Automatic Performance Model Generation for Java Enterprise Edition (EE) Applications

Abstract:
The effort required to create performance models for enterprise applications is often out of proportion compared to their benefits. This work aims to reduce this effort by introducing an approach to automatically generate component-based performance models for running Java EE applications. The approach is applicable for all Java EE server products as it relies on standardized component types and interfaces to gather the required data for modeling an application. The feasibility of the approach and the accuracy of the generated performance models are evaluated in a case study using a SPECjEnterprise2010 industry standard benchmark deployment. Simulations based on a generated performance model of this reference deployment show a prediction error of 1 to 20.
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