Continuous Delivery And Docker Amazon S3 Aws

The Most Complete, Practical, and Actionable Guide to Microservices Going beyond mere theory and marketing hype, Eberhard Wolff presents all the knowledge you need to capture the full benefits of this emerging paradigm. He illuminates microservice concepts, architectures, and scenarios from a technology-neutral standpoint, and demonstrates how to implement them with today's leading technologies such as Docker, Java, Spring Boot, the Netflix stack, and Spring Cloud. The author fully explains the benefits and tradeoffs associated with microservices, and guides you through the entire project lifecycle: development, testing, deployment, operations, and more. You'll find best practices for architecting microservice-based systems, individual microservices, and nanoservices, each illuminated with pragmatic examples. The author supplements opinions based on his experience with concise essays from other experts, enriching your understanding and illuminating areas where experts disagree. Readers are challenged to experiment on their own the concepts explained in the book to gain hands-on experience. Discover what microservices are, and how they differ from other forms of modularization Modernize legacy applications and efficiently build new systems Drive more value from continuous delivery with microservices Learn how microservices differ from SOA Optimize the microservices project lifecycle Plan, visualize, manage, and evolve architecture Integrate and communicate among microservices Apply advanced architectural techniques, including CQRS and Event Sourcing Maximize resilience and stability Operate and monitor microservices in production Build a full implementation with Docker, Java, Spring Boot, the Netflix stack, and Spring Cloud Explore nanoservices with Amazon Lambda, OSGi, Java EE, Vert.x, Erlang, and Seneca Understand microservices' impact on teams, technical leaders, product owners, and stakeholders Managers will discover better ways to support microservices, and learn how adopting the method affects the entire organization. Developers will master the technical skills and concepts they need to be effective. Architects will gain a deep understanding of key issues in creating or migrating toward microservices, and exactly what it will take to transform their plans into reality.

Unleash the combination of Docker and Jenkins in order to enhance the DevOps workflowAbout 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 ForThis book is indented 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 practicesIn DetailThe 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 approachThe book is aimed at DevOps Engineers, developers and IT Operations who want to enhance the DevOps culture using Docker and Jenkins.

Scale and maintain outstanding performance in your AWS-based infrastructure using DevOps principles Key Features Implement continuous integration and continuous deployment pipelines on AWS Gain insight from an expert who has worked with Silicon Valley's most high-profile companies Implement DevOps principles to take full advantage of the AWS stack and services Book Description The DevOps movement has transformed the way modern tech companies work. Amazon Web Services (AWS), which has been at the forefront of the cloud computing revolution, has also been a key contributor to the DevOps movement, creating a huge range of managed services that help you implement DevOps principles. Effective DevOps with AWS, Second Edition will help you to understand how the most successful tech start-ups launch and scale their services on AWS, and will teach you how you can do the same. This book explains how to treat infrastructure as code, meaning you can bring resources online and offline as easily as you control your software. You will also build a continuous integration and continuous deployment pipeline to keep your app up to date. Once you have gotten to grips will all this, we'll move on to how to scale your applications to offer maximum performance to users

even when traffic spikes, by using the latest technologies, such as containers. In addition to this, you'll get insights into monitoring and alerting, so you can make sure your users have the best experience when using your service. In the concluding chapters, we'll cover inbuilt AWS tools such as CodeDeploy and CloudFormation, which are used by many AWS administrators to perform DevOps. By the end of this book, you'll have learned how to ensure the security of your platform and data, using the latest and most prominent AWS tools. What you will learn Implement automatic AWS instance provisioning using CloudFormation Deploy your application on a provisioned infrastructure with Ansible Manage infrastructure using Terraform Build and deploy a CI/CD pipeline with Automated Testing on AWS Understand the container journey for a CI/CD pipeline using AWS ECS Monitor and secure your AWS environment Who this book is for Effective DevOps with AWS is for you if you are a developer, DevOps engineer, or you work in a team which wants to build and use AWS for software infrastructure. Basic computer science knowledge is required to get the most out of this book.

Whether you're deploying applications on-premise or in the cloud, this cookbook is for developers, operators, and IT professionals who need practical solutions for using Docker. The recipes in this book will help developers go from zero knowledge to distributed applications packaged and deployed within a couple of chapters. IT professionals will be able to use this cookbook to solve everyday problems, as well as create, run, share, and deploy Docker images quickly. Operators will learn and understand what developers are excited about and start to adopt the tools that will change the way they work.--

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.

