



QUARKUS

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Agenda

Let's make this useful for you!

- ▶ Introduction to Quarkus by Ioannis Canellos
- ▶ Integrating LLMs with Quarkus by George Andrianakis

What is Quarkus ?

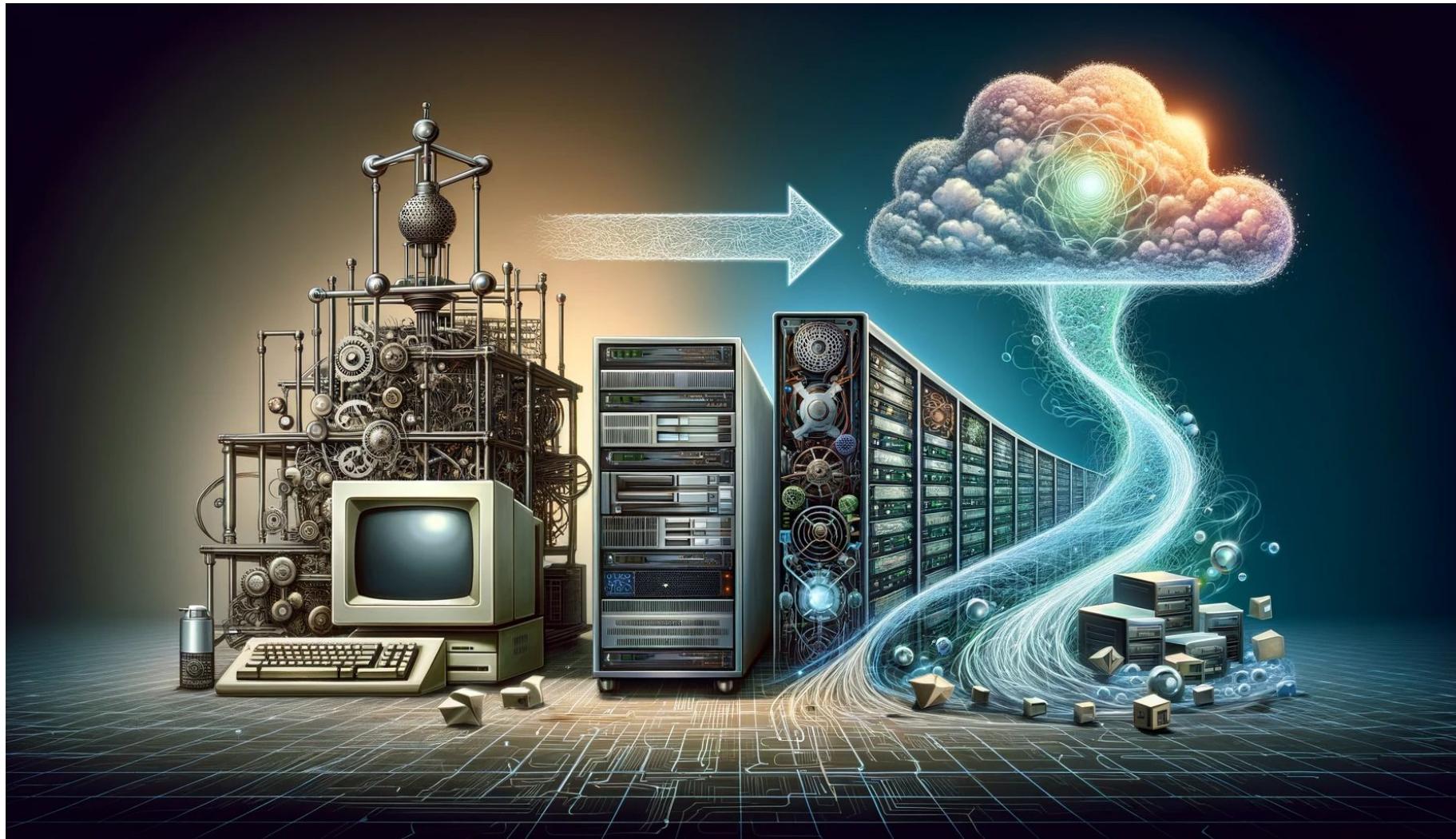
According to the website ...

