

Puppet Vs Chef Vs Ansible Vs Saltstack Techoism

Over 90 practical and highly applicable recipes to successfully deploy various OpenStack configurations in production About This Book Get a deep understanding of OpenStack's internal structure and services Learn real-world examples on how to build and configure various production grade use cases for each of OpenStack's services Use a step-by-step approach to install and configure OpenStack's services to provide Compute, Storage, and Networking as a services for cloud workloads Who This Book Is For If you have a basic understanding of Linux and Cloud computing and want to learn about configurations that OpenStack supports, this is the book for you. Knowledge of virtualization and managing Linux environments is expected. Prior knowledge or experience of OpenStack is not required, although beneficial. What You Will Learn Plan an installation of OpenStack with a basic configuration Deploy OpenStack in a highly available configuration Configure Keystone Identity services with multiple types of identity backends Configure Glance Image Store with File, NFS, Swift, or Ceph image backends and use local image caching Design Cinder to use a single storage provider such as LVM, Ceph, and NFS backends, or to use multiple storage backends simultaneously Manage and configure the OpenStack networking backend Configure OpenStack's compute hypervisor and the instance scheduling mechanism Build and customize the OpenStack dashboard In Detail OpenStack is the most popular open source cloud platform used by organizations building internal private clouds and by public cloud providers. OpenStack is designed in a fully distributed architecture to provide Infrastructure as a Service, allowing us to maintain a massively scalable cloud infrastructure. OpenStack is developed by a vibrant community of open source developers who come from the largest software companies in the world. The book provides a comprehensive and practical guide to the multiple uses cases and configurations that OpenStack supports. This book simplifies the learning process by guiding you through how to install OpenStack in a single controller configuration. The book goes deeper into deploying OpenStack in a highly available configuration. You'll then configure Keystone Identity Services using LDAP, Active Directory, or the MySQL identity provider and configure a caching layer and SSL. After that, you will configure storage back-end providers for Glance and Cinder, which will include Ceph, NFS, Swift, and local storage. Then you will configure the Neutron networking service with provider network VLANs, and tenant network VXLAN and GRE. Also, you will configure Nova's Hypervisor with KVM, and QEMU emulation, and you will configure Nova's scheduler filters and weights. Finally, you will configure Horizon to use Apache HTTPD and SSL, and you will customize the dashboard's appearance. Style and approach This book consists of clear, concise instructions coupled with practical and applicable recipes that will enable you to use and implement the latest features of OpenStack. Six years ago, Infrastructure as Code was a new concept. Today, as even banks and other conservative organizations plan moves to the cloud, development teams for companies worldwide are attempting to build large infrastructure codebases. With this practical book, Kief Morris of ThoughtWorks shows you how to effectively use principles, practices, and patterns pioneered by DevOps teams to manage cloud-age infrastructure. Ideal for system administrators, infrastructure engineers, software developers, team leads, and architects, this updated edition demonstrates how you can exploit cloud and automation technology to make changes easily, safely, quickly, and responsibly. You'll learn how to define everything as code and apply software design and engineering practices to build your system from small, loosely coupled pieces. This book covers: Foundations: Use Infrastructure as Code to drive continuous change and raise the bar of operational quality, using tools and technologies to build cloud-based platforms Working with infrastructure stacks: Learn how to define, provision, test, and continuously deliver changes to infrastructure resources Working with servers and other platforms: Use patterns to design provisioning and configuration of servers and clusters

such as incident management, configuration management, and change management processes in DevOps projects Automate activities within processes Who This Book Is For Consultants, business analysts, administrators, and project managers who are looking for more information about Dynamics 365.