Comprehensive, interactive exam preparation and so much more The AWS Certified SysOps Administrator Official Study Guide: Associate Exam is a comprehensive exam preparation resource. This book bridges the gap between exam preparation and real-world readiness, covering exam objectives while guiding you through hands-on exercises based on situations you'll likely encounter as an AWS Certified SysOps Administrator. From deployment, management, and

operations to migration, data flow, cost control, and beyond, this guide will help you internalize the processes and best practices associated with AWS. The Sybex interactive online study environment gives you access to invaluable preparation aids, including an assessment test that helps you focus your study on areas most in need of review, and chapter tests to help you gauge your mastery of the material. Electronic flashcards make it easy to study anytime, anywhere, and a bonus practice exam gives you a sneak preview so you know what to expect on exam day. Cloud computing offers businesses a cost-effective, instantly scalable IT infrastructure. The AWS Certified SysOps Administrator - Associate credential shows that you have technical expertise in deployment, management, and operations on AWS. Study exam objectives Gain practical experience with hands-on exercises Apply your skills to real-world scenarios Test your understanding with challenging review questions Earning your AWS Certification is much more than just passing an exam—you must be able to perform the duties expected of an AWS Certified SysOps Administrator in a real-world setting. This book does more than coach you through the test: it trains you in the tools, procedures, and thought processes to get the job done well. If you're serious about validating your expertise and working at a higher level, the AWS Certified SysOps Administrator Official Study Guide: Associate Exam is the resource you've been seeking. 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.
Deploy serverless and scalable cloud-native applications with Jakarta EE KEY FEATURES ? Example-driven approach crafted specially for developers and architects. ? Covers all core areas for cloud-native development. ? Step-by-step implementation of core concepts, including application scalability and security, serverless, and containerization. DESCRIPTION The book helps readers to get a basic understanding of features provided by the cloud and core concepts of cloud native development. A hands-on approach makes sure that after reading the book, one can straight away implement the concepts in their daily design and development activities. The book starts with the basics of cloud computing and moves on to understanding the core concepts to create a production-ready cloud-native application. The book helps readers to develop a code that is testable and maintainable to support Agile cloud native development. This book also talks about the security and scalability aspects of applications which are the backbone of any large-scale application. The book covers advanced cloud-native application development approaches using containers and serverless approaches. The book will help readers to get ready for a cloud-native development journey. Whether one is creating a small application or a large-scale application, core concepts explained in this book remain relevant and will work as a guiding light for developers and architects. WHAT YOU WILL LEARN ? Explains the core features that are part of cloud computing. ? Build applications that are fast to market due to testability and maintainability. ? Build applications that are secured

against vulnerabilities. ? Build applications that are easy to scale. WHO THIS BOOK IS FOR The book is meant for software developers, architects, and technical readers who want to learn about Cloud-based application development. Basic knowledge of the Java programming language or Jakarta EE platform is expected to understand code examples used in the book. TABLE OF CONTENTS 1. Introduction to Cloud Computing 2. Design for Cloud 3. Major Players in Cloud Computing 4. Sample Application Using Jakarta EE 5. Testing Cloud-Native Applications 6. Continuous Integration and Continuous Delivery 7. Securing Cloud-Based Applications 8. Scalability 9. Monitoring, Alerting, and Reporting 10. Containers 11. Serverless Computing 12. Best Practices for Developing Cloud-Native Applications

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

- This is the latest practice test to pass the Amazon DOP-C01 AWS DevOps Engineer Professional Exam. - It contains 260 Questions and Answers. - All the questions are 100% valid and stable. - You can reply on this practice test to pass the exam with a good mark and in the first attempt.

Get hands-on recipes to automate and manage Linux containers with the Docker 1.6 environment and jump-start your Puppet development About This Book Successfully deploy DevOps with proven solutions and recipes Automate your infrastructure with Puppet and combine powerful DevOps methods Deploy and manage highly scalable applications using Kubernetes streamline the way you manage your applications Who This Book Is For This Learning Path is for developers, system administrators, and DevOps engineers who want to use Puppet, Docker, and Kubernetes in their development, QA, or production environments. This Learning Path assumes experience with Linux administration and requires some experience with command-line usage and basic text file editing. What You Will Learn Discover how to build high availability Kubernetes clusters Deal with inherent issues with container virtualization and container concepts Create services with Docker to enable the swift development and deployment of applications Make optimum use of Docker in a testing environment Create efficient manifests to streamline your deployments Automate Puppet master deployment using Git hooks, r10k, and PuppetDB In Detail With so many IT management and DevOps

tools on the market, both open source and commercial, it's difficult to know where to start. DevOps is incredibly powerful when implemented correctly, and here's how to get it done.This Learning Path covers three broad areas: Puppet, Docker, and Kubernetes. This Learning Path is a large resource of recipes to ease your daily DevOps tasks. We begin with recipes that help you develop a complete and expert understanding of Puppet's latest and most advanced features. Then we provide recipes that help you efficiently work with the Docker environment. Finally, we show you how to better manage containers in different scenarios in production using Kubernetes. This course is based on these books: Puppet Cookbook, Third Edition Docker Cookbook Kubernetes Cookbook Style and approach This easy-to-follow tutorial-style guide teaches you precisely how to configure complex systems in Puppet and manage your containers using Kubernetes.

