Kubernetes With Terraform Ansible And Openshift On

Core Kubernetes gives you a guided tour through all major aspects of Kubernetes, from managing iptables to setting up dynamically scaled clusters that respond to changes in load. To build and operate reliable cloud native systems, you need to understand what's going on below the surface. Core Kubernetes is packed with experience-driven insights and practical techniques, and takes you inside Kubernetes to teach you what you'll need to know to keep your system running like a well-oiled machine. Core Kubernetes gives you a guided tour through all major aspects of Kubernetes, from managing iptables to setting up dynamically scaled clusters that respond to changes in load. With this exclusive collection of undocumented internals, expert techniques, and practical guidance, you'll understand the unique security concerns of container-based applications, discover tips to minimize costly unused capacity, and get pro tips for maximizing performance. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Every enterprise application creates data, including log messages, metrics, user activity, and outgoing messages. Learning how to move these items is almost as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Pulsar, this practical guide shows you how to use this open source event streaming platform to handle real-time data feeds. Jowanza Joseph, staff software engineer at Finicity, explains how to deploy production Pulsar clusters, write reliable event streaming applications, and build scalable real-time data pipelines with this platform. Through detailed examples, you'll learn Pulsar's design principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the load manager, and the storage layer. This book helps you: Understand how event streaming fits in the big data ecosystem Explore Pulsar producers, consumers, and readers for writing and reading events Build scalable data pipelines by connecting Pulsar with external systems Simplify event-streaming application building with Pulsar Functions Manage Pulsar to perform monitoring, tuning, and maintenance tasks Use Pulsar's operational measurements to secure a production cluster Process event streams using Flink and query event streams using Presto

Learn how to automate and manage your IT infrastructure and applications using Ansible Key Features Develop Ansible automation use cases by automating day-to-day IT and application operations Use Ansible to automate private and public cloud, application containers, and container platforms Improve your DevOps workflow with Ansible Book Description Get ready to leverage the power of Ansible's wide applicability to automate and manage IT infrastructure with Ansible for Real-Life Automation. This book will guide you in setting up and managing the free and open source automation tool and remote-managed nodes in the production and dev/staging environments. Starting with its installation and deployment, you'll learn automation using simple use cases in your workplace. You'll go beyond just Linux machines to use Ansible to automate Microsoft Windows machines, network devices, and private and public cloud platforms such as VMWare, AWS, and GCP. As you progress through the chapters, you'll integrate Ansible into your DevOps workflow and deal with application container management and container platforms such as Kubernetes. This Ansible book also contains a detailed introduction to Red Hat Ansible Automation Platform to help you get up to speed with Red Hat AAP and integration with CI/CD and ITSM. What's more, you'll implement efficient automation solutions while learning best practices and methods to secure sensitive data using Ansible Vault and alternatives to automate non-supported platforms and operations using raw commands, command modules, and REST API calls. By the end of this book, you'll be proficient in identifying and developing real-life automation use cases using Ansible. What you will Explore real-life IT automation use cases and employ Ansible for automation Develop playbooks with best practices for production environments Approach different automation use cases with the most suitable methods Use Ansible for infrastructure management and automate VMWare, AWS, and GCP Integrate Ansible with Terraform, Jenkins, OpenShift, and Kubernetes Manage container platforms such as Kubernetes and OpenShift with Ansible Get to know the Red Hat Ansible Automation Platform and its capabilities Who this book is for This book is for DevOps and systems engineers looking to adopt Ansible as their automation tool. To get started with this book, basic knowledge of Linux is necessary, along with an understanding of how tasks are done the manual way before setting out to automate them.

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 farmUse Terraform to deploy immutable infrastructure environments using IaC (Infrastructure as Code)Use InSpec 2.0 to stay in compliance by testing your cloud infrastructureUse 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 open source technologies to work with Microsoft products. Experience installing SharePoint, and a basic understanding of either Azure or AWS, is helpful.

