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# Autonomic and Trusted Computing

4th International Conference, ATC 2007  
Hong Kong, China, July 11-13, 2007  
Proceedings

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Library of Congress Control Number: 2007930223

CR Subject Classification (1998): D.2, C.2, D.1.3, D.4, E.3, H.4, K.6

LNCS Sublibrary: SL 2 – Programming and Software Engineering

ISSN 0302-9743

ISBN-10 3-540-73546-1 Springer Berlin Heidelberg New York

ISBN-13 978-3-540-73546-5 Springer Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper SPIN: 12088591 06/3180 5 4 3 2 1 0

# Preface

This volume contains the proceedings of ATC 2007, the 4th International Conference on Autonomic and Trusted Computing: Bringing Safe, Self-x and Organic Computing Systems into Reality. The conference was held in Hong Kong, during July 11-13, 2007. ATC 2007 is a successor of the 1st International Workshop on Trusted and Autonomic Ubiquitous and Embedded Systems (TAUES 2005, Japan, December 2005), the International Workshop on Trusted and Autonomic Computing Systems (TACS 2006, Austria, April 2006), and the 3rd International Conference on Autonomic and Trusted Computing (ATC 2006, Three Gorges, China, September 2006).

Computing systems including hardware, software, communication and networks are growing towards an ever-increasing scale and heterogeneity, becoming overly complex. Such complexity is getting even more critical with the ubiquitous permeation of embedded devices and other pervasive systems. To cope with the growing and ubiquitous complexity, autonomic computing (AC) focuses on self-manageable computing and communication systems that exhibit self-awareness, self-configuration, self-optimization, self-healing, self-protection and other self-x operations to the maximum extent even without human intervention or guidance. Organic computing (OC) additionally emphasizes natural-analogue concepts like self-organization and controlled emergence.

Any autonomic or organic system must be trustworthy to avoid the risk of losing control and to retain confidence that the system will not fail. Trust and/or distrust relationships on the Internet and in pervasive infrastructures are key factors to enable dynamic interaction and cooperation of various users, systems and services. Trusted/trustworthy computing (TC) aims at making computing and communication systems as well as services available, predictable, traceable, controllable, assessable, sustainable, dependable, persist-able, security/privacy protect-able, etc. A series of grand challenges exist to achieve practical self-manageable autonomic systems with truly trustworthy services. ATC 2007 addressed the most innovative research and development in these challenging areas and included all technical aspects related to autonomic/organic computing (AC/OC) and trusted computing (TC).

The ATC 2007 conference provided a forum for engineers and scientists in academia, industry and government to exchange ideas and experiences in developing AC/TC theory and models, architectures and systems, components and modules, communication and services, tools and interfaces, services and applications. There was a large number of paper submissions (223), representing 25 countries and regions, not only from Asia and the Pacific, but also from Europe, and North and South America. All submissions were reviewed by at least three Program Committee members or external reviewers. It was extremely difficult to select the presentations for the conference because there were so many

excellent and interesting submissions. In order to allocate as many papers as possible and keep the high quality of the conference, we finally decided to accept 55 papers for presentations, which reflected a 24.6% acceptance rate. We believe that all of these papers and topics not only provided novel ideas, new results, work in progress and state-of-the-art techniques in this field, but also stimulated the future research activities in the area of autonomic and trusted computing. In addition to the refereed papers the proceedings include Hartmut Schmeck's keynote addressing "Remarks on Self-Organization and Trust in Organic Computing Systems".

Organization of conferences with a large number of submissions requires a lot of hard work and dedication from many people. We would like to take this opportunity to thank numerous people whose work made this conference possible and ensured its high quality. We wish to thank the authors of submitted papers, as they contributed to the conference technical program. We wish to express our deepest gratitude to the Program (Vice) Chairs, Mazin Yousif, Omer F. Rana, Xiaobo Zhou, Wolfgang Reif, Dimitris Nikolopoulos and Silvia Giordano for their hard work and commitment to quality when helping with paper selection. We would also like to thank all Program Committee members and external reviewers for their excellent job in the paper review process, the Advisory Committee for their continuous advice, and Stephen S. Yau for organizing a panel on "Future Trends of Autonomic and Ubiquitous Computing." We are also indebted to the Publicity Chairs for advertising the conference, to Lin Chen and other people from the Local Organizing Committee for managing registration and other conference organization-related tasks, and to the Department of Computing, Hong Kong Polytechnic University for hosting the conference. We are also grateful to Tony Li Xu and Liu Yang for their hard work in managing the conference Web site and the conference management system.

July 2007

Bin Xiao  
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# Table of Contents

## Keynote Speech

An Intelligent Home System as a Development and Test Platform for Ubiquitous Computing .....	1
<i>Keith C.C. Chan</i>	
Remarks on Self-organization and Trust in Organic Computing Systems .....	2
<i>Hartmut Schmeck</i>	

## Cryptography and Signatures

ZigBee Security Using Identity-Based Cryptography .....	3
<i>Son Thanh Nguyen and Chunming Rong</i>	
Efficient Identity-Based Signcryption Scheme for Multiple Receivers ....	13
<i>Yong Yu, Bo Yang, Xinyi Huang, and Mingwu Zhang</i>	
Identity-Based Proxy Signature from Pairings .....	22
<i>Wei Wu, Yi Mu, Willy Susilo, Jennifer Seberry, and Xinyi Huang</i>	
Cryptanalysis of BGW Broadcast Encryption Schemes for DVD Content Protection .....	32
<i>Qianhong Wu, Willy Susilo, Yi Mu, and Bo Qin</i>	
A Digital Signature Mechanism and Authentication Scheme for Group Communication in Grid .....	42
<i>Yunfa Li, Hai Jin, Deqing Zou, Jieyun Chen, and Zongfen Han</i>	
Cryptanalysis of Server-Aided RSA Key Generation Protocols at MADNES 2005 .....	52
<i>Fanyu Kong, Jia Yu, Baodong Qin, and Daxing Li</i>	

