Quick answers to common problems

OpenStack Cloud Computing Cookbook

Third Edition

Over 110 effective recipes to help you build and operate OpenStack cloud computing, storage, networking, and automation

Foreword by Tim Bell, Infrastructure Manager, CERN

Kevin Jackson   Cody Bunch

Egle Sigler

[PACKT] open source*
PUBLISHING   community experience distilled

Openstack Cloud Computing Cookbook Kevin Jackson

Adnan Ahmed Siddiqui

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OpenStack Cloud Computing Cookbook Kevin Jackson,Cody Bunch,2013 Over 100 recipes to successfully set up and manage your OpenStack cloud environments with complete coverage of Nova Swift Keystone Glance Horizon Neutron and Cinder **OpenStack Cloud Computing Cookbook - Third Edition** Kevin Jackson,Cody Bunch,Egle Sigler,2015-07-31 Over 110 effective recipes to help you build and operate OpenStack cloud computing storage networking and automationAbout This Book Explore many new features of OpenStack s Juno and Kilo releases Install configure and administer core projects with the help of OpenStack Object Storage Block Storage and Neutron Networking services Harness the abilities of experienced OpenStack administrators and architects and run your own private cloud successfully Practical real world examples of each service and an accompanying Vagrant environment that helps you learn quickly In DetailOpenStack Open Source software is one of the most used cloud infrastructures to support software development and big data analysis It is developed by a thriving community of individual developers from around the globe and backed by most of the leading players in the cloud space today It is simple to implement massively scalable and can store a large pool of data and networking resources OpenStack has a strong ecosystem that helps you provision your cloud storage needs Add OpenStack s enterprise features to reduce the cost of your business This book will show you the steps to build up a private cloud environment At the beginning you ll discover the uses of cloud services such as the identity service image service and compute service You ll dive into Neutron the OpenStack Networking service and get your hands dirty with configuring ML2 networks routers and Distributed Virtual Routers You ll then gather more expert knowledge on OpenStack cloud computing by managing your cloud s security and migration After that we delve in to OpenStack Object storage and how to manage servers and work with objects cluster and storage functionalities Also as you go deeper into the realm of OpenStack you ll learn practical examples of Block storage LBaaS and FWaaS installation and configuration covered ground up Finally you will learn OpenStack dashboard Ansible and Foreman Keystone and other interesting topics What You Will Learn Understand install configure and manage Nova the OpenStack Cloud Compute resource Configure ML2 networks routers and Distributed Virtual Routers with Neutron Use and secure Keystone the OpenStack Authentication service Install and set up Swift and Container Replication between datacenters Gain hands on experience and familiarity with Horizon the OpenStack Dashboard user interface Automate complete solutions with our recipes on Heat the OpenStack Orchestration service Use Ansible and Foreman to automate OpenStack installations successfully Follow practical advice and examples to run OpenStack in productionWho This Book Is ForThis book is aimed at cloud system engineers system administrators and technical architects who are moving from a virtualized environment to cloud environments This book assumes that you are familiar with cloud computing platforms and have knowledge of virtualization networking and managing Linux environments Style and approachClear step by step instructions coupled with practical and applicable recipes that ll enable you to use and

