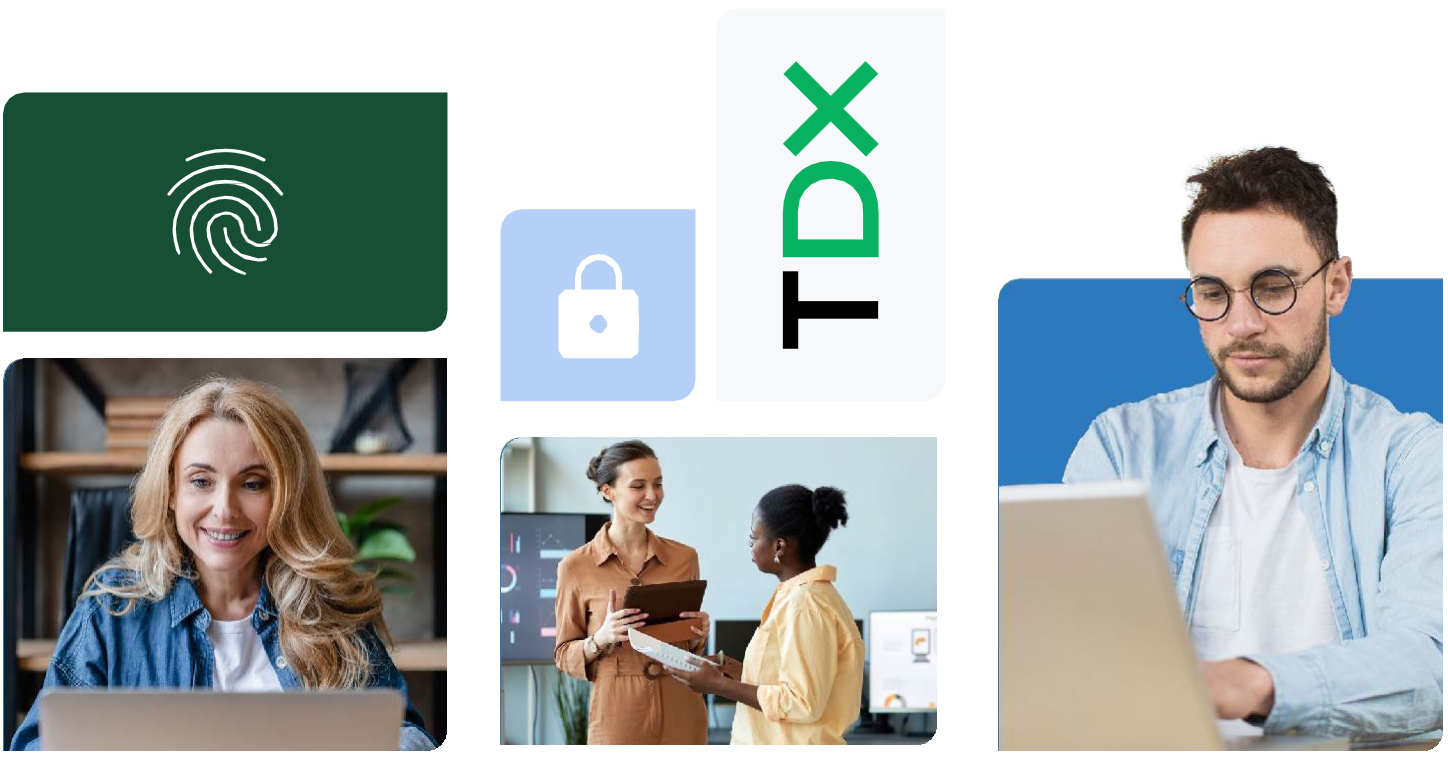
ThriveDX™

Docker and Kubernetes Containerization Fundamentals

TDXAD-108



ThriveDX Docker and Kubernetes Containerization Fundamentals

Time Commitment
5 days (total of 40 hours / 8 hours per day)

