

DCK-101: Docker Intro

Course Length: 1 day

Course Description:

Linux containers are changing the way companies think about service development and deployment. Containers play a vital role in the modern data-center, and Docker is leading the way. This course covers all the core features of Docker including: container creation and management, interacting with Docker hub, using Dockerfile to create and manage custom images, advanced Docker networking (how to safely expose container services to the world, and link containers), the use of Docker volumes to manage persistent data, and Docker Compose to build multi-container applications.

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. Container introduction

- Application containers
- Container runtimes
- Docker introduction
- **LAB TASKS:** Understand Linux namespaces

Module 2. Managing containers using Docker

- Starting/stopping containers with docker
- Listing/inspecting containers
- Executing commands in containers
- **LAB TASKS:** Managing docker containers

Module 3. Managing the container's filesystem with Docker

- Accessing the filesystem
- Overlay FS
- Volumes
- **LAB TASKS:** Managing volumes

Module 4. Managing container images

- Image layers
- Creating images from running containers
- Working with images
- Building images using Dockerfile
- **LAB TASKS:** Managing images

Module 5. Managing container networking

- How containers are connected to the network
- Using host networking
- Sharing the network among multiple containers
- Publishing ports
- **LAB TASKS:** Check container connectivity

Module 6. Docker architecture

- The processes
- Extracting logs
- Registry
- **LAB TASKS:** Accessing container logs

- Container introduction
 - Application containers
 - container runtimes
 - docker introduction
- Managing containers using Docker
 - starting/stopping containers with docker
 - listing/inspecting containers
 - executing commands in containers
- Managing the container's filesystem with Docker
 - accessing the filesystem
 - overlay FS
 - volumes
- Managing container images
 - image layers
 - creating images from running containers
 - working with images
 - building images using Dockerfile
- Managing container networking
 - how containers are connected to the network
 - using host networking
 - sharing the network among multiple containers
 - publishing ports
- Docker architecture
 - the processes
 - extracting logs
 - registry