Increasing Efficiency and Result Reliability of Continuous Benchmarking for FaaS Applications

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| Scalable Software Systems
Function-as-a-Service (FaaS) & Continuous Benchmarking

- FaaS has various benefits
- FaaS applications receive frequent updates in modern development cycles
- Continuous benchmarking is essential to track performance
- “Traditional” approach has flaws[1-2]
Duet Benchmarking

- Previous research has shown the effectiveness of the duet benchmarking for microbenchmarks and benchmark suites[3-4]
- Run artifacts on the same instance
- Isolate and provide the same amount of resources to each version
- Run in them in parallel
Evaluation

- Compare Duet Benchmarking FaaS approach to traditional and randomized sequential (faasterBench) benchmarking methodologies
- Deploy two functions (CPU- and MEM-intensive), inject artificial performance change, and run 1500 experiments (A/A and A/B Configurations).
- Regard interval at max. sample size and interval size development for all 3 approaches
- Source: [https://github.com/timchristianrese/DuetFaaS-code](https://github.com/timchristianrese/DuetFaaS-code)

DuetFaaS Architecture
Results

- Duet Benchmarking provides more accurate results with fewer calls, making it ideal for deployment pipelines
- Function type had little impact
- A/A and A/B results were similar
- Full results found in our paper (under review):
References