Skill Level
Professional Level

Course Category
Agile & Devops

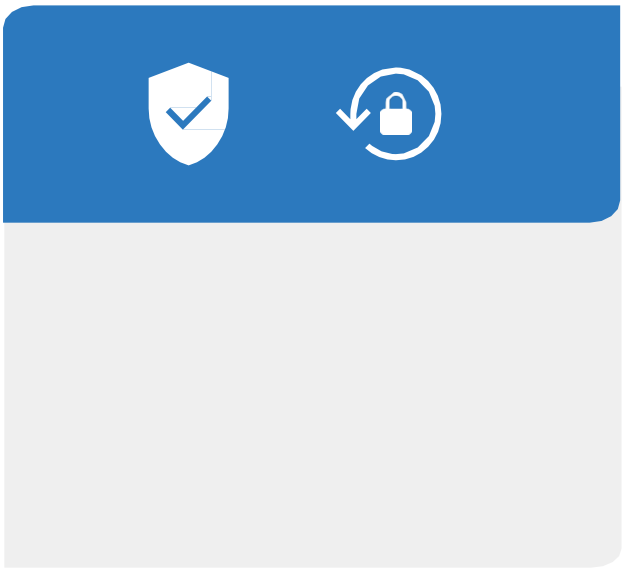
This comprehensive course equips developers and managers with the skills to build, deploy, and manage containerized applications using Docker and Kubernetes. Hands-on workshops and labs provide practical experience for real-world scenarios. basic Linux experience is recommended.

Target audience

IT personnel, developers and managers wishing to familiarize themselves with containerized platforms.

Prerequisites

Basic Linux experience is recommended



Program Structure

Docker workshop and hands on. Duration: 8 hours

Introduction to Docker

- Overview of Docker and containerization
- Understanding Docker architecture
- Installing Docker on different platforms
- Running the first Docker container

Docker Images and Containers

- Creating Docker images using Dockerfile
- Managing Docker images
- Running and managing Docker containers
- Docker container lifecycle

Docker Volumes and Networking

- Working with Docker volumes
- Managing data persistence in Docker containers
- Docker networking concepts
- Exposing ports and connecting containers

Docker Compose

- Introduction to Docker Compose
- Writing Docker Compose files
- Managing multi-container applications
- Deploying applications using Docker Compose

Best Practices and Advanced Concepts

- Docker best practices
- Multi-stage builds in Docker
- Using Docker for microservices architecture
- Docker security considerations

Hands-on Lab and Q&A

- Hands-on lab exercises to practice Docker commands
- Q&A session to address any doubts or questions
- Course wrap-up and feedback

K8s fundamentals. Duration: 16 hours

Session 1:

- Introduction to Kubernetes and Container Orchestration
- Understanding Kubernetes Architecture and Components
- Hands-on Lab: Deploying a Single Pod and Understanding Deployments

Session 2:

- Exploring Kubernetes Services and Load Balancing
- Hands-on Lab: Exposing Applications with LoadBalancer Services
- In-depth Discussion on StatefulSets and DaemonSets

Session 3:

- Understanding Persistent Volume Claims and Storage Classes in Kubernetes
- Authentication, Authorization, and RBAC in Kubernetes

Session 4:

- Introduction to Ingress and Helm Charts in Kubernetes
- Hands-on Lab: Deploying Applications with Helm Charts
- Q&A Session, Recap, and Course Conclusion

Advanced Kubernetes. Duration: 16 hours

Kubernetes Architecture

Master and Node components

Pods, Deployments, and Services

Kubernetes API

Hands-on Lab: Setting up a Kubernetes Cluster

Installing Kubernetes locally

Creating a simple deployment

Kubernetes Services

Service types

Load balancing and service discovery

Ingress Controllers

Introduction to Helm

Overview of Helm

Benefits of Helm

Helm Charts and Templates

Creating Helm Charts

Structure of a Helm Chart

Chart.yaml and values.yaml files

Templates and helpers

Hands-on Lab: Developing a Helm Chart

Creating a basic Helm Chart

Defining templates and values

Packaging and deploying the chart

Advanced Topics

Canary Releases with Helm

Ingress Controllers and Annotations

Resource Management in Kubernetes

The ThriveDX Advantage

1 Handcrafted Training Programs

2 State-Of-The-Art Learning Materials

3 Israel's Premier Training Center

4 Fueled by Industry Leading Experts

5 Over 20 Years of Proven IT Education Success