Managment of Service-Oriented Systems

Vladimir Tosic, Claudio Bartolini and Patrick C.K. Hung

Abstract

Management (monitoring and control) of service-oriented systems is needed to ensure their regular operation, attain guaranteed quality of service (QoS), and accommodate changes. Monitoring is used to measure technical QoS (e.g., response time, throughput, availability) and/or business value metrics (e.g., profit, return on investment, number of customers, customer satisfaction). Control is used to reactively/proactively ensure that there are no faults and that the measured quantities are within desired boundaries. To successfully perform monitoring and control, run- time management issues should be considered during design-time software (and system) engineering activities.

Management of service-oriented systems can be viewed from several aspects. In this tutorial, we will emphasize QoS management and maximization of business value. The tutorial will first clarify the importance of these topics and why the widely used basic Web service technologies are not enough. Then, it will explain theoretical principles (e.g., service level agreement SLA, policy, intermediary, probe, and multiple request queues) for specification, monitoring, and control of QoS and business value attributes. Next, it will provide a critical analysis of several important research achievements and industrial products in this area. We will also present a brief introduction to business-driven IT management (BDIM) and possible approaches to extend management solutions maximizing QoS into solutions maximizing business value metrics. At the end, a number of open topics and resources for further study will be identified.

After attending this tutorial, participants will have general knowledge and understanding of the challenges and fundamental concepts related to the specification, monitoring, and control of QoS and business value metrics of (Web) services and business processes implemented with (Web) services, and open research issues. This knowledge can help them in making decisions about using some of the existing technologies in software systems they engineer and/or in conducting further research in the area.

Details

Date and Time

Tuesday 14 April 2009, 9.00am - 12.30pm

Price

- Registered conference student - AU $150.00

- Tutorial only attendee - AU $350.00

- Registered conference delegate - AU $275.00

Intended Audience

- Software engineers

- Educators

- Researchers

- Project managers

- Decision makers with some understanding of service oriented computing

About the presenters

Vladimir Tosic

Vladimir Tosic is a Researcher at NICTA in Sydney, Australia; a Visiting Fellow at the University of New South Wales, Australia; and an Adjunct Research Professor at the University of Western Ontario, Canada. He previously held several positions in industry and academia in Europe, Canada, and Australia. Most of his peer-reviewed papers were in the area of management of service-oriented architectures. Additionally, he presented several conference tutorials about this topic and co-organized several related workshops, e.g., the Middleware for Web Services (MWS) workshop series. Web page: `http://www.nicta.com.au/people/tosicv`.

Claudio Bartolini

Claudio Bartolini is a Principal Researcher at HP Laboratories in Palo Alto, USA. His background is on architecture and design of software systems and frameworks. His current research interest is in methodologies for business and IT alignment. In addition to many journal, conference, and workshop papers and book chapters, he co- authored the W3C WSCL specification and holds a number of patents in various countries. Claudio envisioned, founded and chairs the series of IEEE workshops on business-driven IT management (BDIM) since 2006. He chaired a number of conferences and workshops and presented tutorials at several international conferences. Web page: `http://www.hpl.hp.com/personal/Claudio_Bartolini`.

Patrick C.K. Hung

Patrick C. K. Hung is an Associate Professor and IT Director at the Faculty of Business and Information Technology in UOIT, Canada and an Adjunct Assistant Professor at the Department of Electrical and Computer Engineering in University of Waterloo. He is an executive committee member of the IEEE Computer Society's Technical Steering Committee for Services Computing, a steering member of EDOC "Enterprise Computing," and an associate editor/editorial board member/guest editor in several international journals such as the IEEE Transactions on Services Computing, International Journal of Web Services Research (JWSR) and International journal of Business Process and Integration Management (IJBPIM). Web page: `http://www.hrl.uoit.ca/~ckphung/`.