



OPENFAAS

Welcome to Serverless 2.0

goto Chicago 2019

Alex Ellis Founder, Director **OpenFaaS Ltd**

What is a 2.0 about?

disruption

#irc



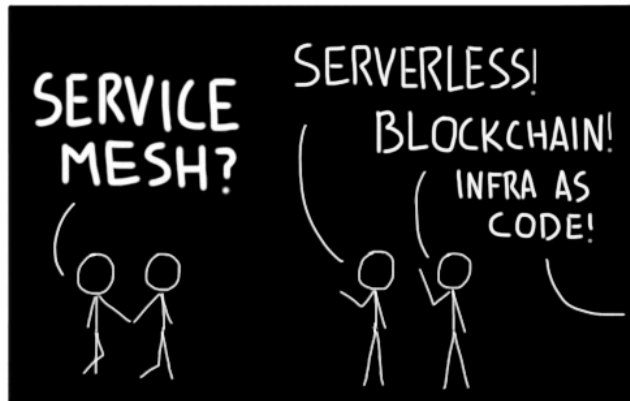
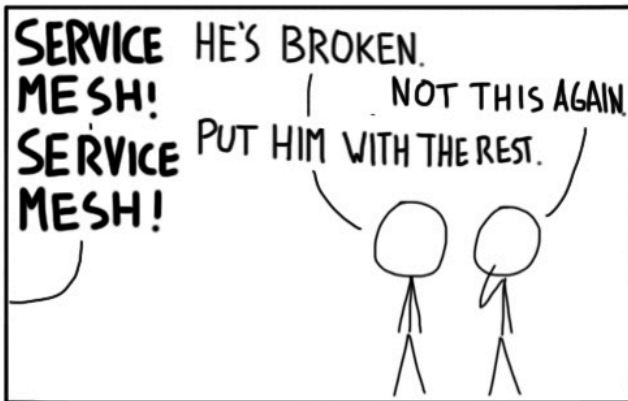
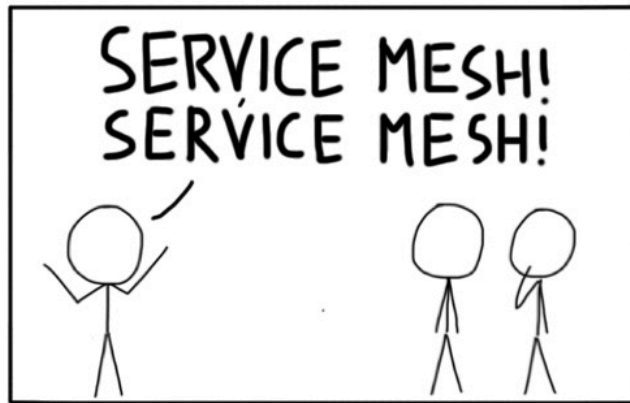
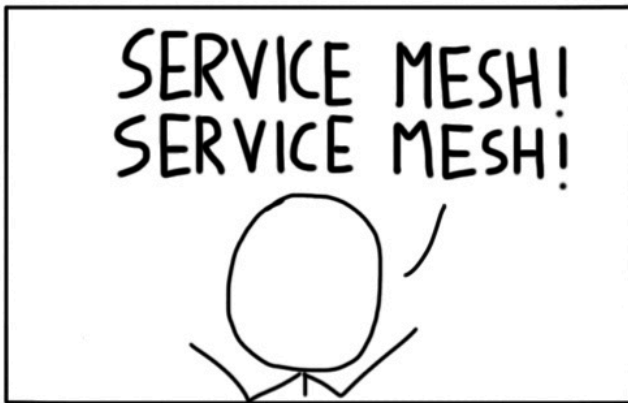
The Session

- What is a Serverless “2.0”?
- Making sense of the landscape 🏔️
- Portable Serverless with Kubernetes 😄
- Live demo 🔥  
- Get involved 👍