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

Ansible for Aws

Implement DevOps culture and repository management solutions

Continuous Delivery with Docker and Jenkins

Implementing Modern DevOps

Server and Configuration Management for Humans

DevOps Adoption Strategies: Principles, Processes, Tools, and Trends

Develop a control plane-based platform for unified infrastructure, services, and application automation

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

What will you learn from this book? Many people who use Git rely on "recipes"--copying and pasting commands they find on the internet without really understanding how Git actually works. But what do you do if you find yourself in a tight spot? You can't simply wing it. With this unique hands-on guide, you'll learn the ways of Git and have fun while doing it. Raju Gandhi peels back the layers to reveal the simple yet powerful engine that powers Git, so you'll understand not just the how but the why. You'll master branches, merges, commit messages, search, utilities, and more; learn best practices for collaborative work; and unlock the full potential of Git. What's so special about this book? If you've read a Head First book, you know what to expect--a visually rich format designed for the way your brain works. If you haven't, you're in for a treat. With this book, you'll learn Git through a multisensory experience that engages your mind rather than a text-heavy approach that puts you to sleep.

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

This book constitutes the proceedings of the 19th International Conference on Service-Oriented Computing, ICSOC 2020, which is held virtually in November 2021. The 29 full, 28 short, and 3 vision papers included in this volume were carefully reviewed and selected from 189 submissions. They were organized in topical sections named: Blockchains and smart contracts, Architectures, microservices and APIs, Applications, Internet-of-Things, crowdsourced, social, and conversational services, Service composition and recommendation, Cloud computing, and Edge computing.

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.

Building Real-Time Apps with Spring, Cassandra, Redis, WebSocket and RabbitMQ

Extend your containerization strategy by orchestrating and managing large-scale container deployments

Hands-On Kubernetes on Windows

Build scalable cloud-native applications using DevOps patterns created with Kubernetes

Simplify the development and orchestration of multi-container applications

Easy Way to Understand How to Use Ansible in Amazon Web Services

With Packer, Terraform, Ansible, and Vagrant

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

Create a complete continuous delivery process using modern DevOps tools such as Docker, Jenkins, Kubernetes, Ansible, Terraform, and many more Key Features • Build reliable and secure applications using Docker containers • Create a highly available environment to scale Jenkins and your services using Kubernetes • Automate your release process end-to-end Book Description This updated third edition of Continuous Delivery with Docker and Jenkins will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. You'll start by setting up a Docker server and configuring Jenkins on it. Next, you'll discover steps for building applications and microservices on Dockerfiles and integrating them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, configuration management, and Infrastructure as Code. Moving ahead, you'll learn how to ensure quick application deployment with Docker containers, along with scaling Jenkins using Kubernetes. Later, you'll explore how to deploy applications using Docker images and test them with Jenkins. Toward the concluding chapters, the book will focus on missing parts of the CD pipeline, such as the environments and infrastructure, application versioning, and non-functional testing. By the end of this continuous integration and continuous delivery book, you'll have gained the skills you need to enhance the DevOps workflow by integrating the functionalities of Docker and Jenkins. What you will learn • Grasp Docker fundamentals and dockerize applications for the CD process • Understand how to use Jenkins on-premises and in the cloud • Scale a pool of Docker servers using Kubernetes • Write acceptance tests using Cucumber • Run tests in the Docker ecosystem using Jenkins • Provision your servers and infrastructure using Ansible and Terraform • Publish a built Docker image to a Docker registry • Deploy cycles of Jenkins pipelines using community best practices Who this book is for The book is for DevOps engineers, system administrators, Docker professionals, or anyone who wants to explore the power of working with Docker and Jenkins together. No prior knowledge of DevOps is required to get started.

