

# OpenFaaS

## Serverless platforms on Kubernetes

王偉任 (weithenn.org)

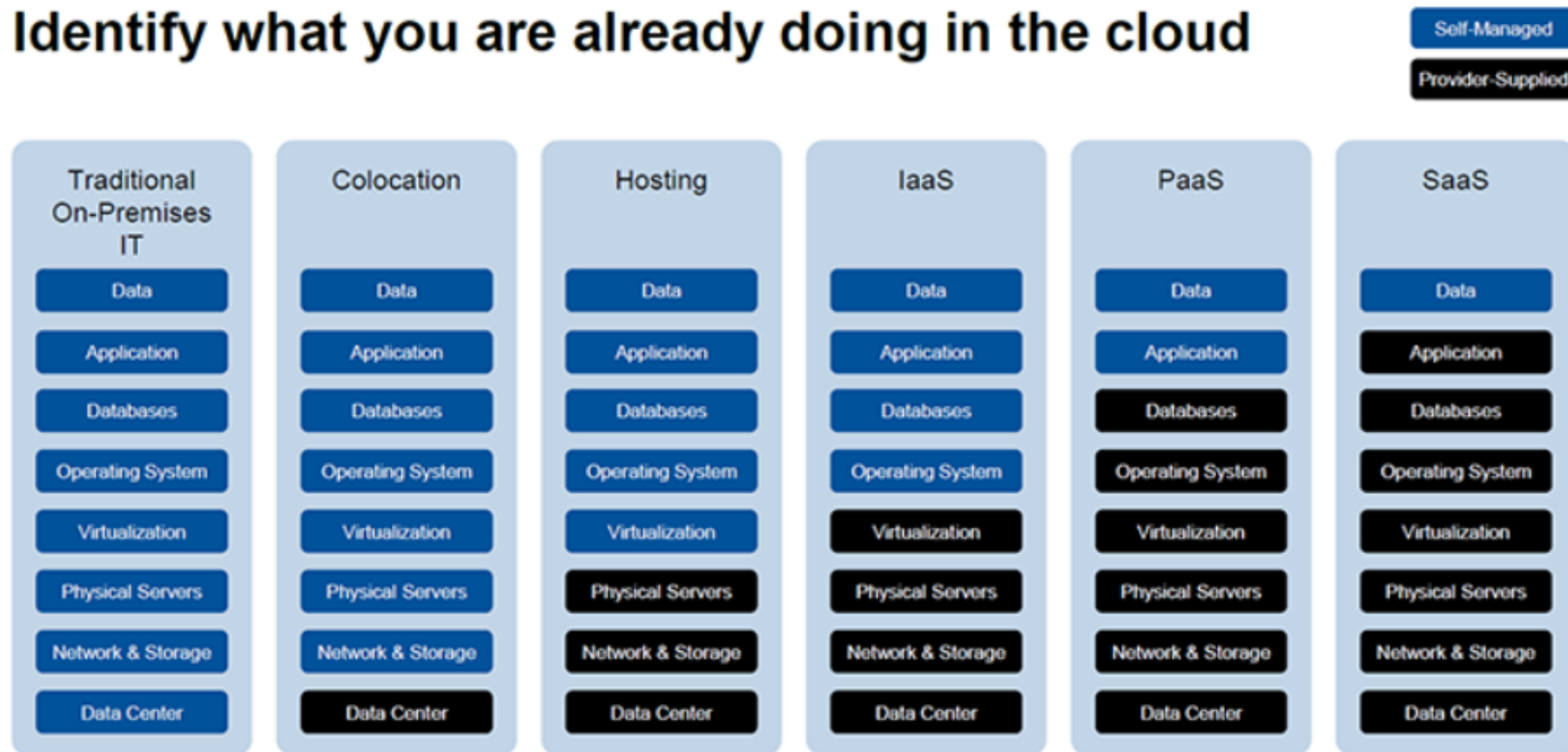


