in the cloud, along with understanding how to migrate code bases from different systems, such as GitHub, Concurrent Versions System, Team Foundation Version Control, and Subversion. Later chapters will help you implement DevOps culture by introducing the workflow management tools in GitLab and continuous integration/continuous deployment (CI/CD). In addition to this, the book will guide you through installing GitLab on a range of cloud platforms, monitoring with Prometheus, and deploying an environment with GitLab. You'll also focus on the GitLab CI component to assist you with creating development pipelines and jobs, along with helping you set up GitLab runners for your own project. Finally, you will be able to choose a high availability setup that fits your needs and helps you monitor and act on results obtained after testing. By the end of this book, you will have gained the expertise you need to use GitLab features effectively, and be able to integrate all phases in the development process.

What you will learn

- Install GitLab on premises and in the cloud using a variety of configurations
- Conduct data migration from the SVN, TFS, CVS, and GitHub platforms to GitLab
- Use GitLab runners to develop different types of configurations in software development
- Plan and perform CI/CD by using GitLab features
- Monitor and secure your software architecture using Prometheus and Grafana
- Implement DevOps culture by introducing workflow management tools in GitLab

Who this book is for

If you are a software developer, DevOps professional, or any developer who wants to master GitLab for productive repository management in your day-to-day tasks, this book is for you. Basic understanding of the software development workflow is assumed.

Automate core security tasks by embedding security controls and processes early in the DevOps workflow through DevSecOps. You will not only learn the various stages in the DevOps pipeline through examples of solutions developed and deployed using .NET Core, but also go through open source SDKs and toolkits that will help you to incorporate automation, security, and compliance. The book starts with an outline of modern software engineering principles and gives you an overview of DevOps in .NET Core. It further explains automation in DevOps for product development along with security principles to improve product quality. Next, you will learn how to improve your product quality and avoid code issues such as SQL injection prevention, cross-site scripting, and many more. Moving forward, you will go through the steps necessary to make security, compliance, audit, and UX automated to increase the efficiency of your organization. You'll see demonstrations of the CI phase of DevOps, on-premise and hosted, along with code analysis methods to verify product quality. Finally, you will learn network security in Docker and containers followed by compliance and security standards. After reading DevSecOps for .NET Core, you will be able to understand how automation, security, and compliance works in all the stages of the DevOps pipeline while showcasing real-world examples of solutions developed and deployed using .NET Core 3.

What You Will Learn

- Implement security for the .NET Core runtime for cross-functional workloads
- Work with code style and review guidelines to improve the security, performance, and maintenance of components
- Add to DevOps pipelines to scan code for security vulnerabilities
- Deploy software on a secure infrastructure, on Docker, Kubernetes, and cloud

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environments Who This Book Is For Software engineers and developers who develop and maintain a secure code repository. Discover how to manage and scale your infrastructure using Infrastructure as Code (IaC) with Terraform Key Features Get up and running with the latest version of Terraform, v0.13 Design and manage infrastructure that can be shared, tested, modified, provisioned, and deployed Work through practical recipes to achieve zero-downtime deployment and scale your infrastructure effectively Book Description HashiCorp Configuration Language (HCL) has changed how we define and provision a data center infrastructure with the launch of Terraform—one of the most popular and powerful products for building Infrastructure as Code. This practical guide will show you how to leverage HashiCorp's Terraform tool to manage a complex infrastructure with ease. Starting with recipes for setting up the environment, this book will gradually guide you in configuring, provisioning, collaborating, and building a multi-environment architecture. Unlike other books, you'll also be able to explore recipes with real-world examples to provision your Azure infrastructure with Terraform. Once you've covered topics such as Azure Template, Azure CLI, Terraform configuration, and Terragrunt, you'll delve into manual and automated testing with Terraform configurations. The next set of chapters will show you how to manage a balanced and efficient infrastructure and create reusable infrastructure with Terraform modules. Finally, you'll explore the latest DevOps trends such as continuous integration and continuous delivery (CI/CD) and zero-downtime deployments. By the end of this book, you'll have developed the skills you need to get the most value out of Terraform and manage your infrastructure effectively. What you will learn Understand how to install Terraform for local development Get to grips with writing Terraform configuration for infrastructure provisioning Use Terraform for advanced infrastructure use cases Understand how to write and use Terraform modules Discover how to use Terraform for Azure infrastructure provisioning Become well-versed in testing Terraform configuration Execute Terraform configuration in CI/CD pipelines Explore how to use Terraform Cloud Who this book is for This book is for developers, operators, and DevOps engineers looking to improve their workflow and use Infrastructure as Code. Experience with Microsoft Azure, Jenkins, shell scripting, and DevOps practices is required to get the most out of this Terraform book.

Terraform has recently gained in popularity, becoming one of the most widely adopted tools for infrastructure automation. If you're interested in a career in DevOps, this book will be your reference guide to gaining hands-on experience with Terraform from scratch.

