Hands On Microservices With Kubernetes Build Depl

Hands-On Cloud-Native Applications with Java and Quarkus
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Playing with Java Microservices on Kubernetes and OpenShift
Bootstrapping Microservices with Docker, Kubernetes, and Terraform
Kubernetes Microservices with Docker
The DevOps 2.3 Toolkit
Hands-On Cloud-Native Microservices with Jakarta EE
Hands-On Microservices with C# 8 and . NET Core 3
Designing Distributed Systems
Bootstrapping Microservices, Second Edition

Cloud Native Microservices with Spring and Kubernetes
Hands-On Kubernetes, Service Mesh and Zero-Trust
The Kubernetes Book
Hands-On Microservices with Spring Boot and Spring Cloud
Kubernetes Best Practices

ENGLISH GIADA

Hands-On Cloud-Native Applications with Java and Quarkus Packt Publishing Ltd
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 machineCreate 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.

Microservices with Spring Boot and Spring Cloud

Packt Publishing Ltd

Build robust and reliable Java applications that works on modern infrastructure, such as containers and cloud, using the new features in Quarkus 1.0 Key FeaturesBuild apps with faster boot time and low RSS memory using the latest Quarkus 1.0 featuresSeamlessly integrate imperative and reactive programming models to build modern Java applicationsDiscover effective solutions for running Java on serverless apps, microservices, containers, FaaS, and the cloudBook Description Quarkus is a new Kubernetes-native framework that allows Java developers to combine the power of containers, microservices, and cloud-native to build reliable applications. The book is a development guide that will teach you how to build Java-native applications using Quarkus and GraalVM. We start by learning about the basic concepts of a cloud-native application and its advantages over standard enterprise applications. Then we will quickly move on to application development, by installing the tooling required to build our first application on Quarkus. Next, we'll learn how to create a container-native image of our application and execute it in a Platform-as-a-Service

environment such as Minishift. Later, we will build a complete real-world application that will use REST and the Contexts and Dependency injection stack with a web frontend. We will also learn how to add database persistence to our application using PostgreSQL. We will learn how to work with various APIs available to Quarkus such as Camel, Eclipse MicroProfile, and Spring DI. Towards the end, we will learn advanced development techniques such as securing applications, application configuration, and working with non-blocking programming models using Vert.x. By the end of this book, you will be proficient with all the components of Quarkus and develop-blazing fast applications leveraging modern technology infrastructure. What you will learnBuild a native application using Quarkus and GraalVMSecure your applications using Elytron and the MicroProfile JWT extensionManage data persistence with Quarkus using PostgreSQLUse a non-blocking programming model with QuarkusLearn how to get Camel and Infinispan working in native modeDeploy an application in a Kubernetes-native environment using MinishiftDiscover Reactive Programming with Vert.xWho this book is for The book is for Java developers and software architects who are interested in learning a promising microservice architecture for building reliable and robust applications. Knowledge

of Java, Spring Framework, and REST APIs is assumed.
Pro Java Microservices with Quarkus and Kubernetes Packt Publishing Ltd
In this practical guide, four Kubernetes professionals with deep experience in distributed systems, enterprise application development, and open source will guide you through the process of building applications with this container orchestration system. Based on the experiences of companies that are running Kubernetes in production successfully, many of the methods are also backed by concrete code examples. This book is ideal for those already familiar with basic Kubernetes concepts who want to learn common best practices. You'll learn exactly what you need to know to build your best app with Kubernetes the first time. Set up and develop applications in Kubernetes Learn patterns for monitoring, securing your systems, and managing upgrades, rollouts, and rollbacks Understand Kubernetes networking policies and where service mesh fits in Integrate services and legacy applications and develop higher-level platforms on top of Kubernetes Run machine learning workloads in Kubernetes

Mastering Kubernetes
BPB Publications
Legend has it that Google deploys over two billion application containers a week. How's that possible? Google revealed the secret through a project called Kubernetes,

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

Python Microservices Development "O'Reilly Media, Inc."

