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Nota di contenuto	Cover ; Copyright; Credits; About the Author; www.PacktPub.com; Table of Contents; Preface; Chapter 1: OpenStack Networking Components - an Overview ; Features of OpenStack Networking; Switching; Routing; Advanced networking features; Load balancing; Firewalling; Virtual private networks; The OpenStack architecture; A reference architecture; Implementing the network; Plugins and drivers; Neutron agents; The DHCP agent; The metadata agent; The network plugin agent; Summary; Chapter 2: Installing OpenStack Using RDO ; System requirements; The initial network configuration; Example networks Interface configurationConnect to the host; Initial steps; Permissions; Install network utilities; Set the hostname; Install Network Time Protocol (NTP); Disable NetworkManager; Upgrade the system; Install RDO using Packstack; Download RDO; Configure the answer file; Install RDO; Verify connectivity to OpenStack; Verify connectivity to the dashboard; Additional installation tasks; Create a security group rule; Create a demo project and user; Configure the keystone_demo file; Upload an image to Glance; Summary; Chapter 3: Neutron API Basics ; Networks; Network attributes; Provider attributes Additional attributesSubnets; Ports; The Neutron workflow; Booting an instance; How the logical model is implemented; Deleting an instance; Summary; Chapter 4: Interfacing with Neutron ; Using the Horizon dashboard; Managing resources within a project; Creating networks

within a project; Viewing the network topology; Managing resources as an administrator; Using the Neutron client; Creating and listing networks; Creating a network; Creating a subnet; Summary; Chapter 5 : Switching; The basics of switching in OpenStack; Using Linux bridges; Using Open vSwitch; Network types; Local networks Flat networksVLAN networks; VXLAN networks; GRE networks; A look at our environment; Getting a closer look; Summary; Chapter 6 : Routing; The basics of routing in Neutron; Network namespaces; Connectivity through a router; Outbound connectivity; Inbound connectivity; Types of routers; Standalone routers; Highly available routers; Distributed virtual routers; Managing routers in the dashboard; Creating routers within a project; Viewing the network topology; Managing routers as an administrator; Managing routers with the Neutron client; Creating and listing routers; Creating a router Adding an interfaceListing router interfaces; Examining the routers; Summary; Chapter 7: Building Networks and Routers ; Using provider networks; Creating a provider network; Booting an instance; Accessing the instance; Using a Neutron router; External provider networks; Attaching the router to an external provider network; Booting an instance; Testing connectivity; Observing SNAT behavior; Assigning a floating IP; Testing connectivity via floating IP; Multiple routers; Advanced networking; Summary; Chapter 8: Security Group Fundamentals ; Security groups in OpenStack; Using security groups The default security group

Sommario/riassunto

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.