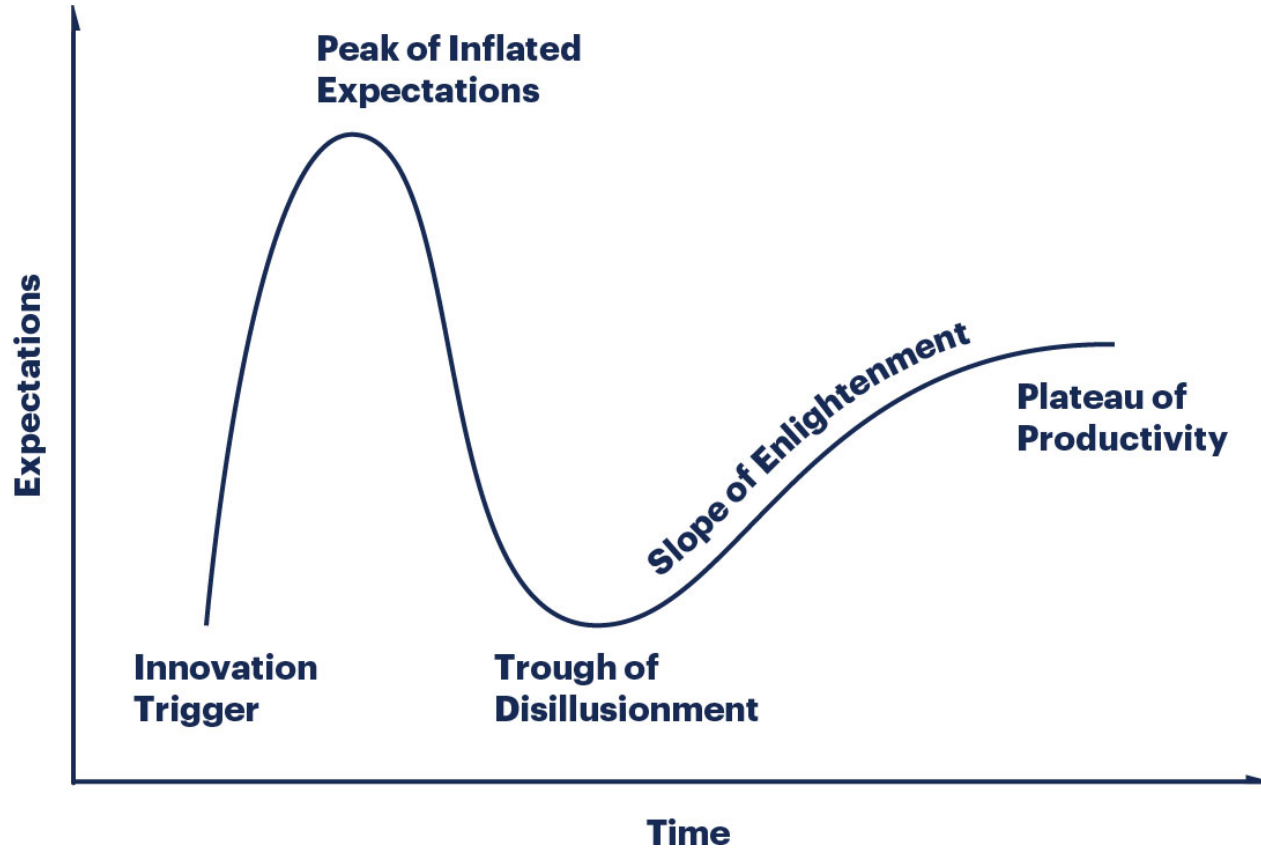
Tweet @alexellisuk 📱💣



Too much hype?



Gartner's Hype Cycle



The X Files

X Files - Desktop Themes

The Truth is out There

X-FILES THEMES

This page now offers over 30 X-Files Desktop Themes to download.

The people who originally created these themes, paid with their web sites and bandwidth. **Twentieth Century Fox**, creators of the X-Files, forced many of the early fans sites to close down. Read the full story of this from the [Dutch X-Files home page](#).....

All the downloads listed here are stored at EZThemes. You can download them directly from this page, without visiting the EZThemes site.

 **Monster Remodelation of this site, new graphics, new tests with monthly posted results, up to date news on andre who is struggling (ranked 103) and more on Andre's personal life, do not miss it. Coming in 2 weeks!**



To See The New Version w/frames!



01337

Tennis is about life!!!

If you don't practice you don't deserve to dream.-Agassi

Search the history of over 357 billion web pages on the Internet.

WayBackMachine

enter URL or keywords



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DONATE

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PEOPLE



Internet Archive is a non-profit library of millions of free books, movies, software, music, websites, and more.



357B



20M



5.1M



5.3M



1.8M



418K



3.3M



202K



435K

Search

GO

[Advanced Search](#)

Announcements

A "Brave" New World

Official EU Agencies Falsely Report
More Than 550 Archive.org URLs as
Terrorist Content

Boston Public Library's 78rpm
Records Come to the Internet:
Reformatting the Boston Public
Library Sound Archives

[SEE MORE](#)

Remember Web 2.0?



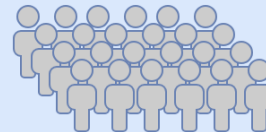
Web 1.0

Published
Read-only
Static
Centralized
Guestbook



Web 2.0

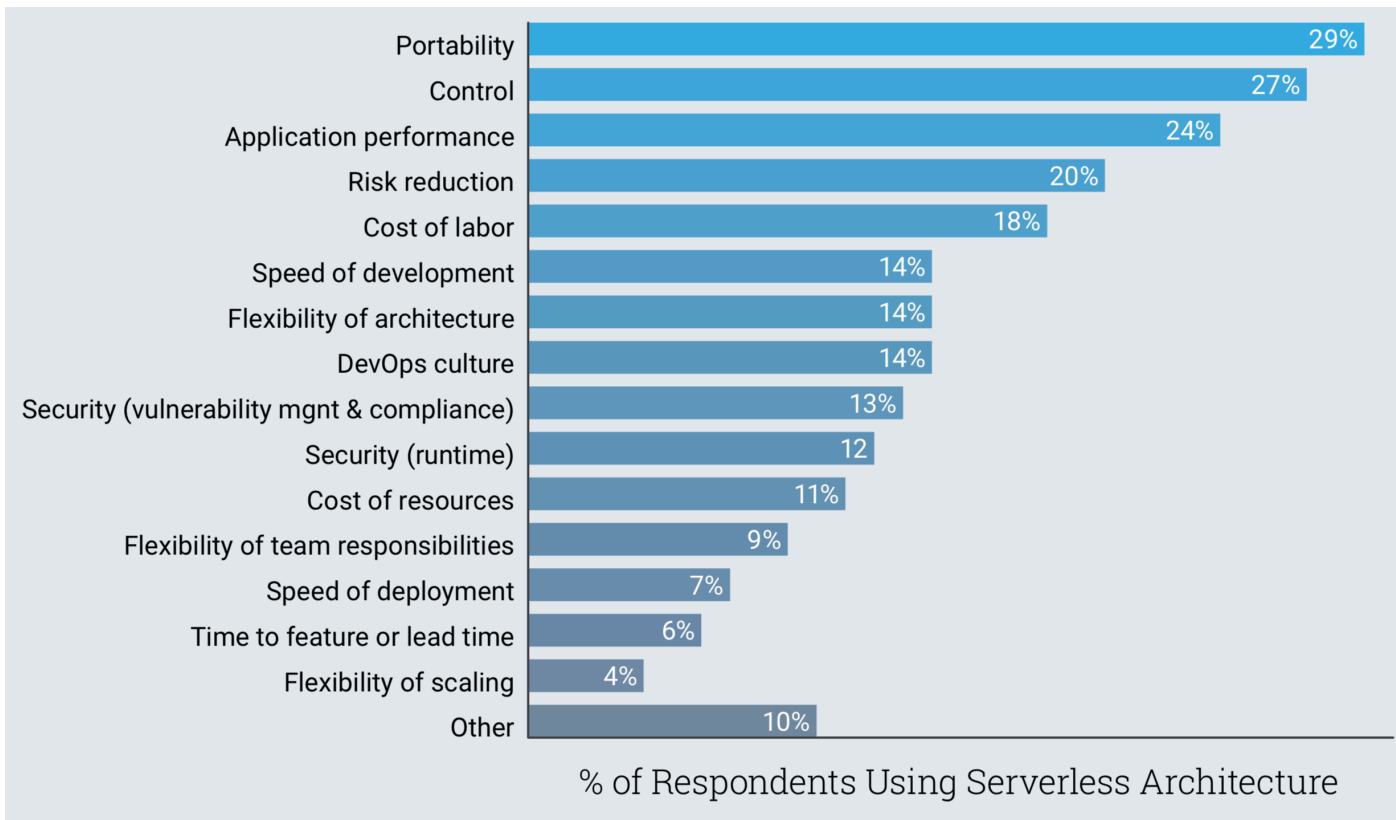
Participative
Dynamic
Feedback
Sharing
Social media



