

En-lighten Technology Ltd

GitOps Fundamentals

Overview

GitOps is a set of principles that help automate deployment of applications to a Kubernetes cluster. Flux is an open source tool that allows you to implement GitOps in your organization. This course starts by describing what GitOps is and what advantages it has over traditional Continuous Deployment (CD) approaches. It then proceeds to teach you how you can use Flux to implement GitOps.

Attendees will learn:

- What GitOps is and the benefits it brings to software delivery
- How to setup Flux and how it works
- How to deploy applications to Kubernetes with Flux and Helm
- Define a declarative setup for applications
- What is Progressive Delivery and how it can be implemented with Flagger

Audience

This course is suitable DevOps engineers and software developers who want to gain an understanding of GitOps

Workshop Approach

The workshop is hands-on, with around 40% of the time on exercises.

Workshop Duration: 1 day

Workshop Content

Introducing GitOps

- What is GitOps
- GitOps use cases
- Advantages and disadvantages of GitOps
- Core concepts
 - Sources
 - Reconciliation
 - Kustomization
 - Bootstrapping
 - Progressive delivery

Flux GitOps Toolkit Components

- Source controller
- Kustomize controller
- Helm controller
- Notification controller
- Image automation controllers

Flux with Helm

- Flux and Helm clients

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- Managing Helm releases
- Customising releases
- Managing secrets and config maps
- Automatic release upgrades
- Automatic uninstalls and rollback

Security

- Best practices
- Context based authorization
- Secrets management

Progressive Delivery

- Introducing flagger
- Routing providers
- Canary deployment