



Universität Karlsruhe (TH)
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Fakultät für Informatik

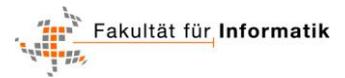
**Institut für Programmstrukturen
und Datenorganisation (IPD)**

**Lehrstuhl für Software-Entwurf und
-Qualität (SEQ), Prof. Reussner**



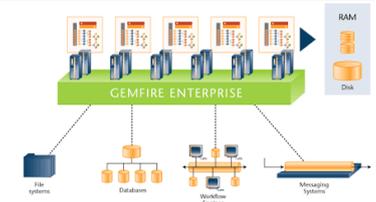
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05.02.2009

Internship in Portland (USA)



Diplomarbeit

Performance Evaluation of Enterprise Data Fabric Infrastructures

Motivation

An Enterprise Data Fabric (EDF) is a distributed, operational data management platform that offers low latency data storage and access, reliable data distribution, and real-time data analysis. The estimation of the computing resources for EDF infrastructures, often referred to as Capacity Planning, is becoming increasingly complex. Enterprise Architects, IT Operations and Developers are confronted with questions such as: How much hardware is required to guarantee that service-level agreements are satisfied? What are the maximum load levels that the system will be able to handle in the production environment? To answer such questions often experiments with large scale production-like deployments are conducted. Many customers, however, do not have dedicated test systems that model their production systems. In such cases, performance models can be used to predict the system performance under load. However, a primary barrier to applying this approach in industrial projects is the time and effort needed to construct representative models and the overhead to analyze the models. Thus, techniques for automating the model construction and analysis process are desired. To minimize the analysis overhead, generated performance models should be kept as simple and compact as possible.

Thesis Goals

A performance modeling case study with Gemstone's GemFire EDF platform will be conducted pursuing the following goals:

1. Investigate alternative approaches to the characterization of application workloads in a semi-automatic manner based on monitoring of the application behavior and resource consumption.
2. Develop a method for extracting performance models from running systems and using them as a tool for system sizing and capacity planning.

The case study will consider realistic scenarios with up to 64 servers and many concurrent clients.

- Cooperation with Gemstone Systems, Inc., a leading enterprise software company
- 2-3 weeks internship in Portland (USA) to gain hands-on experience with real-life systems
- Model cutting-edge enterprise systems and realistic applications
- Gain experience with state-of-the-art performance modeling tools and techniques
- Work could be continued as part of a long-term PhD project in cooperation with industry

Zeitdauer

6 Monate

Ansprechpartner

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