Learn essential microservices concepts while developing scalable

applications with Express, Docker, Kubernetes, and Docker Swarm using Node 10 Key Features Write clean and maintainable code with JavaScript for better microservices development Dive into the Node.js ecosystem and build scalable microservices with Seneca, Hydra, and Express.js Develop smart, efficient, and fast enterprise-grade microservices implementation Book Description Microservices enable us to develop software in small pieces that work together but can be developed separately; this is one reason why enterprises have started embracing them. For the past few years, Node.js has emerged as a strong candidate for developing microservices because of its ability to increase your productivity and the performance of your applications. Hands-On Microservices with Node.js is an end-to-end guide on how to dismantle your monolithic application and embrace the microservice architecture - right from architecting your services and modeling them to integrating them into your application. We'll develop and deploy these microservices using Docker. Scalability is an important factor to consider when adding more functionality to your application, and so we delve into various solutions, such as Docker Swarm and Kubernetes, to scale our microservices. Testing and deploying these services while scaling is a real challenge; we'll overcome this challenge by setting up

deployment pipelines that break up application build processes in several stages. Later on, we'll take a look at serverless architecture for our microservices and its benefits against traditional architecture. Finally, we share best practices and several design patterns for creating efficient microservices. What you will learn Learn microservice concepts Explore different service architectures, such as Hydra and Seneca Understand how to use containers and the process of testing Use Docker and Swarm for continuous deployment and scaling Learn how to geographically spread your microservices Deploy a cloud-native microservice to an online provider Keep your microservice independent of online providers Who this book is for This book is for JavaScript developers seeking to utilize their skills to build microservices and move away from the monolithic architecture. Prior knowledge of Node.js is assumed.

Hands-On Microservices with Node.Js BPB Publications

Understand how to use service mesh architecture to efficiently manage and safeguard microservices-based applications with the help of examples Key FeaturesManage your cloud-native applications easily using service mesh architectureLearn about Istio, Linkerd, and Consul – the three primary open source service mesh providersExplore tips, techniques, and best practices for building

secure, high-performance microservicesBook Description Although microservices-based applications support DevOps and continuous delivery, they can also add to the complexity of testing and observability. The implementation of a service mesh architecture, however, allows you to secure, manage, and scale your microservices more efficiently. With the help of practical examples, this book demonstrates how to install, configure, and deploy an efficient service mesh for microservices in a Kubernetes environment. You'll get started with a hands-on introduction to the concepts of cloud-native application management and service mesh architecture, before learning how to build your own Kubernetes environment. While exploring later chapters, you'll get to grips with the three major service mesh providers: Istio, Linkerd, and Consul. You'll be able to identify their specific functionalities, from traffic management, security, and certificate authority through to sidecar injections and observability. By the end of this book, you will have developed the skills you need to effectively manage modern microservices-based applications. What you will learnCompare the functionalities of Istio, Linkerd, and ConsulBecome well-versed with service mesh control and data plane conceptsUnderstand service mesh architecture with the help of hands-on examplesWork through

hands-on exercises in traffic management, security, policy, and observabilitySet up secure communication for microservices using a service meshExplore service mesh features such as traffic management, service discovery, and resiliencyWho this book is for This book is for solution architects and network administrators, as well as DevOps and site reliability engineers who are new to the cloud-native framework. You will also find this book useful if you're looking to build a career in DevOps, particularly in operations. Working knowledge of Kubernetes and building microservices that are cloud-native is necessary to get the most out of this book.

Kubernetes Patterns

"O'Reilly Media, Inc."

Playing with Java Microservices on Kubernetes and OpenShift will teach you how to build and design microservices using Java and the Spring platform. This book covers topics related to creating Java microservices and deploy them to Kubernetes and OpenShift. Traditionally, Java developers have been used to developing large, complex monolithic applications. The experience of developing and deploying monoliths has been always slow and painful. This book will help Java developers to quickly get started with the features and the concerns of the microservices architecture. It will introduce Docker, Kubernetes and OpenShift to help them deploying their microservices. The

