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Research Context

- Modern software engineering paradigms and technologies – such as DevOps and microservices – are gaining more and more attraction
- Established QoS evaluation (e.g., performance and reliability) for „classic“ paradigms and technologies exist
- Challenges and lack of adoption for DevOps and microservices

Project Goals

- Setting up CASPA platform for comparability of QoS evaluation approaches
- Development, integration, and experimental evaluation of novel approaches for QoS evaluation in DevOps and microservices

Activities

- Integration of a new microservice benchmark application into CASPA
- Novel approach 1: Detection of software performance antipatterns from profiler data
- Novel approach 2: Performance testing of microservices

Next Steps

- Continuous and declarative load testing for microservices
- Automatic extraction and evolution of load test specifications from application performance monitoring data
- Efficient performance test selection based on formal models

Contact

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Architecture-aware Performance and Resilience Engineering for Microservice Architectures

HPI Future SOC Lab Day (Fall 2017)

Selected References

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- T. F. Düllmann et al. *CASPA: A platform for comparability of architecture-based software performance engineering approaches*. In Proc. ICSA 2017
- R. Heinrich et al. *Performance engineering for microservices: Research challenges and directions*. In Proc. ICPE 2017