

Openstack In Action

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Identity, Authentication, and Access Management in OpenStack Apress

Discover your complete guide to designing, deploying, and managing OpenStack-based clouds in mid-to-large IT infrastructures with best practices, expert understanding, and more About This Book Design and deploy an OpenStack-based cloud in your mid-to-large IT infrastructure using automation tools and best practices Keep yourself up-to-date with valuable insights into OpenStack components and new services in the latest OpenStack release Discover how the new features in the latest OpenStack release can help your enterprise and infrastructure Who This Book Is For This book is for system administrators, cloud engineers, and system architects who would like to deploy an OpenStack-based cloud in a mid-to-large IT infrastructure. This book requires a moderate level of system administration and familiarity with cloud concepts. What You Will Learn Explore the main architecture design of OpenStack components and core-by-core services, and how they work together Design different high availability scenarios and plan for a no-single-point-of-failure environment Set up a multinode environment in production using orchestration tools Boost OpenStack's performance with advanced configuration Delve into various hypervisors and container technology supported by OpenStack Get familiar with deployment methods and discover use cases in a real production environment Adopt the DevOps style of automation while deploying and operating in an OpenStack environment Monitor the cloud infrastructure and make decisions on maintenance and performance improvement In Detail In this second edition, you will get to grips with the latest features of OpenStack. Starting with an overview of the OpenStack architecture, you'll see how to adopt the DevOps style of automation while deploying and operating in an OpenStack environment. We'll show you how to create your own OpenStack private cloud. Then you'll learn about various hypervisors and container technology supported by OpenStack. You'll get an understanding about the segregation of compute nodes based on reliability and availability needs. We'll cover various storage types in OpenStack and advanced networking aspects such as SDN and NFV. Next, you'll understand the OpenStack infrastructure from a cloud user point of view. Moving on, you'll develop troubleshooting skills, and get a comprehensive understanding of services such as high availability and failover in OpenStack. Finally, you will gain experience of running a centralized logging server and monitoring OpenStack services. The book will show you how to carry out performance tuning based on OpenStack service logs. You will be able to master OpenStack benchmarking and performance tuning. By the end of the book, you'll be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies. Style and approach This book will help you understand the flexibility of OpenStack by showcasing integration of several out-of-the-box solutions in order to build a large-scale cloud environment.. It will also cover detailed discussions on the various design and deployment strategies for implementing a fault-tolerant and highly available cloud infrastructure.

[Deploying OpenStack](#) Manning Publications Company

Your complete guide to designing, deploying, and managing OpenStack-based clouds in mid-to-large IT infrastructures About This Book* Design and deploy an OpenStack-based cloud in your mid-to-large IT infrastructure using automation tools and best practices* Keep yourself up-to-date with valuable insights into OpenStack components and new services in the latest OpenStack release* Discover how the new features in the latest OpenStack release can help your enterprise and infrastructure Who This Book Is For This book is for system administrators, cloud engineers, and system architects who would like to deploy an OpenStack-based cloud in a mid-to-large IT infrastructure. This book requires a moderate level of system administration and familiarity with cloud concepts. What You Will Learn* Explore the main architecture design of OpenStack components and core-by-core services, and how they work together* Design different high availability scenarios and plan for a no-single-point-of-failure environment* Set up a multinode environment in production using orchestration tools* Boost OpenStack's performance with advanced configuration* Delve into various hypervisors and container technology supported by OpenStack* Get familiar with deployment methods and discover use cases in a real production environment* Adopt the DevOps style of automation while deploying and operating in an OpenStack environment* Monitor the cloud infrastructure and make decisions on maintenance and performance improvement In Detail In this second edition, you will get to grips with the latest features of OpenStack. Starting with an overview of the OpenStack architecture, you'll see how to adopt the DevOps style of automation while deploying and operating in an OpenStack environment. We'll show you how to create your own OpenStack private cloud. Then you'll learn about various hypervisors and container technology supported by OpenStack. You'll get an understanding about the segregation of compute nodes based on reliability and availability needs. We'll cover various storage types in OpenStack and advanced networking aspects such as SDN and NFV. Next, you'll understand the OpenStack infrastructure from a cloud user point of view. Moving on, you'll develop troubleshooting skills, and get a comprehensive understanding of services such as high availability and failover in OpenStack. Finally, you will gain experience of running a centralized logging server and monitoring OpenStack services. The book will show you how to carry out performance tuning based on OpenStack service logs. You will be able to master OpenStack benchmarking and performance tuning. By the end of the book, you'll be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies.