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

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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.

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1. Getting started with Linux
2. Working with Bash
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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

This book is a guide for how to use Ansible in the AWS (Amazon Web Services). The AWS is becoming a popular form of cloud computing in which most businesses, organizations and individuals keep huge amounts of their sensitive data. With Ansible, we can automate most of the tasks such organizations do on the AWS. The first part of the book explains how to create an immutable infrastructure in the AWS using Ansible. It will guide you on all the necessary steps, starting from setup of the AWS account to creation of an inventory. The book also guides you on how to provision and auto scale your AWS infrastructure with Ansible. With this, it will be easy for you or the organization to upload huge amounts of data and have the infrastructure scale to accommodate the data. Please note that with auto scaling, Ansible will do much of the management automatically on the organization's behalf, so there will be little or no effort involved for the organization itself. This results in ease of management and the simplification of tasks. A Dynamic Inventory is also of great significance in AWS. This book explains how to create a Dynamic Inventory using both AWS and Ansible. Ansible and Terraform can also be used to manage Kubernetes on AWS. This book guides you on how to do this. The following topics are discussed in this book:

- Creating an Immutable Infrastructure
- Provision and Autoscaling your Infrastructure with Ansible
- Dynamic Inventory with AWS and Ansible
- Ansible and Terraform for Kubernetes to AWS
- Schedule and run application containers using Kubernetes
- Key Features
- Get to grips with a wide range of tools to monitor and secure your deployments
- Manage your container clusters and networks using Kubernetes
- Get well-versed with the fundamentals of Kubernetes

Book Description Kubernetes has continued to grow and achieve broad adoption across various industries, helping you to orchestrate and automate container deployments on a massive scale. Based on the recent release of Kubernetes 1.12, *Getting Started with Kubernetes* gives you a complete understanding of how to install a Kubernetes cluster. The book focuses on core Kubernetes constructs, such as pods, services, replica sets, replication controllers, and labels. You will understand cluster-level networking in Kubernetes, and learn to set up external access to applications running in the cluster. As you make your way through the book, you'll understand how to manage deployments and perform updates with minimal downtime. In addition to this, you will explore operational aspects of Kubernetes, such as monitoring and logging, later moving on to advanced concepts such as container security and cluster federation. You'll get to grips with integrating your build pipeline and deployments within a Kubernetes cluster, and be able to understand and interact with open source projects. In the concluding chapters, you'll orchestrate updates behind the scenes, avoid downtime on your cluster, and deal with underlying cloud provider instability within your cluster. By the end of this book, you'll have a complete understanding of the Kubernetes platform and will start deploying applications on it. What you will learn

- Download, install, and configure the Kubernetes code base
- Set up and access monitoring and logging for Kubernetes clusters
- Set up external access to applications running in the cluster
- Learn how to manage and scale kubernetes with hosted platforms on AWS, Azure, and GCP
- Run multiple clusters and manage them from a single control plane
- Discover top tools for deploying and managing a Kubernetes cluster
- Learn how to get production ready and harden Kubernetes operations, networking, and storage

Who this book is for *Getting Started with Kubernetes* is for developers, system administrators, and DevOps engineers who want

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to automate the deployment process and scale their applications. No prior knowledge of Kubernetes is required.

Learn to implement container orchestration on AWS with ease
Key Features
Leverage the power of Kubernetes on AWS to deploy highly scalable applications
Provision Kubernetes clusters on Amazon EC2 environments
Implement best practices to improve efficiency and security of Kubernetes on the cloud
Book Description
Docker containers promise to radicalize the way developers and operations build, deploy, and manage applications running on the cloud. Kubernetes provides the orchestration tools you need to realize that promise in production. Kubernetes on AWS guides you in deploying a production-ready Kubernetes cluster on the AWS platform. You will then discover how to utilize the power of Kubernetes, which is one of the fastest growing platforms for production-based container orchestration, to manage and update your applications. Kubernetes is becoming the go-to choice for production-grade deployments of cloud-native applications. This book covers Kubernetes from first principles. You will start by learning about Kubernetes' powerful abstractions - Pods and Services - that make managing container deployments easy. This will be followed by a guided tour through setting up a production-ready Kubernetes cluster on AWS, while learning the techniques you need to successfully deploy and manage your own applications. By the end of the book, you will have gained plenty of hands-on experience with Kubernetes on Amazon Web Services. You will also have picked up some tips on deploying and managing applications, keeping your cluster and applications secure, and ensuring that your whole system is reliable and resilient to failure. What you will learn
Learn how to provision a production-ready Kubernetes cluster on AWS
Deploy your own applications to Kubernetes with Helm
Discover strategies for troubleshooting your cluster and know where to find help with issues
Explore the best ways to monitor your cluster and the applications running on it
Supercharge your cluster by integrating it with the tools provided by the AWS platform
Architect your cluster for high availability
Who this book is for
If you're a cloud engineer, cloud solution provider, sysadmin, site reliability engineer, or developer with an interest in DevOps and are looking for an extensive guide to running Kubernetes in the AWS environment, this book is for you. Though any previous knowledge of Kubernetes is not expected, some experience with Linux and Docker containers would be a bonus.

