

Continuous Delivery With Docker And Jenkins Delivering Software At Scale

This course teaches concepts by deep-dive on-hand exercises. Throughout the course, you will learn the required toolset by using both on-premise, open-source, and hosted cloud solutions. You'll find checklists, best practices, and critical points mentioned throughout the lessons, making things more interesting. Key Features Explains in detail cloud-native continuous integration and delivery Demonstrates how to run a build in a CI/CD system Shows continuous delivery to Docker Registry and continuous deployment to Kubernetes Book Description Cloud-native software development is based on developing distributed applications focusing on speed, stability, and high availability. With this paradigm shift, software development has changed substantially and converted into a more agile environment where distributed teams develop distributed applications. In addition, the environment where the software is built, tested and deployed has changed from bare-metal servers to cloud systems. In this course, the new concepts of cloud-native Continuous Integration and Delivery are discussed in depth. Cloud-native tooling and services such as cloud providers (AWS, Google Cloud) containerization with Docker, container-orchestrators such as Kubernetes will be a part of this course to teach how to analyze and design modern software delivery pipelines. What you will learn Learn the basics of DevOps patterns for cloud-native architecture Learn the cloud-native way of designing CI/CD systems Create multi-stage builds and tests for Docker. Apply the best practices for Docker container images Experiment using GitLab CI/CD pipelines for continuous integration Build and test their applications on cloud Learn how to continuously deliver to Docker registry Learn how to continuously deploy to Kubernetes Experiment using GitLab CI/CD pipelines for Continuous Delivery Configure and deploy software to Kubernetes using Helm Who this book is for This book is ideal for professionals interested in cloud-native software development. To benefit the most from this book, you must be familiar with developing, building, testing, integrating, and deploying containerized microservices into cloud systems.

Create a complete Continuous Delivery process using modern DevOps tools such as Docker, Kubernetes, Jenkins, Docker Hub, Ansible, GitHub and many more. Key Features Build reliable and secure applications using Docker containers. Create a highly available environment to scale a Docker servers using Kubernetes Implement advance continuous delivery process by parallelizing the pipeline tasks Book Description Continuous Delivery with Docker and Jenkins, Second Edition will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of an app development. It will start with setting up a Docker server and configuring Jenkins on it. It will then provide steps to build applications on Docker files and integrate them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, and configuration management. Moving on, you will learn how to ensure quick application deployment with Docker containers along with scaling Jenkins using Kubernetes. Next, you will get to know how to deploy applications using Docker images and testing them with Jenkins. Towards the end, the book will touch base with missing parts of the CD pipeline, which are the environments and infrastructure, application versioning, and nonfunctional testing. By the end of the book, you will be enhancing the DevOps workflow by integrating the functionalities of Docker and Jenkins. What you will learn Get to grips with docker fundamentals and how to dockerize an application for the CD process Learn how to use Jenkins on the Cloud environments Scale a pool of Docker servers using Kubernetes Create multi-container applications using Docker Compose Write acceptance tests using Cucumber and run them in the Docker ecosystem using Jenkins Publish a built Docker image to a Docker Registry and deploy cycles of Jenkins pipelines using community best practices Who this book is for The book targets DevOps engineers, system administrators, docker professionals or any stakeholders who would like to explore the power of working with Docker and Jenkins together. No prior knowledge of DevOps is required for this book.

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

Continuous Delivery with Docker and Jenkins

Unleash the combination of Docker and Jenkins in order to enhance the DevOps workflow About This Book Build reliable and secure applications using Docker containers. Create a complete Continuous Delivery pipeline using Docker, Jenkins, and Ansible. Deliver your applications directly on the Docker Swarm cluster. Create more complex solutions using multi-

containers and database migrations. Who This Book Is For This book is intended to provide a full overview of deep learning. From the beginner in deep learning and artificial intelligence to the data scientist who wants to become familiar with Theano and its supporting libraries, or have an extended understanding of deep neural nets. Some basic skills in Python programming and computer science will help, as well as skills in elementary algebra and calculus. What You Will Learn Get to grips with docker fundamentals and how to dockerize an application for the Continuous Delivery process Configure Jenkins and scale it using Docker-based agents Understand the principles and the technical aspects of a successful Continuous Delivery pipeline Create a complete Continuous Delivery process using modern tools: Docker, Jenkins, and Ansible Write acceptance tests using Cucumber and run them in the Docker ecosystem using Jenkins Create multi-container applications using Docker Compose Managing database changes inside the Continuous Delivery process and understand effective frameworks such as Cucumber and Flyweight Build clustering applications with Jenkins using Docker Swarm Publish a built Docker image to a Docker Registry and deploy cycles of Jenkins pipelines using community best practices In Detail The combination of Docker and Jenkins improves your Continuous Delivery pipeline using fewer resources. It also helps you scale up your builds, automate tasks and speed up Jenkins performance with the benefits of Docker containerization. This book will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. It will start with setting up a Docker server and configuring Jenkins on it. It will then provide steps to build applications on Docker files and integrate them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, and configuration management. Moving on you will learn how to ensure quick application deployment with Docker containers along with scaling Jenkins using Docker Swarm. Next, you will get to know how to deploy applications using Docker images and testing them with Jenkins. By the end of the book, you will be enhancing the DevOps workflow by integrating the functionalities of Docker and Jenkins. Style and approach The book is aimed at DevOps Engineers, developers and IT Operations who want to enhance the DevOps culture using Docker and Jenkins.