[Anatomy and Physiology](#) "O'Reilly Media, Inc."

If you need to get started with OpenStack or want to learn more, then this book is your perfect companion. If you're comfortable with the Linux command line, you'll gain confidence in using OpenStack.

[Terraform: Up & Running](#) Packt Publishing Ltd

Teaches you how and what to study in order to be best prepared for the Certified OpenStack Administrator exam. This fast-growing technology is creating a market that needs more qualified IT specialists with proven skills. This book covers 100% of the exam requirements for both The OpenStack Foundation and the Mirantis OpenStack Certification Exam. Each theme is taught using practical exercises and instructions for the command line and for the graphical client (Horizon). Each chapter is followed by review questions, complete with answers. Even after you have taken and passed your OpenStack exam, this book will remain a useful reference. What You Will Learn Understand the components that make up the cloud. Install and make an OpenStack distribution

from Mirantis, Red Hat or another community version. Work with OpenStack Identity Management, Dashboard, CLI, Object Storage, Block Storage, Networking, Telemetry, Orchestration, and Image Services. Learn how to troubleshoot all the main OpenStack services. Understand where to find information for future work with OpenStack. Who This Book Is For Certified OpenStack Administrator Study Guide is for Cloud and Linux engineers looking for a better understanding of how to work with the modern OpenStack IaaS Cloud, and wants to prove their knowledge by passing a Certified OpenStack Administrator Exam.

[Preparing for the Certified OpenStack Administrator Exam](#) Packt Publishing Ltd

Exploit the power of dynamic cloud formation and auto-scaling features to fully implement OpenStack orchestration About This Book Set up, manage, and troubleshoot Heat and effectively automate your datacenter and cloud-based services Achieve high availability, minimize down-time, and automate the deployment of cloud-based services and resources with minimum effort Upgrade your skills and manipulate resources on virtual machines in an unattended fashion using Heat Who This Book Is For If you are a System Engineer, System Administrator, Cloud Administrator, or a Cloud Engineer, then this book is for you. You should have a background of working in a Linux-based setup. Any knowledge of OpenStack-based cloud infrastructure will help you create wonders using this book. What You Will Learn Install an orchestration service for a private cloud environment Tackle errors that show up during the installation and configuration of heat Configure a template for orchestration using the native HOT format Configure a template for orchestration using the AWS cloud formation format Deploy a stack using the HOT template Deploy a test stack using the AWS CloudFormation template Automate and orchestrate cloud-based services with OpenStack Heat In Detail This book is focused on setting up and using one of the most important services in OpenStack orchestration, Heat. First, the book introduces you to the orchestration service for OpenStack to help you understand the uses of the templating mechanism, complex control groups of cloud resources, and huge-potential and multiple-use cases. We then move on to the topology and orchestration specification for cloud applications and standards, before introducing the most popular IaaS cloud framework, Heat. You will get to grips with the standards used in Heat, overview and roadmap, architecture and CLI, heat API, heat engine, CloudWatch API, scaling principles, JeOS and installation and configuration of Heat. We wrap up by giving you some insights into troubleshooting for OpenStack. With easy-to-follow, step-by-step instructions and supporting images, you will be able to manage OpenStack operations by implementing the orchestration services of Heat. Style and approach The book is a step-by-step guide to implementing an orchestration (cloud formation) service for OpenStack-based cloud environments. This book uses real-world scenarios and examples to demonstrate the procedures in an easy-to-understand language with plenty of screenshots to help you get a better understanding.

