Serverless Computing – part II

Service Management in Networks – WS 2021

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- Compare opensource serverless tools

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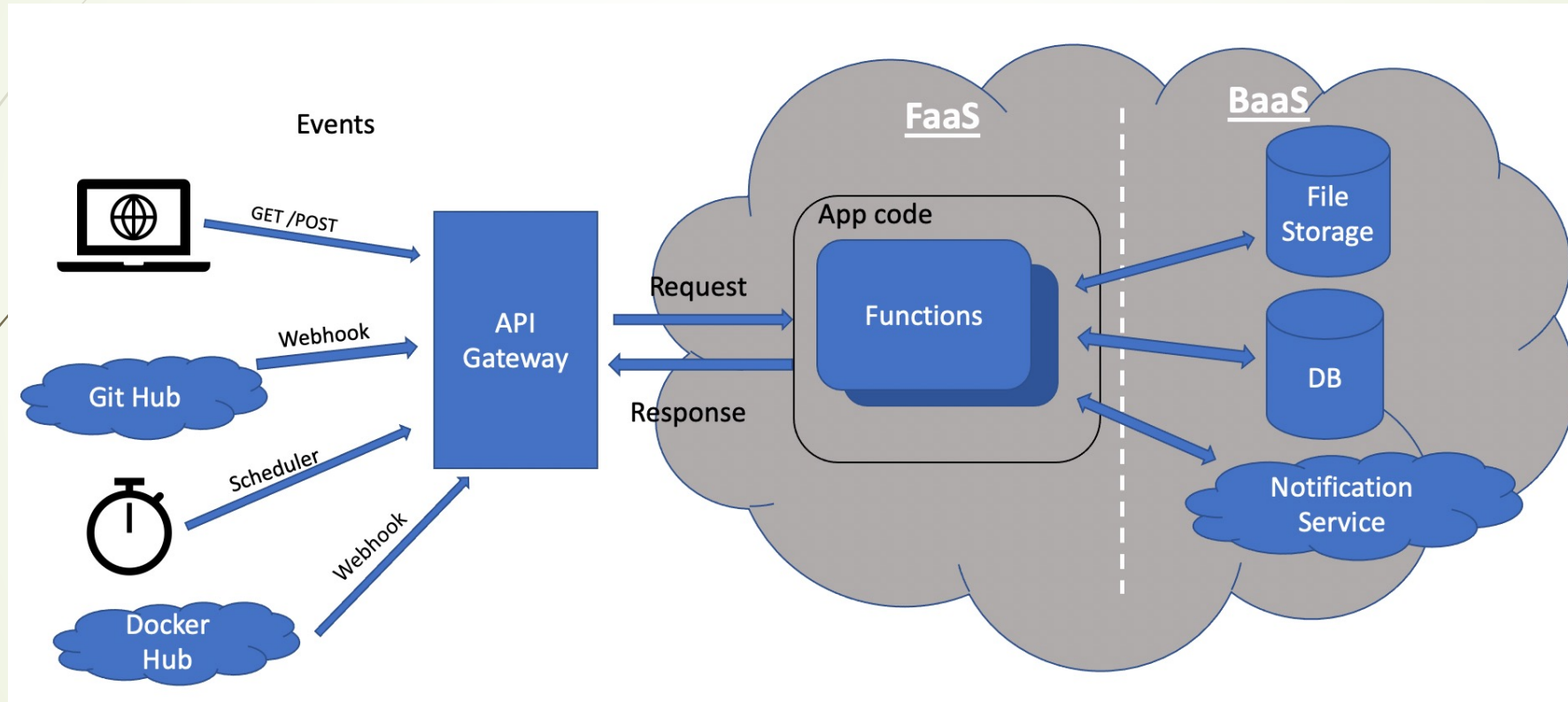- Serverless Web application using OpenFaaS – Demo

- Conclusion

Recap

Fig: Serverless event-driven architecture

Opensource Serverless tools

Name	Supported runtimes	Autoscaling metric	Container Orchestrator	Function triggers	GitHub stars (as of 11/2021)
Fission	Python, Node.js, Ruby, Perl, Java, Go, Bash, PHP, .NET, custom containers	CPU utilization	Kubernetes	HTTP, event, schedule	6.6k
Kubeless	Python, Node.js, Ruby, Java, Go, PHP, .NET, custom containers	CPU utilization, QPS and custom metrics	Kubernetes	HTTP, event, schedule	6.8k
OpenFaas	Python, C#, Node.js, Ruby, Go, custom containers	CPU utilization, QPS and custom metrics	Kubernetes, Docker Swarm, custom orchestrators	HTTP, event	20.6k
OpenWhisk	JavaScript, Swift, Python, PHP, Java, Linux binaries, custom containers	QPS	Kubernetes	HTTP, event, schedule	5.5k