# FaaS / Serverless



# On-Premises / IaaS / PaaS / SaaS

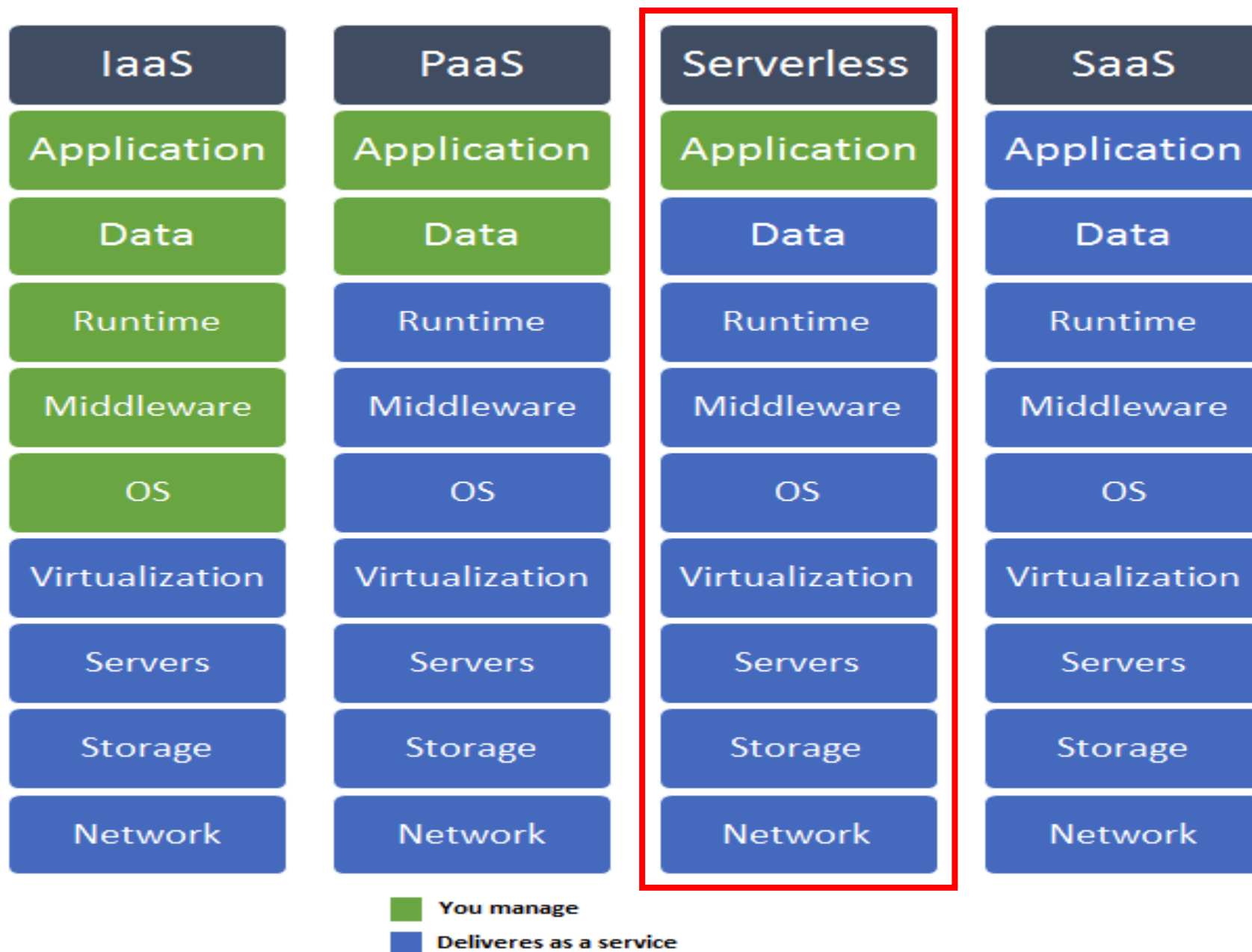
Identify what you are already doing in the cloud



