

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 EUR¹



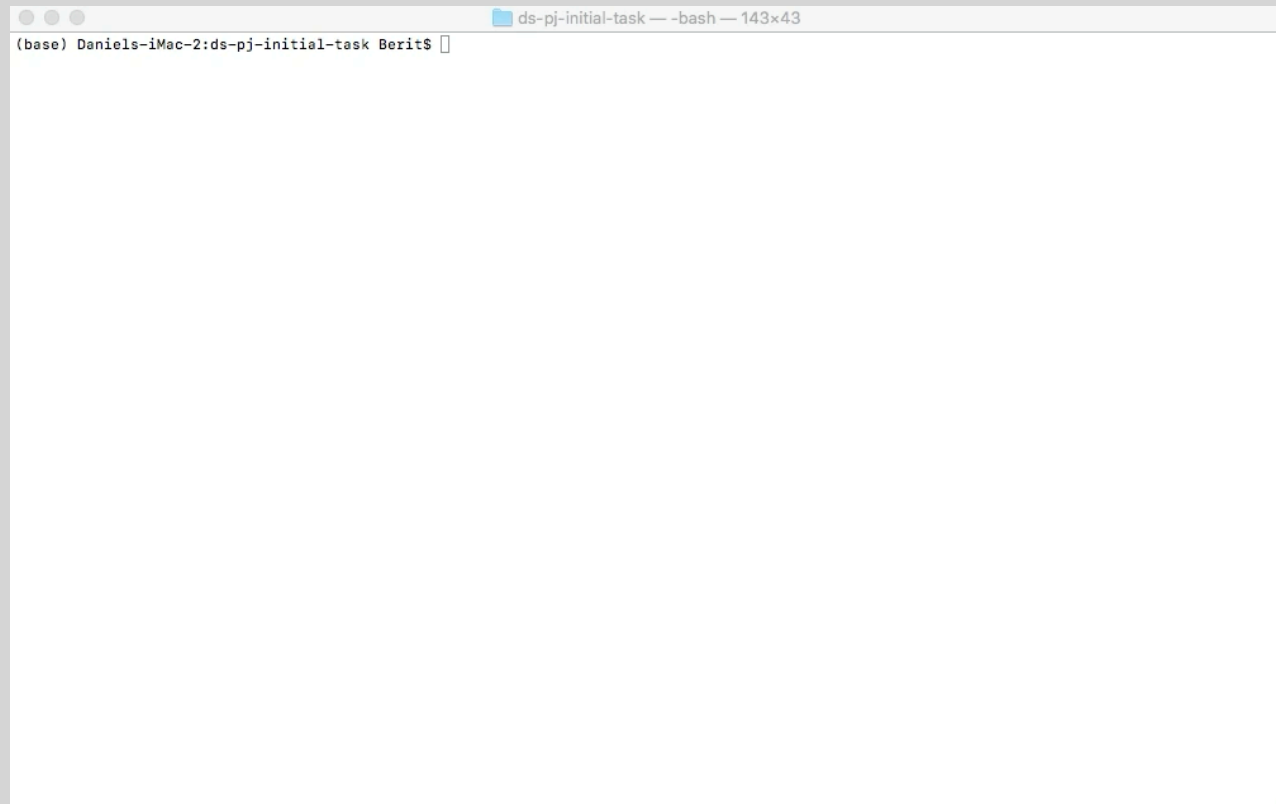
Create 5 mins trigger with openWhisk package²

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" is shown. The prompt is "(base) Daniels-iMac-2:ds-pj-initial-task Berit\$".

```
(base) Daniels-iMac-2:ds-pj-initial-task Berit$
```

3. OpenFaas

Deployment, Functions, APIs

04



Get Public IP of device¹



Get Location of Public IP²



Get weekly incidence of the last 5 days in Berlin³

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 terminal content shows a shell prompt "(base) berit@MBP-von-Berit ~ %" followed by a cursor. The window has a light gray title bar and a white content area.

```
(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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