QAWARE SOFTWARE ENGINEERING

OS-AD OPEN SOURCE AUTOMATION DAYS

Serverless is the Next Logical Evolution in Cloud Native Software Development

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Mario-Leander Reimer

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- Developer && Architekt
- 20+ Jahre Erfahrung
- ~10 Jahre im BMW Aftersales
- #CloudNativeNerd

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Twitter: @LeanderReimer

Github: https://github.com/lreimer/

Bild: Jupiterimages – gettyimages.de

Bild: Berkozel – gettyimages.de

Bild: NatalyaLucia – gettyimages.de

https://commons.wikimedia.org/w/index.php?curid=2223771

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CNCF Cloud Native Landscape

Overwhelmed? Please see the CNCF Trail Map. That and the interactive landscape are at l.cncf.io

Database | Streaming & Messaging | Application Definition & Image Build | Continuous Integration & Delivery

App Definition and Development

Scheduling & Orchestration | Coordination & Service Discovery | Remote Procedure Call | Service Proxy | API Gateway | Service Mesh

Orchestration & Management

Cloud Native Storage | Container Runtime | Cloud Native Network

Runtime

Automation & Configuration | Container Registry | Security & Compliance | Key Management

Provisioning

Kubernetes Certified Service Provider | Kubernetes Training Partner

Platform

Certified Kubernetes - Distribution

Certified Kubernetes - Hosted

Certified Kubernetes - Installer

Cloud Native Service Offerings

Observability and Analysis

Monitoring

Logging

Tracing

Chaos Engineering

Serverless

Members

Telecom

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well traveled path

l.cncf.io

CLOUD NATIVE COMPUTING FOUNDATION

CLOUD NATIVE Landscape

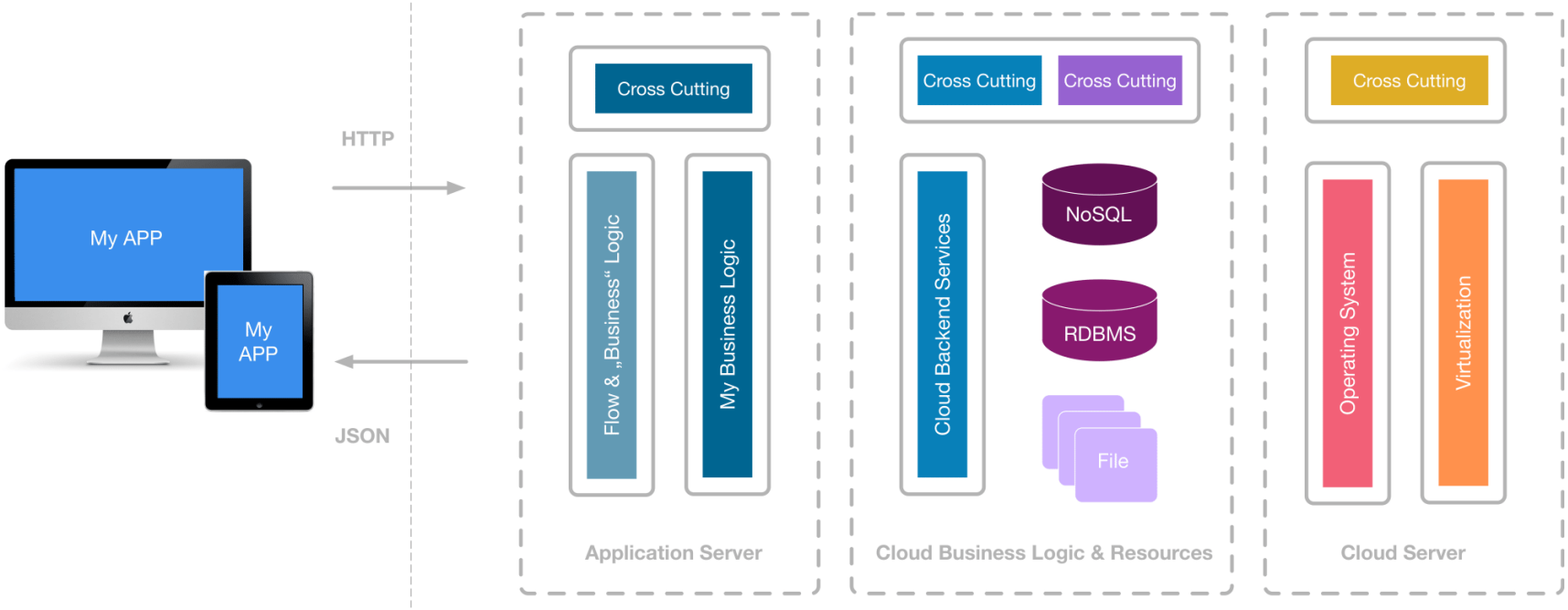
Amplify

CLOUD NATIVE SOFTWARE DEVELOPMENT IS

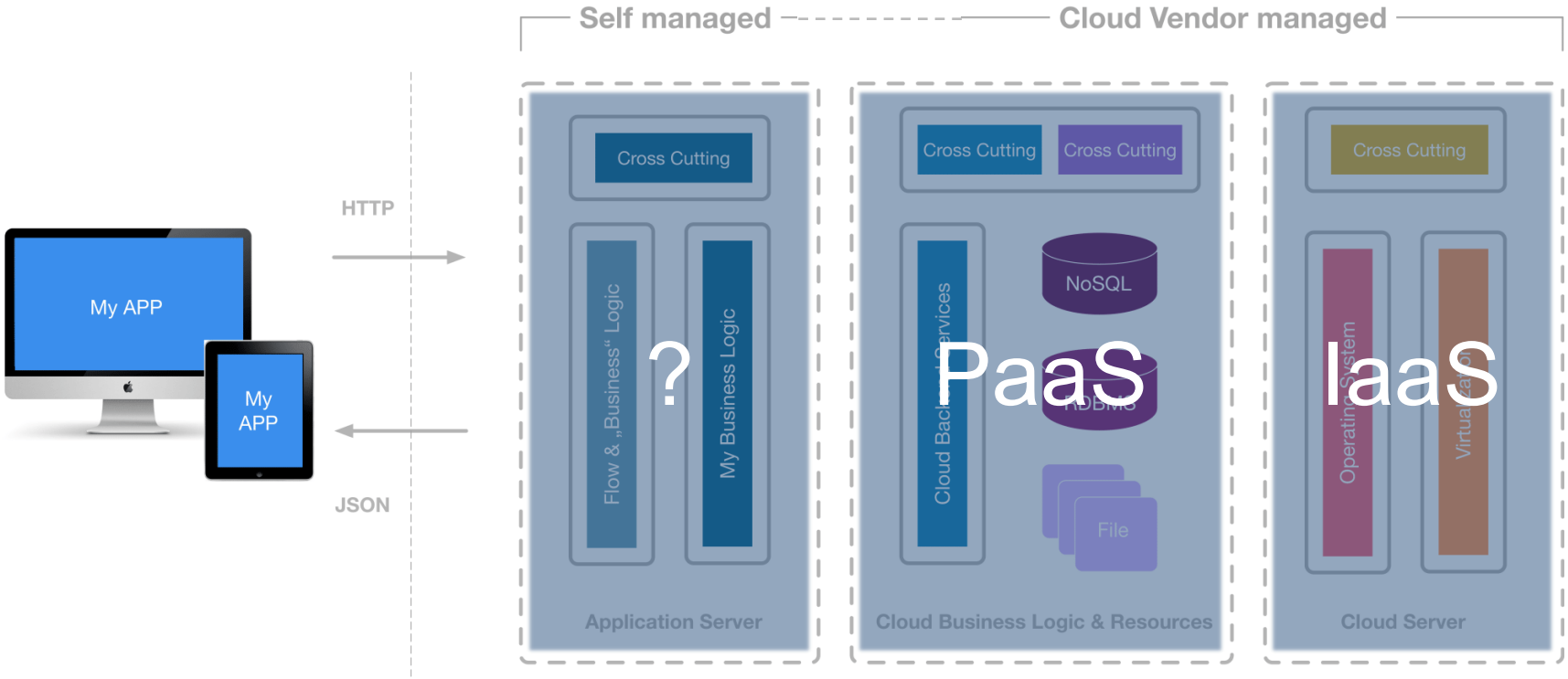
COMPLEX.

DOCKER, YAML, MICROSERVICES, KUBERNETES, ET.AL.

Traditionelle Cloud-basierte Anwendungsarchitektur



Traditionelle Cloud-basierte Anwendungsarchitektur



Kein Server ist einfacher zu verwalten, als kein Server!

