

# **OpenWhisk and OpenFaas**

**Distributed Systems Project - Initial Task**

**Berit Frech, 12.05.2020**

# 1. Setup

## Hardware, Technologies

01

- MacOS on M1 Chip and i7
  - OpenWhisk on i7 - Problems with openwhisk setup on M1
  - OpenFaas on M1
- Both task deployed on local Kubernetes Cluster

## 2. OpenWhisk

### Deployment, API

02

- Deployed on Kubernetes run directly on top of Docker
- Actions in node.js



Get current Bitcoin rate in EUR<sup>1</sup>



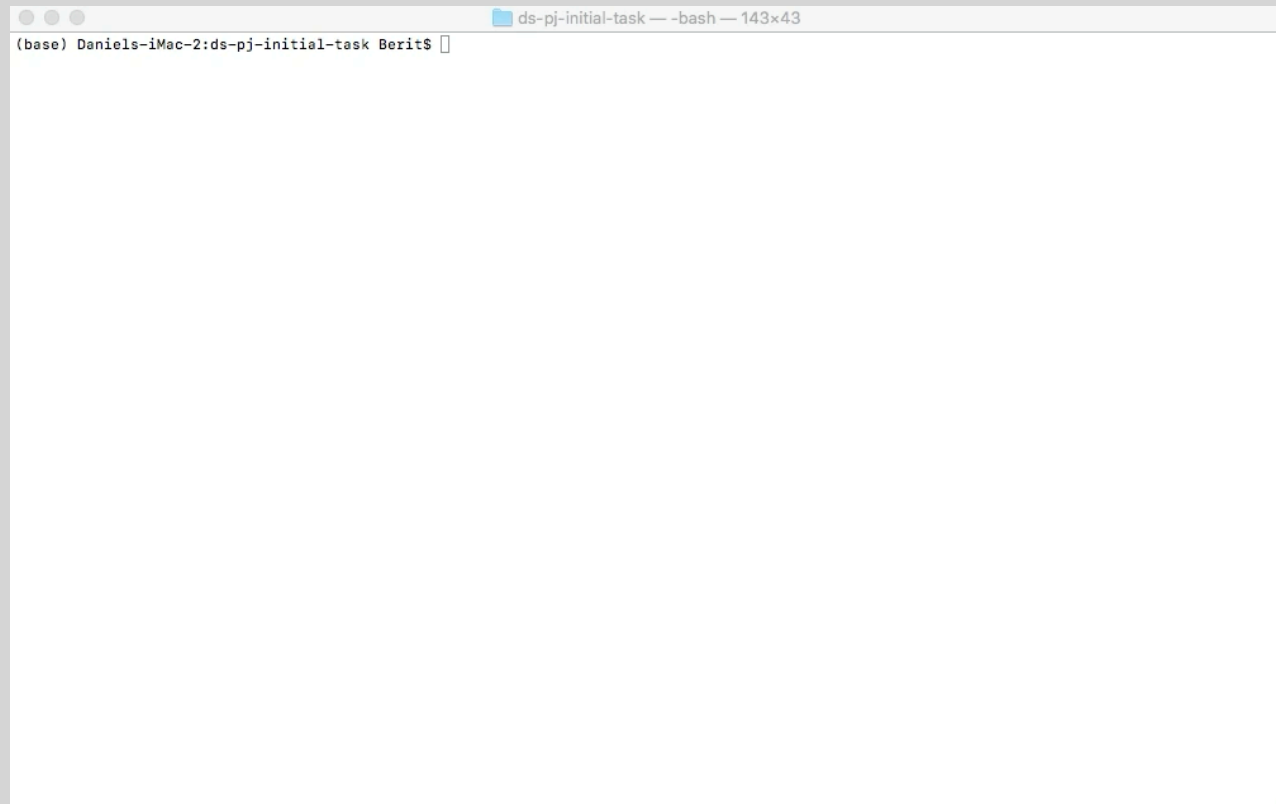
Create 5 mins trigger with openWhisk package<sup>2</sup>

1. <https://api.coindesk.com/v1/bpi/currentprice.json>, 2. <https://github.com/apache/openwhisk-package-alarms>

## 2. OpenWhisk Demo

Current Bitcoin rate in EUR + timestamp

03



A terminal window titled "ds-pj-initial-task -- bash -- 143x43". The prompt is "(base) Daniels-iMac-2:ds-pj-initial-task Berit\$".

# 3. OpenFaas

## Deployment, Functions, APIs

04



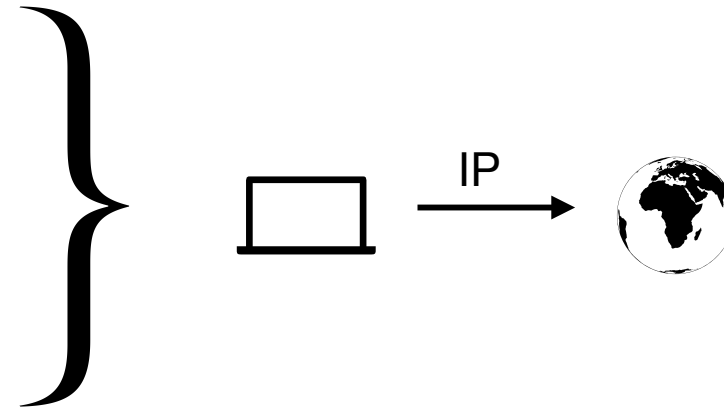
Get Public IP of device<sup>1</sup>



Get Location of Public IP<sup>2</sup>



Get weekly incidence of the last 5 days in Berlin<sup>3</sup>



1. <https://api.ipify.org/?format=json>, 2. <https://ipinfo.io/>, 3. <https://api.corona-zahlen.org/states/BE/history/incidence/5>

# 3. OpenFaas Demo

Public-Ip, Location, Where-am-I, Are-we-still-on-curfew

05

A terminal window with a title bar that reads "berit — -zsh — 112x31". The window contains a single line of text: "(base) berit@MBP-von-Berit ~ %".

```
(base) berit@MBP-von-Berit ~ %
```

## 4. Possible Use Cases

### Periodic triggers, Location Updates

06

- Periodic Triggers on the Edge:
  - Sensor data for monitoring
    - e.g. patient data, air quality measurements to adapt ventilation, weather conditions to adapt temperature or blinds in smart home
- Location APIs:
  - Get current locations of Edge devices in dynamic environments
  - E.g. for smart driving

**<https://git.tu-berlin.de/bfrech/ds-pj-initial-task>**

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