book is written for Java developers who wants to build microservices using the Spring Boot/Cloud stack and who wants to deploy them to Kubernetes and OpenShift. You will be guided on how to install the appropriate tools to work properly. For those who are new to Enterprise Development using Spring Boot, you will be introduced to its core principles and main features thru a deep step-by-step tutorial on many components. For experts, this book offers some recipes that illustrate how to split monoliths and implement microservices and deploy them as containers to Kubernetes and OpenShift. The following are some of the key challenges that we will address in this book: - Introducing Spring Boot/Cloud for beginners - Splitting a monolith using the Domain Driven Design approach - Implementing the cloud & microservices patterns - Rethinking the deployment process - Introducing containerization, Docker, Kubernetes and OpenShift By the end of reading this book, you will have practical hands-on experience of building microservices using Spring Boot/Cloud and you will master deploying them as containers to Kubernetes and OpenShift.

Kubernetes: Up and Running Simon and Schuster

”A complete guide to the challenges and solutions in securing microservices architectures.” —Massimo Siani, FinDynamic Key Features Secure microservices

infrastructure and code Monitoring, access control, and microservice-to-microservice communications Deploy securely using Kubernetes, Docker, and the Istio service mesh. Hands-on examples and exercises using Java and Spring Boot Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Microservices Security in Action teaches you how to address microservices-specific security challenges throughout the system. This practical guide includes plentiful hands-on exercises using industry-leading open-source tools and examples using Java and Spring Boot. About The Book Design and implement security into your microservices from the start. Microservices Security in Action teaches you to assess and address security challenges at every level of a Microservices application, from APIs to infrastructure. You'll find effective solutions to common security problems, including throttling and monitoring, access control at the API gateway, and microservice-to-microservice communication. Detailed Java code samples, exercises, and real-world business use cases ensure you can put what you've learned into action immediately. What You Will Learn Microservice security concepts Edge services with an API gateway Deployments with Docker, Kubernetes, and Istio Security testing at the code level

Communications with HTTP, gRPC, and Kafka This Book Is Written For For experienced microservices developers with intermediate Java skills. About The Author Prabath Siriwardena is the vice president of security architecture at WSO2. Nuwan Dias is the director of API architecture at WSO2. They have designed secure systems for many Fortune 500 companies. Table of Contents PART 1 OVERVIEW 1 Microservices security landscape 2 First steps in securing microservices PART 2 EDGE SECURITY 3 Securing north/south traffic with an API gateway 4 Accessing a secured microservice via a single-page application 5 Engaging throttling, monitoring, and access control PART 3 SERVICE-TO-SERVICE COMMUNICATIONS 6 Securing east/west traffic with certificates 7 Securing east/west traffic with JWT 8 Securing east/west traffic over gRPC 9 Securing reactive microservices PART 4 SECURE DEPLOYMENT 10 Conquering container security with Docker 11 Securing microservices on Kubernetes 12 Securing microservices with Istio service mesh PART 5 SECURE DEVELOPMENT 13 Secure coding practices and automation

Docker and Kubernetes for Java Developers Packt Publishing Ltd

Learn from an expert on how to use Kubernetes, the most adopted container orchestration platform. About This Book Get a detailed, hands-on exploration of everything from the basic to the most

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

build a full DevOps Toolkit. This book in the series looks at Kubernetes, the tool designed to, among other roles, make it easier in the creation and deployment of highly available and fault-tolerant applications at scale, with zero downtime. Within this book, Viktor will cover a wide range of emerging topics, including what exactly Kubernetes is, how to use both first and third-party add-ons for projects, and how to get the skills to be able to call yourself a “Kubernetes ninja.” Work with Viktor and dive into the creation and exploration of Kubernetes with a series of hands-on guides. Style and approach Readers join Viktor Farcic as he continues his exploration of DevOps and begins to explore the opportunities presented by Kubernetes. *Hands-on Kubernetes on Azure* Packt Publishing Ltd Build and deploy scalable cloud native microservices using the Spring framework and Kubernetes. KEY FEATURES ● Complete coverage on how to design, build, run, and deploy modern cloud native microservices. ● Includes numerous sample code exercises on microservices, Spring and Kubernetes. ● Develop a stronghold on Kubernetes, Spring, and the microservices architecture. ● Complete guide of application containerization on Kubernetes containers. ● Coverage on managing modern applications and infrastructure using observability tools. DESCRIPTION The main