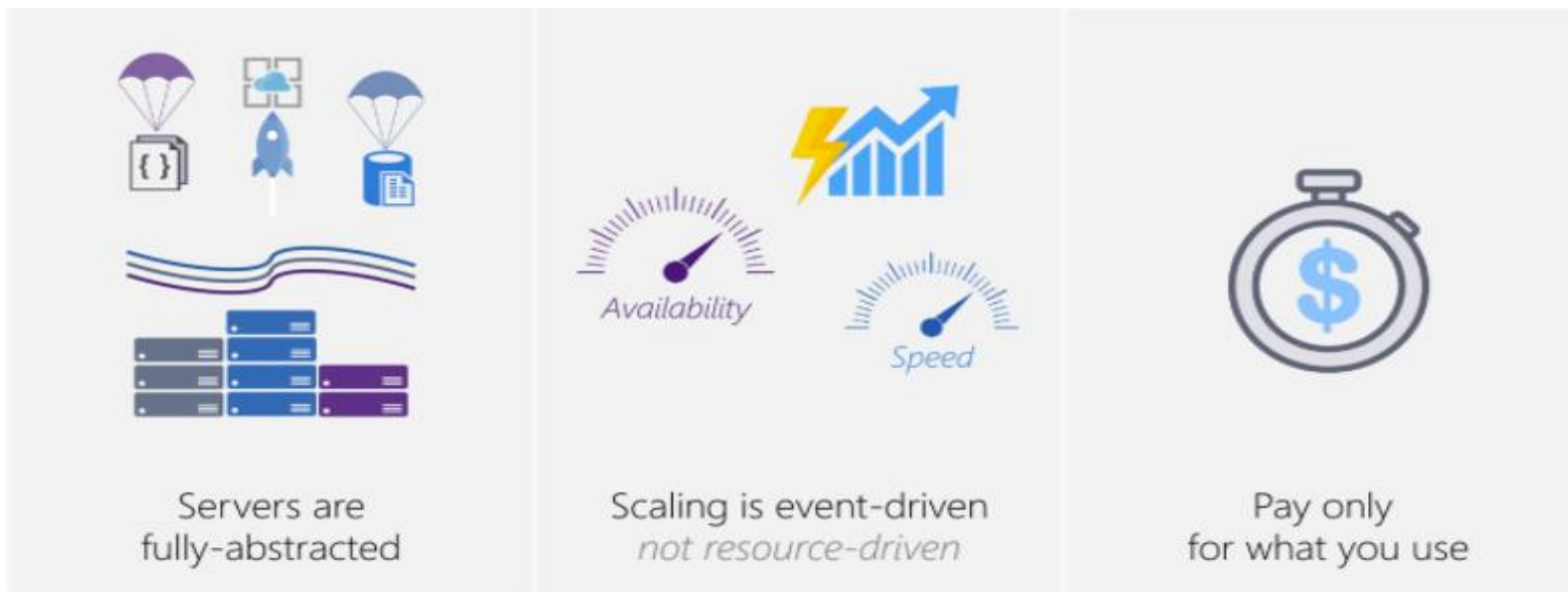
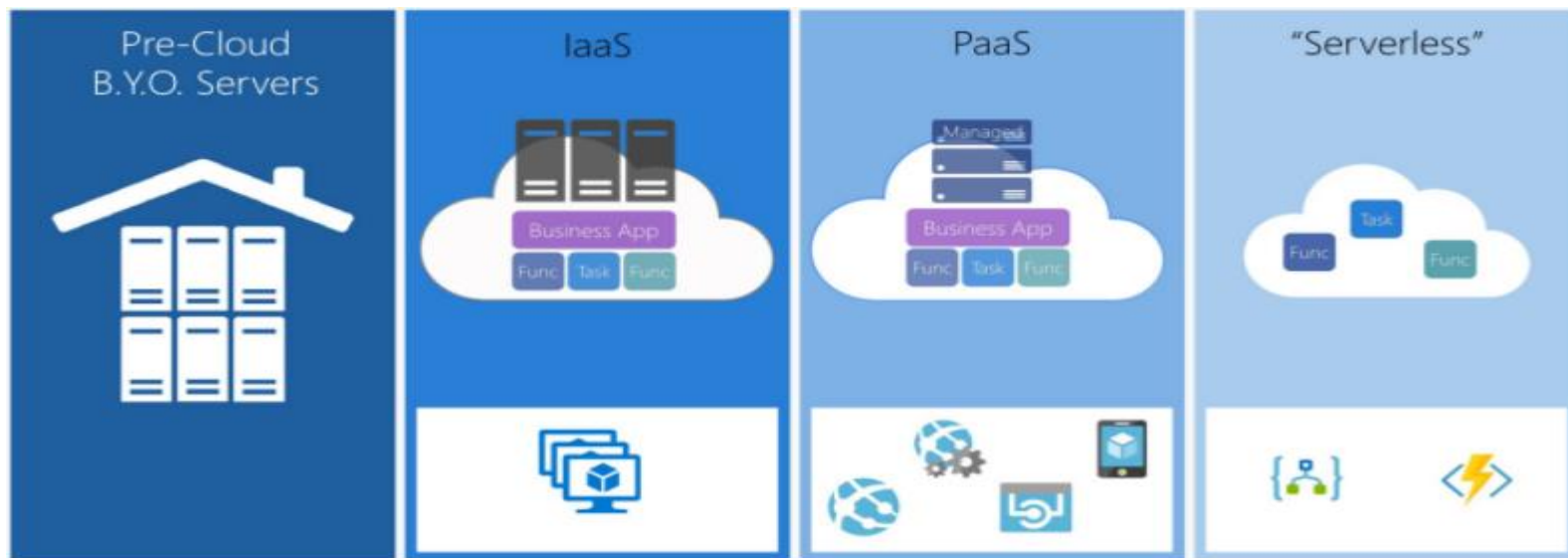
Gartner.