Complete Guide to Get Started with DevOpsDevOps is powerful set of collaborative practices that can take your project to the next level faster than you expect, but only if you understand it and properly implement it! Want to master DevOps quickly?There are so many uses for DevOps and so many compelling reasons to implement DevOps in your business or for your own projects. With this guide in your hands, it is easier than ever to maximize your efficiency and productivity in business and in other projects! When you understand how to use DevOps to its maximum potential, you unlock greater efficiency and make better use of your time and your team's time. Easily implement DevOps by following the simple instructions fully explained inside this guide. It doesn't matter if you have never used DevOps before, this book gives you detailed chapters on the principles of DevOps, all of its features, and exactly how to implement them! This step-by-step guide gives you everything you need to know to unlock the power of DevOps and do more in your business and with your team than you ever thought possible!Here is a preview of what you will learn in this guide: What is DevOps? History and Development of Dev Ops Basic Ideas of DevOps Dev Ops Toolchains Stages of Dev Ops Planning Creating Verification Packaging Release Configuration Monitoring Why Use DevOps? Understanding and Implementing the CALMS Framework of Dev Ops Culture Automation Lean Measurement Sharing What Tools Are Used in DevOps? Source Code Repository Git Build Server Jenkins Amazon CodeBuild Configuration Management Puppet Virtual Infrastructure Docker Amazon Web Services Integrating Amazon Cloud Computing into Dev Ops Microsoft Azure Integrating Azure Cloud Computing into Dev Ops Test Automation EC2 Systems Manager Patch Manager Automation Pipeline Orchestration CodePipeline CodeDeploy DevOps services Continuous Delivery Continuous Delivery vs. Continuous Deployment Continuous Delivery Benefits Continuous Integration Why is Continuous Integration Needed? How does Continuous Integration Work? Continuous Integration Benefits Infrastructure as a Service (IaaS) Platform as a Service (PaaS) Software as a Service (SaaS) Dev Ops as a Service (DaaS) Dev Ops as a managed cloud service Monitoring and Logging Amazon CloudWatch Communication and Collaboration And so much more! Even if you have never used DevOps before have no fear! With this guide in your hands that will not be a barrier for you any longer. Learn to master all the best features of DevOps easily when you grab this guide now!

Automate release processes, deployment, and continuous integration of your application as well as infrastructure automation with the powerful services offered by AWS About This Book Accelerate your infrastructure's productivity by implementing a continuous

delivery pipeline within your environment Leverage AWS services and Jenkins 2.0 to perform complete application deployments on Linux servers This recipe-based guide that will help you minimize application deployment downtime Who This Book Is For This book is for developers and system administrators who are responsible for hosting their application and managing instances in AWS. It's also ideal for DevOps engineers looking to provide continuous integration, deployment, and delivery. A basic understanding of AWS, Jenkins, and some scripting knowledge is needed. What You Will Learn Build a sample Maven and NodeJS Application using CodeBuild Deploy the application in EC2/Auto Scaling and see how CodePipeline helps you integrate AWS services Build a highly scalable and fault tolerant CI/CD pipeline Achieve the CI/CD of a microservice architecture application in AWS ECS using CodePipeline, CodeBuild, ECR, and CloudFormation Automate the provisioning of your infrastructure using CloudFormation and Ansible Automate daily tasks and audit compliance using AWS Lambda Deploy microservices applications on Kubernetes using Jenkins Pipeline 2.0 In Detail AWS CodeDeploy, AWS CodeBuild, and CodePipeline are scalable services offered by AWS that automate an application's build and deployment pipeline. In order to deliver tremendous speed and agility, every organization is moving toward automating an entire application pipeline. This book will cover all the AWS services required to automate your deployment to your instances. You'll begin by setting up and using one of the AWS services for automation – CodeCommit. Next, you'll learn how to build a sample Maven and NodeJS Application using CodeBuild. After you've built the application, you'll see how to use CodeDeploy to deploy the application in EC2/Autoscaling. You'll also build a highly scalable and fault tolerant continuous integration (CI)/continuous deployment (CD) pipeline using some easy-to-follow recipes. Following this, you'll achieve CI/CD for Microservices application and reduce the risk within your software development lifecycle. You'll also learn to set up an infrastructure using CloudFormation Template and Ansible, and see how to automate AWS resources using AWS Lambda. Finally, you'll learn to automate instances in AWS and automate the deployment lifecycle of applications.By the end of this book, you'll be able to minimize application downtime and implement CI/CD, gaining total control over your software development lifecycle. Style and approach This book takes a "How to do it" approach, providing with easy solutions to automate common maintenance and deployment tasks.

Key concepts, sample applications, best practices, and troubleshooting tips to build highly scalable applications in AWS. Key Features Design highly available, cost efficient, fault tolerant, and scalable distributed systems A practical guide that will help you build, deploy, and manage applications with ease. Develop effective solutions with AWS SDK and Lambda Book Description Continuous deployment and Agile methodology have enabled huge advances in modern applications. This book will enable the reader to make use of this rapidly evolving technology to build highly scalable applications within AWS using different architectures. You will begin with installation of AWS SDK and you will get hands-on experience on creating an application using AWS Management Console and AWS Command Line Interface (CLI). Next you will be integrating Applications with AWS services such as DynamoDB, Amazon Kinesis, AWS Lambda, Amazon SQS and Amazon SWF Following this you will get well versed with CI/CD workflow and work with four major phases in Release processes – Source, Build, Test and Production. Next you will learn to