objective of this book is to give an overview of cloud native microservices, their architecture, design patterns, best practices, real use cases and practical coverage of modern applications. This book covers a strong understanding of the fundamentals of microservices, API first approach, Testing, observability, API Gateway, Service Mesh and Kubernetes alternatives of Spring Cloud. This book covers the implementation of various design patterns of developing cloud native microservices using Spring framework docker and Kubernetes libraries. It covers containerization concepts and hands-on lab exercises like how to build, run and manage microservices applications using Kubernetes. After reading this book, the readers will have a holistic understanding of building, running, and managing cloud native microservices applications on Kubernetes containers. WHAT YOU WILL LEARN ● Learn fundamentals of microservice and design patterns. ● Learn microservices development using Spring Boot and Kubernetes. ● Learn to develop reactive, event-driven, and batch microservices. ● Perform end-to-end microservices testing using Cucumber. ● Implement API gateway,authentication & authorization,load balancing, caching, rate limiting. ● Learn observability and monitoring techniques of microservices. WHO THIS BOOK IS FOR This book is for the Spring Developers, Microservice Developers,

Cloud Engineers, DevOps Consultants, Technical Architect and Solution Architects, who have some familiarity with application development, Docker and Kubernetes containers. TABLE OF CONTENTS 1. Overview of Cloud Native microservices 2. Microservice design patterns 3. API first approach 4. Build microservices using the Spring Framework 5. Batch microservices 6. Build reactive and event-driven microservices 7. The API gateway, security, and distributed caching with Redis 8. Microservices testing and API mocking 9. Microservices observability 10. Containers and Kubernetes overview and architecture 11. Run microservices on Kubernetes 12. Service Mesh and Kubernetes alternatives of Spring Cloud

DevOps with Kubernetes Simon and Schuster

A step-by-step guide to creating and deploying production-quality microservices-based applications Key FeaturesBuild cloud-native production-ready microservices with this comprehensively updated guideUnderstand the challenges of building large-scale microservice architecturesLearn how to get the best out of Spring Cloud, Kubernetes, and Istio in combinationBook Description With this book, you'll learn how to efficiently build and deploy microservices. This new edition has been updated for the most recent versions of Spring,

Java, Kubernetes, and Istio, demonstrating faster and simpler handling of Spring Boot, local Kubernetes clusters, and Istio installation. The expanded scope includes native compilation of Spring-based microservices, support for Mac and Windows with WSL2, and an introduction to Helm 3 for packaging and deployment. A revamped security chapter now follows the OAuth 2.1 specification and makes use of the newly launched Spring Authorization Server from the Spring team. Starting with a set of simple cooperating microservices, you'll add persistence and resilience, make your microservices reactive, and document their APIs using OpenAPI. You'll understand how fundamental design patterns are applied to add important functionality, such as service discovery with Netflix Eureka and edge servers with Spring Cloud Gateway. You'll learn how to deploy your microservices using Kubernetes and adopt Istio. You'll explore centralized log management using the Elasticsearch, Fluentd, and Kibana (EFK) stack and monitor microservices using Prometheus and Grafana. By the end of this book, you'll be confident in building microservices that are scalable and robust using Spring Boot and Spring Cloud. What you will learnBuild reactive microservices using Spring BootDevelop resilient and scalable microservices using

Spring CloudUse OAuth 2.1/OIDC and Spring Security to protect public APIsImplement Docker to bridge the gap between development, testing, and productionDeploy and manage microservices with KubernetesApply Istio for improved security, observability, and traffic managementWrite and run automated microservice tests with JUnit, testcontainers, Gradle, and bashWho this book is for If you are a Java or Spring Boot developer who wants to learn how to build microservice landscapes from scratch, this book is for you. No familiarity with microservices architecture is required.

