The Palladio Approach: Design and Simulation of Software Architectures

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Idea

- Prediction of quality properties on a model base
  - for systematic design of software systems
  - performance, reliability, …

- Derive performance metrics from the models using
  - simulation
  - analytical techniques
Component Performance

[Becker2006a]
Component Developers

Software Architect

System Deployer

Domain Expert

[Becker2007a]
Application Scenarios

Design Decisions  
Sizing  
Scaling

Optimal Resource Utilization  
Optimizing Configurations  
Extension of Legacy Software
Acceptance

- On page **one** in query after „Palladio“
  - *Palladio Simulator*
  - [www.palladio-simulator.com/de](http://www.palladio-simulator.com/de)
- Including [http://www.heise.de/software/download/palladio_component_model_bench/6507](http://www.heise.de/software/download/palladio_component_model_bench/6507)
Current Trends

- Extension to energy prediction (fortiss, FZI)
- Meta-Model refactoring (KIT)
- Traceability to requirements and design decisions (KIT)
- Repository of recurring design decisions (KIT)
- Stronger linkage between code and architectures (KIT)
- Analysis of Scalability, Elasticity and Efficiency (TUC)
- Detection of scalability anti patterns (TUC)
- New analysis framework with explicit metrics and typed measurements (TUC)
- Reuse of architectural knowledge (Architectural Templates) (TUC)
The Crew at KIT and FZI
Palladio
The Quality Software People.

www.palladio-simulator.com