apply AWS developer tools in your Continuous Integration (CI) and Continuous Deployment (CD) WorkFlow. Later you will learn about User Authentication using Amazon Cognito and also how you can evaluate the best architecture as per your infrastructure costs. You will learn about Amazon EC2 service and deploy an app using Amazon EC2.You will also get well versed with container service which is Amazon EC2 Container Service (Amazon ECS) and you will learn to deploy an app using Amazon ECS. Along with EC2 and ECS, you will also deploying a practical real-world example of a CI/CD application with the Serverless Application Framework which is known as AWS Lambda. Finally you will learn how to build, develop and deploy the Application using AWS Developer tools like AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy and AWS CodePipeline as per project needs. Also you can develop and deploy applications within minutes using AWS CodeStar from wizard. By the end of this book, the reader will effectively build, deploy, and manage applications on AWS along with scaling and securing applications with best practices and troubleshooting tips. What you will learn Learn how to get up and running with AWS Developer Tools. Integrate the four major phases in the Release Processes. Source, Build, Test and Production. Learn how to integrate Continuous Integration, Continuous Delivery, and Continuous Deployment in AWS. Make secure, scalable and fault tolerant applications. Understand different architectures and deploy complex architectures within minutes Who this book is for This book targets developers who would like to build and manage web and mobile applications and services on the AWS platform. If you are an architect you will be able to take a deep dive and use examples that can be readily applied to real world scenarios. Some prior programming experience is assumed along with familiarity of cloud computing.

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 Simplify your DevOps roles with DevOps tools and techniques Key Features Learn to utilize business resources effectively to increase

productivity and collaboration Leverage the ultimate open source DevOps tools to achieve continuous integration and continuous delivery (CI/CD) Ensure faster time-to-market by reducing overall lead time and deployment downtime Book Description The implementation of DevOps processes requires the efficient use of various tools, and the choice of these tools is crucial for the sustainability of projects and collaboration between development (Dev) and operations (Ops). This book presents the different patterns and tools that you can use to provision and configure an infrastructure in the cloud. You'll begin by understanding DevOps culture, the application of DevOps in cloud infrastructure, provisioning with Terraform, configuration with Ansible, and image building with Packer. You'll then be taken through source code versioning with Git and the construction of a DevOps CI/CD pipeline using Jenkins, GitLab CI, and Azure Pipelines. This DevOps handbook will also guide you in containerizing and deploying your applications with Docker and Kubernetes. You'll learn how to reduce deployment downtime with blue-green deployment and the feature flags technique, and study DevOps practices for open source projects. Finally, you'll grasp some best practices for reducing the overall application lead time to ensure faster time to market. By the end of this book, you'll have built a solid foundation in DevOps, and developed the skills necessary to enhance a traditional software delivery process using modern software delivery tools and techniques What you will learn Become well versed with DevOps culture and its practices Use Terraform and Packer for cloud infrastructure provisioning Implement Ansible for infrastructure configuration Use basic Git commands and understand the Git flow process Build a DevOps pipeline with Jenkins, Azure Pipelines, and GitLab CI Containerize your applications with Docker and Kubernetes Check application quality with SonarQube and Postman Protect DevOps processes and applications using DevSecOps tools Who this book is for If you are a developer or a system administrator interested in understanding continuous integration, continuous delivery, and containerization with DevOps tools and techniques, this book is for you.

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 DescriptionBuilding 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 containersWho this book is forReaders with an intermediate level understanding of Kubernetes and hands-on experience.

Introduction: DevOps Interview Questions DevOps is one of the most popular technology trends. There is a growing demand for DevOps Engineer job in technology companies. This book contains technical interview questions that an interviewer asks for DevOps Engineer position. Each question is accompanied with an answer so that you can prepare for job interview in short time. We have compiled this list

after attending dozens of technical interviews in top-notch companies like- Airbnb, Netflix, Amazon etc.Often, these questions and concepts are used in our daily work. But these are most helpful when an Interviewer is trying to test your deep knowledge of DevOps. What are the DevOps topics covered in this book? We cover a wide variety of DevOps topics in this book. Some of the topics are Docker, AWS OpsWorks Stacks, CloudFormation, Ansible, Jenkins, Nagios, Kubernetes etc. How will this book help me? By reading this book, you do not have to spend time searching the Internet for DevOps interview questions. We have already compiled the list of the most popular and the latest DevOps Interview questions. Are there answers in this book? Yes, in this book each question is followed by an answer. So you can save time in interview preparation. What is the best way of reading this book? You have to first do a slow reading of all the questions in this book. Once you go through them in the first pass, mark the questions that you could not answer by yourself. Then, in second pass go through only the difficult questions. After going through this book 2-3 times, you will be well prepared to face a technical interview for a DevOps Engineer position. What is the level of questions in this book? This book contains questions that are good for a beginner DevOps engineer to a senior DevOps engineer. The difficulty level of question varies in the book from Fresher to a Seasoned professional. What are the sample questions in this book? What are the popular DevOps tools that you use? What are the main benefits of DevOps? What is the typical DevOps workflow you use in your organization? How do you take DevOps approach with Amazon Web Services? How will you run a script automatically when a developer commits a change into GIT? What are the main features of AWS OpsWorks Stacks? How does CloudFormation work in AWS? What is CICD in DevOps? What are the best practices of Continuous Integration (CI)? What are the benefits of Continuous Integration (CI)? What are the options for security in Jenkins? What are the main benefits of Chef? What is the architecture of Chef? What are the main use cases of Ansible? What is Docker Hub? What is your favorite scripting language for DevOps? What is Multi-factor authentication? What is State Stalking in Nagios? What are the main features of Nagios? What is the architecture of Puppet? What is the use of Kubernetes? What is the architecture of Kubernetes? How does Kubernetes provide high availability of applications in a Cluster? What is Chaos Monkey in DevOps? How do you perform Test Automation in DevOps? What is a Deployment Pipeline? What are the main features of Docker Hub? What are the security benefits of using Container based system? What is a Passive check in Nagios? What is a Docker container? What are the common use cases of Docker? Can we lose our data when a Docker Container exits? http://www.knowledgepowerhouse.com