Start defining your infrastructure using Docker Compose and leverage it for everyday development or deployment Key Features Distribute your code in an easier way for developers to get started Set up complex infrastructure for development and CI/CD purposes Deploy simple multi-container applications using Docker Compose Book Description Software development is becoming increasingly complex due to the various software components used. Applications need to be packaged with software components to facilitate their operations, making it complicated to run them. With Docker Compose, a single command can set up your application and the needed dependencies. This book starts with an overview of Docker Compose and its usage and then shows how to create an application. You will also get to grips with the fundamentals of Docker volumes and network, along with Compose commands, their purpose, and use cases. Next, you will set up databases for daily usage using Compose and, leveraging Docker networking, you will establish communication between microservices. You will also run entire stacks locally on Compose, simulate production environments, and enhance CI/CD jobs using Docker Compose. Later chapters will show you how to benefit from Docker Compose for production deployments, provision infrastructure on public clouds such as AWS and Azure, and wrap up with Compose deployments on said infrastructure. By the end of this book, you will have learned how to effectively utilize Docker Compose for day-to-day development. What you will Create multi-container applications using Docker Compose Use Docker Compose for daily development Connect microservices leveraging Docker network fundamentals Add monitoring to services leveraging Prometheus Deploy to production using Docker Compose Translate Compose files to Kubernetes deployments Who this book is for This book is for software engineers, developer advocates, and DevOps engineers looking to set up multi-container Docker applications using Compose without the need to set up a Docker orchestration engine. It is also for team leads looking to increase the productivity of an organization's software teams by streamlining the provisioning of complex development environments locally using Docker Compose. Readers are expected to understand containerization and must possess fundamental Docker knowledge to get started with this book.

Gain in-depth insight into DevOps relative to your field of expertise and implement effective DevOps culture and processes within your organization Key FeaturesPacked with step-by-step explanations and practical examples to help you get started with DevOpsDevelop the skills and knowledge you need to tackle the deployment of DevOps toolsDiscover technology trends such as FinOps and DevSecOps to get more value from DevOpsBook 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 learnUnderstand the importance of culture in DevOpsBuild, foster, and develop a successful DevOps cultureDiscover how to implement a successful DevOps frameworkMeasure and define the success of DevOps transformationGet to grips with techniques for continuous feedback and iterate process changesDiscover the tooling used in different stages of the DevOps life cycleWho 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.

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

Ansible for Real-Life Automation

Core Kubernetes

Getting Started with Terraform

OCI Foundations 2021 Associate Certification

Mastering Apache Pulsar
Infrastructure as a Service, Autonomous Database, Managed Kubernetes, and Serverless
End-to-End Automation with Kubernetes and Crossplane

