# Developer on Kubernetes

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DevStaff April 2019

# Who Am I ?

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Head Architect @ Cloudstreet Oy and  a passionate Java software engineer, where he works in all aspects of performance and tuning in each phase of a project life cycle. His focus has primarily been on performance, working on architecting, developing, and tuning low latency and high throughput telco products. He is also a co-organizer of JHUG meetups and in Program Committee of VoxedDays Athens.

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# Agenda

Overview

Understanding the problems

Available Solutions

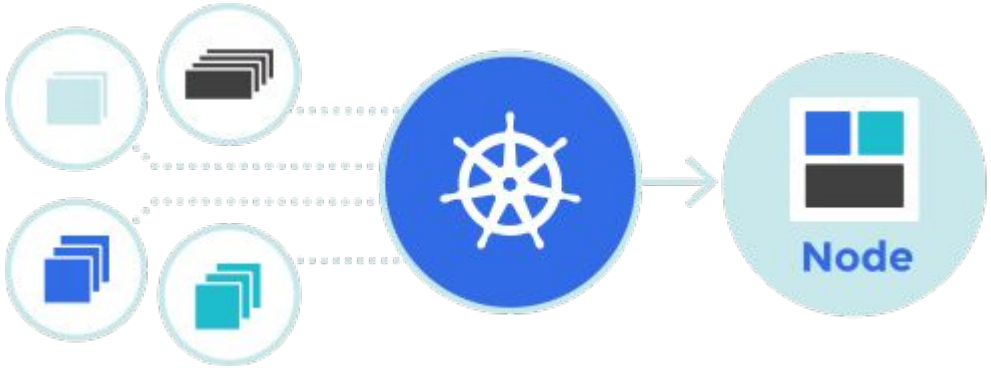
Live Demo

Conclusions

Questions

# Overview

Kubernetes is a portable, extensible open-source platform for managing containerized workloads and services, that facilitates both declarati configuration and automation. It has a large, rapidly growing ecosystem. Kubernetes services, support, and tools are widely available.



# Understanding the problems

01 Developers need to deploy code remotely, and test their application which is time costly.

02 Complicated infrastructure that developers need to have knowledge of DevOps.

03 Development is “different” from production … leading to bad quality and slow delivery times.

# Available Solutions

- Draft by Microsoft ..


- Skaffold by Google

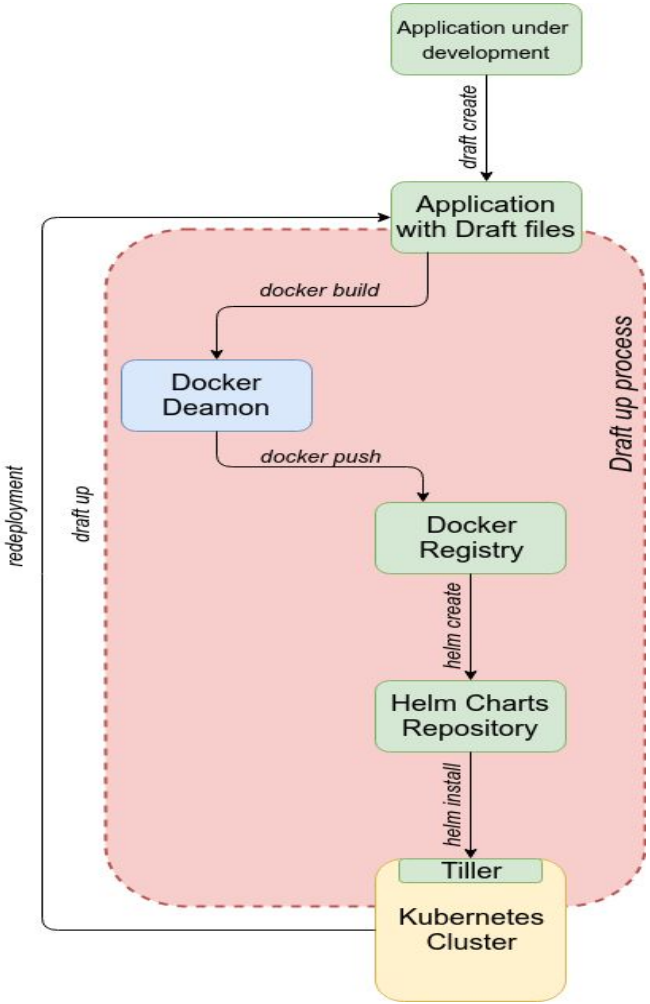
- Others like CodeReady by Redhat, Garden.io, othe

# Draft

Draft targets the “inner loop” of development workflow

Automatically discovers the code that you are working on and automatically generated all needed configuration files.

