Linux Containers Overview Docker Kubernetes And Atomic

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Beginning Kubernetes on the Google Cloud Platform - Ernesto Garbarino 2019-11-28
Use this beginner’s guide to understand and work with Kubernetes on the Google Cloud Platform and go from single monolithic Pods (the smallest unit deployed and managed by Kubernetes) all the way up to distributed, fault-tolerant stateful backing stores. You need only a familiarity with Linux, Bash, and Python to successfully use this book. Proficiency in Docker or cloud technology is not required. You will follow a learn-by-doing approach, running small experiments and observing the effects. Google open sourced Kubernetes in 2015 and now it is the industry standard in container orchestration. It has been adopted by all leading vendors of cloud, on-prem, and hybrid infrastructure services: Microsoft (Azure AKS), Amazon (AWS EKS), IBM (IBM Cloud Kubernetes Services), Alibaba Cloud (ACK), RedHat (OpenShift), and Pivotal (PKS). Even though Kubernetes is offered by all of the market-leading cloud providers, the Google Cloud Platform (GCP) offers an integrated shell (Google Cloud Shell) and a $300 credit to get started, which makes it the ideal platform to not only learn Kubernetes but also to implement final production workloads. What You Will Learn Set up a Kubernetes cluster in GCPDeploy simple Docker images using monolithic PodsArrange highly available and highly scalable applications using DeploymentsAchieve zero-downtime deployments using the Service controllerExternalize configuration using ConfigMaps and SecretsSet up batch processes and recurrent tasks using Jobs and CronJobsInstall horizontal (sidecar pattern) services using DaemonSetsImplement distributed, stateful backing stores using StatefulSets Who This Book Is For Beginners with basic Linux admin and scripting skills (Bash and Python). Proficiency with Docker is not required as all examples in the book use off-the-shelf public images from Docker Hub.
Kubernetes: Up and Running - Kelsey Hightower 2017-09-07
Legend has it that Google deploys

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

Container Security - Liz Rice 2020-04-06

To facilitate scalability and resilience, many organizations now run applications in cloud native environments using containers and orchestration. But how do you know if the deployment is secure? This practical book examines key underlying technologies to help developers, operators, and security professionals assess security risks and determine appropriate solutions. Author Liz Rice, Chief Open Source Officer at Isovalent, looks at how the building blocks commonly used in container-based systems are constructed in Linux. You'll understand what's happening when you deploy containers and learn how to assess potential security risks that could affect your deployments. If you run container applications with kubectl or docker and use Linux command-line tools such as ps and grep, you're ready to get started. Explore attack vectors that affect container deployments Dive into the Linux constructs that underpin containers Examine measures for hardening containers Understand how misconfigurations can compromise container isolation Learn best practices for building container images Identify container images that have known software vulnerabilities Leverage secure connections between containers Use security tooling to prevent attacks on your deployment

Cloud Computing for Machine Learning and Cognitive Applications - Kai Hwang 2017-07-07

The first textbook to teach students how to build data analytic solutions on large data sets using cloud-based technologies. This is the first textbook to teach students how to build data analytic solutions on large data sets (specifically in Internet of Things applications) using cloud-based technologies for data storage, transmission and mashup, and AI techniques to analyze this data. This textbook is designed to train college students to master modern cloud computing systems in operating principles, architecture design, machine learning algorithms, programming models and software tools for big data mining, analytics, and cognitive applications. The book will be suitable for use in one-semester

computer science or electrical engineering courses on cloud computing, machine learning, cloud programming, cognitive computing, or big data science. The book will also be very useful as a reference for professionals who want to work in cloud computing and data science. Cloud and Cognitive Computing begins with two introductory chapters on fundamentals of cloud computing, data science, and adaptive computing that lay the foundation for the rest of the book. Subsequent chapters cover topics including cloud architecture, mashup services, virtual machines, Docker containers, mobile clouds, IoT and AI, inter-cloud mashups, and cloud performance and benchmarks, with a focus on Google's Brain Project, DeepMind, and X-Lab programs, IBKai HwangM SyNapse, Bluemix programs, cognitive initiatives, and neurocomputers. The book then covers machine learning algorithms and cloud programming software tools and application development, applying the tools in machine learning, social media, deep learning, and cognitive applications. All cloud systems are illustrated with big data and cognitive application examples.

Getting Started with Kubernetes - Jonathan Baier 2017-05-31

Learn how to schedule and run application containers using Kubernetes. About This Book Get well-versed with the fundamentals of Kubernetes and get it production-ready for deployments Confidently manage your container clusters and networks using Kubernetes This practical guide will show you container application examples throughout to illustrate the concepts and features of Kubernetes Who This Book Is For This book is for developers, sys admins, and DevOps engineers who want to automate the deployment process and scale their applications. You do not need any knowledge about Kubernetes. What You Will Learn Download, install, and configure the Kubernetes codebase Understand the core concepts of a Kubernetes cluster Be able to set up and access monitoring and logging for Kubernetes clusters Set up external access to applications running in the cluster Understand how CoreOS and Kubernetes can help you achieve greater performance and container implementation agility Run multiple clusters and manage from a single control plane Explore container security as well as securing Kubernetes clusters Work with third-party extensions and tools In Detail Kubernetes has continued to grow and achieve broad adoption across various industries, helping you to orchestrate and automate container deployments on a massive scale. This book will give you a complete understanding of Kubernetes and how to get a cluster up and running. You will develop an understanding of the installation and configuration process. The book will then focus on the core Kubernetes constructs such as pods, services, replica sets, replication controllers, and labels. You will also understand how cluster level networking is done in Kubernetes. The book will also show you how to manage deployments and perform updates with minimal downtime. Additionally, you will learn about operational aspects of Kubernetes such as monitoring and logging. Advanced concepts such as container security and cluster federation will also be covered. Finally, you will learn about the wider Kubernetes ecosystem with OCP, CoreOS, and Tectonic and explore the third-party extensions and tools that can be used with Kubernetes. By the end of the book, you will have a complete understanding of the Kubernetes platform and will start

deploying applications on it. Style and approach This straightforward guide will help you understand how to move your container applications into production through best practices and a step-by-step walkthrough tied to real-world operational strategies.

Application and Theory of Petri Nets and Concurrency - Susanna Donatelli 2019-06-11

This book constitutes the proceedings of the 40th International Conference on Application and Theory of Petri Nets and Concurrency, PETRI NETS 2019, held in Aachen, Germany, , in June 2018. Petri Nets 2019 is co-located with the 19th International Conference on Application of Concurrency to System Design, ACSD 2019. The 23 regular and 3 invited papers presented together in this volume were carefully reviewed and selected from 41 submissions. The focus of the conference is on following topics: Models, Tools, Synthesis, Semantics, Concurrent Processes, Algorithmic Aspects, Parametrics and Combinatorics, and Models with Extensions.

