

## LFS158x - Introduction to Kubernetes

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### Overview

Is your team beginning to use Kubernetes for container orchestration? Do you need guidelines on how to start transforming your organization with Kubernetes and cloud native patterns? Would you like to simplify software container orchestration and find a way to grow your use of Kubernetes without adding infrastructure complexity? Then this is the course for you!

In this course, we'll discuss some of Kubernetes' basic concepts and talk about the architecture of the system, the problems it solves, and the model that it uses to handle containerized deployments and scaling.

This course offers an introduction to Kubernetes and includes technical instructions on how to deploy a stand-alone and multi-tier application.

What you'll learn:

- The origin, architecture, primary components, and building blocks of Kubernetes
- How to set up and access a Kubernetes cluster using Minikube
- Ways to run applications on the deployed Kubernetes environment and access the deployed applications
- Usefulness of Kubernetes communities and how you can participate.

Upon completion, developers will have a solid understanding of the origin, architecture and building blocks for Kubernetes, and will be able to begin testing the new cloud native pattern to begin the cloud native journey.

### Prerequisites

- Basic knowledge of container technologies, like Docker or rkt is required.

# Course Outline

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**Welcome & Introduction**

**Chapter 1. Container Orchestration**

**Chapter 2. Kubernetes**

**Chapter 3. Kubernetes Architecture - Overview**

**Chapter 4. Installing Kubernetes**

**Chapter 5. Setting Up a Single-Node Kubernetes Cluster with Minikube**

**Chapter 6. Accessing Minikube**

**Chapter 7. Kubernetes Building Blocks**

**Chapter 8. Authentication, Authorization, and Admission Control**

**Chapter 9. Services**

**Chapter 10. Deploying a Stand-Alone Application**

**Chapter 11. Kubernetes Volume Management**

**Chapter 12. Deploying a Multi-Tier Application**

**Chapter 13. ConfigMaps and Secrets**

**Chapter 14. Ingress**

**Chapter 15. Advanced Topics - Overview**

**Chapter 16. Kubernetes Community**

**Final Exam**