Machine Learning on Kubernetes Packt Publishing Ltd

A practical approach to conquering the complexities of Microservices using the Python tooling ecosystem Key Features A very useful guide for Python developers who are shifting to the new microservices-based development A concise, up-to-date guide to building efficient and lightweight microservices in Python using Flask, Tox, and other tools Learn to use Docker containers, CoreOS, and Amazon Web Services to deploy your services Book DescriptionWe often deploy our web applications into the cloud, and our code needs to interact with many third-party services. An efficient way to build applications to do this is through microservices architecture. But, in practice, it's hard to get

this right due to the complexity of all the pieces interacting with each other. This book will teach you how to overcome these issues and craft applications that are built as small standard units, using all the proven best practices and avoiding the usual traps. It's a practical book: you'll build everything using Python 3 and its amazing tooling ecosystem. You will understand the principles of TDD and apply them. You will use Flask, Tox, and other tools to build your services using best practices. You will learn how to secure connections between services, and how to script Nginx using Lua to build web application firewall features such as rate limiting. You will also familiarize yourself with Docker's role in microservices, and use Docker containers, CoreOS, and Amazon Web Services to deploy your services. This book will take you on a journey, ending with the creation of a complete Python application based on microservices. By the end of the book, you will be well versed with the fundamentals of building, designing, testing, and deploying your Python microservices.What you will learn Explore what microservices are and how to design them Use Python 3, Flask, Tox, and other tools to build your services using best practices Learn how to use a TDD approach Discover how to document your microservices Configure and package your code in the best way Interact with

other services Secure, monitor, and scale your services Deploy your services in Docker containers, CoreOS, and Amazon Web Services Who this book is for This book is for developers who have basic knowledge of Python, the command line, and HTTP-based application principles, and those who want to learn how to build, test, scale, and manage Python 3 microservices. No prior experience of writing microservices in Python is assumed.

Hands-On Kubernetes on Azure Apress Enhance your skills in building scalable infrastructure for your cloud-based applications Key FeaturesLearn to design a scalable architecture by building continuous integration (CI) pipelines with KubernetesGet an in-depth understanding of role-based access control (RBAC), continuous deployment (CD), and observabilityMonitor a Kubernetes cluster with Prometheus and GrafanaBook Description

Kubernetes is among the most popular open-source platforms for automating the deployment, scaling, and operations of application containers across clusters of hosts, providing a container-centric infrastructure. Hands-On Microservices with Kubernetes starts by providing you with in-depth insights into the synergy between Kubernetes and microservices. You will learn how to use Delinkcious, which will serve as a live lab throughout the book to

help you understand microservices and Kubernetes concepts in the context of a real-world application. Next, you will get up to speed with setting up a CI/CD pipeline and configuring microservices using Kubernetes ConfigMaps. As you cover later chapters, you will gain hands-on experience in securing microservices, and implementing REST, gRPC APIs, and a Delinkcious data store. In addition to this, you'll explore the Nuclio project, run a serverless task on Kubernetes, and manage and implement data-intensive tests. Toward the concluding chapters, you'll deploy microservices on Kubernetes and learn to maintain a well-monitored system. Finally, you'll discover the importance of service meshes and how to incorporate Istio into the Delinkcious cluster. By the end of this book, you'll have gained the skills you need to implement microservices on Kubernetes with the help of effective tools and best practices. What you will learnUnderstand the synergy between Kubernetes and microservicesCreate a complete CI/CD pipeline for your microservices on KubernetesDevelop microservices on Kubernetes with the Go kit framework using best practicesManage and monitor your system using Kubernetes and open-source toolsExpose your services through REST and gRPC APIsImplement and deploy serverless functions as a serviceExternalize

authentication, authorization and traffic shaping using a service meshRun a Kubernetes cluster in the cloud on Google Kubernetes EngineWho this book is for This book is for developers, DevOps engineers, or anyone who wants to develop large-scale microservice-based systems on top of Kubernetes. If you are looking to use Kubernetes on live production projects or want to migrate existing systems to a modern containerized microservices system, then this book is for you. Coding skills, together with some knowledge of Docker, Kubernetes, and cloud concepts will be useful.

