



# **VERY TECH TRIP TALK**

Powered by  OVHcloud

# CaaS, Serverless, scale to zero.

## Késako and how to build it easily with Knative?



THANKS!!

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☁️ Often head in the clouds ☁️

🐦 @wildagsx

📝 <https://philippart-s.github.io/blog>

🐙 <https://github.com/philippart-s/>

🌐 <https://www.linkedin.com/in/philippartstephane/>



# Let's get to know each other

- 👉 Who's using a service or infrastructure from a cloud provider?
- 👉 Do you know what IaaS, PaaS and SaaS are?
- 👉 And FaaS, CaaS and Serverless?
- 👉 Who knows Knative?
- 👉 Who uses Knative?



# Why choose a cloud provider?





# Infrastructure as a Service



\*\*\* as a Service

# It works on my machine!



## Commodore 64

Американский персональный компьютер. Занесен в книгу рекордов Гиннеса как самый продаваемый в мире: всего было продано более 15 миллионов экземпляров. Одним из ключей к успеху C64 стала агрессивная политика компании Commodore, предлагавшая компьютер по цене в 50% от конкурентов. Благодаря этому компьютер мог похвастаться качественной цветной графикой, а также отличным звуком (за счёт микширования нескольких каналов). Благодаря своим возможностям компьютер можно было подключить к монитору, к телевизору, к принтеру, к сканеру, к модему, к дисководу и к другим устройствам. Секрет в том, что Commodore производил все компоненты. Это позволило сократить стоимость одной машины до \$135.

### Интересный факт

Считается, что именно на C64 сформировалось направление компьютерного искусства под названием «демосцена». Участники демо-сцены пишут программы, которые в реальном времени создают на экране визуальные эффекты, синхронизированные с музыкой и объединённые стилистически и сюжетно. Это явление существует по сей день.

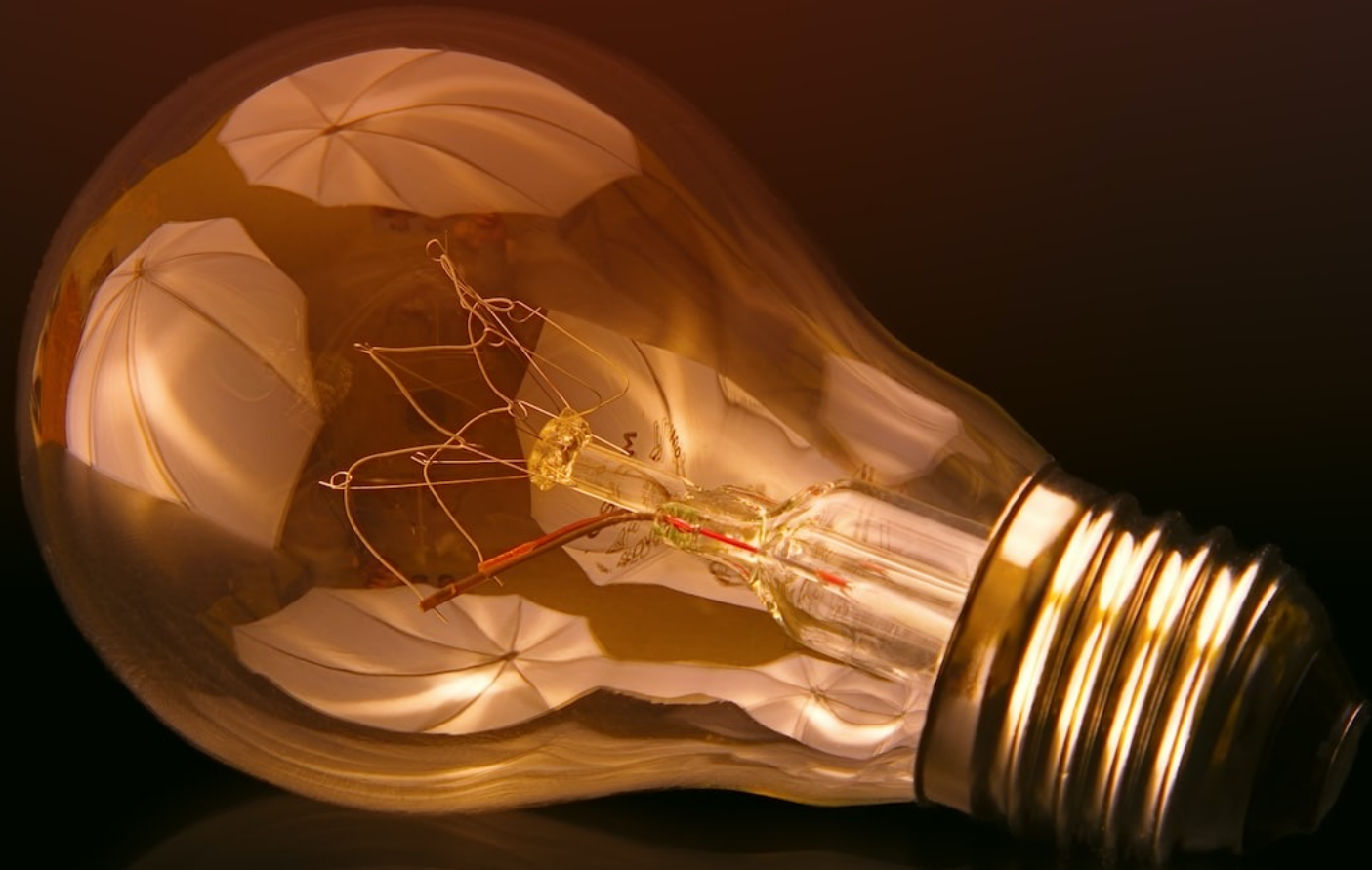
Средний выпуск: 1982–1986. Процессор: микросхема MOS Technology 6510 800 кГц или 1,023 МГц. Оперативная память: 64 Кб. Постоянная память: 20 Кб. Графика: VIC-II, 320х200 разрешение, 320х200, 16 цветов, 32Kb. Звук: SID

An 8-bit computer from America. The Commodore 64 made it into the Guinness Book of World Records as the best-selling computer ever with over 15 million units sold worldwide. One of the keys to the C64's success was Commodore's aggressive pricing policy. At the relatively low price of \$595, the computer boasted vivid high-definition graphics output by its dedicated GPU, high-quality sound produced by a three-channel sound synthesizer chip, the ability to switch between a monitor and a TV, and a wide range of external hardware available on the market. Commodore produced all of its chips in-house, which allowed the company to keep their prices low. This strategy reduced the production cost of one machine to \$135.