implement the latest features of OpenStack **OpenStack Cloud Computing Cookbook** Kevin Jackson,Cody Bunch,Egle Sigler,James Denton,2018-01-29 The Fourth Edition of the industry acclaimed OpenStack Cloud Computing Cookbook from four recognized experts updated to the latest OpenStack build including Cinder Nova and Neutron Key Features Over 100 recipes created by a team of OpenStack experts Updated to work with the latest OpenStack builds with recipes covering the installation and use of OpenStack with Ansible It covers topics such as Keystone Glance Neutron Nova Cinder and more plus recipes for OpenStack storage networking and orchestrating workloads Test drive OpenStack using the accompanying Vagrant environment Book Description This is the fourth edition of the industry acclaimed OpenStack Cloud Computing Cookbook created by four recognized OpenStack experts It has now been updated to work with the latest OpenStack builds using tools and processes based on their collective and vast OpenStack experience OpenStack Open Source Cloud software is one of the most used cloud infrastructures to support a wide variety of use cases from software development to big data analysis It is developed by a thriving community of individual developers from around the globe and backed by most of the leading players in the cloud space today We make it simple to implement massively scalable and able to store a large pool of data and networking resources OpenStack has a strong ecosystem that helps you provision your cloud storage needs Add OpenStack s enterprise features to reduce the cost of your business This book will begin by showing you the steps to build up an OpenStack private cloud environment using Ansible You ll then discover the uses of cloud services such as the identity service image service and compute service You ll dive into Neutron the OpenStack Networking service and get your hands dirty with configuring networks routers load balancers and more You ll then gather more expert knowledge on OpenStack cloud computing by managing your cloud s security and migration After that we delve into OpenStack Object storage and you ll see how to manage servers and work with objects cluster and storage functionalities Finally you will learn about OpenStack dashboard Ansible Keystone and other interesting topics What you will learn Understand install configure and manage a complete OpenStack Cloud platform using OpenStack Ansible Configure networks routers load balancers and more with Neutron Use Keystone to setup domains roles groups and user access Learn how to use Swift and setup container access control lists Gain hands on experience and familiarity with Horizon the OpenStack Dashboard user interface Automate complete solutions with our recipes on Heat the OpenStack Orchestration service as well as using Ansible to orchestrate application workloads Follow practical advice and examples to run OpenStack in production Who this book is for This book is written for cloud system engineers system administrators and technical architects who are moving from a virtualized environment to cloud environments This book assumes that you are familiar with cloud computing platforms and have knowledge of virtualization networking and managing Linux environments **OpenStack Cloud Computing Cookbook** Kevin Jackson,2012 **OpenStack: Building a Cloud Environment** Alok Shrivastwa,Sunil Sarat,Kevin Jackson,Cody Bunch,Egle Sigler,Tony Campbell,2016-09-19 Learn how you can put the features of OpenStack to work in the real world in

this comprehensive path About This Book Harness the abilities of experienced OpenStack administrators and architects and run your own private cloud successfully Learn how to install configure and manage all of the OpenStack core projects including topics on Object Storage Block Storage and Neutron Networking services such as LBaaS and FWaaS Get better equipped to troubleshoot and solve common problems in performance availability and automation that confront production ready OpenStack environments Who This Book Is For This course is for those who are new to OpenStack who want to learn the cloud networking fundamentals and get started with OpenStack networking Basic understanding of Linux Operating System Virtualization and Networking and Storage principles will come in handy What You Will Learn Get an introduction to OpenStack and its components Store and retrieve data and images using storage components such as Cinder Swift and Glance Install and configure Swift the OpenStack Object Storage service including configuring Container Replication between datacenters Gain hands on experience and familiarity with Horizon the OpenStack Dashboard user interface Learn how to automate OpenStack installations using Ansible and Foreman Follow practical advice and examples for running OpenStack in production Fix common issues with images served through Glance and master the art of troubleshooting Neutron networking In Detail OpenStack is a collection of software projects that work together to provide a cloud fabric Learning OpenStack Cloud Computing course is an exquisite guide that you will need to build cloud environments proficiently This course will help you gain a clearer understanding of OpenStack s components and their interaction with each other to build a cloud environment The first module Learning OpenStack starts with a brief look into the need for authentication and authorization the different aspects of dashboards cloud computing fabric controllers along with Networking as a Service and Software defined Networking Then you will focus on installing configuring and troubleshooting different architectures such as Keystone Horizon Nova Neutron Cinder Swift and Glance After getting familiar with the fundamentals and application of OpenStack let s move deeper into the realm of OpenStack In the second module OpenStack Cloud Computing Cookbook preview how to build and operate OpenStack cloud computing storage networking and automation Dive into Neutron the OpenStack Networking service and get your hands dirty with configuring ML2 networks routers and distributed virtual routers Further you ll learn practical examples of Block Storage LBaaS and FBaaS The final module Troubleshooting OpenStack will help you quickly diagnose troubleshoot and correct problems in your OpenStack We will diagnose and remediate issues in Keystone Glance Neutron networking Nova Cinder block storage Swift object storage and issues caused by Heat orchestration This Learning Path combines some of the best that Packt has to offer in one complete curated package It includes content from the following Packt products Learning OpenStack by Alok Shrivastwa Sunil Sarat OpenStack Cloud Computing Cookbook Third Edition by Kevin Jackson Cody Bunch Egle Sigler Troubleshooting OpenStack by Tony Campbell Style and approach This course aims to create a smooth learning path that will teach you how to get started with setting up private and public clouds using a free and open source cloud computing platform OpenStack

