Effective
Kubernetes Devops
with Cloud Manager

Modes of Delivery

- On-site
- Public
- Live online
- Trainer lead

Format

- 50% theory
- 50% lab work

Intended Audience

- Cloud Architects
- Developers
- Devops Personnel
- Kubernetes Practitioners

Pricing

- Use contact below

Contacts

Order&Inquiry:

training@einnovator.org

Course Summary

In this course, you will learn how to use Kubernetes and tools deploy applications and services in a cloud environment.

You get introduced to key concepts in *Cloud Computing* and **Kubernetes** (K8s), and learn how perform common deployment devops workloads. Tools covered include **kubectl** command-line tool, package manager **Helm**, and several Web UI based interfaces to K8s with a strong emphasis on **Dashboard** and EInnovator **Cloud Manager**.

Several devops workloads are studies in detail, including: how to deploy, upgrade and scale applications, how to configure applications, how to deploy marketplace services, how to expose services, how to setup **Tekton CI/CD** pipelines, how to secure access to K8s resources, and how to install and setup K8 custom resource extensions (operators).

The course is structured in trainer-lead presentations and a practical hand-on lab. You will be provided with a K8s cloud environment to perform the labs, which you can continue to use after the course.

Course Objectives

- Understand *Could Computing* and **Kubernetes** concepts
- Learn how to perform common workload in K8s, including deploy, upgrade, scale, configure, and troubleshoot applications and services
- Get familiar with kubectl commands and YAML files
- Learn how to manage container storage
- Learn how to setup access to K8s Clusters
- Learn how setup security policies in K8s cluster
- Increase productivity with Web UI interfaces to K8s, including Dashboard and Cloud Manager
- Setup CI/CD pipelines with Cloud Manager and Tekton, to generate Docker Images from GIT repositories

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Day 1

1 CLOUD COMPUTING & KUBERNETES

- Key Concepts in Cloud Computing
- Containers Orchestration Overview
- Kubernetes Concepts & Architecture
- K8s Tools Overview

2 DEPLOYING PODS & APPS

- Deploying Pods
- Deploying Stateless Applications
- Logging and Troubleshooting
- Scaling Deployments
- Advanced Deployment Settings

3 SERVICES

- Service Exposure Approaches
- Ingresses, DNS Domains and Routes
- Marketplace Solutions
- Helm Repositories and Tools

4 CONFIGURING APPLICATIONS

- Environment Variables
- Config Maps
- Connectors and Bindings
- Secrets

Day 2

5 DATA STORAGE

- Volumes and Claims
- Distributed Storage
- Stateful Deployments
- Volume Templates

6 JOBS

- Patterns for Batch Applications
- Deploying Jobs
- Deploying Cron Jobs

7 SECURITY

- Kubernetes Security Model
- Authentication Modes
- Role-Based Access Control
- Attribute-Based Access Control

8 DEPLOYING MARKTEPLACE SOLUTIONS

- Monitoring in Kubernetes
- Installing Databases
- Installing Message-Brokers
- Installing other Services

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Day 3

9	**CI/CD**
	• CI/CD Concepts
	• Tekton Pipelines
	• Web UI for CI/CD Pipelines
10	**CLUSTER ADMINISTRATION**
	• Accessing K8s Clusters
	• Setting-up K8s Clusters
	• On-Premises Cloud Manager Install
	• Federation and Inter-Cluster Devops
11	**ADDITIONAL TOPICS**
	• Extending Kubernetes with Custom Resources
	• Operator Library
	• Kubernets API

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Course Details

Effective Kubernetes Devops with Cloud Manager, brings you up to speed with the state-of-the-art and best-practices in Cloud Computing and Kubernetes, and builds-up your knowledge to learn how to be effective in setting up a cloud enviornment to deploy your applications and services, and implement CI/CD pipelines.

You get familiar with the key concepts in Kubernetes, and get practice performing common devops workloads. Tools covered include **kubectl** command-line tool, package manager **Helm**, and several Web UI based interfaces to K8s with a strong emphasis on **Dashboard** and EInnovator **Cloud Manager**.

You will learn: how to deploy, upgrade and scale applications, how to configure applications, how to deploy marketplace services, how to expose services, how to setup **Tekton** CI/CD pipelines, how to secure access to K8s resources, and how to install and setup K8 custom resource extensions (operators).

Structure & Labs: The course is structured in multiple sessions (modules), each with a trainer-lead presentation and a practical hand-on lab. You will be provided with a K8s cloud environment to perform the labs, which you can continue to use after the course.

Who can benefit from this course? All Cloud Architects, Developers, Devops Personnel, and Kubernetes Practitioners, looking to learn how to setup and use cloud environments for application and service deployment, based on Kubernetes and ecosystem tools.

Pre-requisites: None.

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