



# Cloud Native and Serverless

February 25, 2021 | Virtual



# Get Quarkus Funky the next time you hit a Serverless dance floor!

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Red Hat

February 2021

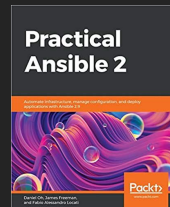


# About Me



## Daniel Oh

- Principal Technical Marketing Manager at Red Hat 
  - Cloud Native App Development
  - Agile & DevOps practices
- Ambassador for CNCF  and DevOps Institute 
- Opensource.com Correspondents
- Public Speaker & Developer
- Author of [Practical Ansible 2](#)



 @danieloh30

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 danieloh30



IN THE BEGINNING...



THEN...

# Serverless Landscape

## Tools



## Security



## Framework



Too many choices

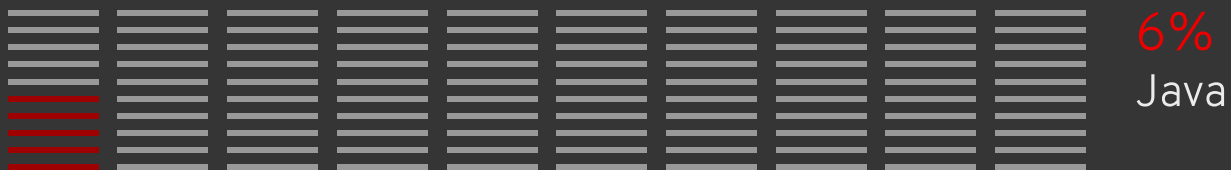
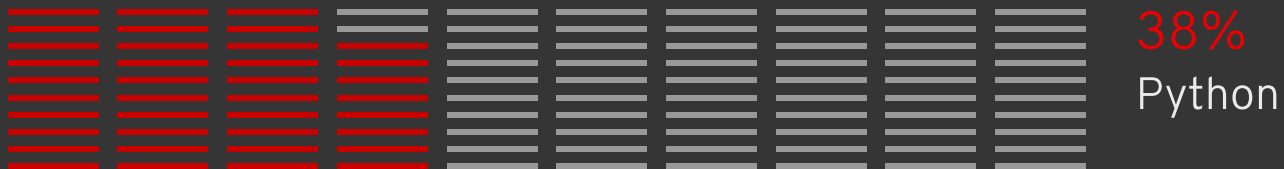
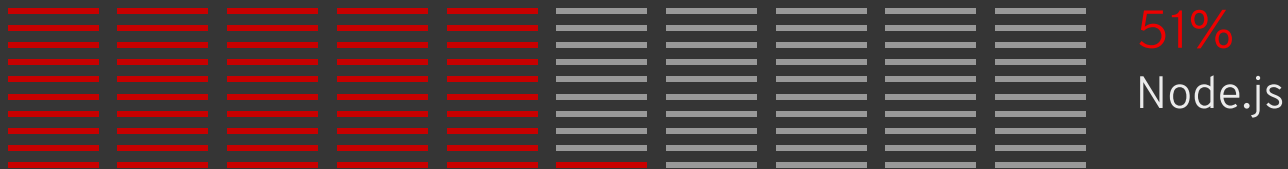
## Hosted Platform



## Installable Platform



# Languages used on AWS Lambda






Designed for  
**Throughput**

At the expense  
of **footprint**



Designed to be long-running

At the expense of startup speed

A close-up photograph of a gecko's head, showing its intricate scales in shades of green, yellow, and brown. The gecko's large, round eye is prominent, with a black pupil and a yellowish-green iris. The background is blurred, showing more of the gecko's body and some green foliage.