Viktor Farcic's latest book, The DevOps 2.1 Toolkit: Docker Swarm, shows you how to successfully integrate Docker Swarm into your DevOps toolset. About This Book Expand your DevOps Toolkit with the DevOps thought leader, Viktor Farcic Build, test, deploy, and monitor services inside Docker Swarm clusters Translate your understanding to different hosting providers like AWS, Azure, and DigitalOcean Go beyond simple deployment to explore how to create a continuous deployment process Extend the deep understanding you gained from Viktor's DevOps 2.0 Toolkit book Who This Book Is For This book is for professionals interested in the full microservices life cycle combined with continuous deployment and containers. Target audience could be architects who want to know how to design their systems around microservices. It could be DevOps wanting to know how to apply modern configuration management practices and continuously deploy applications packed in containers. It is for developers who would like to take the process back into their hands as well as for managers who would like to gain a better understanding of the process used to deliver software from the beginning to the end. This book is for everyone wanting to know more about the software development life cycle starting from requirements and design, through the development and testing all the way until deployment and post-deployment phases. We'll create the processes taking into account the best practices developed by and for some of the biggest companies. What You Will Learn Learn all aspects of Docker Swarm from building, testing, deploying, and monitoring services inside Docker Swarm clusters, available since Docker 1.12. Master the deeper logic of DevOps with Viktor, so that you can successfully apply that logic across any specific set of tools you're working with. Translate a deep understanding to different hosting providers like AWS, Azure, DigitalOcean, among others. You'll go beyond simple deployment: you will explore with Viktor how to create a continuous deployment process. Accomplish zero-downtime deployments, and what to do in case of a failover. Know how to run services at scale, how to monitor the systems, and how to make it heal itself. In Detail Viktor Farcic's latest book, The DevOps 2.1 Toolkit: Docker Swarm, takes you deeper into one of the major subjects of his international best seller, The DevOps 2.0 Toolkit, and shows you how to successfully integrate Docker Swarm into your DevOps toolset. Viktor shares with you his expert knowledge in all aspects of building, testing, deploying, and monitoring services inside Docker Swarm clusters. You'll go through all the tools required for running a cluster. You'll travel through the whole process with clusters running locally on a laptop. Once you're confident with that outcome, Viktor shows you how to translate your experience to different hosting providers like AWS, Azure, and DigitalOcean. Viktor has updated his DevOps 2.0 framework in this book to use the latest and greatest features and techniques introduced in Docker. We'll go through many practices and even more tools. While there will be a lot of theory, this is a hands-on book. You won't be able to complete it by reading it on the metro on your way to work. You'll have to read this book while in front of the computer and get your hands dirty. Style and approach We'll go through many practices and even more tools. While there will be a lot of theory, this is a hands-on book. You'll have to read this book while in front of the computer and get your hands dirty. The goal is not to master one particular set of tools, but to learn the logic behind them so that you can apply it to your job in various contexts.

Learn, understand, and apply people-, process-, and technology-related practices to make OpenShift and DevOps adoption a success within your organization.

Updated for Docker Community Edition v18.09! Docker book designed for SysAdmins, SREs, Operations staff, Developers and DevOps who are interested in deploying the open source container service Docker. In this book, we'll walk you through installing, deploying, managing, and extending Docker. We're going to do that by first introducing you to the basics of Docker and its components. Then we'll start to use Docker to build containers and services to perform a variety of tasks. We're going to take you through the development lifecycle, from testing to production, and see where Docker fits in and how it can make your life easier. We'll make use of Docker to build test environments for new projects, demonstrate how to integrate Docker with continuous integration workflow, and then how to build application services

and platforms. Finally, we'll show you how to use Docker's API and how to extend Docker yourself. We'll teach you how to:

- * Install Docker.
- * Take your first steps with a Docker container.
- * Build Docker images.
- * Manage and share Docker images.
- * Run and manage more complex Docker containers.
- * Deploy Docker containers as part of your testing pipeline.
- * Build multi-container applications and environments.
- * Learn about orchestration using Compose and Swarm for the orchestration of Docker containers and Consul for service discovery.
- * Explore the Docker API.
- * Getting Help and Extending Docker.

Docker containers offer simpler, faster, and more robust methods for developing, distributing, and running software than previously available. With this hands-on guide, you'll learn why containers are so important, what you'll gain by adopting Docker, and how to make it part of your development process. Ideal for developers, operations engineers, and system administrators—especially those keen to embrace a DevOps approach—Using Docker will take you from Docker and container basics to running dozens of containers on a multi-host system with networking and scheduling. The core of the book walks you through the steps needed to develop, test, and deploy a web application with Docker. Get started with Docker by building and deploying a simple web application Use Continuous Deployment techniques to push your application to production multiple times a day Learn various options and techniques for logging and monitoring multiple containers Examine networking and service discovery: how do containers find each other and how do you connect them? Orchestrate and cluster containers to address load-balancing, scaling, failover, and scheduling Secure your system by following the principles of defense-in-depth and least privilege

Winner of the 2011 Jolt Excellence Award! Getting software released to users is often a painful, risky, and time-consuming process. This groundbreaking new book sets out the principles and technical practices that enable rapid, incremental delivery of high quality, valuable new functionality to users. Through automation of the build, deployment, and testing process, and improved collaboration between developers, testers, and operations, delivery teams can get changes released in a matter of hours—sometimes even minutes—no matter what the size of a project or the complexity of its code base. Jez Humble and David Farley begin by presenting the foundations of a rapid, reliable, low-risk delivery process. Next, they introduce the “deployment pipeline,” an automated process for managing all changes, from check-in to release. Finally, they discuss the “ecosystem” needed to support continuous delivery, from infrastructure, data and configuration management to governance. The authors introduce state-of-the-art techniques, including automated infrastructure management and data migration, and the use of virtualization. For each, they review key issues, identify best practices, and demonstrate how to mitigate risks. Coverage includes

- Automating all facets of building, integrating, testing, and deploying software
- Implementing deployment pipelines at team and organizational levels
- Improving collaboration between developers, testers, and operations
- Developing features incrementally on large and distributed teams
- Implementing an effective configuration management strategy
- Automating acceptance testing, from analysis to implementation
- Testing capacity and other non-functional requirements
- Implementing continuous deployment and zero-downtime releases
- Managing infrastructure, data, components and dependencies
- Navigating risk management, compliance, and auditing

Whether you're a developer, systems administrator, tester, or manager, this book will help your organization move from idea to release faster than ever—so you can deliver value to your business rapidly and reliably.