Practical Microservices with Dapr and .NET Packt Publishing

Build a microservices application from scratch using industry standard tools and battle-tested best practices. The best way to learn microservices development is to build something! Bootstrapping Microservices with Docker, Kubernetes, GitHub Actions, and Terraform, Second Edition guides you from zero through to a complete microservices project, including fast prototyping, development, and deployment. In Bootstrapping Microservices, Second Edition you'll get hands-on experience with microservices development skills like: Creating, configuring, and running a microservice with Node.js Building and publishing a microservice using Docker Applying automated testing

Running a microservices application in development with Docker Compose Deploying microservices to a production Kubernetes cluster Implementing infrastructure as code and setting up a continuous delivery pipeline Monitoring, managing, and troubleshooting Bootstrapping Microservices with Docker, Kubernetes, GitHub Action, and Terraform has helped thousands of developers create their first microservices applications. This fully revised second edition introduces the industry-standard tools and practical skills you'll use for every microservices application. Author Ashley Davis's friendly advice and guidance helps cut down the learning curve for Docker, Terraform, and Kubernetes, showing you just what you need to know to start building. About the technology Taking a microservices application from proof of concept to production requires many steps and a host of tools like Kubernetes, Terraform, and GitHub Actions. But where do you start? With clear, practical introductions to each concept and tool, this book guides you hands-on through designing and building your first microservices application. About the book Bootstrapping Microservices, Second Edition is your microservices mentor. It teaches you to use industry-standard tools to create a working video streaming application from the ground up. You'll

learn the pillars of cloud-native development, including Terraform for configuration, Docker for packaging, and a basic Kubernetes deployment. Plus, this second edition includes coverage of GitHub Actions, continuous delivery, and Infrastructure as Code. What's inside Deploying microservices to Kubernetes Automated testing and continuous delivery Monitoring, managing, and troubleshooting About the reader Examples are in JavaScript and Node. No experience with microservices required. About the author Ashley Davis is a software craftsman, entrepreneur, and author with over 25 years of experience in software development—from coding, to managing teams, to founding companies. 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 The road to production 7 Infrastructure as code 8 Continuous deployment 9 Automated testing for microservices 10 Shipping FlixTube 11 Healthy microservices 12 Pathways to scalability

Getting Started with Istio Service Mesh Manning Publications

A step-by-step guide to building microservices using Python and Docker, along with managing and orchestrating them with Kubernetes Key FeaturesLearn to use Docker containers to

create, operate, and deploy your microservicesCreate workflows to manage independent deployments on coordinating services using CI and GitOps through GitHub, Travis CI, and FluxDevelop a REST microservice in Python using the Flask framework and Postgres databaseBook Description Microservices architecture helps create complex systems with multiple, interconnected services that can be maintained by independent teams working in parallel. This book guides you on how to develop these complex systems with the help of containers. You'll start by learning to design an efficient strategy for migrating a legacy monolithic system to microservices. You'll build a RESTful microservice with Python and learn how to encapsulate the code for the services into a container using Docker. While developing the services, you'll understand how to use tools such as GitHub and Travis CI to ensure continuous delivery (CD) and continuous integration (CI). As the systems become complex and grow in size, you'll be introduced to Kubernetes and explore how to orchestrate a system of containers while managing multiple services. Next, you'll configure Kubernetes clusters for production-ready environments and secure them for reliable deployments. In the concluding chapters, you'll learn how to detect and debug critical problems with the help of logs and metrics. Finally,

you’ll discover a variety of strategies for working with multiple teams dealing with different microservices for effective collaboration. By the end of this book, you’ll be able to build production-grade microservices as well as orchestrate a complex system of services using containers. What you will learnDiscover how to design, test, and operate scalable microservicesCoordinate and deploy different services using KubernetesUse Docker to construct scalable and manageable applications with microservicesUnderstand how to monitor a complete system to ensure early detection of problemsBecome well versed with migrating from an existing monolithic system to a microservice oneUse load balancing to ensure seamless operation between the old monolith and the new serviceWho this book is for This book is for developers, engineers, or software architects who are trying to move away from traditional approaches for building complex multi-service systems by adopting microservices and containers. Although familiarity with Python programming is assumed, no prior knowledge of Docker is required.

