

Self-adaptive Web Service Compositions

Luciano Baresi

*Politecnico di Milano, Dipartimento di Elettronica e Informazione
piazza Leonardo da Vinci, 32 – 20133 Milano, Italy
bares@elet.polimi.it*

Abstract

Self-adaptability and autonomic behaviors are becoming more and more important in the landscape of complex distributed systems, and Web service compositions are a prominent example. Mobile applications require services able to adapt their behavior with respect to different context autonomously, but also more conventional systems demand for reliable services able to cope with "unforeseen" anomalies without human intervention (and without maintaining and redeploying the whole system).

These requirements are scarcely supported by current composition languages, like BPEL (Business Process Execution Language), but different research initiatives are trying to overcome these limitations. Some proposals work directly on actual compositions, while others tackle the problem by considering the middleware infrastructure in charge of executing them. Proposed solutions are different and offer many interesting options.

The talk surveys the different proposals and proposes a first taxonomy. The result is that the middleware infrastructure plays a key role to provide a holistic and flexible solution for self-adaptive compositions. The brief presentation of a prototype infrastructure for the deployment of reliable and self-adaptive BPEL processes further supports this assumption. The talk concludes by discussing some open issues in the field and by sketching a possible research agenda.

Biography

Luciano Baresi is an associate professor in the Department of Electronics and Information of Politecnico di Milano, where he got both his Laurea Degree and Ph.D. in Computer Science. Luciano was also junior researcher at Cefriel (an ICT Center of Excellence For Research, Innovation, Education and industrial Labs partnership) and visiting professor at University of Oregon at Eugene (USA) and University of Paderborn (Germany).

Luciano has published and presented more than 70 papers on the most important national and international journals and conferences, and served as PC member for several conferences. Luciano was program chair of ICECCS'02 (International Conference on Engineering Complex Computer Systems), FASE'06 (ETAPS Conference on Fundamental Approaches on Software Engineering), and ICWE'07 (International Conference on Web Engineering), and he will be program chair of ICSOC'09 (International Conference on Service-Oriented Computing).

Luciano has been principal investigator of different European and national projects. His research interests are in software engineering, and currently he is particularly interested in dynamic software systems, service-oriented applications, and software architectures.

Further information at home.dei.polimi.it/baresi.