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

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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

Help your organization join the DevOps revolution About This Book Helps you skill up your DevOps knowledge without a strong set of prerequisites Deliver continuously improved software by showcasing the most advanced tools and techniques Acquire a deeper insight into implementing DevOps in your organization and deliver results from day 1 Who This Book Is For This book is written for engineers and companies that want to learn the minimum set of required technologies and processes to be successful in the DevOps world. This book also targets system administrators, developers, and IT professionals who would like to employ DevOps techniques and best practices to manage IT infrastructures or would like to acquire the necessary skills needed to work in DevOps teams. What You Will Learn Master development best practices. Understand how the Agile Delivery Methodology helps you ensure accuracy and quality. Analyze branching strategies such as branch creation, merging, and synchronization. Learn to automate builds to deploy and deliver code faster and more often Explore testing frameworks and how to automate testing Learn to put specific metrics in place to measure ROI of DevOps and monitor logs and events in a system In Detail This book follows a unique approach to modern DevOps using cutting-edge tools and technologies such as Ansible, Kubernetes, and Google Cloud Platform. This book starts by explaining the organizational alignment that has to happen in every company that wants to implement DevOps in order to be effective, and the use of cloud datacenters in combination with the most advanced DevOps tools to get the best out of a small team of skilled engineers. It also delves into how to use Kubernetes to run your applications in Google Cloud Platform, minimizing the friction and hassle of maintaining a cluster but ensuring its high availability. By the end of this book, you will be able to realign teams in your company and create a Continuous Delivery pipeline with Kubernetes and Docker. With strong monitoring in place, you will also be able to react to adverse events in your system, minimizing downtime and improving the overall up-time and stability of your system. Style and approach This book takes a step-by-step practical approach to the implementation of DevOps. This book will teach you how to enable IT organizations to deliver faster and smarter through a unique approach using Code-Build-Test-Release-Configure-Monitor (CBTRCM).

Orchestrate your cloud infrastructure Key Features Recipe-based approach to install and configure cloud resources using Ansible Covers various cloud-related modules and their functionalities Includes deployment of a sample application to the cloud resources that we create Learn the best possible way to manage and automate your cloud infrastructure Book Description Ansible has a large collection of inbuilt modules to manage various cloud resources. The book begins with the concepts needed to safeguard your credentials and explain how you

interact with cloud providers to manage resources. Each chapter begins with an introduction and prerequisites to use the right modules to manage a given cloud provider. Learn about Amazon Web Services, Google Cloud, Microsoft Azure, and other providers. Each chapter shows you how to create basic computing resources, which you can then use to deploy an application. Finally, you will be able to deploy a sample application to demonstrate various usage patterns and utilities of resources. What you will learn Use Ansible Vault to protect secrets Understand how Ansible modules interact with cloud providers to manage resources Build cloud-based resources for your application Create resources beyond simple virtual machines Write tasks that can be reused to create resources multiple times Work with self-hosted clouds such as OpenStack and Docker Deploy a multi-tier application on various cloud providers Who this book is for If you are a system administrator, infrastructure engineer, or a DevOps engineer who wants to obtain practical knowledge about Ansible and its cloud deliverables, then this book is for you. Recipes in this book are designed for people who would like to manage their cloud infrastructures efficiently using Ansible, which is regarded as one of the best tools for cloud management and automation.

Use this fast-paced and comprehensive guide to build cloud-based solutions on Oracle Cloud Infrastructure. You will understand cloud infrastructure, and learn how to launch new applications and move existing applications to Oracle Cloud. Emerging trends in software architecture are covered such as autonomous platforms, infrastructure as code, containerized applications, cloud-based container orchestration with managed Kubernetes, and running serverless workloads using open-source tools. Practical examples are provided. This book teaches you how to self-provision the cloud resources you require to run and scale your custom cloud-based applications using a convenient web console and programmable APIs, and you will learn how to manage your infrastructure as code with Terraform. You will be able to plan, design, implement, deploy, run, and monitor your production-grade and fault-tolerant cloud software solutions in Oracle's data centers across the world, paying only for the resources you actually use. Oracle Cloud Infrastructure is part of Oracle's new generation cloud that delivers a complete and well-integrated set of Infrastructure as a Service (IaaS) capabilities (compute, storage, networking), edge services (DNS, web application firewall), and Platform as a Service (PaaS) capabilities (such as Oracle Autonomous Database which supports both transactional and analytical workloads, the certified and fully managed Oracle Kubernetes Engine, and a serverless platform based on an open-source Fn Project). Oracle Autonomous Database which supports both transactional and analytical workloads), and Oracle's certified and managed Container Engine for Kubernetes. What You Will Learn Build software solutions on Oracle Cloud Automate cloud infrastructure with CLI and Terraform Follow best practices for architecting on Oracle Cloud Employ Oracle Autonomous Database to obtain valuable data insights Run containerized applications on Oracle's Container Engine for Kubernetes Understand the emerging Cloud Native ecosystem Who This Book Is For Cloud architects, developers, DevOps engineers, and technology students and others who want to learn how to build cloud-based systems on Oracle Cloud Infrastructure (OCI) leveraging a broad range of OCI Infrastructure as a Service (IAAS) capabilities,

