

## Your Special Challenge

### Build up a scalable OpenFaaS deployment

Serverless computing – Functions as a Service (FaaS) – is a hot topic in computer science. One free software solution, which allows to create a private cloud FaaS deployment with Docker and Swarm or Kubernetes is OpenFaaS [1][2].

### The individual steps of your task

1. **Investigate** how to deploy OpenFaaS in a private context and in a public cloud infrastructure.
2. **Deploy** OpenFaaS for testing on physical (local) hardware and inside a public cloud IaaS service offering. Investigate which components your OpenFaaS environment has and how these components do interact. It is also interesting to understand which data is created, how is it handed over between the relevant OpenFaaS components and where and in which form is data stored by the OpenFaaS components. [3][4][5][6][7][8]
3. **Test** your OpenFaaS environment with several applications (functions).
4. **Create** a presentation (max. 30 Minutes) with maximum 15 slides and additionally a live demonstration. Give your presentation during class or during an exercise session.

### Some final words to motivate you

In real life, one or two weeks is a typical amount of time to do such a task in parallel to your daily tasks. In this course you have several weeks and you are not alone.

Last but not least, questions of the exam will cover this special task!

### References

- [1] “OpenFaaS.” <https://github.com/openfaas/faas>.
- [2] “OpenFaaS.” <https://www.openfaas.com>.

- [3] “Your first serverless Python function with OpenFaaS.” <https://blog.alexellis.io/first-faas-python-function/>.
- [4] “Turn Any CLI into a Function with OpenFaaS.” <https://blog.alexellis.io/cli-functions-with-openfaas/>.
- [5] “Serverless sorcery with ImageMagick.” <https://blog.alexellis.io/serverless-imagemagick/>.
- [6] “Serverless Kubernetes home-lab with your Raspberry Pis.” <https://blog.alexellis.io/serverless-kubernetes-on-raspberry-pi/>.
- [7] “OpenFaaS: Package any Binary or Code as a Serverless Function.” <https://thenewstack.io/openfaas-put-serverless-function-container/>.
- [8] “OpenFaaS: Serverless with Docker.” <https://medium.com/@pfernandom/openfaas-serverless-with-docker-cc2af7bde0a6>.