

Google Kubernetes Engine (GKE)

Duration: 4 days

Lab Requirement: Customer Google Cloud Account Required

Module 1: Docker

Introduction to Containers

Installing Docker

Building Docker Images

Public and Private registry

Data persistence with volume

Linux capabilities

Module 2: Core Concepts of Kubernetes

Introduction

Overview

Benefits

Setup and installation

Design Principles

Module 3: Navigating Kubernetes Architecture

Master/Node

Kubectl, Kubeadm, Kubelet, Kube-Proxy

etcd

API server

Scheduler

Controller

Module 4: Using Kubernetes Features

YAML introduction

Pods

Labels

Replica Set

Services

Deployment

Manual Scheduling

Module 5: Other features

Resource Management

Namespace

Resource limit

Resource quota

Module 6: Storage

EmptyDir

host volume

Persistent Volume

Persistent Volume Claim

Module 7: Environment Variables

Plain Key value

ConfigMap

Secrets

Module 8: Workloads

Jobs

CronJobs

DaemonSets

Module 9: Security

Security Context

Authentication

Service Account

Roles