



DOCKER Course

Docker is an open–source platform for developing, running, and managing applications using containerization technology. This technology enables developers to build and run their applications in containers, which are lightweight, standalone, and portable environments. Containers create an isolated environment where all the dependencies and necessary variables for the application are encapsulated, allowing developers to easily run their applications in any environment.

Course Overview

Containers, especially Docker, are one of the most fundamental components in the architecture of any project with a DevOps approach. Everything in the development of modern software is dependent on containers and their management practices.

The goal of this Docker learning course is to become proficient in Docker as a leading platform in this field. The target audience for this course includes Linux system administrators and developers who, in order to enter the DevOps world, need to familiarize themselves with the realm of containers.

Course outline

Module 1: Introduction

- What is a container
- Container is not a VM
- Chroot
- Linux namespaces
- Introducing Docker
- Docker Architecture
- Docker Images
- Registry
- Docker Hello World

Module 2: Basics

- docker run command
- Streams and tty
- Detached mode
- Logs
- Image Layers
- Saving and Loading Images

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- Running a process inside a container with docker exec
- Container Lifecycle
- Exporting and Importing Containers
- Resource usage
- Environment Variables

Module 3: Build

- Writable Layer
- docker commit
- docker tag
- Use dockerhub
- Dockerfile
- docker build
- Multi-stage builds

Module 4: Data Persistence

- Volumes
- Bind mount
- Tmpfs
- Managing volumes
- Storage Drivers
- Best Practices using NFS

Module 5: Networking

- Linux bridge
- Network Types
- veth and namespaces
- Internal communication
- Port mapping
- Links
- Firewalls

Module 6: Docker compose

- Yaml
- Docker compose format
- Docker compose command

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- Building
- Network

Module 7: Orchestration

- Docker swarm
- Services
- Node Availability
- Intro to Kubernetes

Prerequisites

- LPIC 1
- LPIC 2

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