

# Four 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.

---

<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.

Visit the [Quarkus community](#) to learn about the Red Hat® commitment to the Java community and open source.

Register for our [virtual event on cloud-native application development](#), including Quarkus.



#### About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



facebook.com/redhatinc  
@redhat  
linkedin.com/company/red-hat

**North America**  
1 888 REDHAT1  
www.redhat.com

**Europe, Middle East,  
and Africa**  
00800 7334 2835  
europe@redhat.com

**Asia Pacific**  
+65 6490 4200  
apac@redhat.com

**Latin America**  
+54 11 4329 7300  
info-latam@redhat.com

redhat.com  
#F19180\_0919

Copyright © 2019 Red Hat, Inc. Red Hat, Red Hat Enterprise Linux, the Red Hat logo, and JBoss are trademarks or registered trademarks of Red Hat, Inc. or its subsidiaries in the United States and other countries. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries. Java and all Java based trademarks and logos are trademarks or registered trademarks of Oracle America, Inc. in the U.S. and other countries.