[Software Architecture](#) Packt Publishing Ltd

Harness the power of OpenStack Networking for public and private clouds using 90 hands-on recipes About This Book Build and manage virtual switching, routing, and firewall-based networks in OpenStack using Neutron Develop plugins and drivers for Neutron to enhance the built-in networking capabilities Monitor and automate OpenStack networks using tools like Ceilometer and Heat Who This Book Is For This book is aimed at network and system administrators who want to deploy and manage OpenStack-based cloud and IT infrastructure. If you have basic knowledge of OpenStack and virtualization, this book will help you leverage the rich functionality of OpenStack Networking in your cloud deployments. What You Will Learn Operate OpenStack Networking for public and private clouds Configure advanced routing services for your workloads Secure data traffic using firewall-as-a-service capabilities of OpenStack Discover how to leverage VXLAN to implement SDN in your OpenStack cloud Monitor the virtual networks using Ceilometer Develop plugins to enhance and customize OpenStack Networking Provide HA and VPN connectivity for your virtual machines Troubleshoot and solve common problems with OpenStack Networking In Detail Networking in OpenStack has evolved from Nova Network to Neutron. This has resulted in a rich suite of networking services available to OpenStack users and administrators. Advanced services such as routers, firewall, and load balancers use building blocks such as network and subnets. Recent improvements support powerful customization using plugins. The evolution of Neutron continues as it integrates with tools like Ceilometer and Heat. This book will explore the built-in capabilities of Neutron to effectively deploy cloud solutions. You will begin with the most fundamental constructs of OpenStack Networking for switching and routing. You will then learn how to provide your tenants with services like firewalls and load-balancers. The step-by-step recipes will help you configure and troubleshoot networking problems in your cloud. This book will also introduce you to advanced topics like Ceilometer, Heat, and other upcoming tools in OpenStack Style and approach The book is full of step-by-step recipes to configure and manage the networking aspects of your OpenStack cloud. In addition to covering basic configuration involved in OpenStack Networking, the books also shares various troubleshooting tips and techniques. As much as possible the book uses OpenStack dashboard (Horizon) to help the user get a feel of real OpenStack Networking [Fast Track](#) Simon and Schuster

A Cookbook full of practical and applicable recipes that will enable you to use the full capabilities of OpenStack like never before. This book is aimed at system administrators and technical architects moving from a virtualized environment to cloud environments with familiarity of cloud computing platforms. Knowledge of virtualization and managing linux environments is expected. Packt Publishing Ltd

Design, build, and automate 10 real-world OpenStack administrative tasks with Ansible About This Book Automate real-world OpenStack cloud operator administrative tasks Construct a collection of automation code to save time on managing your OpenStack cloud Use this step-by-step tutorial to automate such tasks with Ansible Who This Book Is For If you are an OpenStack-based cloud operator and/or infrastructure administrator and are interested in automating administrative functions, then this book is exactly what you are looking for. Having a functioning OpenStack environment is helpful, but most certainly not necessary. What You Will Learn Efficiently execute OpenStack administrative tasks Familiarize yourself with how Ansible works and assess the defined best practices Create Ansible playbooks and roles Automate tasks to customize your OpenStack cloud Review OpenStack automation considerations when automating administrative tasks Examine and automate advanced OpenStack tasks and designated use cases Get a high-level overview of OpenStack and the current production-ready projects Deep dive into OpenStack CLI tools and find out how to use them In Detail Most organizations are seeking methods to improve business agility

because they have realized just having a cloud is not enough. Being able to improve application deployments, reduce infrastructure downtime, and eliminate daily manual tasks can only be accomplished through some sort of automation. Packed with real-world OpenStack administrative tasks, this book will walk you through working examples and explain how these tasks can be automated using one of the most popular open source automation tools—Ansible. We will start with a brief overview of OpenStack and Ansible and highlight some best practices. Each chapter will provide an introduction to handling various Cloud Operator administration tasks such as creating multiple users/tenants, setting up Multi-Tenant Isolation, customizing your clouds quotas, taking instance snapshots, evacuating compute hosts for maintenance, and running cloud health checks, and a step-by-step tutorial on how to automate these tasks with Ansible. Style and approach This easy-to-follow reference guide is packed with examples of real-world OpenStack administration tasks; each task is explained in detail and then subsequently turned into automation code.

