FaaS

Eirik, Orestis, Rurik

Institute for Economic Affairs — ML-faktion

2019

What will we talk about?

- What do me mean by FaaS?
- Benefits of FaaS
- Challenges of FaaS
- Understanding cost and cost implications
- Concrete examples
  - REST API
  - CD-platform
- Summary

What do we mean by FaaS?

Simply put: AWS Lambda and managed services like DynamoDB

Benefits of FaaS

- Lower costs
- Simplicity
- More testable architecture
- Replicability
- “Driftløshet”

Challenges of FaaS I

Challenges:

- Vendor lock-in
- New idiom, a lot to learn
- Not suited to every task
- Accidental costs can accumulate
- Possible to make a real mess

Challenges of FaaS II

How to deal with them:

- Portable code
  - but don't strive for project-defeating generics
- Understand the offerings, learn about Infrastructure As Code (IAC)
- Many things can be solved with Lambdas. (But should they?)
- Keep an eye on what costs are accumulating by setting up cost reports, automate resource deprovisioning
- Discipline is important:
  - TDD & BDD/FDD are essential
  - Code hygiene and QA equally so
  - having continuous deployment as a constant and understood aim
  - IAC is an absolute

Understanding costs & cost implications

Cheap:

- Some stuff costs a lot
- Some stuff costs little, if it is used correctly

Cheap isn't always good

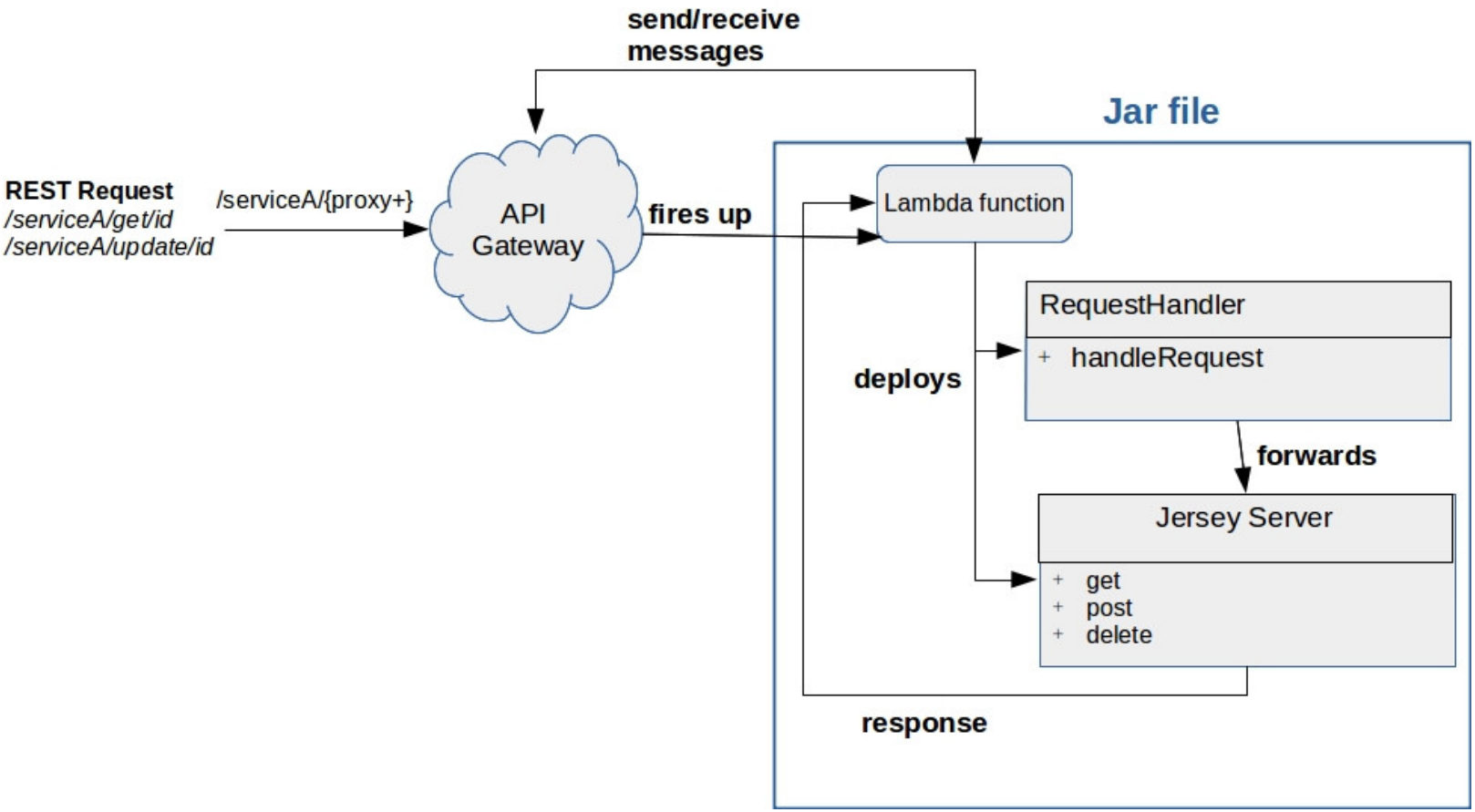
- Some stuff is cheaper to implement in different ways
  - Cost for light usage for some services is high (CloudSearch)
- Some stuff is more performant if implemented in different ways
  - Long-running and/or processor-intensive processes are better run in EC2 as Lambda becomes expensive in these cases

Basically, know your needs; know the platform; use the appropriate technology.