This book is your concise guide to Ansible, the simple way to automate apps and IT infrastructure. In less than 250 pages, this book takes you from knowing nothing about configuration management to understanding how to use Ansible in a professional setting. You will learn how to create an Ansible playbook to automatically set up an environment, ready to install an open source project. You'll extract common tasks into roles that you can reuse across all your projects, and build your infrastructure on top of existing open source roles and modules that are available for you to use. You will learn to build your own modules to perform actions specific to your business. By the end you will create an entire cluster of virtualized machines, all of which have your applications and all their dependencies installed automatically. Finally, you'll test your Ansible playbooks. Ansible can do as much or as little as you want it to. Ansible: From Beginner to Pro will teach you the key skills you need to be an Ansible professional. You'll be writing roles and modules and creating entire environments without human intervention in no time at all – add it to your library today. What You Will Learn Learn why Ansible is so popular and how to download and install it Create a playbook that automatically downloads and installs a popular open source project Use open source roles to complete common tasks, and write your own specific to your business Extend Ansible by writing your own modules Test your infrastructure using Test Kitchen and ServerSpec Who This Book Is For Developers that currently create development and production environments by hand. If you find yourself running apt-get install regularly, this book is for you. Ansible adds reproducibility and saves you time all at once. Ansible: From Beginner to Pro is great for any developer wanting to enhance their skillset and learn new tools.

How many times did you hear the excuse ""works on my machine""? With Vagrant, this stays in the past. Your environments will be exactly the way you want them to be, targeting specific projects for different needs. As easy as cloning a repository and running ""vagrant up."" This book covers from basic to advanced concepts on Vagrant, including important ProTips to improve your Vagrant projects and avoid common mistakes. Vagrant Cookbook comes with quick guides to the 3 most used Vagrant provisioners: Puppet, Ansible and Chef. Following the guide, a practical example will show you how to provision a basic web server with Nginx + PHP5-FPM (PHP 5.5+).

Over 90 practical, actionable recipes to automate, test, and manage your infrastructure quickly and effectively About This Book Bring down your delivery timeline from days to hours by treating your server configurations and VMs as code, just like you would with software code. Take your existing knowledge and skill set with your existing tools (Puppet, Chef, or Docker) to the next level and solve IT infrastructure challenges. Use practical recipes to use code to provision and deploy servers and applications and have greater control of your infrastructure. Who This Book Is For This book is for DevOps engineers and developers working in cross-functional teams or operations and would now switch to IAC to manage complex infrastructures. What You Will Learn Provision local and remote development environments with Vagrant Automate production infrastructures with Terraform, Ansible and Cloud-init on AWS, OpenStack, Google Cloud, Digital Ocean, and more Manage and test automated systems using Chef and Puppet Build, ship, and debug optimized Docker containers

Explore the best practices to automate and test everything from cloud infrastructures to operating system configuration. In Detail Infrastructure as Code (IAC) is a key aspect of the DevOps movement, and this book will show you how to transform the way you work with your infrastructure—by treating it as software. This book is dedicated to helping you discover the essentials of infrastructure automation and its related practices; the over 90 organized practical solutions will demonstrate how to work with some of the very best tools and cloud solutions. You will learn how to deploy repeatable infrastructures and services on AWS, OpenStack, Google Cloud, and Digital Ocean. You will see both Ansible and Terraform in action, manipulate the best bits from cloud-init to easily bootstrap instances, and simulate consistent environments locally or remotely using Vagrant. You will discover how to automate and test a range of system tasks using Chef or Puppet. You will also build, test, and debug various Docker containers having developers' interests in mind. This book will help you to use the right tools, techniques, and approaches to deliver working solutions for today's modern infrastructure challenges. Style and approach This is a recipe-based book that allows you to venture into some of the most cutting-edge practices and techniques about IAC and solve immediate problems when trying to implement them.

This book constitutes the refereed proceedings of the 10th Software Quality Days Conference, SWQD 2018, held in Vienna, Austria, in January 2018. The Software Quality Days (SWQD) conference started in 2009 and has grown to the biggest conferences on software quality in Europe with a strong community. The program of the SWQD conference is designed to encompass a stimulating mixture of practical presentations and new research topics in scientific presentations. The guiding conference topic of the SWQD 2018 is “Software Quality 4.0: Methods and Tools for better Software and Systems”, as novel technologies include new challenges and might require new and adapted methods and tools to support quality assurance activities early. The 6 full papers and 2 short papers presented in this volume were carefully reviewed and selected from 16 submissions. The volume also contains 2 invited talks. The contributions were organized in topical sections named: safety and security; requirements engineering and requirements-based testing; crowdsourcing in software engineering; software and systems architecture; experimentation in software engineering; and smart environments.