Serverless 1.0

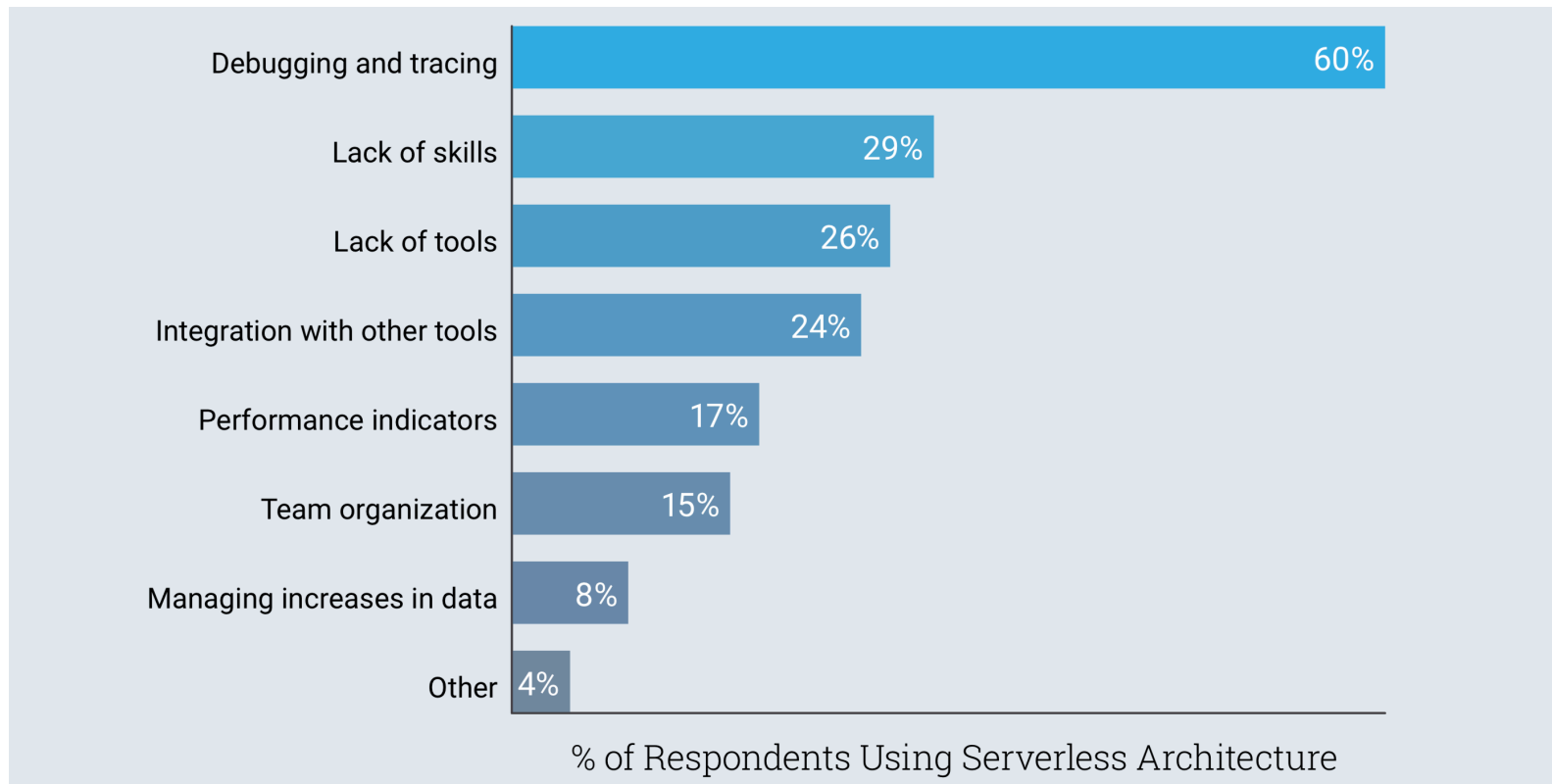
Workload	 Node.js Function	 Node.js Function	 Node.js Microservice
Packaging	 Zip File	 Zip File	
Platform	 AWS Lambda	 Google Cloud Functions	
Infrastructure	 AWS	 GCP	 Enterprise

Serverless 1.0 – pain points 🙄



Source: The New Stack Guide to Serverless Tech. 2018

Serverless 1.0 – developer pain points 🤔



Amazon Alexa crashes after Christmas Day overload

Number of users plugging in products using virtual assistant causes outage in Europe