DevOps: Puppet, Docker, and Kubernetes - Thomas Uphill 2017-03-31

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.

Docker Containers - Christopher Negus 2016

Negus begins by explaining how containers can overcome development, administration, and security problems that virtualization hasn't solved. He reviews the current state of containerization and Docker project, assesses Docker alternatives, and

helps you decide whether Docker is right for your application. Next, he teaches Docker through a series of step-by-step demonstrations built on the open source Fedora distribution of Linux.

Mastering Linux Administration - Alexandru Calcatinge 2021-06-18

Develop advanced skills for working with Linux systems on-premises and in the cloud Key FeaturesBecome proficient in everyday Linux administration tasks by mastering the Linux command line and using automationWork with the Linux filesystem, packages, users, processes, and daemonsDeploy Linux to the cloud with AWS, Azure, and KubernetesBook Description Linux plays a significant role in modern data center management and provides great versatility in deploying and managing your workloads on-premises and in the cloud. This book covers the important topics you need to know about for your everyday Linux administration tasks. The book starts by helping you understand the Linux command line and how to work with files, packages, and filesystems. You'll then begin administering network services and hardening security, and learn about cloud computing, containers, and orchestration. Once you've learned how to work with the command line, you'll explore the essential Linux commands for managing users, processes, and daemons and discover how to secure your Linux environment using application security frameworks and firewall managers. As you advance through the chapters, you'll work with containers, hypervisors, virtual machines, Ansible, and Kubernetes. You'll also learn how to deploy Linux to the cloud using AWS and Azure. By the end of this Linux book, you'll be well-versed with Linux and have mastered everyday administrative tasks using workflows spanning from on-premises to the cloud. If you also find yourself adopting DevOps practices in the process, we'll consider our mission accomplished. What you will learnUnderstand how Linux works and learn basic to advanced Linux administration skillsExplore the most widely used commands for managing the Linux filesystem, network, security, and moreGet to grips with different networking and messaging protocolsFind out how Linux security works and how to configure SELinux, AppArmor, and Linux iptablesWork with virtual machines and containers and understand container orchestration with KubernetesWork with containerized workflows using Docker and KubernetesAutomate your configuration management workloads with AnsibleWho this book is for If you are a Linux administrator who wants to understand the fundamentals and as well as modern concepts of Linux system administration, this book is for you. Windows System Administrators looking to extend their knowledge to the Linux OS will also benefit from this book.

Industry 4.1 - Fan-Tien Cheng 2021-10-19

Industry 4.1 Intelligent Manufacturing with Zero Defects Discover the future of manufacturing with this comprehensive introduction to Industry 4.0 technologies from a celebrated expert in the field Industry 4.1: Intelligent Manufacturing with Zero Defects delivers an in-depth exploration of the functions of intelligent manufacturing and its applications and implementations through the Intelligent Factory Automation (iFA) System Platform. The book’s distinguished editor offers readers a broad range of resources that educate and enlighten on topics as diverse as the Internet of Things, edge computing, cloud computing, and

cyber-physical systems. You'll learn about three different advanced prediction technologies: Automatic Virtual Metrology (AVM), Intelligent Yield Management (IYM), and Intelligent Predictive Maintenance (IPM). Different use cases in a variety of manufacturing industries are covered, including both high-tech and traditional areas. In addition to providing a broad view of intelligent manufacturing and covering fundamental technologies like sensors, communication standards, and container technologies, the book offers access to experimental data through the IEEE DataPort. Finally, it shows readers how to build an intelligent manufacturing platform called an Advanced Manufacturing Cloud of Things (AMCoT). Readers will also learn from: An introduction to the evolution of automation and development strategy of intelligent manufacturing A comprehensive discussion of foundational concepts in sensors, communication standards, and container technologies An exploration of the applications of the Internet of Things, edge computing, and cloud computing The Intelligent Factory Automation (iFA) System Platform and its applications and implementations A variety of use cases of intelligent manufacturing, from industries like flat-panel, semiconductor, solar cell, automotive, aerospace, chemical, and blow molding machine Perfect for researchers, engineers, scientists, professionals, and students who are interested in the ongoing evolution of Industry 4.0 and beyond, Industry 4.1: Intelligent Manufacturing with Zero Defects will also win a place in the library of laypersons interested in intelligent manufacturing applications and concepts. Completely unique, this book shows readers how Industry 4.0 technologies can be applied to achieve the goal of Zero Defects for all product

Docker in Practice - Ian Miell 2019-02-06

Summary Docker in Practice, Second Edition presents over 100 practical techniques, hand-picked to help you get the most out of Docker. Following a Problem/Solution/Discussion format, you'll walk through specific examples that you can use immediately, and you'll get expert guidance on techniques that you can apply to a whole range of scenarios. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Docker's simple idea-wrapping an application and its dependencies into a single deployable container-created a buzz in the software industry. Now, containers are essential to enterprise infrastructure, and Docker is the undisputed industry standard. So what do you do after you've mastered the basics? To really streamline your applications and transform your dev process, you need relevant examples and experts who can walk you through them. You need this book. About the Book Docker in Practice, Second Edition teaches you rock-solid, tested Docker techniques, such as replacing VMs, enabling microservices architecture, efficient network modeling, offline productivity, and establishing a container-driven continuous delivery process. Following a cookbook-style problem/solution format, you'll explore real-world use cases and learn how to apply the lessons to your own dev projects. What's inside Continuous integration and delivery The Kubernetes orchestration tool Streamlining your cloud workflow Docker in swarm mode Emerging best practices and techniques About the Reader Written for developers and engineers using Docker in production. About the Author Ian Miell and Aidan

Hobson Sayers are seasoned infrastructure architects working in the UK. Together, they used Docker to transform DevOps at one of the UK's largest gaming companies. Table of Contents PART 1 - DOCKER FUNDAMENTALS Discovering Docker Understanding Docker: Inside the engine room PART 2 - DOCKER AND DEVELOPMENT Using Docker as a lightweight virtual machine Building images Running containers Day-to-day Docker Configuration management: Getting your house in order PART 3 - DOCKER AND DEVOPS Continuous integration: Speeding up your development pipeline Continuous delivery: A perfect fit for Docker principles Network simulation: Realistic environment testing without the pain PART 4 - ORCHESTRATION FROM A SINGLE MACHINE TO THE CLOUD A primer on container orchestration The data center as an OS with Docker Docker platforms PART 5 - DOCKER IN PRODUCTION Docker and security Plain sailing: Running Docker in production Docker in production: Dealing with challenges