Oracle Autonomous Database, and Oracle's Container Engine for Kubernetes. Readers should have a working knowledge of Linux, exposure to programming, and a basic understanding of networking concepts. All exercises in the book can be done at no cost with a 30-day Oracle Cloud trial.

Learn how to use AI and blockchain to build decentralized intelligent applications (DIApps) that overcome real-world challenges

Key Features

- Understand the fundamental concepts for converging artificial intelligence and blockchain
- Apply your learnings to build apps using machine learning with Ethereum, IPFS, and Moibit
- Get well-versed with the AI-blockchain ecosystem to develop your own DIApps

Book Description

AI and blockchain are two emerging technologies catalyzing the pace of enterprise innovation. With this book, you'll understand both technologies and converge them to solve real-world challenges. This AI blockchain book is divided into three sections. The first section covers the fundamentals of blockchain, AI, and affiliated technologies, where you'll learn to differentiate between the various implementations of blockchains and AI with the help of examples. The second section takes you through domain-specific applications of AI and blockchain. You'll understand the basics of decentralized databases and file systems and connect the dots between AI and blockchain before exploring products and solutions that use them together. You'll then discover applications of AI techniques in crypto trading. In the third section, you'll be introduced to the DIApp design pattern and compare it with the DApp design pattern. The book also highlights unique aspects of SDLC (software development lifecycle) when building a DIApp, shows you how to implement a sample contact tracing application, and delves into the future of AI with blockchain. By the end of this book, you'll have developed the skills you need to converge AI and blockchain technologies to build smart solutions using the DIApp design pattern.

What you will learn

- Get well-versed in blockchain basics and AI methodologies
- Understand the significance of data collection and cleaning in AI modeling
- Discover the application of analytics in cryptocurrency trading
- Get to grips with open, permissioned, and private blockchains
- Explore the DIApp design pattern and its merit in digital solutions
- Find out how LSTM and ARIMA can be applied in crypto trading
- Use the DIApp design pattern to build a sample contact tracing application
- Get started with building your own DIApps across various domains

Who this book is for

This book is for blockchain and AI architects, developers, data scientists, data engineers, and evangelists who want to harness the power of artificial intelligence in blockchain applications. If you are looking for a blend of theoretical and practical use cases to understand how to implement smart cognitive insights into blockchain solutions, this book is what you need! Knowledge of machine learning and blockchain concepts is required.

Build clustered and scalable Java-based, real-time applications using Spring Framework, Boot, WebSocket, Cassandra, Redis and RabbitMQ. In this book, you'll tie all this together with a dive-in case study, a real-time scalable chat

application under differing scenarios. Pro Java Clustering and Scalability also discusses how to horizontally scale the WebSocket chat application using a full STOMP broker such as RabbitMQ. Although this is a programming book, it also discusses many interesting infrastructure topics and tips about continuous delivery, Docker, NoSQL (Cassandra and Redis) and other related technologies. What You Will Learn Handle clustering and scalability using various open source Java, microservices, and web services tools and technologies Use Spring Framework, Boot, and other Spring technologies Integrate with Redis, RabbitMQ, Cassandra, NoSQL, and much more Test the case study code under various scenarios and stresses Who This Book Is For Experienced Java developers with at least some prior experience with Java, especially Spring Framework, Boot and other tools, and some web services.

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.

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

Nobel Captain is proud to support Employment Agencies, Head Hunters and IT Recruiters by publishing a series of Technical Assessment tools that will make the hiring process easier, more productive, and even faster.

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

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 CI Containerize your applications with Docker and Kubernetes Check application quality with SonarQube and Postman Protect DevOps processes and applications using DevSecOps tools Who 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.

