redhat.

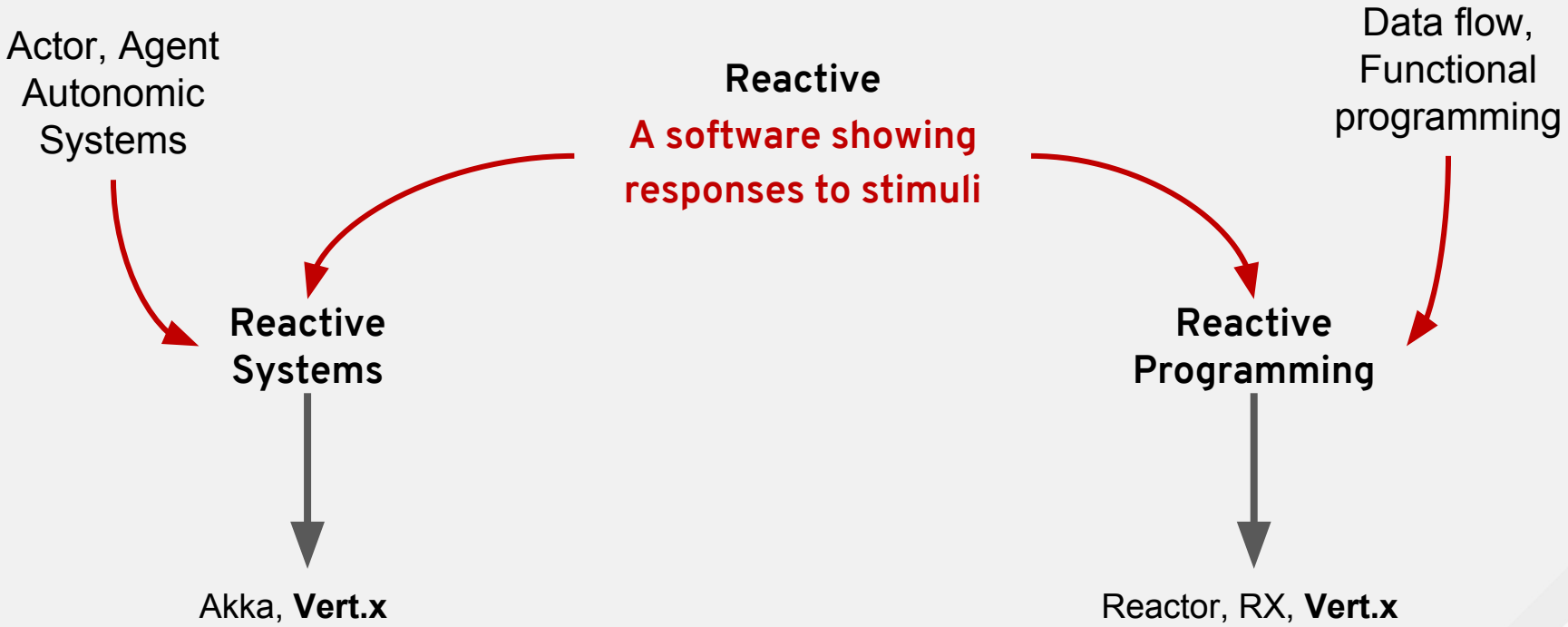
Microsoft Azure

MONOLITHS TO MICROSERVICES: APP TRANSFORMATION

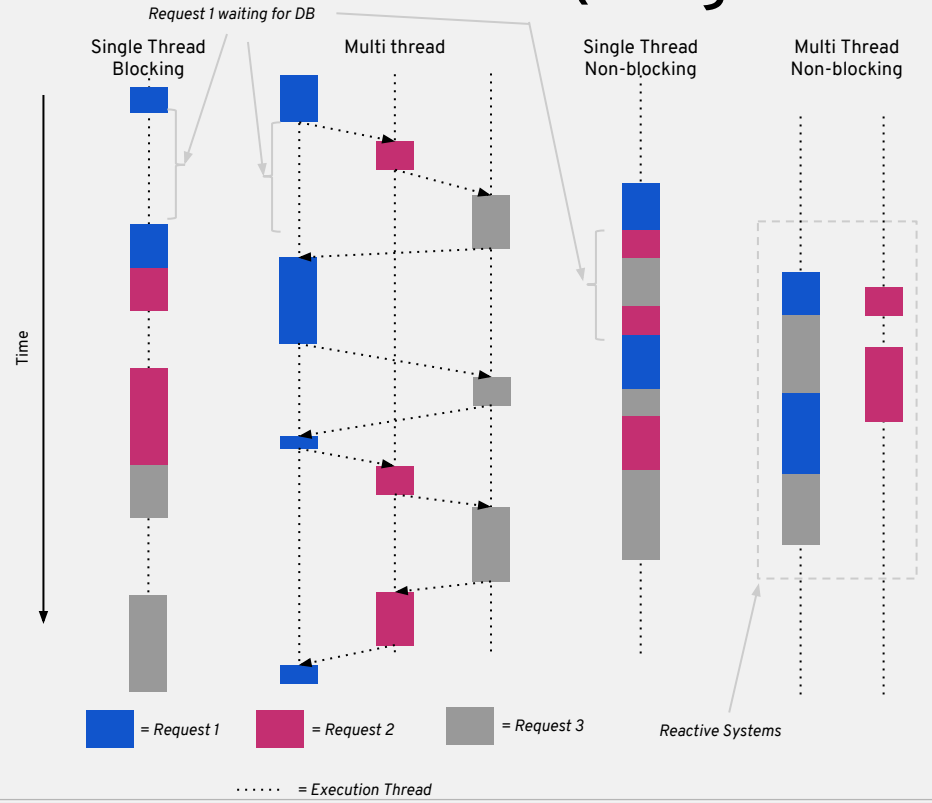
Hands-on Technical Workshop

REACTIVE MICROSERVICES

The 2 faces of Reactive



Execution Model (single core)



Blocking

- Example: CGI, early versions of server side JavaScript.
- Can only scale horizontally