Among the many configuration management tools available, Ansible has some distinct advantages—it's minimal in nature, you don't need to install anything on your nodes, and it has an easy learning curve. This practical guide shows you how to be productive with this tool quickly, whether you're a developer deploying code to production or a system administrator looking for a better automation solution. Author Lorin Hochstein shows you how to write playbooks (Ansible's configuration management scripts), manage remote servers, and explore the tool's real power: built-in declarative modules. You'll discover that Ansible has

the functionality you need and the simplicity you desire. Understand how Ansible differs from other configuration management systems Use the YAML file format to write your own playbooks Learn Ansible's support for variables and facts Work with a complete example to deploy a non-trivial application Use roles to simplify and reuse playbooks Make playbooks run faster with ssh multiplexing, pipelining, and parallelism Deploy applications to Amazon EC2 and other cloud platforms Use Ansible to create Docker images and deploy Docker containers

This book introduces readers to the tools needed to protect IT resources and communicate with security specialists when there is a security problem. The book covers a wide range of security topics including Cryptographic Technologies, Network Security, Security Management, Information Assurance, Security Applications, Computer Security, Hardware Security, and Biometrics and Forensics. It introduces the concepts, techniques, methods, approaches, and trends needed by security specialists to improve their security skills and capabilities. Further, it provides a glimpse into future directions where security techniques, policies, applications, and theories are headed. The book represents a collection of carefully selected and reviewed chapters written by diverse security experts in the listed fields and edited by prominent security researchers. Complementary slides are available for download on the book's website at Springer.com.

Agile continues to be the most adopted software development methodology among organizations worldwide, but it generally hasn't integrated well with traditional security management techniques. And most security professionals aren't up to speed in their understanding and experience of agile development. To help bridge the divide between these two worlds, this practical guide introduces several security tools and techniques adapted specifically to integrate with agile development. Written by security experts and agile veterans, this book begins by introducing security principles to agile practitioners, and agile principles to security practitioners. The authors also reveal problems they encountered in their own experiences with agile security, and how they worked to solve them. You'll learn how to: Add security practices to each stage of your existing development lifecycle Integrate security with planning, requirements, design, and at the code level Include security testing as part of your team's effort to deliver working software in each release Implement regulatory compliance in an agile or DevOps environment Build an effective security program through a culture of empathy, openness, transparency, and collaboration

Virtualization, cloud, containers, server automation, and software-defined networking are meant to simplify IT operations. But many organizations adopting these technologies have found that it only leads to a faster-growing sprawl of unmanageable systems. This is where infrastructure as code can help. With this practical guide, author Kief Morris of ThoughtWorks shows you how to effectively use principles, practices, and patterns pioneered through the DevOps movement to manage cloud age infrastructure. Ideal for system administrators, infrastructure

engineers, team leads, and architects, this book demonstrates various tools, techniques, and patterns you can use to implement infrastructure as code. In three parts, you'll learn about the platforms and tooling involved in creating and configuring infrastructure elements, patterns for using these tools, and practices for making infrastructure as code work in your environment. Examine the pitfalls that organizations fall into when adopting the new generation of infrastructure technologies Understand the capabilities and service models of dynamic infrastructure platforms Learn about tools that provide, provision, and configure core infrastructure resources Explore services and tools for managing a dynamic infrastructure Learn specific patterns and practices for provisioning servers, building server templates, and updating running servers