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

A beginner's guide to implementing Continuous Integration and Continuous Delivery using Jenkins About This Book Speed up and increase software productivity and software delivery using Jenkins Automate your build, integration, release, and deployment processes with Jenkins—and learn how continuous integration (CI) can save you time and money Explore the power of continuous delivery using Jenkins through powerful real-life examples Who This Book Is For This book is for anyone who wants to exploit the power of Jenkins. This book serves a great starting point for those who are in the field DevOps and would like to leverage the benefits of CI and continuous delivery in order to increase productivity and reduce delivery time. What You Will Learn Take advantage of a continuous delivery solution to achieve faster software delivery Speed up productivity using a continuous

Integration solution through Jenkins Understand the concepts of CI and continuous delivery Orchestrate many DevOps tools using Jenkins to automate builds, releases, deployment, and testing Explore the various features of Jenkins that make DevOps activities a piece of cake Configure multiple build machines in Jenkins to maintain load balancing Manage users, projects, and permissions in Jenkins to ensure better security Leverage the power of plugins in Jenkins In Detail In past few years, Agile software development has seen tremendous growth across the world. There is huge demand for software delivery solutions that are fast yet flexible to frequent amendments. As a result, CI and continuous delivery methodologies are gaining popularity. Jenkins' core functionality and flexibility allows it to fit in a variety of environments and can help streamline the development process for all stakeholders. This book starts off by explaining the concepts of CI and its significance in the Agile world with a whole chapter dedicated to it. Next, you'll learn to configure and set up Jenkins. You'll gain a foothold in implementing CI and continuous delivery methods. We dive into the various features offered by Jenkins one by one exploiting them for CI. After that, you'll find out how to use the built-in pipeline feature of Jenkins. You'll see how to integrate Jenkins with code analysis tools and test automation tools in order to achieve continuous delivery. Next, you'll be introduced to continuous deployment and learn to achieve it using Jenkins. Through this book's wealth of best practices and real-world tips, you'll discover how easy it is to implement a CI service with Jenkins. Style and approach This is a step-by-step guide to setting up a CI and continuous delivery system loaded with hands-on examples

A practical guide to rapidly and efficiently mastering Docker containers, along with tips and tricks learned in the field. About This Book Use Docker containers, horizontal node scaling, modern orchestration tools (Docker Swarm, Kubernetes, and Mesos) and Continuous Integration/Continuous Delivery to manage your infrastructure. Increase service density by turning often-idle machines into hosts for numerous Docker services. Learn what it takes to build a true container infrastructure that is scalable, reliable, and resilient in the face of increased complexities from using container infrastructures. Find out how to identify, debug, and mitigate most real-world, undocumented issues when deploying your own Docker infrastructure. Learn tips and tricks of the trade from existing Docker infrastructures running in production environments. Who This Book Is For This book is aimed at system administrators, developers, DevOps engineers, and software engineers who want to get concrete, hands-on experience deploying multi-tier web applications and containerized microservices using Docker. This book is also for anyone who has worked on deploying services in some fashion and wants to take their small-scale setups to the next level (or simply to learn more about the process). What You Will Learn Set up a working development environment and create a simple web service to demonstrate the basics Learn how to make your service more usable by adding a database and an app server to process logic Add resilience to your services by learning how to horizontally scale with a few containers on a single node Master layering isolation and messaging to simplify and harden the connectivity between containers Learn about numerous issues encountered at scale and their workarounds, from the kernel up to code versioning Automate the most important parts of your infrastructure with continuous integration In Detail Deploying Docker into production is considered to be one of the major pain points in developing large-scale infrastructures, and the documentation available online leaves a lot to be desired. With this book, you will learn everything you wanted to know to effectively scale your deployments globally and build a resilient, scalable, and containerized cloud platform for your own use. The book starts by introducing you to the containerization ecosystem with some concrete and easy-to-digest examples; after that, you will delve into examples of launching multiple instances of the same container. From there, you will cover orchestration, multi-node setups, volumes, and almost every relevant component of this new approach to deploying services. Using intertwined approaches, the book will cover battle-tested tooling, or issues likely to be encountered in real-world scenarios, in detail. You will also learn about the other supporting components required for a true PaaS deployment and discover common options to tie the whole infrastructure together. At the end of the book, you learn to build a small, but functional, PaaS (to appreciate the power of the containerized service approach) and continue to explore real-world approaches to implementing even larger global-scale services. Style and approach This in-depth learning guide shows you how to deploy your applications in production using Docker (from the basic steps to advanced concepts) and how to overcome challenges in Docker-based infrastructures. The book also covers practical use-cases in real-world examples, and provides tips and tricks on the various topics.

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

"Getting software released to users is often a painful, risky, and time-consuming process. The practice of continuous delivery sets

out the principles and technical practices that enable rapid, low-risk delivery of high quality, valuable new functionality to users. Through automation of the build, deployment, and testing process, and improved collaboration between developers, testers and IT operations, teams can get changes released in a matter of hours sometimes even minutes no matter what the size of the product or the complexity of the enterprise environment."--Resource description page.

Follow this step-by-step guide for creating a continuous delivery pipeline using all of the new features in Jenkins 2.0 such as Pipeline as a Code, multi-branch pipeline, and more. You will learn three crucial elements for achieving a faster software delivery pipeline: a fungible build/test environment, manageable and reproducible pipelines, and a scalable build/test infrastructure. Pro Continuous Delivery demonstrates how to create a highly available, active/passive Jenkins server using some niche technologies. What You'll Learn Create a highly available, active/passive Jenkins server using CoreOS and Docker, and using Pacemaker and Corosync Use a Jenkins multi-branch pipeline to automatically perform continuous integration whenever there is a new branch in your source control system Describe your continuous delivery pipeline with Jenkinsfile Host Jenkins server on a cloud solution Run Jenkins inside a container using Docker Discover how the distributed nature of Git and the "merge before build" feature of Jenkins can be used to implement gated check-in Implement a scalable build farm using Docker and Kubernetes Who This Book Is For You have experience implementing continuous integration and continuous delivery using Jenkins freestyle Jobs and wish to use the new Pipeline as a Code feature introduced in Jenkins 2.0 Your source code is on a Git-like version control system (Git, GitHub, GitLab, etc.) and you wish to leverage the advantages of a multi-branch pipeline in Jenkins Your infrastructure is on a Unix-like platform and you wish to create a scalable, distributed build/test farm using Docker or Kubernetes You are in need of a highly available system for your Jenkins Server using open source tools and technologies

Gain the techniques and tools that enable a smooth and efficient software development process in this quick and practical guide on Python continuous integration (CI) and continuous delivery (CD). Based on example applications, this book introduces various kinds of testing and shows you how to set up automated systems that run these tests, and install applications in different environments in controlled ways. Python Continuous Integration and Delivery tackles the technical problems related to software development that are typically glossed over in pure programming texts. After reading this book, you'll see that in today's fast-moving world, no software project can afford to go through development, then an integration phase of unpredictable length and complexity, and finally be shipped to the customer -- just to find out that the resulting application didn't quite fill their need. Instead, you'll discover that practicing continuous integration and continuous delivery reduces the risks by keeping changes small and automating otherwise painful processes. What You Will Learn Carry out various kinds of testing, including unit testing and continuous integration testing, of your Python code using Jenkins Build packages and manage repositories Incorporate Ansible and Go for automated packaging and other deployments Manage more complex and robust deployments Who This Book Is For Python programmers and operating staff that work with Python applications.

