

PRODUCTION GRADE KUBERNETES APPLICATIONS

Summary

Kubernetes has arguably become the leading container orchestrator for running Cloud Native applications. The Kubernetes community has a plethora of information available on both how to get started with Kubernetes, as well as what people learned from running different workloads in production. But what works for one type of workload isn't immediately the best for another type of workload. And the best deployment strategy for one app might render another one offline on every deploy.

In this hands-on workshop we will recap the fundamental concepts and features of Kubernetes, ensuring you have the basics you need to reason about and architect Cloud Native applications on Kubernetes. Next, over the course of multiple exercises we walk you through taking a demo application from a naive first deployment to improving it step by step, implementing best practices. We will discuss these best practices as well as common anti-patterns for deploying and running applications on Kubernetes in detail.

What can I expect from the workshop experience?

After this workshop you will have an overview of the key Kubernetes concepts, have practiced deploying, updating and exposing an application running on a cluster and be able to understand the reasons behind and how to implement best practices for production grade apps on Kubernetes.

Outcomes

By the end of this workshop, you will be able to:

- Understand the most important areas to consider when running an application on Kubernetes in a Production environment
- Use advanced Kubernetes features to effectively run a stateless application
- Demonstrate multiple ways to update a running application
- Explain how Kubernetes can be integrated with common CI/CD pipelines
- Demonstrate how to manage external access to an application

- Apply best practises for effective configuration management
- Apply appropriate security controls to ensure a secure application
- Summarize approaches to application monitoring and logging
- Troubleshoot problems encountered when running on an application on Kubernetes

Who should attend

This workshop is for Software Developers, DevOps engineers and application architects who want to get working knowledge of Kubernetes and how advanced features can be used to make application development more agile, improve availability and sustainability. This course focuses on the architectural and operational side of running mission critical applications on Kubernetes.

Topics covered

- Kubernetes' architecture and core components
- Running workloads on Kubernetes
- Advanced deployment strategies
- CD/CD integration
- Exposing an application
- Fault tolerant applications
- Configuration Management
- Managing application permissions
- Logging & Monitoring
- Troubleshooting & Debugging

Required Experience

- An Intermediate level with Containers
- An Intermediate level with Kubernetes
- Containerisation of applications
- Running Kubernetes in at least a Development environment

Format and Duration

- **Format:** Hands-on Workshop
- **Duration:** 1 day