MIPAF: MIDDLEWARE-BASED, POLICY-DRIVEN ADAPTATION FRAMEWORK

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ABSTRACT
Evolution of software is required to ensure its ability to support operational and business changes of an organization. However, rapid changes in business environment resulted in a more challenging task required to simplify software evolution. Uncontrolled evolution is said to be one of the main caused of problems in software maintenance. Motivated by this fact, we embark on a research to simplify software evolution by providing a framework that enable adaptable software to be developed. The framework, MiPAF, has the aim to control the negative effects of software evolution using the concept of software adaptation, supporting both parameterized and compositional adaptation. Parameterized adaptation is implemented via the use of XML based policy language and compositional adaptation is realized by the used of web services. Another important feature for MiPAF is the use of middleware concept as the base for its run-time environment. The contribution of our research is the development of MiPAF policy language and the MiPAF framework. A set of tools will also be developed for MiPAF ease of use. We plan to test the framework with an industrial strength case study, a Unit Trust System that was developed using a smart-client application.

KEYWORD
Software evolution, adaptation, middleware, policy, web service