

# 4 reasons to try Quarkus

A modern, Kubernetes-native Java framework

Quarkus is an open source, Kubernetes-native Java™ framework tailored for GraalVM and OpenJDK HotSpot. It offers a full-stack framework, using top Java libraries and standards. With Quarkus, Java can be a leading platform in Kubernetes and serverless environments, while offering developers a unified reactive and imperative programming model to address a wider range of distributed application architectures. Red Hat is the Quarkus project sponsor and a top contributor to the Quarkus community.

This checklist details four reasons why developers should use Quarkus as a programming tool.

## 1 Use in cloud, containers, and serverless environments

Low memory consumption and fast first response time makes Quarkus ideal for cloud, containers, and serverless environments. With Quarkus, you can:

- Tailor your application for GraalVM and HotSpot using its compile-time boot approach.
- Benefit from fast first response time—milliseconds versus the 10 seconds it takes a traditional cloud-native stack.<sup>1</sup>
- Reduce resident set size (RSS) memory—uses one-tenth of the memory needed for a traditional cloud-native stack.<sup>1</sup>
- Gain near instant scale up and high-density memory utilization in container orchestration platforms like Kubernetes.
- Achieve much higher workload density, reducing overall costs for hardware and cloud compute and memory.

## 2 Gain productivity

Quarkus includes built-in capabilities to automate repetitive tasks, allowing developers to get their job done faster. Quarkus features:

- Unified configuration.
- Zero configuration and live reload.
- Streamlined code for 80% of the common usages and flexible code for the other 20%.
- Simplified compilation of Java code to machine language with a one-line command.
- Compatibility with popular frameworks like Eclipse MicroProfile, Spring Dependency Injection (DI), Hibernate, and more—allowing developers to use preferred frameworks or standards.

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<sup>1</sup> Quarkus homepage, <https://quarkus.io/>. Methodology found at <https://quarkus.io/guides/performance-measure>.

### 3 Choose your development model

Quarkus seamlessly brings together imperative and reactive models, so developers can use the technology that best fits their use case. With Quarkus, you can choose:

- Reactive development.
- Imperative development.
- A mix of these development models in the same application.

### 4 Optimize Java

Quarkus optimizes Java and makes it efficient for containers, cloud, and serverless environments with memory consumption optimization and a fast first response time. Quarkus:

- Features a low learning curve for Java developers.
- Makes Java comparable to natively compiled, high-level programming languages.
- Includes many capabilities—from database access to integration and business automation.
- Supports microservices architectures and development.

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