Kubernetes: Up and Running - Brendan Burns 2022-08-02

In just five years, Kubernetes has radically changed the way developers and ops personnel build, deploy, and maintain applications in the cloud. With this book's updated third edition, you'll learn how this popular container orchestrator can help your company achieve new levels of velocity, agility, reliability, and efficiency--whether you're new to distributed systems or have been deploying cloud native apps for some time. Brendan Burns, Joe Beda, Kelsey Hightower, and Lachlan Evenson--who have worked on Kubernetes at Google and beyond--explain how this system fits into the life cycle of a distributed application. Software developers, engineers, and architects will learn ways to use tools and APIs to automate scalable distributed systems for online services, machine learning applications, or even a cluster of Raspberry Pi computers. This guide shows you how to: Create a simple cluster to learn how Kubernetes works Dive into the details of deploying an application using Kubernetes Learn specialized objects in Kubernetes, such as DaemonSets, jobs, ConfigMaps, and secrets Explore deployments that tie together the lifecycle of a complete application Get practical examples of how to develop and deploy real-world applications in Kubernetes

Installation and Configuration of IBM Watson Analytics and StoredIQ - Alan Bluck 2021-04-30

Guidance for successful installation of a wide range of IBM software products KEY FEATURES ● Complete installation guide of IBM software systems, Redhat Enterprise, IBM Cloud, and Docker. ● Expert-led demonstration on complete configuration and implementation of IBM software solutions. ● Includes best practices and efficient techniques adopted by banks, financial services, and insurance companies. DESCRIPTION This book provides instructions for installation, configuration and troubleshooting sections to improve the IT support productivity and fast resolution of issues that arise. It covers readers' references that are available online and also step-by-step procedures required for a successful installation of a broad range of IBM Data Analytics products. This book provides a holistic in-depth knowledge for students, software architects, installation specialists, and developers of Data Analysis software and a handbook for data analysts who want a single source of information on IBM Data Analysis Software products. This book provides a single resource that covers the latest available IBM Data

Analysis software on the most recent RedHat Linux and IBM Cloud platforms. This book includes comprehensive technical guidance, enabling IT professionals to gain an in-depth knowledge of the installation of a broad range of IBM Software products across different operating systems. WHAT YOU WILL LEARN ● Step-by-step installation and configuration of IBM Watson Analytics. ● Managing RedHat Enterprise Systems and IBM Cloud Platforms. ● Installing, configuring, and managing IBM StoredIQ. ● Best practices to administer and maintain IBM software packages. ● Upgrading VMware stations and installing Docker. WHO THIS BOOK IS FOR This book is a go-to guide for IT professionals who are primarily Solution Architects, Implementation Experts, or Technology Consultants of IBM Software suites. This will also be a useful guide for IT managers who are looking to adopt and enable their enterprise with IBM products. TABLE OF CONTENTS 1. Getting Started with IBM Resources for Analytics 2. IBM Component Software Compatibility Matrix 3. IBM Download Procedures 4. On-Premise Server Configurations and Prerequisites 5. IBM Fix Packs 6. IBM Cloud PAK Systems 7. RedHat OpenShift 4.x Installations 8. IBM Cloud Private System 9. Base VMWare System Platform 10. IBM Cloud Private Cluster on CentOS 8.0 11. UIMA Pipeline and Java Code Extensions 12. IBM Watson Explorer Foundational Components V12 13. IBM Watson Explorer oneWEX 12.0.3 14. IBM StoredIQ for Legal APPENDIX References and End of Life Support

The Docker Book - James Turnbull 2014-07-14

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.

Kubernetes for Full-Stack Developers - 2020-02-04

This book is designed to help newcomers and experienced users alike learn about Kubernetes. Its chapters are designed to introduce core Kubernetes concepts and to build on them to a level where running an application on a production cluster is a familiar, repeatable, and automated process. From there, more advanced topics are introduced, like how to manage a Kubernetes cluster itself.

Docker Cookbook - Sébastien Goasguen

2015-11-04
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.--

The The Docker Workshop - Vincent Sesto 2020-10-29

Get started with Docker on your local machine and progress towards deploying useful applications in production with this simplified, practical guide Key FeaturesGet a working understanding of Docker containers by incorporating them in your development processComplete interesting exercises to learn how to secure and control access of your containersWork with advanced features of Docker to make your development process smoother and reliable Book Description No doubt Docker Containers are the future of highly-scalable software systems and have cost and runtime efficient supporting infrastructure. But learning it might look complex as it comes with many technicalities. This is where The Docker Workshop will help you. Through this workshop, you'll quickly learn how to work with containers and Docker with the help of practical activities. The workshop starts with Docker containers, enabling you to understand how it works. You'll run third party Docker images and also create your own images using Dockerfiles and multi-stage Dockerfiles. Next, you'll create environments for Docker images, and expedite your deployment and testing process with Continuous Integration. Moving ahead, you'll tap into interesting topics and learn how to implement production-ready environments using Docker Swarm. You'll also apply best practices to secure Docker images and to ensure that production environments are running at maximum capacity. Towards the end, you'll gather skills to successfully move Docker from development to testing, and then into production. While doing so, you'll learn how to troubleshoot issues, clear up resource bottlenecks and optimize the performance of services. By the end of this workshop, you'll be able to utilize Docker containers in real-world use cases. What you will learnGet a solid understanding of how Docker containers workNetwork Docker images and environments to allow communication between servicesBuild and publish docker images from a CI/CD pipelineUse Docker Swarm to implement production-ready environmentsFind out how to replace Swarm with Kubernetes clustersExtend your Docker images with PluginsWho this book is for This is the right learning asset if you are a developer or a beginner who wants to get a practical understanding of Docker containers. If you have experienced in running command shells or knowledge of IntelliJ, atom, or VSCode editors, then you will grasp the topics covered here quickly.

