GEN-138

Just Enough Kubernetes

Course Overview

Course Type
Instructor-Led Training

Level
Introductory

Duration
1 day

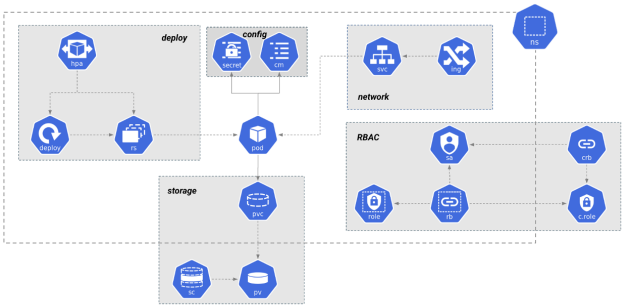
Platform
minikube Kubernetes

Topics Covered

- Cluster Architecture
- Control Plane Architecture
- Kubernetes Resources
- The YAML Manifest File
- Deploying Pods and Services

About This Training

This one-day course provides an explanation of architecture and the basic skills required for understanding Kubernetes. Kubernetes is an open-source platform that automates the management of containerized applications. Kubernetes has fundamentally transformed the software development and operations of the modern enterprise and is the de facto standard for container orchestration. While it addresses a critical need for deploying and managing containers, it is by necessity a complex system. The course is focused on explaining how it works by defining the architecture for clusters, the control plane, and resources.



What Skills You Will Gain

In this course, you will learn to:

- Explain the fundamental architecture of Kubernetes clusters.
- Run a local Kubernetes cluster using minikube on a remote system.
- Interact with your cluster by running `kubectl` commands and using the Kubernetes Dashboard.
- Understand the basics of YAML manifest files for defining applications.
- Deploy containerized applications, including Pods and Services, using the command line.
- Describe the difference between imperative and declarative approaches to managing resources.

Who Should Take This Course?

This course is an entry point for learning Kubernetes. This course is intended for a broad audience, to include managers, project managers, developers, and operators. In short, anyone who wants to have a working knowledge and baseline skill of Kubernetes. The classroom environment is a two-node Kubernetes cluster running on Linux.

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Get Aboard

- Run Kubernetes with minikube
- Run kubectl command
- Run the Kubernetes Dashboard
- Exercises

Learning Kubernetes

- Design principles
- Documentation and References
- Exercises

Cluster Architecture

- Types of Kubernetes Clusters
- Available Kubernetes Tools
- Node Roles
- Node Configuration
- Exercises

Control Plane Architecture

- API Server
- Scheduler
- Controller Manager
- Persistent storage with etcd
- Cluster DNS
- Exercises

Microservices

- Docker Containers
- Container Applications
- Exercises

Resource Architecture

- Resources Model
- Namespaces
- Pods
- Services
- Deployments
- Network
- Access Control
- Storage
- Exercises

Manifest Files

- YAML file basics
- Kubernetes Manifest files
- Imperative vs Declarative
- Exercises

Deployment

- Run Pods
- Expose Services
- Use Deployments
- Labels and Selectors
- Exercises

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