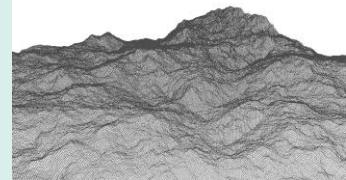


Diploma / Master Thesis

DSL for Modeling Dynamic Workload Profiles



Motivation

At the current state-of-art, existing workload or usage models are not capable to capture variability of request arrival rates to the needed extend. A formal description of the workload profiles' characteristics - in other word its elements such as bursts, trends, and seasonal patterns -, and their composition would be highly valuable in research and industry. A domain-specific language (DSL) for workload profiles could serve as starting point for the development of representative cloud benchmarks and mechanisms for intelligent proactive resource management in cloud environments.

Goals

The goals of this thesis include the definition of a DSL for workload profiles considering their elements and composition. In addition, this thesis includes the implementation of an extension for an existing workload generation framework like Faban. Having an implementation of the defined DSL, a validation should evaluate the error of the modeled/generated workload profile compared to real-world workload profiles from representative cloud systems.

- **Collaboration opportunity with SPEC and major leading cloud providers including Google, IBM, Salesforce, and SAP**
- **Results will be fed into benchmark standardization efforts at SPEC**
- **Excellent working environment and intensive mentoring**
- **Closely related to current research projects**

Duration

6 months as DA/MA thesis,
4 months as SA/BA thesis is possible

Contact

Dipl.-Inform. Nikolas Herbst
herbst@kit.edu
<http://descartes.ipd.kit.edu>