# FaaS / Serverless



# Benefits and Use Cases



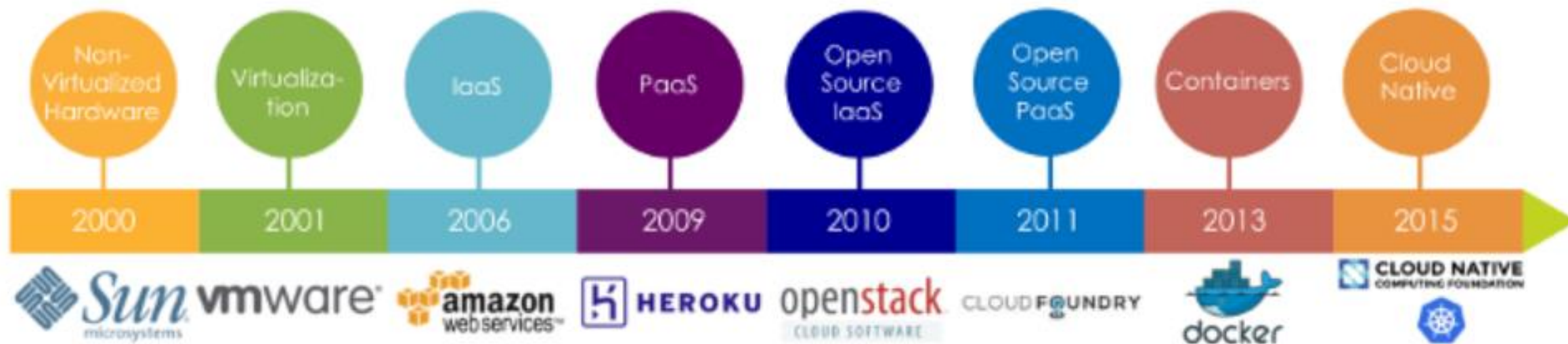
# Cloud Native



# Cloud Native



- Cloud native computing uses an open source software stack to:
  - segment applications into *microservices*,
  - packaging each part into its own *container*
  - and dynamically *orchestrating* those containers to optimize resource utilization