Source: The Guardian, 2018

Serverless 1.0 claims 🤔

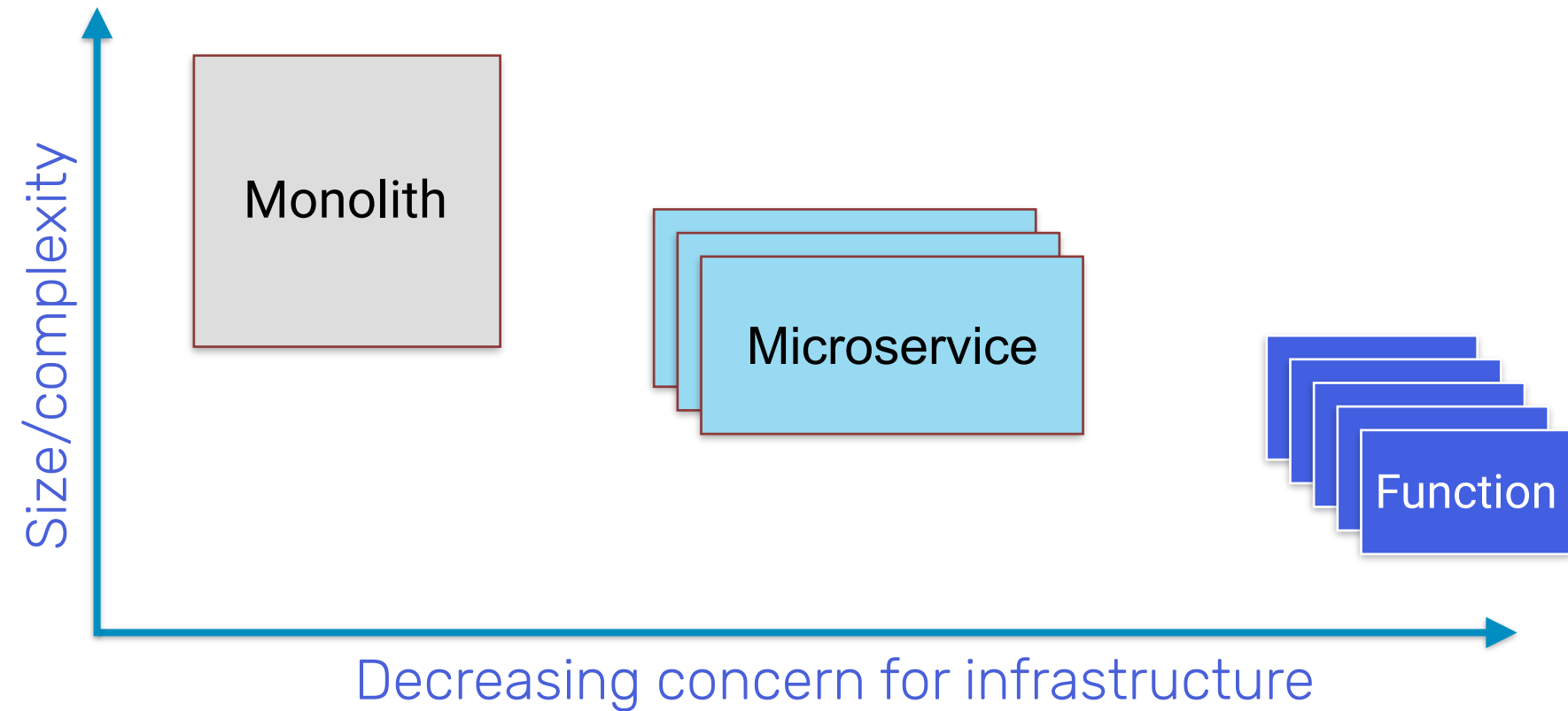
- Only functions
- Infinite capacity / scale
- Zero cost at rest
- Sub-second billing
- No-ops

} SaaS

Serverless is an architectural pattern



Serverless approach



What are functions?

```
def handler(req):  
    return "hello world"
```

Short-lived
Single-purpose
No state
Auto-scaling



Write a function with OpenFaaS

1. `$ faas new --lang python3 uptime`

```
import requests

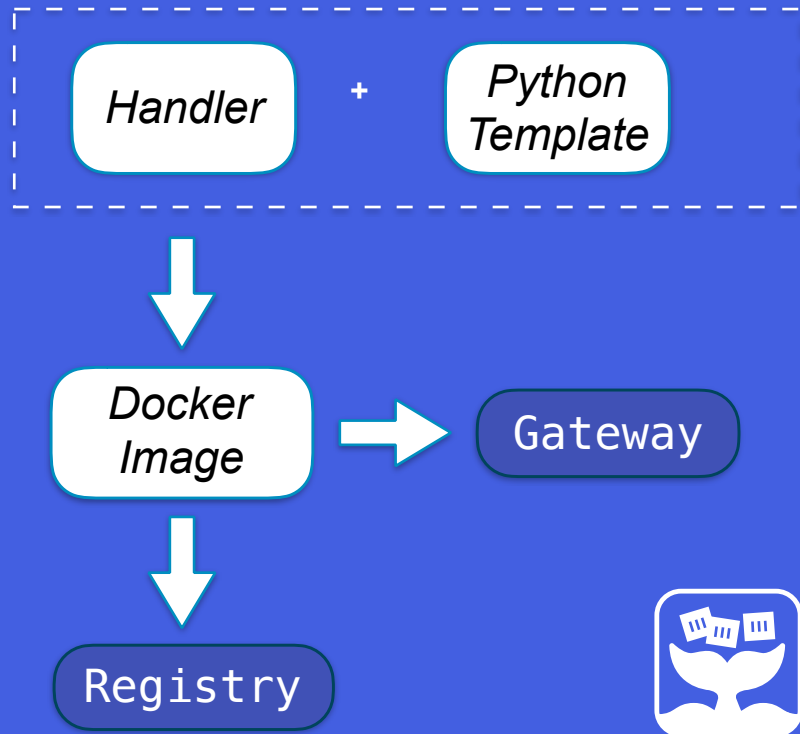
def handle(req):
    r = requests.get(req)
    return str(r.status_code)
```