Kubernetes, Docker Daemon and Helm are the prerequisites



# Draft Features

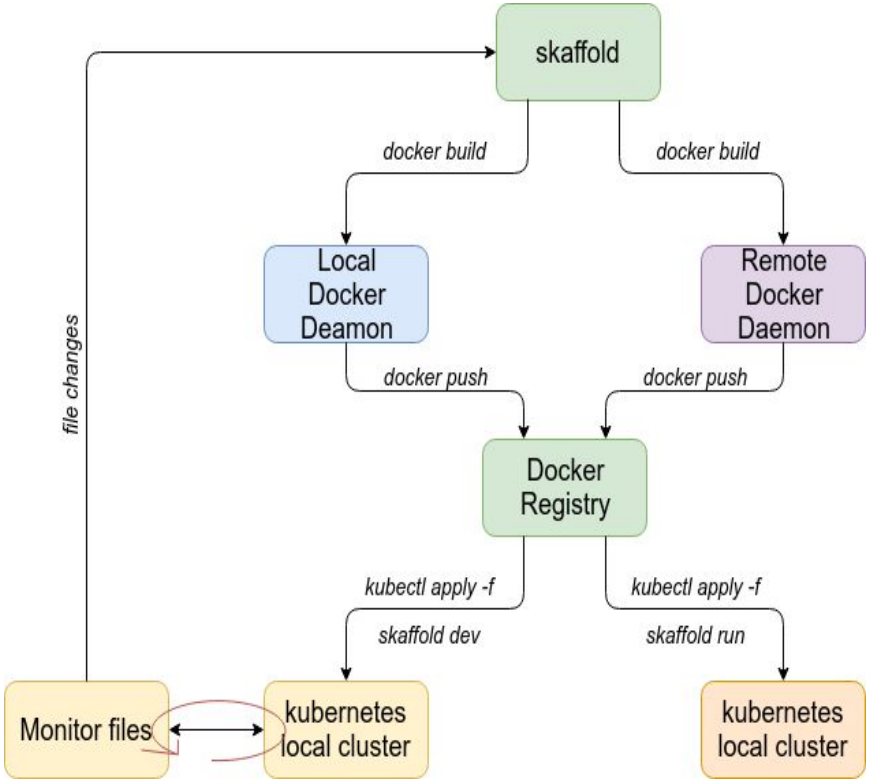
- Fully custom configuration files. Furthermore a custom language pack can be implemented fulfilling the developers needs.
- A wide range of  supported languages without the need to write dockerfile or k8s manifests is provided.
- Configuration and Deployment files are stored in the application source code directory leading to construct integration pipelines very efficiently.
- Build and deployment configuration into the source tree, making it trivial to construct continuous integration pipelines.
- All builds are executed locally.
- Monitors local changes and trigger deployments. This feature is configurable and can be enabled by the developer.
- It allows the developer to use either the local or remote Kubernetes cluster in order to deploy it’s application.

# Skaffold

Support two different mode (dev and run)

Genereated one configuration file.

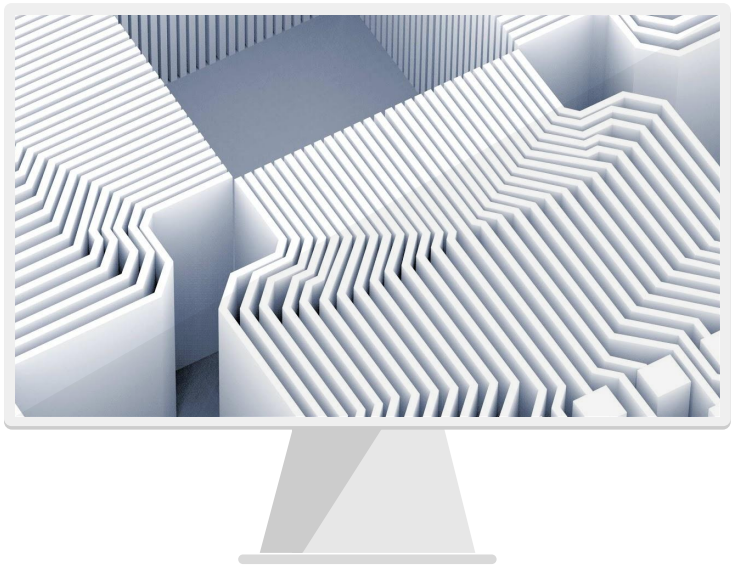
Only kubernetes and docker daemon (in case on local build is needed).



# Skaffold Features

- Monitors local changes in your source code and automatically trigger build/push deployments to local or remote Kubernetes clusters.
- It support remotes and local docker engines and registries.
- Supports various application components and only the element of the applications stack that changes will be deployed.
- Supports existing tooling and workflows with the ability to build and deploy APIs that make each implementation composable to support various different workflows.
- Can be used from multiple different environments, such as the local developer environment or any CI since it is CI vendor independent (not need for any plugin for kubernetes or other tool.
- Skaffold supports applications consisting of multiple components

Live Demo



# Conclusions

Both solution supports automatic deployment to local and remote kubernetes clusters.

Skaffold provides more options/flexibility to support complicated products and technologies but with additional complexity to create configuration files

Draft support auto generation of configuration files for a number of languages. This can be extended to additional ones.

Need to consider your application and choose the most appropriate one.

# Resourses

- Draft - https://draft.sh/
- Skaffold - https://skaffold.dev/
- MicroK8s - https://microk8s.io/
- Local Kubernetes for Windows - https://codefresh.io/kubernetes-tutorial/local-kubernetes-windows-minikube-vs-docker-desktop/
- Local Kubernetes for Linux - https://codefresh.io/kubernetes-tutorial/local-kubernetes-linux-minikube-vs-microk8s/
- Local Kubernetes for Mac - https://codefresh.io/kubernetes-tutorial/local-kubernetes-mac-minikube-vs-docker-desktop/

# Questions ?