**Learning Kubernetes**

**Section 1: Creating your Cluster: Installing Kubernetes Locally**

**1.1 The Course Overview**

This video provides an overview of the entire course.

**1.2 Overview: Installing Kubernetes**

This video aims to provide a high-level overview of installing a kubernetes.

* + Learn to install Kubernetes
  + Install Kubernetes (Minikube)
  + Explore Kubernetes

**1.3 Installing Dependencies**

In this video, we will learn to setup our environment before installing Kubernetes.

* + Understand what Kubernetes requires
  + Install dependencies
  + Confirm whether the environment is correct

**1.4 Installing the Latest Kubernetes**

In this video, we will install a local Kubernetes cluster.

* + Explore the installation process
  + Install Kubernetes
  + Confirm if the cluster is available

**1.5 Exploring Your Kubernetes Installation**

In this video, we will explore our Kubernetes installation.

* + Learn to interact with Kubernetes
  + Learn some kubectl commands
  + Confirm if kubectl is working

**Section 2: Kubernetes Deployment Models for High-Availability**

**2.1 Kubernetes Architecture and Design**

In this video, we will understand Kubernetes core concepts before diving into advanced concepts.

* + Understand how kubernetes works
  + Explore core kubernetes components
  + Learn the kubernetes logical architecture

**2.2 Achieving High-Availability**

This video aims to explain that we want our cluster to be highly available to reduce downtime and we need a deployment pattern.

* + Learn target state architecture
  + Understand how to achieve service and data redundancy
  + Learn to leverage federation

**2.3 Scaling Kubernetes**

In this video, we will learn of some upper-limits or size limitations of kubernetes.

* + Explore Kubernetes limitations
  + Learn scaling an app
  + Understand scaling an app across clusters

**2.4 Federation**

This video aims to explain that we need to manage multiple clusters using federation.

* + Learn to sync resources across a cluster
  + Understand cross cluster discovery
  + Explore high availability

**Section 3: Managing Secrets and Configuration**

**3.1 Configuration Best Practices**

In this video, we will understand best practices for configuring Kubernetes.

* + Learn the configuration files
  + Learn about labels
  + Explore leveraging version control

**3.2 Creating and Decoding Secrets**

In this video, we will understand how to use the kubectl CLI to create and decode secrets.

* + Use kubectl to encode secrets
  + Use kubectl to decode secrets
  + Create secrets manually

**3.3 Using Secrets in Applications**

In this video, we will understand how to mount volumes containing secrets to apps.

* + Use secrets in the app
  + Learn to attach secrets to a volume
  + Learn to attach secrets to an app

**Section 4: Deploying an Application to Kubernetes**

**4.1 Overview: Docker Containerization**

This video aims to explain what is a container engine, container build tool, and container registry.

* + Build container image
  + Register container image
  + Run container image

**4.2 Installing Docker and Building the Image**

In this video, we will learn to install docker, to build and test run our docker image.

* + Install docker
  + Explore docker commands
  + Explore docker config file

**4.3 Deploying Your Docker Container**

In this video, we will install our container image to kubernetes.

* + Deploy our container to a pod
  + Explore deployment methods
  + Explore deployment commands

**4.4 Interacting With Your Container**

In this video, we will test whether our application is running successfully in Kubernetes.

* + Monitor our running app
  + View health of the app
  + Learn to send test request to our running app