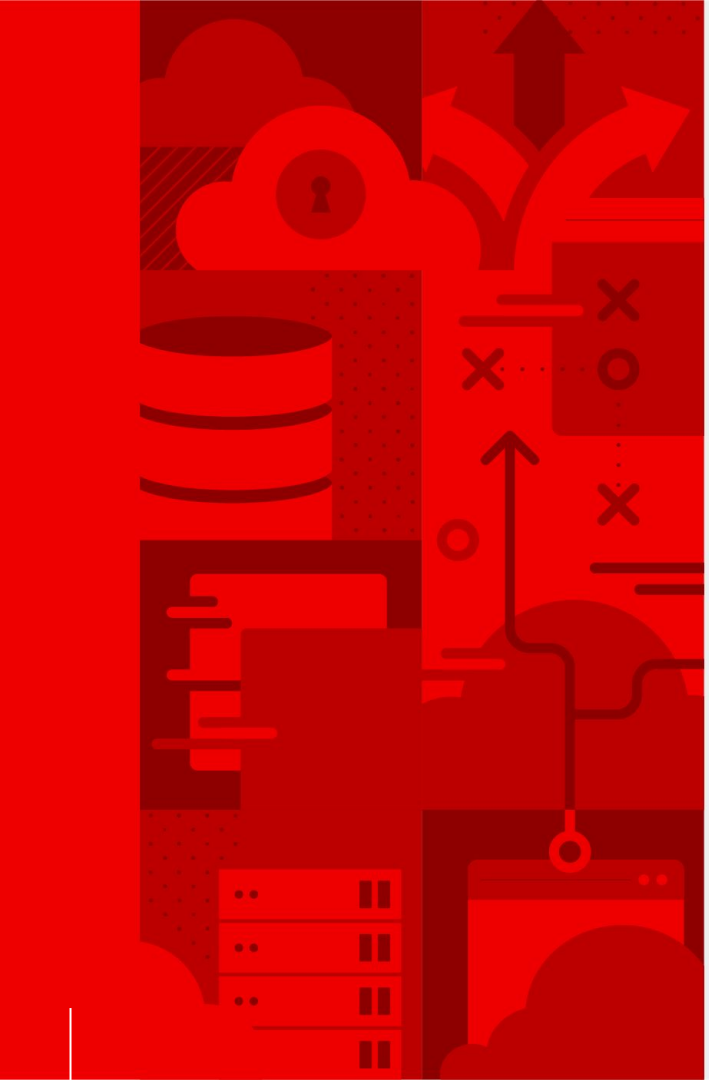

Quarkus on Openshift

November 2020

Red Hat Middleware Product
Marketing Team

Red Hat

QUARKUS

Supersonic. Subatomic. Java.

Red Hat

Why Quarkus?

“Supersonic, Subatomic Java”

Cost Savings

Cloud efficiency (low memory, fast startup, high density), serverless deployments

Faster Time to Market

Developer productivity, extensions ecosystem, low learning curve, keep competitive edge

Kubernetes-Native

End-to-End Kubernetes experience, Remote development, Dev. Console, CodeReady, Serverless

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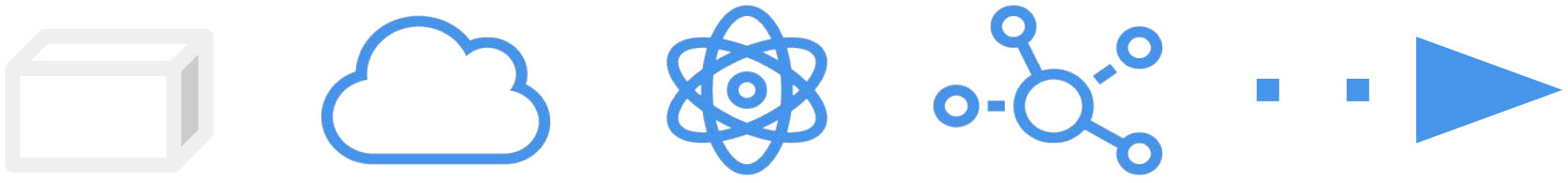
Quarkus - Kubernetes Native Java