### Interesting fact

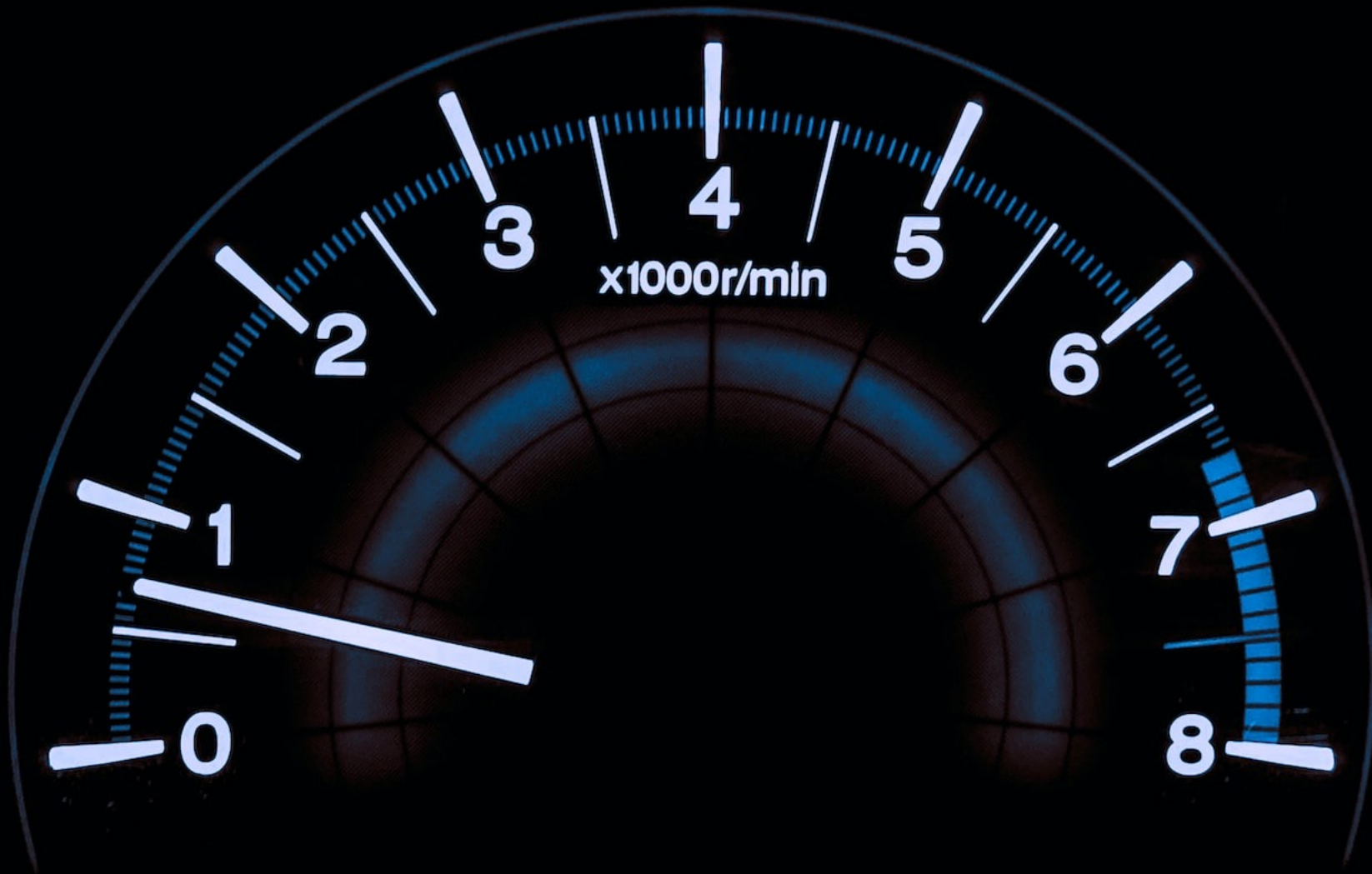
It's widely believed that a subculture now known as the "demoscene" was formed thanks to the C64. The demoscene is a digital art movement involves writing programs that output real-time visual effects in sync with music and follow a sort of plot or visual theme.

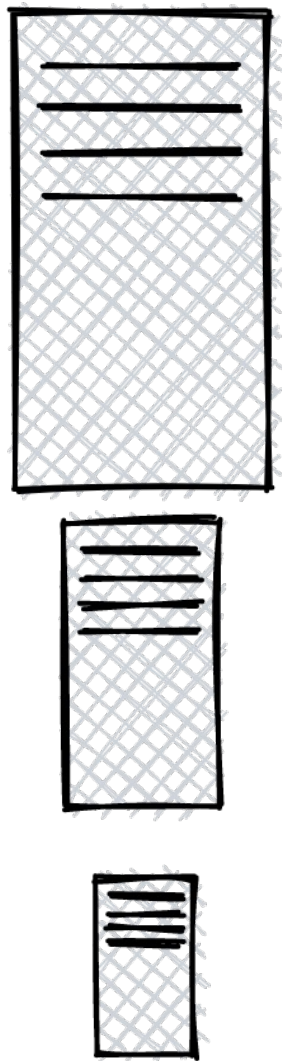
Production: 1982–1986. CPU: 8-bit MOS Technology 6510 800 kHz or 1,023 MHz. RAM: 64 Kib. ROM: 20 Kib. Graphics: VIC-II, 320x200 resolution, 320x200, 16 colors, 32 Kib. Sound: SID



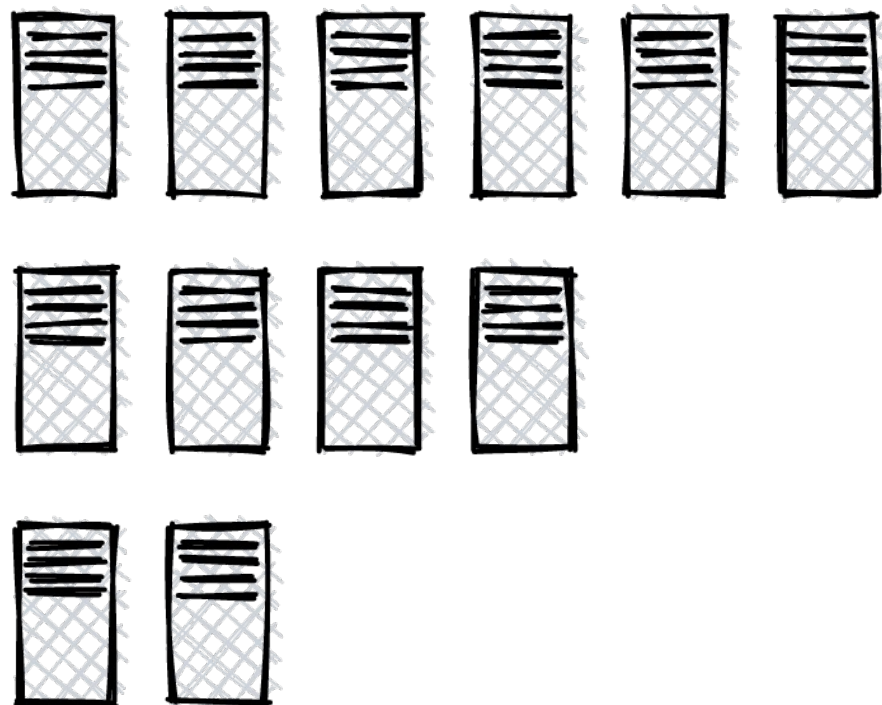
Innovation, Tests, Lastest versions

# Performances





Vertical scaling



Horizontal scaling

# Autoscaler

A 3D perspective view of a grid of blue cubes. The cubes are arranged in rows and columns, receding into the distance. Several cubes in the foreground have a white ship's wheel icon on their front face. Thin white lines connect some of the cubes, suggesting a network or data flow. The overall color scheme is a deep blue.