Use DevOps principles with Google Cloud Platform (GCP) to develop applications and services. This book builds chapter by chapter to a complete real-life scenario, explaining how to build, monitor, and maintain a complete application using DevOps in practice. Starting with core DevOps concepts, continuous integration, and continuous delivery, you'll cover common tools including Jenkins, Docker, and Kubernetes in the context of a real microservices application to deploy in the cloud. You will also create a monitor for your cloud and see how to use its data to prevent errors and improve the stability of the system. By the end of Pro DevOps with Google Cloud Platform, you will be able to deploy, maintain, and monitor a real application with GCP. What You Will Learn Build and deploy applications and services using DevOps on Google Cloud Platform Maintain a complete continuous integration (CI) and continuous delivery (CD) pipeline Use containerization with Docker and Kubernetes Carry out CD with GCP and Jenkins Create microservices with Jenkins, Docker, and Kubernetes Monitor your newly deployed application and its deployment and performance Set up security and manage your network with GCP Who This Book Is For Developers and software architects who want to implement DevOps in practice. Some prior programming experience is recommended as well as a basic knowledge of a Linux command-line environment.

Automating the Continuous Deployment Pipeline with Containerized Microservices About This Book* First principles of devops, Ansible, Docker, Kubernetes, microservices* Architect your software in a better and more efficient way with microservices packed as immutable containers* Practical guide describing an extremely modern and advanced devops toolchain that can be improved continuously Who This Book Is For If you are an intermediate-level developer who wants to master the whole microservices development and deployment lifecycle using some of the latest and greatest practices and tools, this is the book for you. Familiarity with the basics of Devops and Continuous Deployment will be useful. What You Will Learn * Get to grips with the fundamentals of Devops* Architect efficient software in a better and more efficient way with the help of microservices* Use Docker, Kubernetes, Ansible, Ubuntu, Docker Swarm and more* Implement fast, reliable and continuous deployments with zero-downtime and ability to roll-back* Learn about centralized logging and monitoring of your cluster* Design self-healing systems capable of recovery from both hardware and software failures In Detail Building a complete modern devops toolchain requires not only the whole microservices development and a complete deployment lifecycle, but also the latest and greatest practices and tools. Victor Farcic argues from first principles how to build a devops toolchain. This book shows you how to chain together Docker, Kubernetes, Ansible, Ubuntu, and other tools to build the complete devops toolkit. Style and approach This book follows a unique, hands-on approach familiarizing you to the Devops 2.0 toolkit in a very practical manner. Although there will be a lot of theory, you won't be able to complete this book by reading it in a metro on a way to work. You'll need to be in front of your computer and get your hands dirty.

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

Learn how to deploy and test Linux-based Docker containers with the help of real-world use cases Key Features Understand how to make a deployment workflow run smoothly with Docker containers Learn Docker and DevOps concepts such as continuous integration and continuous deployment (CI/CD) Gain insights into using various Docker tools and libraries Book Description Docker is the de facto standard for containerizing apps, and with an increasing number of software projects migrating to containers, it is crucial for engineers and DevOps teams to understand how to build, deploy, and secure Docker environments effectively. Docker for Developers will help you understand Docker containers from scratch while taking you through best practices and showing you how to address security concerns. Starting with an introduction to Docker, you'll learn how to use containers and VirtualBox for development. You'll explore how containers work and develop projects within them after you've explored different ways to deploy and run containers. The book will also show you how to use Docker

containers in production in both single-host set-ups and in clusters and deploy them using Jenkins, Kubernetes, and Spinnaker. As you advance, you'll get to grips with monitoring, securing, and scaling Docker using tools such as Prometheus and Grafana. Later, you'll be able to deploy Docker containers to a variety of environments, including the cloud-native Amazon Elastic Kubernetes Service (Amazon EKS), before finally delving into Docker security concepts and best practices. By the end of the Docker book, you'll be able to not only work in a container-driven environment confidently but also use Docker for both new and existing projects. What you will learn Get up to speed with creating containers and understand how they work Package and deploy your containers to a variety of platforms Work with containers in the cloud and on the Kubernetes platform Deploy and then monitor the health and logs of running containers Explore best practices for working with containers from a security perspective Become familiar with scanning containers and using third-party security tools and libraries Who this book is for If you're a software engineer new to containerization or a DevOps engineer responsible for deploying Docker containers in the cloud and building DevOps pipelines for container-based projects, you'll find this book useful. This Docker containers book is also a handy reference guide for anyone working with a Docker-based DevOps ecosystem or interested in understanding the security implications and best practices for working in container-driven environments.

Understand various tools and practices for building a continuous integration and delivery pipeline effectively Key Features Get up and running with the patterns of continuous integration Learn Jenkins UI for developing plugins and build an effective Jenkins pipeline Automate CI/CD with command-line tools and scripts Book Description Hands-On Continuous Integration and Delivery starts with the fundamentals of continuous integration (CI) and continuous delivery (CD) and where it fits in the DevOps ecosystem. You will explore the importance of stakeholder collaboration as part of CI/CD. As you make your way through the chapters, you will get to grips with Jenkins UI, and learn to install Jenkins on different platforms, add plugins, and write freestyle scripts. Next, you will gain hands-on experience of developing plugins with Jenkins UI, building the Jenkins 2.0 pipeline, and performing Docker integration. In the concluding chapters, you will install Travis CI and Circle CI and carry out scripting, logging, and debugging, helping you to acquire a broad knowledge of CI/CD with Travis CI and CircleCI. By the end of this book, you will have a detailed understanding of best practices for CI/CD systems and be able to implement them with confidence. What you will learn Install Jenkins on multiple operating systems Work with Jenkins freestyle scripts, pipeline syntax, and methodology Explore Travis CI build life cycle events and multiple build languages Master the Travis CI CLI (command-line interface) and automate tasks with the CLI Use CircleCI CLI jobs and work with pipelines Automate tasks using CircleCI CLI and learn to debug and troubleshoot Learn open source tooling such as Git and GitHub Install Docker and learn concepts in shell scripting Who this book is for Hands-On Continuous Integration and Delivery is for system administrators, DevOps engineers, and build and release engineers who want to understand the concept of CI and gain hands-on experience working with prominent tools in the CI ecosystem. Basic knowledge of software delivery is an added advantage.