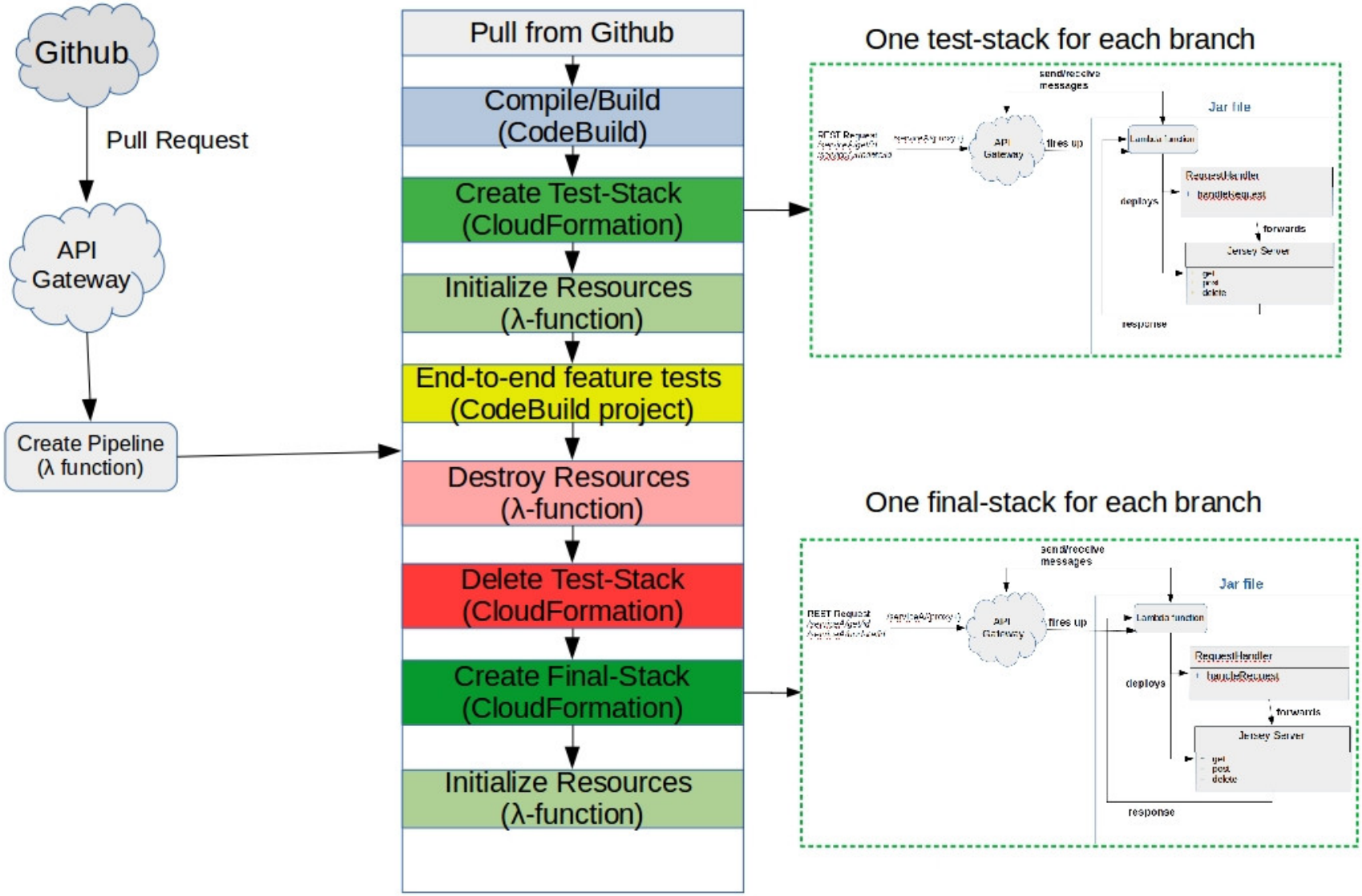
Concrete example: REST API (A Serverless Server)

- A Jersey server as a function.
- Advantages
  - The server starts with very small delay (milliseconds)
  - Server dies after few minutes without requests
  - Cost for low/moderate traffic: low
  - Scales automatically
  - No maintenance
  - The Jersey server can be ported into an EC2 instance with very few code modifications
  - Extremely easy to replicate the production environment
- Disadvantages
  - Cost for high traffic: unknown
  - Can have problems with timeouts for very heavy queries.

Concrete example: REST API



Concrete example: CD-platform



Summary

- Infrastructure as code is alpha & omega
- Automated deployment of services ("Driftløs")
- Choose the right DevOps approach and develop it
  - Test-first, test-last and test everything inbetween
  - CD
  - Stamp out laziness
- Read the DORA report for inspiration