# Monitoring and measurement



Please wait while we install a system update



A photograph of an industrial manufacturing environment featuring several orange robotic arms. One arm in the foreground is out of focus, while others in the background are positioned over a conveyor belt system. The scene is brightly lit with overhead fluorescent lights. A semi-transparent blue banner is overlaid across the center of the image.

No OPS?

Pay as you go



# Certifications



## ISO 27001 / 27017 / 27018

ISO/IEC 27001:2013 Certification and ISMS relating to information security management systems for cloud



## ISO 27701

ISO/IEC 27701:2019 Certification and PIMS relating to personal data processing security management  
[Find out more →](#)



## GDPR

Compliance with Regulation (EU) 2016/679, known as the General Data Protection Regulation (GDPR)



## SOC 1, 2, 3

AICPA certification SSAE 16/ISAE 3402 Type 2 for control over financial reporting  
[Find out more →](#)



## HDS

Certification by the French Digital Health Agency (ANS) for hosting healthcare data  
[Find out more →](#)



## Healthcare data in Europe

Compliance for hosting healthcare data from French, British, Italian, German and Polish citizens



## HIPAA & HITECH

Compliance with the United States Health Insurance Portability and Accountability Act in our US datacentres.  
[Find out more →](#)



## PCI DSS

Lever 1 Payment Card Industry Data Security Standard certification relating to payment data hosting  
[Find out more →](#)



Cloud for trusted



G  
G-  
Pl  
Pr  
Fi

## AgID

Certification for the delivery of cloud services to the public sector in Italy



## ENS

Compliance with the Esquema Nacional de Seguridad (ENS) high-level certification, which defines security standards for government agencies and public organisations in Spain.



## EBA

Compliance with the European Banking Authority (EBA) Outsourcing Guidelines for Financial Service Operators in Europe



## ACPR Outsourcing Guidelines (France)

Compliance for the provision of outsourced essential services from the French Prudential Supervision and Resolution Authority (ACPR)  
[Find out more →](#)



## SWIPO

Signatory of the SWIPO IaaS Code of Conduct on cloud service portability



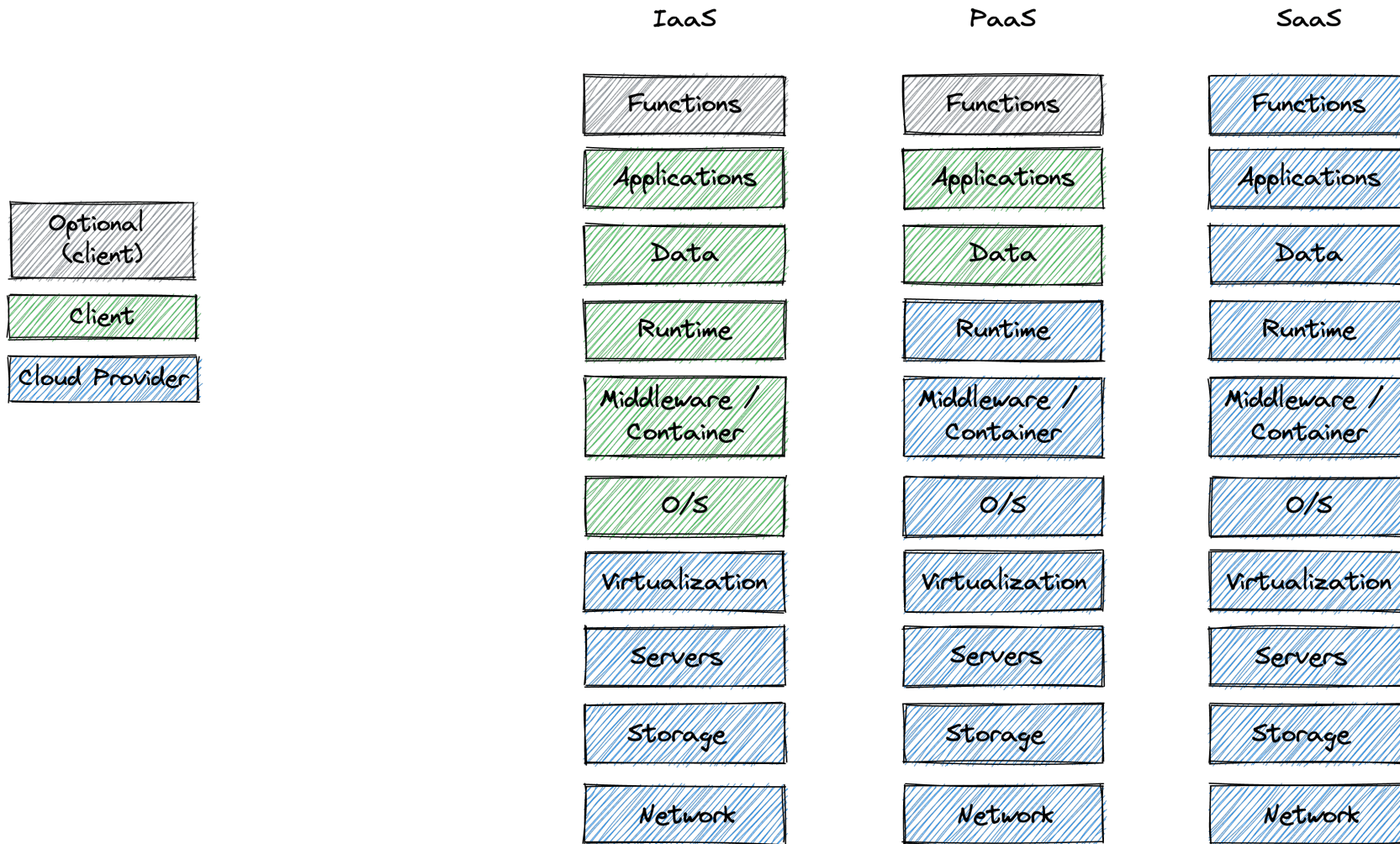
## C5

Cloud Computing Compliance Criteria Catalogue  
[Find out more →](#)

