

## DCK-102: Docker Administration

**Course Length:** 2 days

### Course Description

Containers play a vital role in the modern data-center, and Docker is leading the way. This course introduces students to the concepts of Docker. covers all the core features of Docker including: installing and basic management of containers, managing images and using Dockerfile to create and manage custom images.

**Structure:** 50% theory 50% hands on lab exercises

**Target audience:** System administrators, developers and devops who want to understand and use Docker in cloud and data center environments

**Prerequisites:** Proficiency with the Linux CLI. A broad understanding of Linux system administration.

### Detailed Course Outline

#### Module 1: INTRODUCTION TO CLOUD AND CONTAINERS

- Cloud computing in general
- Cloud types
- Cloud native computing
- Application containers
- Containers on linux
- Container runtime
- Docker
- Docker Ecosystem
- Docker Ecosystem
- Lab 1

#### Module 2: INSTALLING DOCKER

- Distribution Packages
- Packages from Docker
- Docker-machine
- Docker Daemon Configuration
- Lab 2

#### Module 3: MANAGING CONTAINERS

- Docker - container run
- Docker – container ps
- Docker – container attach
- Docker – container signal
- Docker - accessing container FS
- Lab 3

#### Module 4: DOCKER NETWORK - PORT PUBLISHING

- Port publishing
- Lab 4

## **Module 5: DOCKER STORAGE - IMAGES**

- Docker storage
- Docker storage - overlay FS
- Docker storage - image layers
- Docker images - commit
- Docker images - cli
- Docker images - work with images
- Lab 5

## **Module 6: BUILDING IMAGES**

- Docker images - Dockerfile
- Docker images - Dockerfile syntax
- Docker images - Dockerfile syntax
- Docker images - Dockerfile syntax
- Lab 6

## **Module 7: DOCKER REGISTRY**

- Docker registry
- Docker registry CLI
- Docker local registry setup
- Lab 7

## **Module 8: INTEGRATING DOCKER INTO ECLIPSE IDE**

- Eclipse IDE for Developers
- Creating sample code - java
- Building and Testing
- Lab 8

## **Module 9: DOCKER STORAGE - VOLUME**

- Docker storage - volume
- Docker storage - volume management
- Docker storage - shared volume
- Docker storage - shared volume examples
- Lab 9

## **Module 10: CONNECTING CONTAINERS**

- Connecting Containers
- Lab 10

## **Appendix A: DOCKER LOGGING**

## **Appendix B: DOCKER NETWORKING**

- Docker networking
- Docker networking - addresses
- Docker networking - custom bridge
- Docker networking - custom bridge
- Docker networking - no network
- Docker networking - host network
- Docker networking - shared network NS

## **Appendix C: CONTAINER ORCHESTRATION**

## **Appendix D: DOCKER CLUSTER**

## **Appendix E: LINUX SUBSYSTEMS USED IN CONTAINER TECHNOLOGY**