Introduction to Red Hat OpenShift Service on AWS

Course Duration: 16 Hours **Course code: CS120**

1. Course Overview

The Introduction to Red Hat OpenShift Service on AWS (CS120) course provides an overview of deploying and managing Red Hat OpenShift clusters on Amazon Web Services (ROSA). Participants learn how to create and operate ROSA clusters, configure GitHub authentication, and integrate with Red Hat cloud services. The course also covers using OpenShift GitOps for declarative project provisioning, performing cluster updates, and cleaning up AWS resources. With hands-on labs, learners gain practical experience in managing cloud-native applications on OpenShift, making it ideal for IT operations staff and cloud engineers.

2. What you'll learn?

By the end of this course, learners will:

This course aims to provide learners with a clear understanding of how Red Hat OpenShift Service on AWS (ROSA) simplifies deploying, managing, and scaling containerized applications in a hybrid cloud environment. Participants will explore the architecture of ROSA, learn about its key features, and understand

how it integrates the power of Red Hat OpenShift with the scalability and flexibility of Amazon Web Services. By the end of the course, learners will gain practical knowledge to confidently plan, deploy, and manage OpenShift clusters on AWS.

3. Target Audience

- Cloud architects and engineers
- DevOps engineers and site reliability engineers (SREs)
- Kubernetes administrators
- Application developers working with container platforms
- IT professionals responsible for hybrid or cloud-native infrastructure
- Anyone interested in deploying and managing OpenShift on AWS

4. Pre-Requisites

Participants should have:

- To get the most out of this course, learners should have foundational knowledge of containers and Kubernetes concepts, along with basic familiarity with AWS cloud services. Prior experience with Red Hat OpenShift or similar container orchestration platforms will be beneficial but is not strictly required.
- Basic understanding of container technologies (e.g., Docker)
- Familiarity with Kubernetes fundamentals
- General knowledge of AWS services and cloud concepts

- Prior exposure to OpenShift (recommended but not mandatory)

5. Course content

Module 01 – Introduction to OpenShift Service on AWS (ROSA)

- Overview of Red Hat OpenShift and AWS Integration
- Understanding ROSA Architecture and Components
- Key Features and Benefits of Managed OpenShift on AWS

Module 02 – Setting Up ROSA Clusters

- Creating and Configuring ROSA Clusters
- Integrating GitHub Authentication
- Configuring Red Hat Cloud Services

Module 03 – Managing Projects and Applications

- Using OpenShift GitOps for Declarative Project Provisioning
- Deploying and Managing Applications on ROSA
- Monitoring Application Performance

Module 04 – Cluster Operations and Updates

- Performing OpenShift Version Updates
- Managing Nodes and Resources
- Troubleshooting Common Issues in ROSA Clusters

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 – Advanced ROSA Operations

- Configuring Networking and Security Policies
- Integrating with External Services and APIs
- Scaling Applications and Cluster Resources
- Backup, Recovery, and High Availability Strategies