Multi thread

- Example: Java EE, Tomcat, Spring (non reactive)
- Scales horizontally and vertically

Non blocking

- Example: NodeJS, Eclipse Vert.x, Akka, Spring reactive
- Scales horizontally and vertically

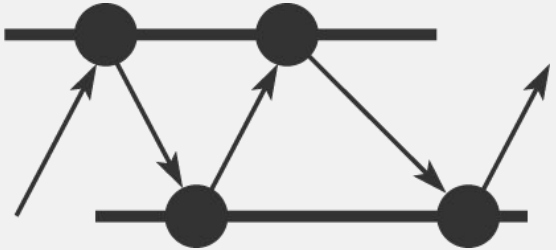
Eclipse Vert.x

VERT.X

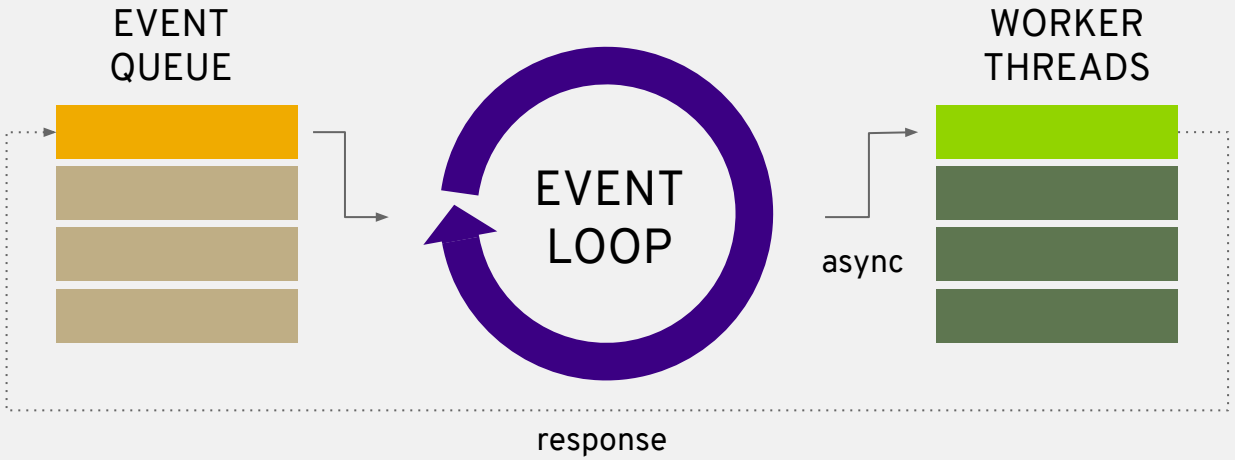
Vert.x is a toolkit to build distributed and reactive systems