Through this comprehensive course you ll learn OpenStack Cloud computing from scratch to finish and more *OpenStack Cloud Computing Cookbook - Fourth Edition* Kevin Jackson,Cody Bunch,Egle Sigler,2018-01-25 The Fourth Edition of the industry acclaimed OpenStack Cloud Computing Cookbook from four recognized experts updated to the latest OpenStack build including Cinder Nova and Neutron Key Features Over 100 recipes created by a team of OpenStack experts Updated to work with the latest OpenStack builds with recipes covering the installation and use of OpenStack with Ansible It covers topics such as Keystone Glance Neutron Nova Cinder and more plus recipes for OpenStack storage networking and orchestrating workloads Test drive OpenStack using the accompanying Vagrant environment Book Description This is the fourth edition of the industry acclaimed OpenStack Cloud Computing Cookbook created by four recognized OpenStack experts It has now been updated to work with the latest OpenStack builds using tools and processes based on their collective and vast OpenStack experience OpenStack Open Source Cloud software is one of the most used cloud infrastructures to support a wide variety of use cases from software development to big data analysis It is developed by a thriving community of individual developers from around the globe and backed by most of the leading players in the cloud space today We make it simple to implement massively scalable and able to store a large pool of data and networking resources OpenStack has a strong ecosystem that helps you provision your cloud storage needs Add OpenStack s enterprise features to reduce the cost of your business This book will begin by showing you the steps to build up an OpenStack private cloud environment using Ansible You ll then discover the uses of cloud services such as the identity service image service and compute service You ll dive into Neutron the OpenStack Networking service and get your hands dirty with configuring networks routers load balancers and more You ll then gather more expert knowledge on OpenStack cloud computing by managing your cloud s security and migration After that we delve into OpenStack Object storage and you ll see how to manage servers and work with objects cluster and storage functionalities Finally you will learn about OpenStack dashboard Ansible Keystone and other interesting topics What you will learn Understand install configure and manage a complete OpenStack Cloud platform using OpenStack Ansible Configure networks routers load balancers and more with Neutron Use Keystone to setup domains roles groups and user access Learn how to use Swift and setup container access control lists Gain hands on experience and familiarity with Horizon the OpenStack Dashboard user interface Automate complete solutions with our recipes on Heat the OpenStack Orchestration service as well as using Ansible to orchestrate application workloads Follow practical advice and examples to run OpenStack in production Who this book is for This book is written for cloud system engineers system administrators and technical architects who are moving from a virtualized environment to cloud environments This book assumes that you are familiar with cloud computing platforms and have knowledge of virtualization networking and managing Linux environments **OpenStack Cloud Computing Cookbook - Fourth Edition** ,2017 The Fourth Edition of the industry acclaimed OpenStack Cloud Computing Cookbook from four recognized experts updated to the latest OpenStack

