



Community Experience Distilled

# Learning OpenStack Networking (Neutron) *Second Edition*

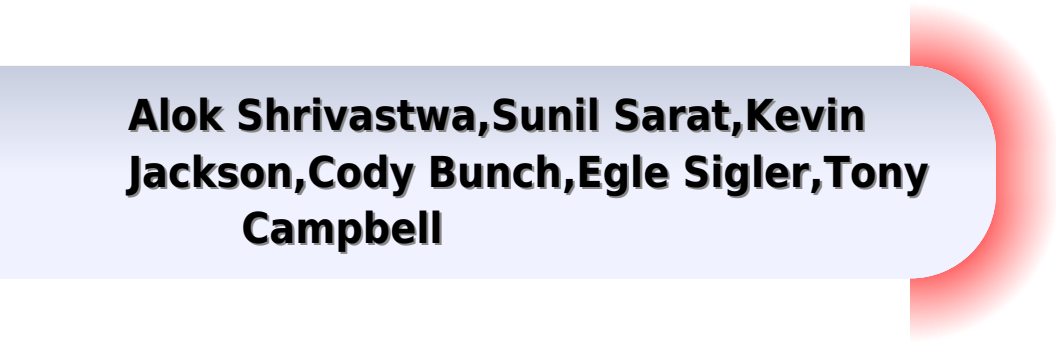
Wield the power of OpenStack Neutron networking to bring network infrastructure and capabilities to your cloud

**James Denton**

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# Learning Openstack Networking Neutron

**Alok Shrivastwa, Sunil Sarat, Kevin  
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Campbell**



## **Learning Openstack Networking Neutron:**

*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 \(Neutron\)](#) 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

**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

**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 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 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      **OpenStack Cloud Security** Fabio Alessandro Locati,2015-07-28

OpenStack is a system that controls large pools of computing storage and networking resources allowing its users to provision resources through a user friendly interface OpenStack helps developers with features such as rolling upgrades federated identity and software reliability You will begin with basic security policies such as MAC MLS and MCS and explore the structure of OpenStack and virtual networks with Neutron Next you will configure secure communications on the

OpenStack API with HTTP connections You will also learn how to set OpenStack Keystone and OpenStack Horizon and gain a deeper understanding of the similarities differences between OpenStack Cinder and OpenStack Swift By the end of this book you will be able to tweak your hypervisor to make it safer and a smart choice based on your needs

**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 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 Detail OpenStack 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 production Who This Book Is For This 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 approach Clear step by step instructions coupled with practical and applicable recipes that ll enable you to use and implement the latest features of OpenStack

Production



Ready OpenStack - Recipes for Successful Environments Arthur Berezin, 2015-10-12 Over 90 practical and highly applicable recipes to successfully deploy various OpenStack configurations in production About This Book Get a deep understanding of OpenStack's internal structure and services Learn real world examples on how to build and configure various production grade use cases for each of OpenStack's services Use a step by step approach to install and configure OpenStack's services to provide Compute Storage and Networking as a services for cloud workloads Who This Book Is For If you have a basic understanding of Linux and Cloud computing and want to learn about configurations that OpenStack supports this is the book for you Knowledge of virtualization and managing Linux environments is expected Prior knowledge or experience of OpenStack is not required although beneficial What You Will Learn Plan an installation of OpenStack with a basic configuration Deploy OpenStack in a highly available configuration Configure Keystone Identity services with multiple types of identity backends Configure Glance Image Store with File NFS Swift or Ceph image backends and use local image caching Design Cinder to use a single storage provider such as LVM Ceph and NFS backends or to use multiple storage backends simultaneously Manage and configure the OpenStack networking backend Configure OpenStack's compute hypervisor and the instance scheduling mechanism Build and customize the OpenStack dashboard In Detail OpenStack is the most popular open source cloud platform used by organizations building internal private clouds and by public cloud providers OpenStack is designed in a fully distributed architecture to provide Infrastructure as a Service allowing us to maintain a massively scalable cloud infrastructure OpenStack is developed by a vibrant community of open source developers who come from the largest software companies in the world The book provides a comprehensive and practical guide to the multiple uses cases and configurations that OpenStack supports This book simplifies the learning process by guiding you through how to install OpenStack in a single controller configuration The book goes deeper into deploying OpenStack in a highly available configuration You'll then configure Keystone Identity Services using LDAP Active Directory or the MySQL identity provider and configure a caching layer and SSL After that you will configure storage back end providers for Glance and Cinder which will include Ceph NFS Swift and local storage Then you will configure the Neutron networking service with provider network VLANs and tenant network VXLAN and GRE Also you will configure Nova's Hypervisor with KVM and QEMU emulation and you will configure Nova's scheduler filters and weights Finally you will configure Horizon to use Apache HTTPD and SSL and you will customize the dashboard's appearance Style and approach This book consists of clear concise instructions coupled with practical and applicable recipes that will enable you to use and implement the latest features of OpenStack *Learning OpenDaylight* Reza Toghraee, 2017-05-29 A practical guide to building programmable networks using OpenDaylight About This Book Learn and understand how SDN controllers operate and integrate with networks this book's step by step tutorials will give you a strong foundation in SDN NVF and OpenDayLight Learn how to map legacy Layer 2/3 networking technologies in the SDN world Add new services and capabilities to your infrastructure and quickly adopt SDN and NFV

