

Red Hat Ceph Storage for OpenStack I

Course Duration: 40 Hours

Course code: CL260

1. Course Overview

The Red Hat Ceph Storage for OpenStack I (CL260) course provides learners with the skills to deploy, manage, and scale Red Hat Ceph Storage in OpenStack environments. Participants will explore block, object, and file storage solutions, and learn to integrate Ceph with OpenStack for hybrid cloud storage. The course emphasizes hands-on experience in configuring storage clusters, monitoring performance, and ensuring high availability. By the end, learners will be able to deliver scalable, reliable, and secure storage solutions for enterprise cloud environments.

2. What you'll learn?

By the end of this course, learners will:

This course is designed to provide participants with the skills and knowledge necessary to deploy, manage, and integrate Red Hat Ceph Storage with Red Hat OpenStack Platform. Learners will explore how to configure Ceph as the storage backend for OpenStack services, optimize performance, and ensure high availability and scalability of storage resources. Through practical labs and guided exercises, participants will gain confidence in maintaining a robust, software-defined storage infrastructure that supports dynamic and demanding cloud workloads.

3. Target Audience

- Cloud infrastructure administrators
- OpenStack cloud operators and architects
- Storage administrators managing OpenStack environments
- Systems engineers working with Red Hat OpenStack Platform
- IT professionals interested in software-defined storage

4. Pre-Requisites

Participants should have:

- Participants should have a solid understanding of Linux system administration as well as familiarity with OpenStack architecture and components. Prior experience with storage technologies will help participants get the most out of the course, as it builds upon foundational skills to introduce advanced Ceph Storage integration concepts.
- Red Hat Certified System Administrator (RHCSA) or equivalent knowledge
- Working knowledge of Red Hat OpenStack Platform
- Basic understanding of storage concepts and technologies

5. Course content

Module 01 – Introduction to Red Hat Ceph Storage

- Overview of Ceph Architecture and Components
- Understanding Object, Block, and File Storage
- Ceph’s Role in OpenStack and Cloud Environments

Module 02 – Deploying a Ceph Storage Cluster

- Planning and Preparing Nodes for Deployment
- Installing Ceph Using Red Hat Tools
- Configuring Monitors, OSDs, and Manager Daemons

Module 03 – Managing Ceph Storage Services

- Configuring Object Storage with RADOS Gateway
- Managing Block Storage with RBD
- Setting Up Shared File Storage with CephFS

Module 04 – Monitoring and Troubleshooting Ceph

- Using Ceph CLI and Dashboard for Monitoring
- Managing Cluster Health and Performance
- Troubleshooting Common Issues in Ceph Storage

Module 05 – Integrating Ceph with OpenStack

- Configuring OpenStack Cinder with Ceph Block Storage
- Using Swift-Compatible Object Storage with OpenStack
- Best Practices for OpenStack and Ceph Integration

Module 06 – Scaling and Maintenance

- Expanding the Ceph Cluster and Adding Storage Nodes
- Upgrading Ceph and Performing Routine Maintenance
- Backup, Recovery, and High Availability Strategies