Learning DevOpsThe complete guide to accelerate collaboration with Jenkins, Kubernetes, Terraform and Azure DevOpsPackt Publishing Ltd
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 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.
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.
Schedule and run application containers using Kubernetes Key FeaturesGet to grips with a wide range of tools to monitor and secure your deploymentsManage your container clusters and networks using KubernetesGet well-versed with the fundamentals of KubernetesBook 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 learnDownload, install, and configure the Kubernetes code baseSet up and access monitoring and logging for Kubernetes clustersSet up external access to applications running in the clusterLearn how to manage and scale kubernetes with hosted platforms on AWS, Azure, and GCPRun multiple clusters and manage them from a single control planeDiscover top tools for deploying and managing a Kubernetes clusterLearn how to get production ready and harden Kubernetes operations, networking, and storageWho this book is for Getting Started with Kubernetes is for developers, system administrators, and DevOps engineers who want to automate the deployment process and scale their applications. No prior knowledge of Kubernetes is required.
Enabling IT organizations to deliver faster and smarter
Getting Started with Kubernetes
Terraform in Action
Driving DevOps with Value Stream Management
Continuous delivery and deployment codified
Mastering GitLab 12
A Comprehensive Guide to Accelerating DevOps Culture Adoption with Terraform, Azure DevOps, Kubernetes, and Jenkins
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). What You Will LearnBuild software solutions on Oracle CloudAutomate cloud infrastructure with CLI and TerraformFollow best practices for architecting on Oracle CloudEmploy Oracle Autonomous Database to obtain valuable data insightsRun containerized applications on Oracle's Container Engine for KubernetesUnderstand 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.
Implement modern DevOps techniques to increase business productivity, agility, reliability, security, and scalability Key Features: Learn how to use business resources effectively for improved productivity and collaboration Use infrastructure as code practices to build large-scale cloud infrastructure Leverage the ultimate open source DevOps tools to achieve continuous integration and continuous delivery (CI/CD) Book Description: In the implementation of DevOps processes, the choice of tools is crucial to the sustainability of projects and collaboration between developers and ops. This book presents the different patterns and tools for provisioning and configuring an infrastructure in the cloud, covering mostly open source tools with a large community contribution, such as Terraform, Ansible, and Packer, which are assets for automation. This DevOps book will show you how to containerize your applications with Docker and Kubernetes and walk you through the construction of DevOps pipelines in Jenkins as well as Azure pipelines before covering the tools and importance of testing. You'll find a complete chapter on DevOps practices and tooling for open source projects before getting to grips with security integration in DevOps using Inspec, Hashicorp Vault, and Azure Secure DevOps kit. You'll also learn about the reduction of downtime with blue-green deployment and feature flags techniques before finally covering common DevOps best practices for all your projects. 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: Understand the basics of infrastructure as code patterns and practices Get an overview of Git command and Git flow Install and write Packer, Terraform, and Ansible code for provisioning and configuring cloud infrastructure based on Azure examples Use Vagrant to create a local development environment Containerize applications with Docker and Kubernetes Apply DevSecOps for testing compliance and securing DevOps infrastructure Build DevOps CI/CD pipelines with Jenkins, Azure Pipelines, and GitLab CI Explore blue-green deployment and DevOps practices for open sources projects Who this book is for: If you are an application developer or a system administrator interested in understanding continuous integration, continuous delivery, and containerization with DevOps tools and techniques, this book is for you. Knowledge of DevOps fundamentals and Git principles is required.
Learn about Azure DevOps services to successfully apply DevOps strategies Ê KEY FEATURESÊÊ _ Share knowledge on DevOps implementation and use of Azure DevOps services. _ Learn about Azure artifacts, dependency management, and CI/CD pipeline management. _ Manage third-party integration, Agile planning, and application lifecycle management. DESCRIPTIONÊ This book offers readers the best DevOps practices and explains how to implement various services of Azure DevOps to ensure efficiency, effectiveness, and better management of the entire software development lifecycle. This book explains each component of Azure DevOps services, their pricing models, and a quick tutorial on how to proceed with its usage. Backed with numerous examples, this book helps you implement Agile planning using Azure Boards, maintain code versioning using Azure Repos, and manage CI/CD using Azure Pipelines. You will learn how to administer the DevOps process such as managing packages using the most popular Azure Artifacts and how to run Test Plans using Azure Test Plans. You will also learn how to integrate with third-party systems. Finally, you will learn about marketplaces of extensions and how to develop your own extensions. WHAT YOU WILL LEARN _ Learn DevOps culture, practices, and habits. _ Learn to manage version control of the source code within Azure DevOps Services. _ Learn how to administer Azure DevOps services for an enterprise application lifecycle management system. _ Learn Azure DevOps services and features. WHO THIS BOOK IS FORÊÊ This book is for anyone who wishes to use or who are using Azure DevOps services, including Infrastructure engineers, Software engineers, Architects, Testers, Managers, or Product Owners. Ê TABLE OF CONTENTS 1. Introduction to Azure DevOps 2. Azure DevOps Organization 3. Azure DevOps Project 4. Azure Board 5. Azure Repos 6. Azure Pipelines 7. Azure Artifacts 8. Azure Test Plans 9. Extension Marketplace
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 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 FeaturesDelve into GitLab's architecture, and install and configure it to fit your environmentLearn about the underlying principles of Agile software development and DevOpsExplore Gitlab's features to manage enterprise cloud-native applications and servicesBook 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 learnInstall GitLab on premises and in the cloud using a variety of configurationsConduct data migration from the SVN, TFS, CVS, and GitHub platforms to GitLabUse GitLab runners to develop different types of configurations in software developmentPlan and perform CI/CD using GitLab featuresMonitor and secure your software architecture using Prometheus and GrafanaImplement DevOps culture by introducing workflow management tools in GitLabWho 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.
Implement and secure DevOps in the public cloud with cutting-edge tools, tips, tricks, and techniques
19th International Conference, ICSOC 2021, Virtual Event, November 22–25, 2021, Proceedings
Improve IT value stream delivery with a proven VSM methodology to compete in the digital economy
Bootstrapping Microservices with Docker, Kubernetes, and Terraform
The complete guide to accelerate collaboration with Jenkins, Kubernetes, Terraform and Azure DevOps
Kubernetes in Production Best Practices
Build and Deploy DevOps Pipelines Using Linux Commands, Terraform, Docker, Vagrant, and Kubernetes (English Edition)