As organizations shift from monolithic applications to smaller, self-contained microservices, distributed systems have become more fine-grained. But developing these new systems brings its own host of problems. This expanded second edition takes a holistic view of topics that you need to consider when building, managing, and scaling microservices architectures. Through clear examples and practical advice, author Sam Newman gives everyone from architects and developers to testers and IT operators a firm grounding in the concepts. You'll dive into the latest solutions for modeling, integrating, testing, deploying, and monitoring your own autonomous services. Real-world cases reveal how organizations today manage to get the most out of these architectures. Microservices technologies continue to move quickly. This book brings you up to speed. Get new information on user interfaces, container orchestration, and serverless Align system design with your organization's goals Explore options for integrating a service with your system Understand how to independently deploy microservices Examine the complexities of testing and monitoring distributed services Manage security with expanded content around user-to-service and service-to-service models

"Infrastructure as a code is one of the foundations of DevOps Automation toolchain. Chef is at the forefront of the IaaS revolutions and was the first tool amongst the four main configuration management tools including Puppet, Ansible and Saltstack .Chef is also the fastest configuration management system and provides a simple DSL (Domain Specific Language) to define the state of resources and does the heavy lifting of managing underlying platform specific operations by itself, providing users with a higher level of abstraction than scripts do. The use of Chef is no more limited to servers, but has also expanded to managing all type of devices including routers, embedded systems, storage and so on. With more and more organizations adopting DevOps practices, knowledge on IaaS and tools such as Chef is essential for today's generation of DevOps professionals. This skill would also help you advance your career, especially for operations, systems, networks, and DevOps engineers. It then helps you dive into the world of Chef by understanding the basics of the languages such as resources/providers, manifests, and modules, and then delves deeper into

creating dynamic code with parameters, templates, defined types and so on. Once equipped with the basics, it unlocks Chef's full potential with advanced topics such as environments, hiera, r10k, puppet enterprise, rolls and design patterns and so on. This course takes you from zero to Chef master in two weeks."--Resource description page.

If you want to study, build, or simply validate your thinking about modern cloud native data center networks, this is your book. Whether you're pursuing a multitenant private cloud, a network for running machine learning, or an enterprise data center, author Dinesh Dutt takes you through the steps necessary to design a data center that's affordable, high capacity, easy to manage, agile, and reliable. Ideal for network architects, data center operators, and network and containerized application developers, this book mixes theory with practice to guide you through the architecture and protocols you need to create and operate a robust, scalable network infrastructure. The book offers a vendor-neutral way to look at network design. For those interested in open networking, this book is chock-full of examples using open source software, from FRR to Ansible. In the context of a cloud native data center, you'll examine: Clos topology Network disaggregation Network operating system choices Routing protocol choices Container networking Network virtualization and EVPN Network automation

This book constitutes the thoroughly refereed post-conference proceedings of the 13th International Conference on Security for Information Technology and Communications, SecITC 2020, held in Bucharest, Romania, in November 2020. The 17 revised full papers presented together with 2 invited talks were carefully reviewed and selected from 41 submissions. The conference covers topics from cryptographic algorithms, to digital forensics and cyber security and much more.

Orchestrate change across server clusters in near realtime with MCollective, the framework that works in concert with Puppet, Chef, and other configuration management tools. Ideal for system administrators and operations or DevOps engineers at any level, this hands-on guide teaches you how to build and test a real installation of MCollective servers and clients in your environment. Learn how to build an entire installation by hand, know where every configuration file lives, and understand every configuration parameter and what it means. Whether you manage a small environment or one that's immense in scale, this book shows you how to orchestrate specific actions faster and better than you do now. Tour MCollective's architecture, backbone, transport, and security controls

Configure MCollective components to match your production environment Create and use collectives to handle thousands of remote MCollective agents Use ActiveMQ Network of Brokers to resolve multi-site or redundancy requirements Learn how to use community-built client and agent plugins, with concrete examples Create your own server and client plugins to perform a variety of actions Learn recommended best practices for using MCollective

Unleash the combination of Docker and Jenkins in order to enhance the DevOps workflow About This Book Build reliable and secure applications using Docker

