



Diplomanden- und Doktorandenseminar  
des Instituts für Informatik

## Introduction of Deployment Variability to Multi-Tenancy Applications

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Software-as-a-Service (SaaS) is a delivery model whose basic idea is to provide applications to the customer on demand over the Internet. In contrast to similar but older approaches, SaaS promotes multi-tenancy (MT) as a tool to exploit economies of scale. This means that a single application instance serves multiple customers. However, even though multiple customers use the same instance each of them has the impression that the instance is designated only to them. This is achieved by isolating the tenants' data from each other.

In contrast to single-tenancy, MT has the advantage that IT-Infrastructure may be used most efficiently as it is possible to host as many tenants as possible on the same instance. Thus, operational cost of the application is decreased. However, one of the major drawbacks of MT Applications is the customers' hesitation of sharing infrastructure, application code, or data with other tenants. This is due to the fact that customers are afraid that other tenants might access their data due to a system error, malfunction, or destructive action. So far this problem has only been tackled by proposing new approaches to implement and improve the tenant isolation on a single instance.

The approach of this work, however, is different as it strives to solve the problem by finding a hybrid solution between multi-tenancy and single-tenancy that we call Mixed-tenancy. The approach tries to emphasize both the customers concerns about sharing infrastructure as well as the operators desire to utilize infrastructure as efficient as possible.

This presentation will give an overview of the challenges, research questions, and the solution approach of this research.

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15 Uhr c.t. im Seminarraum 106 des IfI,  
Julius-Albert-Straße 4