Werner Vogels, CTO, Amazon

Bild: pavlinec – gettyimages.de

Serverless computing refers to a new model of cloud native computing,

https://landscape.cncf.io/

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https://landscape.cncf.io/

Serverless computing refers to a new model of cloud native computing, enabled by architectures that do not require server management to build and run applications. It leverages a finer-grained deployment model where applications, bundled as one or more functions, are uploaded to a platform

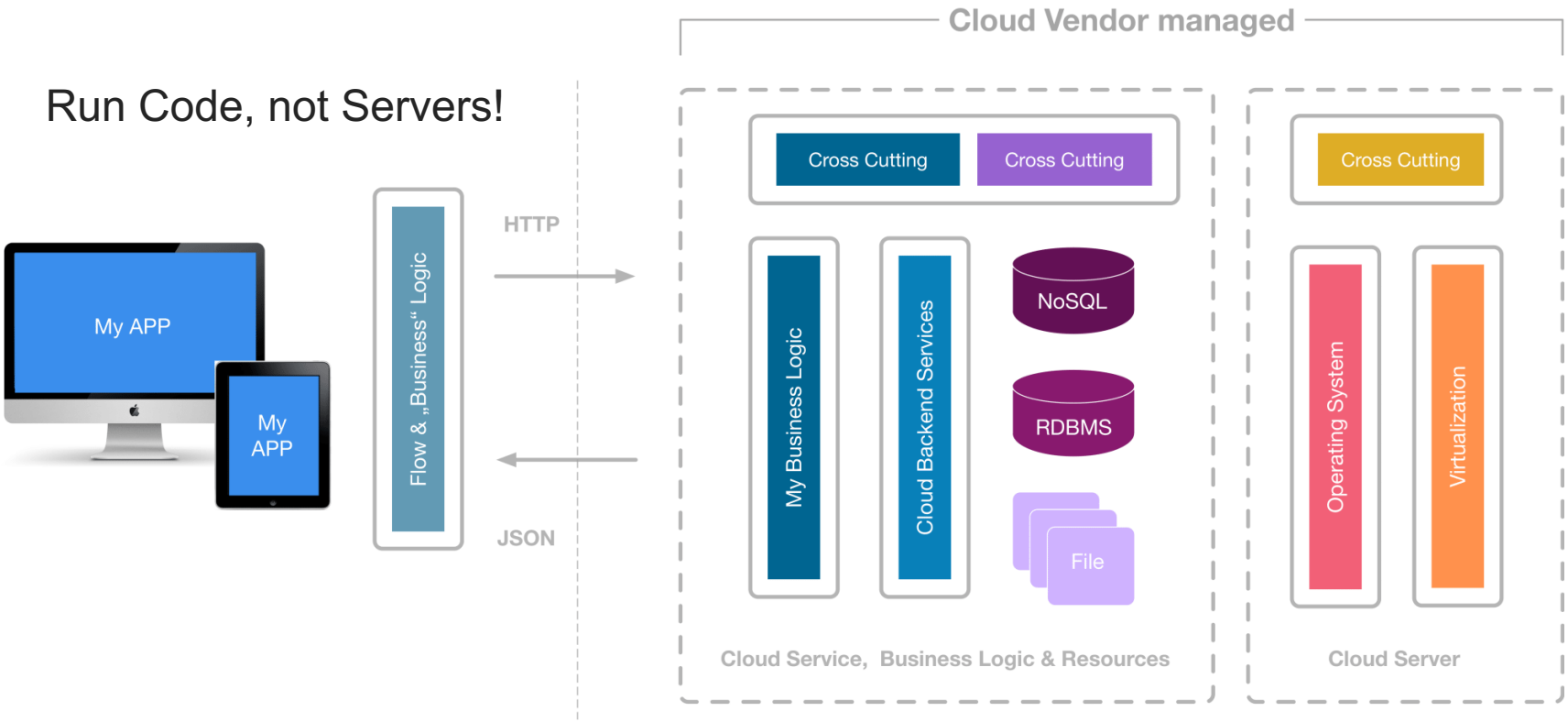
https://landscape.cncf.io/

Serverless computing refers to a new model of cloud native computing, enabled by architectures that do not require server management to build and run applications. It leverages a finer-grained deployment model where applications, bundled as one or more functions, are uploaded to a platform and then executed, scaled, and billed in response to the exact demand needed at the moment.

https://landscape.cncf.io/

Serverless Anwendungsarchitektur

Run Code, not Servers!