Kubernetes Patterns - Bilgin Ibryam 2019-04-09

The way developers design, build, and run software has changed significantly with the evolution of microservices and containers. These modern architectures use new primitives that require a different set of practices than most

developers, tech leads, and architects are accustomed to. With this focused guide, Bilgin Ibryam and Roland Huß from Red Hat provide common reusable elements, patterns, principles, and practices for designing and implementing cloud-native applications on Kubernetes. Each pattern includes a description of the problem and a proposed solution with Kubernetes specifics. Many patterns are also backed by concrete code examples. This book is ideal for developers already familiar with basic Kubernetes concepts who want to learn common cloud native patterns. You'll learn about the following pattern categories: Foundational patterns cover the core principles and practices for building container-based cloud-native applications. Behavioral patterns explore finer-grained concepts for managing various types of container and platform interactions. Structural patterns help you organize containers within a pod, the atom of the Kubernetes platform. Configuration patterns provide insight into how application configurations can be handled in Kubernetes. Advanced patterns covers more advanced topics such as extending the platform with operators.

Installation, Upgrade, and Configuration of IBM Cognos Analytics - Alan Bluck 2021-11-15

An end-to-end guide for IBM implementation partners and solution providers. KEY FEATURES ● Detailed step-by-step IBM Software installation and configuration that saves time for installing and configuring computers. ● Designed for students, IT consultants, systems and solution architects, data analysts, and developers. ● Unique solution documentation for running Cognos configuration designed for banks, financial services, and insurance companies. DESCRIPTION This book shows how to install IBM Cognos Analytics software and related systems on RedHat Enterprise Linux 8.0, IBM Cloud, IBM Cloud Private (Community Edition), and Windows 10. It includes step-by-step instructions for downloading and installing IBM Cognos Analytics. It also includes numerous examples of setups and updates to analyze the OLAP database utilized by the IBM Case Manager. The initial chapters discuss the installation of IBM Information Management Products. The reader will know the URLs of the downloading sites, the product codes, descriptions, sizes, and the names of each software downloaded to the gzip tar file. It includes setting up RHEL 8.0 Linux OS and using the Docker system for installation on IBM Cloud PAK servers, RedHat Openshift clusters, and IBM Cloud Private. The IBM Cognos installation contains versions 11.1.1 through 11.4.0 on RedHat Linux 8.0 and Windows 10. The book includes the usage of the IBM Cognos Analytics 11.1 R4 Dynamic Cube Datastore and the 11.1 R4 Cube Designer for the report and dashboard. Additionally, the book includes constructing the essential Zlib library from the C language source download, its compilation, and linking. WHAT YOU WILL LEARN ● Detailed step-by-step instructions for installing IBM Cognos Analytics. ● Installation on Windows 10, RedHat Enterprise Linux 8.0, IBM Cloud, and IBM Cloud Private (CE). ● Downloading, compiling, and linking the necessary zlib library on Linux. ● Connecting to the CASTORE database using an example of Cognos Analytics configuration. ● Creating OLAP Cubes for IBM Case Manager dashboard reports. WHO THIS BOOK IS FOR This book is for IT consultants, architects for systems and solutions, data analysts, and data analytics solution developers. All the examples

in the book are based on Unix/Windows and web-based tool basic knowledge. TABLE OF CONTENTS 1. Getting Started with IBM Resources for Cognos 2. IBM Cloud PAK Systems 3. RedHat OpenShift 4.x Installations 4. IBM Cloud Private Cluster systems 5. IBM Cognos Analytics 11. On RHEL 8.0 6. IBM Cognos Analytics 11. On Windows 10.0 7. IBM Cognos Analytics 11 on RHEL 8.0 Linux Fix for Zlib

Docker Containers - Christopher Negus 2015

This is the Rough Cut version of the printed book Start out running a few Docker container images in Ubuntu, Fedora, RHEL, CoreOS or Project Atomic. End up deploying enterprise-quality, multi-container Kubernetes setups in a Linux or cloud environment. In between, learn best practices for building containers from Dockerfile files, integrating them with host storage and networking, and accessing special host privileges. Whether you are a system administrator, software developer or just an enthusiast, Docker Containers: From Start to Enterprise launches you into the latest Docker container technology. Examine fun and useful real-world Docker container examples and learn how to leverage them to build your own Dockerized applications. With Docker Containers: From Start to Enterprise you will be able to: install Docker on standard Linux or specialized container operating systems; set up a private Docker Registry; create, run and investigate Docker images and containers; pull and push containers between local systems and Docker Registries; integrate Docker containers with host networking and storage. orchestrate multiple containers into complex applications with Kubernetes; and employ best practices when developing containerized applications.

Continuous Delivery with Docker and Jenkins - Rafal Leszko 2022-05-04

Create a complete continuous delivery process using modern DevOps tools such as Docker, Jenkins, Kubernetes, Ansible, Terraform, and many more Key Features • Build reliable and secure applications using Docker containers • Create a highly available environment to scale Jenkins and your services using Kubernetes • Automate your release process end-to-end Book Description This updated third edition of Continuous Delivery with Docker and Jenkins will explain the advantages of combining Jenkins and Docker to improve the continuous integration and delivery process of app development. You'll start by setting up a Docker server and configuring Jenkins on it. Next, you'll discover steps for building applications and microservices on Dockerfiles and integrating them with Jenkins using continuous delivery processes such as continuous integration, automated acceptance testing, configuration management, and Infrastructure as Code. Moving ahead, you'll learn how to ensure quick application deployment with Docker containers, along with scaling Jenkins using Kubernetes. Later, you'll explore how to deploy applications using Docker images and test them with Jenkins. Toward the concluding chapters, the book will focus on missing parts of the CD pipeline, such as the environments and infrastructure, application versioning, and non-functional testing. By the end of this continuous integration and continuous delivery book, you'll have gained the skills you need to enhance the DevOps workflow by integrating the functionalities of Docker and Jenkins. What you will learn • Grasp Docker fundamentals and dockerize applications for the CD process • Understand how to use Jenkins on-premises and in the cloud • Scale a

pool of Docker servers using Kubernetes • Write acceptance tests using Cucumber • Run tests in the Docker ecosystem using Jenkins • Provision your servers and infrastructure using Ansible and Terraform • Publish a built Docker image to a Docker registry • Deploy cycles of Jenkins pipelines using community best practices Who this book is for The book is for DevOps engineers, system administrators, Docker professionals, or anyone who wants to explore the power of working with Docker and Jenkins together. No prior knowledge of DevOps is required to get started.

