

# Red Hat OpenStack Administration I: Core Operations for Domain Operators

**Course Duration: 40 Hours**

**Course code: CL110**

## 1. Course Overview

The Red Hat OpenStack Administration I: Core Operations for Domain Operators (CL110) course provides foundational skills for managing and operating Red Hat OpenStack Platform environments. Participants will learn how to perform core domain operations, manage project resources, and ensure smooth day-to-day functioning of cloud environments. The training covers key concepts such as user and project management, network configuration, instance deployment, and storage provisioning. With hands-on labs, learners gain practical experience in administering OpenStack services and troubleshooting common issues. This course is ideal for domain operators seeking to build confidence in managing cloud infrastructure using Red Hat OpenStack.

## 2. What you'll learn?

**By the end of this course, learners will:**

This course aims to empower participants with the essential skills to manage core operations of Red Hat OpenStack Platform as a domain operator. Learners will gain practical knowledge in managing projects, users, flavors, images, and instances while performing day-to-day operational tasks in a private cloud environment. Through hands-on labs and guided instruction, participants will

build confidence in efficiently administering OpenStack infrastructure to deliver reliable and scalable cloud services.

### 3. Target Audience

- Cloud administrators
- System administrators working in OpenStack environments
- Network administrators responsible for cloud-based services
- Infrastructure operations professionals
- IT professionals planning to manage private or hybrid clouds
- Candidates pursuing Red Hat OpenStack certifications

### 4. Pre-Requisites

#### Participants should have:

- Participants are expected to have foundational Linux administration skills, including experience managing services, processes, and user permissions. Familiarity with networking concepts and virtualization technologies is also helpful to make the most of the hands-on components of the course.
- Red Hat Certified System Administrator (RHCSA) or equivalent experience
- Basic knowledge of virtualization concepts
- Understanding of fundamental networking principles

## 5. Course content

### Module 01 – Introduction to Cloud Computing and OpenStack

- Overview of Cloud Computing Concepts
- Understanding IaaS, PaaS, and SaaS Models
- Introduction to Red Hat OpenStack Platform

### Module 02 – OpenStack Architecture and Components

- Core Services: Nova, Neutron, Cinder, Glance, Keystone
- Supporting Services and Integration
- How the Services Work Together in a Cloud Environment

### Module 03 – Managing Compute Resources with OpenStack Nova

- Creating and Managing Virtual Machines
- Flavors, Images, and Key Pairs
- Scheduling and Resource Allocation

### Module 04 – Networking in OpenStack with Neutron

- Network Types: Flat, VLAN, VXLAN
- Configuring Networks, Subnets, and Routers
- Security Groups and Floating IPs

### Module 05 – Storage in OpenStack

- Block Storage with Cinder
- Object Storage with Swift
- Ephemeral vs. Persistent Storage

## **Module 06 – Identity and Access Management with Keystone**

- User, Role, and Project Management
- Authentication and Authorization Concepts
- Multi-Tenant Security

## **Module 07 – Monitoring, Scaling, and Best Practices**

- Monitoring OpenStack Environment Health
- Scaling Compute and Storage Resources
- Operational Best Practices and Security Considerations