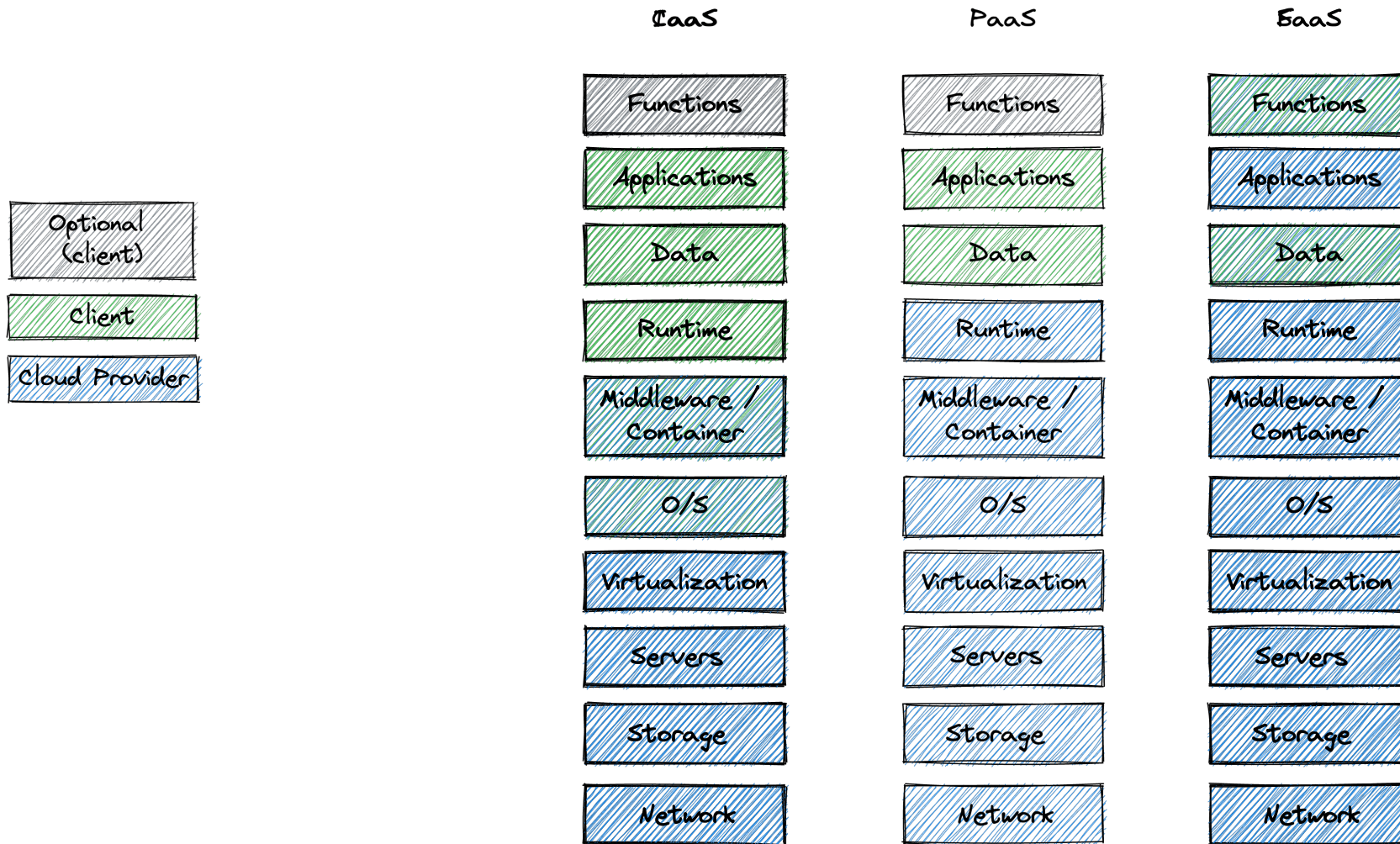


Choose the right offer

# IaaS, PaaS, CaaS, Serverless, FaaS, XaaS, ...



# IaaS, PaaS, CaaS, Serverless, FaaS, XaaS, ...





# Serverless?

Pay as you go



# Scale to zero





AWS Lambda

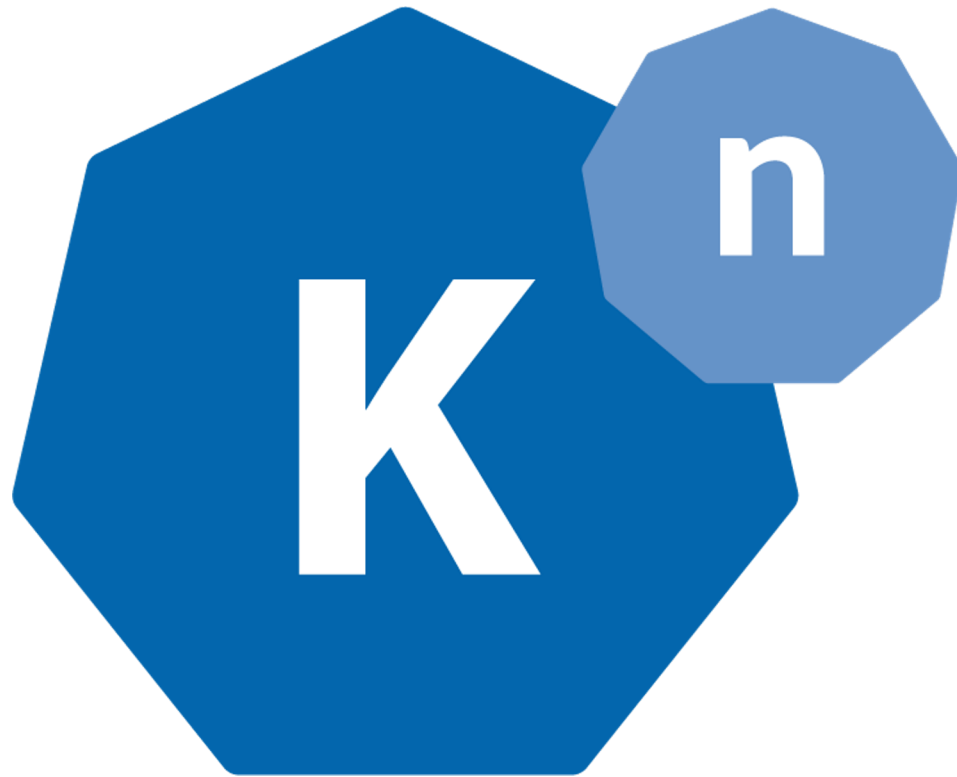
[Cássio Paixão](#)