Serverless Anwendungsarchitektur

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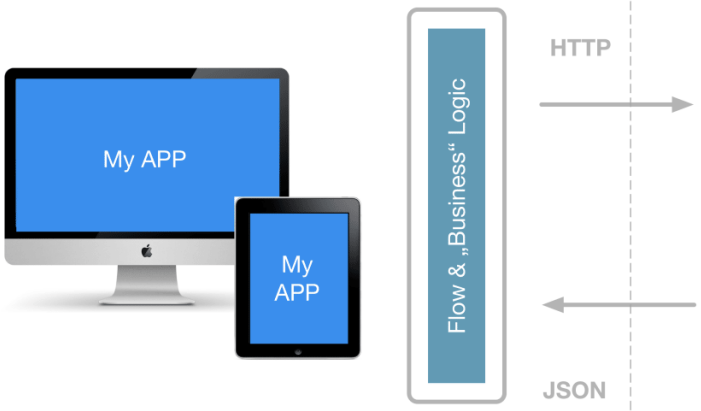
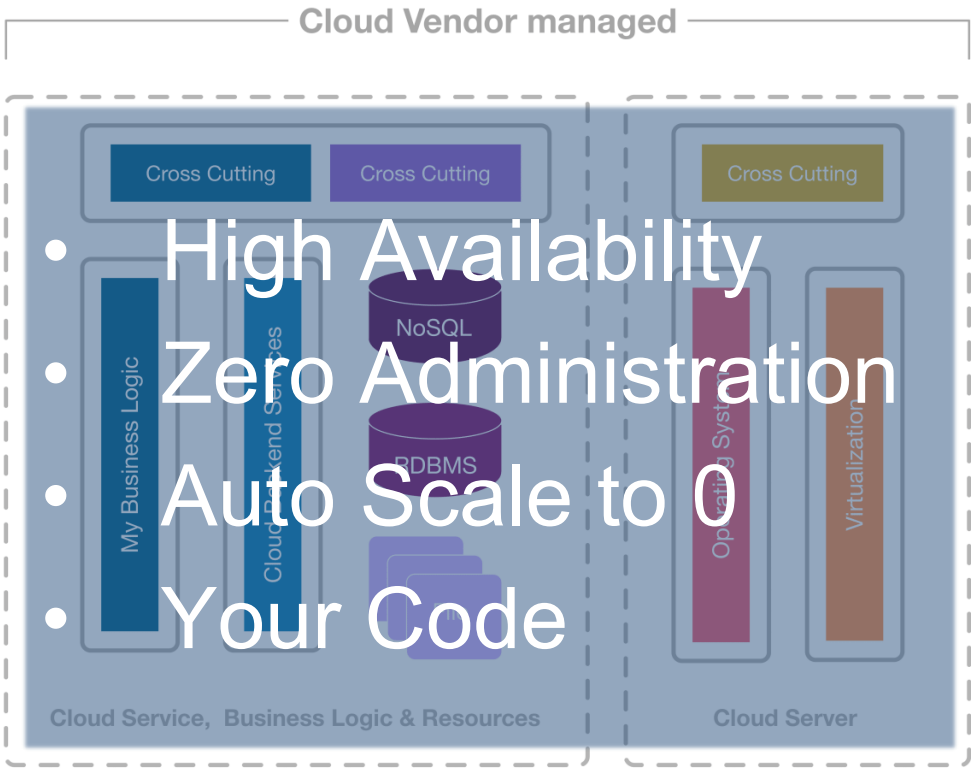
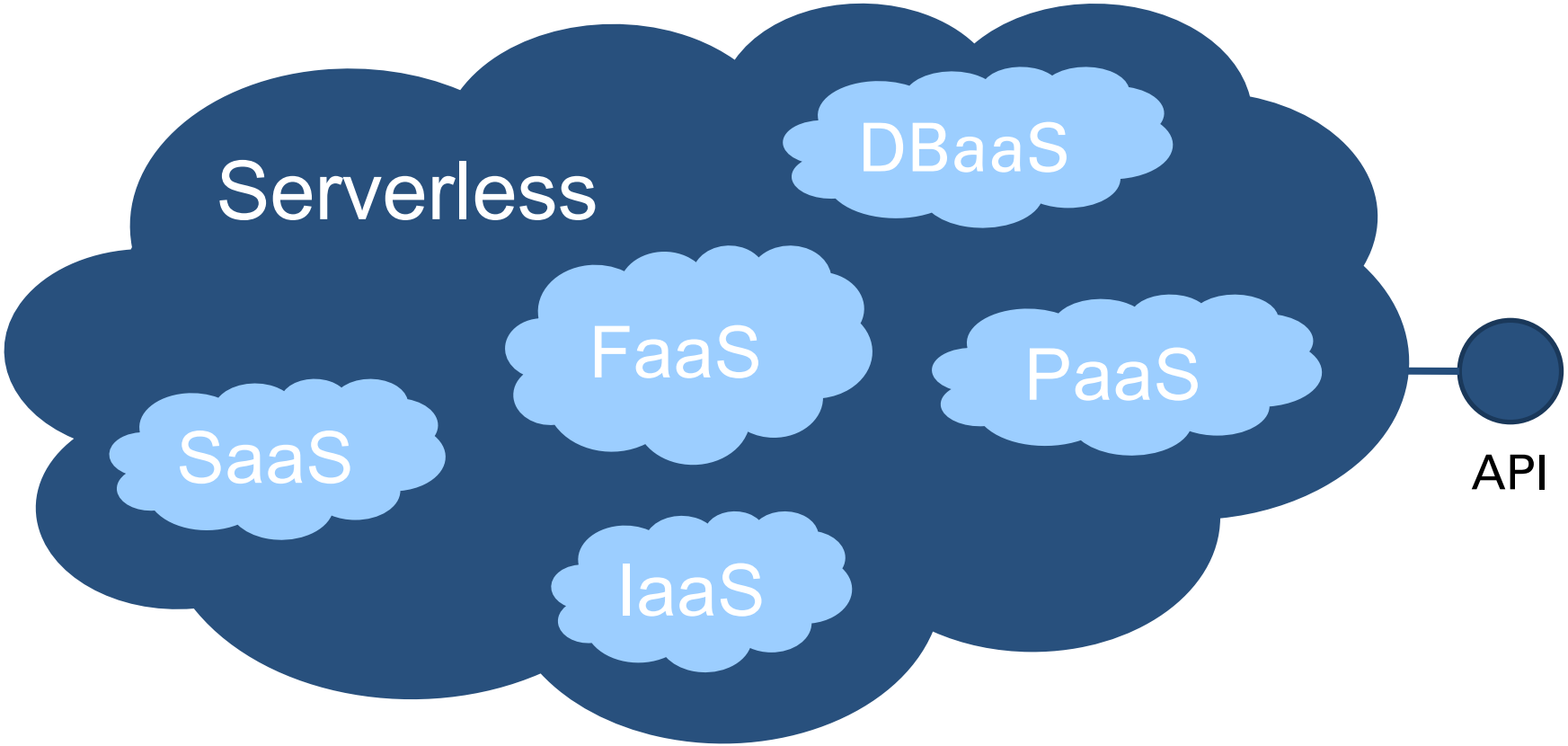