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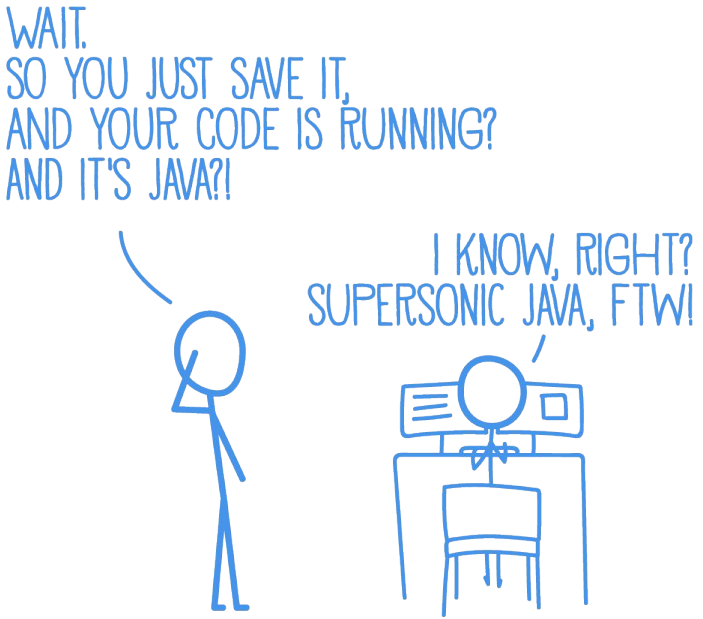
Developer Joy and Operational Excellence

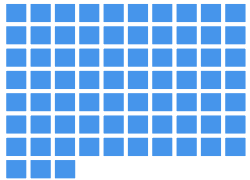
- Zero config, live reload in the blink of an eye
- Remote development with Openshift
- Integration with Dev Console
- CodeReady Workspaces
- Based on standards, but not limited
- Unified configuration
- No hassle native executable generation



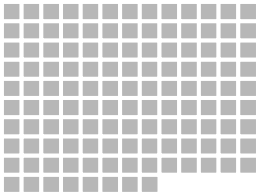
Developer Joy and Operational Excellence

- Improved memory efficiency
- Increased Deployment Density
- Faster startup
- Smaller disk foot-print

Quarkus + Native



Quarkus + JVM



Traditional
Cloud-Native Stack

Operational Impact of Language/Frameworks

"We could run 3 times denser deployments without sacrificing availability and response times of service"

Thorsten Pohl
Lufthansa Technik AVIATAR Product Owner Automation & Platform Architect

"When you adopt Quarkus, you will be productive from day one since you don't really need to learn new technologies."

Roberto Cortez
Talkdesk Principal Architect

"Quarkus seemed to provide the performance boost we needed while at the same time having a good backer (Red Hat) and relying on battle-tested technologies"

Christos Sotiriou
DXL technical lead at Vodafone Greece

Kubernetes-Native Java from First Principles

Polyglot - power and responsibility

The power of choosing any language needs to be tempered with choosing the right language. Language features are only valuable if you have developer experience in that language.

Toolchain beyond the desktop

Cloud-native application development extends beyond the IDE, introducing unique challenges for inner/outer loop development and CI/CD pipeline automation.

Framework Features and Ecosystem

Minimize time-to-value by leveraging platform and framework features for common cloud-native requirements such as service discovery, eventing, connectivity, and APIs.

Operational Efficiency

Footprint and performance are critical decision factors when determining the overall cost of the platform to operate, manage and scale.

Red Hat

Kubernetes-Native Development with Quarkus

TIOBE : #1
IEEE : #1
SlashData : #2
RedMonk : #2

Solid Foundation

Java consistently ranks in the Top 3 of programming languages in use today with a community of 7-10 million developers.

Stunning Performance

Optimized to provide native-level memory footprint and startup time, allowing for increased density, performance and elasticity at lower cost.

Toolchain

End-to-end toolchain including OpenShift Developer Console, Code Ready Workspaces, project generators in IDE and web, live-reload for lightning fast inner loop workflow, and Tekton pipelines integration.

Community

Large catalog of extensions connects your applications with best of breed-technologies including Camel, Jaeger, Prometheus, Istio, Kafka and more.

Red Hat

Use Cases

"Quarkus is an ideal runtime for"

NET NEW

Low memory footprint + lightning fast startup time + small disk footprint = an ideal runtime for Kubernetes-native microservices

MONO 2 MICRO

Quarkus is a great choice to modernize existing monolithic applications by breaking it into smaller, loosely coupled microservices.

SERVERLESS

Scaling up or down (0) is extremely fast with Quarkus making it an ideal runtime for creating serverless applications.

EVENT-DRIVEN/REACTIVE

Quarkus utilizes an asynchronous, reactive event loop that makes it easy to create reactive applications.

Why Quarkus on OpenShift?