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

Everything you need to know for the Solutions Architect - Associate Exam, fully updated The AWS Certified Solutions Architect Study Guide: Associate (SAA-C01) Exam is your complete and fully updated resource to the AWS Solutions Architect - Associate certification. This invaluable Sybex study guide covers all relevant aspects of the AWS Solutions Architect job role, including mapping multi-tier architectures to AWS services, loose coupling and stateless systems, applying AWS security features, deploying and managing services, designing

large scale distributed systems, and many more. Written by two AWS subject-matter experts, this self-study guide and reference provides all the tools and information necessary to master the exam, earn your certification, and gain insights into the job of an AWS Solutions Architect. Efficient and logical presentation of exam objectives allows for flexible study of topics, and powerful learning tools increase comprehension and retention of key exam elements. Practice questions, chapter reviews, and detailed examination of essential concepts fully prepare you for the AWS Solutions Architect – Associate certification. The certification is highly valued in IT and cloud computing professionals. Now in a new edition—reflecting the latest changes, additions, and updates to the AWS Solutions Architect – Associate certification exam guide—this book is your complete, one-stop resource: Access the Sybex interactive learning environment and test bank, including chapter tests, practice exams, electronic flashcards, and a searchable glossary of key terms. Learn all the components of the AWS exam and know what to expect on exam day Review challenging exam topics and focus on the areas that need improvement Expand your AWS skillset and keep pace with current cloud computing technologies The AWS Certified Solutions Architect Study Guide: Associate (SAA-C01) Exam enables you to validate your skills, increase your competitive advantage, and take the next step on your career path. Comprehensive and up-to-date content and superior study tools make this guide a must-have resource for those seeking AWS Solutions Architect – Associate certification.

Much has changed in technology over the past decade. Data is hot, the cloud is ubiquitous, and many organizations need some form of automation. Throughout these transformations, Python has become one of the most popular languages in the world. This practical resource shows you how to use Python for everyday Linux systems administration tasks with today's most useful DevOps tools, including Docker, Kubernetes, and Terraform. Learning how to interact and automate with Linux is essential for millions of professionals. Python makes it much easier. With this book, you'll learn how to develop software and solve problems using containers, as well as how to monitor, instrument, load-test, and operationalize your software. Looking for effective ways to "get stuff done" in Python? This is your guide. Python foundations, including a brief introduction to the language How to automate text, write command-line tools, and automate the filesystem Linux utilities, package management, build systems, monitoring and instrumentation, and automated testing Cloud computing, infrastructure as code, Kubernetes, and serverless Machine learning operations and data engineering from a DevOps perspective Building, deploying, and operationalizing a machine learning project

Internet of Vehicles. Technologies and Services Toward Smart Cities6th International Conference, IOV 2019, Kaohsiung, Taiwan, November 18–21, 2019, ProceedingsSpringer Nature

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

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.

Build, Manage and Improve your infrastructure effortlessly. About This Book An up-to-date and comprehensive resource on Terraform that lets you quickly and efficiently launch your infrastructure Learn how to implement your infrastructure as code and make secure, effective changes to your infrastructure Learn to build multi-cloud fault-tolerant systems and simplify the management and orchestration of even the largest scale and most complex cloud infrastructures Who This Book Is For This book is for developers and operators who already have some exposure to working with infrastructure but want to improve their workflow and introduce infrastructure as a code practice. Knowledge of essential Amazon Web Services components (EC2, VPC, IAM) would help contextualize the examples provided. Basic understanding of Jenkins and Shell scripts will be helpful for the chapters on the production usage of Terraform. What You Will Learn Understand what Infrastructure as Code (IaC) means and why it matters Install, configure, and deploy Terraform Take full control of your infrastructure in the form of code Manage complete infrastructure, starting with a single server and scaling beyond any limits Discover a great set of production-ready practices to manage infrastructure Set up CI/CD pipelines to test and deliver Terraform stacks Construct templates to simplify more complex provisioning tasks In Detail Terraform is a tool used to efficiently build, configure, and improve the production infrastructure. It can manage the existing infrastructure as well as create custom in-house solutions. This book shows you when and how to implement infrastructure as a code practices with Terraform. It covers everything necessary to set up the complete management of infrastructure with Terraform, starting with the basics of using providers and resources. It is a comprehensive guide that begins with very small infrastructure templates and takes you all the way to managing complex systems, all using concrete examples that evolve over the course of the book. The book ends with the complete workflow of managing a production infrastructure as code—this is achieved with the help of version control and continuous integration. The readers will also learn how to combine multiple providers in a single template and manage different code bases with many complex modules. It focuses on how to set up continuous integration for the infrastructure code. The readers will be able to use Terraform to build, change, and combine infrastructure safely and efficiently. Style and approach This book will help and guide you to implement Terraform in your infrastructure. The readers will start by working on very small infrastructure templates and then slowly move on to manage complex systems, all by using concrete examples that will evolve during the course of the book.