within your organization with OpenDayLight Integrate and manage software defined networks efficiently in your organization Build innovative network applications with OpenDayLight and save time and resources Who This Book Is For This book targets network engineers network programmers and developers administrators and anyone with some level of networking experience who d like to deploy OpenDayLight effectively Familiarity with the day to day operations of computer networks is expected What You Will Learn Transition from legacy networking to software defined networking Learn how SDN controllers work and manage a network using southbound and northbound APIs Learn how to deploy the OpenDayLight SDN controller and integrate it with virtual switches Understand the basic design and operation of the OpenDaylight platform Build simple MD SAL OpenDaylight applications Build applications on top of OpenDayLight to trigger network changes based on different events Integrate OpenStack with OpenDayLight to build a fully managed network Learn how to build a software defined datacenter using NFV and service chaining technologies In Detail OpenDaylight is an open source software defined network controller based on standard protocols It aims to accelerate the adoption of Software Defined Networking SDN and create a solid foundation for Network Functions Virtualization NFV SDN is a vast subject many network engineers find it difficult to get started with using and operating different SDN platforms This book will give you a practical bridge from SDN theory to the practical real world use of SDN in datacenters and by cloud providers The book will help you understand the features and use cases for SDN NFV and OpenDaylight NFV uses virtualization concepts and techniques to create virtual classes for node functions Used together SDN and NFV can elevate the standards of your network architecture generic hardware saving costs and the advanced and abstracted software will give you the freedom to evolve your network in the future without having to invest more in costly equipment By the end of this book you will have learned how to design and deploy OpenDaylight networks and integrate them with physical network switches You will also have mastered basic network programming over the SDN fabric Style and approach This is a step by step tutorial aimed at getting you up to speed with OpenDayLight and ready to adopt it for your SDN Software Defined Networking and NFV Network Functions Virtualization ecosystem

**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 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 Testing Practitioner Handbook Renu Rajani,2017-03-22 Gain insights into the latest technology and business trends within testing domains About This Book This book covers the latest trends that every Testing and QA professional should keep up to date with given the advancements in digital technologies Master cutting edge testing techniques for emerging areas such as IOT Machine Learning Cognitive Best practices for Testing and Quality Assurance within several industry domains Who This Book Is For This book is targeted at those working in the QA and Testing areas The book does not cover testing basics which QA professional are already familiar with for example writing a test plan or test case and so on What You Will Learn Understand the TCOE model managed services the structure of testing in Agile DevOps engagements factory models and crowdsourcing Implement testing

processes practices and automation tools in the Agile DevOps life cycle Adapt to current technologies in social media mobile analytics and the Cloud Leverage cognitive intelligence machine learning robotics and the Internet of Things in testing How key industries domains consumer products and retail energy and utilities healthcare telecom and automotive adapt to digital transformation Future directions for the QA industry consulting careers testing profession and professionals In Detail The book is based on the author s experience in leading and transforming large test engagements and architecting solutions for customer testing requirements bids problem areas It targets the testing practitioner population and provides them with a single go to place to find perspectives practices trends tools and solutions to test applications as they face the evolving digital world This book is divided into five parts where each part explores different aspects of testing in the real world The first module explains the various testing engagement models You will then learn how to efficiently test code in different life cycles The book discusses the different aspects of Quality Analysis consideration while testing social media mobile analytics and the Cloud In the last module you will learn about futuristic technologies to test software By the end of the book you will understand the latest business and IT trends in digital transformation and learn the best practices to adopt for business assurance Style and approach This book is a compilation of the latest business and IT trends in digital transformation Tools and Best Practices that QA professionals need to adopt for business assurance

