

# Deploying Production AWS ROSA Clusters: Creation, Configuration, and Application Integration

**Course Duration: 40 Hours**

**Course code: CS229**

## 1. Course Overview

The CS229 course teaches participants how to deploy and configure production-grade Red Hat OpenShift Service on AWS (ROSA) within existing AWS environments, ensuring alignment with enterprise-level security standards. Learners will also integrate ROSA with key AWS services—such as Amazon CloudWatch, Cognito, and ECR—while maintaining strong control over access credentials and roles. Throughout training, participants will gain hands-on experience with autoscaling, log forwarding, storage integration, pod identity, observability, and secure public access implementations. Upon completion, learners are prepared to build secure, scalable, and highly available ROSA deployments for critical enterprise applications.

## 2. What you'll learn?

**By the end of this course, learners will:**

This course is designed to provide participants with practical skills for successfully deploying, configuring, and integrating production-grade AWS ROSA (Red Hat OpenShift Service on AWS) clusters. Learners will

explore best practices for provisioning ROSA clusters, integrating them with enterprise applications, and managing security, scaling, and networking in a cloud environment. The course aims to empower professionals to confidently deliver resilient, high-performance Kubernetes workloads on ROSA in production environments.

### 3. Target Audience

- Cloud architects and engineers
- Kubernetes and container platform administrators
- DevOps engineers and site reliability engineers (SREs)
- IT infrastructure professionals working with OpenShift or AWS
- Developers responsible for deploying cloud-native applications
- Professionals seeking to enhance skills in Red Hat OpenShift Service on AWS (ROSA)

### 4. Pre-Requisites

#### Participants should have:

- Before attending this course, participants should have a foundational understanding of Kubernetes concepts and AWS services, as well as some experience with OpenShift administration. This baseline knowledge will ensure learners can effectively grasp advanced ROSA deployment and integration topics.
- Familiarity with AWS fundamentals
- Working knowledge of Kubernetes (pods, services, deployments)

- Prior exposure to Red Hat OpenShift administration (recommended)
- Experience with containerized application deployment (helpful but not mandatory)

## 5. Course content

### Module 01 – Private Link ROSA Cluster Creation

- Create ROSA clusters using STS and Private Link for secure, private network access to API and router endpoints.

### Module 02 – Node and Pod Autoscaling

- Configure clusters and workloads to scale both nodes and pods dynamically according to demand.

### Module 03 – ROSA Integration with AWS Services

- Forward logs (node, cluster, audit) to Amazon CloudWatch for aggregation and analysis.
- Set up authentication and group synchronization with Amazon Cognito.

### Module 04 – External Registry Integration

- Deploy applications from external image registries such as Amazon ECR and Quay.io.

### Module 05 – AWS Storage Configuration for ROSA

- Enable applications to use EBS or EFS volumes via appropriate storage classes and security contexts.

## Module 06 – Pod Identity and AWS Service Access

- Configure pod identity using STS/IRSA to grant secure access to AWS services like Aurora (database), SQS (queue), and S3 (object storage).
- Provision AWS services for applications using AWS Controllers for Kubernetes (ACK).

## Module 07 – ROSA & AWS Observability

- Forward application logs to CloudWatch and metrics to Amazon Managed Prometheus Service to enable full-stack observability.

