

Lecture Notes in Computer Science

2819

Edited by G. Goos, J. Hartmanis, and J. van Leeuwen

Springer

Berlin

Heidelberg

New York

Hong Kong

London

Milan

Paris

Tokyo

Boualem Benatallah Ming-Chien Shan (Eds.)

Technologies for E-Services

4th International Workshop, TES 2003
Berlin, Germany, September 7-8, 2003
Proceedings



Springer

Series Editors

Gerhard Goos, Karlsruhe University, Germany
Juris Hartmanis, Cornell University, NY, USA
Jan van Leeuwen, Utrecht University, The Netherlands

Volume Editors

Boualem Benatallah
The University of New South Wales
School of Computer Science and Engineering
Sydney 2052, Australia
E-mail: boualem@cse.unsw.edu.au

Ming-Chien Shan
Hewlett Packard Laboratories
1501 Page Mill Road, Palo Alto, CA 94304, USA
E-mail: ming-chien.shan@hp.com

Cataloging-in-Publication Data applied for

A catalog record for this book is available from the Library of Congress.

Bibliographic information published by Die Deutsche Bibliothek
Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie;
detailed bibliographic data is available in the Internet at <<http://dnb.ddb.de>>.

CR Subject Classification (1998): H.2, H.4, C.2, H.3, J.1, K.4.4, I.2.11, J.1

ISSN 0302-9743

ISBN 3-540-20052-5 Springer-Verlag Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer-Verlag. Violations are liable for prosecution under the German Copyright Law.

Springer-Verlag Berlin Heidelberg New York
a member of BertelsmannSpringer Science+Business Media GmbH

<http://www.springer.de>

© Springer-Verlag Berlin Heidelberg 2003
Printed in Germany

Typesetting: Camera-ready by author, data conversion by PTP-Berlin GmbH
Printed on acid-free paper SPIN: 10953570 06/3142 5 4 3 2 1 0

Preface

E-services, and in particular Web services, are emerging as a promising technology for the effective automation of application integration across networks and organizations. The basic technological infrastructure for e-services is structured around three major standards: SOAP, WSDL, and UDDI. These standards provide building blocks for service description, discovery, and interaction. E-service technologies have clearly influenced positively the development of integrated systems by providing programmatic access to e-services through SOAP, WSDL, and UDDI. E-services are evolving toward being able to solve critical integration issues including security, transactions, collaborative processes management, semantic aspects, and seamless integration with existing middleware infrastructures.

VLDB-TES 2003 was the fourth workshop in a successful series of annual workshops on technologies for E-services, held in conjunction with the VLDB conference. The objective of VLDB-TES 2003 was to bring together researchers, practitioners, and users to exchange new ideas, developments, and experiences on issues related to E-services. VLDB-TES 2003 took place in Berlin, Germany. It featured the presentation of 16 regular papers. In addition to the presentation of research papers, the workshop included two invited talks and a panel discussion.

We would like to thank the authors for submitting their papers to the workshop, the members of the program committee, and the external reviewers for the tremendous job they did in reviewing the submitted papers. Special thanks go Helen Paik and Quan Z. Sheng for all their help with the logistics of the review process. We are grateful to Fabio Casati for all his help and guidance with all aspects of the workshop. We also thank Helen Paik and Sara Comai who served as the publicity co-chairs and Axel Marten who organized and planned the local arrangements.

July 2003

Boualem Benatallah
Ming-Chien Shan

Organization

Workshop Officers

General Chair

Ming-Chien Shan, Hewlett-Packard, USA
shan@hpl.hp.com

Program Chair

Boualem Benatallah, University of New South Wales, Sydney, Australia
boualem@cse.unsw.edu.au

Local Arrangements Chair

Axel Marten, Humboldt University, Berlin
artens@informatik.hu-berlin.de

Publicity Co-chairs

Sara Comai, Politecnico di Milano, Italy
comai@elet.polimi.it
Hye-young Helen Paik, University of New South Wales, Sydney, Australia
hpaik@cse.unsw.edu.au