Build and deploy scalable cloud applications using Windows containers and Kubernetes Key FeaturesRun, deploy, and orchestrate containers on the Windows platform with this Kubernetes bookUse Microsoft SQL Server 2019 as a data store to deploy Kubernetes applications written in .NET FrameworkSet up a Kubernetes development environment and deploy clusters with Windows Server 2019 nodesBook 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 learnUnderstand containerization as a packaging format for applicationsCreate a development environment for Kubernetes on WindowsGrasp the key architectural concepts in KubernetesDiscover the current limitations of Kubernetes on the Windows platformProvision and interact with a Kubernetes cluster from a Windows machineOrchestrate hybrid Windows Kubernetes clusters in on-premises and cloud environmentsWho 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.
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 FeaturesAddress DevOps implementation issues, including culture, toolchain costs, improving work and information flows, and product team alignmentImplement proven VSM methodology to improve IT value stream flowsLeverage VSM platforms to view, analyze, and improve end-to-end value deliveryBook 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 learnIntegrate Agile, systems thinking, and Lean development to deliver customer-centric valueFind out how to choose the most appropriate value stream for your initial and follow-on VSM projectsEstablish better flows with integrated, automated, and orchestrated DevOps and CI/CD pipelinesApply a proven eight-step VSM methodology to drive lean IT value stream improvementsDiscover the key strengths of modern VSM tools and their customer use case scenariosUnderstand how VSM drives DevOps pipeline improvements and value delivery transformations across enterprisesWho 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.
The cloud is becoming the de facto home for companies ranging from enterprises to startups. Moving to the cloud means moving your applications from monolith to microservices. But once you do, running and maintaining these services brings its own level of complexity. The answer? Modularity, deployability, observability, and self-healing capacity through cloud native development. With this practical book, Nishant Singh and Michael Kehoe show you how to build a true cloud native infrastructure using Microsoft Azure or another cloud computing solution by following guidelines from the Cloud Native Computing Foundation (CNCF). DevOps and site reliability engineers will learn how adapting applications to cloud native early in the design phase helps you fully utilize the elasticity and distributed nature of the cloud. This book helps you explore: Why go cloud native? How to use infrastructure as code What it takes to containerize an application Why and how Kubernetes is the "grand orchestrator" How to create a Kubernetes cluster on Azure How observability complements monitoring How to use service discovery and a service mesh to find new territories How networking and policy management serve as gatekeepers How distributed databases and storage work
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

Simplify your DevOps roles with DevOps tools and techniques Key FeaturesLearn to utilize business resources effectively to increase productivity and collaborationLeverage 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 downtimeBook 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 learnBecome well versed with DevOps culture and its practicesUse Terraform and Packer for cloud infrastructure provisioningImplement Ansible for infrastructure configurationUse basic Git commands and understand the Git flow processBuild 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.

