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Sign up

Operator Kubernetes training in Go

3 days (21 hours)

Presentation

Our Kubernetes Operators with Go training course will enable you to become fully operational on Kubernetes operator creation by leveraging the power and simplicity of the Go programming language. The efficiency and ease of use of this programming language make it an ideal choice, offering unrivalled performance and reliability.

The course will familiarize you with the configuration of your development environment, so that you can master the advanced features of Kubernetes operators.
You'll learn how to manage and automate Kubernetes applications and the role of custom resource definitions.

In this training course, you'll gain theoretical and practical skills on managing your Kubernetes operators with the Go programming language.

Like all our training courses, it will cover the latest versions of Kubernetes and Go.

Objectives

- **Understanding Kubernetes operators**
- Mastering Go in the context of Kubernetes
- Master advanced operator functions

Target audience

- **DevOps engineers**
- Developers

Prerequisites

- Familiarity with Kubernetes and Kubelect
- Knowledge of the Go programming language

Kubernetes Operators with Go training program

Introduction to Kubernetes operators

- Operators' role
- Benefits
- Operator interaction in the Kubernetes architecture
- Introduction to customized resources
- Controller introductions
- Namespace-scoped vs. cluster-scoped operators

Setting up the environment

- **Tools and framework**
- GO installation
- Introduction to Minikube
- CLI configuration with Kubectl
- KubeBuilder with operator

Building an operator

- Installing KubeBuilder
- Creating a new project
- Understanding project structure
- Introduction to the SDK
- Understanding the capacity model

Web server operator development

- Define resource type
- Create API and CRD
- Writing the WebServerSpec structure in Go
- Add specification fields
- Implementing the controller in the web server

Implement the

- Reconcile function
- Write controller logic
- State changes
- Idempotence in operator actions

- Debugging and error handling

Testing and deployment

- **Writing unit tests**
- Operator deployment with local Minikube
- Check operator functionality
- Deploying the operator in a Kubernetes cluster
- Operator monitoring

Advanced functions

- Leader election in the operator
- Managing secrets
- Automatic scaling
- Versioning
- Backup strategy

Best practices

- Common development models
- High availability
- Performance optimization
- Good safety practices
- Community resources

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.