Enterprise Kubernetes Storage with Red Hat OpenShift Data Foundation (DO370) Training

Duration: **5 Day**

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Overview

Learn the essential skills to **design, implement, and manage storage for Kubernetes environments** using **Red Hat OpenShift Data Foundation (ODF)**.

Traditional storage solutions in Kubernetes environments are often limited in scalability and flexibility. Red Hat OpenShift Data Foundation provides a unified, cloud-native storage layer that integrates seamlessly with OpenShift — supporting **file, block, and object storage** for containerized workloads.

This {*training} teaches administrators how to deploy, configure, monitor, and manage OpenShift Data Foundation clusters to deliver **high-performance, resilient, and scalable storage** for enterprise applications. It also introduces modern data protection and disaster recovery practices using **Kubernetes CSI and OADP APIs**.

> *This course is based on Red Hat OpenShift Data Foundation.*

Who Should Attend

This course is designed for:

- **Primary Audience:** Platform Administrators, System Administrators, and Cloud Infrastructure Engineers managing storage and container platforms.
- **Secondary Audience:** Enterprise Architects, DevOps Engineers, and Site Reliability Engineers designing application infrastructure for hybrid and cloud-native environments.

What You Will Learn

By the end of this {*training}, you will have gained knowledge and skills in the following areas:

- Describe the **architecture and features** of Red Hat OpenShift Data Foundation.
- **Install and configure** ODF on an OpenShift cluster using internal mode.
- Select and tune **storage classes** based on application performance and capacity requirements.
- Configure **OpenShift services** (Monitoring, Registry, and Logging) to use ODF storage.
- Enable **object storage access** for containerized workloads.
- Implement **backup and restore operations** using Kubernetes CSI and OADP APIs.
- Monitor **cluster health and performance metrics** for ODF.
- Identify and troubleshoot **Ceph components** and common failure scenarios.

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Impact on the Organization

Modern enterprises increasingly depend on **persistent storage for containerized workloads**.
With **Red Hat OpenShift Data Foundation**, organizations can:

- Automatically provision storage tailored to specific workload needs.
- Achieve **data resiliency and high availability** for business-critical apps.
- Unify storage management across hybrid and multicloud environments.
- Reduce complexity by integrating storage natively within OpenShift.

This course equips teams to efficiently support digital transformation initiatives and accelerate application deployment through **automated, cloud-native storage provisioning**.

Impact on the Individual

After completing this course, participants will:

- Understand how to deploy ODF using on-premises or cloud-based storage backends.
- Be able to select and configure storage classes that match application needs.
- Monitor and scale storage capacity proactively.
- Create, clone, and restore persistent volumes using Kubernetes-native tools.

Professionals will gain the practical skills to **provision, manage, and optimize enterprise-grade Kubernetes storage** within Red Hat OpenShift environments.

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Outline

1. Architecture Overview and Deployment of OpenShift Data Foundation (Internal Mode)
Understand ODF architecture, deployment options, and install ODF on OpenShift using internal mode.

2. Configuring Application Workloads for File and Block Storage
Provision and connect applications to ODF-backed file and block storage classes.

3. Configuring Application Workloads for Object Storage
Configure applications to use object storage via ODF's S3-compatible API.

4. Configuring OpenShift Cluster Services
Integrate OpenShift services like Monitoring, Image Registry, and Logging with ODF storage.

5. Backup and Restore of Kubernetes Block and File Volumes
Implement backup and recovery strategies using Kubernetes CSI snapshots and OADP.

6. Monitoring OpenShift Data Foundation
Monitor ODF performance metrics, storage capacity, and health status.

7. Managing Storage Capacity with ODF
Expand or optimize cluster capacity dynamically to meet growing data demands.

8. Troubleshooting OpenShift Data Foundation
Diagnose and resolve common Ceph-related or storage-layer issues.