`handler.py`

`requests`

`requirements.txt`

2. `$ faas up`

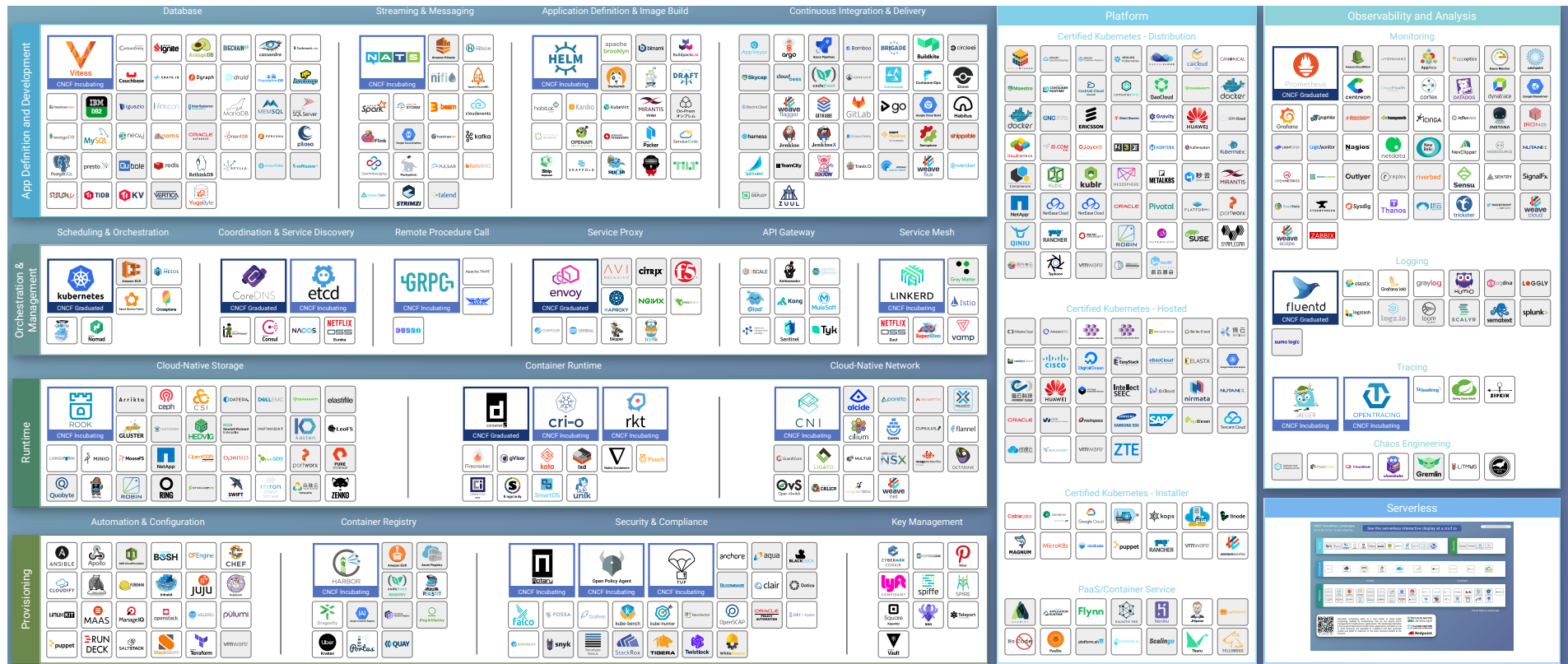


stack.yml

```
4  functions:
5    leaderboard:
6      lang: golang-middleware
7      handler: ./leaderboard
8      image: leaderboard:1.1.0
9      labels:
10        com.openfaas.scale.zero: false
11      environment:
12        postgres_db: defaultdb
13        postgres_sslmode: require
14        postgres_port: 25060
15      secrets:
16        - leaderboard-app-secrets
```



The Cloud Native Opportunity



The Cloud Native Opportunity



Kubernetes Certified Service providers



Serverless 2.0

Workload	 Node.js Function	 Node.js Microservice
Packaging	 Docker Image	
Platform	 Kubernetes	

Serverless 2.0 contract

- HTTP/8080
- Docker / OCI image
- Stateless
- Immutable

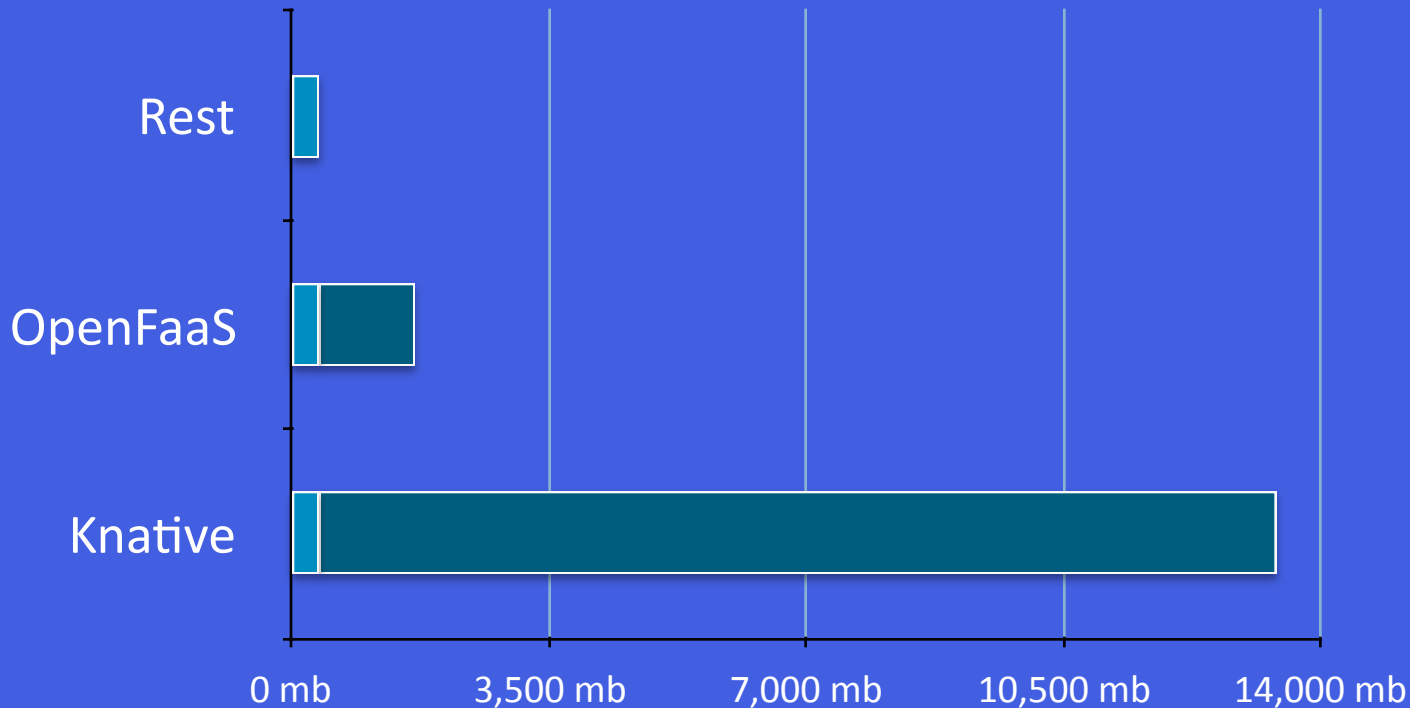


*adopted by
OpenFaaS & Knative

Framework comparison

	OpenFaaS	Kubeless	Knative
Vendor	Community	Bitnami	Google
Maturity	2.5yr	2.5yr	< 1 yr
Stable	✓✓	✓✓	✗
Code limits	∞	50kb/1mb	∞
Lightweight	✓✓	✓	✗
YAML	Stack/CRD	CRD	CRD
Zero-scale	✓	✗	✓
Ease of Use	✓✓✓	✓✓	?