Using Docker - Adrian Mouat 2015-12-09

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

Data Serving with FUJITSU Enterprise Postgres on IBM LinuxONE - Sam Amsavelu 2021-07-14

Enterprises require support and agility to work with big data repositories and relational databases. FUJITSU Enterprise Postgres is one of the leading relational database management systems (RDBMSs), and it is designed to work with large data sets. As more companies transform their infrastructures with hybrid cloud services, they require environments that protect the safety of their data and business rules. At IBM®, we believe that your data is yours and yours alone. The insights and advantages that come from your data are yours to use in the pursuit of your business objectives. IBM is dedicated to this mission, and the IBM LinuxONE platform is designed around this core statement. IBM LinuxONE is a secure and scalable data serving and computing platform that is made for today's critical workloads. IBM LinuxONE is an all-Linux enterprise platform for open innovation that combines the best of Linux and open technology with the best of enterprise computing in one system. Combining FUJITSU Enterprise Postgres, which is a robust Relational Database Management System (RDBMS) that provides strong query performance and high availability (HA), with IBM LinuxONE can transform your application and data portfolio by providing innovative data privacy, security, and cyber resiliency capabilities, which are all delivered with minimal downtime. This IBM Redbooks® publication describes data serving with FUJITSU Enterprise Postgres 12 that is deployed on IBM LinuxONE, which provides the

scalability, business-critical availability, and security that your enterprise requires. This publication is useful to IT architects, system administrators, and others who are interested in understanding the significance of using FUJITSU Enterprise Postgres on IBM LinuxONE. This publication is written for those who are familiar with IBM LinuxONE and have some experience in the use of PostgreSQL.

Docker Orchestration - Randall Smith 2017-01-24

A concise, fast-paced guide to orchestrating and deploying scalable services with Docker About This Book Explore the new features added to the core Docker Engine to make multi-container orchestration easy Leverage tools such as Docker Machine, Swarm, Compose, and third-party tools such as Kubernetes, Mesosphere, and CoreOS to orchestrate containers Use Docker Compose with Swarm and apply rolling updates for zero downtime deployments Who This Book Is For This book is aimed at Sysadmins and DevOps engineers who know what Docker does and are now looking to manage multiple containers on multiple hosts using the orchestration feature. What You Will Learn Build scalable, reliable services with Docker See how to manage a service in Docker using Docker Swarm, Kubernetes, and Mesosphere Discover simpler orchestration tools such as CoreOS/Fleet and Rancher Cattle Understand cluster-wide logging, system monitoring, and troubleshooting Build, test, and deploy containers using Continuous Integration Deploy cluster hosts on cloud services and automate your infrastructure In Detail Docker orchestration is what you need when transitioning from deploying containers individually on a single host to deploying complex multi-container apps on many machines. This book covers the new orchestration features of Docker 1.12 and helps you efficiently build, test, and deploy your application using Docker. You will be shown how to build multi-container applications using Docker Compose. You will also be introduced to the building blocks for multi-host Docker clusters such as registry, overlay networks, and shared storage using practical examples. This book gives an overview of core tools such as Docker Machine, Swarm, and Compose which will enhance your orchestration skills. You'll learn how to set up a swarm using the decentralized building block. Next, you'll be shown how to make the most out of the in-built orchestration feature of Docker engine and you'll use third-party tools such as Kubernetes, Mesosphere, and CoreOS to orchestrate your existing process. Finally, you will learn to deploy cluster hosts on cloud services and automate your infrastructure. Style and approach This comprehensive guide will take you through the orchestration feature of Docker. Using practical examples, you will discover various tools that can be used to manage multiple containers with ease.

Docker Containers (includes Content Update Program) - Christopher Negus 2015-11-26

The Practical Guide to Running Docker on Linux Systems or Cloud Environments Whether on your laptop or a remote cloud, Docker can transform how you create, test, deploy, and manage your most critical applications. In Doc ker Containers , Christopher Negus helps you master Docker containerization from the ground up. You’ll start out running a few Docker container images in Ubuntu, Fedora, RHEL, CoreOS, or Project Atomic. By the time you’ve finished, you’ll be deploying enterprise-quality, multi-container Kubernetes setups in modern Linux and

cloud environments. Writing for system administrators, software developers, and technology enthusiasts, Negus touches on every aspect of working with Docker: setting up containerized applications, working with both individual and multiple containers, running containers in cloud environments, and developing containers. Teaching through realistic examples of desktop applications, system services, and games, Negus guides you through building and deploying your own Dockerized applications. As you build your expertise, you'll also learn indispensable Docker best practices for building and integrating containers, managing Docker on a day-to-day basis, and much more: • Understanding what Docker is and what you can do with it • Installing Docker on standard Linux or specialized container operating systems such as Atomic Host and CoreOS • Setting up a container runtime environment and private Docker Registry • Creating, running, and investigating Docker images and containers • Finding, pulling, saving, loading, and tagging container images • Pulling and pushing containers between local systems and Docker Registries • Integrating Docker containers with host networking and storage • Building containers with the docker build command and Dockerfile files • Minimizing space consumption and erasing unneeded containers • Accessing special host privileges from within a container • Orchestrating multiple containers into complex applications with Kubernetes • Using super privileged containers in cloud environments • Managing containers in the cloud with Cockpit • Getting started with Docker container development • Learning container build techniques from shared Dockerfiles This book is part of the Pearson Content Update Program. As the technology changes, sections of this book will be updated or new sections will be added. The updates will be delivered to you via a free Web Edition of this book, which can be accessed with any Internet connection.

コンテナ・ベース・オーケストレーション **Docker/Kubernetes** で作るクラウド時代のシステム基盤 - 須江信洋 2018-03-15

Dockerだけでは終わらない?！ コンテナ技術を実践的に使うための解説書! コンテナは主としてLinuxを分割し、複数のOSとして利用するもので、1つのコンピュータを分割して利用する技術の新潮流です。代表的コンテナ技術として「Docker」が注目されていますが、Docker単体で大規模なシステムを作ることは難しく、エンジニアリングそしてクラウドの世界ではさまざまなOSSプロダクトや技術が登場し注目されています。【本書の特長】・システム技術の新潮流「コンテナ」のコンセプトと活用について入門・Dockerの基本的な概念からサービス化の手法を解説・注目の技術Kubernetesのコンセプトや活用方法も紹介・コンテナを使ったクラウドサービスGKE（Google Kubernetes Engine）やRancherなどのOSSを解説・IBM Bluemixレッドハットの OpenShiftなどの企業プロダクトの動向も紹介 本書ではコンテナを現場で使うためのさまざまなノウハウを集めています。とくにコンテナの統合的操作／管理（オーケストレーション）はKubernetesを中心に大きく進歩しており、最新のサービス／OSS／製品などの活用法を具体的に紹介していきます。クラウド時代のノウハウで、インフラ技術の最新トレンドを紹介します。