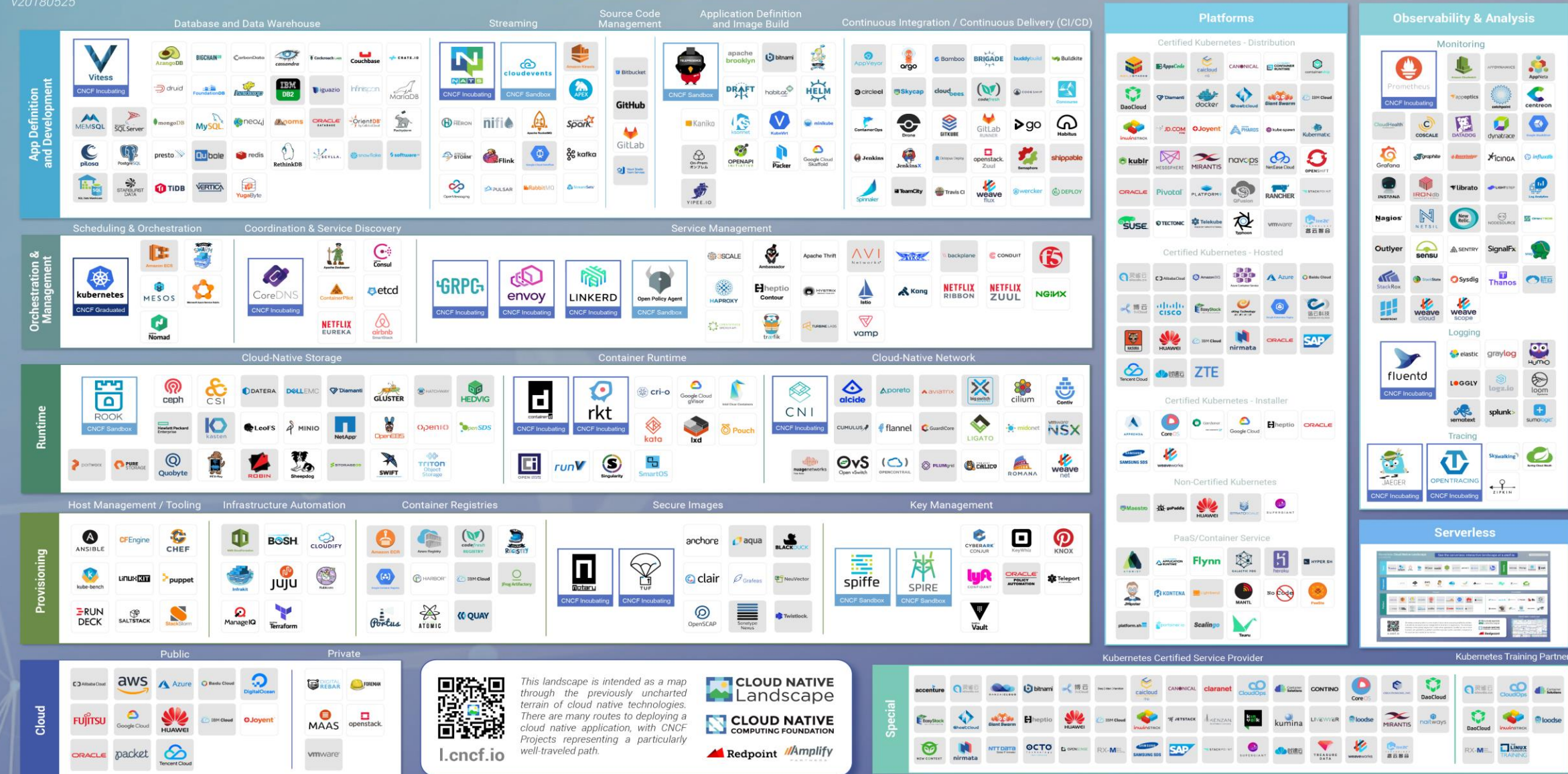
# Cloud Native Landscape (v20180525)

## Cloud Native Landscape

v20180525

See the interactive landscape at [l.cncf.io](http://l.cncf.io)

Greyed logos are not open source





# Serverless Cloud Native Landscape (v20180525)

Serverless Cloud Native Landscape  
v20180525

See the serverless interactive landscape at [s.cncf.io](https://s.cncf.io)

Greyed logos are not open source

Tools



Security



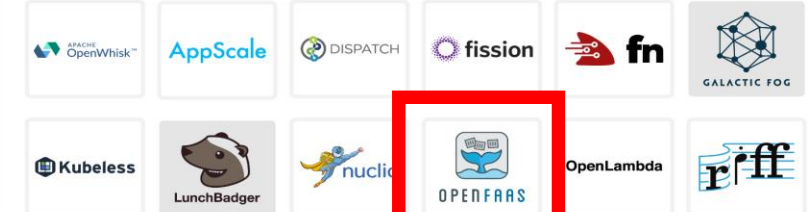
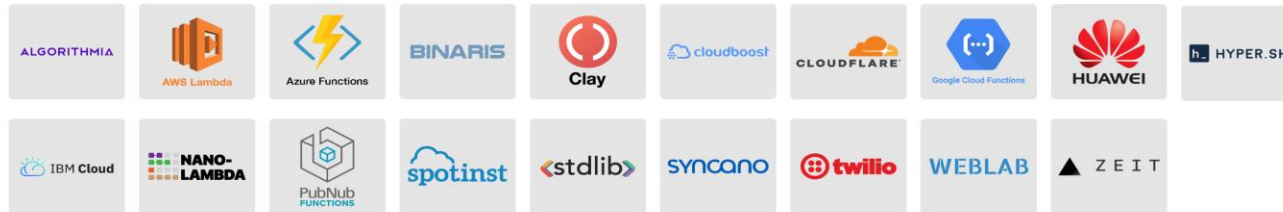
Framework