Build, Manage and Improve your infrastructure effortlessly. About This Book An up-to-date and comprehensive resource on Terraform that lets you quickly and efficiently launch your infrastructure Learn how to implement your infrastructure as code and make secure, effective changes to your infrastructure Learn to build multi-cloud fault-tolerant systems and simplify the management and orchestration of even the largest scale and most complex cloud infrastructures Who This Book Is For This book is for developers and operators who already have some exposure to working with infrastructure but want to improve their workflow and introduce infrastructure as a code practice. Knowledge of essential Amazon Web Services components (EC2, VPC, IAM) would help contextualize the examples provided. Basic understanding of Jenkins and Shell scripts will be helpful for the chapters

on the production usage of Terraform. What You Will Learn Understand what Infrastructure as Code (IaC) means and why it matters Install, configure, and deploy Terraform Take full control of your infrastructure in the form of code Manage complete infrastructure, starting with a single server and scaling beyond any limits Discover a great set of production-ready practices to manage infrastructure Set up CI/CD pipelines to test and deliver Terraform stacks Construct templates to simplify more complex provisioning tasks In Detail Terraform is a tool used to efficiently build, configure, and improve the production infrastructure. It can manage the existing infrastructure as well as create custom in-house solutions. This book shows you when and how to implement infrastructure as a code practices with Terraform. It covers everything necessary to set up the complete management of infrastructure with Terraform, starting with the basics of using providers and resources. It is a comprehensive guide that begins with very small infrastructure templates and takes you all the way to managing complex systems, all using concrete examples that evolve over the course of the book. The book ends with the complete workflow of managing a production infrastructure as code—this is achieved with the help of version control and continuous integration. The readers will also learn how to combine multiple providers in a single template and manage different code bases with many complex modules. It focuses on how to set up continuous integration for the infrastructure code. The readers will be able to use Terraform to build, change, and combine infrastructure safely and efficiently. Style and approach This book will help and guide you to implement Terraform in your infrastructure. The readers will start by working on very small infrastructure templates and then slowly move on to manage complex systems, all by using concrete examples that will evolve during the course of the book.

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

A developer's field-guide to designing scalable services using Kubernetes Key Features Develop and run your software using containers within a Kubernetes environment Get hands-on experience of using Kubernetes with DevOps concepts such as continuous integration, benchmark testing, monitoring, and so on Pragmatic example-based approach showing how to use Kubernetes in the development process Book Description Kubernetes is documented and typically approached from the

perspective of someone running software that has already been built. Kubernetes may also be used to enhance the development process, enabling more consistent testing and analysis of code to help developers verify not only its correctness, but also its efficiency. This book introduces key Kubernetes concepts, coupled with examples of how to deploy and use them with a bit of Node.js and Python example code, so that you can quickly replicate and use that knowledge. You will begin by setting up Kubernetes to help you develop and package your code. We walk you through the setup and installation process before working with Kubernetes in the development environment. We then delve into concepts such as automating your build process, autonomic computing, debugging, and integration testing. This book covers all the concepts required for a developer to work with Kubernetes. By the end of this book, you will be in a position to use Kubernetes in development ecosystems. What you will learn

- Build your software into containers
- Deploy and debug software running in containers within Kubernetes
- Declare and add configuration through Kubernetes
- Define how your application fits together, using internal and external services
- Add feedback to your code to help Kubernetes manage your services
- Monitor and measure your services through integration testing and in production deployments

Who this book is for If you are a full-stack or back-end software developers interested, curious, or being asked to test as well as run the code you're creating, you can leverage Kubernetes to make that process simpler and consistent regardless of where you deploy. If you're looking for developer focused examples in NodeJS and Python for how to build, test, deploy, and run your code with Kubernetes, this is perfect for you.

A practical guide to implementing Value Stream Management to guide your strategic investments in DevOps capabilities and deliver customer-centric value quickly and economically

- Key Features
- Address DevOps implementation issues, including culture, toolchain costs, improving work and information flows, and product team alignment
- Implement proven VSM methodology to improve IT value stream flows
- Leverage VSM platforms to view, analyze, and improve end-to-end value delivery

Book Description

Value Stream Management (VSM) opens the door to maximizing your DevOps pipeline investments by improving flows and eliminating waste. VSM and DevOps together deliver value stream improvements across enterprises for a competitive advantage in the digital world. Driving DevOps with Value Stream Management provides a comprehensive review and analysis of industry-proven VSM methods and tools to integrate, streamline, and orchestrate activities within a DevOps-oriented value stream. You'll start with an introduction to the concepts of delivering value and understand how VSM methods and tools support improved value delivery from a Lean production perspective. The book covers the complexities of implementing modern CI/CD and DevOps pipelines and then guides you through an eight-step VSM methodology with the help of a use case showing an Agile team's efforts to install a CI/CD pipeline. Free from marketing hype or vendor bias, this book presents the current VSM tool vendors and customer use cases that showcase their products' strengths. As you advance through the book, you'll learn four approaches to implementing a DevOps pipeline and get guidance on choosing the best fit. By the end of this VSM book, you'll be ready to develop and execute a plan to streamline your software delivery pipelines and improve your organization's value stream delivery. What you will learn