- This is the latest practice test to pass the CompTIA XK0-004 CompTIA Linux+ Exam. - It contains 223 Questions and Answers. - All the questions are 100% valid and stable. - You can rely on this practice test to pass the exam with a good mark and in the first attempt.

If you are a developer who wants to have your development environment accurately reflect your live servers to tackle the ever-increasing complexity of web and software projects, this book is most certainly intended for you! It's assumed that you know the basics of Linux systems in the context of web-based projects.

This book presents the latest research in the fields of computational intelligence, ubiquitous computing models, communication intelligence, communication security, machine learning, informatics, mobile computing, cloud computing and big data analytics. The best selected papers, presented at the International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2020), are included in the book. The book focuses on the theory, design, analysis, implementation and applications of distributed systems and networks.

Network automation is the process of efficiently automating the management and functionality of networks. Through practical use-cases and examples, this book introduces you to the popular tools such as Python, Ansible, Chef and more, that are used to automate a network. This book is a collection of peer-reviewed best selected research papers presented at the First International Conference on Machine Intelligence and Smart Systems 2020 (MISS 2020), organized during September 24–25, 2020, in Gwalior, India. The book presents new advances and research results in the fields of machine intelligence, artificial intelligence and smart systems. It includes main paradigms of machine intelligence algorithms, namely (1) neural networks, (2) evolutionary computation, (3) swarm intelligence, (4) fuzzy systems and (5) immunological computation.

Strategically design, troubleshoot, and automate Docker containers from development to deployment About This Book Utilize current and emergent technologies for effective Docker orchestration and management A step-by-step guide to diagnosing and fixing problems with Docker containers. Who This Book Is For This book is intended for seasoned solutions architects, developers, and programmers, system engineers, and administrators to help you troubleshoot common areas of Docker containerization. If you are looking to build production-ready Docker containers for automated deployment, you will be able to master and troubleshoot both the basic functions and the advanced features of Docker. Advanced familiarity with the Linux command line syntax, unit testing, the Docker Registry, Github, and leading container hosting platforms and Cloud Service Providers (CSP) are the prerequisites. What You Will Learn Install Docker ecosystem tools and services, Microservices and N-tier applications Create re-usable, portable containers with help of automation tools Network and inter-link containers Attach volumes securely to containers Consume and troubleshoot Docker APIs Troubleshooting issue of Docker deployment in Public cloud Ease the process of container management with Kubernetes In Detail This book will traverse some common best practices to for complex application scenarios where troubleshooting can be successfully employed to provide the repeatable processes and advantages that containers can deliver. This book will be a practical guide showing how to fix real-life issues related to installation, memory, Dockerfile syntax, connection, authorization, networking and so on in Docker. This book will also teach how to solve errors that occur during advanced setup and administration and deployment in a step-by-step fashion. By sequentially working through the real-world production scenarios in each chapter throughout the book, you will gain insight into and mastery of common areas not only for effective troubleshooting, but ways and means to avoid troubleshooting in the first place. This book will also cover tips and tricks that make the workflow easier. Style and approach An easy-to-follow guide full of interactive examples of real-world development and deployment scenarios. Ample screenshots, workflows, complementary tools, and related terminal commands are provided to address a wide range of practical and situational applications.

