Learning OpenStack Networking (Neutron)
Second Edition

Wield the power of OpenStack Neutron networking to bring network infrastructure and capabilities to your cloud

James Denton

Learning Openstack Networking Neutron

Alok Shrivastwa,Sunil Sarat,Kevin Jackson,Cody Bunch,Egle Sigler,Tony Campbell

Learning Openstack Networking Neutron:

  Learning OpenStack Networking (Neutron) James Denton,2014-10-10 If you are an OpenStack based cloud operator with experience in OpenStack Compute and nova network but are new to Neutron networking then this book is for you Some networking experience is recommended and a physical network infrastructure is required to provide connectivity to instances and other network resources configured in the book   **Learning OpenStack Networking** James Denton,2018-08-31 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   Learning OpenStack Networking (Neutron) James Denton,2014-10-10 If you are an OpenStack based cloud operator with experience in OpenStack Compute and nova network but are new to Neutron networking then this book is for you Some networking experience is recommended and a physical network infrastructure is required to provide connectivity to instances and other network resources configured in the book   **Learning OpenStack Networking (Neutron) - Second Edition** James Denton,2015 Wield the power of OpenStack Neutron networking to bring network infrastructure and capabilities to your cloud About This Book This completely up to date edition will show you how to deploy

a cloud on OpenStack using community driven processes It includes rich examples that will help you understand complex networking topics with ease Understand every aspect of designing creating customizing and maintaining the core network foundation of an OpenStack cloud using OpenStack Neutron all in one book Written by best selling author James Denton who has more than 15 years of experience in system administration and networking James has experience of deploying operating and maintaining OpenStack clouds and has worked with top enterprises and organizations 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 What You Will Learn Architect and install the latest release of OpenStack on Ubuntu Linux 14 04 LTS Review the components of OpenStack networking including plugins agents and services and learn how they work together to coordinate network operations Build a virtual switching infrastructure using reference architectures based on ML2 Open vSwitch or ML2 LinuxBridge Create networks subnets and routers that connect virtual machine instances to the network Deploy highly available routers using DVR or VRRP based methods Scale your application with haproxy and Load Balancing as a Service Implement port and router level security using Security Groups and Firewall as a Service Provide connectivity to tenant networks with Virtual Private Networking as a Service VPNaaS Find out how to manage OpenStack networking resources using CLI and GUI driven methods In Detail OpenStack Neutron is an OpenStack component that provides networking as a service for other OpenStack services to architect networks and create virtual machines through its API This API lets you define network connectivity in order to leverage network capabilities to cloud deployments Through this practical book you will build a strong foundational knowledge of Neutron and will architect and build an OpenStack cloud using advanced networking features We start with an introduction to OpenStack **Learning OpenStack Networking (Neutron)** James Denton,2015-11-27 Wield the power of OpenStack Neutron networking to bring network infrastructure and capabilities to your cloud About This Book This completely up to date edition will show you how to deploy a cloud on OpenStack using community driven processes It includes rich examples that will help you understand complex networking topics with ease Understand every aspect of designing creating customizing and maintaining the core network foundation of an OpenStack cloud using OpenStack Neutron all in one book Written by best selling author James Denton who has more than 15 years of experience in system administration and networking James has experience of deploying operating and maintaining OpenStack clouds and has worked with top enterprises and organizations 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 What You Will Learn Architect and install the latest release of OpenStack on Ubuntu Linux 14 04 LTS Review the