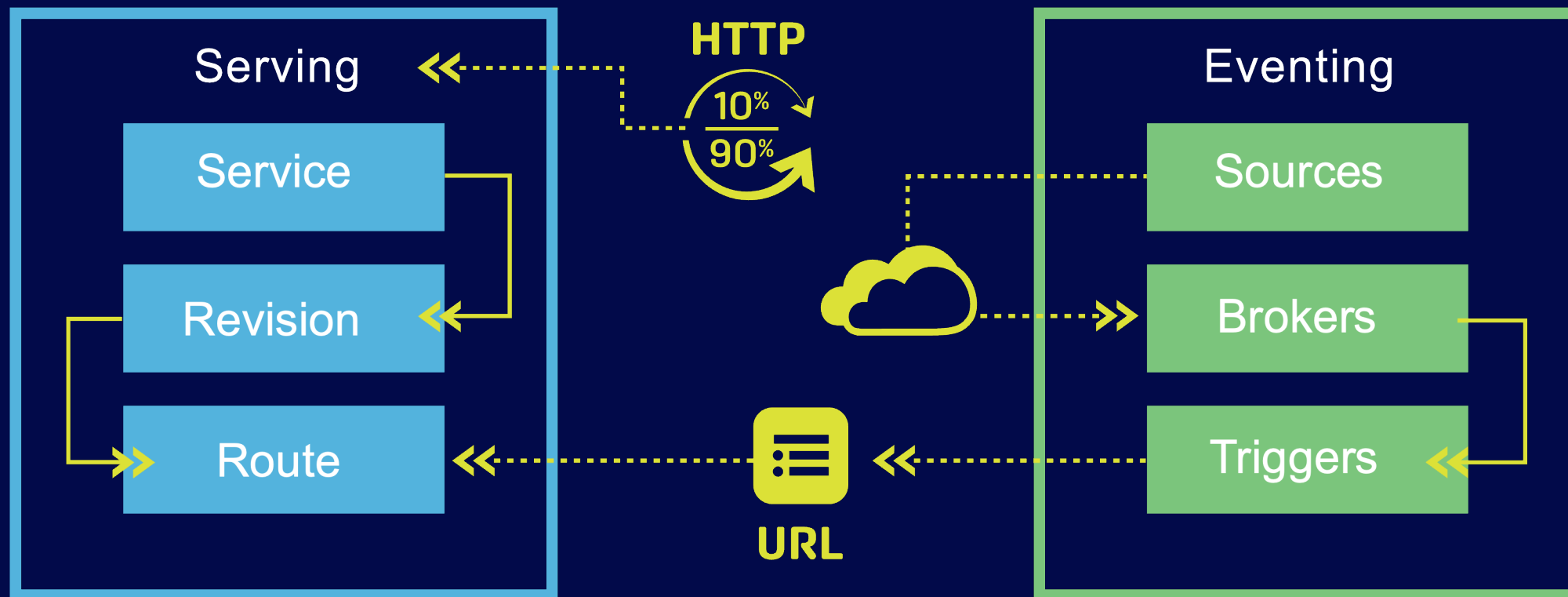


**Google  
Cloud  
Functions**

[hackviking](#)

# Knative





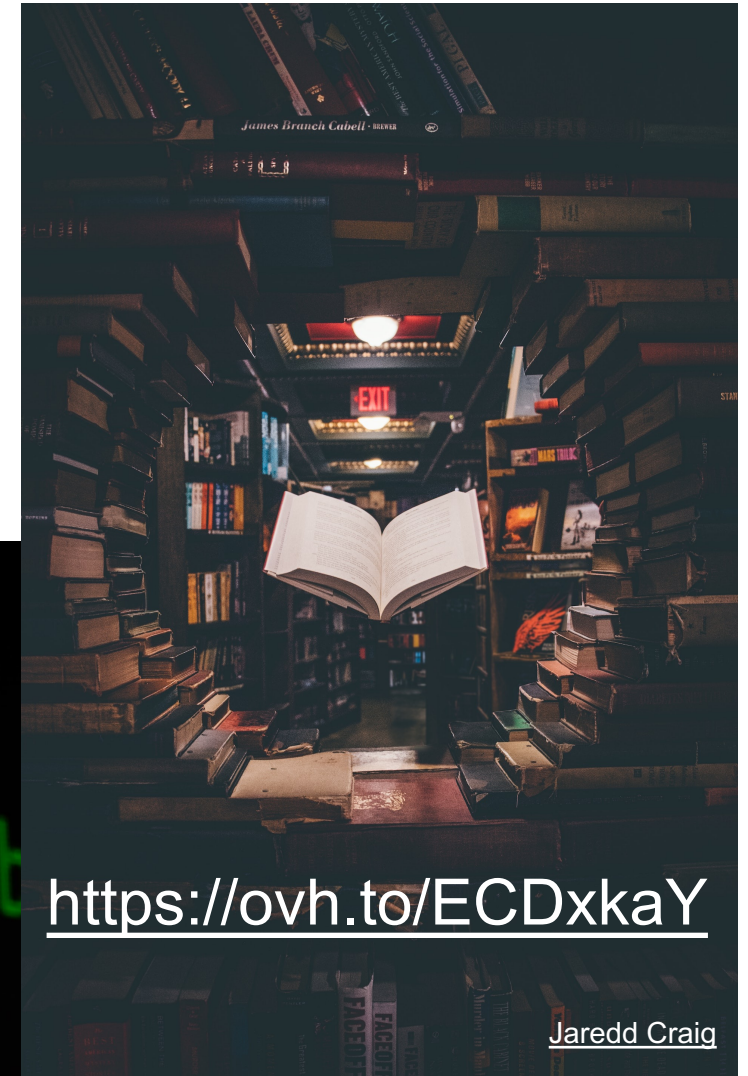


# Installing Knative



```
1 apiVersion: apiex
2 kind: CustomResou
3 metadata:
4   name: certifica
5   labels:
6     app.kubernet
7     app.kubernet
8     app.kubernet
9     knative.dev/c
10 spec:
11   group: networki
12   versions:
13     - name: v1alpha1
14       served: true
15       storage: true
16       subresources:
17         status: {}
18 # blabla wonderful YAML 😊
```

<https://github.com/knative/serving/releases/download/knative-v1.8.3/serving-crd.yaml>