Java needs to be fast, lightweight to match modern deployment patterns

Makes Java comparable to natively compiled, high-level programming languages. Efficiently run Java applications in a cloud-native ecosystem

- Quarkus uses one-tenth of the memory needed, deploying Java more efficiently to a traditional cloud-native stack
- Achieve much higher workload density, reducing overall costs for hardware and cloud compute and memory
- Supports serverless and microservices architectures and development

Quarkus On Red Hat OpenShift

Single Step Deployment

- Includes OpenShift developer extensions
- Simplified deployment of JVM and Native mode applications
- Includes support for ConfigMap/Secrets volume mounts

Platform Integration

- No-code health probes
- Config via ConfigMap
- OpenMetrics / OpenTracing support
- Knative serving / eventing / functions
- Remote dev/debug with Live Coding
- OpenShift Dev Console

IDE Integration

- CodeReady Workspaces plugin
- Scaffold new projects
- Code completion
- Quarkus-specific API suggestions & snippets

Support Lifecycle

- Support for 3.11, latest 4.x
- Fully supported during OpenShift EUS lifecycle

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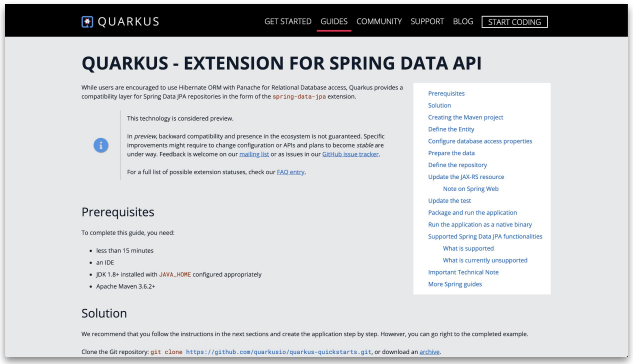
Spring to Quarkus Migration

SPRING API COMPATIBILITY IN QUARKUS

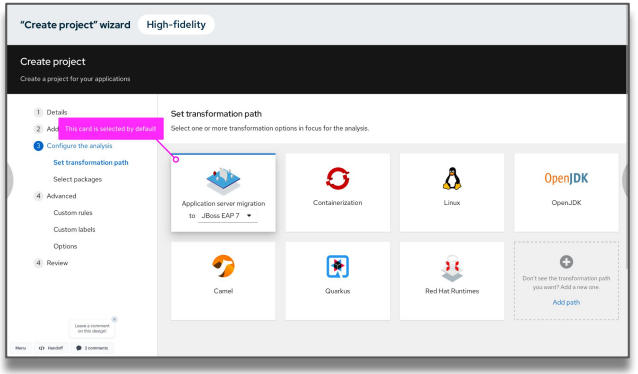
→ A subset of Spring Framework / Spring Boot APIs in Quarkus to minimize learning curve



→ Spring to Quarkus Workshop available in Q4

MIGRATION TOOLKIT FOR APPLICATIONS

→ Java code analysis, effort estimation, risk identification, migration execution via Web UI, CLI, IDE Plugins.



→ New rules and UI in MTA 5.1

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Quarkus in Production

Lufthansa

talkdesk®

asiakastieto

vodafone

(Vodafone Greece)

GoWithFlow.io

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Community Leadership

“modern stack with an active community, backed by Red Hat”

Leadership

Redhat is a leader in enterprise Java and open source communities stewardship

Kubernetes

Modern stack for Kubernetes-native microservices and serverless applications

Community

Active community with fast release cadence and timely forum replies

Additional Resources

REDHAT.COM

Red Hat build of Quarkus

Red Hat Runtimes

Red Hat Middleware Portfolio

LEARN MORE

IDC Quarkus Report

Four Reasons To Try Quarkus

What is a Java Framework?