- High Availability
- Zero Administration
- Auto Scale to 0
- Your Code

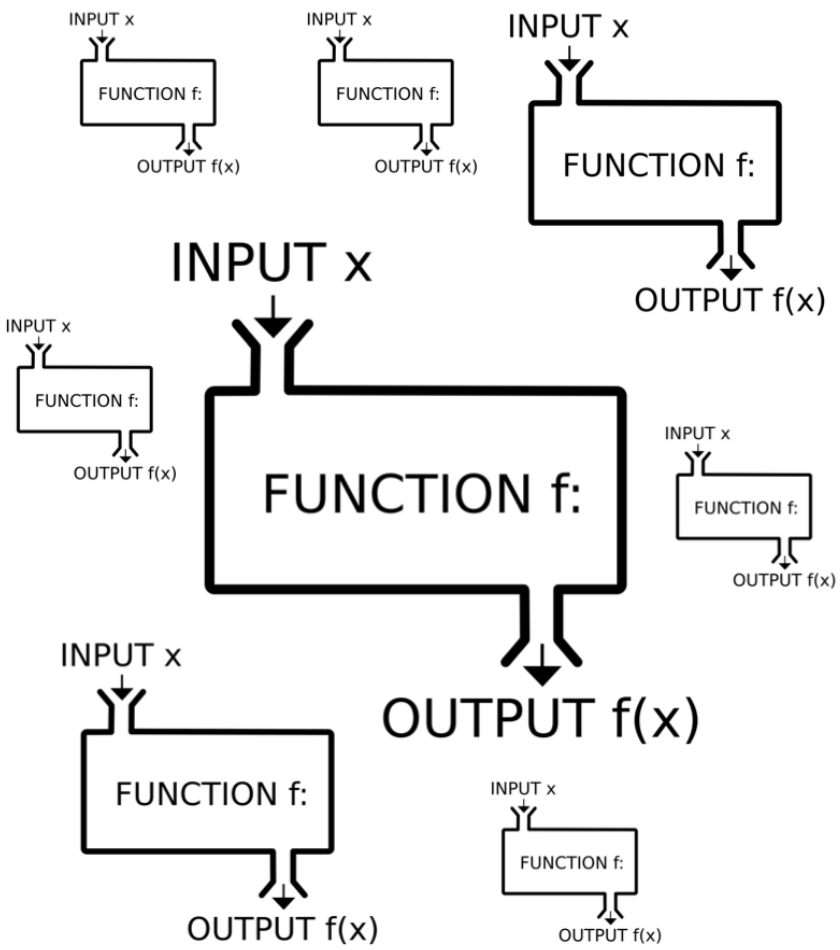
Out-of the Box Self-scaling Fully Managed Backend