<https://ovh.to/ECDxkaY>

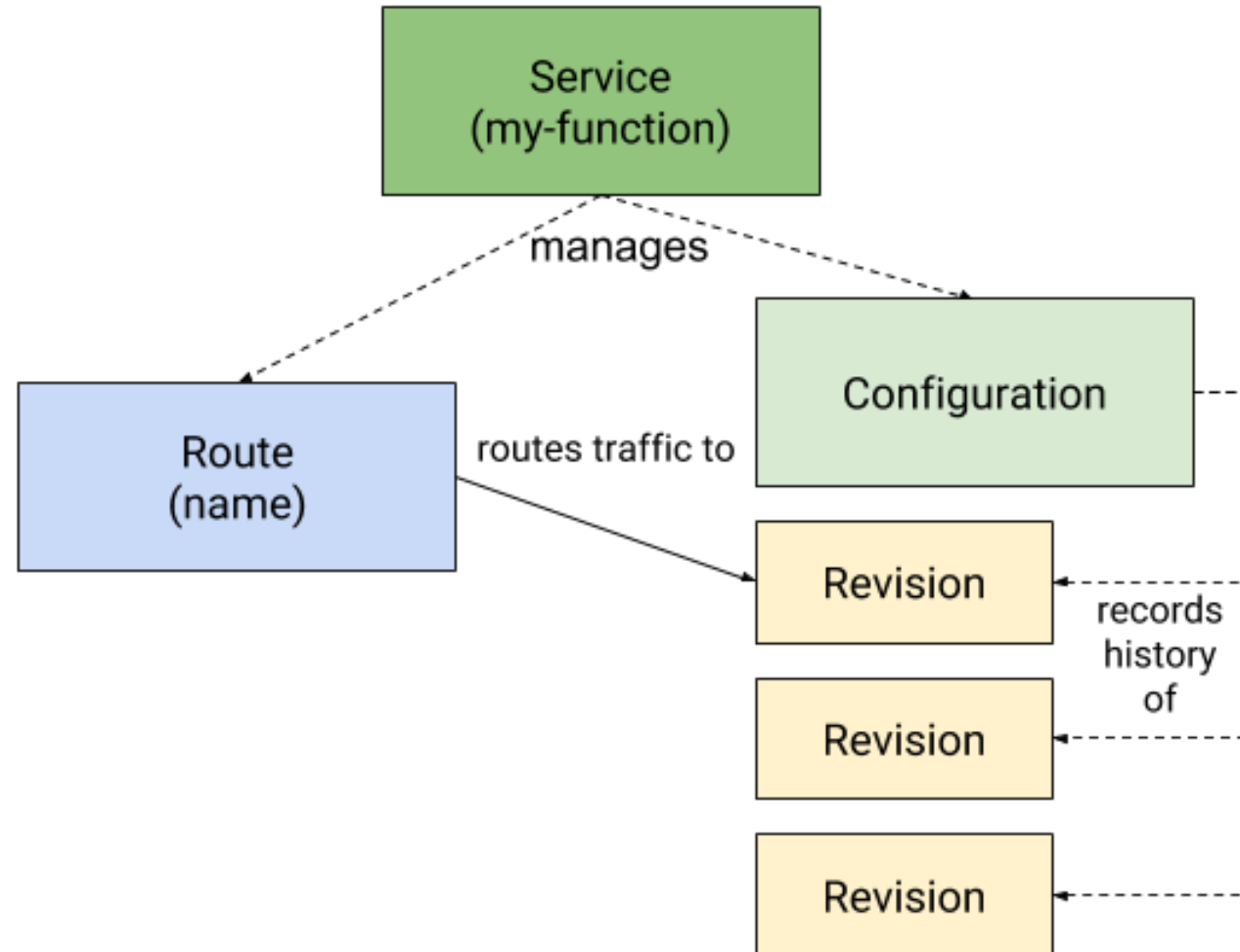
Jaredd Craig

Gabriel Heinzer

Serverless, are you kidding me?



# Knative Serving

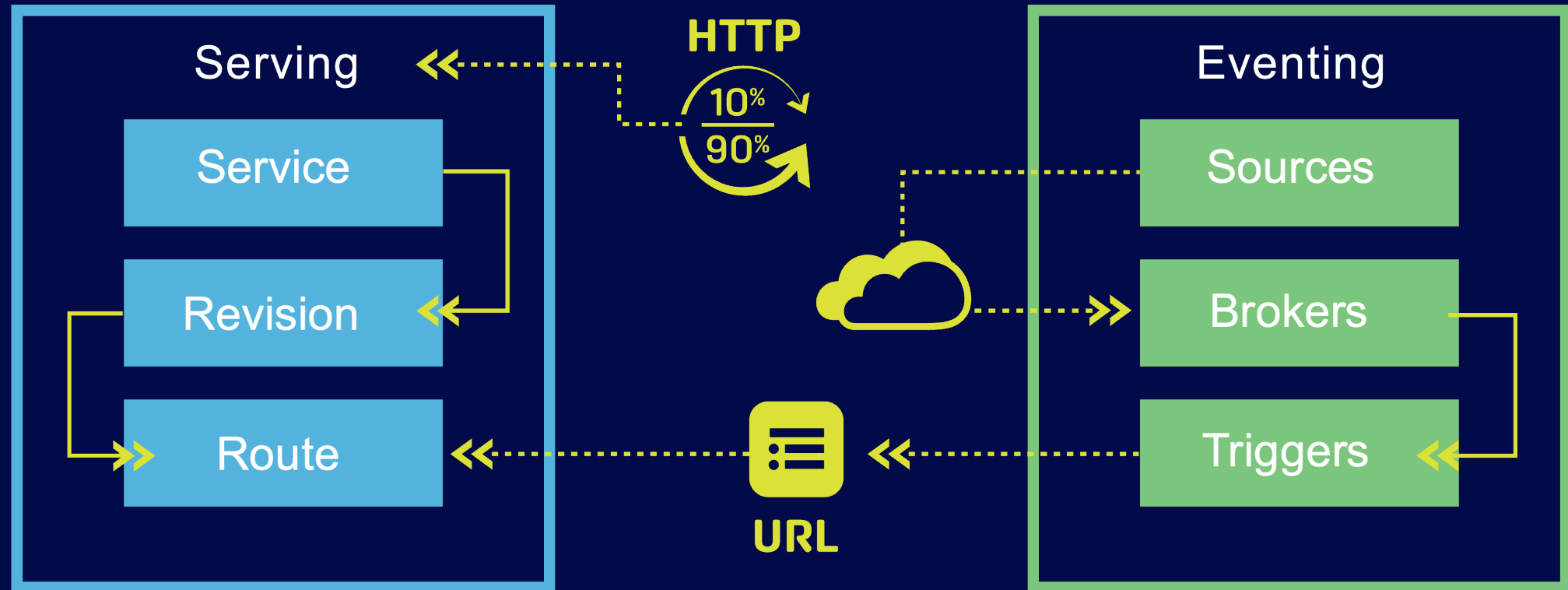


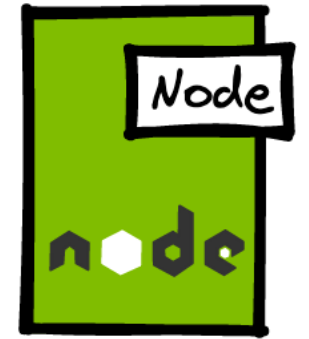
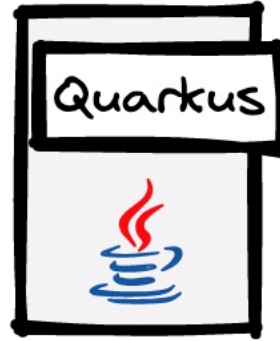
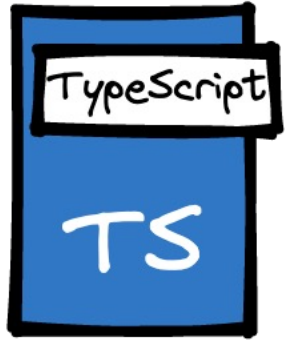
# Custom Resource Definition

```
1 apiVersion: apiextensions.k8s.io/v1
2 kind: CustomResourceDefinition
3 metadata:
4   name: services.serving.knative.dev
5   labels:
6     app.kubernetes.io/name: knative-serving
7     app.kubernetes.io/version: "1.8.3"
8     knative.dev/crd-install: "true"
9     duck.knative.dev/addressable: "true"
10    duck.knative.dev/podspecable: "true"
11 spec:
12   group: serving.knative.dev
13   names:
14     kind: Service
15     plural: services
16     singular: service
17     categories:
18       - all
19       - knative
20       - serving
21     shortNames:
22       - kservice
23       - ksvc
24   scope: Namespaced
25   versions:
26     - name: v1
27 # ...
```

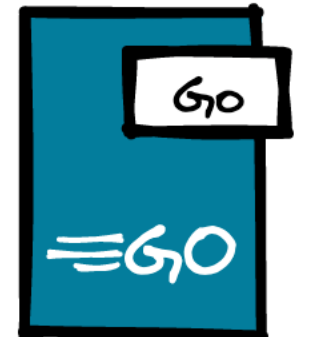
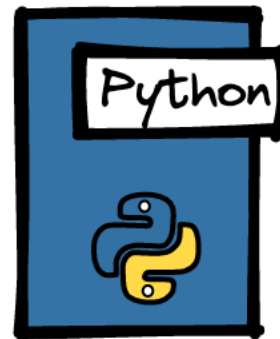
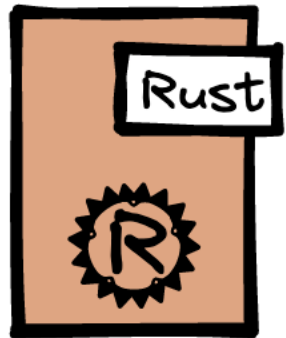
```
1 apiVersion: serving.knative.dev/v1
2 kind: Service
3 metadata:
4   name: helloworld-from-quarkus
5   namespace: knative-samples
6 spec:
7   template:
8     spec:
9       containers:
10        - image: wilda/hello-world-from-quarkus
```