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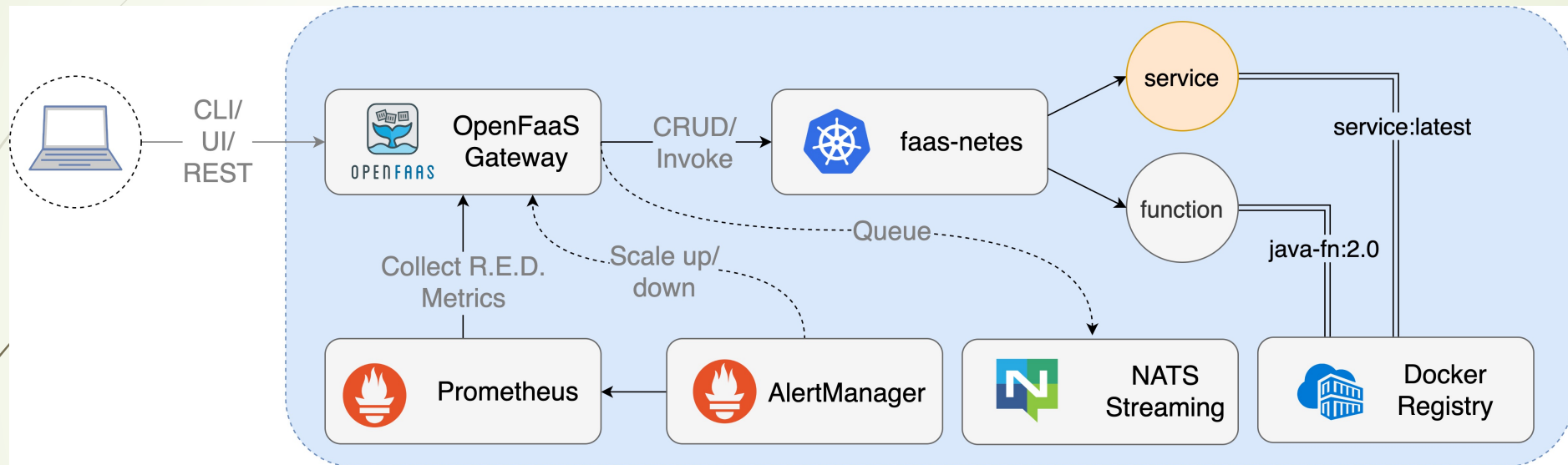
OpenFaaS architecture