Functions

as preferred Serverless Application

Programming Model



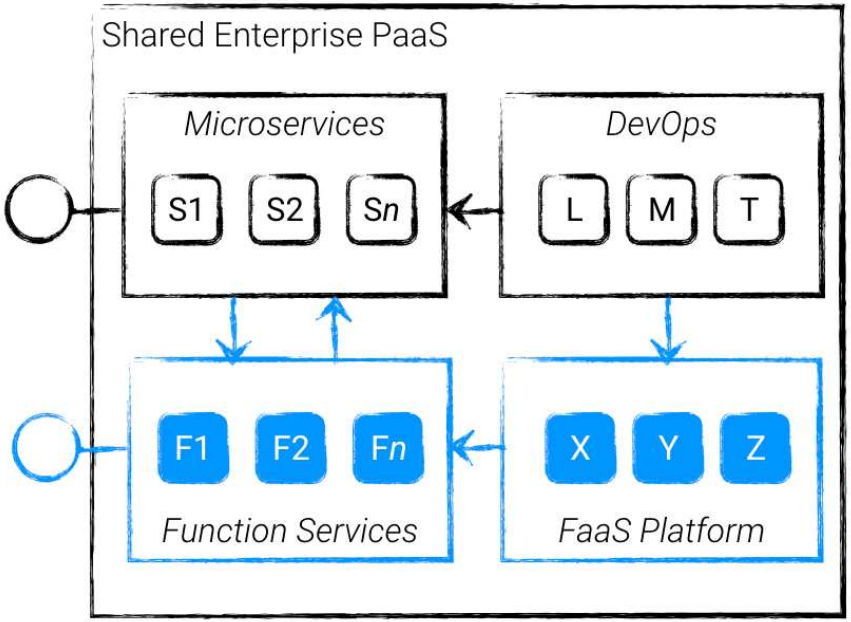
EVENT-DRIVEN ARCHITECTURE

enables loosly coupled reactive

software components and services.

