

## Kubernetes Operators – and exploratory assignment

2-LINER Description: Explore all aspects of Kubernetes by building a few Kubernetes Operators (applications that allow you to manage complex workloads)

### Description of the assignment

- Kubernetes, an open source orchestrator, is a popular choice for managing containerized applications. Using a multitude of basic components of Kubernetes (such as Services and Deployments) it is fairly easy to deploy stateless applications (web applications, API services, ...) and dynamically scale and even upgrade them.
- Running more stateful applications (such as caches, databases, ...) can be more complex and this calls for some basic knowledge about the application domains so it is managed correctly.
- Within the Kubernetes-community, this domain specific knowledge is mostly implemented in a so-called 'Operator' that enlarges the Kubernetes API with Custom Resource Definitions on which users can configure and manage applications.

### [Goals]

- Research the many available Operator SDK (e.g. Kubebuilder, The Operator Framework, ...)
- Implement one or more of these Operators for a more complex, stateful application such as
  - RabbitMQ
  - Concourse CI
  - Locust: Distributed Load Testing Framework
  - Blink! LED Operator op een Raspberry Pi Kubernetes Cluster

### [What will you gain?]

- Knowledge and experience using Golang (a popular programming language)
- You will gain knowledge and experience in Kubernetes and many more advanced components

### [What do you need?]

- A general interest in backend development
- Basic knowledge in Golang is a plus
- An eagerness to explore the Kubernetes world in a relatively short period of time

### [Location of your assignment]

- Veldkant 33B, 2550 Kontich

### [Your mentor]

- Johan Siebens – Business unit manager OnTheSpot

### [Technologies you'll be using]

- Golang
- Docker