Docker for DevelopersDevelop and run your application with Docker containers using DevOps tools for continuous deliveryPackt Publishing Ltd

Learn how to use the power of Docker and Kubernetes to deploy your Rails applications easily and efficiently. Deploying Rails with Docker, Kubernetes and ECS shows you how to set up the project, push it to DockerHub, manage services and set up an efficient continuous integration environment. Every concept is clearly explained alongside a full Ruby on Rails application deployment. You'll also learn how to deploy via Docker using Amazon EC2 Container Service. Docker and Kubernetes are increasing in popularity every day, but what if you want to leverage their benefits for your Rails application? This is the quick guide you need. What You Will Learn Create a Rails API application using Rails 5 and PostgreSQL, and Dockerize it Write and test templates to run the application with Kubernetes Create a Kubernetes cluster in Amazon Web Services and run your Inspect and troubleshoot problems in the cluster Automatize the the whole deployment process with Jenkins Who This Book Is For This book is for anyone who wants to understand how to effectively deploy a Rails application using Docker and Kubernetes. You will need to understand Rails and have basic knowledge of what Docker and Kubernetes are used for.

Help your organization join the DevOps revolution About This Book Helps you skill up your DevOps knowledge without a strong set of

prerequisites Deliver continuously improved software by showcasing the most advanced tools and techniques Acquire a deeper insight into implementing DevOps in your organization and deliver results from day 1 Who This Book Is For This book is written for engineers and companies that want to learn the minimum set of required technologies and processes to be successful in the DevOps world. This book also targets system administrators, developers, and IT professionals who would like to employ DevOps techniques and best practices to manage IT infrastructures or would like to acquire the necessary skills needed to work in DevOps teams. What You Will Learn Master development best practices. Understand how the Agile Delivery Methodology helps you ensure accuracy and quality. Analyze branching strategies such as branch creation, merging, and synchronization. Learn to automate builds to deploy and deliver code faster and more often Explore testing frameworks and how to automate testing Learn to put specific metrics in place to measure ROI of DevOps and monitor logs and events in a system In Detail This book follows a unique approach to modern DevOps using cutting-edge tools and technologies such as Ansible, Kubernetes, and Google Cloud Platform. This book starts by explaining the organizational alignment that has to happen in every company that wants to implement DevOps in order to be effective, and the use of cloud datacenters in combination with the most advanced DevOps tools to get the best out of a small team of skilled engineers. It also delves into how to use Kubernetes to run your applications in Google Cloud Platform, minimizing the friction and hassle of maintaining a cluster but ensuring its high availability. By the end of this book, you will be able to realign teams in your company and create a Continuous Delivery pipeline with Kubernetes and Docker. With strong monitoring in place, you will also be able to react to adverse events in your system, minimizing downtime and improving the overall up-time and stability of your system. Style and approach This book takes a step-by-step practical approach to the implementation of DevOps. This book will teach you how to enable IT organizations to deliver faster and smarter through a unique approach using Code-Build-Test-Release-Configure-Monitor (CBTRCM).

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

Leading tech companies such as Netflix, Amazon and Uber use data science and machine learning at scale in their core business processes, whereas most traditional companies struggle to expand their machine learning projects beyond a small pilot scope. This book enables organizations to truly embrace the benefits of digital transformation by anchoring data and AI products at the core of their business. It provides executives with the essential tools and concepts to establish a data and AI portfolio strategy as well as the organizational setup and agile processes that are required to deliver machine learning products at scale. Key consideration is given to advancing the data architecture

and governance, balancing stakeholder needs and breaking organizational silos through new ways of working. Each chapter includes templates, common pitfalls and global case studies covering industries such as insurance, fashion, consumer goods, finance, manufacturing and automotive. Covering a holistic perspective on strategy, technology, product and company culture, Driving Digital Transformation through Data and AI guides the organizational transformation required to get ahead in the age of AI.