build including Cinder Nova and Neutron About This Book Over 100 recipes created by a team of OpenStack experts Updated to work with the latest OpenStack builds with recipes covering the installation and use of OpenStack with Ansible It covers topics such as Keystone Glance Neutron Nova Cinder and more plus recipes for OpenStack storage networking and orchestrating workloads Test drive OpenStack using the accompanying Vagrant environment Who This Book Is For This book is written for cloud system engineers system administrators and technical architects who are moving from a virtualized environment to cloud environments This book assumes that you are familiar with cloud computing platforms and have knowledge of virtualization networking and managing Linux environments What You Will Learn Understand install configure and manage a complete OpenStack Cloud platform using OpenStack Ansible Configure networks routers load balancers and more with Neutron Use Keystone to setup domains roles groups and user access Learn how to use Swift and setup container access control lists Gain hands on experience and familiarity with Horizon the OpenStack Dashboard user interface Automate complete solutions with our recipes on Heat the OpenStack Orchestration service as well as using Ansible to orchestrate application workloads Follow practical advice and examples to run OpenStack in production In Detail This is the fourth edition of the industry acclaimed OpenStack Cloud Computing Cookbook created by four recognized OpenStack experts It has now been updated to work with the latest OpenStack builds using tools and processes based on their collective and vast OpenStack experience OpenStack Open Source Cloud software is one of the most used cloud infrastructures to support a wide variety of use cases from software development to big data analysis It is developed by a thriving community of individual developers from around the globe and backed by most of the leading players in the cloud space today We make it simple to implement massively scalable and able to store a large pool of data and networking resources OpenStack has a strong ecosystem that helps you provision your cloud storage needs Add OpenStack s enterprise features to reduce the cost of your business This book will begin by s   **Creating Development Environments with Vagrant - Second Edition** Michael Peacock,2015-03-12 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   OpenStack Orchestration Adnan Ahmed Siddiqui,2015-10-27 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   50 Kubernetes Concepts Every DevOps Engineer Should Know Michael Levan,2023-01-30 A must have Kubernetes book to learn key concepts for succeeding in any production environment be it a greenfield Kubernetes environment or your cloud native journey Key FeaturesAdvance in your Kubernetes journey with guidance from a seasoned k8s practitioner and trainerDiscover best practices for implementing Kubernetes in any production environmentGo beyond the basics and work with Kubernetes applications in every environmentBook Description Kubernetes is a trending topic among engineers CTOs CIOs and other technically sound professionals Due to its proliferation and importance for all cloud technologies DevOps engineers nowadays need a solid grasp of key Kubernetes concepts to help their organization thrive This book equips you with all the requisite information about how Kubernetes works and how to use it for the best results You ll learn everything from why cloud native is important to implementing Kubernetes clusters to deploying applications in production This book takes you on a learning journey starting from what cloud native is and how to get started with Kubernetes in the cloud on premises and PaaS environments such as OpenShift Next you ll learn about deploying applications in many ways including Deployment specs Ingress Specs and StatefulSet specs Finally you ll be comfortable working with Kubernetes monitoring observability and security Each chapter of 50 Kubernetes Concepts Every DevOps Engineer Should Know is built upon the previous chapter ensuring that you develop practical skills as you work through the code examples in GitHub allowing you to follow along while giving you practical knowledge By the end of this book you ll be able to implement Kubernetes in any environment whether it s an existing environment a greenfield

environment or your very own lab running in the cloud or your home What you will learnFind out how Kubernetes works on premises in the cloud and in PaaS environmentsWork with networking cluster management and application deploymentUnderstand why cloud native is crucial for Kubernetes applicationsDeploy apps in different states including Stateless and StatefulMonitor and implement observability in your environmentExplore the functioning of Kubernetes security at the cluster user and application levelWho this book is for This book is for cloud engineers developers DevOps engineers and infrastructure engineers responsible for inheriting a Kubernetes environment or creating a greenfield Kubernetes environment If you are a professional who wants to get started with cloud native applications and implement k8s best practices then this book is a must read If you have engineered environments in the cloud and on premises and understand how to deploy applications with a solid tenure in a developer role this book will help you further your skills