components of OpenStack networking including plugins agents and services and learn how they work together to coordinate network operations Build a virtual switching infrastructure using reference architectures based on ML2 Open vSwitch or ML2 LinuxBridge Create networks subnets and routers that connect virtual machine instances to the network Deploy highly available routers using DVR or VRRP based methods Scale your application with haproxy and Load Balancing as a Service Implement port and router level security using Security Groups and Firewall as a Service Provide connectivity to tenant networks with Virtual Private Networking as a Service VPNaaS Find out how to manage OpenStack networking resources using CLI and GUI driven methods In Detail OpenStack Neutron is an OpenStack component that provides networking as a service for other OpenStack services to architect networks and create virtual machines through its API This API lets you define network connectivity in order to leverage network capabilities to cloud deployments Through this practical book you will build a strong foundational knowledge of Neutron and will architect and build an OpenStack cloud using advanced networking features We start with an introduction to OpenStack Neutron and its various components including virtual switching routing FWaaS VPNaaS and LBaaS You ll also get hands on by installing OpenStack and Neutron and its components and use agents and plugins to orchestrate network connectivity and build a virtual switching infrastructure Moving on you ll get to grips with the HA routing capabilities utilizing VRRP and distributed virtual routers in Neutron You ll also discover load balancing fundamentals including the difference between nodes pools pool members and virtual IPs You ll discover the purpose of security groups and learn how to apply the security concept to your cloud tenant instance Finally you ll configure virtual private networks that will allow you to avoid the use of SNAT and floating IPs when connecting to remote networks Style and approach This easy to follow guide on networking in OpenStack follows a step by step process to installing OpenStack and configuring the base networking components Each major networking component has a dedicated chapter that will build on your experience gained from prior chapters **Learning OpenStack Networking - Third Edition** James Denton,2018 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 Downloading the example code for this book You can download the example code files for all Packt books you have purchased from your account   *OpenStack Networking Essentials* James Denton,2016-04-19 Build and manage networks in OpenStack using Neutron About This Book Deploy an all in one cloud based on OpenStack Liberty 2015 2 using RDO Learn the fundamentals of the Neutron API including networks subnets and ports and how to manage these resources in the cloud Build simple virtual network infrastructures in the cloud Who This Book Is For The book is for those who are new to OpenStack and Neutron who want to learn the cloud networking fundamentals and get started with OpenStack networking Prior networking experience along with a virtual or physical server is recommended to follow along with the concepts demonstrated in the book What You Will Learn Install the latest Liberty 2015 2 release of OpenStack using RDO in VirtualBox Discover the basics of the Neutron API including networks subnets and ports Interact with Neutron using the CLI and Horizon dashboard Create networks and subnets that provide connectivity to instances Implement software routers that connect networks and provide network address translation Secure instances using Neutron s security group functionality In Detail The OpenStack Networking API offers users the ability to create and manage both basic and complex network architectures that blend the virtual and physical network infrastructure This book kicks off by describing various components of Openstack Neutron and installing Ubuntu OpenStack based on Canonical s process Further on you will use various methods to interface with Neutron to create and manage network resources You will also get to grips with the relationship between ports networks and subnets through diagrams and explanations and see how the logical components are implemented via plugins and agents Moving forward you will learn how virtual switches are implemented and how to build Neutron routers You will also configure networks subnets and routers to provide connectivity to instances using simple examples At the end you will configure and manage security groups and will observe how these rules translate to iptables rules on the host machines By the end of the book you will be able to build basic network architectures using Neutron networks and routers in no time Style and approach An easy to follow guide that covers the

networking features of OpenStack and the core Neutron API components providing a solid foundation to deploy networks and instances **OpenStack Object Storage (Swift) Essentials** Amar Kapadia,Kris Rajana,Sreedhar Varma,2015-05-30 If you are an IT administrator and you want to enter the world of cloud storage using OpenStack Swift then this book is ideal for you Basic knowledge of Linux and server technology is beneficial to get the most out of the book **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: 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** 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