Sharpen your DevOps knowledge with DevOps Bootcamp About This Book Improve your organization's performance to ensure smooth production of software and services. Learn how Continuous Integration and Continuous Delivery practices can be utilized to cultivate the DevOps culture. A fast-paced guide filled with illustrations and best practices to help you consistently ship quality software. Who This Book Is For The book is aimed at IT Developers and Operations—administrators who want to quickly learn and implement the DevOps culture in their organization. What You Will Learn Static Code Analysis using SOnarqube Configure a Maven-based JEE Web Application Perform Continuous Integration using Jenkins and VSTS Install and configure Docker Converge a Chef node using a Chef workstation Accomplish Continuous Delivery in Microsoft Azure VM and Microsoft Azure App Services (Azure Web Apps) using Jenkins Perform Load Testing using Apache JMeter Build and Release Automation using Visual Studio Team Services Monitor Cloud-based resources In Detail DevOps Bootcamp delivers practical learning modules in manageable chunks. Each chunk is delivered in a day, and each day is a productive one. Each day builds your competency in DevOps. You will be able to take the task you learn every day and apply it to cultivate the DevOps culture. Each chapter presents core concepts and key takeaways about a topic in DevOps and provides a series of hands-on exercises. You will not only learn the importance of basic concepts or practices of DevOps but also how to use different tools to automate application lifecycle management. We will start off by building the foundation of the DevOps concepts. On day two, we will perform Continuous Integration using Jenkins and VSTS both by configuring Maven-based JEE Web Application?. We will also integrate Jenkins and Sonar qube for Static Code Analysis. Further, on day three, we will focus on Docker containers where we will install and configure Docker and also create a Tomcat Container to deploy our Java based web application. On day four, we will create and configure the environment for application deployment in AWS and Microsoft Azure Cloud for which we will use Infrastructure as a Service and Open Source Configuration Management tool Chef. For day five, our focus would be on Continuous Delivery. We will automate application deployment in Docker container using Jenkins Plugin, AWS EC2 using Script, AWS Elastic Beanstalk using Jenkins Plugin, Microsoft Azure VM using script, and Microsoft Azure App Services Using Jenkins. We will also configure Continuous Delivery using VSTS. We will then learn the concept of Automated Testing on day six using Apache JMeter and URL-based tests in VSTS. Further, on day seven, we will explore various ways to automate application lifecycle management using orchestration. We will see how Pipeline can be created in Jenkins and VSTS, so the moment Continuous? Integration is completed successfully, Continuous Delivery will start and application will be deployed. On the final day, our focus would be on Security access to Jenkins and Monitoring of CI resources, and cloud-based resources in AWS and Microsoft Azure Platform as a Service. Style and Approach This book is all about fast and intensive learning. This means we don't waste time in helping readers get started. The new content is basically about filling in with highly-effective examples to build new things, solving problems in newer and unseen ways, and solving real-world examples.

Summary Amazon Web Services in Action, Second Edition is a comprehensive introduction to computing, storing, and networking in the AWS cloud. You'll find clear, relevant coverage of all the essential AWS services you to know, emphasizing best practices for security, high availability and scalability. Foreword by Ben Whaley, AWS community hero and author. Purchase of the print book includes a free eBook in

PDF, Kindle, and ePub formats from Manning Publications. About the Technology The largest and most mature of the cloud platforms, AWS offers over 100 prebuilt services, practically limitless compute resources, bottomless secure storage, as well as top-notch automation capabilities. This book shows you how to develop, host, and manage applications on AWS. About the Book Amazon Web Services in Action, Second Edition is a comprehensive introduction to deploying web applications in the AWS cloud. You'll find clear, relevant coverage of all essential AWS services, with a focus on automation, security, high availability, and scalability. This thoroughly revised edition covers the latest additions to AWS, including serverless infrastructure with AWS Lambda, sharing data with EFS, and in-memory storage with ElastiCache. What's inside Completely revised bestseller Secure and scale distributed applications Deploy applications on AWS Design for failure to achieve high availability Automate your infrastructure About the Reader Written for mid-level developers and DevOps engineers. About the Author Andreas Wittig and Michael Wittig are software engineers and DevOps consultants focused on AWS. Together, they migrated the first bank in Germany to AWS in 2013. Table of Contents PART 1 - GETTING STARTED What is Amazon Web Services? A simple example: WordPress in five minutes PART 2 - BUILDING VIRTUAL INFRASTRUCTURE CONSISTING OF COMPUTERS AND NETWORKING Using virtual machines: EC2 Programming your infrastructure: The command-line, SDKs, and CloudFormation Automating deployment: CloudFormation, Elastic Beanstalk, and OpsWorks Securing your system: IAM, security groups, and VPC Automating operational tasks with Lambda PART 3 - STORING DATA IN THE CLOUD Storing your objects: S3 and Glacier Storing data on hard drives: EBS and instance store Sharing data volumes between machines: EFS Using a relational database service: RDS Caching data in memory: Amazon ElastiCache Programming for the NoSQL database service: DynamoDB PART 4 - ARCHITECTING ON AWS Achieving high availability: availability zones, auto-scaling, and CloudWatch Decoupling your infrastructure: Elastic Load Balancing and Simple Queue Service Designing for fault tolerance Scaling up and down: auto-scaling and CloudWatch