Pipeline as Code is a practical guide to automating your development pipeline in a cloud-native, service-driven world. Learn how to think about your development pipeline as a mission-critical application, with techniques for implementing code-driven infrastructure and CI/CD systems using Jenkins, Docker, Terraform, and cloud-native services. 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.

Create generic pipelines to reduce your overall DevOps workload and allow your team to deliver faster. This book helps you get up to speed on the pros and cons of generic pipeline methodology, and learn to combine shell scripts and Docker to build generic pipelines. In today's world of micro-services and agile practices, DevOps teams need to move as fast as feature teams. This can be extremely challenging if you're creating multiple pipelines per application or tech stack. What if your feature teams could utilize a generic pipeline that could build, test, and deploy any application, regardless of tech stack? What if that pipeline was also cloud and platform agnostic? Too good to be true? Well think again! Generic Pipelines Using Docker explores the principles and implementations that allow you to do just that. You will learn from real-world examples and reusable code. After reading this book you will have the knowledge to build generic pipelines that any team can use. What You'll Learn Explore the pros and cons of generic pipeline methodology Combine shell scripts and Docker to build a generic pipeline Implement a pipeline across CI/CD platforms Build a pipeline that lends itself well to both centralized and federated DevOps teams Construct a modular pipeline with components that can be added, removed, or replaced as needed Who This Book Is For Professionals who use DevOps or are part of a DevOps team, and are seeking ways to streamline their pipelines and drive more deployments while using less code

Speed up the software delivery process and software productivity using the latest features of Jenkins Key Features Take advantage of a Continuous Integration and Continuous Delivery solution to speed up productivity and achieve faster software delivery See all the new features introduced in Jenkins 2.x, such as Pipeline as code, Multibranch pipeline, Docker Plugin, and more Learn to implement Continuous Integration and Continuous Delivery by orchestrating multiple DevOps tools using Jenkins Book Description In past few years, agile software development has seen tremendous growth. There is a huge demand for software delivery solutions that are fast yet flexible to numerous amendments. As a result, Continuous Integration (CI) and Continuous Delivery (CD) methodologies are gaining popularity. This book starts off by explaining the concepts of CI and its significance in the Agile. Next, you'll learn how to configure and set up Jenkins in many different ways. The book exploits the concept of "pipeline as code" and various other features introduced in the Jenkins 2.x release to their full potential. We also talk in detail about the new Jenkins Blue Ocean interface and the features that help to quickly and easily create a CI pipeline. Then we dive into the various features offered by Jenkins one by one, exploiting them for CI and CD. Jenkins' core functionality and flexibility allows it to fit in a variety of environments and can help streamline the development process for all stakeholders. Next, you'll be introduced to CD and will learn how to achieve it using Jenkins. Through this book's wealth of best practices and real-world tips, you'll discover how easy it is to implement CI and CD using Jenkins. What you will learn Get to know some of the most popular ways to set up Jenkins See all the new features introduced in the latest Jenkins, such as pipeline as code, Multibranch pipeline, and more Manage users, projects, and permissions in Jenkins to ensure better security Leverage the power of plugins in Jenkins Learn how to create a CI pipeline using Jenkins Blue Ocean Create a distributed build farm using Docker and use it with Jenkins Implement CI and CD using Jenkins See the difference between CD and Continuous Deployment Understand the concepts of CI Who this book is for The book is for those with little or no previous experience with Agile or CI and CD. It's a good starting point for anyone new to this field who wants to leverage the benefits of CI and CD to increase productivity and reduce delivery time. It's ideal for Build and Release engineers, DevOps engineers, SCM (Software

Configuration Management) engineers, developers, testers, and project managers. If you're already using Jenkins for CI, you can take your project to the next level—CD.

Achieve the Continuous Integration and Continuous Delivery of your web applications with ease About This Book Overcome the challenges of implementing DevOps for web applications, familiarize yourself with diverse third-party modules, and learn how to integrate them with bespoke code to efficiently complete tasks Understand how to deploy web applications for a variety of Cloud platforms such as Amazon EC2, AWS Elastic Beanstalk, Microsoft Azure, Azure Web Apps, and Docker Container Understand how to monitor applications deployed in Amazon EC2, AWS Elastic Beanstalk, Microsoft Azure, Azure Web Apps using Nagios, New Relic, Microsoft Azure, and AWS default monitoring features Who This Book Is For If you are a system admin or application and web application developer with a basic knowledge of programming and want to get hands-on with tools such as Jenkins 2 and Chef, and Cloud platforms such as AWS and Microsoft Azure, Docker, New Relic, Nagios, and their modules to host, deploy, monitor, and manage their web applications, then this book is for you. What You Will Learn Grasp Continuous Integration for a JEE application—create and configure a build job for a Java application with Maven and with Jenkins 2.0 Create built-in delivery pipelines of Jenkins 2 and build a pipeline configuration for end-to-end automation to manage the lifecycle of Continuous Integration Get to know all about configuration management using Chef to create a runtime environment Perform instance provisioning in AWS and Microsoft Azure and manage virtual machines on different cloud platforms—install Knife plugins for Amazon EC2 and Microsoft Azure Deploy an application in Amazon EC2, AWS Elastic Beanstalk, Microsoft Azure Web Apps, and a Docker container Monitor infrastructure, application servers, web servers, and applications with the use of open source monitoring solutions and New Relic Orchestrate multiple build jobs to achieve application deployment automation—create parameterized build jobs for end-to-end automation In Detail The DevOps culture is growing at a massive rate, as many organizations are adopting it. However, implementing it for web applications is one of the biggest challenges experienced by many developers and admins, which this book will help you overcome using various tools, such as Chef, Docker, and Jenkins. On the basis of the functionality of these tools, the book is divided into three parts. The first part shows you how to use Jenkins 2.0 for Continuous Integration of a sample JEE application. The second part explains the Chef configuration management tool, and provides an overview of Docker containers, resource provisioning in cloud environments using Chef, and Configuration Management in a cloud environment. The third part explores Continuous Delivery and Continuous Deployment in AWS, Microsoft Azure, and Docker, all using Jenkins 2.0. This book combines the skills of both web application deployment and system configuration as each chapter contains one or more practical hands-on projects. You will be exposed to real-world project scenarios that are progressively presented from easy to complex solutions. We will teach you concepts such as hosting web applications, configuring a runtime environment, monitoring and hosting on various cloud platforms, and managing them. This book will show you how to essentially host and manage web applications along with Continuous Integration, Cloud Computing, Configuration Management, Continuous Monitoring, Continuous Delivery, and Deployment. Style and approach This is a learning guide for those who have a basic knowledge of application deployment, configuration management tools, and Cloud computing, and are eager to leverage it to implement DevOps for web applications using end-to-end automation and orchestration. "The combination of Docker and Jenkins improves your Continuous Delivery pipeline using fewer resources. It also helps you scale up your builds, automate tasks, and speed up Jenkins' performance with the benefits of Docker containerization. This course will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. We start with setting up a Docker server and configuring Jenkins on it. Next, you'll work through the steps to build applications on Docker files and integrate them with Jenkins using continuous delivery processes such as continuous integration and automated acceptance testing."--Resource description page.

