

# PRELIMINARY EXAM IN CONTAINERS, KUBERNETES, & OPENSIFT (PE180)

Course Code: 100652

The Preliminary Exam in Containers, Kubernetes, & Openshift Exam (PE180) allows you to test and demonstrate the knowledge, skills, and abilities you learned in Introduction to Containers, Kubernetes, and Red Hat OpenShift (DO180)

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## What You'll Learn

The Preliminary Exam in Containers, Kubernetes, & OpenShift Exam (PE180) allows you to test and demonstrate the knowledge, skills, and abilities required to:

- Implement new container images by extending existing images.
- Manage images, including pulling and pushing images from a private registry.
- Manually run and link containers in a development environment.
- This exam is based on Podman and Red Hat® OpenShift® Container Platform 4.1.

## Who Needs to Attend

Administrators, architects, software developers, and anyone responsible for creating, managing, or using containers, including those who want to demonstrate their understanding of the key concepts and processes underlying the use of containers in modern software.

## Prerequisites

Red Hat encourages you to consider taking [Introduction to Containers, Kubernetes, and Red Hat OpenShift \(DO180\)](#) to help prepare.

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ON-DEMAND

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## On-Demand Outline

### Exam format:

This hands-on, practical exam requires you to undertake real-world tasks. Internet access is not provided and will be strictly controlled during the exam, and you will not be permitted to use any hard copy or electronic documentation during the exam. This prohibition includes notes, books, or any other materials, but documentation that ships with Podman is available during the exam.

### *Study points for the exam*

To help you prepare, the exam objectives below highlight the task areas you can expect to see covered in the exam.

You should be able to demonstrate these skills and abilities:

- Implement images using Podman
  - ☒ Understand and use FROM (the concept of a base image) instruction.
  - ☒ Understand and use RUN instruction.
  - ☒ Understand and use ADD instruction.
  - ☒ Understand and use COPY instruction.
  - ☒ Understand the difference between ADD and COPY instructions.
  - ☒ Understand and use WORKDIR and USER instructions.
  - ☒ Understand security-related topics.
  - ☒ Understand the differences and applicability of CMD vs. ENTRYPOINT instructions.
  - ☒ Understand ENTRYPOINT instruction with param.
  - ☒ Understand when and how to expose ports from a Docker file.
  - ☒ Understand and use environment variables inside images.
  - ☒ Understand ENV instruction.

- ☒ Understand container volume.
- ☒ Mount a host directory as a data volume.
- ☒ Understand security and permissions requirements related to this approach.
- ☒ Understand lifecycle and cleanup requirements of this approach.
- Manage images
  - ☒ Understand private registry security.
  - ☒ Interact with many different registries.
  - ☒ Understand and use image tags.
  - ☒ Push and pull images from and to registries.
  - ☒ Back up an image with its layers and meta data vs. backup a container state.
- Run containers locally using Podman
  - ☒ Get container logs.
  - ☒ Listen to container events on the container host.
  - ☒ Use Podman inspect.

As with all Red Hat performance-based exams, configurations must persist after reboot without intervention.

*Red Hat and Global Knowledge reserve the right to add, modify, and remove exam objectives. Such changes will be made public in advance.*

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