Infrastructure as Code (IAC) Cookbook Packt Publishing Ltd

This book is a new contribution aiming to give some last research findings in the field of optimization and computing. This work is in the same field target than our two previous books published: “Recent Developments in Metaheuristics” and “Metaheuristics for Production Systems”, books in Springer Series in Operations Research/Computer Science Interfaces. The challenge with this work is to gather the main contribution in three fields, optimization technique for production decision, general development for optimization and computing method and wider spread applications. The number of researches dealing with decision maker tool and optimization method grows very quickly these last years and in a large number of fields. We may be able to read nice and worthy works from research developed in chemical, mechanical, computing, automotive and many other fields.

Set Up and Manage Your OpenStack Cloud Packt Publishing Ltd

Summary OpenStack in Action offers the real world use cases and step-by-step instructions you can take to develop your own cloud platform from from inception to deployment. This book guides you through the design of both the physical hardware cluster and the infrastructure services you'll need to create a custom cloud platform. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology OpenStack is an open source framework that lets you create a private or public cloud platform on your own physical servers. You build custom infrastructure, platform, and software services without the expense and vendor lock-in associated with proprietary cloud platforms like Amazon Web Services and Microsoft Azure. With an OpenStack private cloud, you can get increased security, more control, improved reliability, and lower costs. About the Book "OpenStack in Action" offers real-world use cases and step-by-step instructions on how to develop your own cloud platform. This book guides you through the design of both the physical hardware cluster and the infrastructure services you'll need. You'll learn how to select and set up virtual and physical servers, how to implement software-defined networking, and technical details of designing, deploying, and operating an OpenStack cloud in your enterprise. You'll also discover how to best tailor your OpenStack deployment for your environment. Finally, you'll learn how your cloud can offer user-facing software and infrastructure services. What's Inside Develop and deploy an enterprise private cloud Private cloud technologies from an IT perspective Organizational impact of self-service cloud computing About the Reader No prior knowledge of OpenStack or cloud development is assumed. About the Author Cody Bumgardner is the Chief Technology Architect at a large university where he is responsible for the architecture, deployment, and long-term strategy of OpenStack private clouds and other cloud computing initiatives. Table of Contents PART 1 GETTING STARTED Introducing OpenStack Taking an OpenStack test-drive Learning basic OpenStack operations Understanding private cloud building blocks PART 2 WALKING THROUGH A MANUAL DEPLOYMENT Walking through a Controller deployment Walking through a Networking deployment Walking through a Block Storage deployment Walking through a Compute deployment PART 3 BUILDING A PRODUCTION ENVIRONMENT Architecting your OpenStack Deploying Ceph Automated HA OpenStack deployment with Fuel Cloud orchestration using OpenStack

OpenStack Cloud Security "O'Reilly Media, Inc."