- Integrate Agile, systems thinking, and lean development to deliver customer-centric value
- Find out how to

choose the most appropriate value stream for your initial and follow-on VSM projects Establish better flows with integrated, automated, and orchestrated DevOps and CI/CD pipelines Apply a proven eight-step VSM methodology to drive lean IT value stream improvements Discover the key strengths of modern VSM tools and their customer use case scenarios Understand how VSM drives DevOps pipeline improvements and value delivery transformations across enterprises Who this book is for This book will help corporate executives, managers, IT team members, and other stakeholders involved in digital business transformations to improve the flow of customer value through their IT-based value streams. It will provide you with the practical guidance you need while adopting Lean-Agile, Value Stream Management, and DevOps capabilities on an enterprise scale to enable business agility. A basic understanding of how CI/CD and DevOps pipelines improve software delivery capabilities via integrated and automated toolchains will help you to make the most of the book.

Are you painfully aware of the mismatch between outdated approaches and our rapidly evolving world? Dr. Dele Ola looks unflinchingly at the problem of resisting change and offers a wealth of expert guidance on how to embrace positive growth and foster development. *Be a Change Agent* is a comprehensive examination of change leadership—the need for it, the qualities of change leaders, and the importance of having great change teams. In the first section of the book, Ola takes the reader through stories of fearless leaders and explores the VERITAS qualities that made them successful. The second section is about building collaborative teams that work well and have the independence to innovate without too much bureaucratic control. Ola's years working with high-performance teams helped him develop an insightful tool for looking at three spectrums that cause tension in teams:

- The Systems Spectrum—Structure versus influence
- The Reaction Spectrum—Reflection versus action
- The Perspective Spectrum—Reality versus idealism

The Tensions Equalizer tool will change how you view the balance of members in your team. This book culminates in a discussion of the future of work, learning, enterprise, and innovation. Complete with insightful questionnaires and reflection questions, *Be a Change Agent* offers a practical toolkit for both emerging change agents and seasoned influencers to evaluate their leadership qualities and become the very best they can be.

Build your own hybrid cloud strategy with this comprehensive learning guide. Key Features Build a hybrid cloud strategy for your organization with AWS and OpenStack Leverage Hybrid Cloud to design a complex deployment pipeline Learn to implement security and monitoring best practices with real-world examples Book Description Hybrid cloud is currently the buzz word in the cloud world. Organizations are planning to adopt hybrid cloud strategy due to its advantages such as untested workloads, cloud-bursting, cloud service brokering and so on. This book will help you understand the dynamics, design principles, and deployment strategies of a Hybrid Cloud. You will start by understanding the concepts of hybrid cloud and the problems it solves as compared to a stand-alone public and private cloud. You will be delving into the different architecture and design of hybrid cloud. The book will then cover advanced concepts such as building a deployment pipeline, containerization strategy, and data storage mechanism. Next up, you will be able to deploy an external CMP to run a Hybrid cloud and integrate it with your OpenStack and AWS environments. You will also understand the strategy for designing a Hybrid Cloud using containerization and work with pre-

built solutions like vCloud Air, VMware for AWS, and Azure Stack. Finally, the book will cover security and monitoring related best practices that will help you secure your cloud infrastructure. By the end of the book, you will be in a position to build a hybrid cloud strategy for your organization. What you will learn

- Learn the demographics and definitions of Hybrid Cloud
- Understand the different architecture and design of Hybrid Cloud
- Explore multi-cloud strategy and use it with your hybrid cloud
- Implement a Hybrid Cloud using CMP / Common API's
- Implement a Hybrid Cloud using Containers
- Overcome various challenges and issues while working with your Hybrid Cloud
- Understand how to monitor your Hybrid Cloud
- Discover the security implications in the Hybrid Cloud

Who this book is for This book is targeted at cloud architects, cloud solution providers, DevOps engineers, or any working stakeholder who wants to learn about the hybrid cloud architecture. A basic understanding of public and private cloud is desirable.

Learning DevOps The complete guide to accelerate collaboration with Jenkins, Kubernetes, Terraform and Azure DevOps

Packt Publishing Ltd

Build and deploy scalable cloud applications using Windows containers and Kubernetes

Key Features

- Run, deploy, and orchestrate containers on the Windows platform with this Kubernetes book
- Use Microsoft SQL Server 2019 as a data store to deploy Kubernetes applications written in .NET Framework
- Set up a Kubernetes development environment and deploy clusters with Windows Server 2019 nodes

Book Description

With the adoption of Windows containers in Kubernetes, you can now fully leverage the flexibility and robustness of the Kubernetes container orchestration system in the Windows ecosystem. This support will enable you to create new Windows applications and migrate existing ones to the cloud-native stack with the same ease as for Linux-oriented cloud applications. This practical guide takes you through the key concepts involved in packaging Windows-distributed applications into containers and orchestrating these using Kubernetes. You'll also understand the current limitations of Windows support in Kubernetes. As you advance, you'll gain hands-on experience deploying a fully functional hybrid Linux/Windows Kubernetes cluster for development, and explore production scenarios in on-premises and cloud environments, such as Microsoft Azure Kubernetes Service. By the end of this book, you'll be well-versed with containerization, microservices architecture, and the critical considerations for running Kubernetes in production environments successfully. What you will learn