Continuous delivery adds enormous value to the business and the entire software delivery lifecycle, but adopting this practice means mastering new skills typically outside of a developer's comfort zone. In this practical book, Daniel Bryant and Abraham Marín-Pérez provide guidance to help experienced Java developers master skills such as architectural design, automated quality assurance, and application packaging and deployment on a variety of platforms. Not only will you learn how to create a comprehensive build pipeline for continually delivering effective software, but you'll also explore how Java application architecture and deployment platforms have affected the way we rapidly and safely deliver new software to production environments. Get advice for beginning or completing your migration to continuous delivery Design architecture to enable the continuous delivery of Java applications Build application artifacts including fat JARs, virtual machine images, and operating system container (Docker) images Use continuous integration tooling like Jenkins, PMD, and find-sec-bugs to automate code quality checks Create a comprehensive build pipeline and design software to separate the deploy and release processes Explore why functional and system quality attribute testing is vital from development to delivery Learn how to effectively build and test applications locally and observe your system while it runs in production

Explore the high-in demand core DevOps strategies with powerful DevOps tools such as Ansible, Jenkins, and Chef Key Features ?Get acquainted with methodologies and tools of the DevOps framework ?Perform continuous integration, delivery, deployment, and monitoring using DevOps tools ?Explore popular tools such as Git, Jenkins, Maven, Gerrit, Nexus, Selenium, and so on ?Embedded with assessments that will help you revise the concepts you have learned in this book Book Description DevOps is the most widely used software engineering culture and practice that aim at software development and operation. Continuous integration is a cornerstone technique of DevOps that merges software code updates from developers into a shared central mainline. This book takes a practical approach and covers the tools and strategies of DevOps. It starts with familiarizing you with DevOps framework and then shows how to perform

continuous delivery, integration, and deployment with DevOps. You will explore DevOps process maturity frameworks and progression models with checklist templates for each phase of DevOps. You will also be familiar with agile terminology, methodology, and the benefits accrued by an organization by adopting it. You will also get acquainted with popular tools such as Git, Jenkins, Maven, Gerrit, Nexus, Selenium, and so on. You will learn configuration, automation, and the implementation of infrastructure automation (Infrastructure as Code) with tools such as Chef and Ansible. This book is ideal for engineers, architects, and developers, who wish to learn the core strategies of DevOps. What you will learn? Get familiar with life cycle models, maturity states, progression and best practices of DevOps frameworks? Learn to set up Jenkins and integrate it with Git? Know how to build jobs and perform testing with Jenkins? Implement infrastructure automation (Infrastructure as Code) with tools such as Chef and Ansible? Understand continuous monitoring process with tools such as Splunk and Nagios? Learn how Splunk improves the code quality Who this book is for This book is for engineers, architects, and developers, who wish to learn the core strategies of DevOps.

This book provides essential insights on the adoption of modern software engineering practices at large companies producing software-intensive systems, where hundreds or even thousands of engineers collaborate to deliver on new systems and new versions of already deployed ones. It is based on the findings collected and lessons learned at the Software Center (SC), a unique collaboration between research and industry, with Chalmers University of Technology, Gothenburg University and Malmö University as academic partners and Ericsson, AB Volvo, Volvo Car Corporation, Saab Electronic Defense Systems, Grundfos, Axis Communications, Jeppesen (Boeing) and Sony Mobile as industrial partners. The 17 chapters present the "Stairway to Heaven" model, which represents the typical evolution path companies move through as they develop and mature their software engineering capabilities. The chapters describe theoretical frameworks, conceptual models and, most importantly, the industrial experiences gained by the partner companies in applying novel software engineering techniques. The book's structure consists of six parts. Part I describes the model in detail and presents an overview of lessons learned in the collaboration between industry and academia. Part II deals with the first step of the Stairway to Heaven, in which R&D adopts agile work practices. Part III of the book combines the next two phases, i.e., continuous integration (CI) and continuous delivery (CD), as they are closely intertwined. Part IV is concerned with the highest level, referred to as "R&D as an innovation system," while Part V addresses a topic that is separate from the Stairway to Heaven and yet critically important in large organizations: organizational performance metrics that capture data, and visualizations of the status of software assets, defects and teams. Lastly, Part VI presents the perspectives of two of the SC partner companies. The book is intended for practitioners and professionals in the software-intensive systems industry, providing concrete models, frameworks and case studies that show the specific challenges that the partner companies encountered, their approaches to overcoming them, and the results. Researchers will gain valuable insights on the problems faced by large software companies, and on how to effectively tackle them in the context of successful cooperation projects.

Discover how to use Docker to build deployment systems. Learn how to use Jenkins with Docker; review key deployment and integration concepts; explore how to create an integration test job; and more.

Annotation Over the past 10 years, distributed systems have become more fine-grained. From the large multi-million line long monolithic applications, we are now seeing the benefits of smaller self-contained services. Rather than heavy-weight, hard to change Service Oriented Architectures, we are now seeing systems consisting of collaborating microservices. Easier to change, deploy, and if required retire, organizations which are in the right position to take advantage of them are yielding significant benefits. This book takes an holistic view of the things you need to be cognizant of in order to pull this off. It covers just enough understanding of technology, architecture, operations and organization to show you how to move towards finer-grained systems.