Leverage the best SDN technologies for your OpenStack-based cloud infrastructure About This Book Learn how to leverage critical SDN technologies for OpenStack Networking APIs via plugins and drivers Champion the skills of achieving complete SDN with OpenStack with specific use cases and capabilities only covered in this title Discover exactly how you could implement cost-effective OpenStack SDN integration for your organization Who This Book Is For Administrators, and cloud operators who would like to implement Software Defined Networking on OpenStack clouds. Some prior experience of network infrastructure and networking concepts is assumed. What You Will Learn Understand how OVS is used for Overlay networks Get familiar with SDN Controllers with Architectural details and functionalities Create core ODL services and understand how OpenDaylight integrates with OpenStack to provide SDN capabilities Understand OpenContrail architecture and how it supports key SDN functionality such as Service Function Chaining (SFC) along with OpenStack Explore Open Network Operating System (ONOS) - a carrier grade SDN platform embraced by the biggest telecom service providers Learn about upcoming SDN technologies in OpenStack such as Dragonflow and OVN In Detail Networking is one the pillars of OpenStack and OpenStack Networking are designed to support programmability and Software-Defined Networks. OpenStack Networking has been evolving from simple APIs and functionality in Quantum to more complex capabilities in Neutron. Armed with the basic knowledge, this book will help the readers to explore popular SDN technologies, namely, OpenDaylight (ODL), OpenContrail, Open Network Operating System (ONOS) and Open Virtual Network (OVN). The first couple of chapters will provide an overview of OpenStack Networking and SDN in general. Thereafter a set of chapters are devoted to OpenDaylight (ODL), OpenContrail and their integration with OpenStack Networking. The book then introduces you to Open Network Operating System (ONOS) which is fast becoming a carrier grade SDN platform. We will conclude the book with overview of upcoming SDN projects within OpenStack namely OVN and Dragonflow. By the end of the book, the readers will be familiar with SDN technologies and know how they can be leveraged in an OpenStack based cloud. Style and approach A hands-on practical tutorial through use cases and examples for Software Defined Networking with OpenStack.

OpenStack Networking Cookbook Packt Publishing Ltd

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.

OpenStack Administration with Ansible Packt Publishing Ltd

Master the objectives required to pass the Certified OpenStack Administrator exam. About This Book Focuses on providing a clear, concise strategy so you gain the specific skills required to pass the Certified OpenStack Administrator exam Includes exercises and performance-based tasks to ensure

all exam objectives can be completed via the Horizon dashboard and command-line interface Includes a free OpenStack Virtual Appliance to practice the objectives covered throughout the book Includes a practice exam to put your OpenStack skills to the test to prove you have what it takes to conquer the live exam Updated for the 2017 exam featuring OpenStack Newton Who This Book Is For This book is for IT professionals, system administrators, DevOps engineers, and software developers with basic Linux command-line and networking knowledge. It's also a great guide for those interested in an entry-level OpenStack position but have limited real-world OpenStack experience. After passing the exam, Certified OpenStack Administrators will prove they have the required skills for the job. What You Will Learn Manage the Keystone identity service by creating and modifying domains, groups, projects, users, roles, services, endpoints, and quotas. Upload Glance images, launch new Nova instances, and create flavors, key pairs, and snapshots. Discover Neutron tenant and provider networks, security groups, routers, and floating IPs. Manage the Cinder block storage service by creating volumes and attaching them to instances. Create Swift containers and set access control lists to allow read/write access to your objects. Explore Heat orchestration templates and create, list, and update stacks. In Detail This book provides you with a specific strategy to pass the OpenStack Foundation's first professional certification: the Certified OpenStack Administrator. In a recent survey, 78% of respondents said the OpenStack skills shortage had deterred them from adopting OpenStack. Consider this an opportunity to increase employer and customer confidence by proving you have the skills required to administrate real-world OpenStack clouds. You will begin your journey by getting well-versed with the OpenStack environment, understanding the benefits of taking the exam, and installing an included OpenStack all-in-one virtual appliance so you can work through objectives covered throughout the book. After exploring the basics of the individual services, you will be introduced to strategies to accomplish the exam objectives relevant to Keystone, Glance, Nova, Neutron, Cinder, Swift, Heat, and troubleshooting. Finally, you'll benefit from the special tips section and a practice exam to put your knowledge to the test. By the end of the journey, you will be ready to become a Certified OpenStack Administrator! Style and approach Clear, concise, and straightforward with supporting diagrams and lab environment tutorials, this book will help you confidently pass Certified OpenStack Administrator objectives on the Horizon dashboard and command-line interface.

Learning OpenStack Openstack in Action

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.