Pro SQL Server on Linux - Bob Ward 2018-10-27

Get SQL Server up and running on the Linux operating system and containers. No database professional managing or developing SQL Server on Linux will want to be without this deep and authoritative guide by one of the most respected experts on SQL Server in the industry. Get an inside look at how SQL Server for Linux works through the eyes of an engineer on the team that made it possible. Microsoft SQL Server is one of the leading database platforms in the industry, and SQL Server 2017 offers developers and administrators the ability to run a database management system on Linux, offering proven support for enterprise-level features and without onerous licensing terms. Organizations invested in Microsoft and open source technologies are now able to run a unified database

platform across all their operating system investments. Organizations are further able to take full advantage of containerization through popular platforms such as Docker and Kubernetes. Pro SQL Server on Linux walks you through installing and configuring SQL Server on the Linux platform. The author is one of the principal architects of SQL Server for Linux, and brings a corresponding depth of knowledge that no database professional or developer on Linux will want to be without. Throughout this book are internals of how SQL Server on Linux works including an in depth look at the innovative architecture. The book covers day-to-day management and troubleshooting, including diagnostics and monitoring, the use of containers to manage deployments, and the use of self-tuning and the in-memory capabilities. Also covered are performance capabilities, high availability, and disaster recovery along with security and encryption. The book covers the product-specific knowledge to bring SQL Server and its powerful features to life on the Linux platform, including coverage of containerization through Docker and Kubernetes. What You'll Learn Learn about the history and internal of the unique SQL Server on Linux architecture. Install and configure Microsoft’s flagship database product on the Linux platform Manage your deployments using container technology through Docker and Kubernetes Know the basics of building databases, the T-SQL language, and developing applications against SQL Server on LinuxUse tools and features to diagnose, manage, and monitor SQL Server on LinuxScale your application by learning the performance capabilities of SQL ServerDeliver high availability and disaster recovery to ensure business continuity Secure your database from attack, and protect sensitive data through encryption Take advantage of powerful features such as Failover Clusters, Availability Groups, In-Memory Support, and SQL Server’s Self-Tuning Engine Learn how to migrate your database from older releases of SQL Server and other database platforms such as Oracle and PostgreSQLBuild and maintain schemas, and perform management tasks from both GUI and command line Who This Book Is For Developers and IT professionals who are new to SQL Server and wish to configure it on the Linux operating system. This book is also useful to those familiar with SQL Server on Windows who want to learn the unique aspects of managing SQL Server on the Linux platform and Docker containers. Readers should have a grasp of relational database concepts and be comfortable with the SQL language.

Docker in Action - Jeffrey Nickoloff 2019-10-28

Even small applications have dozens of components. Large applications may have thousands, which makes them challenging to install, maintain, and remove. Docker bundles all application components into a package called a container that keeps things tidy and helps manage any dependencies on other applications or infrastructure. Docker in Action, Second Edition teaches you the skills and knowledge you need to create, deploy, and manage applications hosted in Docker containers. This bestseller has been fully updated with new examples, best practices, and entirely new chapters. You'll start with a clear explanation of the Docker model and learn how to package applications in containers, including techniques for testing and distributing applications. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Docker: Up & Running - Karl Matthias 2015-06-11
Updated to cover Docker version 1.10 Docker is quickly changing the way that organizations are deploying software at scale. But understanding how Linux containers fit into your workflow—and getting the integration details right—are not trivial tasks. With this practical guide, you'll learn how to use Docker to package your applications with all of their dependencies, and then test, ship, scale, and support your containers in production. Two Lead Site Reliability Engineers at New Relic share much of what they have learned from using Docker in production since shortly after its initial release. Their goal is to help you reap the benefits of this technology while avoiding the many setbacks they experienced. Learn how Docker simplifies dependency management and deployment workflow for your applications Start working with Docker images, containers, and command line tools Use practical techniques to deploy and test Docker-based Linux containers in production Debug containers by understanding their composition and internal processes Deploy production containers at scale inside your data center or cloud environment Explore advanced Docker topics, including deployment tools, networking, orchestration, security, and configuration
Learn Docker – Fundamentals of Docker 19.x - Gabriel N. Schenker 2020-03-13
Explore the core functionality of containerizing your applications and making them production-ready Key FeaturesGrasp basic to advanced Docker concepts with this comprehensive guideGet acquainted with Docker containers, Docker images, orchestrators, cloud integration, and networkingLearn to simplify dependencies and deploy and test containers in productionBook Description Containers enable you to package an application with all the components it needs, such as libraries and other dependencies, and ship it as one package. Docker containers have revolutionized the software supply chain in both small and large enterprises. Starting with an introduction to Docker fundamentals and setting up an environment to work with it, you'll delve into concepts such as Docker containers, Docker images, and Docker Compose. As you progress, the book will help you explore deployment, orchestration, networking, and security. Finally, you'll get to grips with Docker functionalities on public clouds such as Amazon Web Services (AWS), Azure, and Google Cloud Platform (GCP), and learn about Docker Enterprise Edition features. Additionally, you'll also discover the benefits of increased security with the use of containers. By the end of this Docker book, you'll be able to build, ship, and run a containerized, highly distributed application on Docker Swarm or Kubernetes, running on-premises or in the cloud. What you will learnContainerize your traditional or microservice-based applicationsDevelop, modify, debug, and test an application running inside a containerShare or ship your application as an immutable container imageBuild a Docker Swarm and a Kubernetes cluster in the cloudRun a highly distributed application using Docker Swarm or KubernetesUpdate or rollback a distributed application with zero downtimeSecure your applications with encapsulation, networks, and secretsTroubleshoot a containerized, highly distributed application in the cloudWho this book is for This book is for Linux professionals, system administrators, operations engineers, DevOps engineers, and developers or

stakeholders who are interested in getting started with Docker from scratch. No prior experience with Docker containers is required. Users with a Linux system would be able to take full advantage of this book. *Learn Docker - Fundamentals of Docker 18.x* - Gabriel N. Schenker 2018-04-26 Enhance your software deployment workflow using containers Key Features ●Get up-and-running with basic to advanced concepts of Docker ●Get acquainted with concepts such as Docker containers, Docker images, orchestrators and so on. ●Practical test-based approach to learning a prominent containerization tool Book Description Docker containers have revolutionized the software supply chain in small and big enterprises. Never before has a new technology so rapidly penetrated the top 500 enterprises worldwide. Companies that embrace containers and containerize their traditional mission-critical applications have reported savings of at least 50% in total maintenance cost and a reduction of 90% (or more) of the time required to deploy new versions of those applications. Furthermore they are benefitting from increased security just by using containers as opposed to running applications outside containers. This book starts from scratch, introducing you to Docker fundamentals and setting up an environment to work with it. Then we delve into concepts such as Docker containers, Docker images, Docker Compose, and so on. We will also cover the concepts of deployment, orchestration, networking, and security. Furthermore, we explain Docker functionalities on public clouds such as AWS. By the end of this book, you will have hands-on experience working with Docker containers and orchestrators such as SwarmKit and Kubernetes. What you will learn ●Containerize your traditional or microservice-based application ●Share or ship your application as an immutable container image ●Build a Docker swarm and a Kubernetes cluster in the cloud ●Run a highly distributed application using Docker Swarm or Kubernetes ●Update or rollback a distributed application with zero downtime ●Secure your applications via encapsulation, networks, and secrets ●Know your options when deploying your containerized app into the cloud Who this book is for This book is targeted at system administrators, operations engineers, DevOps engineers, and developers or stakeholders who are interested in getting started with Docker from scratch. No prior experience with Docker Containers is required.

