Quarkus Cloud Development

The course Quarkus Cloud Development is intended for developers who want to learn how Quarkus can be used to develop microservices and serverless applications.

Prerequisite Course Quarkus Cloud Development
Knowledge and experience with Java programming and web technology is required to participate in this course.

### Realization Training Quarkus Cloud Development
The theory is treated on the basis of presentations and is interspersed with exercises. Demos are used to clarify the theory. Course times are from 9:30 to 16:30.

Certificate Quarkus Cloud Development
Participants receive a certificate Quarkus Cloud Development upon successful completion of the course.

Duration: 3 days	**Price: € 1950**

Open Schedule

Quarkus Cloud Development
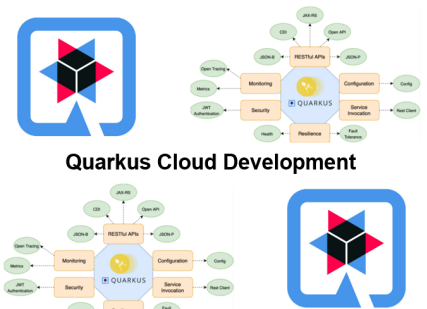
Content Course Quarkus Cloud Development

The course Quarkus Cloud Development teaches participants to develop applications with the Quarkus framework. Quarkus is a full-stack, Kubernetes-native Java framework built for Java virtual machines (JVMs) and native compilation. In Quarkus Java is specifically optimized for containers, making it an effective platform for serverless, cloud and Kubernetes environments.

Quarkus Intro
The course Quarkus Cloud Development starts with an overview of the essentials of the Quarkus framework. Among other things, Quarkus Dependency Injection, which is based on CDI (Context and Dependency Injection), is discussed. It also provides the correct information to the GraalVM for compilation to native code.

Quarkus Configuration
Next attention is paid to the configuration options of Quarkus applications. This includes configuration parameters, YAML configuration and programmatic configuration.

Rest Services
Quarkus is designed to interoperate with well-known Java standards, frameworks and libraries. The course covers how Quarkus can be used to define and approach JSON Rest Services. Attention is also paid to the Open API.

DataAccess
The support that Quarkus has for Data Access with Hibernate ORM and JPA is also treated. Connection pooling and transactions are covered as well.

Messages
Part of the program of the course Quarkus Cloud Development is messaging between applications. Various messaging patterns and stream processing with Apache Kafka are discussed.

Security
Next attention is paid to Security in Quarkus applications. Implementations of various security mechanisms are treated including JSON Web Tokens and OAuth2.

Quarkus Cloud
Quarkus applications are ideally suited to be hosted in a public cloud or in an internally hosted Kubernetes cluster. It is discussed how characteristics such as fast startup and low memory usage are important to keep hosting costs low.

Monitoring and Extensions
Finally attention is paid to monitoring Quarkus applications with the Micrometer Extension and Prometheus. And also writing extensions yourself is covered.

Modules Course Quarkus Cloud Development

Module 1 : Quarkus Intro	Module 2 : Quarkus Configuration	Module 3 : Rest Services
What is Quarkus?	Quarkus Configuration	Rest JSON Services
Graal VM	SmallRye Config AP	Consume JSON Payload
Imperative Code	Configuration Parameters	Produce JSON Payload
Reactive Code	ConfigProperty Annotation	Scalability
Dependency Injection	YAML Configuration	Reactive Rest Clients
Microservices	Programmatic Configuration	CRUD Services
Serverless Apps	Build Time Configuration	Bean Validation
Quarkus CLI	Mapping to Objects	Using Websockets
Quarkus Tooling	Extending Configuration	Multipart Clients
Packaging	Application Startup	Open API
Bootstrapping	Application Termination	Swagger
Module 4 : Data Access	**Module 5 : Messaging**	**Module 6 : Security**
Connecting to Data	Asynchronous Messaging	Security Architecture
JDBC Drivers	Messaging Patterns	Authentication Mechanisms
Reactive Drivers	Reactive Messaging	Basic Authentication
Hibernate and JPA	Messaging with SmallRye	Form Authentication
Unified Configuration	Using Apache Kafka	Proactive Authentication
Connection Pooling	Stream Processing	TLS Authentication
Transactions	Schema Registry	Identity Providers
Named Datasources	Using Avro	OAuth2
Datasource Injection	Serialized Records	JSON Web Tokens
Health Checks	Java Messaging Service	CORS
Zero Config Setup	Event Bus	Authorization
Module 7 : Quarkus Cloud	**Module 8 : Monitoring**	**Module 9 : Extensions**
Kubernetes Extension	Micrometer Extension	Role of Extensions
Kubernetes Resources	Prometheus MeterRegistry	Ahead of Time Compilation
Using dekorate	Dimensional Labels	Extension Parts
kubernetes.json	Review Generated Metrics	Runtime Modules
kubernetes.yml	Inject the MeterRegistry	Deployment Module
Deployment Resources	Adding Counters	GraalVM's Native Compilation
StatefulSet	Naming Conventions	Quarkus Bootstrap Phases
Job or CronJob	Prometheus Endpoint	Augmentation
Labels and Annotations	Shaping Data	Static Init
Exposing Application	Review Collected Metrics	Runtime Init
Ingress Rules	Add a Timer	Testing Extension