OpenStack Trove Packt Pub Limited

Summary OpenStack in Action offers the real world use cases and step-by-step instructions you can take to develop your own cloud platform from from inception to deployment. This book guides you through the design of both the physical hardware cluster and the infrastructure services you'll need to create a custom cloud platform. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology OpenStack is an open source framework that lets you create a private or public cloud platform on your own physical servers. You build custom infrastructure, platform, and software services without the expense and vendor lock-in associated with proprietary cloud platforms like Amazon Web Services and Microsoft Azure. With an OpenStack private cloud, you can get increased security, more control, improved reliability, and lower costs. About the Book OpenStack in Action offers real-world use cases and step-by-step instructions on how to develop your own cloud platform. This book guides you through the design of both the physical hardware cluster and the infrastructure services you'll need. You'll learn how to select and set up virtual and physical servers, how to implement software-defined networking, and technical details of designing, deploying, and operating an OpenStack cloud in your enterprise. You'll also discover how to best tailor your OpenStack deployment for your environment. Finally, you'll learn how your cloud can offer user-facing software and infrastructure services. What's Inside Develop and deploy an enterprise private cloud Private cloud technologies from an IT perspective Organizational impact of self-service cloud computing About the Reader No prior knowledge of OpenStack or cloud development is assumed. About the Author Cody Bumgardner is the Chief Technology Architect at a large university where he is responsible for the architecture, deployment, and long-term strategy of OpenStack private clouds and other cloud computing initiatives. Table of Contents PART 1 GETTING STARTED Introducing OpenStack Taking an OpenStack test-drive Learning basic OpenStack operations Understanding private cloud building blocks PART 2 WALKING THROUGH A MANUAL DEPLOYMENT Walking through a Controller deployment Walking through a Networking deployment Walking through a Block Storage deployment Walking through a Compute deployment PART 3 BUILDING A PRODUCTION ENVIRONMENT Architecting your OpenStack Deploying Ceph Automated HA OpenStack deployment with Fuel Cloud orchestration using OpenStack **Certified OpenStack Administrator Study Guide** Simon and Schuster

Discover the basics of virtual networking in OpenStack to implement various cloud network architectures Key Features Learn the difference between Open vSwitch and Linux bridge switching technologies Connect virtual machine instances to virtual networks, subnets, and ports Implement virtual load balancers, firewalls, and routers in your network Book Description OpenStack Networking is a pluggable, scalable, and API-driven system to manage physical and virtual networking resources in an OpenStack-based cloud. Like other core OpenStack components, OpenStack Networking can be used by administrators and users to increase the value and maximize

the use of existing datacenter resources. This third edition of *Learning OpenStack Networking* walks you through the installation of OpenStack and provides you with a foundation that can be used to build a scalable and production-ready OpenStack cloud. In the initial chapters, you will review the physical network requirements and architectures necessary for an OpenStack environment that provide core cloud functionality. Then, you'll move through the installation of the new release of OpenStack using packages from the Ubuntu repository. An overview of Neutron networking foundational concepts, including networks, subnets, and ports will segue into advanced topics such as security groups, distributed virtual routers, virtual load balancers, and VLAN tagging within instances. By the end of this book, you will have built a network infrastructure for your cloud using OpenStack Neutron. What you will learn Get familiar with Neutron constructs, including agents and plugins Build foundational Neutron resources to provide connectivity to instances Work with legacy Neutron routers and troubleshoot traffic through them Explore high-availability routing capabilities utilizing Virtual Router Redundancy Protocol (VRRP) Create and manage load balancers and associated components Manage security groups as a method of securing traffic to and from instances Who this book is for If you are an OpenStack-based cloud operator and administrator who is new to Neutron networking and wants to build your very own OpenStack cloud, then this book is for you. Prior networking experience and a physical server and network infrastructure is recommended to follow along with concepts demonstrated in the book.