Ansible for DevOps

A project-based guide

Pipeline as Code

Continuous Delivery with Jenkins, Kubernetes, and Terraform

Cloud Without Compromise

Embracing DevOps through effective culture, people, and processes

Service-Oriented Computing

Become familiar with Kubernetes and explore techniques to manage your containerized workloads and services Key FeaturesLearn everything from creating a cluster to monitoring applications in KubernetesUnderstand and develop DevOps primitives using KubernetesUse Kubernetes to solve challenging real-life DevOps problemsBook 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 the book, you'll be able to manage the lifecycle of simple to complex applications on Kubernetes with confidence. What you will learnCreate and manage Kubernetes clusters in on-premise systems and cloudExercise various DevOps practices using KubernetesExplore configuration, secret, and storage management, and exercise these on KubernetesPerform different update techniques and apply them on KubernetesUse the built-in scaling feature in Kubernetes to scale your applications up and downUse various troubleshooting techniques and have a monitoring system installed on KubernetesWho 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.

A complete journey to automating infrastructure provisioning and cloud-native application deployment Key FeaturesLeverage Crossplane and Kubernetes for a unified automation experience of infrastructure and appsBuild a modern self-service infrastructure platform abstracting recipes and in-house policiesClear guidance on trade-offs to manage Kubernetes configuration and ecosystem toolsBook Description In the last few years, countless organizations have taken advantage of the disruptive app deployment operating model provided by Kubernetes. With the launch of Crossplane, the same benefits are coming to the world of infrastructure provisioning and management. The limitations of Infrastructure as Code with respect to drift management, role-based access control, team collaboration, and weak contract are making people move toward control-plane-based infrastructure automation, but setting it up requires a lot of know-how and effort. This book will take you on a detailed journey through building a control-plane-based infrastructure automation platform with Kubernetes and Crossplane. Although the cloud-native landscape by CNCF has an overwhelming list of tools that can make it difficult to analyze and choose, this book will guide you in selecting the right tools for Kubernetes configuration management that best suit the use case. You'll learn about configuration management with hands-on modules built on popular configuration management tools such as Helm, Kustomize, CNAB, Argo, Keptn, and Open Policy Agent. The examples in the book will be patterns that you can directly use in your work. By the end of this DevOps book, you'll be able to build a modern infrastructure automation platform to unify application and infrastructure automation. What you will learnUnderstand the context of Kubernetes-based infrastructure automationGet to grips with Crossplane concepts with the help of practical examplesExtend Crossplane to build a modern infrastructure automation platformUse right configuration management tools in the Kubernetes environmentExplore patterns to unify application and infrastructure automationDiscover top engineering practices for infrastructure platform as a productWho this book is for This book is for cloud architects, platform engineers, infrastructure or application operators, and Kubernetes enthusiasts who want to simplify infrastructure and application automation. A basic understanding of Kubernetes and its building blocks like Pod, Deployment, Service, and Namespace is needed before you can get started with this book.

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) 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.

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 FeaturesGet up and running with containerization-as-a-service and infrastructure automation in the public cloudLearn container security techniques and secret management with Cloud KMS, Anchore Grype, and Grafeas KritisLeverage the combination of DevOps, GitOps, and automation to continuously ship a package of softwareBook 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 learnBecome well-versed with AWS ECS, Google Cloud Run, and KnativeDiscover how to build and manage secure Docker images efficientlyUnderstand continuous integration with Jenkins on Kubernetes and GitHub actionsGet to grips with using Spinnaker for continuous deployment/deliveryManage immutable infrastructure on the cloud with Packer, Terraform, and AnsibleExplore the world of GitOps with GitHub actions, Terraform, and Flux CDWho 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.