Managing Kubernetes

Apress

Build fast, efficient Kubernetes-based Java applications using the Quarkus framework, MicroProfile, and Java standards. In Kubernetes Native Microservices with Quarkus and MicroProfile you’ll learn how to:

Deploy enterprise Java applications on Kubernetes Develop applications using the Quarkus runtime Compile natively using GraalVM for blazing speed Create efficient microservices applications Take advantage of MicroProfile specifications Popular Java frameworks like Spring were designed long before Kubernetes and the microservices revolution. Kubernetes Native Microservices with Quarkus and MicroProfile introduces next generation tools that have been cloud-native and Kubernetes-aware right from the beginning. Written by veteran Java developers John Clingan and Ken Finnigan, this book shares expert insight into Quarkus and MicroProfile directly from contributors at Red Hat. You'll learn how to utilize these modern tools to create efficient enterprise Java applications that are easy to deploy, maintain, and expand. About the technology Build microservices efficiently with modern Kubernetes-first tools! Quarkus works naturally with containers and Kubernetes, radically simplifying the development and deployment of microservices. This powerful framework minimizes startup time and memory use, accelerating performance and reducing hosting cost. And because it's Java from the ground up, it integrates seamlessly with your existing JVM codebase. About the book Kubernetes Native Microservices with Quarkus and MicroProfile teaches you to build

microservices using containers, Kubernetes, and the Quarkus framework. You'll immediately start developing a deployable application using Quarkus and the MicroProfile APIs. Then, you'll explore the startup and runtime gains Quarkus delivers out of the box and also learn how to supercharge performance by compiling natively using GraalVM. Along the way, you'll see how to integrate a Quarkus application with Spring and pick up pro tips for monitoring and managing your microservices. What's inside Deploy enterprise Java applications on Kubernetes Develop applications using the Quarkus runtime framework Compile natively using GraalVM for blazing speed Take advantage of MicroProfile specifications About the reader For intermediate Java developers comfortable with Java EE, Jakarta EE, or Spring. Some experience with Docker and Kubernetes required. About the author John Clingan is a senior principal product manager at Red Hat, where he works on enterprise Java standards and Quarkus. Ken Finnigan is a senior principal software engineer at Workday, previously at Red Hat working on Quarkus. Table of Contents PART 1 INTRODUCTION 1 Introduction to Quarkus, MicroProfile, and Kubernetes 2 Your first Quarkus application PART 2 DEVELOPING MICROSERVICES 3 Configuring microservices 4 Database access with

Panache 5 Clients for consuming other microservices 6 Application health 7 Resilience strategies 8 Reactive in an imperative world 9 Developing Spring microservices with Quarkus PART 3 OBSERVABILITY, API DEFINITION, AND SECURITY OF MICROSERVICES 10 Capturing metrics 11 Tracing microservices 12 API visualization 13 Securing a microservice

Hands-on Reactive Microservices in .NET Core 3 Packt Publishing Ltd

Start using Kubernetes in complex big data and enterprise applications, including Docker containers. Starting with installing Kubernetes on a single node, the book introduces Kubernetes with a simple Hello example and discusses using environment variables in Kubernetes. Next, Kubernetes Microservices with Docker discusses using Kubernetes with all major groups of technologies such as relational databases, NoSQL databases, and in the Apache Hadoop ecosystem. The book concludes with using multi container pods and installing Kubernetes on a multi node cluster. /div "a concise but clear introduction to containers, Docker and Kubernetes, using simple real-world examples to pass on the core concepts, via repetition, and is a very useful enabler." 10/10 Dave Hay MBCS CITP: review for BCS, The Chartered Institute for IT (http://www.bcs.org/content/conWebDoc/58512)

What You Will Learn Install Kubernetes on a single node Set environment variables Create multi-container pods using Docker Use volumes Use Kubernetes with the Apache Hadoop ecosystem, NoSQL databases, and RDBMSs Install Kubernetes on a multi-node cluster Who This Book Is For Application developers including Apache Hadoop developers, database developers and NoSQL developers.

