

Towards the model-based predictive performance analysis of Cloud adaptive systems with e-Motions (Work in progress)

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We use graph transformation to define an adaptive component model, what allows us to carry on predictive analyses on dynamic architectures through simulations. Specifically, we build on the e-Motions definition of the Palladio component model, and then specify adaptation mechanisms as generic adaptation rules. We illustrate our approach with rules modelling the increase in the number of CPU replicas used by a component, and the distribution of works between processors, reacting, respectively, to saturated queues or response time constraints violations. We evaluate alternative scenarios by analysing their performance, and discuss on its consequences in practice.