# Knative Eventing





# Knative Functions ❤️ FaaS



# Demos



© 2019 UNIVERSAL STUDIOS THE GRINCH AND DR. SEUSS CHARACTERS



# Have you met Quarkus?

SUPERSONIC /  
SUBATOMIC /  
JAVA

<https://github.com/philippart-s/hello-world-from-quarkus>

<https://quarkus.io/>

# What we will try to do?

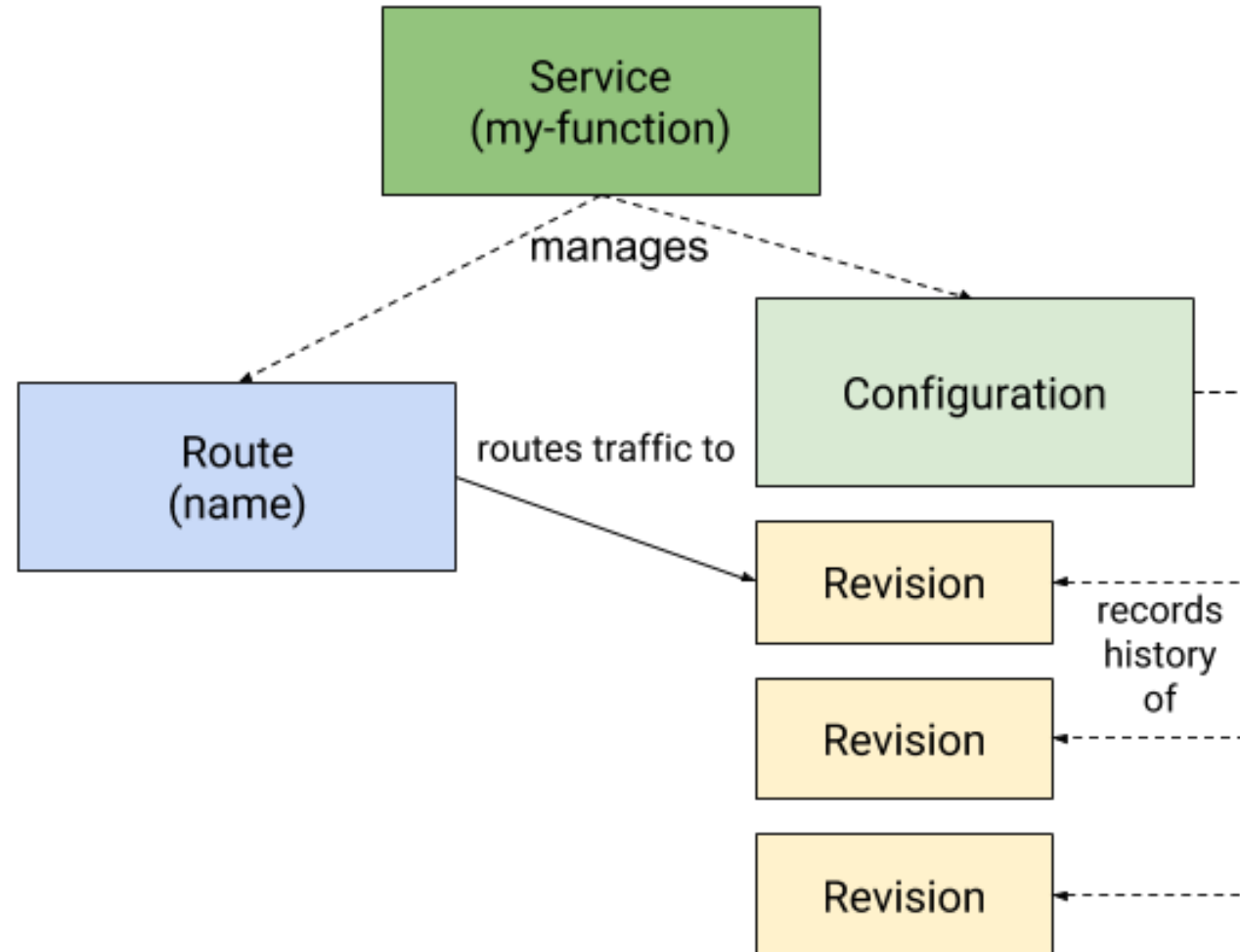


Fotis Fotopoulos

🏗️ Deploy a Quarkus application

0 Scale to zero

# Knative Serving



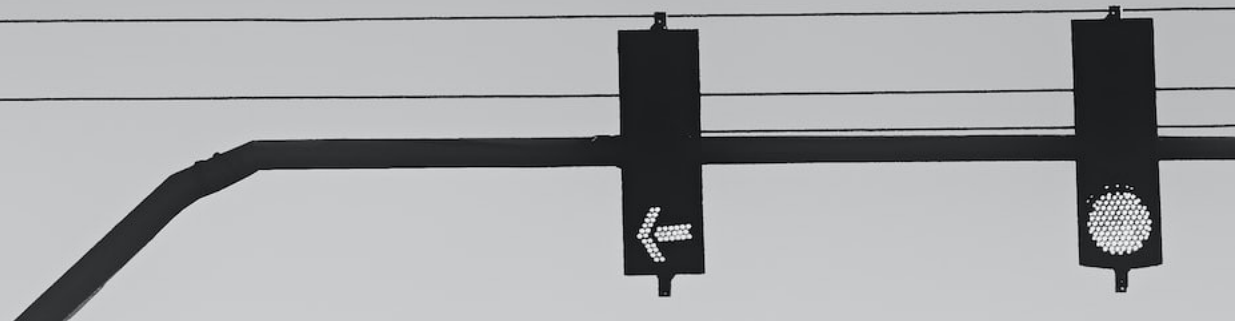
# What we will try to do?



