

# Containers, Kubernetes, and Red Hat OpenShift Development II with Exam

Course code: D0296

Accelerated hands-on training to boost developer productivity powered by Red Hat OpenShift Containers, Kubernetes, and Red Hat OpenShift Development I with exam (D0296) teaches you how to design, build, and deploy containerized software applications to an OpenShift® cluster. Whether you are tasked with writing container-native applications or migrating existing brownfield applications, this offering provides hands-on training to boost developer productivity powered by Red Hat OpenShift. The Red Hat Certified Specialist in OpenShift Application Development exam (EX288) is included in this offering.

## Who is the course for

- Enterprise application developers who wish to containerize software applications.
- Developers who are new to container technology and container orchestration.
- Architects who are considering using container technologies in software architectures.
- DevOps Site reliability engineers who are considering using Kubernetes and OpenShift.

## What we teach you

- Container and OpenShift architecture
- Designing and Creating containerized services
- Managing containers and container images
- Creating custom container images
- Deploying containerized applications on OpenShift
- Deploying multi-container applications using Helm Charts
- Manage and trigger application builds using Source-to-Image (S2I)
- Create health checks to monitor and improve application reliability
- Create and deploy cloud-native applications on OpenShift

## Required skills

- Familiarity with the Linux command line is recommended but not required.

## Course outline

### Introduction and overview of container technology

Describe how containers facilitate application development.

### Podman basics

Manage and run containers with Podman.

### Container images

Navigate container registries to find and manage container images.

### Custom container images

Build custom container images to containerize applications.

### Deploy and manage applications on an OpenShift cluster

Deploy applications by using various application packaging methods on an OpenShift cluster and manage their resources.

### Publish enterprise container images

Create an enterprise registry and publish container images to it.

### Manage builds on OpenShift

Describe the OpenShift build process, in addition to triggering and managing builds.

### Customize source-to-image builds

Customize an existing S2I base image and create a new one.

#### GOPAS Praha

Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

#### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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## Deploy multi-container applications

Deploy multi-container applications using Helm charts and Kustomize.

## Manage application deployments

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

## Build applications for OpenShift

Create, Deploy and Integrate third-party applications on OpenShift.

## What you need to know

### Impact on the organization

Containers are a key technology for the configuration and deployment of applications and microservices, and containers and OpenShift have quickly become the de facto solution for agile development and application deployment.

Administrators and developers are seeking ways to improve application time-to-market for minimum viable products.

This course provides the gateway to organizational and digital transformation by providing an understanding of the potential of DevOps using a container-based architecture. Orchestrated with Kubernetes and OpenShift, a container-based architecture improves application reliability and scalability, while decreasing developer overhead and facilitating continuous deployment.

### Impact on the individual

As a result of attending this course, you will understand the fundamental concepts behind containerizing, scaling, deploying, and managing applications on Red Hat OpenShift Container Platform, which is a containerized application platform that allows enterprises to manage container deployments and scale their applications using Kubernetes.

You should be able to demonstrate these skills:

- Design container images to containerize applications.
- Customize application builds and implement post-commit build hooks.
- Deploy multi-container applications.
- Implement health checks to improve system reliability.

#### GOPAS Praha

Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

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[info@gopas.sk](mailto:info@gopas.sk)



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