Obtain enterprise agility and continuous delivery by implementing DevOps with Windows Server 2016 About This Book This practical learning guide will improve your application lifecycle management and help you manage environments efficiently Showcase through a sample application ways to apply DevOps principles and practices in the real world Implement DevOps using latest technologies in Windows Server 2016 such as Windows Container, Docker, and Nano Servers Who This Book Is For This book is for .NET developers and system administrators who have a basic knowledge of Windows Server 2016 and are now eager to implement DevOps at work using Windows Server 2016. Knowledge of Powershell, Azure, and containers will help. What You Will Learn Take a deep dive into the fundamentals, principles, and practices of DevOps Achieve an end-to-end DevOps implementation Execute source control management using GITHUB and VSTS vNext Automate the provisioning and configuration of infrastructure Build and release pipeline Measure the success of DevOps through application instrumentation and monitoring In Detail Delivering applications swiftly is one of the major challenges faced in fast-paced business environments. Windows Server 2016 DevOps is the solution to these challenges as it helps organizations to respond faster in order to handle the competitive pressures by replacing error-prone manual tasks using automation. This book is a practical description and implementation of DevOps principles and practices using the features provided by Windows Server 2016 and VSTS vNext. It jumps straight into explaining the relevant tools and technologies needed to implement DevOps principles and practices. It implements all major DevOps practices and principles and takes readers through it from envisioning a project up to operations and further. It uses the latest and upcoming concepts and technologies from Microsoft and open source such as Docker, Windows Container, Nano Server, DSC, Pester, and VSTS vNext. By the end of this book, you will be well aware of the DevOps principles and practices and will have implemented all these principles practically for a sample application using the latest technologies on the Microsoft platform. You will be ready to start implementing DevOps within your project/engagement. Style and approach This practical, learning book is linear and progressive, and every chapters builds on the previous chapters. We focus on the practical skills required to implement DevOps, with a summary of the key concepts only where strictly necessary. "The combination of Docker and Jenkins improves your Continuous Delivery pipeline using fewer resources. It also helps you scale up your builds, automate tasks, and speed up Jenkins performance with the benefits of Docker containerization. This course explains continuous delivery pipelines in depth and improve the continuous integration and delivery process of app development. It starts with managing configuration using Ansible. Then we build a complete Continuous Delivery pipeline. Finally we present a mixture of different aspects related to the Continuous Delivery process."--Resource description page.

A step-by-step guide to implementing Continuous Integration and Continuous Delivery (CI/CD) for Mobile, Hybrid, and Web applications

DESCRIPTION The main objective of the book is to create Declarative Pipeline for programming languages such as Java, Android, iOS, AngularJS, NodeJS, Flutter, Ionic Cordova, and .Net. The book starts by introducing all the areas which encompass the field of DevOps Practices. It covers definition of DevOps, DevOps history, benefits of DevOps culture, DevOps and Value Streams, DevOps practices, different Pipeline types such as Build Pipeline, Scripted Pipeline, Declarative Pipeline, and Blue Ocean. Each chapter focuses on Pipeline that includes Static Code Analysis using SonarQube or Lint tools, Unit tests, calculating code coverage, publishing unit tests and coverage reports, verifying the threshold of code coverage, creating build/package, and distributing package to a specific environment based on the type of programming language. The book will also teach you how to use different deployment distribution environments such as Azure App Services, Docker, Azure Container Services, Azure Kubernetes Service, and App Center. By the end, you will be able to implement DevOps Practices using Jenkins effectively and efficiently. **KEY FEATURES** ? Understand how and when Continuous Integration makes a difference ? Learn how to create Declarative Pipeline for Continuous Integration and Continuous Delivery ? Understand the importance of Continuous Code Inspection and Code Quality ? Learn to publish Unit Test and Code Coverage in Declarative Pipeline ? Understand the importance of Quality Gates and Build Quality **WHAT YOU WILL LEARN** ? Use Multi-Stage Pipeline (Pipeline as a Code) to implement Continuous Integration and Continuous Delivery. ? Create and configure Cloud resources using Platform as a Service Model ? Deploy apps to Azure App Services, Azure Kubernetes and containers ? Understand how to distribute Mobile Apps (APK and IPA) to App Center ? Improve Code Quality and Standards using Continuous Code Inspection **WHO THIS BOOK IS FOR** This book is for DevOps Consultants, DevOps Evangelists, DevOps Engineers, Technical Specialists, Technical Architects, Cloud Experts, and Beginners. Having a basics knowledge of Application development and deployment, Cloud Computing, and DevOps Practices would be an added advantage. **TABLE OF CONTENTS**
1. Introducing DevOps 2. Introducing Jenkins 2.0 and Blue Ocean 3. Building CICD Pipeline for Java Web Application 4. Building CICD Pipeline for Android App 5. Building CICD Pipeline for iOS App 6. Building CICD Pipeline for Angular Application 7. Building CICD Pipeline NodeJS Application 8. Building CICD Pipeline for Hybrid Mobile Application 9. Building CICD Pipeline for Python Application 10. Building CICD Pipeline for DotNet Application 11. Best Practices

Getting started with the processes and the tools to continuously deliver high-quality software About This Book Incorporate popular development practices to prevent messy code Automate your build, integration, release, and deployment processes with Jenkins, Git, and Gulp?and learn how continuous integration (CI) can save you time and money Gain an end-to-end overview of Continuous Integration using different languages (JavaScript and C#) and tools (Gulp and Jenkins) Who This Book Is For This book is for developers who want to understand and implement Continuous Integration and Delivery in their daily work. A basic knowledge of at least JavaScript and HTML/CSS is required. Knowing C# and SQL will come in handy. Most programmers who have programmed in a (compiled) C-like language will be able to follow along. What You Will Learn Get to know all the aspects of Continuous Integration, Deployment, and Delivery Find out how Git can be used in a CI environment Set up browser tests using Karma and Selenium and unit tests using Jasmine Use Node.js, npm, and Gulp to automate tasks such as linting, testing, and minification Explore different Jenkins jobs to integrate with Node.js and C# projects Perform Continuous Delivery and Deployment using Jenkins Test and deliver a web API In Detail The challenge faced by many teams while implementing Continuous Deployment is that it requires the use of many tools and processes that all work together. Learning and implementing all these tools (correctly) takes a lot of time and effort, leading people to wonder whether it's really worth it. This book sets up a project to show you the different steps, processes, and tools in Continuous Deployment and the actual problems they solve. We start by introducing Continuous Integration (CI), deployment, and delivery as well as providing an overview of the tools used in CI. You'll then create a web app and see how Git can be used in a CI environment. Moving on, you'll explore unit testing using Jasmine and browser testing using Karma and Selenium for your app. You'll also find out how to automate tasks using Gulp and Jenkins. Next, you'll get acquainted with database integration for different platforms, such as MongoDB and PostgreSQL. Finally, you'll set up different Jenkins jobs to integrate with Node.js and C# projects, and Jenkins pipelines to make branching easier. By the end of the book, you'll have implemented Continuous Delivery and deployment from scratch. **Style and approach** This practical book takes a step-by-step approach to explaining all the concepts of Continuous Integration and delivery, and how it can help you deliver a high-quality product.