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

Terraform Cookbook

Cloud Native Infrastructure with Azure

Create secure applications by building complete CI/CD pipelines

Efficiently define, launch, and manage Infrastructure as Code across various cloud platforms

Build and manage highly available production-ready Kubernetes clusters

DevOps for SharePoint

Demystifying Azure DevOps Services

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).

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 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.

The ability to administer and monitor a Kubernetes cluster is in high demand today. To meet this need, the Cloud Native Computing Foundation developed a certification exam to establish an administrator's credibility and value in the job market to confidently work in a Kubernetes environment. The Certified Kubernetes Administrator (CKA) certification exam is different from the typical multiple-choice format of other professional certifications. Instead, the CKA is a performance-based exam that requires deep knowledge of the tasks under immense time pressure. This study guide walks you through all the topics covered to fully prepare you for the exam. Author Benjamin Muschko also shares his personal experience with preparing for all aspects of the exam. Learn when and how to apply Kubernetes concepts to administer and troubleshoot a production-grade cluster Understand the objectives, abilities, and tips and tricks needed to pass the CKA exam Explore the ins and outs of the kubectl command-line tool Demonstrate competency to perform the responsibilities of a Kubernetes administrator Solve real-world Kubernetes problems in a hands-on command-line environment Effectively navigate and solve questions during the CKA exam

OCI Foundations 2021 Associate Certification [1Z0-1085-21 Practice Test] is a comprehensive mock exam with emphasis on using the OCI Foundations 2021 Associate Certification [1Z0-1085-21 Practice Test] exam syllabus as guide on the question topic. The student should have basic knowledge on OCI Foundations 2021 or previous releases because this is not a tutorial. All questions are based on individual topics and all topics have been covered. Every topic in the syllabus have a corresponding question with sufficient representation. Cloud Concepts • Basic cloud concepts and its principles of economics Getting Started with OCI • Key features and components of OCI • Core Solutions on OCI Core OCI Services • Core OCI services • Cloud Native services Security and compliance • OCI Security model • OCI compliance structure OCI pricing, support and operations • OCI Pricing model • OCI operational and support model Ideal situation is a combination of Oracle training and hands-on experience (attained via labs and/or experience) provides the best preparation for passing the exam. In absence of either of the two, I recommend doing hands-on to test the validity of the answers and improve memory recollection. All questions are self-explanatory and it will be easier to recall if the answers are validated using Oracle Cloud Free Tier. OCI Foundations 2021 Associate Certification [1Z0-1085-21 Practice Test] validates your understanding of the Oracle Cloud Infrastructure (OCI) technology and sets the stage for your future progression.

Design, build, and operate scalable and reliable Kubernetes infrastructure for production Key FeaturesImplement industry best practices to build and manage production-grade Kubernetes infrastructureLearn how to architect scalable Kubernetes clusters, harden container security, and fine-tune resource managementUnderstand, manage, and operate complex business workloads confidentlyBook 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 learnExplore different infrastructure architectures for Kubernetes deploymentImplement optimal open source and commercial storage management solutionsApply 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 themSecure your Kubernetes environment using the latest tools and best practicesDeploy core observability stacks, such as monitoring and logging, to fine-tune your infrastructureWho 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.

Modern DevOps Practices

A Guide to Architect, Deploy, and Administer DevOps Using Microsoft Azure DevOps Services (English Edition)

Terraform: Up & Running

Effectively orchestrate Windows container workloads using Kubernetes

Writing Infrastructure as Code

Certified Kubernetes Administrator (CKA) Study Guide

Building, Deploying, and Scaling Modern Applications in the Cloud

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

Head First Git

DevOps Technical Assessment

Hands-on DevOps with Linux

Cloud Native DevOps with Kubernetes

A complete Ansible handbook filled with practical IT automation use cases

A Developer's Essential Guide to Docker Compose