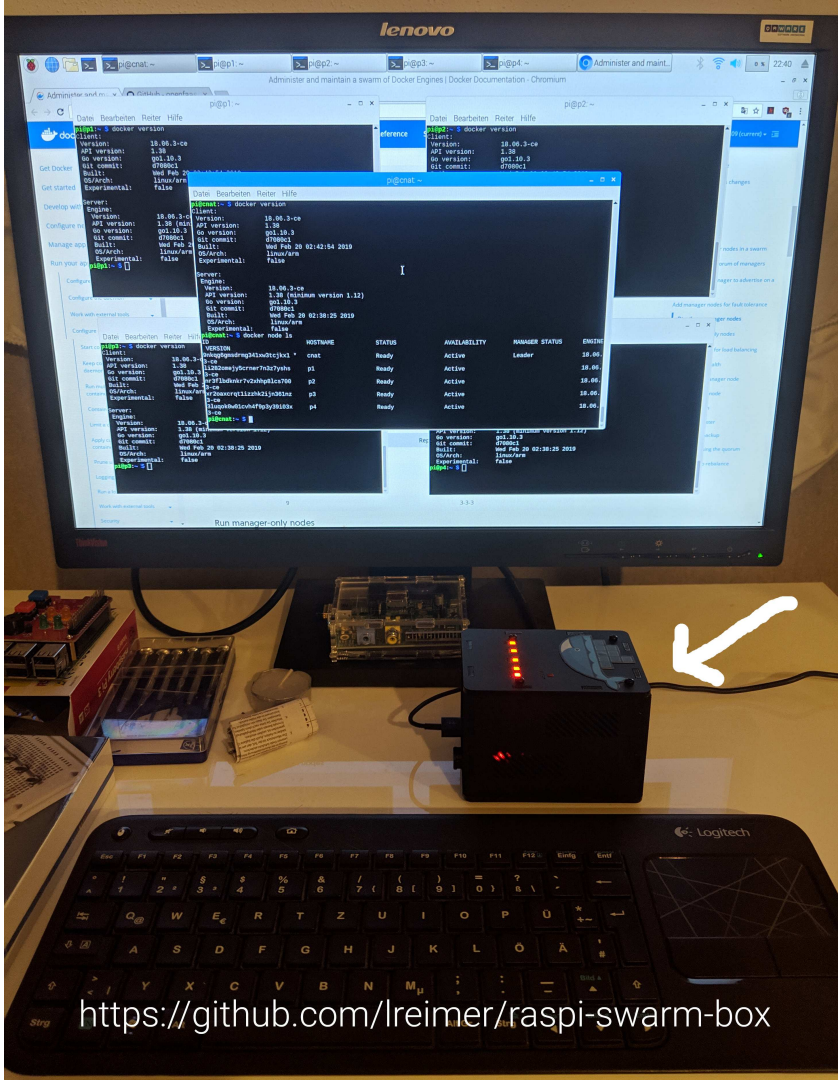
Use Case 1
Hybrid Architectures

- Kombination von Microservice Architektur mit EDA
- Nutzung von Function Services für Event-getriebene Use Cases
- Reduzierter Ressourcen-Verbrauch per Scale-to-Zero
- Integration in bestehende Enterprise PaaS Umgebung



Use Case 2
Edge und Fog Computing

- Anbindung unserer LoRaWan Raum-Sensoren mittels Serverless Backend
- Couch Projekt: Nutzung von FaaS auf Low Power Devices
- Unterstützung von leichtgewichtigen Cluster Scheduler wie Docker Swarm



CNCF Serverless Landscape

2019-10-15T01:04:17Z 66f905b

See the serverless interactive display at s.cncf.io

Greyed logos are not open source

Tools

Cloud Native Landscape, CLOUDZERO, dashbird, epsagon, HASURA GraphQL Engine, IO|pipe, Iron.io, lumigo, Node Lambda, SCAR, SIGMA, STACKERY, THUNDRA

Security

Protego, PURESEC, threat stack

Framework

APEX, Architect, AWS SAM, CHALICE, Claudia.js, FLOGO, serverless, SPARTA, Spring Cloud Function

Platform

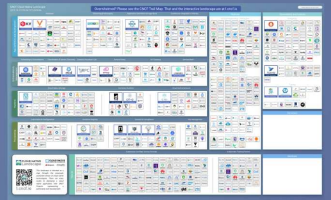
Hosted

ALGORITHMIA, Azure Cloud Functions, AWS Lambda, Azure Functions, BINARIS, CLOUDFLARE Workers, Google Cloud Functions, HUAWEI FunctionStage, IBM Cloud Functions, netlify Functions, nimbella, Nuweba, PubNub FUNCTIONS, spotinst, stdlib, Tencent Cloud Serverless Cloud Function, twilio Functions, ZEIT

Installable

APACHE OpenWhisk, AppScale, fission, fn, Knative, Kubeless, Kyma, LunchBadger, nuclio, OPENFAAS, PipelineAI, riff, Virtual Kubelet

Cloud Native Landscape



s.cncf.io

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CLOUD NATIVE Landscape

CLOUD NATIVE COMPUTING FOUNDATION

Redpoint

OPENFAAS

fission

Kubeless

nuclio

Kyma

siehe auch https://bit.ly/2Mh1kxJ

Die Kandidaten

- OpenFaas
  https://www.openfaas.com
- Fission
  https://fission.io
- Kubeless
  https://kubeless.io
- Nuclio
  https://nuclio.io
- Knative
  https://knative.dev/
- Kyma
  https://kyma-project.io

Demo Time

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