Fotis Fotopoulos

- 🏗️ Deploy a Quarkus application
- 0 Scale to zero
- 🐥 Canary / blue-green deployment

# Traffic Routing



# Command Line Interface : Kn

```
ubuntu@ubuntu: ~$ |
```

**YAML?**

**WHERE WE ARE GOING,**

**WE DONT NEED YAML**

# What we will try to do?



Fotis Fotopoulos

- 🏗️ Deploy a Quarkus application
- 0 Scale to zero
- 🐦 Canary / blue-green deployment
- 👨‍💻 Function as a Service

# Knative Functions

```
function digital_best_reviews_posts  
global $post;  
$orig_post = $post;  
$cat_query1 = new WP_Query(  
    'cat_query1->have_posts'>  
);
```



Knative Serving  $\leftrightarrow$  CaaS

Knative Functions  $\leftrightarrow$  FaaS

# CaaS with OVHAI



Time to choose



Cloud  
CaaS  
SaaS  
FaaS  
DBaaS  
Serverless  
XXaaS  
IaaS

# OVHcloud



**Web Cloud & Telecom**



**Private Cloud**



**Public Cloud**



**Storage**



**Network & Security**



**30 Data Centers**  
in 12 locations



**34 Points of Presence**  
on a 20 TBPS Bandwidth Network



**2200 Employees**  
worldwide



**115K Private Cloud**  
VMS running



**300K Public Cloud**  
instances running



**380K Physical Servers**  
running in our data centers



**1 Million+ Servers**  
produced since 1999



**1.5 Million Customers**  
across 132 countries



**3.8 Million Websites**  
hosting



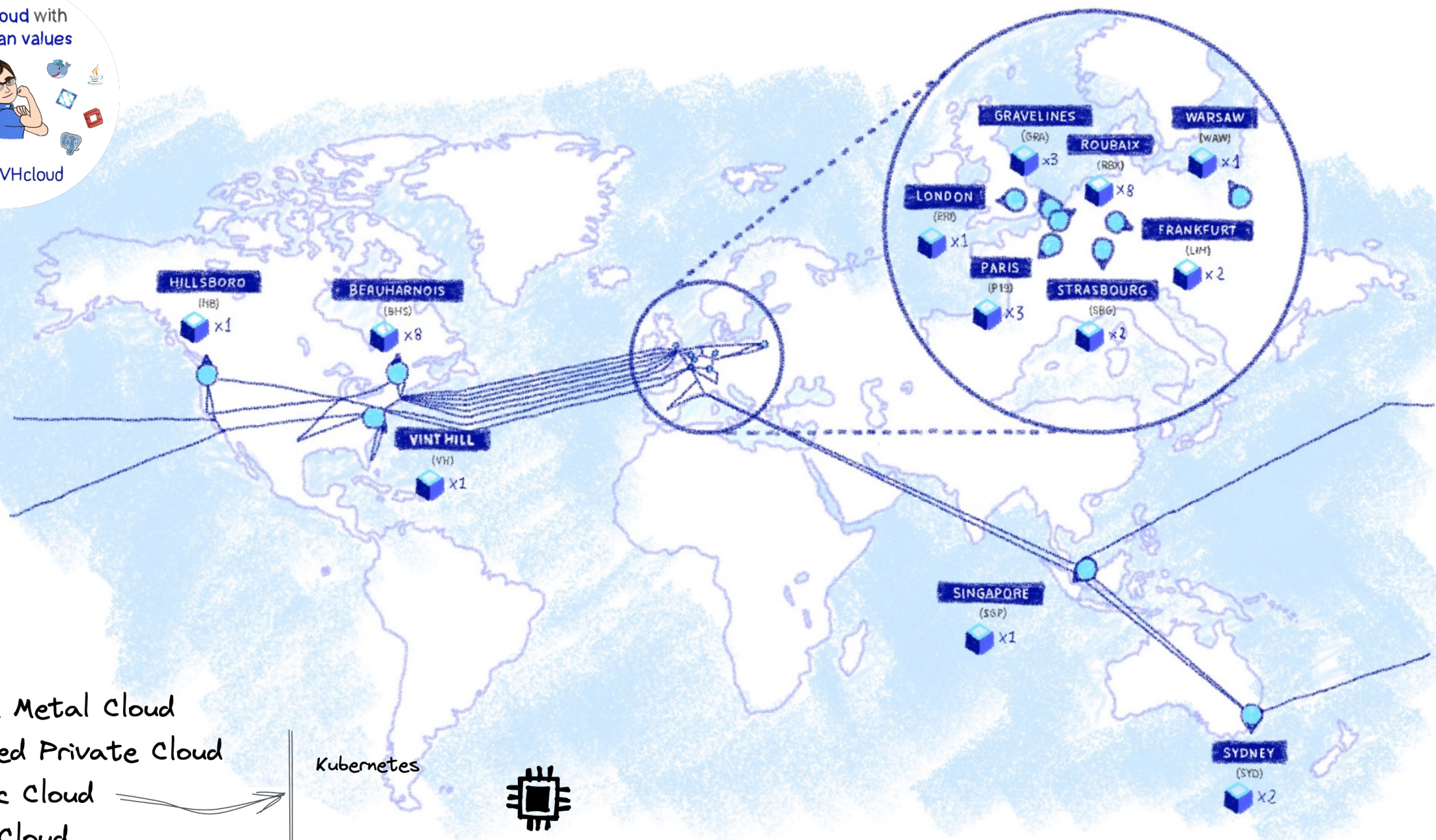
**1.5 Billion Euros Invested**  
since 2016



**P.U.E. 1.09**  
Energy efficiency indicator



**20+ Years in Business**  
Disrupting since 1999

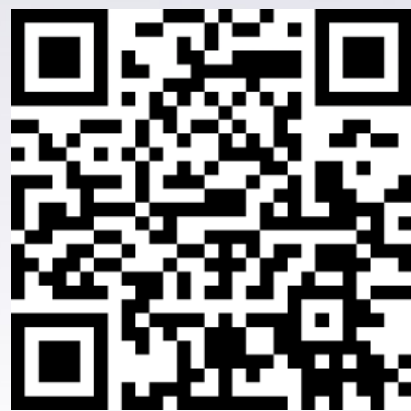


- Bare Metal cloud
- Hosted Private Cloud
- Public cloud
- Web cloud
- Télécom

Kubernetes

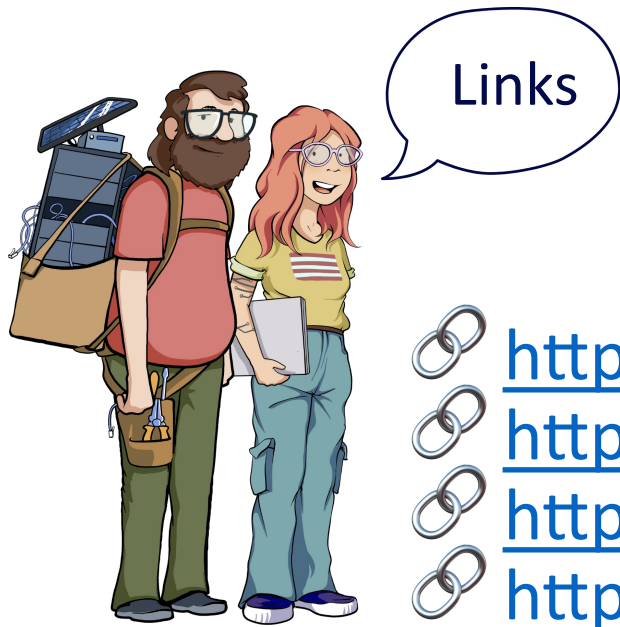
AI Deploy

GPU / CPU



<https://ovh.to/tFHgKRe>





Links

 <https://docs.ovh.com/gb/en/kubernetes/installing-knative/>

 <https://knative.dev/docs/>

 <https://cloudevents.io/>

 <https://quarkus.io/>

 <https://github.com/philippart-s/kn-serving-samples>

 <https://github.com/philippart-s/kn-func-samples>

 <https://www.ovhcloud.com/fr/public-cloud/ai-deploy/>

# VERY TECH TRIP

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