The screenshot shows the official Quarkus website. At the top, there's a navigation bar with the Quarkus logo, followed by dropdown menus for 'WHY', 'LEARN', 'EXTENSIONS', 'COMMUNITY', and a 'START CODING' button. Below the navigation is a large banner with a red-to-blue gradient background featuring diagonal motion blur lines. On the left side of the banner, the text 'SUPersonic/Subatomic/Java' is displayed in large white letters. To the right, there's a description of Quarkus as 'A Kubernetes Native Java stack tailored for OpenJDK HotSpot and GraalVM, crafted from the best of breed Java libraries and standards.' Below this, it says 'Now Available QUARKUS 3.5.2' with a link to 'Read the release notes'. At the bottom of the banner are two blue buttons: 'GET STARTED WITH QUARKUS' and 'READ THE GUIDES'.

Confused ?



The evolution of software



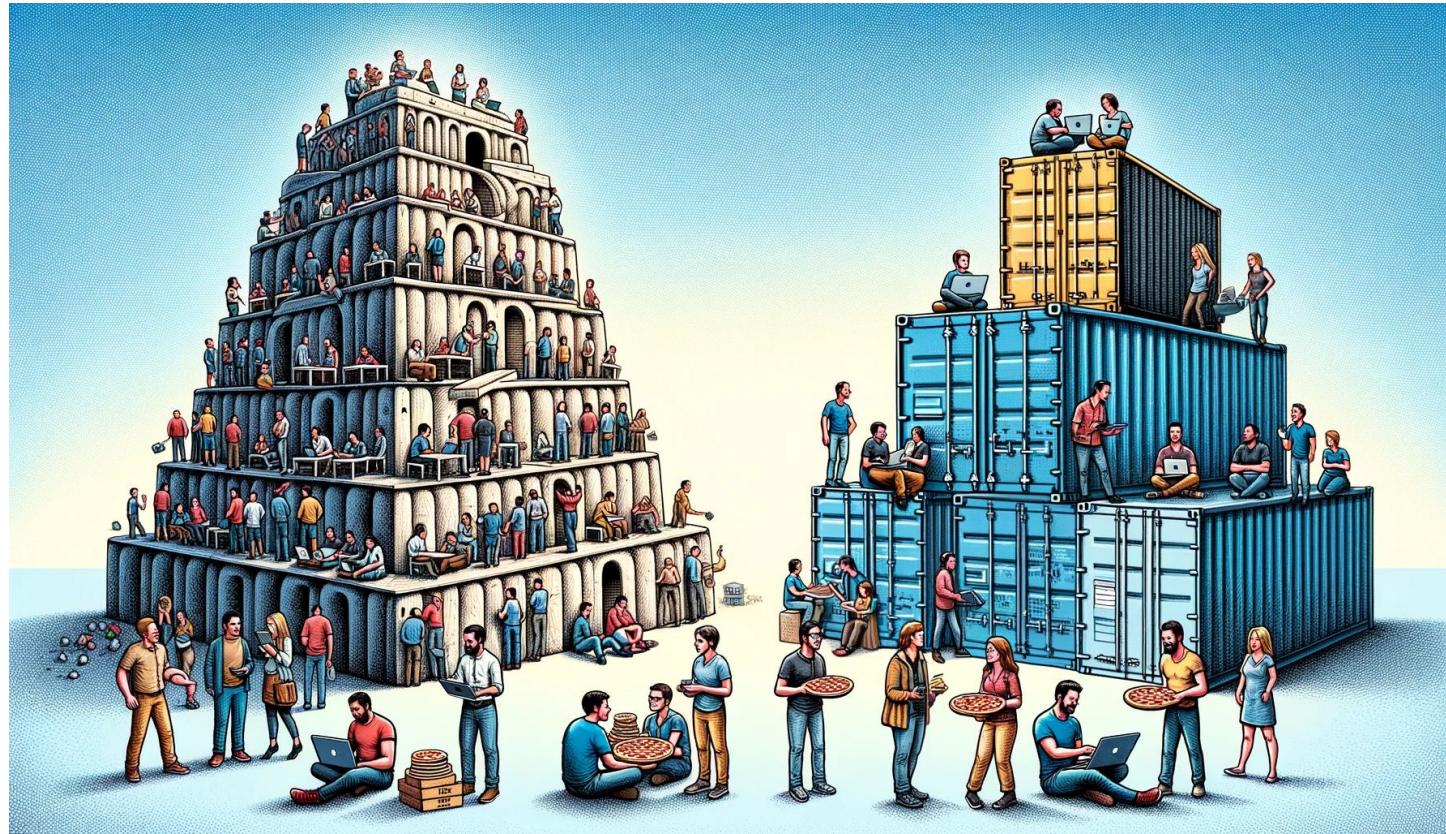
Kubernetes

Is pretty much what powers modern cloud applications



From monolith to containers

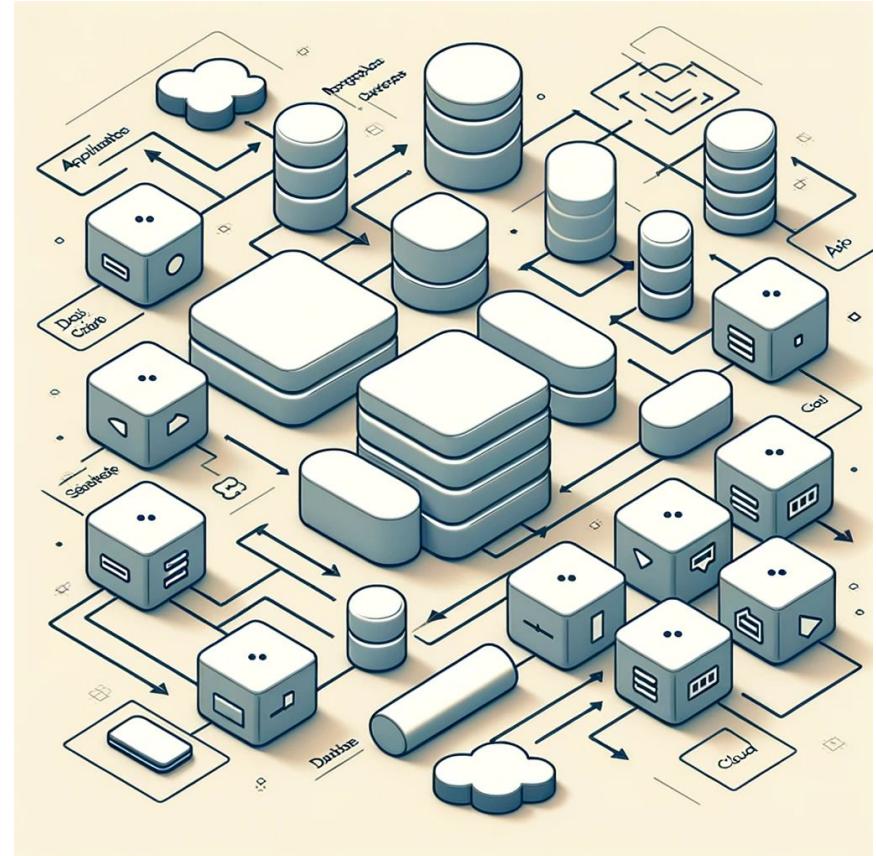
... maintained by “two pizza” teams



Microservices

Key characteristics

- Small
- Stateless
- Scalable



Scalability

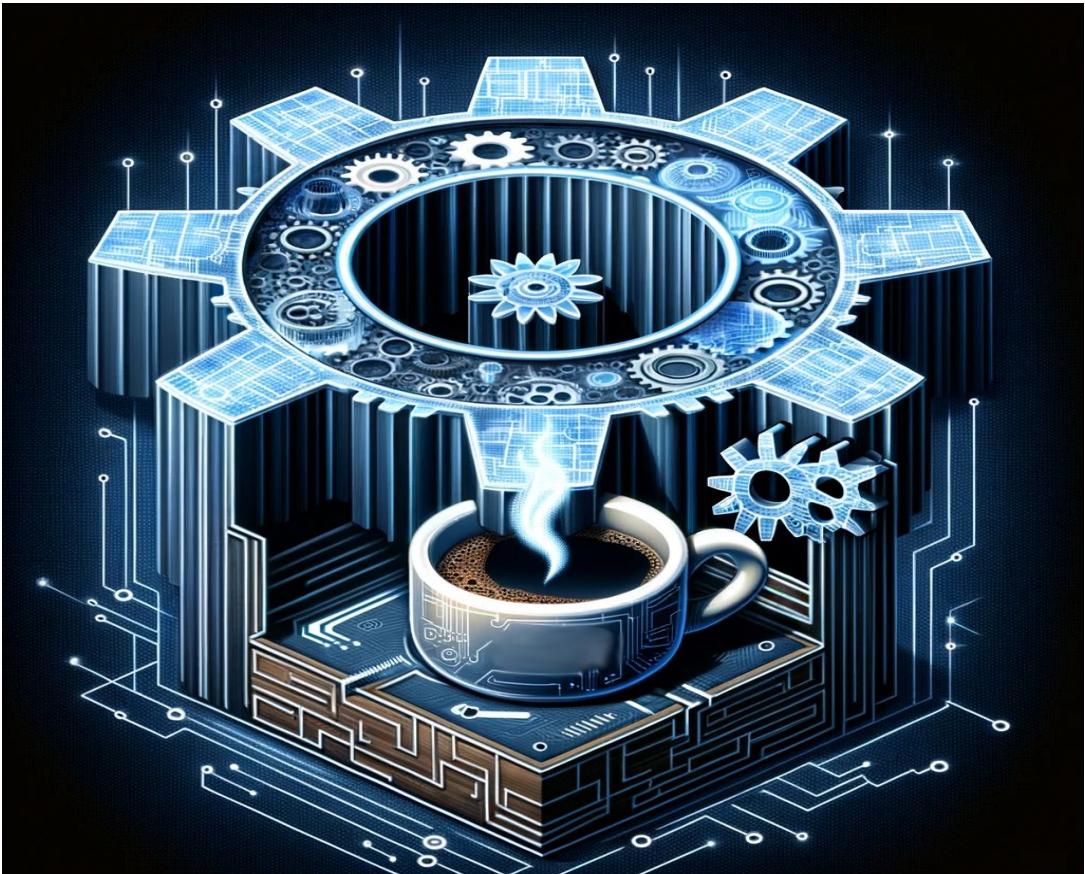
