

# K8S Clusters - From Scratch to Full Fledge K8s Production Cluster Workshop

**Course 90905 – 8 Hours**

## Overview

When building a K8S cluster you'll quickly find out that installing K8S is the easiest part and only the beginning.

The first part of the seminar focuses on implementing a full production K8S cluster.

Starting by automating it's installation (IAC) using Kops and Terraform, Installing and configuring full end to end monitoring framework using the latest Prometheus K8S-Operator.

In the second part II we will work on the most important part of setting up a K8S cluster, KMS and Discovery management using Vault and Consul.

We will use the latest POD Security based on Calico CNI and set our cluster for receiving External traffic using multiple Ingress controllers.

Once everything is set, We will set a Continuous Delivery system using ARGO CD to allow continuously deliver your application to your K8S clusters(s) using the GitOps methodology.

By completing the session you'll have everything you'll require to build or upgrade your own K8S cluster stored in your private Git account.

## Who Should Attend

- DevOps Engineers

## Prerequisites

- Rich experience in K8S and Terraform

## Course Contents

### PART I

- Intro – What are we going to accomplish in this session
  - Planning our K8S Cluster(s)
  - Working and deploying with KOPS and Terraform to automate multiple K8S clusters in the Cloud
  - Intro to installing and managing K8S with Rancher2 in an OnPremised environment
- Building our KOPS configuration and Terraform Code
  - Deploying multiple clusters from Dev to Production using ASG and spot instances (Not just using EKS)
- Monitoring our cluster with Prometheus and Grafana Operators

### Part II

- Service Discovery & KMS
  - Intro Consul
  - Intro Vault for KMS

- Deploying
- Updating Realtime
- Realtime ENV and Secrets on Pods using Consul and Vault
  - Using envconsul
- PODS Security Policy using Calico CNI
- Intro to Ingress and Api gateways
  - Ambassador
  - ISTIO GW
- Ingress controllers using
  - TRAEFIC
- GitOps style Delivery system from Code to K8S in a click
  - ARGOCD