Program Committee

Dave Abel, CSIRO, Australia
Gustavo Alonso, ETH Zurich, Switzerland
Jean Bacon, Cambridge University, UK
Martin Bichler, Technical University of Munich, Germany
Athman Bouguettaya, Virginia Tech., USA
Christoph Bussler, Oracle Corp., USA
Fabio Casati, Hewlett-Packard, USA
Jen-Yao Chung, IBM, USA
Umesh Dayal, Hewlett-Packard, USA
Asuman Dogac, Middle East Technical University, Turkey
Marlon Dumas, Queensland University of Technology, Australia
Dan Fishman, Avaya Labs., USA
Mariagrazia Fugini, Politecnico di Milano, Italy
Dimitrios Georgakopoulos, Telcordia, USA
Claude Godard, INRIA-LORIA, France
Mei Hsu, Commerce One, USA
Eleanna Kafeza, Hong Kong University of Science and Technology, China
Alfons Kemper, University of Passau, Germany
Wolfgang Klas, University of Vienna, Austria

Frank Leymann, IBM, Germany
Christoph Liebig, SAP, USA
Heiko Ludwig, IBM, USA
Zakaria Maamar, Zayed University, Dubai, United Arab Emirates
Ann Hee Hiong Ngu, Southwest Texas State University, USA
Mike Papazoglou, Tilburg University, The Netherlands
Barbara Pernici, Politecnico di Milano, Italy
Krithi Ramamritham, IIT Bombay, India
Stefan Tai, IBM, USA
Farouk Toumani, LIMOS, France
Aphroditi Tsalgatidou, University of Athens, Greece
Steve Vinoski, IONA, USA
Hartmut Vogler, SAP Research Lab, USA
Jian Yang, Tilburg University, The Netherlands
Yanchun Zhang, University of Southern Queensland, Australia
Lizhu Zhou, Tsing-Hua University, China

Additional Referees

Tariq A. Al-Naeem	Markus Keidl	Stefan Seltzsam
George Athanasopoulos	Patrick Kellert	Quan Z. Sheng
Jan Camenisch	Piyush Maheshwari	Edgar Weippl
Malu Castellanos	Brahim Medjahed	Utz Westermann
Qiming Chen	Bart Orriens	Moe Wynn
Andrzej Cichocki	Helen Paik	Liangzhao Zeng
Rachid Hamadi	Thomi Pilioura	Sonja Zillner
Birgit Hofreiter	Pierluigi Plebani	
Christian Huemer	Fethi Rabhi	

Table of Contents

On Web Services Aggregation	1
<i>Rania Khalaf, Frank Leymann</i>	
A Framework for Business Rule Driven Service Composition	14
<i>Bart Orriëns, Jian Yang, Mike. P. Papazoglou</i>	
Context-Aware Composition of <i>E</i> -services	28
<i>L. Baresi, D. Bianchini, V. De Antonellis, M.G. Fugini, B. Pernici, P. Plebani</i>	
A Quality-Aware Approach to Web Services Procurement	42
<i>Octavio Martín-Díaz, Antonio Ruiz-Cortés, David Benavides, Amador Durán, Miguel Toro</i>	
Towards a Context-Aware Service Directory	54
<i>Christos Doulkeridis, Efstratios Valavanis, Michalis Vazirgiannis</i>	
User-Facing Web Service Development: A Case for a Product-Line Approach	66
<i>Oscar Diaz, Salvador Trujillo, Iker Azpeitia</i>	
A Contract Model to Deploy and Control Cooperative Processes	78
<i>Olivier Perrin, Claude Godart</i>	
A Reputation-Based Approach to Preserving Privacy in Web Services ...	91
<i>Abdelmounaam Rezgui, Athman Bouguettaya, Zaki Malik</i>	
Reliable Web Service Execution and Deployment in Dynamic Environments	104
<i>Markus Keidl, Stefan Seltzsam, Alfons Kemper</i>	
Reliable Execution Planning and Exception Handling for Business Process	119
<i>Liangzhao Zeng, Jun-Jan Jeng, Santhosh Kumaran, Jayant Kalagnanam</i>	
L-ToPSS – Push-Oriented Location-Based Services	131
<i>Ioana Burcea, Hans-Arno Jacobsen</i>	
A Process and a Tool for Creating Service Descriptions Based on DAML-S	143
<i>Michael Klein, Birgitta König-Ries</i>	

Mathematical Web Services: A Case Study	155
<i>Yannis Chicha, Marc Gaëtano</i>	
enTish: An Approach to Service Composition	168
<i>Stanislaw Ambroszkiewicz</i>	
Varying Resource Consumption to Achieve Scalable Web Services	179
<i>Lindsay Bradford, Stephen Milliner, Marlon Dumas</i>	
A Protocol for Fast Co-allocation of Shared Web Services	191
<i>Jonghun Park, Tao Yang</i>	
Author Index	203