- **Asynchronous Non-Blocking development model**
- Simplified concurrency (**event loop**)
- Reactive microservice, Web applications, IOT
- Ideal high-volume, low-latency applications
- Un-opinionated
- Understands clustering in its core architecture

Home - http://www.vertx.io

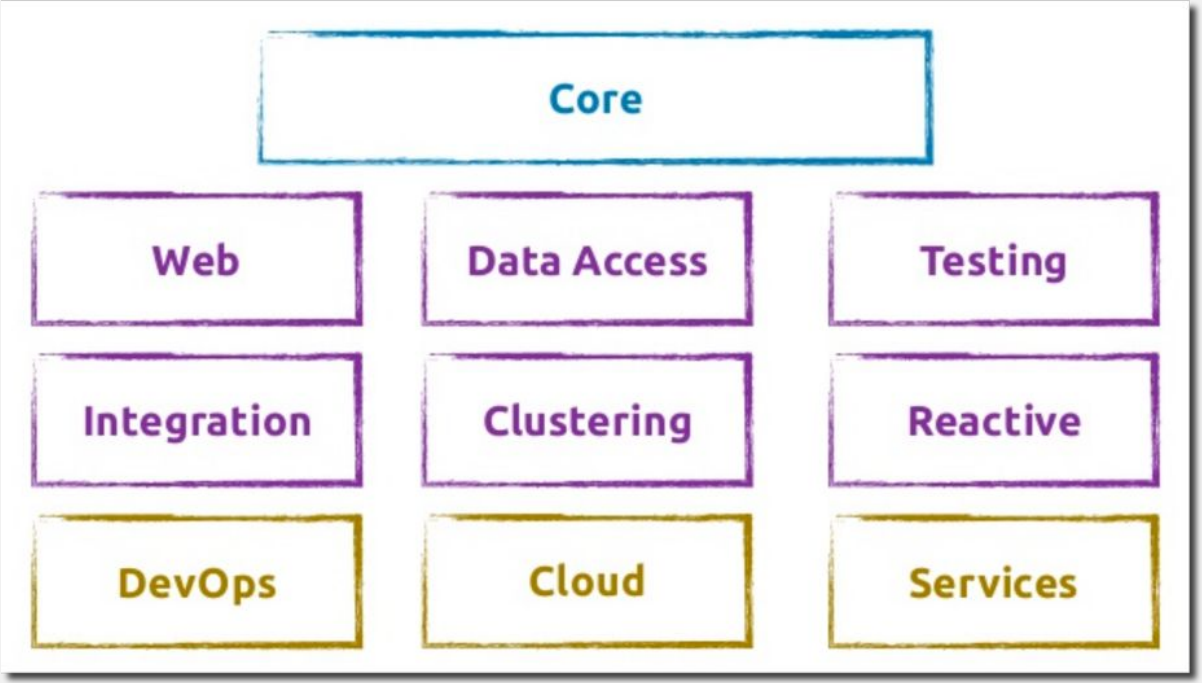


VERT.X EVENT LOOP



Handle Thousands of Requests
With Few Threads

Vert.x Ecosystem



LAB 4: Reactive Microservices with Eclipse Vert.x

- Explore Vert.x Maven project
- Create an API gateway
- Run Vert.x locally
- Deploy Vert.x on OpenShift