Azure is evolving at a rapid speed and introducing newer services almost every week. What was relevant a year back is not more relevant today as better services are available to solve the same challenges. This book will provide architects with solid information about the important services for hosting, deploying and architecting solutions.

Many companies claim to have "gone to the cloud," yet returns from their efforts are meager or

worse. Why? Because they've defined cloud as a destination, not a capability. Using cloud as a single-vendor, one-stop destination is fiction; in practice, today's organizations use a mosaic of capabilities across several vendors. Your cloud strategy needs to follow a hybrid multicloud model, one that delivers cloud's value at destinations you choose. This practical guide provides business leaders and C-level executives with guidance and insights across a wide range of cloud-related topics, such as distributed cloud, microservices, and other open source solutions for strengthening operations. You'll apply in-the-field best practices and lessons learned as you define your hybrid cloud strategy and drive your company's transformation strategy. Learn cloud fundamentals and patterns, including basic concepts and history Get a framework for cloud acumen phases to value-plot your cloud future Know which questions to ask a cloud provider before you sign Discover potential pitfalls for everything from the true cost of a cloud solution to adopting open source the right way

"Ansible is an infrastructure automation framework; other examples include Chef, Puppet, and SaltStack. While each framework offers its own unique features, Ansible has an advantage: simplicity. Ansible configuration uses simple, compact, and clean YAML files that are easy to understand and maintain. Ansible is agentless, which means Ansible itself doesn't need to be installed on target machines. At the same time, while Ansible is simple to learn, it is powerful and extensible, making it the perfect choice even for demanding tasks such as configuring an entire OpenStack cluster. This video course will show you how to use Ansible to automate deployment so you can quickly and reliably run and upgrade your applications. You will learn how Infrastructure Automation results in cost reduction, productivity, availability, reliability, and performance. You will follow along step-by-step on a real Ansible deployment of dotCMS, an open-source Content Management System (CMS), which will deliver content to websites, intranets and mobile apps. You will gain real-world experience that will get you started quickly on your own deployments. This will include information on all of Ansible's core concepts and features, including playbooks, tasks, roles, templates, variables, and modules. By the end of the course, you will be able to create and maintain Ansible playbooks, roles, and custom modules, enabling you to make full use of Ansible as part of a DevOps or automation strategy."--Resource description page.

"Infrastructure as a code is one of the foundations of the DevOps Automation toolchain. Being the first to enter in 2005, Puppet is at the forefront of the IaaC revolutions and was the first tool amongst the four main configuration management tools including Chef, Ansible and Saltstack . Puppet is also the fastest configuration management system and provides a simple DSL (Domain Specific Language) to define the state of resources and does the heavy lifting of managing underlying platform-specific operations by itself, providing users with a higher level of abstraction than scripts do. The use of Puppet is no more limited to servers, but has also expanded to managing all type of devices including routers, embedded systems, storage and so on. With more and more organizations adopting to DevOps practices, knowledge on IaaC and tools such as Puppet is essential for today's generation of DevOps professionals. This skill would also help you to advance your career, especially for operations, systems, networks and DevOps engineers. It then helps you dive into the world of Puppet by understanding the basics of the languages such as resources/providers, manifests, and modules, and then delves deeper into creating dynamic code with parameters, templates, defined types and so on. Once equipped with the basics, it unlocks Puppet's full potential with advanced topics such as environments, Hiera, r10k, Puppet Enterprise, rolls and design patterns and so on. This course takes you from zero to Puppet Master in two weeks."--Resource description page.