Fig: OpenFaaS conceptual workflow

Create a function using OpenFaaS - Demo

➡ Demo

1. Pull function template
2. Create a function from template
3. Build and deploy the function
4. Invoke the function

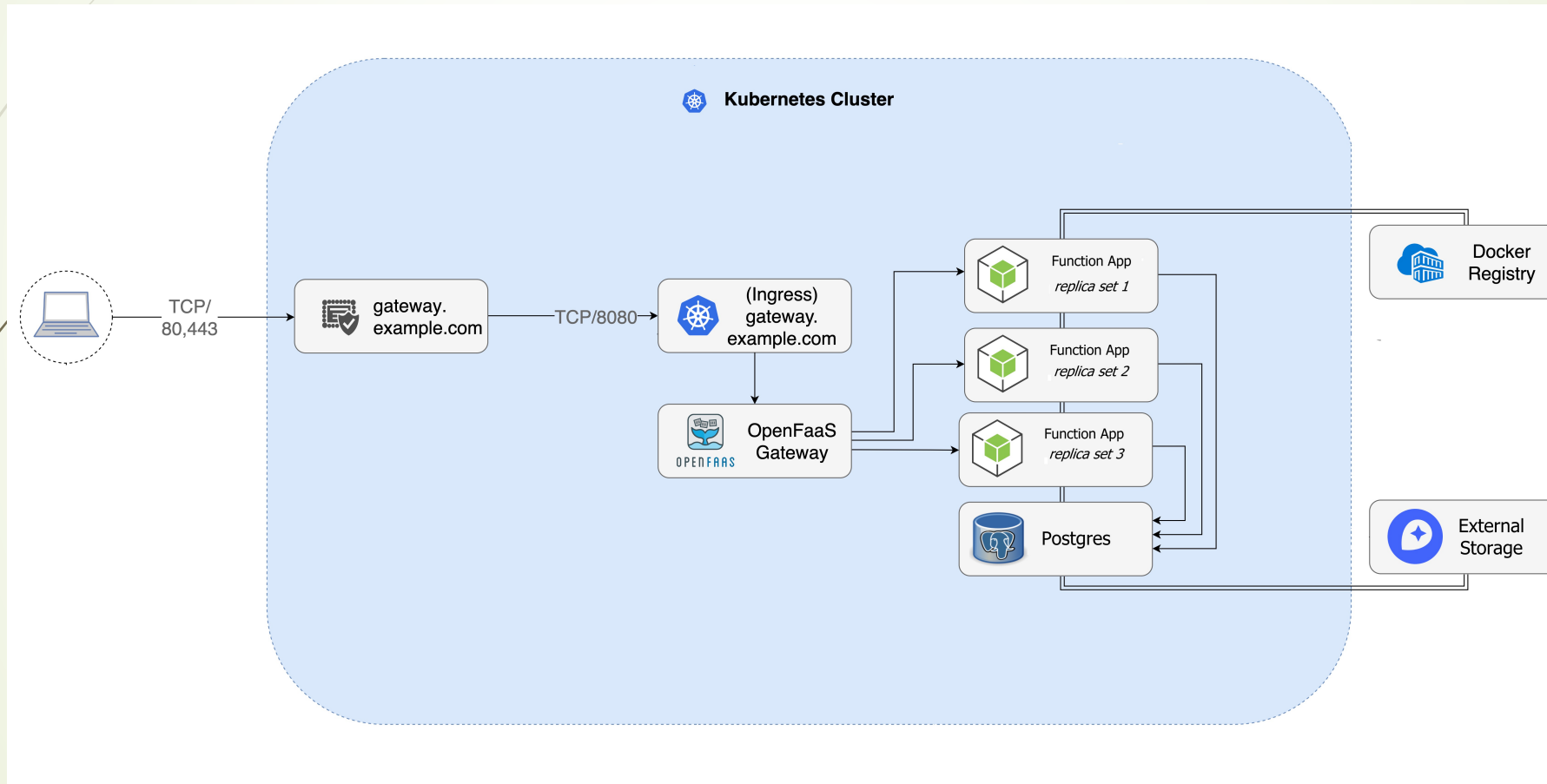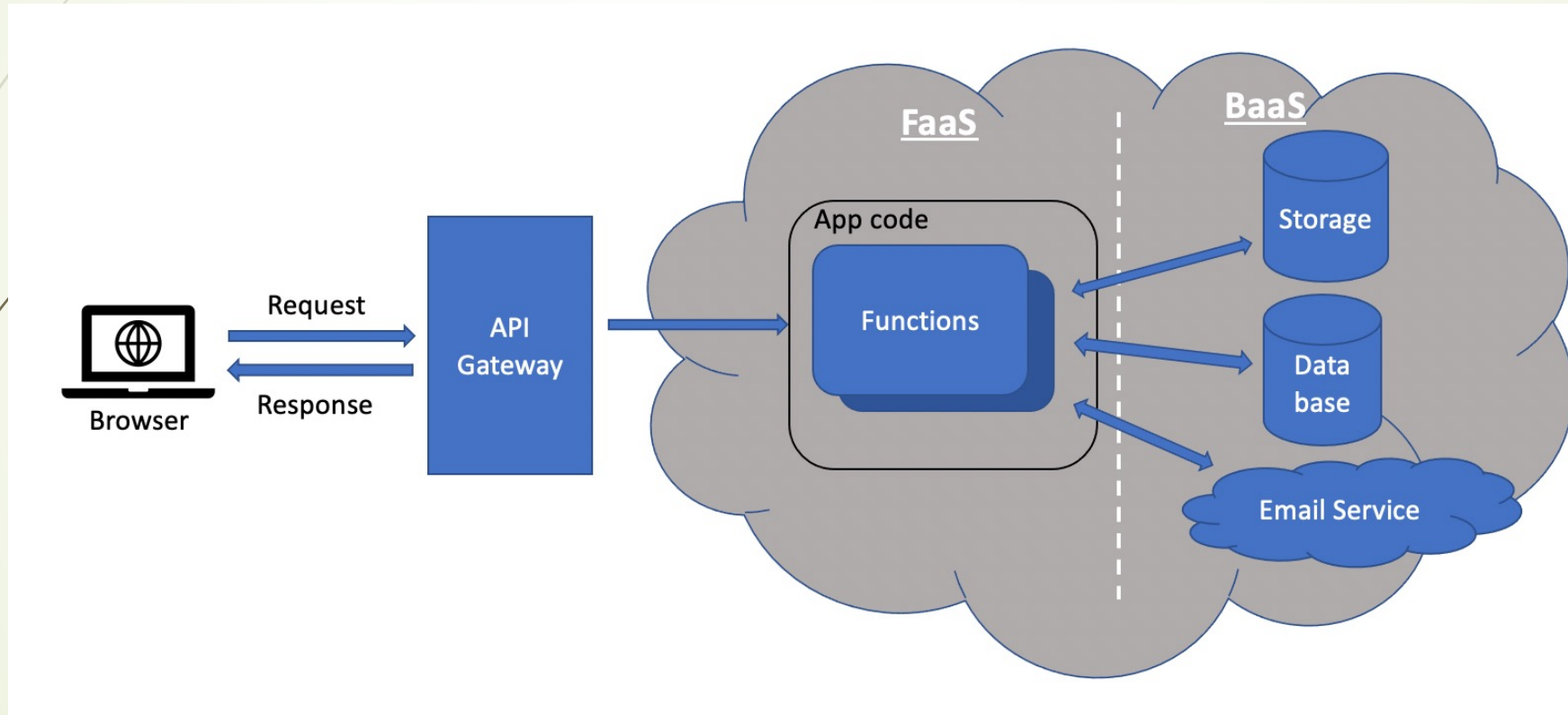# Serverless Web app deployed using OpenFaaS - Demo

Fig: Application architecture

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Web app architecture

Demo

References

- Mohanty S.K., Premsankar G., Fransesco M.D. "An evaluation of open source serverless computing frameworks" IEEE International Conference on Cloud Computing Technology and Science (CloudCom), 2018.

- www.openfaas.com

Questions ?