Just like other books I wrote, this one did not have a fixed scope. I did not start with an index. I didn't write a summary of each chapter in an attempt to define the scope. I do not do such things. There was only a high-level goal to explore continuous delivery and deployment inside Kubernetes clusters. What I did do, though, was to set a few guidelines.The first guideline is that "all the examples will be tested on all major Kubernetes platforms." Well, that might be a bit far-fetched. I'm aware that any sentence that mentions "all" together with "Kubernetes" is bound to be incorrect. New platforms are popping out like mushrooms after rain. Still, what I can certainly do is to choose a few of the most commonly used ones.Minikube and Docker for Mac or Windows should undoubtedly be there for those who prefer to "play" with Docker locally.AWS is the biggest hosting provider so Kubernetes Operations (kops) must be included as well.Since it would be silly to cover only un-managed cloud, I had to include managed Kubernetes clusters as well. Google Kubernetes Engine (GKE) is the obvious choice. It is the most stable and features rich managed Kubernetes solution. Adding GKE to the mix means that Azure Container Service (AKS) and Amazon's Elastic Container Service (EKS) should be included as well so that we can have the "big trio" of the hosting vendors that offer managed Kubernetes. Unfortunately, at the time of this writing (May 2018), Elastic Container Service (EKS) is in the preview stage and Amazon is providing access only to a relatively small number of people. AKS, on the other hand, is available but, at this moment, it is too unstable. So, I'm forced to scale down from the trio to GKE as the only managed Kubernetes we'll explore.Finally, a possible on-prem solution should be included as well. Since OpenShift shines in that area, the choice was relatively easy.All in all, I decided to test everything in minikube and Docker for Mac locally, AWS with kops as the representative of a cluster in the cloud, GKE for managed Kubernetes clusters, and OpenShift (with minishift) as a potential on-prem solution. That, in itself, already constitutes a real challenge that might prove to be more than I can

chew. Still, making sure that all the examples work with all those platforms and solutions should provide some useful insights.Some of you already chose the Kubernetes flavor you'll use. Others might still wonder whether to adopt one or the other. Even though the comparison of different Kubernetes platforms is not the primary scope of the book, I'll do my best to explain the differences as they come.To summarize the guidelines, the book has to explore continuous delivery and deployment in Kubernetes using Jenkins. All the examples have to be tested in minikube, Docker for Mac (or Windows), AWS with kops, GKE, and OpenShift with minishift, and EKS.

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.

Run Docker on AWS and build real-world, secure, and scalable container platforms on cloud Key Features Configure Docker for the ECS environment Integrate Docker with different AWS tools Implement container networking and deployment at scale Book Description Over the last few years, Docker has been the gold standard for building and distributing container applications. Amazon Web Services (AWS) is a leader in public cloud computing, and was the first to offer a managed container platform in the form of the Elastic Container Service (ECS). Docker on Amazon Web Services starts with the basics of containers, Docker, and AWS, before teaching you how to install Docker on your local machine and establish access to your AWS account. You'll then dig deeper into the ECS, a native container management platform provided by AWS that simplifies management and operation of your Docker clusters and applications for no additional cost. Once you have got to grips with the basics, you'll solve key operational challenges, including secrets management and auto-scaling your infrastructure and applications. You'll explore alternative strategies for deploying and running your Docker applications on AWS, including Fargate and ECS

Service Discovery, Elastic Beanstalk, Docker Swarm and Elastic Kubernetes Service (EKS). In addition to this, there will be a strong focus on adopting an Infrastructure as Code (IaC) approach using AWS CloudFormation. By the end of this book, you'll not only understand how to run Docker on AWS, but also be able to build real-world, secure, and scalable container platforms in the cloud. What you will learn Build, deploy, and operate Docker applications using AWS Solve key operational challenges, such as secrets management Exploit the powerful capabilities and tight integration of other AWS services Design and operate Docker applications running on ECS Deploy Docker applications quickly, consistently, and reliably using IaC Manage and operate Docker clusters and applications for no additional cost Who this book is for Docker on Amazon Web Services is for you if you want to build, deploy, and operate applications using the power of containers, Docker, and Amazon Web Services. Basic understanding of containers and Amazon Web Services or any other cloud provider will be helpful, although no previous experience of working with these is required.

A beginner's guide to building fully functioning web applications from scratch using the latest features of ASP.NET Core 3 and C# 8 Key Features Get to grips with the new features and APIs in ASP.NET Core 3, EF Core 3, and Blazor Create web APIs that integrate your applications with other systems and services Learn to deploy your web applications in new environments such as the cloud and Docker containers Book Description ASP.NET Core is an open source framework from Microsoft that makes it easy to build highly efficient and dynamic cross-platform web applications. Updated for the latest features of ASP.NET Core 3, this second edition will equip you with the skills you need to build powerful web applications. The book starts with an introduction to ASP.NET Core and its features, giving you a complete understanding of the framework. You will also learn how to set up your development environment with Visual Studio 2019 and build a fully functioning application from scratch. You'll then understand core concepts for building web applications such as Model View Controller (MVC), dependency injection, and WebSockets. As you advance, you'll discover how to use Entity Framework Core 3 to automate all database-related activities for your application. You will then build and document secure web APIs using security best practices to protect your web applications from threats and vulnerabilities. Finally, you will learn how to use Azure DevOps as a CI/CD tool to deploy and monitor your applications using Microsoft Azure, Amazon Web Services (AWS), and Docker. By the end of this book, you'll have the skills you need to develop efficient and robust web applications in ASP.NET Core 3. What you will learn Delve into basic and advanced ASP.NET Core 3 concepts with the help of examples Build an MVC web application and use Entity Framework Core 3 to access data Add web APIs to your web applications using RPC, REST, and HATEOAS Create a fully automated continuous integration and continuous delivery (CI/CD) pipeline using Azure DevOps Use Azure, Amazon Web Services, and Docker to deploy and monitor your applications Secure your web application from common attacks such as Cross-Site Scripting and SQL injection Explore client-side development using C# Razor components Who this book is for This book is for developers who want to build modern web applications with ASP.NET Core. The book will also be helpful for anyone working in infrastructure engineering and operatio...