Hands-On Kubernetes on Azure Packt Publishing Ltd

Apply microservices patterns to build resilient and scalable distributed systems Key Features Understand the challenges of building large-scale microservice landscapes Build cloud-native production-ready microservices with this comprehensive guide Discover how to get the best out of Spring Cloud, Kubernetes, and Istio when used together Book DescriptionMicroservices architecture allows developers to build and maintain applications with ease, and enterprises are rapidly adopting it to build software using Spring Boot as their default framework. With this book, you'll learn how to efficiently build and deploy microservices using Spring Boot. This microservices book will take you through tried and tested approaches to building distributed systems and implementing microservices architecture in your organization. Starting with a set of simple cooperating microservices developed using Spring Boot, you'll

learn how you can add functionalities such as persistence, make your microservices reactive, and describe their APIs using Swagger/OpenAPI. As you advance, you'll understand how to add different services from Spring Cloud to your microservice system. The book also demonstrates how to deploy your microservices using Kubernetes and manage them with Istio for improved security and traffic management. Finally, you'll explore centralized log management using the EFK stack and monitor microservices using Prometheus and Grafana. By the end of this book, you'll be able to build microservices that are scalable and robust using Spring Boot and Spring Cloud.What you will learn Build reactive microservices using Spring Boot Develop resilient and scalable microservices using Spring Cloud Use OAuth 2.0/OIDC and Spring Security to protect public APIs Implement Docker to bridge the gap between development, testing, and production Deploy and manage microservices using Kubernetes Apply Istio for improved security, observability, and traffic management Who this book is for This book is for Java and Spring developers and architects who want to learn how to break up their existing monoliths into microservices and deploy them either on-premises or in the cloud using Kubernetes as a container orchestrator and Istio as a service Mesh. No familiarity with

microservices architecture is required to get started with this book.

Kubernetes Native Microservices with Quarkus and MicroProfile Apress Discover how cloud-native microservice architecture helps you to build dynamically scalable applications by using the most widely used and adopted runtime environments Key FeaturesBuild robust cloud-native applications using a variety of toolsUnderstand how to configure both Amazon Web Services (AWS) and Docker clouds for high availabilityExplore common design patterns used in building and deploying microservices architecture.Book Description Businesses today are evolving rapidly, and developers now face the challenge of building applications that are resilient, flexible, and native to the cloud. To achieve this, you'll need to be aware of the environment, tools, and resources that you're coding against. The book will begin by introducing you to cloud-native architecture and simplifying the major concepts. You'll learn to build microservices in Jakarta EE using MicroProfile with Thorntail and Narayana LRA. You'll then delve into cloud-native application x-rays, understanding the MicroProfile specification and the implementation/testing of microservices. As you progress further, you'll focus on continuous integration and continuous delivery, in addition to learning how

to dockerize your services. You'll also cover concepts and techniques relating to security, monitoring, and troubleshooting problems that might occur with applications after you've written them. By the end of this book, you will be equipped with the skills you need to build highly resilient applications using cloud-native microservice architecture. What you will learnIntegrate reactive principles in MicroProfile microservices architectureExplore the 12-factors-app paradigm and its implicationsGet the best out of Java versions 8 and 9 to implement a microservice based on ThorntailUnderstand what OpenShift is and why it is so important for an elastic architectureBuild a Linux container image using Docker and scale the application using KubernetesImplement various patterns such as, Circuit Breaker and bulkheadsGet to grips with the DevOps methodology using continuous integration (CI) and continuous deployment (CD)Who this book is for This book is for developers with basic knowledge of Java EE and HTTP-based application principles who want to learn how to build, test and scale Java EE microservices. No prior experience of writing microservices in Java EE is required.

Hands-On Kubernetes on Windows Packt Publishing Ltd

"Microservice architecture and development are gaining momentum in enterprises. While

microservices are more modular to develop and may look simpler, there are also a lot of complexities in creating these distributed systems. In this course you learn about the tools and techniques that are necessary to successfully develop, deploy, manage, and monitor microservice-based applications. We develop a basic distributed reactive microservice system using .NET Core and Apache Kafka to send messages across microservices. We learn about using patterns such as CQRS to manage complexities in distributed systems. You'll also learn to containerize these services and use Kubernetes to manage the deployment, scaling, and updating of these services. By the end of the course, you'll be confident in implementing Kubernetes tools and resources to effectively deploy and manage microservices."--Resource description page.