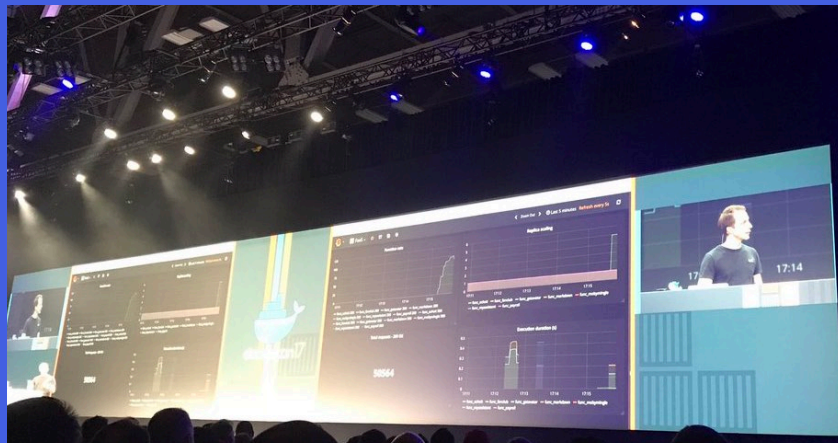
Memory at idle



DigitalOcean 3x 4GB 2x vCPU

Meet OpenFaaS

- Started in Nov 2016 as a cool hack for Dockercon
- Developers-first
- Operationally simple
- Community centric



1360 Slack members

16.7k stars

200+ contributors

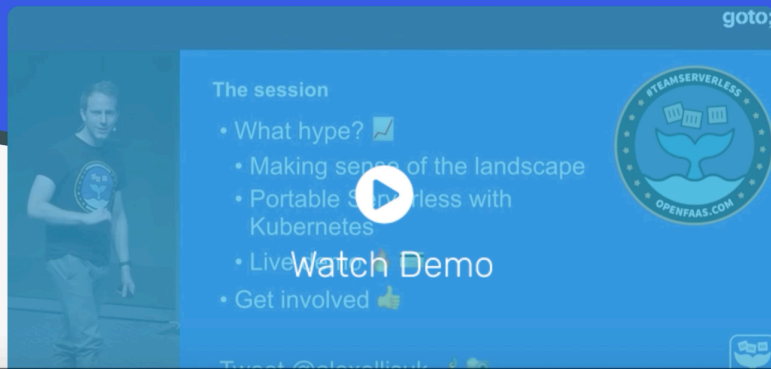
6.8M pulls



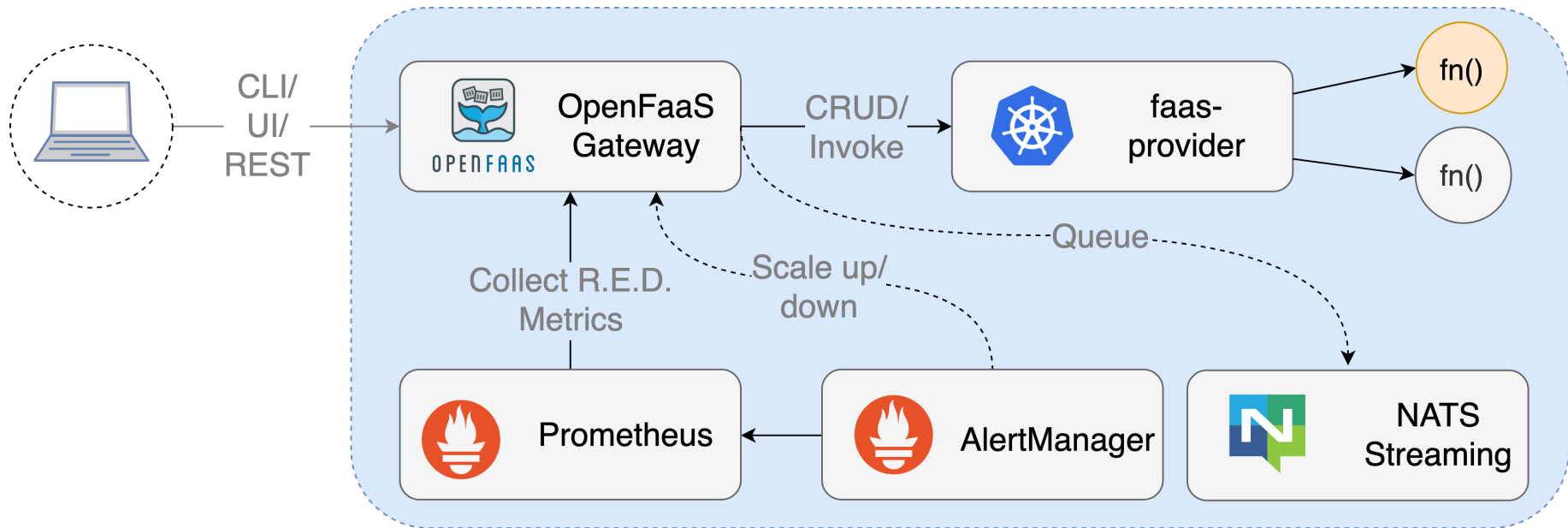


Serverless Functions, Made Simple.

OpenFaaS® makes it simple to turn anything into a serverless function that runs on Linux or Windows through Docker Swarm or Kubernetes.



OpenFaaS Architecture



OpenFaaS in production



Dim Solution.



