The Vision of Declarative Performance Engineering
Jürgen Walter, André van Hoorn, Heiko Koziolek, Dušan Okanović and Samuel Kounev

Software Performance Engineering
...the entire collection of software engineering activities and related analyses used throughout the software development cycle, which are directed to meeting performance requirements.

Problem Statement
Approaches differ in input, accuracy, analysis speed and system perturbation. It is difficult to
• choose an appropriate solution approach
• parametrize it
• filter and interpret results

User Concerns
Questions and Goals

Performance Engineering
Established Methods, Techniques, and Tools

Declarative Language
• Defines information need without tool evaluation details
• Performance analysts only describe what they want to know instead of how to get it
  SELECT cpu1.utilization CONSTRAINED AS accurate
  DETECT BOTTLENECKS CONSTRAINED AS fast

Processing Framework and Adapters
• Provides solution according to user concerns
• Uses internal automation and optimization
• Is independent of the evaluation approach

Capability Model and Decision Engine
• Automated choice of an appropriate evaluation approach
• Based on a tool and approach capability model

Preliminary Work
• Declarative Query Languages (DQL, Mamba)
• Model Extraction for Architectural Performance Models (PCM, DML)
• Measurement-Based Analysis (Kieker)

Benefits
• Reduces the complexity for users
• Decision support for tools and approaches
• Automation and optimization

Supported by:
Deutsche Forschungsgemeinschaft
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