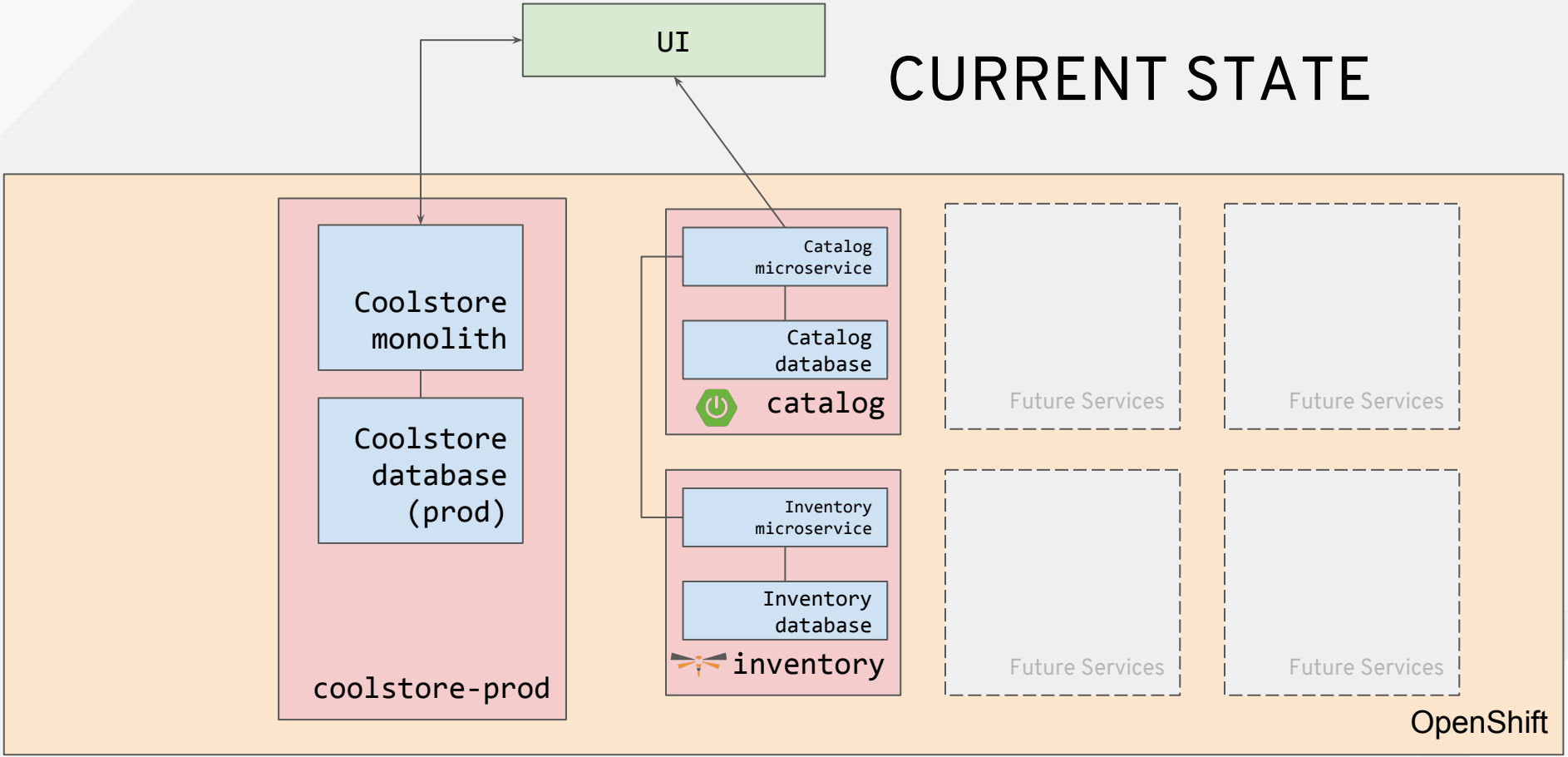
LAB: REACTIVE MICROSERVICES WITH ECLIPSE VERT.X

GOAL FOR LAB

In this lab you will learn:

- How Event-based architectures supercharge microservice apps
- Use cases for reactive applications
- Develop microservices using Eclipse Vert.x
- Interact with other microservices without blocking
- Learn the basics of Reactive programming