Hosted

Installable

Platform



[s.cncf.io](https://s.cncf.io)

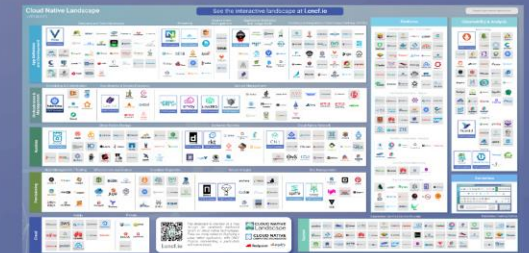
Serverless computing refers to a new model of cloud native computing, enabled by architectures that do not require server management to build and run applications. This landscape illustrates a finer-grained deployment model where applications, bundled as one or more functions, are uploaded to a platform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

CLOUD NATIVE  
Landscape

CLOUD NATIVE  
COMPUTING FOUNDATION

Redpoint

Cloud Native Landscape



# OpenFaaS



# OpenFaaS – Serverless Function Made Simple

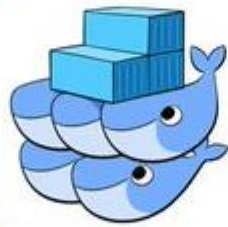
## Functions as a Service

API Gateway

Function Watchdog



Prometheus



Swarm



Kubernetes



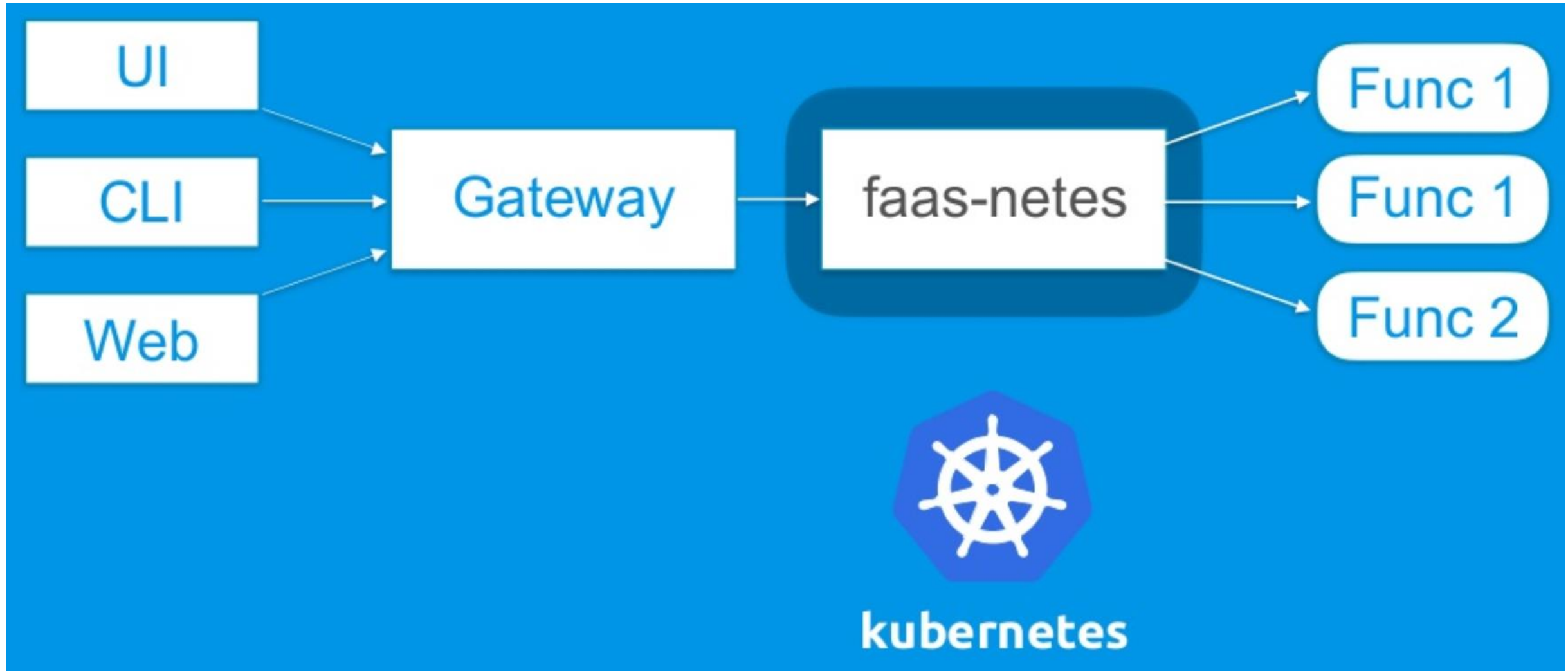
docker

# DEMO

## Build OpenFaaS on Kubernetes ( > 1 min)

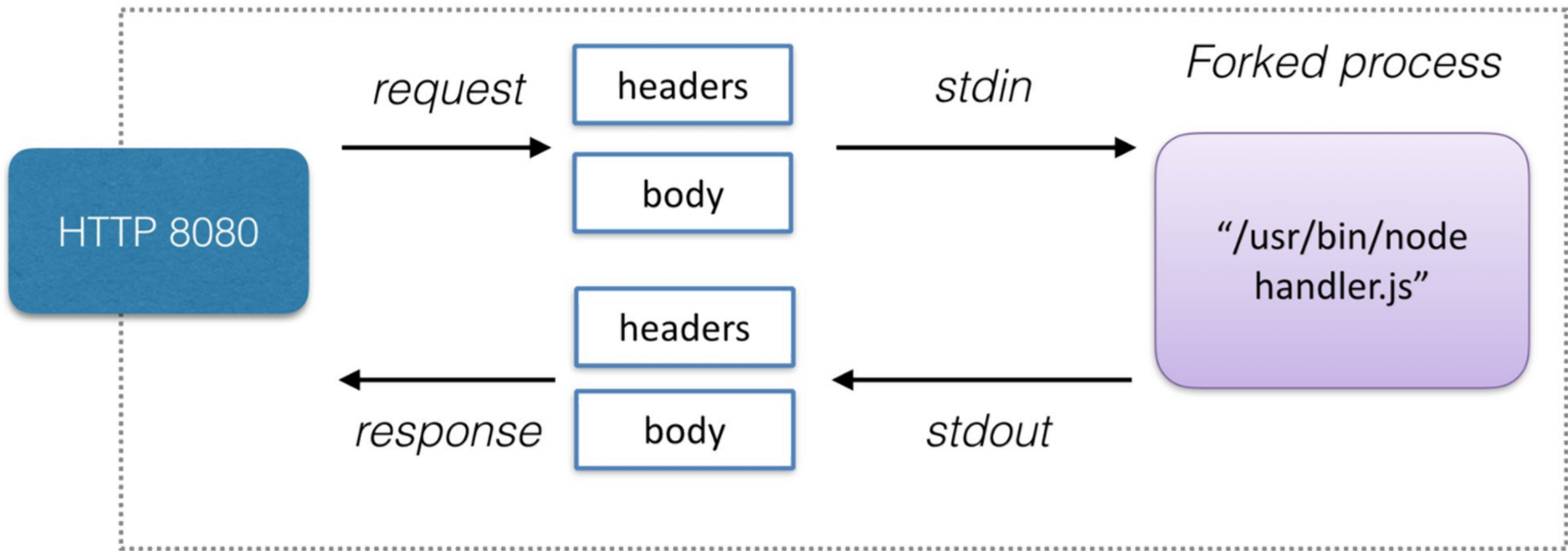


# OpenFaaS – on Kubernetes





# OpenFaaS – Invoke Function (Watchdog)



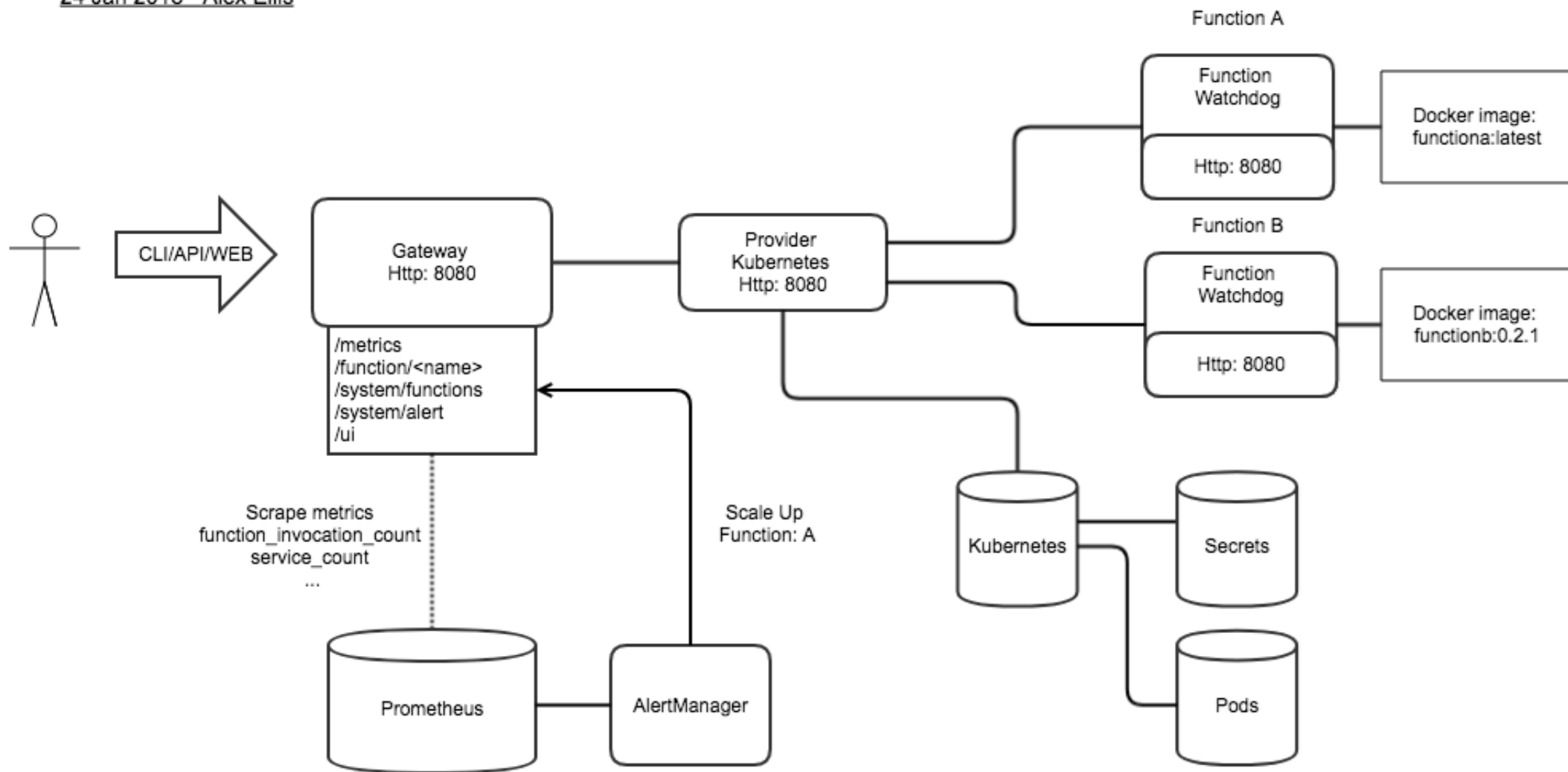
# DEMO

## Invoke Function



# OpenFaaS – Auto-Scaling via AlertManager

OpenFaaS conceptual diagram  
24 Jan 2018 - Alex Ellis



Multiple replicas may exist for the Gateway, the provider and each function.

# DEMO

# Auto-Scaling



# DEMO

## Deploy Function from Manually





# Write a Function

How do I write a function?

WRITE A HANDLER

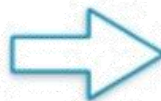
```
$ faas new --lang python dockercon
```

```
def handler(req):  
    r = requests.get(req)  
    print(r.status_code)
```

handler.py

requests

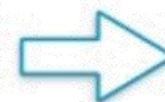
requirements.txt



Python  
Template



Docker  
Image



Container Registry



# Write a Function

What languages are available?

SHORT ANSWER - ANY

- Use supported templates
- Create your own
- Use a Dockerfile



Thank  
you