InfoTech
Partners

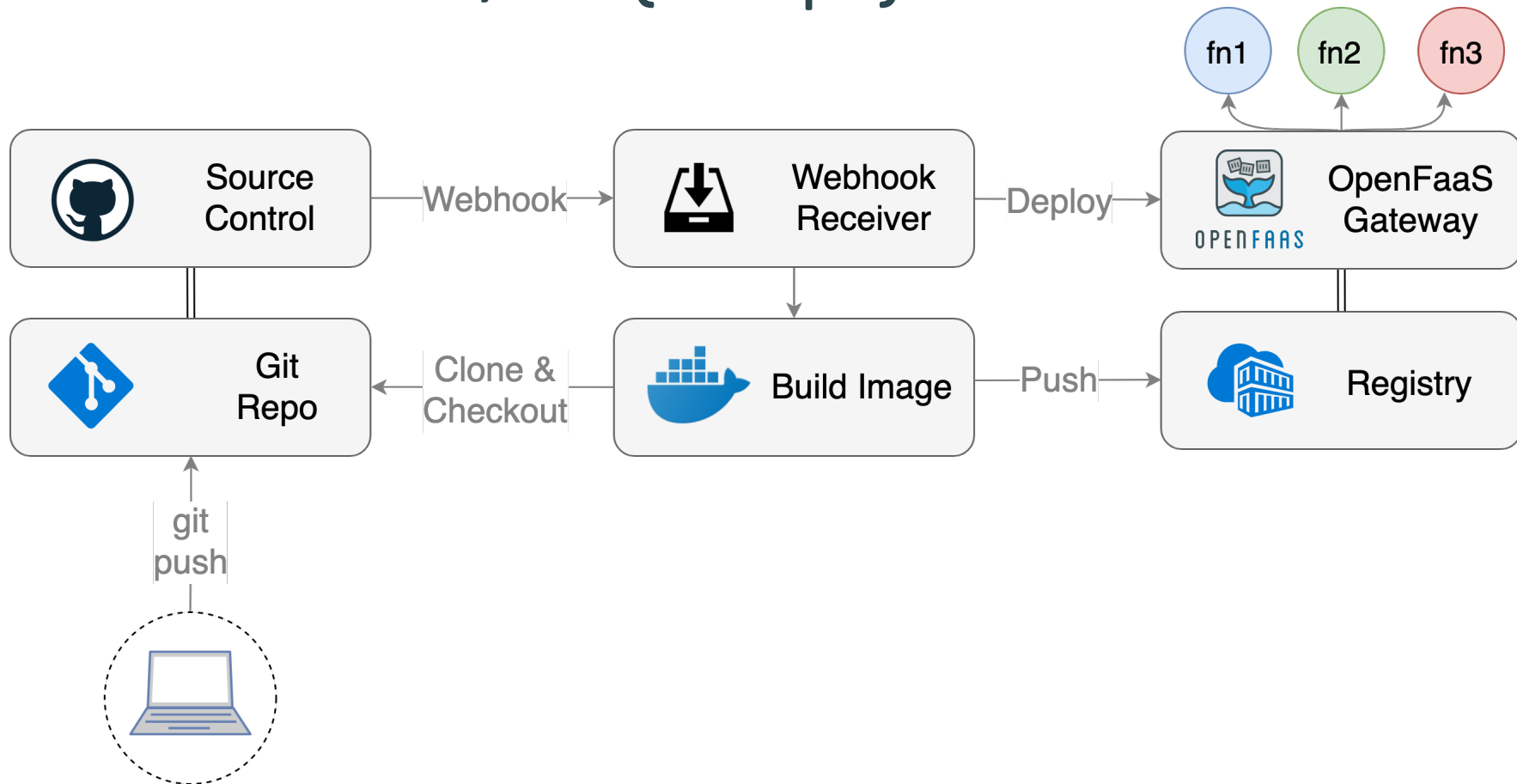


• VMware



Source: OpenFaaS.com April 2019, 36x end-user companies

Automated CI/CD (GitOps)



OpenFaaS Cloud

 Search or jump to... / Pull requests Issues Marketplace Explore

alexellis / **leaderboard-app** Unwatch 2

[Code](#) [Issues 2](#) [Pull requests 1](#) [Actions](#) [Insights](#) [Settings](#)

Branch: master ▼

Commits on Apr 7, 2019

Disable scale to zero ...

 alexellis committed 11 days ago ✓

All checks have passed

4 successful checks

✓  **github-sub** — Build github-sub [Details](#)

✓  **leaderboard** — Build leaderboard [Details](#)

✓  **leaderboard-page** — Build leaderboard... [Details](#)

✓  **stack-deploy** — Deploy to OpenFaaS [Details](#)

[Verify](#)

Commits on Mar 14, 2019

Update local testing instructions ...

 alexellis committed on 14 Mar ✓

Add local deployment instructions

 alexellis committed on 14 Mar ✓

Commits on Feb 21, 2019

Bump CI ...

 alexellis committed on 21 Feb ✗

OpenFaaS Cloud



OpenFaaS Cloud

Home

[GitHub](#)

[Logout](#)

alexellis

Functions for alexellis

Welcome to the OpenFaaS Cloud Dashboard! Click on a function for more details.

Name		Repository	SHA	Deployed	Invocations	Replicas	
leaderboard		leaderboard-app	be88a88	11 days ago	1	1/4	
leaderboard-page		leaderboard-app	be88a88	11 days ago	4	1/4	
github-sub		leaderboard-app	be88a88	11 days ago	20	1/4	

OpenFaaS Cloud

alexellis / github-sub

Function Overview

 Deployment

Build Logs

Name: github-sub 

Image: ofcommunity/alexellis-leaderboard-app-github-sub:1.1.0-be88a88

Endpoint: <https://alexellis.o6s.io/github-sub>

Replicas: 1/4

 Git

Get Badge

Repository: [alexellis/leaderboard-app](#)

SHA: [be88a88278a7e8d229f6ff40af00c182d02e494b](#)

Deploy Time: 11 days ago

Invocations

Period:

1hr24hr

42 invocations

42

Success

0

Error

OpenFaaS Cloud ☁ Demo

 alexellis / my-uptime-monitor

 Unwatch ▾ 1

 Star 0

 Fork 0

 Code

 Issues 0

 Pull requests 0

 Actions

 Projects 0

 Wiki

 Insights

 Settings

My Uptime Monitor demo

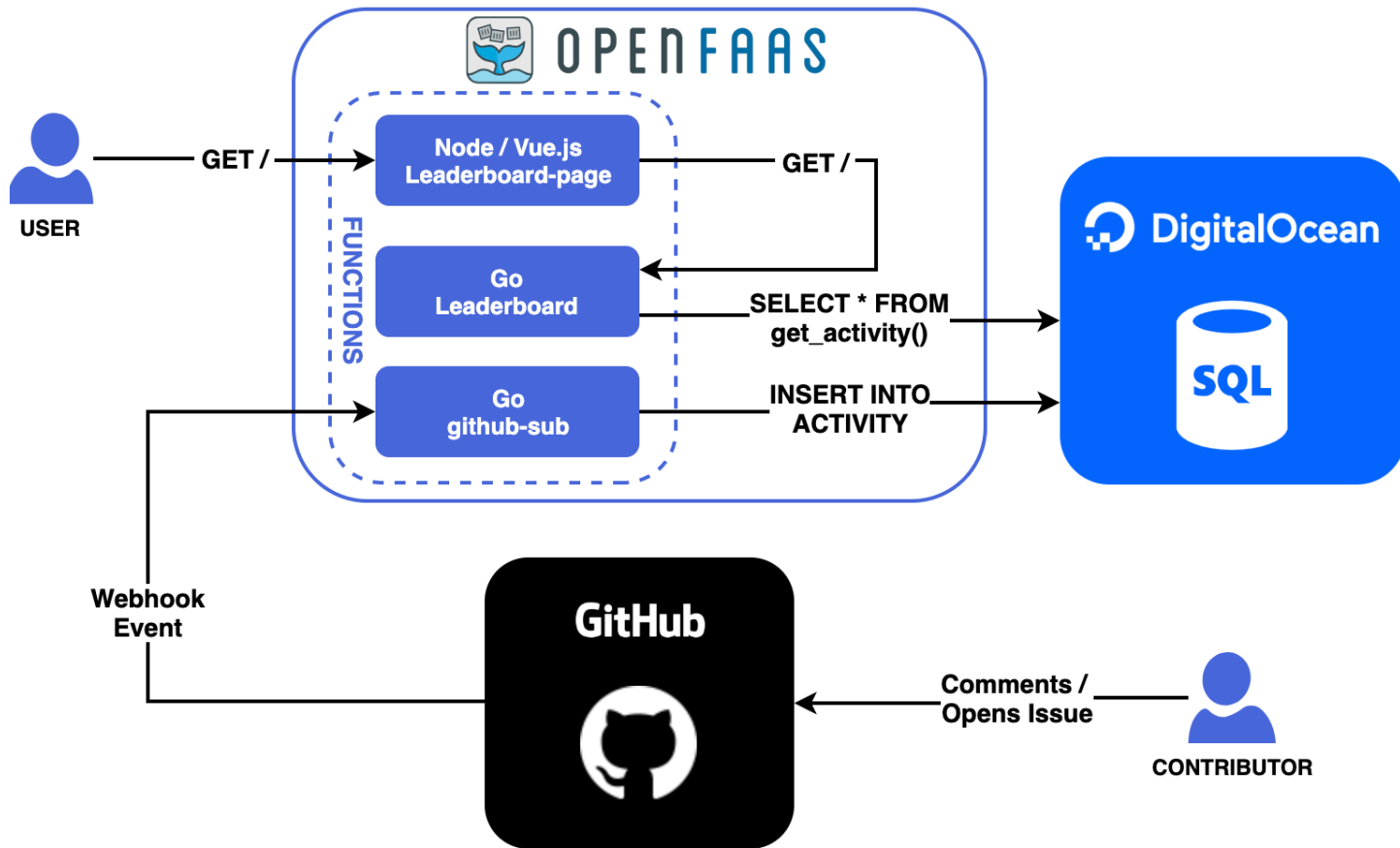
Edit

Single Page App (SPA)

LEADERBOARD

↑	Login	issue Comments	issues opened
	alexellis	561	42
	martindekov	85	5
	LucasRoesler	60	7
	rgee0	52	4
	derek[bot]	47	0
	zeerorg	46	1
	matipan	40	0

Conceptual design (SPA)



Demo (SPA)

bit.ly/2V1Sp9w



[github.com/
teamserverless/
chicago/issues/1](https://github.com/teamserverless/chicago/issues/1)



Write

Preview

AA B i

“ <> 🔗

☰ ☰ ☑ ☰

@ ★ ↩

Leave a nice "family-rated" comment!

Attach files by dragging & dropping, selecting or pasting them.



🚫 Close and comment

Comment

Summing-up

- Serverless 1.0 - lock-in, control & debug 🙈
- Serverless 2.0 - Docker Contract, Cloud Native Opportunity, industry buy-in & > FaaS 🌟
- It's Open Source, and you're invited 🧐



Get involved

1. Join Slack 🙌

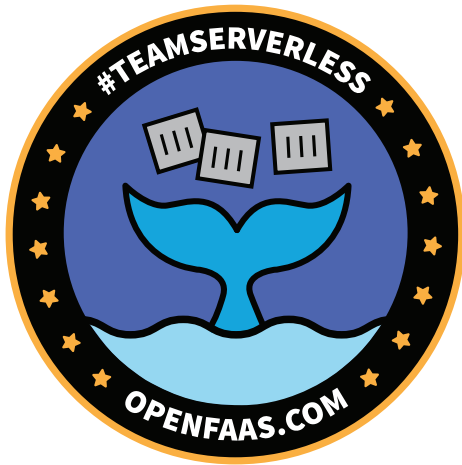
<https://docs.openfaas.com/community>

2. Try the self-paced workshop! 💻

<https://github.com/openfaas/workshop>

3. Masterclass: Serverless Kubernetes

Sign-up today!





OPENFAAS

Thank You!

www.openfaas.com

@alexellisuk