Linux Troubleshooting Bible - Christopher Negus 2004-12-03 * An indispensable resource for Fedora users who must now work without customer support from Red Hat, Inc., covering critical troubleshooting techniques for networks, internal servers, and external servers * Chris Negus is a well-known Linux authority and also the author of the top-selling Red Hat Linux Bible (0-7645-4333-4); Thomas Weeks is a trainer and administrator who manages hundreds of Red Hat Linux systems * Covers all of the most common Fedora problem areas: firewalls, DNS servers, print servers, Samba, NFS, Web servers, FTP servers, e-mail servers, modems, adding hardware, and hardware certification * Features easy-to-use flowcharts that guide administrators step by step through common Fedora troubleshooting scenarios * A companion Web site offers troubleshooting updates to keep pace with the frequent Fedora Core releases as well as a forum for exchanging troubleshooting tips

Emerging Real-World Applications of

Internet of Things - Anshul Verma 2022-11-24
The Internet of things (IoT) is a network of connected physical objects or things that are working along with sensors, wireless transceiver modules, processors, and software required for connecting, processing, and exchanging data among the other devices over the Internet. These objects or things are devices ranging from simple handheld devices to complex industrial heavy machines. A thing in IoT can be any living or non-living object that can be provided capabilities to sense, process, and exchange data over a network. The IoT provides people with the ability to handle their household works to industrial tasks smartly and efficiently without the intervention of another human. The IoT provides smart devices for home automation as well as business solutions for delivering insights into everything from real-time monitoring of working systems to supply chain and logistics operations. The IoT has become one of the most prominent technological inventions of the 21st century. Due to the versatility of IoT devices, there are numerous real-world applications of the IoT in various domains such as smart home, smart city, health care, agriculture, industry, and transportation. The IoT has emerged as a paradigm-shifting technology that is influencing various industries. Many companies, governments, and civic bodies are shifting to IoT applications to improve their works and to become more efficient. The world is slowly transforming toward a "smart world" with smart devices. As a consequence, it shows many new opportunities coming up in the near "smart" future for IoT professionals. Therefore, there is a need to keep track of advancements related to IoT applications and further investigate several research challenges related to the applicability of IoT in different domains to make it more adaptable for practical and industrial use. With this goal, this book provides the most recent and prominent applications of IoT in different domains as well as issues and challenges in developing IoT applications for various new domains.
Using Docker - Adrian Mouat 2015-12-09
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
Containers in Cisco IOS-XE, IOS-XR, and NX-OS - Yogesh Ramdoss 2020-05-07
By containerizing applications and

network services, you can achieve unprecedented levels of network agility and efficiency. Cisco IOS-XE, IOS-XR, and NX-OS Architecture have been augmented with compute virtualization capabilities to accommodate both native and third-party container hosting, empowering organizations to containerize and instantiate any application or network service. Direct from Cisco, Containers in Cisco IOS-XE, IOS-XR, and NX-OS: Orchestration and Operation is the complete guide to deploying and operating "containerized" application and network services in Cisco platforms. The authors begin by reviewing the virtualization and containerization concepts network professionals need to know, and introducing today's leading orchestration tools. Next, they take a deep dive into container networking, introducing Cisco architectural support for container infrastructures. You'll find modular coverage of characteristics, configuration, and operations for each key Cisco software platform: IOS-XE, IOS-XR, and NX-OS. A full chapter on developer tools and resources shows how to build container images with Docker, and introduces Cisco's toolkits, APIs, NX-SDK or Open Access Containers (OAC), telemetry, Nexus Data Broker, management tools, Puppet, Chef, Ansible, and more. The authors conclude with multiple use cases, showing how users in diverse markets can drive value with containers.

Docker: Up & Running - Sean P. Kane 2018-09-07

Docker is rapidly changing the way organizations deploy software at scale. However, understanding how Linux containers fit into your workflow—and getting the integration details right—is not a trivial task. With the updated edition of this practical guide, you'll learn how to use Docker to package your applications with all of their dependencies and then test, ship, scale, and support your containers in production. This edition includes significant updates to the examples and explanations that reflect the substantial changes that have occurred over the past couple of years. Sean Kane and Karl Matthias have added a complete chapter on Docker Compose, deeper coverage of Docker Swarm mode, introductions to both Kubernetes and AWS Fargate, examples on how to optimize your Docker images, and much more. Learn how Docker simplifies dependency management and deployment workflow for your applications Start working with Docker images, containers, and command line tools Use practical techniques to deploy and test Docker containers in production Debug containers by understanding their composition and internal processes Deploy production containers at scale inside your data center or cloud environment Explore advanced Docker topics, including deployment tools, networking, orchestration, security, and configuration

Professional Cloud Architect – Google Cloud Certification Guide - Konrad Cłapa 2019-10-18

Become a Professional Cloud Architect by exploring essential concepts, tools, and services in GCP and working through tests designed to help you get certified Key FeaturesPlan and design a GCP cloud solution architectureEnsure the security and reliability of your cloud solutions and operationsTest yourself by taking mock tests with up-to-date exam questionsBook Description Google Cloud Platform (GCP) is one of the leading cloud service suites and offers solutions for storage, analytics, big data, machine learning, and application development. It features an array of

services that can help organizations to get the best out of their infrastructure. This comprehensive guide covers a variety of topics specific to Google's Professional Cloud Architect official exam syllabus and guides you in using the right methods for effective use of GCP services. You'll start by exploring GCP, understanding the benefits of becoming a certified architect, and learning how to register for the exam. You'll then delve into the core services that GCP offers such as computing, storage, and security. As you advance, this GCP book will help you get up to speed with methods to scale and automate your cloud infrastructure and delve into containers and services. In the concluding chapters, you'll discover security best practices and even gain insights into designing applications with GCP services and monitoring your infrastructure as a GCP architect. By the end of this book, you will be well versed in all the topics required to pass Google's Professional Cloud Architect exam and use GCP services effectively. What you will learnManage your GCP infrastructure with Google Cloud management options such as CloudShell and SDKUnderstand the use cases for different storage optionsDesign a solution with security and compliance in mindMonitor GCP compute optionsDiscover machine learning and the different machine learning models offered by GCPUnderstand what services need to be used when planning and designing your architectureWho this book is for If you are a cloud architect, cloud engineer, administrator, or any IT professional who wants to learn how to implement Google Cloud services in your organization and become a GCP Certified Professional Cloud Architect, this book is for you. Basic knowledge of server infrastructure, including Linux and Windows Servers, is assumed. Knowledge of network and storage will also be helpful.

