Preparation Red Hat OpenStack Administration I: Core Operations for Cloud Operators (CL110)

Overview

Course

Introduction to Red Hat OpenStack Platform and the deployment of virtual cloud servers and applications.

Red Hat OpenStack Administration I: Core Operations for Cloud Operators (CL110) is designed for system administrators who are intending to implement a cloud computing environment using OpenStack. You will learn how to configure, use, and maintain Red Hat® OpenStack Platform.
This course is based on Red Hat Enterprise Linux 7.5 and Red Hat OpenStack Platform 13.0.

Impact on the organization

This course is intended to develop the skills needed to utilize and manage the daily operation of a private cloud. A private cloud can reduce costs through fine-grained resource control, simplifying regulatory compliance, and permitting easier integration with legacy systems. Using the skills taught by this course, users and operators will be able to create and use project resources built of networks and services running running templated applications, in customizable and adaptable configurations, virtually eliminating the need to build physical systems for any new projects. This release brings major enhancements and stabilization, including service containerization, new installation and management tools, a newly designed application load balancing component, and a significant expansion of features supported by the OpenStack CLI. Also, clients can use various installation tools, most noticeably PackStack, which is completely deprecated.

Impact on the individual

As a result of attending this course, you will understand the architecture of a private or hybrid OpenStack cloud infrastructure and will be able to create, manage, and troubleshoot software-defined network services, resources, servers, and applications for dynamically scalable business environments.

You should also be able to demonstrate these skills:

- Design and implement on-demand projects, software-defined networks, and virtual machine instances.
- Deploy a proof-of-concept OpenStack installation for practice, development, demonstration, and testing, back in your own home or business computing environment.
- Manage software-defined networks such as subnets, routers, floating IP addresses, images, flavors, security groups/rules, and block and object storage.
- Create and customize advanced VM instances as applications, customize on deploy, and create scalable stacks of multiple VM applications.

Objectives

The focus of Red Hat OpenStack Administration I: Core Operations for Cloud Operators (CL110) will be managing OpenStack using both the web-based dashboard and the command-line interface, in addition to managing instances and installing a proof-of-concept environment using Red Hat OpenStack Platform (RHOSP) director. Essential skills covered in the course include configuring Red Hat OpenStack Platform (using the director UI); managing users, projects, flavors, roles, images, networking, and block storage; setting quotas; and configuring images at instantiation.

- Launch an instance.
- Manage projects, quotas, and users.
- Manage networks, subnets, routers, and floating IP addresses.
- Create and manage block and object storage in the OpenStack framework.
- Customize instances with cloud-init.
- Deploy scalable stacks.
- Deploy Red Hat OpenStack Platform using RHOSP director.

Content

Introduce launching an instance

Launch an instance and describe the OpenStack architecture and use cases.

Organize people and resources

Manage projects, users, roles, and quotas.

Describe cloud computing

Describe the changes in technology and processes for cloud computing.

Manage Linux networks

Administer Linux networks and bridges.

Prepare to deploy an instance with public access

Manage images, flavors, and private networks in preparation for launching an instance.

Deploy an instance

Launch and verify an instance.

Manage block storage

Manage ephemeral and persistent block storage.

Manage object storage

Administer object storage.

Prepare to deploy an external instance

Manage external networks and security in preparation for launching an instance with public access.

Deploy an instance with public access

Launch and verify an instance with public access.

Customize instances

Customize an instance with cloud-init.

Deploy scalable stacks

Deploy a stack and configure autoscaling.

Install an OpenStack overcloud

Install an OpenStack proof of concept using the director UI and provisioning service templates.

Lab: Comprehensive review of CL110

Review tasks in the Red Hat OpenStack Administration I: Core Operations for Cloud Operators course.

Audience

This course is designed for Linux system administrators, cloud administrators, and cloud operators interested in, or responsible for, maintaining a private or hybrid cloud.

Prerequisites

Become a **Red Hat Certified System Administrator (RHCSA)** or demonstrate equivalent experience

Certification

- Red Hat OpenStack Administration II (CL210)
- Choose to learn the OpenStack version that matches your company's infrastructure, either as currently built or as planned for upgrade in the near future.
- Red Hat strongly recommends pursuing the same Red Hat OpenStack Platform version when scheduling each course and exam in the OpenStack curriculum path. Red Hat OpenStack Administration II is based on OpenStack 10.0, but will also be available on OpenStack 13.0 soon, with the title of Red Hat OpenStack Administration II: Infrastructure Configuration for Cloud Administrators (CL210)
- Red Hat Ceph Storage Architecture and Administration (CEPH125)