Red Hat OpenStack Technical Overview

Course Duration: 8 Hours **Course code: CL010**

1. Course Overview

The Red Hat OpenStack Technical Overview (CL010) course provides a high-level introduction to Red Hat OpenStack Platform, its core concepts, architecture, and key components. Learners will explore how OpenStack enables private and public cloud deployments, manage virtual machines, networks, and storage, and understand its integration with other Red Hat technologies. This course is ideal for IT professionals seeking to gain foundational knowledge of OpenStack for cloud infrastructure planning and operations.

2. What you'll learn?

By the end of this course, learners will:

This course aims to provide participants with a high-level understanding of Red Hat OpenStack Platform, its architecture, core components, and use cases in private and hybrid cloud environments. Learners will explore how OpenStack supports scalable, flexible, and cost-effective cloud infrastructure, enabling them to assess the platform's suitability for their organization's needs. The course helps build foundational awareness of OpenStack services, deployment options, and integration opportunities with existing enterprise systems.

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3. Target Audience

- IT infrastructure administrators
- System administrators and engineers
- Cloud architects
- Network and storage administrators
- IT professionals interested in hybrid cloud technologies
- Professionals seeking an introduction to OpenStack fundamentals

4. Pre-Requisites

Participants should have:

- There are no strict technical prerequisites for this introductory-level course, making it suitable for those seeking a foundational awareness of OpenStack. However, participants will benefit from having a general understanding of Linux system administration and basic networking concepts to get the most out of the course topics.
- Basic knowledge of Linux operating systems (recommended)
- Familiarity with fundamental networking concepts (recommended)
- No prior OpenStack experience required

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