Hewlett Packard Enterprise

Networking in OpenStack® Technology using Neutron H4S71S

This 2-day course will take students through an in depth look at the OpenStack Network service Neutron, including features up to and including the OpenStack Mitaka release. The result will be the skills to design, build, and manage a scalable network within an OpenStack environment. The students will get hands-on lab experience of many of the course topics in a dedicated, pre-built OpenStack environment.

Networking in OpenStack® Technology using Neutron	
Price	USD $1,600
Links to local schedules, pricing and registration	**US/Canada** **Mexico/Latin America** **Brazil**
HP course #	H4S71S
Category	Cloud
Duration	2 days

Audience

- Network Administrators
- Network Architects
- Solution Architects
- Sales Engineers
- Technical Marketing Staff
- OpenStack Administrators
- OpenStack Architects

Prerequisites

Have a good grasp on networking fundamentals:

- TCP/IP
- Ethernet
- Routing
- Firewalls

And attendance of the following courses, or possessing equivalent skills:

- Fundamentals of OpenStack® Technology (H6C68S)
- Linux Fundamentals (U8583S)
- Cloud Computing Overview WBT (HK917AAE)

Course objectives

After completing this course, students will be able to:

- Use the OpenStack documentation to complete the prerequisite for and the installation of Neutron components

- Discuss the Neutron components that exist on an OpenStack multi-node installation
- Describe the process flows of the primary types of OpenStack topologies
- Define the purpose of Distributed Virtual Routing, describe its function, and configure it
- Use OpenStack Neutron, Linux Bridge, OVS, and Linux commands to understand how Neutron operates and troubleshoot common issues

Benefits to you

- Gain a thorough understanding of OpenStack Neutron concepts
- Use OpenStack documentation to implement some of the more common types of OpenStack topologies
- Use OpenStack Neutron, Linux Bridge, OVS, and Linux commands to:
  - Examine the more common types of network flows between OpenStack components and between OpenStack components and an external network
  - Troubleshoot OpenStack neutron-related issues
  - Preparation for the OpenStack Neutron Troubleshooting course

Course outline

Module 1: Course Objectives
- Set course objectives
- Course prerequisites
- Course agenda
- Neutron reference materials

Module 2: Overview of OpenStack Neutron
- Neutron Functionality
- Neutron support of other OpenStack projects
- Neutron components
- Neutron Network types
- Distribution of Neutron components across OpenStack node types
- Neutron supported topologies
- Types of VM Instance flows

Module 3: Installing and configuring Neutron
- Neutron installation process flow
- Verifying operations of the Neutron components
- Logical view of the Neutron software components across OpenStack nodes

Module 4: Neutron Operations on an OpenStack Compute Node
- Neutron ML2 Plugins
- Neutron ML2 Network Types
- Neutron ML2 Network Mechanisms
- OVS Flow – East to west for instances on the same network
- L2 Population Flow

Module 5: Neutron Operations on an OpenStack Network Node
- Network namespace
- OVS Bridge Flows
- OVS components on a Network Node
- OVS Flow – East to west for Instances on Different Networks
- SNAT and Floating IP Addresses
- OVS Flow – North to South using SNAT
- OVS Flow – North to South using a floating IP address

Module 6: Distributed Virtual Routers

- What is DVR?
- Configuring DVR
- Neutron components on a Compute Node with DVR functionality
- Linux bridge, OVS, and Linux computes in a Compute Node with DVR functionality
- DVR flow between Instances on different networks
- FIP Namespace
- OVS Flow – North to South using a floating IP address

Module 7: High Availability and scale

- Building resilience into a Neutron based OpenStack network
- Service resilience
- DHCP resilience
- Network resilience
- Scaling the network – Effect on controller and network nodes
- Adding compute nodes

Module 8: Troubleshooting Neutron based networks

- Tools available
- Log locations and use
- Techniques to employ
- Example problems and resolution

Learn more

hpe.com/us/training/cloud

H4S71S Ver B.00

c04755710 October 2016

Hewlett Packard Enterprise