Requirements



- Performance
- Efficiency
- Startup time

Java in the Cloud

Challenges

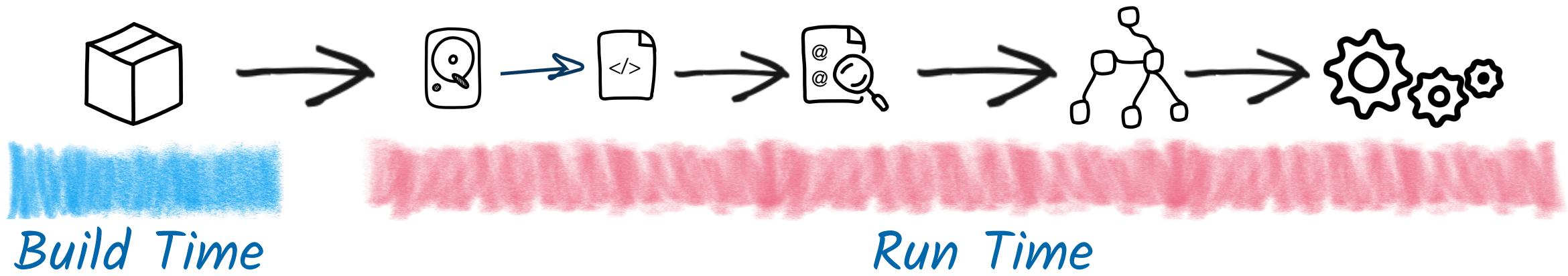


- **JVM**
 - i. Startup time
 - ii. Resources
- **Ecosystem**
 - i. Reflection
 - ii. Scanning

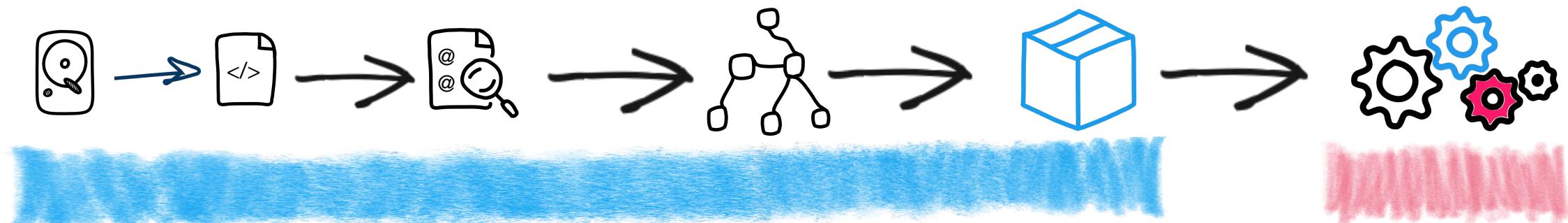
The basic idea behind Quarkus:

Optimize the Application at Build Time

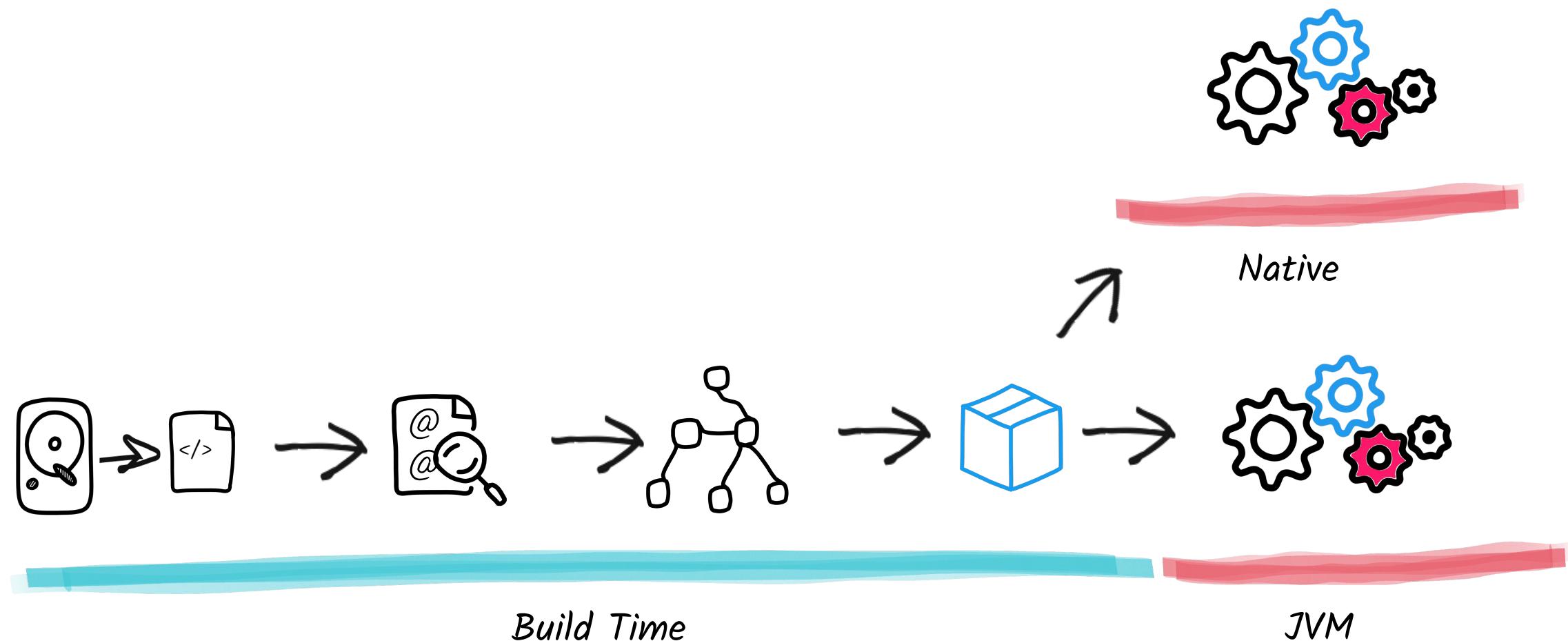
Traditional:



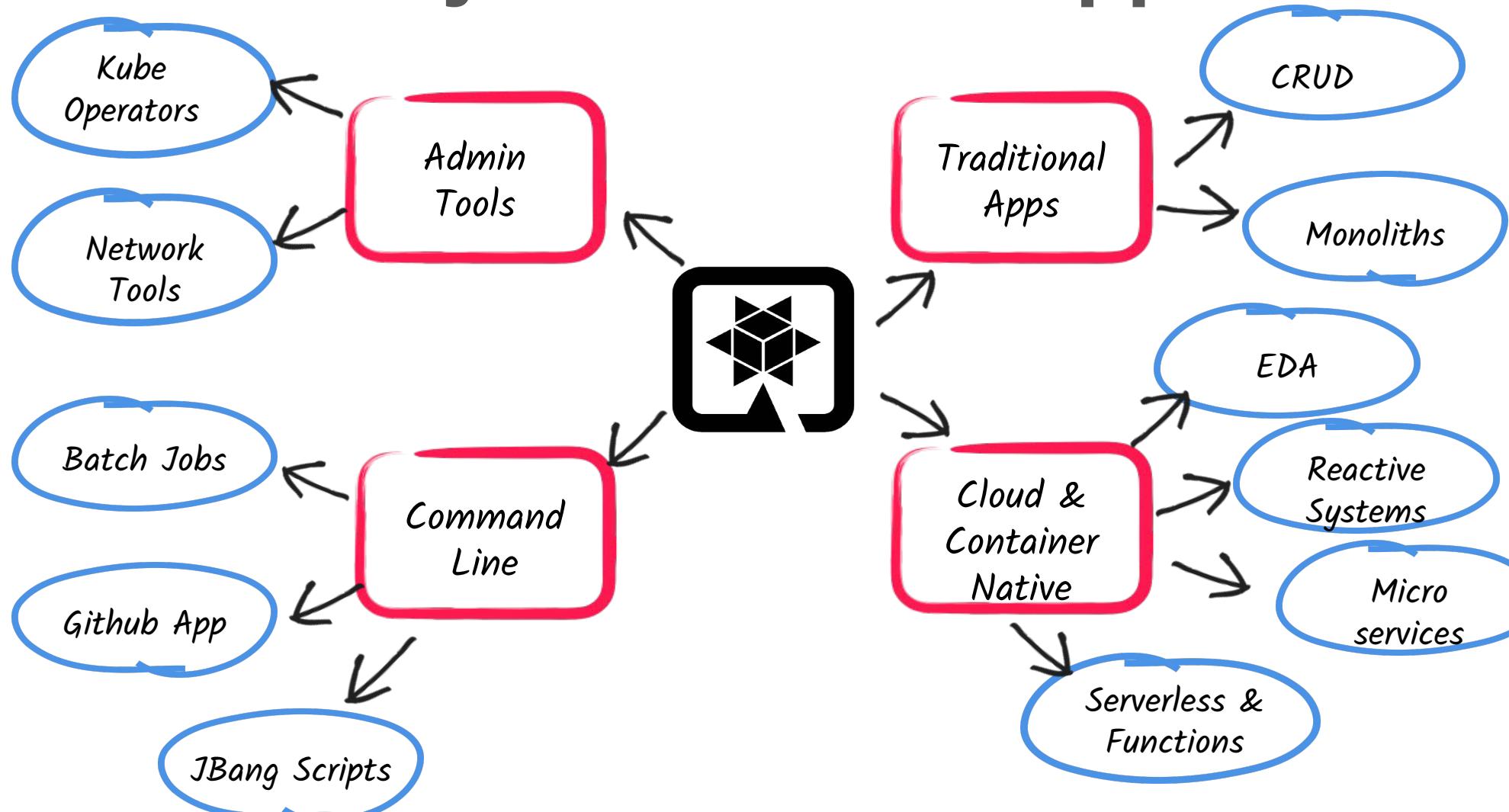
Quarkus:



