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# OpenShift 4 training: Deploying and managing containers

OPENSIFT CONTAINER PLATFORM

hours)

3 days (21

## Presentation

Our OpenShift training course will teach you how to deploy and orchestrate application containers. Based on Kubernetes, OpenShift is a powerful and flexible platform for managing containerized applications.

By the end of this course, you'll know how to [orchestrate your containers with ease](#). Red Hat OpenShift is the DevOps containerization Platform as a Service (PaaS) that guarantees stable performance and high availability for your users.

You'll learn about the OpenShift system and how it relates to Docker and Kubernetes. After discovering its architecture, we'll teach you how to create containerized services, manage containers and deploy containerized and multi-containerized applications.

You'll also learn how to scale your applications and manage your clusters. You'll learn all about the elements that make up the OpenShift architecture (pod, control plane, image, service...).

This OpenShift training course will be based on the latest stable release of the project ([OpenShift 4.15 to date](#)).

## Objectives

- Understanding the OpenShift architecture and its components
- Creating containerized services
- Managing containers
- Deploying containerized and multi-containerized applications

## Target audience

- DevOps
- Developers
- System administrators
- System architects
- Engineers

## Prerequisites

- Master Linux system administration
- Have the knowledge to understand the architecture used by OpenShift

## Software requirements

You'll need a Red Hat training account, from which you'll need to download the "pull secret" that Red Hat will provide.

## Recommendations for pre- and post-course reading

- An easy-to-understand guide [to Openshift](#)
- [Don Schenck's advice on](#) container installation
- An article to understand the [key differences between Kubernetes and Openshift](#) to avoid common mistakes
- [OpenShift articles on](#) one of the best DevOps blogs: GUI Free Life
- A long article on the main [OpenShift features](#)

## OpenShift training program

### Introduction

- Introduction to OCP
- Kubernetes reminder
- The advantages of containerization
- The benefits of OpenShift
- Installing OpenShift
- Updates

### OpenShift architecture

- Component overview
- The OpenShift container lifecycle
- The control plane

- RHCOS
- Cluster Manager presentation

## Component presentation

- Containers
- The images
- Pods
- Services
- Projects and users

## Creating containerized services

- Introducing the CaaS model
- The advantages of service containers
- Introduction to OpenShift development
- KISS, YAGNI, DRY and SoC approaches
- Create your first container
- Options
  - Image base
  - Registry
- Creating a Kubernetes manifest

## Container management

- Moving an application to OpenShift
- Services and roads
- Configmaps
- The secrets
- Using builds
- Customize an S2I version
- Managing volume
- Scaling your application

## Deploying containerized applications

- Understanding deployment on OpenShift
- Deployment strategies
- DeploymentConfig objects
- Replication controllers
- Replica sets
- Manage the deployment process
- Monitoring

## Multi-containerized application deployment

- Multi-container pod architecture
- Image creation
- Create your template
- Deploying your template

## Add-on module: OpenShift advanced

- Hybrid Cloud
- Version control
- Automatic testing
- Ansible
- Cloud Native Applications

## Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.