Amazon S3 Cookbook Naoya Hashimoto,2015-08-27 Over 30 hands on recipes that will get you up and running with Amazon Simple Storage Service S3 efficiently About This Book Learn how to store manage and access your data with AWS SDKs Study the Amazon S3 pricing model and learn how to calculate costs by simulating practical scenarios Optimize your Amazon S3 bucket by following step by step instructions of how to deliver your content with CloudFront secure the S3 bucket with IAM and lower costs with object life cycle management Who This Book Is For This book is for cloud developers who have experience of using Amazon S3 and are also familiar with Amazon S3 What You Will Learn Host a static website on Amazon S3 Calculate costs with AWS Simple Monthly Calculators Deploy a static website via CloudFormation Distribute your content via CloudFront Secure resources with bucket policies and IAM Protect objects using server side and client side encryption Enable Cross Origin Resource Sharing Manage objects life cycles to lower costs Optimize performance for uploading as well as downloading objects Enable S3 event notifications and create Lambda functions Manage common operations with AWS SDKs In Detail Amazon S3 is one of the most famous and trailblazing cloud object storage services which is highly scalable low latency and economical Users only pay for what they use and can store and retrieve any amount of data at any time over the Internet which attracts Hadoop users who run clusters on EC2 The book starts by showing you how to install several AWS SDKs such as iOS Java Node js PHP Python and Ruby and shows you how to manage objects Then you ll be taught how to use the installed AWS SDKs to develop applications with Amazon S3 Furthermore you will explore the Amazon S3 pricing model and will learn how to annotate S3 billing with cost allocation tagging In addition to this the book covers several practical recipes about how to distribute your content with CloudFront secure your content with IAM optimize Amazon S3 performance and notify S3 events with Lambada By the end of this book you will be successfully implementing pro level practices techniques and solutions in Amazon S3 Style and approach A step by step practical guide that will show you how to efficiently store manage and control your data in Amazon S3 **Virtualization and Private Cloud with VMware Cloud Suite** Lee Chao,2017-03-16 To help readers understand virtualization and cloud computing this book is designed to cover the

theories and concepts enough to understand the cutting edge technology Meanwhile in this book the reader can gain hands on skills on VMware Cloud Suite to create a private cloud With the academic support from VMware readers can use the VMware supported software to create various virtualized IT infrastructures sophisticated enough for various sized enterprises Then the virtualized IT infrastructure can be made available to an enterprise through the private cloud services

    Building a Future-Proof Cloud Infrastructure Silvano Gai,2020-02-13 Prepare for the future of cloud infrastructure Distributed Services Platforms By moving service modules closer to applications Distributed Services DS Platforms will future proof cloud architectures improving performance responsiveness observability and troubleshooting Network pioneer Silvano Gai demonstrates DS Platforms remarkable capabilities and guides you through implementing them in diverse hardware Focusing on business benefits throughout Gai shows how to provide essential shared services such as segment routing NAT firewall micro segmentation load balancing SSL TLS termination VPNs RDMA and storage including storage compression and encryption He also compares three leading hardware based approaches Sea of Processors FPGAs and ASICs preparing you to evaluate solutions ask the right questions and plan strategies for your environment Understand the business drivers behind DS Platforms and the value they offer See how modern network design and virtualization create a foundation for DS Platforms Achieve unprecedented scale through domain specific hardware standardized functionalities and granular distribution Compare advantages and disadvantages of each leading hardware approach to DS Platforms Learn how P4 Domain Specific Language and architecture enable high performance low power ASICs that are data plane programmable at runtime Distribute cloud security services including firewalls encryption key management and VPNs Implement distributed storage and RDMA services in large scale cloud networks Utilize Distributed Services Cards to offload networking processing from host CPUs Explore the newest DS Platform management architectures Building a Future Proof Cloud Architecture is for network cloud application and storage engineers security experts and every technology professional who wants to succeed with tomorrow s most advanced service architectures   *Data-Intensive Workflow Management* Daniel C. M. de Oliveira,Ji Liu,Esther Pacitti,2019-05-13 Workflows may be defined as abstractions used to model the coherent flow of activities in the context of an in silico scientific experiment They are employed in many domains of science such as bioinformatics astronomy and engineering Such workflows usually present a considerable number of activities and activations i e tasks associated with activities and may need a long time for execution Due to the continuous need to store and process data efficiently making them data intensive workflows high performance computing environments allied to parallelization techniques are used to run these workflows At the beginning of the 2010s cloud technologies emerged as a promising environment to run scientific workflows By using clouds scientists have expanded beyond single parallel computers to hundreds or even thousands of virtual machines More recently Data Intensive Scalable Computing DISC frameworks e g Apache Spark and Hadoop and environments emerged and are being used to execute data intensive workflows DISC environments are composed of