*Web Development with Django Cookbook*  
Aidas Bendoraitis, 2016-01-28 Over 70 practical recipes to help you create scalable websites using the Django 1.8 framework About This Book This is the latest book on the market that will help you take advantage of the new features added to Django 1.8 This book consists of recipes of varying complexities to help you create multilingual responsive and scalable websites with Django This updated edition teaches you major Django functions and will help you improve your skills by developing models forms views and templates Who This Book Is For This book is for intermediate level and professional Django users who need to build projects that are multilingual functional on devices of different screen sizes and that scale over a period of time If you have created websites with Django but you want to sharpen your knowledge and learn some good approaches to different aspects of web development you should definitely read this book What You Will Learn Get started with the basic configuration necessary to start any Django project Build a database structure out of reusable model mixins Manage forms and views and get to know some useful patterns that are used to create them Create handy template filters and tags that you can reuse in every project Integrate your own functionality into the Django CMS Manage hierarchical structures with MPTT Import data from local sources and external web services as well as exporting your data to third parties Implement a multilingual search with Haystack Test and deploy your project efficiently In Detail Django is a web framework that was designed to strike a balance between rapid web development and high performance It has the capacity to handle applications with high levels of user traffic and interaction and can integrate with massive databases on the backend constantly collecting and processing data in real time Through this book you ll discover that collecting data from different sources and providing it

to others in different formats isn't as difficult as you thought. It follows a task-based approach to guide you through all the web development processes using the Django framework. We'll start by setting up the virtual environment for a Django project and configuring it. Then you'll learn to write reusable pieces of code for your models and find out how to manage database schema changes using South migrations. After that we'll take you through working with forms and views to enter and list data. With practical examples on using templates and JavaScript together you will discover how to create the best user experience. In the final chapters you'll be introduced to some programming and debugging tricks and finally you will be shown how to test and deploy the project to a remote dedicated server. By the end of this book you will have a good understanding of the new features added to Django 1.8 and be an expert at web development processes. Style and approach: Every chapter consists of practical examples and a mix of basic and advanced recipes that will guide you through the entire web development process starting from project configuration and taking you right through to deployment.

*Troubleshooting OpenStack* Tony Campbell, 2016-03-22. Get unstuck and start stacking. About This Book: Easily fix the nagging problems that commonly plague OpenStack and become the go-to person in your organization. Get better equipped to troubleshoot and solve common problems in performance, availability, and automation that confront production-ready OpenStack environments. Save time and decrease frustration by solving significant issues that arise from OpenStack deployments pertaining to storage and networking. Who This Book Is For: You will need a basic understanding of OpenStack, Linux, and Cloud computing. If you have an understanding of Linux, this book will help you leverage that knowledge in the world of OpenStack, giving you confidence to tackle most issues that may arise. What You Will Learn: Diagnose and remediate authentication and authorization problems in Keystone. Fix common issues with images served through Glance. Master the art of troubleshooting Neutron networking. Navigate and overcome problems with Nova. Troubleshoot and resolve Cinder block storage issues. Identify and correct Swift object storage problems. Isolate and fix issues caused by Heat orchestration. Leverage Ceilometer and other metering and monitoring tools for effective troubleshooting. In Detail: OpenStack is a collection of software projects that work together to provide a cloud fabric. OpenStack is one of the fastest growing open source projects in history that unlocks cloud computing for everyone. With OpenStack you are able to create public or private clouds on your own hardware. The flexibility and control afforded by OpenStack puts the cloud within reach of anyone willing to learn this technology. Starting with an introduction to OpenStack troubleshooting tools, we'll walk through each OpenStack service and how you can quickly diagnose, troubleshoot, and correct problems in your OpenStack. Understanding the various projects and how they interact is essential for anyone attempting to troubleshoot an OpenStack cloud. We will start by explaining each of the major components and the dependencies between them and move on to show you how to identify and utilize an effective set of OpenStack troubleshooting tools and fix common Keystone problems. Next, we will expose you to common errors and problems you may encounter when using the OpenStack Block Storage service, Cinder. We will then

examine Heat the OpenStack Orchestration Service where you will learn how to trace errors determine their root cause and effectively correct the issue Finally you will get to know the best practices to architect your OpenStack cloud in order to achieve optimal performance availability and reliability Style and approach This is straight to the point guide to fixing your OpenStack cluster Common problems are identified and suggestions to resolve these problems are presented in a simple easy to understand manner

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