ProTech Professional Technical Services, Inc.

Beginning DevOps with Docker

Course Summary

Description

The course outlines the power of containerization and the influence this innovation has on development teams and general operations. We also get to understand what DevOps really is, the principles involved, and how the process contributes to product health, by implementing a Docker workflow.

Docker is an open source containerization tool that makes it easier to streamline product delivery and reduce the time it takes to get from a whiteboard sketch of the business to a money-back implementation.

We will start by defining how Docker influences the DevOps process. We will then design and build simple containers, with a clear outline of how applications are involved in the process. Then we will define the key highlights when setting up multiple containers, while setting up a number using docker-compose, Docker's tool for running multi-container applications. We will wind up by having a production-ready application and host it locally (a process that you can replicate in the cloud).

This is a 1-day course packaged with the perfect balance of theory and hands-on activities that will help you learn Docker from scratch.

This course complies with instructional designing principles for all the 3 lessons. This will ensure that you repeat and reinforce your gained knowledge at every step. Each and every minute spent during this 1-day course will incrementally take you to the next level.

Objectives

After taking this course, students will be able to understand:
- Docker and DevOps, why and how they integrate
- What containers are, how to create and manage them
- Scaling a delivery pipeline and multiple deployments with Docker
- Orchestration and delivery of containerized applications

Topics

- Images and Containers
- Application Container Management
- Orchestration and Delivery

Audience

This course is crafted for developers, system architects, junior and mid-level site reliability engineers interested in adopting a Docker workflow.

Prerequisites

Before you take this course, you should have a basic knowledge of UNIX concepts such as ssh, ports and logs.

Duration

One day

Course Outline *(vertical, left margin)*

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Course Outline

I.   *Images and Containers*
    A. How Docker Improves a DevOps Workflow
    B. Basic Docker Terminal Commands
    C. Dockerfile Syntax
    D. Building Images
    E. Running Containers From Images
    F. Versioning Images and Docker Hub
    G. Deploying a Docker Image to Docker Hub

II.   *Application Container Management*
    A. The docker-compose Tool
    B. Overview of a Multi-Container Application Setup
    C. Managing Multiple Containers and Distributed Application Bundles
    D. Networking with docker-compose

III.   *Orchestration and Delivery*
    A. An Overview of Docker Swarm
    B. Using Docker Engine to Create a Swarm
    C. Managing Services and Applications in a Swarm
    D. Scaling Services Up and Down