

SPEEDL - A Declarative Event-Based Language for Cloud Scaling Definition

Reference:

R. Zabolotnyi, P. Leitner, S. Schulte, S. Dustdar, "SPEEDL - A Declarative Event-Based Language for Cloud Scaling Definition (accepted for publication)," in *The Future of Software Engineering For and In Cloud*, Visionary Track of IEEE Services 2015, New York, US, 2015, pp. NN-NN.

Abstract:

Contemporary cloud providers offer out-of-the-box auto-scaling solutions. However, defining a non-trivial scaling behavior that goes beyond the feature set provided by existing solutions is still challenging. In this paper we present SPEEDL, a declarative and extensible domain-specific language that simplifies the creation of elastic scaling behavior on top of IaaS clouds. SPEEDL simplifies the creation of event-driven policies for resource management (How many resources, and what resource types, are needed?), as well as task mapping (Which tasks should be handled by which resources?). Based on a dataset of real-life scaling policies, we demonstrate that SPEEDL can cover most scaling behaviors real-life developers want to express, and that the resulting SPEEDL policies are at the same time substantially more compact, easier to read, and less error-prone than the same behavior expressed via a general-purpose programming language.