An exploration of continuous deployment to a Kubernetes cluster, using a wide range of Kubernetes platforms with instructions on how to develop a pipeline on a few of the most commonly used CI/CD platforms. **Key Features** The fifth book of DevOps expert Viktor Farcic's bestselling DevOps Toolkit series, with a discussion of the difference between continuous delivery vs. continuous deployment, and which is best for the user **Guides** readers through the continuous deployment process using Jenkins in a Kubernetes cluster **Provides** an overview of the best practices for building, testing, and deploying applications through fully automated pipelines. **Book Description** Building on The DevOps 2.3 Toolkit: Kubernetes, Viktor Farcic brings his latest exploration of the Docker technology as he records his journey to continuously deploying applications with Jenkins into a Kubernetes cluster. The DevOps 2.4 Toolkit: Continuously Deploying Applications with Jenkins to a Kubernetes Cluster is the latest book in Viktor Farcic's series that helps you build a full DevOps Toolkit. This book guides readers through the process of building, testing, and deploying applications through fully automated pipelines. Within this book, Viktor will cover a wide-range of emerging topics, including an exploration of continuous delivery and deployment in Kubernetes using Jenkins. It also shows readers how to perform continuous integration inside these clusters, and discusses the distribution of Kubernetes applications, as well as installing and setting up Jenkins. Work with Viktor and dive into the creation of self-adaptive and self-healing systems within Docker. What you will learn **Gain** an understanding of continuous deployment **Learn** how to build, test, and deploy applications into Kubernetes **Execute** continuous integration inside containers **Who this book is for** Readers with an intermediate level understanding of Kubernetes and hands-on experience. **Learn** to use some of the most exciting and powerful tools to deliver world-class quality software with continuous delivery and DevOps **About This Book** **Get** to know the background of DevOps so you understand the collaboration between different aspects of an IT organization and a software developer **Deploy** top-quality software and ensure software maintenance and release management with this practical guide **This course** covers some of the most exciting technology available to DevOps engineers, and demonstrates multiple techniques for using them **Real-world** and realistic examples are provided to help you as you go about the implementation and adoption of continuous delivery and DevOps **Who This Book Is For** This course is for developers who want to understand how the infrastructure that builds today's enterprises works, and how to painlessly and regularly ship quality software. **What You Will Learn** **Set up** and familiarize yourself with all the tools you need to be efficient with DevOps **Design** an application that is suitable for continuous deployment systems with DevOps in mind **Test** the code using automated regression testing with Jenkins Selenium **Managing** the lifecycle of hosts, from creation to ongoing management using Puppet Razor **Find out** how to manage, use, and work with Code in the Git version management system **See** what traps, pitfalls, and hurdles to look out for as you implement continuous delivery and DevOps **In Detail** **Harness** the power of DevOps to boost your skill set and make your IT organization perform better. If you're keen to employ DevOps techniques to better your software development, this course contains all you need to overcome the day-to-day complications of managing complex infrastructures the DevOps way. Start with your first module – Practical DevOps - that encompasses the entire flow from code from testing to production. Get a solid ground-level knowledge of how to monitor code for any anomalies, perform code testing, and make sure the code is running smoothly through a series of real-world exercise, and develop practical skills by creating a sample enterprise Java application. In the second module, run through a series of tailored mini-tutorials designed to give you a complete understanding of every DevOps automation technique. Create real change in the way you deliver your projects by utilizing some of the most commendable software available today. Go from your first steps of managing code in Git to

configuration management in Puppet, monitoring using Sensu, and more. In the final module, get to grips with the continuous delivery techniques that will help you reduce the time and effort that goes into the delivery and support of software. This Learning Path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following Packt products: Practical DevOps by Joakim Verona DevOps Automation Cookbook by Michael Duffy Continuous Delivery and DevOps : A Quickstart Guide - Second Edition by Paul Swartout Style and approach This course is an easy to follow project based guide for all those with a keen interest in deploying world-class software using some of the most effective and remarkable technologies available.

Unleash the combination of Docker and Jenkins in order to enhance the DevOps workflow

About This Book

- * Build reliable and secure applications using Docker containers.
- * Create a complete Continuous Delivery pipeline using Docker, Jenkins, and Ansible.
- * Deliver your applications directly on the Docker Swarm cluster.
- * Create more complex solutions using multi-containers and database migrations.

Who This Book Is For

This book is intended to provide a full overview of deep learning. From the beginner in deep learning and artificial intelligence to the data scientist who wants to become familiar with Theano and its supporting libraries, or have an extended understanding of deep neural nets. Some basic skills in Python programming and computer science will help, as well as skills in elementary algebra and calculus.

What You Will Learn

- * Get to grips with docker fundamentals and how to dockerize an application for the Continuous Delivery process
- * Configure Jenkins and scale it using Docker-based agents
- * Understand the principles and the technical aspects of a successful Continuous Delivery pipeline
- * Create a complete Continuous Delivery process using modern tools: Docker, Jenkins, and Ansible
- * Write acceptance tests using Cucumber and run them in the Docker ecosystem using Jenkins
- * Create multi-container applications using Docker Compose
- * Managing database changes inside the Continuous Delivery process and understand effective frameworks such as Cucumber and Flyweight
- * Build clustering applications with Jenkins using Docker Swarm
- * Publish a built Docker image to a Docker Registry and deploy cycles of Jenkins pipelines using community best practices

In Detail

The combination of Docker and Jenkins improves your Continuous Delivery pipeline using fewer resources. It also helps you scale up your builds, automate tasks and speed up Jenkins performance with the benefits of Docker containerization. This book will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. It will start with setting up a Docker server and configuring Jenkins on it. It will then provide steps to build applications on Docker files and integrate them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, and configuration management. Moving on you will learn how to ensure quick application deployment with Docker containers along with scaling Jenkins using Docker Swarm. Next, you will get to know how to deploy applications using Docker images and testing them with Jenkins. By the end of the book, you will be enhancing the DevOps workflow by integrating the functionalities of Docker and Jenkins.

Style and approach

The book is aimed at DevOps Engineers, developers and IT Operations who want to enhance the DevOps culture using Docker and Jenkins.

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