Deploying OpenStack Simon and Schuster

Build your own cloud based Database as a Service using OpenStack Trove About This Book Familiarize yourself with the concept of Database as a Service and make your existing system scalable and efficient with OpenStack Trove Minimize the administrative tasks and complexities of managing your cloud infrastructure This is a fast-paced guide to datastore management on the OpenStack platform using OpenStack Trove Who This Book Is For If you are a DBA / system administrator / architect, or a student who wants to build a Database as a Service based on OpenStack, this book is for you. You should have a basic knowledge of OpenStack components, RDBMS/NoSQL, IaaS, and cloud computing. What You Will Learn Get to grips with the basics of OpenStack and the prerequisites to install Trove Understand the expectations of DBaaS and how Trove can help you achieve them Set up a basic installation of DevStack (Development Stack) in a virtual box Install Trove and utilize its configuration groups to manage and tune databases Use Image builder to create guest images for Trove Utilize Trove to provision your first database instance Back up and restore your databases with the help of Trove In Detail OpenStack has become an extremely popular solution to build public and private clouds with. Database as a Service (DBaaS) enables the delivery of more agile database services at lower costs. Some other benefits of DBaaS are secure database deployments and compliance to standards and best practices. Trove is a DBaaS built on OpenStack and is becoming more popular by the day. Since Trove is one of the most recent projects of OpenStack, DBAs and system administrators can find it difficult to set up and run a DBaaS using OpenStack Trove. This book helps DBAs make that step. We start by introducing you to the concepts of DBaaS and how is it implemented using OpenStack Trove. Following this, we look at implementing OpenStack and deploying Trove. Moving on, you will learn to create guest images to be used with Trove. We then look at how to provision databases in self-service mode, and how to perform administration tasks such as backup and recovery, and fine-tuning databases. At the end of the book, we will examine some advanced features of Trove such as replication. Style and approach This fast-paced, step-by-step guide introduces you to DBaaS, OpenStack Trove, and its components, leading you through building your own Cloud-based DBaaS. Using the DevStack deployment method, you will spend less time on installing OpenStack so you can devote more time to learning how to provision and manage databases in a DBaaS environment.

Build a solid foundation in virtual networking technologies for OpenStack-based clouds, 3rd Edition "O'Reilly Media, Inc."

Get up and running with OpenStack Swift, the free, open source solution for deploying high-performance object storage clusters at scale. In this practical guide, Joe Arnold, co-founder and CEO of SwiftStack, brings you up-to-speed on the basic concepts of object storage and walks you through what you need to know to plan, build, operate, and measure the performance of your own Swift

storage system. Object storage is essential today with the growth of web, mobile, and software-as-a-service (SaaS) applications. This book helps you through the process, with separate sections on application development, installation, administration, and troubleshooting. Learn Swift's concepts for organizing, distributing, and serving data Explore basic and advanced features of the Swift RESTful API Delve into Swift's many client libraries, including useful Python features Write middleware to customize and simplify your storage system Understand requirements for planning a Swift deployment—including your specific use case Learn options for coaxing the best performance from your cluster Get best practices for daily operations, such as monitoring and planning capacity additions Pick up techniques for testing and benchmarking your Swift cluster

OpenStack in Action Packt Publishing Ltd

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.

Learning OpenStack Networking "O'Reilly Media, Inc."

This book constitutes the refereed proceedings of the tracks and workshops which complemented the 14th European Conference on Software Architecture, ECSA 2020, held in L'Aquila, Italy*, in September 2020. The 30 full papers and 9 short papers presented in this volume were carefully reviewed and selected from 72 submissions. Papers presented were accepted into the following tracks and workshops: ECSA 2020 Doctoral Symposium track; ECSA 2020 Tool Demos track; ECSA 2020 Gender Diversity in Software Architecture & Software Engineering track; CASA - 3rd International Workshop on Context-aware, Autonomous and Smart Architecture; CSE/QUDOS - Joint Workshop on Continuous Software Engineering and Quality-Aware DevOps; DETECT - 3rd International Workshop on Modeling, Verification and Testing of Dependable Critical Systems; FAACS-MDE4SA - Joint Workshop on Formal Approaches for Advanced Computing Systems and Model-Driven Engineering for Software Architecture; IoT-ASAP - 4th International Workshop on Engineering IoT Systems: Architectures, Services, Applications, and Platforms; SASI4 - 2nd Workshop on Systems, Architectures, and Solutions for Industry 4.0; WASA - 6th International Workshop on Automotive System/Software Architecture. *The conference was held virtually due to the COVID-19 pandemic.