Docker and Kubernetes for Java Developers - Jaroslaw Krochmalski 2017-08-30

Leverage the lethal combination of Docker and Kubernetes to automate deployment and management of Java applications About This Book Master using Docker and Kubernetes to build, deploy and manage Java applications in a jiff Learn how to create your own Docker image and customize your own cluster using Kubernetes Empower the journey from development to production using this practical guide. Who This Book Is For The book is aimed at Java developers who are eager to build, deploy, and manage applications very quickly using container technology. They need have no knowledge of Docker and Kubernetes. What You Will Learn Package Java applications into Docker images Understand the running of containers locally Explore development and deployment options with Docker Integrate Docker into Maven builds Manage and monitor Java applications running on Kubernetes clusters Create Continuous Delivery pipelines for Java applications deployed to Kubernetes In Detail Imagine creating and testing Java EE applications on Apache Tomcat Server or Wildfly Application server in minutes along with deploying and managing Java applications swiftly. Sounds too good to be true? But you have a reason to cheer as such scenarios are only possible by leveraging Docker and Kubernetes. This book will start by introducing Docker and delve deep into its networking and persistent storage concepts. You will then proceed to learn how to refactor monolith application into separate services by

building an application and then packaging it into Docker containers. Next, you will create an image containing Java Enterprise Application and later run it using Docker. Moving on, the book will focus on Kubernetes and its features and you will learn to deploy a Java application to Kubernetes using Maven and monitor a Java application in production. By the end of the book, you will get hands-on with some more advanced topics to further extend your knowledge about Docker and Kubernetes. Style and approach An easy-to-follow, practical guide that will help Java developers develop, deploy, and manage Java applications efficiently.

Advanced Microservices - Thomas Hunter II 2017-06-13

Use the many types of tools required to navigate and maintain a microservice ecosystem. This book examines what is normally a complex system of interconnected services and clarifies them one at a time, first examining theoretical requirements then looking at concrete tools, configuration, and workflows. Building out these systems includes many concerns such as containerization, container orchestration, build pipelines and continuous integration solutions, automated testing, service discovery, logging and analytics. You will examine each of these tools and understand how they can be combined within an organization. You will design an automated build pipeline from Pull Request to container deployment, understand how to achieve High Availability and monitor application health with Service Discovery, and learn how to collaborate with other teams, write documentation, and describe bugs. Covering use of Jenkins, Docker, Kubernetes, the ELK stack (Elasticsearch, Logstash, and Kibana), and StatsD and Grafana for analytics, you will build on your existing knowledge of Service-Oriented Architecture and gain an advanced, practical understanding of everything from infrastructure development to team collaboration. What You'll Learn Design an API to be convenient for developers to consume. Deploy dynamic instances of Microservices and allow then to discover each other. Track the health of a Microservice and be notified in case of degraded performance. Write effective documentation and communicate efficiently with other teams. Who This Book Is For Those who would like a better understanding of System Oriented Architecture. Those who would like to break a monolith into smaller Microservices. Those who are familiar with Microservices and would like a better understanding of peripheral technologies.

Kubernetes Management Design Patterns - Deepak Vohra 2017-01-20

Take container cluster management to the next level; learn how to administer and configure Kubernetes on CoreOS; and apply suitable management design patterns such as Configmaps, Autoscaling, elastic resource usage, and high availability. Some of the other features discussed are logging, scheduling, rolling updates, volumes, service types, and multiple cloud provider zones. The atomic unit of modular container service in Kubernetes is a Pod, which is a group of containers with a common filesystem and networking. The Kubernetes Pod abstraction enables design patterns for containerized applications similar to object-oriented design patterns. Containers provide some of the same benefits as software objects such as modularity or packaging, abstraction, and reuse. CoreOS Linux is used in the majority of the chapters and other platforms

discussed are CentOS with OpenShift, Debian 8 (jessie) on AWS, and Debian 7 for Google Container Engine. CoreOS is the main focus becayse Docker is pre-installed on CoreOS out-of-the-box. CoreOS: Supports most cloud providers (including Amazon AWS EC2 and Google Cloud Platform) and virtualization platforms (such as VMWare and VirtualBox) Provides Cloud-Config for declaratively configuring for OS items such as network configuration (flannel), storage (etcd), and user accounts Provides a production-level infrastructure for containerized applications including automation, security, and scalability Leads the drive for container industry standards and founded appc Provides the most advanced container registry, Quay Docker was made available as open source in March 2013 and has become the most commonly used containerization platform. Kubernetes was open-sourced in June 2014 and has become the most widely used container cluster manager. The first stable version of CoreOS Linux was made available in July 2014 and since has become one of the most commonly used operating system for containers. What You'll Learn Use Kubernetes with Docker Create a Kubernetes cluster on CoreOS on AWS Apply cluster management design patterns Use multiple cloud provider zones Work with Kubernetes and tools like Ansible Discover the Kubernetes-based PaaS platform OpenShift Create a high availability website Build a high availability Kubernetes master cluster Use volumes, configmaps, services, autoscaling, and rolling updates Manage compute resources Configure logging and scheduling Who This Book Is For Linux admins, CoreOS admins, application developers, and container as a service (CAAS) developers. Some pre-requisite knowledge of Linux and Docker is required. Introductory knowledge of Kubernetes is required such as creating a cluster, creating a Pod, creating a service, and creating and scaling a replication controller. For introductory Docker and Kubernetes information, refer to Pro Docker (Apress) and Kubernetes Microservices with Docker (Apress). Some pre-requisite knowledge about using Amazon Web Services (AWS) EC2, CloudFormation, and VPC is also required.