



## **CEPH 125 Red Hat Ceph Storage Architecture and Administration**

**5 days of training**

### **DESCRIPTION:**

Red Hat Ceph Storage Architecture and Administration (CEPH125) is designed for storage administrators or cloud operators who intend to deploy Red Hat Ceph Storage to their production data center environment or OpenStack installation.

### **PREREQUISITES:**

- Be certified as a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent experience
- Some experience with storage administration is recommended, but not required

### **COURSE OBJECTIVES:**

You should be able to demonstrate these skills:

- Explain the architecture of a Ceph cluster.
- Deploy a Red Hat Ceph Storage cluster using Ansible.
- Manage operations on a Red Hat Ceph Storage cluster.
- Provide servers with storage from the Ceph cluster using block, object, and file-based access methods.
- Integrate Red Hat Ceph Storage as backend storage for Red Hat OpenStack Platform.

### **COURSE OUTLINE:**

#### **Prepare for Red Hat Ceph Storage**

- Identify challenges faced by traditional storage and explain how Ceph addresses them.

#### **Deploy Red Hat Ceph Storage**

- Deploy and expand the storage capacity of a new Red Hat Ceph Storage cluster.

#### **Configure Red Hat Ceph Storage**

- Manage how Ceph stores data with pools, configure Red Hat Ceph Storage using its configuration file, and configure users for Ceph clients that may access the Ceph storage cluster.

#### **Provide block storage with RBD**

- Configure Ceph to provide block storage for clients by using RADOS block devices (RBDs).

### **Provide object storage with RADOSGW**

- Configure Ceph to provide object storage for clients by using a RADOS gateway (RADOSGW or RGW).

### **Provide file storage with CephFS**

- Configure Ceph to provide file storage for clients using the Ceph Filesystem (CephFS).

### **Configure the CRUSH map**

- Adjust the CRUSH map—which controls how data is stored, replicated, and distributed across OSDs in the Ceph cluster—in order to optimize resiliency and performance.

### **Manage and update the cluster maps**

- Explain how the monitor and OSD maps are managed in order to maintain cluster operation, quorum, and consistency.

### **Manage a Red Hat Ceph Storage cluster**

- Check Ceph cluster status, troubleshoot Ceph daemon problems, and upgrade Ceph software.

### **Tune and troubleshoot Red Hat Ceph Storage**

- Identify the key performance metrics for a Ceph cluster and use them to help tune and troubleshoot the operating system and Ceph software for optimal performance.

### **Integrate Red Hat Ceph Storage with OpenStack**

- Configure an OpenStack cloud to use Ceph to provide image, block, object, and file storage.