OpenFaaS

Function as a Service is the next level

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Agenda

FaaS on the Verge
  - brief overview
  - current landscape
  - considerations

OpenFaaS: Make Serverless Functions Simple
  - overview
  - design and architecture
  - community

OpenFaaS Cloud

Demo

SUSE Developer Program
FaaS on the Verge
Brief Overview

FaaS

- is for event driven, short lived, “stateless” functions
- is a new type of architecture for application and service developers
- saves time in development, deployment and infrastructure management
- is great for rapid MVP cycles, experiments with reduced time to market
- means new challenges for developers (security, debugging, monitoring)

Hype or no hype?

- Gartner in 2017: 2-5 years for Serverless PaaS to become mainstream
- Gartner in 2019: between 2020 and 2022 FaaS will become mainstream
- Zion: Global serverless architecture market to reach ~USD 18.04 billion by 2024

https://www.zionmarketresearch.com/report/serverless-architecture-market
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.

https://landscape.cncf.io
Considerations

Development

- Integration testing? DoS our production environment? Debugging at xyz vendor?

Short function lifetime

Limited memory usage

- Persistent states?

0 scale → cold start → latency?

Vendor lock-in


Security

Mark Roberts: Serverless Architectures
https://martinfowler.com/articles/serverless.html
OpenFaaS
Make Serveless Functions Simple
Overview

Founded by Alex Ellis in 2016

Written in Go

Functions
- easy templates
- deployed in containers (OCI)
- optional async with Nats Streaming
- C#, Go, NodeJS, Python, Ruby, PHP, Lua, Vala, Swift..

Container runtimes
- Docker, cri-o
Design and Architecture
using openfaas/faas-netes

- Web UI
- CLI
- container registry
- REST
- API Gateway:
  - endpoints:
    - /function/....
    - /system/alert
    - /metrics
    - /ui
    - ....
- faas-netes:
  - Kubernetes "bindings"
- Function A:
  - Watchdog
  - Handler
- Function B:
  - Watchdog
  - Handler
Online Resources

**Great online documentation**
- getting started docs for swarm and k8s
- troubleshooting guide
- CLI guide, tutorials, how-tos

**Sample Functions**
- Official and community contributions

**Video demos**
- From Zero to Serverless in 60 Seconds Anywhere
- OpenFaaS complete walk-through on Kubernetes
- Inference with OpenFaaS and Mobilenet

**Online Workshop**
- self paced labs with Python
OpenFaaS Cloud
Multi-tenant FaaS sandbox for your team?
OpenFaaS Cloud

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Repository</th>
<th>SHA</th>
<th>Deployed</th>
<th>Invocations</th>
<th>Replicas</th>
</tr>
</thead>
<tbody>
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<td>dashboard</td>
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<td>2e2d8bb</td>
<td>16 days ago</td>
<td>0</td>
<td>1/4</td>
</tr>
<tr>
<td>github-stats-page</td>
<td>faas-github-stats</td>
<td>b8074c8</td>
<td>19 days ago</td>
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<td>faas-github-stats</td>
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<td>19 days ago</td>
<td>15</td>
<td>1/4</td>
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<tr>
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<td>faas-contributors-page</td>
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<td>20 days ago</td>
<td>0</td>
<td>1/4</td>
</tr>
</tbody>
</table>

Powered by OpenFaaS

https://tinyurl.com/OF-Cloud-in-100-seconds
# OpenFaaS Cloud

**Deployment**

- **Name:** go-fn
- **Image:** bartsmykla/bartsmykla-go-fn-go-fn:latest-47828a1
- **Endpoint:** https://bartsmykla.dedal.io/go-fn
- **Replicas:** 1/4

**Git**

- **Repository:** bartsmykla/go-fn
- **SHA:**
  - 47828a1bf2232c688b962891c65
  - 3c7df3d9ec6f0
- **Deploy Time:** 5 days ago

Powered by [OpenFaaS](https://tinyurl.com/OF-Cloud-in-100-seconds)
OpenFaaS Community
The driving force
Community

21 repositories
189 contributors
1877 forks

Meetups
Conference talks
Active Slack presence
#FaaSFriday campaign

https://openfaas.com
https://github.com/openfaas
https://openfaas.slack.com
SUSE Developer Program
Executive Summary

What’s the problem?
SUSE is not on the radar of developers →limiting SUSE’s ability to grow

What is our proposal?
Use developers’ increasing influence and buying power to drive growth and change.

How?
Quick wins and long-term initiatives

• Developer Evangelist community
• Developer Portal with sandbox environments, learning and career development resources
• Ecosystem alignment (ongoing as we speak: Go, Java, Vagrant)
• Application development and delivery workflow from Core to Cloud Native
• SUSECON DevZone & Developer Track
The SUSE Developer Program [DEV1240]

Session Type (pick one): Developer
Technical Level: Technical Beginner

Tuesday, April 02, 10:15 AM - 11:15 AM | 12 South 1
Friday, April 05, 10:15 AM - 11:15 AM | 12 South 1

presented by Marco Varlese
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