Linux Administration: A Beginner's Guide, Eighth Edition Wale Soyinka,2020-04-10 Publisher s Note Products purchased from Third Party sellers are not guaranteed by the publisher for quality authenticity or access to any online entitlements included with the product Gain Essential Linux Administration Skills Easily Effectively set up and manage popular Linux distributions on individual servers and build entire network infrastructures using this practical resource Fully updated to

cover the latest tools and techniques Linux Administration A Beginner s Guide Eighth Edition features clear explanations step by step instructions and real world examples Find out how to configure hardware and software work from the command line or GUI maintain Internet and network services and secure your data Performance tuning virtualization containers software management security and backup solutions are covered in detail Install and configure Linux including the latest distributions from Fedora Ubuntu CentOS openSUSE Debian and RHEL Set up and administer core system services daemons users and groups Manage software applications from source code or binary packages Customize build or patch the Linux kernel Understand and manage the Linux network stack and networking protocols including TCP IP ARP IPv4 and IPv6 Minimize security threats and build reliable firewalls and routers with Netfilter iptables and nftables and Linux Create and maintain DNS FTP web e mail print LDAP VoIP and SSH servers and services Share resources using GlusterFS NFS and Samba Spin up and manage Linux based servers in popular cloud environments such as OpenStack AWS Azure Linode and GCE Explore virtualization and container technologies using KVM Docker Kubernetes and Open Container Initiative OCI tooling Download specially curated Virtual Machine image and containers that replicate various exercises software servers commands and concepts covered in the book Wale Soyinka is a father system administrator a DevOps SecOps aficionado an open source evangelist a hacker and a well respected world renowned chef in his mind He is the author of Advanced Linux Administration as well as other Linux Network and Windows administration training materials **Software-Defined Networking (SDN) with OpenStack** Sriram Subramanian,Sreenivas Voruganti,2016-10-28 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 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   **Mastering OpenStack** Omar Khedher,2015-07-30 This comprehensive guide will help you to choose the right practical option and make strategic decisions about the OpenStack cloud environment to fit your infrastructure in production At the start this book will explain the OpenStack core architecture You will soon be shown how to create your own OpenStack private cloud Next you will move on to cover the key security layer and network troubleshooting skills along with some advanced networking features Finally you will gain experience of centralizing and logging OpenStack The book will show you how to carry out performance tuning based on OpenStack service logs By the end of this book you will be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies   *OpenStack Essentials* Dan Radez,2015-05-26 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   **OpenStack Neutron Networking Essentials** William Smith,2025-08-20 OpenStack Neutron Networking Essentials OpenStack Neutron Networking Essentials offers an authoritative and comprehensive guide to mastering networking within the OpenStack cloud ecosystem Beginning with a deep dive into Neutron s architecture core abstractions and integration with essential OpenStack services the book demystifies how networking underpins scalable secure and agile cloud environments Readers are equipped to understand both foundational concepts and advanced mechanisms including the clear distinction between control and data planes extensible plugin and driver architectures and essential terminology contextualized for modern cloud networking The book meticulously covers the practical aspects of deploying operating and optimizing Neutron networks of every scale Detailed chapters walk through network segmentation VLAN VXLAN GRE distributed virtual routing and specialized topologies tailored to a wide range of cloud workloads Readers will explore sophisticated solutions around DHCP L3 services NAT load balancing and firewalling as well as multi tenancy role based access and deep integration with external security appliances and SDN controllers With strategic guidance on high availability fault tolerance upgrades and scaling the text serves as an invaluable resource for network architects and system administrators alike Modern cloud operations require automation and continuous improvement a theme carried throughout the guide with best practices using configuration management infrastructure as code orchestration frameworks and self healing network architectures The book culminates in a forward looking overview of advanced topics hybrid and multi cloud strategies container networking IPv6 deployments edge far edge scenarios and emerging trends in SDN and the broader OpenStack community OpenStack Neutron Networking Essentials is both a practical field manual and a strategic reference for any professional designing deploying or managing OpenStack powered networks   **Production Ready**

OpenStack - Recipes for Successful Environments Arthur Berezin,2015-09-30 Over 90 practical and highly applicable recipes to successfully deploy various OpenStack configurations in productionAbout 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 workloadsWho This Book Is ForIf 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 dashboardIn DetailOpenStack 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 approachThis 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

OpenStack Cloud Computing Cookbook Kevin Jackson,Cody Bunch,Egle Sigler,2015-08-19 Over 110 effective recipes to help you build and operate OpenStack cloud computing storage networking and automation About 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

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