Works great for compiling to Native, too!



Not just for Cloud Apps



Demo time!

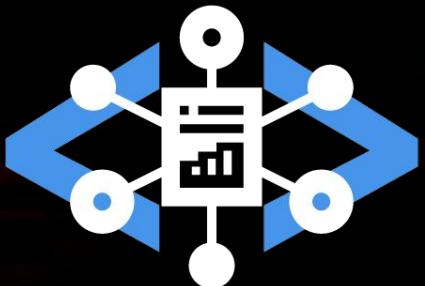
Quarkus 3 Highlights



PERFORMANCE

Hibernate ORM 6
& Mutiny 2 upgrades

Azure Functions extension



PRODUCTIVITY

Pact contract testing support

New Dev UI



KUBE-NATIVE

Kubernetes DevService

Quarkus CLI deploy
to Kubernetes



STANDARDS

Java 11 & 17

Aligns with MicroProfile 6
& Jakarta EE Core Profile 10

Azure Functions extension

Learn more at Quarkus.io/quarkus3

WHAT IS NEXT?

Areas we are exploring short term

6-12 months

ARM Support

Multi-Arch support.
Test and verify Quarkus on cloud providers
ARM machines.

Security improvements

Trusted content with SBOMS
Improved docs and developer experience.

Better legacy support

Support for JAX-WS, JCA, Saga Pattern,
etc.

Front-end development improvements

Better integration with web components and
common npm.

Areas we are exploring long term

12-24 months

Virtual Threads / Reactive

Expand @RunOnVirtualThread support
(Kafka, AMQP, gRPC...)
Improve scheduling between event loops
and virtual threads

Modern Data Streaming

Elastic, Cloud-Native, Reliable, Stateful and
Stateless stream processing
Schemeful and Schemaless

TLS, ACME, Let's Encrypt...

Simplify and improve TLS configuration
Add support for key store rotation (cert
manager, ACME...)

Overall developer experience

Improve the experience with Kubernetes /
Openshift (init containers,
telepresence-like)
Enhanced containerization

Thanks!



QUARKUS



-  <https://quarkus.io>
-  quarkusio.zulipchat.com
-  [@quarkusio](#)
-   [@quarkusio](#)
-  If you like Quarkus, star it on GitHub!
<https://github.com/quarkusio/quarkus>