processors and disks in large commodity computing clusters connected using high speed communications switches and networks The main advantage of DISC frameworks is that they support and grant efficient in memory data management for large scale applications such as data intensive workflows However the execution of workflows in cloud and DISC environments raise many challenges such as scheduling workflow activities and activations managing produced data collecting provenance data etc Several existing approaches deal with the challenges mentioned earlier This way there is a real need for understanding how to manage these workflows and various big data platforms that have been developed and introduced As such this book can help researchers understand how linking workflow management with Data Intensive Scalable Computing can help in understanding and analyzing scientific big data In this book we aim to identify and distill the body of work on workflow management in clouds and DISC environments We start by discussing the basic principles of data intensive scientific workflows Next we present two workflows that are executed in a single site and multi site clouds taking advantage of provenance Afterward we go towards workflow management in DISC environments and we present in detail solutions that enable the optimized execution of the workflow using frameworks such as Apache Spark and its extensions

OpenStack Networking Cookbook Sriram Subramanian,Chandan Dutta Chowdhury,2015-10-23 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 **OpenStack Cookbook** Jorven Halquin,2024-08-14 OpenStack Cookbook is specifically tailored for cloud professionals network administrators and engineers who express a desire to augment their proficiency in effectively managing OpenStack environments The book provides a pragmatic and interactive methodology with recipes that specifically target solutions to tackle the actual difficulties encountered in implementing and overseeing cloud infrastructure Every chapter presents systematic solutions enabling you to develop proficiency in designated OpenStack components These recipes provide instructions on how to install configure and optimize OpenStack services such as Keystone for identity management Glance for image processing Neutron for networking Nova for computing management Cinder for block storage and Octavia for load balancing Some of the more advanced topics covered in the book include how to use Heat for Infrastructure as Code IaC how to automate and repeat infrastructure deployments and how to use Heat and Ceilometer to create auto scaling solutions that dynamically adjust resources according to demand Typical problems with stack creation resource management and orchestration tasks will be explained and solved The book encompasses a broad spectrum of situations ranging from the prevention of stack creation failures and template validation errors to the effective management of resource dependencies and performance issues With the knowledge you gain from this book you will be able to set up administer and fix OpenStack environments with ease No matter your level of expertise with OpenStack this cookbook will equip you with the practical knowledge and solutions you need to use OpenStack efficiently in real world scenarios Key Learnings Get the environment quickly settled with all the OpenStack services including Nova Keystone Glance and Neutron Make easy management of OpenStack cloud environments a reality with these real world solutions Get your cloud infrastructure up and running consistently and reliably every time with the help of Heat templates Improve your resource allocation skills with practical experience in auto scaling with Heat and Ceilometer Keep operations stable by troubleshooting common OpenStack issues and providing step by step solutions Vertigo XLAN and security group configurations are just a few of the advanced networking techniques you can learn about in Neutron Secure your cloud with SSL termination and volume encryption Optimize traffic management and guarantee high availability by deploying Octavia based load balancing solutions Build automated cloud environment management with Infrastructure as Code IaC Table of Content Setting up OpenStack Infrastructure Identity Management with Keystone Image Management with Glance Networking with Neutron Compute Resources with Nova Block Storage with Cinder Load Balancing with Octavia Orchestration with Heat **Openstack Cloud Computing** John Rhoton,2014-03 OpenStack Cloud Computing is not a tutorial on using OpenStack It