DEVELOPERS

Documentation

Interactive Tutorials

Start Coding

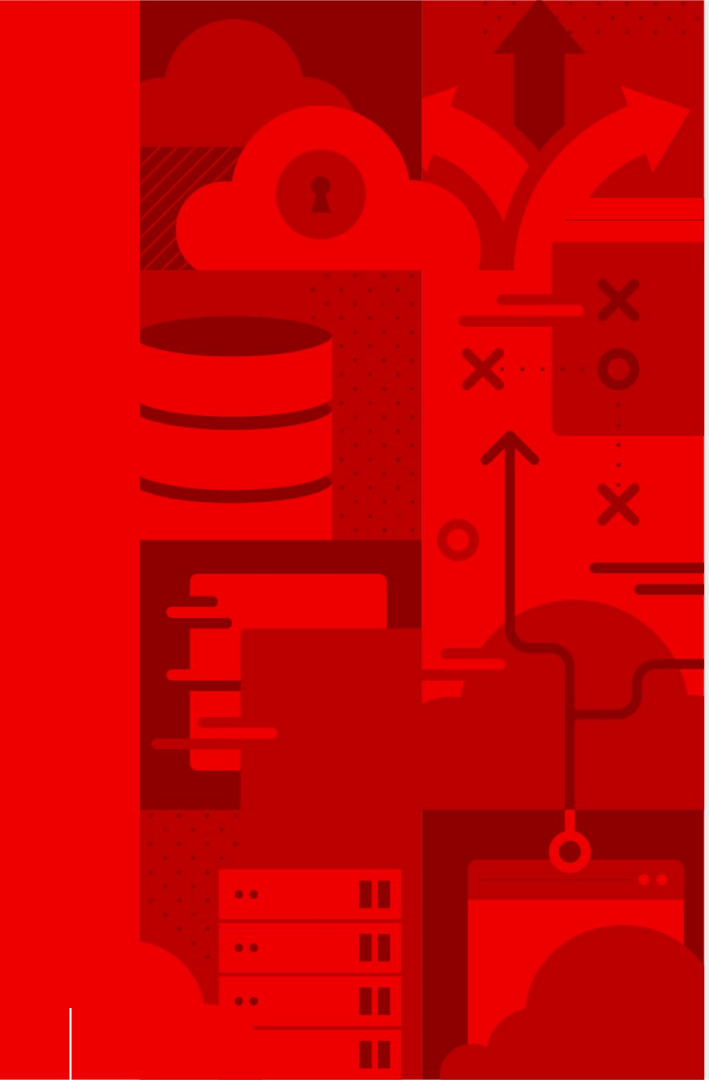
QUARKUS COMMUNITY

Quarkus.io

Blogs

User Stories

Red Hat



Thank You

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.

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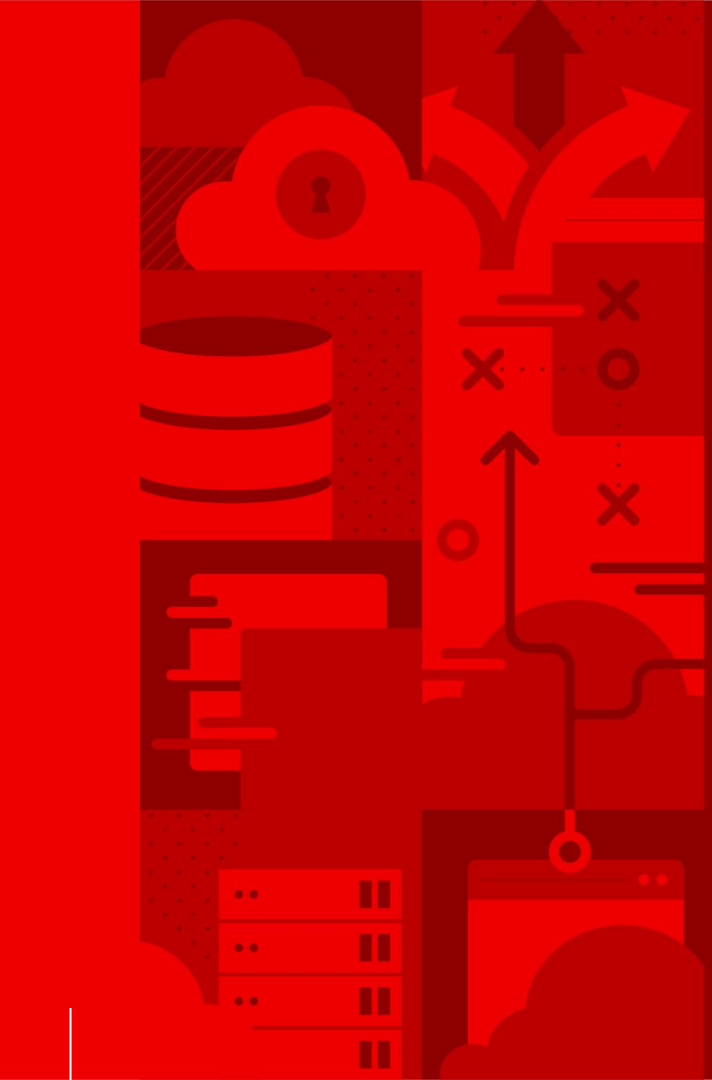

Additional Information

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EAP vs Quarkus

EAP Benefits

- Optimized for high performance on bare metal or virtualized
- Long term support by providing stable and backward compatible APIs
- Powerful management capabilities
- Focus on established standards like Jakarta EE and MicroProfile core
- Modular at the core - great for modularized monolithic applications
- Awesome management experience
- Compliancy
    - Common criteria, etc

Quarkus benefits

- Optimized for Kubernetes, Serverless & FaaS
- Very low resource utilization with native compilations
- Great for event-based architecture and reactive programming
- Great for microservices and distributed architectures
- Latest and greatest frameworks and standards, like MicroProfile core + extra, Spring APIs, Mutiny, Kafka streams
- Awesome developer experience