

# Red Hat Container Adoption Boot Camp for Administrators

Course code: D0700

Supporting the infrastructure for adoption of container technology and container-native applications, Kubernetes, and DevOps practices The Container Adoption Boot Camp for Administrators (D0700) immerses you in intensive, hands-on management of container-native applications deployed on Red Hat's implementation of Kubernetes, Red Hat® OpenShift® Container Platform, at enterprise scale. This course is for those seeking to make a quantum leap in their digital transformation journey. Making this shift requires the ability to support a growing number of clusters, stakeholders, applications, and users to achieve large-scale deployments. As part of enrollment, you will receive one year of Red Hat Learning Subscription Standard, which gives you unlimited access to all of our courses online, plus up to five certification exams and two retakes. This collection of courses is based on Red Hat OpenShift Container Platform 4.10.

## Who is the course for

System Administrators, Cloud Engineers, and Site Reliability Engineers (SREs) interested in adopting container and Kubernetes technologies.

## What we teach you

- Introduction to Containers, Kubernetes, and Red Hat OpenShift
- Manage local containers and building container images
- Deploy and troubleshoot containerized applications for OpenShift
- Control access to projects using role-based access control (RBAC)
- Control resource usage through quotas and limits
- Isolate applications through network policies
- Automate OpenShift administration tasks using Ansible and Jenkins
- Provision persistent storage tailored for application requirements
- Manage monitoring metrics and alerts
- Deploying and configuring log aggregation

## Required skills

- Become a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent experience

## Course outline

### *Get started with container technology*

Describe how applications can run in containers orchestrated by OpenShift Container Platform.

### **Create containerized services**

Provision a service using container technology.

### **Manage containers**

Manipulate pre-built container images to create and manage containerized services.

### **Manage container images**

Manage the life cycle of a container image from creation to deletion.

### **Create custom container images**

Design and code a Dockerfile to build a custom container image.

### **Deploy containerized applications on OpenShift**

Deploy single container applications on OpenShift Container Platform.

### **Deploying multi-container applications**

Deploy applications that are containerized using multiple container images.

### **Publish enterprise container images**

Interact with an enterprise registry and publish container images to it.

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## Deploying multi-container applications

Deploy multi-container applications using Helm charts and Kustomize.

## Managing application deployments

Monitor application health and implement various deployment methods for cloud-native applications.

## Describing the Red Hat OpenShift Container Platform

Describe the architecture of OpenShift Container Platform.

## Verify the health of a cluster

Describe OpenShift installation methods and verify the health of a newly installed cluster.

## Configuring authentication and authorization

Configure authentication with the HTPasswd identity provider and assign roles to users and groups.

## Configuring application security

Restrict permissions of applications using security context constraints and protect access credentials using secrets.

## Configuring OpenShift networking for applications

Troubleshoot OpenShift software-defined networking (SDN) and configure network policies.

## Controlling pod scheduling

Control the nodes on which a pod runs.

## Describing cluster updates

Describe how to perform a cluster update.

## Managing a cluster with the web console

Manage a Red Hat OpenShift cluster using the web console.

## Moving from Kubernetes to OpenShift

Demonstrate that OpenShift is Kubernetes by deploying Kubernetes-native applications on OpenShift.

## Introducing automation with OpenShift

Automate OpenShift using scripts and Ansible playbooks.

## Managing OpenShift operators

Manage operators and OpenShift cluster operators.

## Implementing GitOps with Jenkins

Implement a GitOps workflow using containerized Jenkins to administer an OpenShift cluster.

## Configuring enterprise authentication

Configure OpenShift integration with enterprise identity providers.

## Configuring trusted TLS certificates

Configure trusted TLS certificates for external access to cluster services and applications.

## Configuring dedicated node pools

Add nodes to an OpenShift cluster with custom configurations.

## Configuring persistent storage

Configure storage providers and storage classes to ensure cluster user access to persistent volume resources.

## Managing cluster monitoring and metrics

Configure and manage the OpenShift monitoring stack.

## Provisioning and inspecting cluster logging

Deploy and query cluster-wide logging, and diagnose common issues using tools.

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# Red Hat Container Adoption Boot Camp for Administrators

## Recovering failed worker nodes

Inspect, troubleshoot, and remediate worker nodes in a variety of failure scenarios.

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