is an introduction to building a cloud based on OpenStack technologies OpenStack includes a large set of modular and extensible components with broad industry support Enterprises and service providers alike can use these programs and services to improve the efficiency agility security quality and usability of their data center operations These benefits are not free Someone will have the responsibility to evaluate design and implement the technology They will need to select the services they require choose from the myriad configuration options and incorporate the necessary plugins The architects must ensure that they not only cover the basic functions such as compute storage and networking but also integrate them into the existing infrastructure and address key topics like administration billing confidentiality availability and scalability This book introduces the reader to some of the primary challenges and suggests how to address them in an environment based on OpenStack   *Python and AWS Cookbook* Mitch Garnaat,2011-10-24 If you intend to use Amazon Web Services AWS for remote computing and storage Python is an ideal programming language for developing applications and controlling your cloud based infrastructure This cookbook gets you started with more than two dozen recipes for using Python with AWS based on the author s boto library You ll find detailed recipes for working with the S3 storage service as well as EC2 the service that lets you design and build cloud applications Each recipe includes a code solution you can use immediately along with a discussion of why and how the recipe works You also get detailed advice for using boto with AWS and other cloud services This book s recipes include methods to help you Launch instances on EC2 and keep track of them with tags Associate an Elastic IP address with an instance Restore a failed Elastic Block Store volume from a snapshot Store and monitor your own custom metrics in CloudWatch Create a bucket in S3 to contain your data objects Reduce the cost of storing noncritical data Prevent accidental deletion of data in S3   **Azure Serverless Computing Cookbook** Praveen Kumar Sreeram,2017-08-17 Over 50 recipes to help you build applications hosted on Serverless architecture using Azure Functions About This Book Enhance Azure Functions with continuous deployment using Visual Studio Team Services Learn to deploy and manage cost effective and highly available serverless applications using Azure Functions This recipe based guide will teach you to build a robust serverless environment Who This Book Is For If you are a Cloud administrator architect or developer who wants to build scalable systems and deploy serverless applications with Azure functions then this book is for you Prior knowledge and hands on experience with core services of Microsoft Azure is required What You Will Learn Develop different event based handlers supported by serverless architecture supported by Microsoft Cloud Platform Azure Integrate Azure Functions with different Azure Services to develop Enterprise level applications Get to know the best practices in organizing and refactoring the code within the Azure functions Test troubleshoot and monitor the Azure functions to deliver high quality reliable and robust cloud centric applications Automate mundane tasks at various levels right from development to deployment and maintenance Learn how to develop statefulserverless applications and also self healing jobs using DurableFunctions In Detail Microsoft provides a solution to easily run small segment of code in the Cloud

with Azure Functions Azure Functions provides solutions for processing data integrating systems and building simple APIs and microservices The book starts with intermediate level recipes on serverless computing along with some use cases on benefits and key features of Azure Functions Then we ll deep dive into the core aspects of Azure Functions such as the services it provides how you can develop and write Azure functions and how to monitor and troubleshoot them Moving on you ll get practical recipes on integrating DevOps with Azure functions and providing continuous integration and continous deployment with Visual Studio Team Services It also provides hands on steps and tutorials based on real world serverless use cases to guide you through configuring and setting up your serverless environments with ease Finally you ll see how to manage Azure functions providing enterprise level security and compliance to your serverless code architecture By the end of this book you will have all the skills required to work with serverless code architecture providing continuous delivery to your users Style and approach This recipe based guide explains the different features of Azure Function by taking a real world application related to a specific domain You will learn how to implement automation and DevOps and discover industry best practices to develop applications hosted on serverless architecture using Azure functions **SUSE OpenStack Cloud 7** Suse Llc,2017-08-04 As an OpenStack cloud end user you can provision your own resources within the limits set by cloud administrators The examples in this guide show you how to perform tasks by using the following methods OpenStack dashboard Use this web based graphical interface code named horizon to view create and manage resources OpenStack command line clients Each core OpenStack project has a command line client that you can use to run simple commands to view create and manage resources in a cloud and automate tasks by using scripts You can modify these examples for your specific use cases Many chapters in this manual contain links to additional documentation resources These include additional documentation that is available on the system and documentation available on the Internet This book is available for free in many languages and different formats on the suse com web site This book is printed in grayscale

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