Red Hat OpenShift Essentials & Advanced DevOps Automation Training

15 – 19 February 2027
Addis Ababa

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Ref: 67_223285 **Date:** 15 – 19 February 2027 **Location:** Addis Ababa **Fees:** 4500 Euro

Course Overview:

"Red Hat OpenShift Fundamentals & Advanced DevOps Automation" is an intensive 1-week training program that empowers IT professionals, DevOps engineers, and developers to master OpenShift from the ground up. This course blends foundational theory with hands-on practice. Participants will explore the OpenShift Kubernetes platform, learn OpenShift administration and development, deploy containerized applications, integrate CI/CD pipelines with Tekton, configure security using RBAC and SCCs, and manage services like Service Mesh, Knative, and GitOps. From understanding BuildConfigs to debugging with Prometheus and deploying via Devfiles, the course offers a complete pathway for OpenShift mastery.

Target Audience:

- DevOps Engineers
- Kubernetes Administrators
- Application Developers
- Platform Engineers
- Site Reliability Engineers SREs
- IT Infrastructure Specialists

Targeted Organizational Departments:

- IT Operations
- Software Development
- DevOps & Automation
- Cybersecurity
- Cloud Infrastructure Teams
- Quality Assurance and Testing

Targeted Industries:

- Technology & Software
- Banking & Finance
- Government & Public Sector
- Telecommunications
- Energy & Utilities
- Healthcare & Pharmaceuticals

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Course Offerings:

By the end of this course, participants will be able to:

- Understand the architecture and core components of OpenShift Kubernetes platform
- Deploy and manage applications using DeploymentConfig, BuildConfig, and templates
- Use the OpenShift oc CLI and odo CLI for automation and app management
- Implement CI/CD pipelines with Tekton for continuous deployment with OpenShift
- Configure Role-Based Access Control RBAC and Security Context Constraints SCCs
- Monitor, log, and debug applications using Prometheus, Elasticsearch, and Kibana
- Leverage Red Hat Developer Sandbox and OpenShift Local for development and testing
- Deploy microservices and serverless applications using Service Mesh and Knative

Training Methodology:

This course combines instructor-led training with practical labs, real-world case studies, and guided walkthroughs. Participants will execute live exercises involving BuildConfig creation, RBAC configuration, and CI/CD deployment. Activities simulate collaborative DevOps workflows, while reflection sessions solidify learning. Discussions around OpenShift CRDs, GitOps, Helm templates, and the Twelve-Factor App methodology provide both strategic and technical insights.

Course Toolbox:

- Red Hat OpenShift Developer Sandbox Free Tier
- OpenShift Local CRC Setup
- oc CLI and odo CLI tools
- Tekton CI/CD Pipelines and tkn CLI
- Devfile and Dev Spaces
- Sample GitHub/GitLab repositories for deployment
- YAML/Helm Templates and Operators Examples only
- Example logs, dashboards Prometheus, Kibana, and alerts
- Guided practice scripts installation, scaling, debugging

Note: The course gives insights and examples of these tools, but does not include any commercial licenses or paid software.

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Course Agenda:

Day 1: Introduction to OpenShift & Architecture Essentials

- **Topic 1:** What is Red Hat OpenShift and how it extends Kubernetes
- **Topic 2:** Understanding OpenShift Projects vs Namespaces
- **Topic 3:** Custom Resource Definitions: DeploymentConfig vs Deployment
- **Topic 4:** Using oc and odo CLI tools effectively
- **Topic 5:** Setting up OpenShift Local CRC and Red Hat Sandbox
- **Topic 6:** Accessing the web console and CLI simultaneously
- **Reflection & Review:** OpenShift concepts recap and practical exercises discussion

Day 2: Application Deployment, BuildConfig, and Registry

- **Topic 1:** Creating and managing BuildConfigs
- **Topic 2:** Using OpenShift Source-to-Image S2I build system
- **Topic 3:** Deploying from Git and managing container image registry
- **Topic 4:** Debugging deployments with odo CLI and Devfile
- **Topic 5:** OpenShift application templates and automated provisioning
- **Topic 6:** Role of OpenShift image streams and automated rebuilds
- **Reflection & Review:** Build and deployment workflows overview

Day 3: CI/CD Automation with Tekton Pipelines

- **Topic 1:** Understanding Tekton and installing OpenShift Pipelines
- **Topic 2:** Creating pipelines, tasks, workspaces, triggers
- **Topic 3:** Using EventListeners and Webhooks for continuous deployment
- **Topic 4:** Deploying CI/CD pipelines via YAML and Web Console
- **Topic 5:** GitOps and version-controlled deployments
- **Topic 6:** Using tkn CLI and Visual Studio Code extensions
- **Reflection & Review:** Pipeline design feedback and use case review

Day 4: OpenShift Security and Access Management

- **Topic 1:** Configuring users, roles, and service accounts RBAC
- **Topic 2:** Understanding and applying Security Context Constraints SCCs
- **Topic 3:** Secure container deployment best practices
- **Topic 4:** OpenShift compliance, image validation, and UBI images
- **Topic 5:** Managing application secrets and config maps securely
- **Topic 6:** OpenShift policy and audit log usage
- **Reflection & Review:** Role-based access simulation and audit logs

Day 5: Monitoring, Serverless, and Advanced OpenShift

- **Topic 1:** Application logging with Kibana and Elasticsearch
- **Topic 2:** Monitoring containers using Prometheus and Grafana
- **Topic 3:** Scaling applications manually, horizontally, and vertically
- **Topic 4:** Deploying serverless apps using Knative
- **Topic 5:** Service Mesh integration with Istio for microservices
- **Topic 6:** Advanced automation using OpenShift Operators and Helm
- **Reflection & Review:** Final project showcase and course wrap-up

FAQ:

What specific qualifications or prerequisites are needed for participants before enrolling in the course?

Participants should have basic knowledge of containers, Docker, Kubernetes, and Git.

How long is each day's session, and is there a total number of hours required for the entire course?

Each day's session is generally structured to last around 4-5 hours, with breaks and interactive activities included. The total course duration spans one week, approximately 20-25 hours of instruction.

How is OpenShift different from vanilla Kubernetes and why is it relevant for enterprise use?

OpenShift builds on Kubernetes by offering enhanced security, integrated DevOps tools, visual management consoles, and enterprise-ready CRDs, making it ideal for secure, scalable, and compliant environments.

How This Course is Different from Other Red Hat OpenShift Training Courses:

This course delivers an end-to-end DevOps experience based on real-world needs. It combines beginner and advanced modules, practical CLI usage oc/odo, free access to Red Hat Developer Sandbox, and advanced topics like Service Mesh, Tekton CI/CD, GitOps, and Knative. Security and monitoring are not optional add-ons but integral to the training, ensuring participants walk away with a holistic understanding. Whether you're deploying microservices, securing clusters with RBAC, or scaling apps with Prometheus, this course transforms OpenShift theory into enterprise-grade action.