Rich dynamic behavior  
built for **mutable**  
systems

Yet containers  
are primarily  
**immutable**

WE  
NEED  
SOMETHING  
**DIFFERENT**



# QUARKUS

An Open Source  
stack to write Java apps



Cloud Native



Microservices



Serverless

# Quarkus - Optimizing the Stack

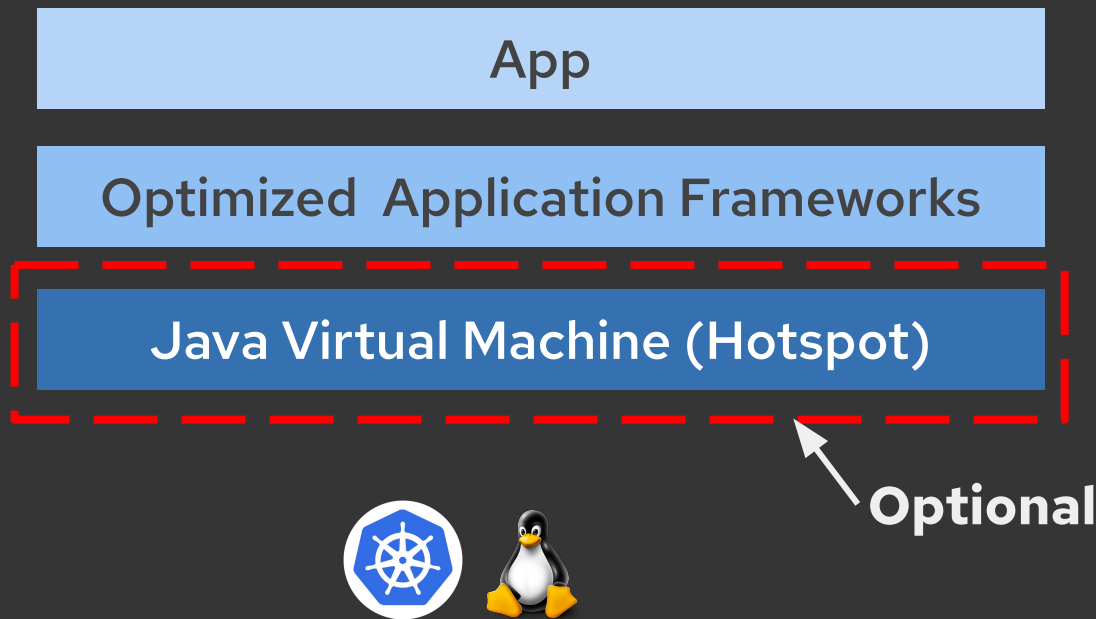
Architecture: **Microservices**,  
Deployment: **Serverless**

**Single App**

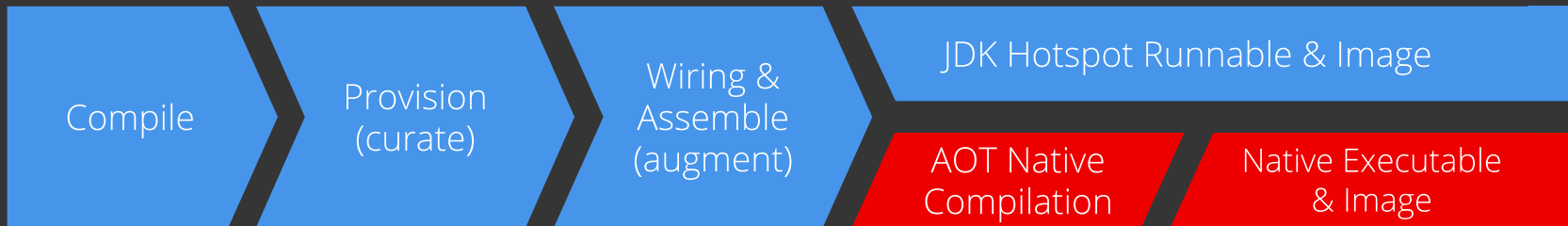
Lifecycle: **ms to Days**

Memory: **10MB RAM**

Startup: **Milliseconds**



# Quarkus native compilation



app.jar



Frameworks



Runnable  
Java app



Runnable  
Native app

# Quarkus **Funqy** for Serverless

- A portable Java API to write functions
- Deployable to various FaaS environments or a standalone service

```
import io.quarkus.funqy.Funqy;

public class GreetingFunction {
    @Funqy
    public String greet(String name) {
        return "Hello " + name;
    }
}
```

# Quarkus **Funqy** for Serverless

- Async Reactive Types
- Supports the Smallrye Mutiny Uni reactive type as a return type

```
import io.quarkus.funqy.Funq;  
import io.smallrye.mutiny.Uni;  
  
public class GreetingFunction {  
  
    @Funq  
    public Uni<Greeting> reactiveGreeting(String name) {  
        ...  
    }  
}
```

# Quarkus **Funqy** for Serverless

- Supports dependency injection through CDI or Spring DI

```
@ApplicationScoped
public class GreetingFunction {

    @Inject
    GreetingService service;

    @Funq
    public Greeting greet(Friend friend) {
        Greeting greeting = new Greeting();
        greeting.setMessage(service.greet(friend.getName()));
        return greeting;
    }
}
```

# Quarkus **Funqy** for Serverless

## Cloud

### Quarkus Funqy

This guide explains basics of the Funqy framework, a simple portable cross-provider cloud function API.