- Understand containerization as a packaging format for applications
- Create a development environment for Kubernetes on Windows
- Grasp the key architectural concepts in Kubernetes
- Discover the current limitations of Kubernetes on the Windows platform
- Provision and interact with a Kubernetes cluster from a Windows machine
- Create hybrid Windows Kubernetes clusters in on-premises and cloud environments

Who this book is for This book is for software developers, system administrators, DevOps engineers, and architects working with Kubernetes on Windows, Windows Server 2019, and Windows containers. Knowledge of Kubernetes as well as the Linux environment will help you get the most out of this book.

Design, build, and operate scalable and reliable Kubernetes infrastructure for production

Key Features

- Implement industry best practices to build and manage production-grade Kubernetes infrastructure
- Learn how to architect scalable Kubernetes clusters, harden container security, and fine-tune resource management
- Understand, manage, and operate

complex business workloads confidently Book Description Although out-of-the-box solutions can help you to get a cluster up and running quickly, running a Kubernetes cluster that is optimized for production workloads is a challenge, especially for users with basic or intermediate knowledge. With detailed coverage of cloud industry standards and best practices for achieving scalability, availability, operational excellence, and cost optimization, this Kubernetes book is a blueprint for managing applications and services in production. You'll discover the most common way to deploy and operate Kubernetes clusters, which is to use a public cloud-managed service from AWS, Azure, or Google Cloud Platform (GCP). This book explores Amazon Elastic Kubernetes Service (Amazon EKS), the AWS-managed version of Kubernetes, for working through practical exercises. As you get to grips with implementation details specific to AWS and EKS, you'll understand the design concepts, implementation best practices, and configuration applicable to other cloud-managed services. Throughout the book, you'll also discover standard and cloud-agnostic tools, such as Terraform and Ansible, for provisioning and configuring infrastructure. By the end of this book, you'll be able to leverage Kubernetes to operate and manage your production environments confidently. What you will learn Explore different infrastructure architectures for Kubernetes deployment Implement optimal open source and commercial storage management solutions Apply best practices for provisioning and configuring Kubernetes clusters, including infrastructure as code (IaC) and configuration as code (CAC) Configure the cluster networking plugin and core networking components to get the best out of them Secure your Kubernetes environment using the latest tools and best practices Deploy core observability stacks, such as monitoring and logging, to fine-tune your infrastructure Who this book is for This book is for cloud infrastructure experts, DevOps engineers, site reliability engineers, and engineering managers looking to design and operate Kubernetes infrastructure for production. Basic knowledge of Kubernetes, Terraform, Ansible, Linux, and AWS is needed to get the most out of this book.

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World,"

Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

Learn how to best use GitOps to automate manual tasks in the continuous delivery and deployment process

Key Features

- Explore the different GitOps schools of thought and understand which GitOps practices will work for you and your team
- Get up and running with the fundamentals of GitOps implementation
- Understand how to effectively automate the deployment and delivery process

Book Description

The world of software delivery and deployment has come a long way in the last few decades. From waterfall methods to Agile practices, every company that develops its own software has to overcome various challenges in delivery and deployment to meet customer and market demands. This book will guide you through common industry practices for software delivery and deployment. Throughout the book, you'll follow the journey of a DevOps team that matures their software release process from quarterly deployments to continuous delivery using GitOps. With the help of hands-on tutorials, projects, and self-assessment questions, you'll build your knowledge of GitOps basics, different types of GitOps practices, and how to decide which GitOps practice is the best for your company. As you progress, you'll cover everything from building declarative language files to the pitfalls in performing continuous deployment with GitOps. By the end of this book, you'll be well-versed with the fundamentals of delivery and deployment, the different schools of GitOps, and how to best leverage GitOps in your teams. What you will learn

- Explore a variety of common industry tools for GitOps
- Understand continuous deployment, continuous delivery, and why they are important
- Gain a practical understanding of using GitOps as an engineering organization
- Become well-versed with using GitOps and Kubernetes together
- Leverage Git events for automated deployments
- Implement GitOps best practices and find out how to avoid GitOps pitfalls

Who this book is for

This book is for engineering leaders and anyone working in software engineering, DevOps, SRE, build/release, or cloud automation teams. A basic understanding of the DevOps software development life cycle (SDLC) will help you to get the most out of this book.

Ansible is a simple, but powerful, server and configuration management tool. Learn to use Ansible effectively, whether you manage one server--or thousands.

