

# Tuning and Troubleshooting Red Hat Ceph Storage

### Goal

Identify the key Ceph cluster performance metrics, and use them to tune and troubleshoot Ceph operations for optimal performance.

### Objectives

- Choose Red Hat Ceph Storage architecture scenarios and operate Red Hat Ceph Storage-specific performance analysis tools to optimize cluster deployments.
- Protect OSD and cluster hardware resources from over-utilization by controlling scrubbing, deep scrubbing, backfill, and recovery processes to balance CPU, RAM, and I/O requirements.
- Identify key tuning parameters and troubleshoot performance for Ceph clients, including RADOS Gateway, RADOS Block Devices, and CephFS.

### Sections

- Optimizing Red Hat Ceph Storage Performance (and Guided Exercise)
- Tuning Object Storage Cluster Performance (and Guided Exercise)
- Troubleshooting Clusters and Clients (and Guided Exercise)

### Lab

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