Design and implement successful private clouds with OpenStack About This Book Explore the various design choices available for cloud architects within an OpenStack deployment Craft an OpenStack architecture and deployment pipeline to meet the unique needs of your organization Create a product roadmap for Infrastructure as a Service in your organization

using this hands-on guide Who This Book Is For This book is written especially for those who will design OpenStack clouds and lead their implementation. These people are typically cloud architects, but may also be in product management, systems engineering, or enterprise architecture. What You Will Learn Familiarize yourself with the components of OpenStack Build an increasingly complex OpenStack lab deployment Write compelling documentation for the architecture teams within your organization Apply Agile configuration management techniques to deploy OpenStack Integrate OpenStack with your organization's identity management, provisioning, and billing systems Configure a robust virtual environment for users to interact with Use enterprise security guidelines for your OpenStack deployment Create a product roadmap that delivers functionality quickly to the users of your platform In Detail Over the last five years, hundreds of organizations have successfully implemented Infrastructure as a Service (IaaS) platforms based on OpenStack. The huge amount of investment from these organizations, industry giants such as IBM and HP, as well as open source leaders such as Red Hat have led analysts to label OpenStack as the most important open source technology since the Linux operating system. Because of its ambitious scope, OpenStack is a complex and fast-evolving open source project that requires a diverse skill-set to design and implement it. This guide leads you through each of the major decision points that you'll face while architecting an OpenStack private cloud for your organization. At each point, we offer you advice based on the experience we've gained from designing and leading successful OpenStack projects in a wide range of industries. Each chapter also includes lab material that gives you a chance to install and configure the technologies used to build production-quality OpenStack clouds. Most importantly, we focus on ensuring that your OpenStack project meets the needs of your organization, which will guarantee a successful rollout. Style and approach This is practical, hands-on guide to implementing OpenStack clouds, where each topic is illustrated with real-world examples and then the technical points are proven in the lab.

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).

This book presents a range of cloud computing platforms for data-intensive scientific applications. It covers systems that deliver infrastructure as a service, including: HPC as a service; virtual networks as a service; scalable and reliable storage; algorithms that manage vast cloud resources and applications runtime; and programming models that enable pragmatic programming and implementation toolkits for eScience applications. Many scientific applications in clouds are also introduced, such as bioinformatics, biology, weather forecasting and social networks. Most chapters include case studies. Cloud Computing for Data-Intensive Applications targets advanced-level students and researchers studying computer science and electrical engineering. Professionals working in cloud computing, networks, databases and more will also find this book useful as a reference.

Learn everything you need to manage and handle your systems with ease with Ansible 2 using this comprehensive guide About This Book Simplify the automation of applications and systems using the newest version of Ansible Get acquainted with fundamentals of Ansible such as playbooks, modules, and various testing strategies A comprehensive, learning guide that provides you with great skills to automate your organization's infrastructure using Ansible 2 Who This Book Is For The book is for sys admins who want to automate their organization's infrastructure using Ansible 2. No prior knowledge of Ansible is required. What You Will Learn Set up Ansible 2 and an Ansible 2 project in a future-proof way Perform basic operations with Ansible 2 such as creating, copying, moving, changing, and deleting files, and creating and deleting users Deploy complete cloud environments using Ansible 2 on AWS and DigitalOcean Explore complex operations with Ansible 2 (Ansible vault, e-mails, and Nagios) Develop and test Ansible playbooks Write a custom module and test it In Detail Ansible is an open source automation platform that assists organizations with tasks such as configuration management, application deployment, orchestration, and task automation. With Ansible, even complex tasks can be handled easier than before. In this book, you will learn about the fundamentals and practical aspects of Ansible 2 by diving deeply into topics such as installation (Linux, BSD, and Windows Support), playbooks, modules, various testing strategies, provisioning, deployment, and orchestration. In this book, you will get accustomed with the new features of Ansible 2 such as cleaner architecture, task blocks, playbook parsing, new execution strategy plugins, and modules. You will also learn how to integrate Ansible with cloud platforms such as AWS. The book ends with the enterprise versions of Ansible, Ansible Tower and Ansible Galaxy, where you will learn to interact Ansible with different OSes to speed up your work to previously unseen levels By the end of the book, you'll able to leverage the Ansible parameters to create expeditious tasks for your organization by implementing the Ansible 2 techniques and paradigms. Style and approach This book is a step-by-step learning guide on the all new Ansible 2, which is an ideal configuration management tool.

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