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.

Learn to implement DevOps using Docker & Kubernetes. About This Book Learning DevOps, container, and Kubernetes within one book. Leverage Kubernetes as a platform to deploy, scale, and run containers efficiently. A practical guide towards container management and orchestration Who This Book Is For This book is targeted for anyone, who wants to learn containerization and clustering in a practical way using Kubernetes. No prerequisite skills required, however, essential DevOps skill and public/private Cloud knowledge will accelerate the reading speed. If you're advanced readers, you can also get a deeper understanding of all the tools and technique described in the book. What You Will Learn Learn fundamental and advanced DevOps skills and tools Get a comprehensive understanding for container Learn how to move your application to container world Learn how to manipulate your application by Kubernetes Learn how to work with Kubernetes in popular public cloud Improve time to market with Kubernetes and Continuous Delivery Learn how to monitor, log, and troubleshoot your application with Kubernetes In Detail Containerization is said to be the best way to implement DevOps. Google developed Kubernetes, which orchestrates containers efficiently and is considered the frontrunner in container orchestration. Kubernetes is an orchestrator that creates and manages your containers on clusters of servers. This book will guide you from simply deploying a container to administrate a Kubernetes cluster, and then you will learn how to do monitoring, logging, and continuous deployment in DevOps. The initial stages of the book will introduce the fundamental DevOps and the concept of containers. It will move on to how to containerize applications and deploy them into. The book will then introduce networks in Kubernetes. We then move on to advanced DevOps skills such as monitoring, logging, and continuous deployment in Kubernetes. It will proceed to introduce permission control for Kubernetes resources via attribute-based

access control and role-based access control. The final stage of the book will cover deploying and managing your container clusters on the popular public cloud Amazon Web Services and Google Cloud Platform. At the end of the book, other orchestration frameworks, such as Docker Swarm mode, Amazon ECS, and Apache Mesos will be discussed. Style and approach Readers will be taken through fundamental DevOps skills and Kubernetes concept and administration with detailed examples. It introduces comprehensive DevOps topics, including microservices, automation tools, containers, monitoring, logging, continuous delivery, and popular public cloud environments. At each step readers will learn how to leverage Kubernetes in their everyday lives and transform their original delivery pipeline for fast and efficient delivery.

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.

Secure your applications and development environments with Docker and Kubernetes DESCRIPTION Through this book, we will introduce the DevOps tools ecosystem and the main containers orchestration tools through an introduction to some platforms such as Kubernetes, Docker Swarm, and OpenShift. Among other topics, both good practices will be addressed when constructing the Docker images as well as best security practices to be applied at the level of the host in which those containers are executed, from Docker's own daemon to the rest of the components that make up its technological stack. We will review the topics such as static analysis of vulnerabilities on Docker images, the signing of images with Docker Content Trust and their subsequent publication in a Docker Registry will be addressed. Also, we will review the security state in Kubernetes. In the last section, we will review container management and administration open source tools for IT organizations that need to manage and monitor container-based applications, reviewing topics such as monitoring, administration, and networking in Docker. KEY FEATURES - Introducing Container platforms (Docker, Kubernetes, Swarm, OpenShift) - Discover how to manage high availability with Docker Swarm and Kubernetes - Learn how Docker can manage the security in images and containers - Discover how Docker can be integrated into development workflows in applications - Discover vulnerabilities in the Docker containers and images with practical examples to secure your container-based applications - Discover tools for monitoring and administration Docker and Kubernetes applications WHAT WILL YOU LEARN - Learn fundamental DevOps skills and tools, starting with the basic components and concepts of Docker. - Learn about Docker as a platform for the deployment of containers and Docker images taking into account the security of applications. - Learn about tools that allow us to audit the security of the machine where we execute Docker images, finding out how to secure your Docker host. - Learn how to secure your Docker environment and discover vulnerabilities and threats in Docker images. - Learn about creating and deploying containers in a security way with Docker and Kubernetes. - Learn about monitoring and administration in Docker with tools such as cadvisor, sysdig, portainer, and Rancher. WHO THIS BOOK IS FOR This book covers different techniques to help developers improve DevOps and container security skills and can be useful for people who are involved in software development and want to learn how Docker works from a security point of view. It is recommended that readers have the knowledge about UNIX commands and they work with commands terminal. TABLE OF CONTENTS 1. Getting started with DevOps 2. Container platforms 3. Managing Containers and Docker images 4. Getting started with Docker security 5. Docker host security 6. Docker images security 7. Auditing and analyzing vulnerabilities in Docker containers 8. Kubernetes security 9. Docker container networking 10. Docker container monitoring 11. Docker container administration

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