### Quarkus Funqy HTTP

This guide explains Funqy's HTTP binding

### Quarkus Funqy Amazon Lambdas

This guide explains Funqy's Amazon Lambda binding

### Quarkus Funqy Amazon Lambdas HTTP

This guide explains Funqy's Amazon Lambda HTTP binding

### Quarkus Funqy Knative Events

This guide explains Funqy's Knative Events binding

### Quarkus Funqy Azure Functions HTTP

This guide explains Funqy's Azure Functions HTTP binding

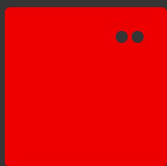
### Quarkus Funqy Google Cloud Platform

This guide explains Funqy's Google Cloud Platform binding

# Simple Path from Quarkus to Kubernetes/OpenShift



Write code



Package



**Red Hat**

OpenShift Container Platform



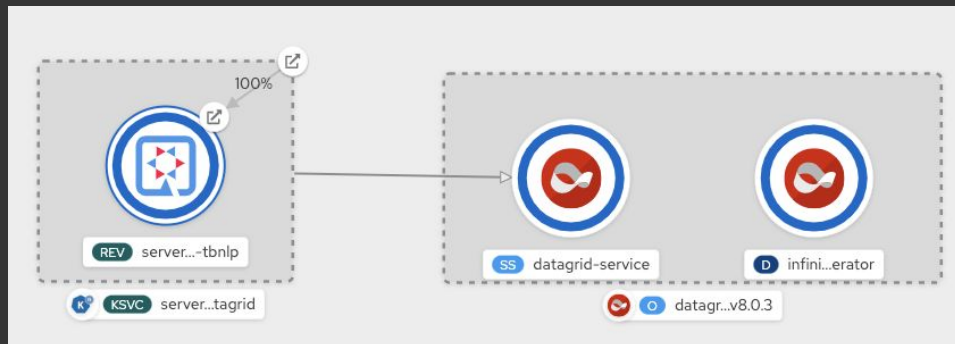
**kubernetes**



**Red Hat**

# For more Use cases and Demos

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<https://youtu.be/M54SAwabsMY>

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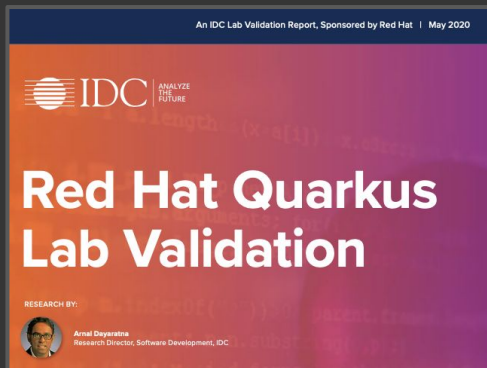
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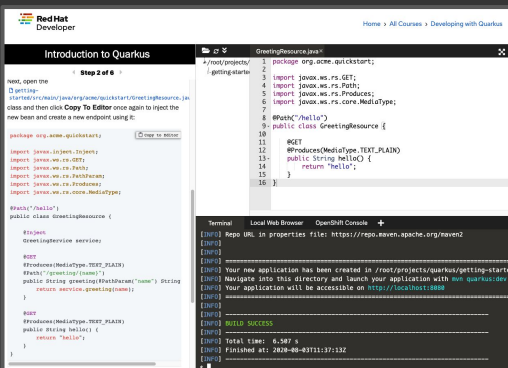
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- The Level Up Hour (E22): Introducing the Microservi...  
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- Build-up: Cloud Native Edition  
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- VSBE2020: Build A Serverless Hybrid Cloud...  
1:05:11
- J4k 2020 - Build A Serverless Hybrid Cloud Using...  
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- Hybrid Serverless Development using Quarkus  
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- App Dev & Containerization – Ask The Experts (Friday)  
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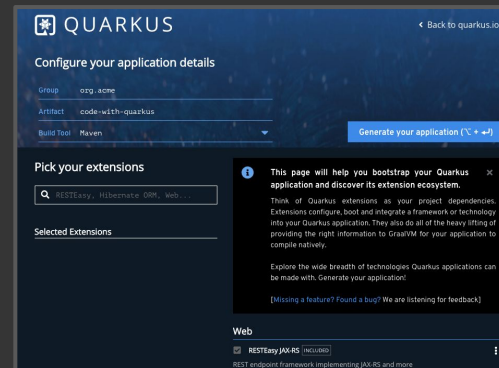
# How to get started



[red.ht/idc-quarkus-study](https://red.ht/idc-quarkus-study)



[bit.ly/try-quarkus](https://bit.ly/try-quarkus)



[code.quarkus.io](https://code.quarkus.io)



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