A hands-on, introductory book about managing infrastructure with Terraform. Start small and then build on what you learn to scale up to complex infrastructure. Written for both developers and sysadmins. Focuses on how to build infrastructure and applications with Terraform. The book contains:

- Chapter 1: An Introduction to Terraform
- Chapter 2: Installing Terraform
- Chapter 3: Building our first application
- Chapter 4: Provisioning and Terraform
- Chapter 5: Collaborating with Terraform
- Chapter 6: Building a multi-environment architecture
- Chapter 7: Infrastructure testing

Updated for Terraform

0.12!

Become familiar with Kubernetes and explore techniques to manage your containerized workloads and services

Key Features Learn everything from creating a cluster to monitoring applications in Kubernetes Understand and develop DevOps primitives using Kubernetes Use Kubernetes to solve challenging real-life DevOps problems

Book Description Kubernetes and DevOps are the two pillars that can keep your business at the top by ensuring high performance of your IT infrastructure. Introduction to DevOps with Kubernetes will help you develop the skills you need to improve your DevOps with the power of Kubernetes. The book begins with an overview of Kubernetes primitives and DevOps concepts. You'll understand how Kubernetes can assist you with overcoming a wide range of real-world operation challenges. You will get to grips with creating and upgrading a cluster, and then learn how to deploy, update, and scale an application on Kubernetes. As you advance through the chapters, you'll be able to monitor an application by setting up a pod failure alert on Prometheus. The book will also guide you in configuring Alertmanager to send alerts to the Slack channel and trace down a problem on the application using kubectl commands. By the end of this book, you'll be able to manage the lifecycle of simple to complex applications on Kubernetes with confidence. What you will learn

Create and manage Kubernetes clusters in on-premise systems and cloud

Exercise various DevOps practices using Kubernetes

Explore configuration, secret, and storage management, and exercise these on Kubernetes

Perform different update techniques and apply them on Kubernetes

Use the built-in scaling feature in Kubernetes to scale your applications up and down

Use various troubleshooting techniques and have a monitoring system installed on Kubernetes

Who this book is for If you are a developer who wants to learn how to apply DevOps patterns using Kubernetes, then this book is for you. Familiarity with Kubernetes will be useful, but not essential.

Gain in-depth insight into DevOps relative to your field of expertise and implement effective DevOps culture and processes within your organization

Key Features Packed with step-by-step explanations and practical examples to help you get started with DevOps

Develop the skills and knowledge you need to tackle the deployment of DevOps tools

Discover technology trends such as FinOps and DevSecOps to get more value from DevOps

Book Description DevOps is a set of best practices enabling operations and development teams to work together to produce higher-quality work and, among other things, quicker releases. This book helps you to understand the fundamentals needed to get started with DevOps, and prepares you to start deploying technical tools confidently. You will start by learning the key steps for implementing successful DevOps transformations. The book will help you to understand how aspects of culture, people, and process are all connected, and that without any one of these elements DevOps is unlikely to be successful. As you make progress, you will discover how to measure and quantify the success of DevOps in your organization, along with

exploring the pros and cons of the main tooling involved in DevOps. In the concluding chapters, you will learn about the latest trends in DevOps and find out how the tooling changes when you work with these specialties. By the end of this DevOps book, you will have gained a clear understanding of the connection between culture, people, and processes within DevOps, and learned why all three are critically important. What you will learn Understand the importance of culture in DevOps Build, foster, and develop a successful DevOps culture Discover how to implement a successful DevOps framework Measure and define the success of DevOps transformation Get to grips with techniques for continuous feedback and iterate process changes Discover the tooling used in different stages of the DevOps life cycle Who this book is for This book is for IT professionals such as support engineers and systems engineers and developers looking to learn DevOps and for those going through DevOps transformation. General knowledge of IT and business processes will be helpful. You'll also find this book useful if you are in a business or service role within technology such as service delivery management. Basic familiarity with DevOps and transformational methods such as value streams and process are needed to get the most out of this book.

Many companies claim to have "gone to the cloud," yet returns from their efforts are meager or worse. Why? Because they've defined cloud as a destination, not a capability. Using cloud as a single-vendor, one-stop destination is fiction; in practice, today's organizations use a mosaic of capabilities across several vendors. Your cloud strategy needs to follow a hybrid multicloud model, one that delivers cloud's value at destinations you choose. This practical guide provides business leaders and C-level executives with guidance and insights across a wide range of cloud-related topics, such as distributed cloud, microservices, and other open source solutions for strengthening operations. You'll apply in-the-field best practices and lessons learned as you define your hybrid cloud strategy and drive your company's transformation strategy. Learn cloud fundamentals and patterns, including basic concepts and history Get a framework for cloud acumen phases to value-plot your cloud future Know which questions to ask a cloud provider before you sign Discover potential pitfalls for everything from the true cost of a cloud solution to adopting open source the right way

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