CURRENT STATE



LAB: REACTIVE MICROSERVICES

SCENARIO 6 BUILDING REACTIVE MICROSERVICES

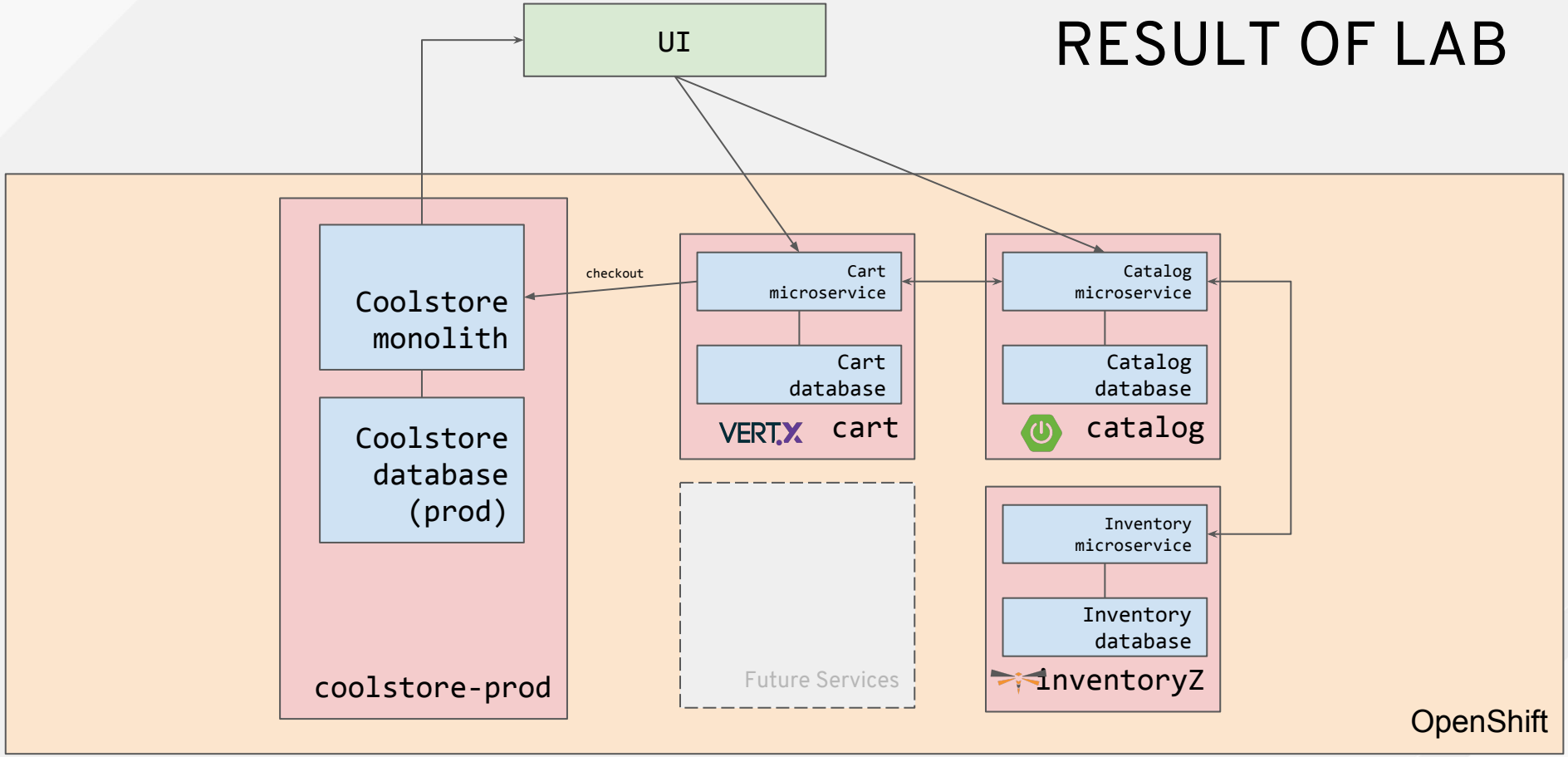
WRAP-UP AND DISCUSSION

RESULT OF LAB

In this lab you learned how to:

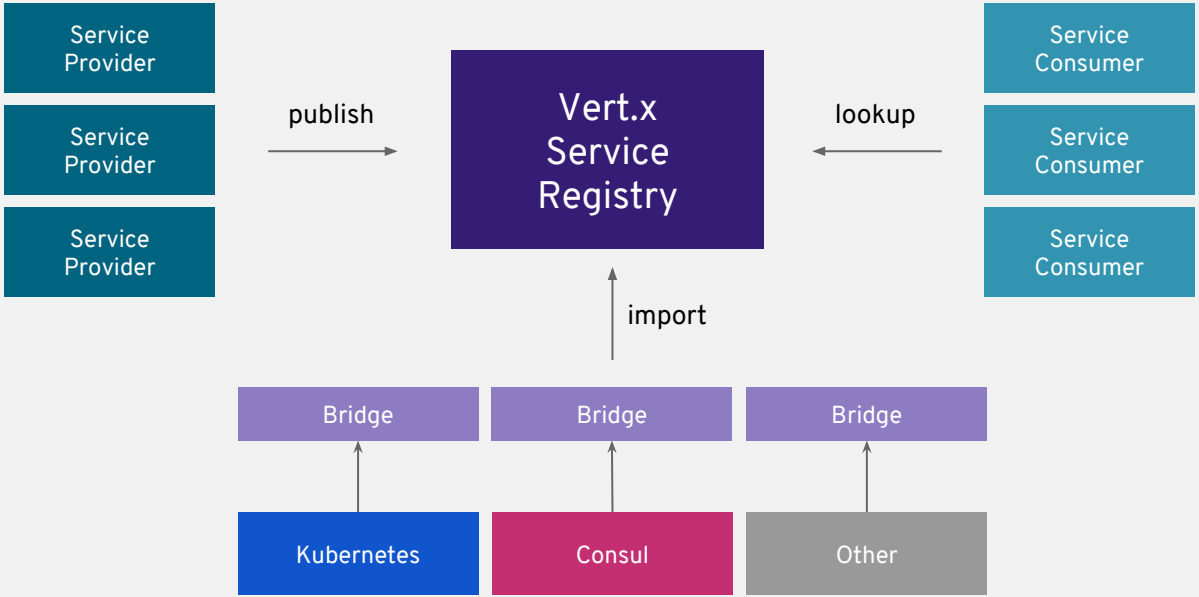
- Build reactive web application that are non-blocking
- Asynchronously call out to external service using Callbacks, Handlers and Futures
- Deploy the application to OpenShift

RESULT OF LAB



ECLIPSE VERT.X OFFER MUCH MORE

SERVICE DISCOVERY



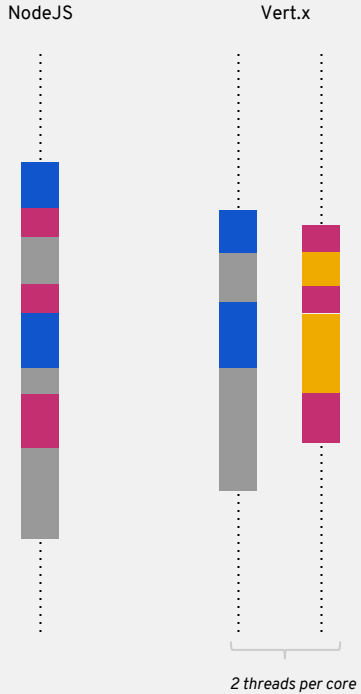
Vert.x vs NodeJS

Vert.x

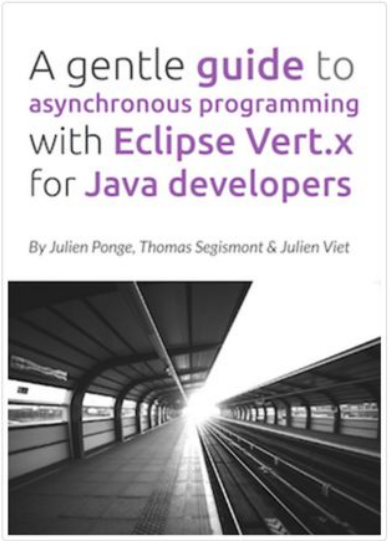
- Multi-threaded
- Polyglot (Java, JavaScript, Scala, and more)
- Supports reactive programming using RxJava, RxJS, etc

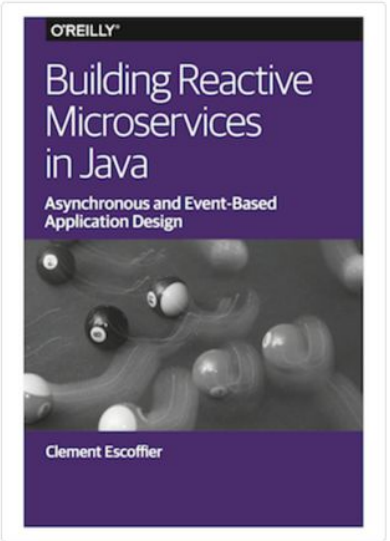
NodeJS

- Single threaded
- JavaScript only
- Support reactive programming using RxJS



FREE E-BOOKS





http://vertx.io/docs/

redhat.

THANK YOU

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