Red Hat - Cloud

CL211: Red Hat OpenStack Administration II: Infrastructure Configuration for Cloud Administrators with exam

Install, configure, and maintain a cloud computing environment using Red Hat OpenStack Platform in this 5-day Red Hat certification course.

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- 5 Days
- Includes Red Hat OpenStack exam (EX210)

Upcoming Dates

Course Description

Course description

Introduction to Red Hat OpenStack Platform configuration and administration of private cloud infrastructure using core OpenStack services

Red Hat OpenStack Administration II: Infrastructure Configuration for Cloud Administrators with exam (CL211) teaches and validates how to implement a full-featured cloud computing environment using OpenStack. You will learn how to configure, administer, and manage Red Hat® OpenStack Platform infrastructure. The Red Hat Certified System Administrator in Red Hat OpenStack exam (EX210) is included in this offering.

This course is based on Red Hat OpenStack Platform 13.0 and Red Hat® Enterprise Linux® 7.5.

The focus of this course is on managing and using the OpenStack client command-line interface and the director and dashboard graphical web user interfaces to securely manage server instances, compute and storage resources, and user identities.

Course summary

- Gain familiarity with overcloud service containerization technology.
- Learn about Open Virtual Networking (OVN) enhancement to OVS.
- Use identity service v3 (keystone) with external Red Hat IdM store.
- Manage the core control plane, including Pacemaker.
- Customize images, with techniques for multiple use cases.
- Manage block and object storage.
- Manage compute nodes, including tuning and hyperconvergence.
- Deploy multi-container stacks.
- Troubleshoot OpenStack.

Course Outline

Navigate the Red Hat OpenStack Platform architecture

Describe the classroom environment, support systems, functions of the undercloud components, and more.

Describe the OpenStack control plane

Identify the shared services running on a controller node and describe service endpoint configuration and security.

Integrate identity management

Describe the installation and architecture of a Red Hat Identity Management back end for the OpenStack identity service.

Perform image operations

Build an image using diskimage-builder and customize launched instances during deployment using cloud-init.

Manage storage

Explain persistent storage options for use in OpenStack, focusing on the expanding capabilities of the default Red Hat® Ceph Storage.

Manage OpenStack networking

Explain the different network types available to the OpenStack networking service and improve network performance with Open Virtual Network.

Manage compute resources

Perform common compute node administration tasks, including live migration, evacuation, and enabling and disabling compute nodes.

Automate cloud applications

Explain the orchestration architecture required to deploy application stacks and write templates using the Heat Orchestration Template (HOT) language.

Troubleshoot OpenStack operations

Discuss recommended diagnostic and troubleshooting tools and techniques.

Comprehensive review

Build a custom image and launch an instance using the custom image.

Note: Course outline is subject to change with technology advances and as the nature of the underlying job evolves. For questions or confirmation on a specific objective or topic, contact one of our Red Hatters.

Audience

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

Prerequisites

- Be a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent experience by passing the online skills assessment
- Attend Red Hat OpenStack Administration I: Core Operations for Cloud Operators (CL110) , or demonstrate equivalent experience

What You Will Learn

Impact on the organization

Businesses of all sizes have recognized the value of and embraced cloud computing, growing public cloud hosting and services to surpass

legacy enterprise computing. Many large enterprises need private or hybrid infrastructures for issues of security, privacy, regulation, and compliance.

In the OpenStack world, Red Hat OpenStack Platform is recognized as the primary choice in supported open source private cloud infrastructure. OpenStack itself has reached a level of maturity for core services and, in the process, has distinguished itself as an incredibly flexible IaaS platform for many industries and models, including telecom, finance, service, ecommerce, education, healthcare, government, and aviation. Enterprises need hybrid and private solutions, not just public cloud services, and Red Hat OpenStack Platform specializes in private and hybrid clouds that can be highly customized according to business needs. Organizations can integrate services, hardware, and tools from multiple vendors into Red Hat OpenStack Platform, while quickly and easily deploying their cloud systems, introducing new services, and responding to changing market conditions.

Customer organizations will find this version to be easier to install and manage, yet capable of handling more diverse types of cloud and legacy workloads with an expanding portfolio of flexible resource configuration. Enhancements in Red Hat OpenStack Platform 13.0 address evolving customer requirements for more capable cloud infrastructures, including:

- Use of the popular Ansible toolset for installations, upgrades, and patching.
- Enhanced networking features and performance using Open Virtual Networking (OVN), an evolved networking framework based on Open vSwitch.
- Quicker application scaling with the newly designed load balancer built using efficient containers.
- Introduction of shared file system storage, including the new CephFS as a back end.
- Integration of hyperconverged technology that combines storage and compute resources on the same compute nodes for lower latency and higher performance.
- The ability to integrate the popular OpenShift application platform onto the Red Hat OpenStack infrastructure.

Red Hat has created this course in a way intended to benefit our customers, but each company and infrastructure is unique, and actual results or benefits may vary.

Impact on the individual

As a result of attending this course, you will know how to configure and manage an OpenStack installation featuring all of the common, core features and services used by enterprise private/hybrid cloud customers. You will also be able to choose and customize compute, storage, networking, deployment, and application support resources and services tailored to your enterprise needs.

You should be able to demonstrate these skills:

- Navigate and manage the control plane on the undercloud and the overcloud.
- Work with containerized overcloud infrastructure services.
- Manage necessary authentication, authorization, and security administration.
- Navigate and describe all network layers in an IaaS and all aspects of SDN design and management.
- Manage compute node and storage resource, including hyperconvergence.
- Troubleshoot typical OpenStack operations.