## Autonomic Computing and Services

Service-Context Knowledge-Based Solution for Autonomic Adaptation .....	61
<i>Marcel Cremene and Michel Riveill</i>	
Middleware Based Context Management for the Component-Based Pervasive Computing .....	71
<i>Di Zheng, Jun Wang, Yan Jia, Wei-Hong Han, and Peng Zou</i>	

Building Autonomic and Secure Service Oriented Architectures with MAWeS .....	82
<i>Valentina Casola, Emilio Pasquale Mancini, Nicola Mazzocca, Massimiliano Rak, and Umberto Villano</i>	
Biology as Inspiration Towards a Novel Service Life-Cycle .....	94
<i>David Linner, Heiko Pfeffer, Ilja Radusch, and Stephan Steglich</i>	
Design of Service-Based Systems with Adaptive Tradeoff Between Security and Service Delay .....	103
<i>Stephen S. Yau, Min Yan, and Dazhi Huang</i>	
<b>Secure and Trusted Computing</b>	
Provably Secure Identity-Based Threshold Unsignryption Scheme .....	114
<i>Bo Yang, Yong Yu, Fagen Li, and Ying Sun</i>	
Final Fantasy – Securing On-Line Gaming with Trusted Computing .....	123
<i>Shane Balfe and Anish Mohammed</i>	
An Efficient and Secure Rights Sharing Method for DRM System Against Replay Attack.....	135
<i>Donghyun Choi, Yunho Lee, Hogab Kang, Seungjoo Kim, and Dongho Won</i>	
Establishing Trust Between Mail Servers to Improve Spam Filtering .....	146
<i>Jimmy McGibney and Dmitri Botvich</i>	
<b>Autonomic Models and Architectures</b>	
An Architecture for Self-healing Autonomous Object Groups .....	156
<i>Hein Meling</i>	
A Generic and Modular System Architecture for Trustworthy, Autonomous Applications .....	169
<i>George Brancovici and Christian Müller-Schloer</i>	
Cooperative Component Testing Architecture in Collaborating Network Environment .....	179
<i>Gaeil An and Joon S. Park</i>	
An Approach to a Trustworthy System Architecture Using Virtualization .....	191
<i>Frederic Stumpf, Michael Benz, Martin Hermanowski, and Claudia Eckert</i>	
<b>Trusted Models and Systems</b>	
CuboidTrust: A Global Reputation-Based Trust Model in Peer-to-Peer Networks .....	203
<i>Ruichuan Chen, Xuan Zhao, Liyong Tang, Jianbin Hu, and Zhong Chen</i>	

A Trust Evolution Model for P2P Networks . . . . .	216
<i>Yuan Wang, Ye Tao, Ping Yu, Feng Xu, and Jian Lü</i>	
An Adaptive Trust Control Model for a Trustworthy Component Software Platform . . . . .	226
<i>Zheng Yan and Christian Prehofer</i>	
Towards Trustworthy Resource Selection: A Fuzzy Reputation Aggregation Approach . . . . .	239
<i>Chunmei Gui, Quanyuan Wu, and Huaimin Wang</i>	

## Intrusion Detection

An Adaptive Spreading Activation Approach to Combating the Front-Peer Attack in Trust and Reputation System . . . . .	249
<i>Yufeng Wang, Yoshiaki Hori, and Kouichi Sakurai</i>	
Research on Cost-Sensitive Learning in One-Class Anomaly Detection Algorithms . . . . .	259
<i>Jun Luo, Li Ding, Zhisong Pan, Guiqiang Ni, and Guyu Hu</i>	
Improved and Trustworthy Detection Scheme with Low Complexity in VBLAST System . . . . .	269
<i>So-Young Yeo, Myung-Sun Baek, and Hyoung-Kyu Song</i>	
Stepping-Stone Detection Via Request-Response Traffic Analysis . . . . .	276
<i>Shou-Husan Stephen Huang, Robert Lychev, and Jianhua Yang</i>	
SPA Countermeasure Based on Unsigned Left-to-Right Recodings . . . . .	286
<i>Sung-Kyoung Kim, Dong-Guk Han, Ho Won Kim, Kyo IL Chung, and Jongin Lim</i>	

## Access Control

A New One-Way Isolation File-Access Method at the Granularity of a Disk-Block . . . . .	296
<i>Wenyuan Kuang, Yaoxue Zhang, Li Wei, Nan Xia, Guangbin Xu, and Yuezhi Zhou</i>	
Novel Remote User Authentication Scheme Using Bilinear Pairings . . . . .	306
<i>Chen Yang, Wenping Ma, and Xinmei Wang</i>	
On the Homonymous Role in Role-Based Discretionary Access Control . . . . .	313
<i>Kai Ouyang, Xiaowen Chu, Yixin Jiang, Hsiao-Hwa Chen, and Jiangchuan Liu</i>	
Ontology Based Hybrid Access Control for Automatic Interoperation . . .	323
<i>Yuqing Sun, Peng Pan, Ho-fung Leung, and Bin Shi</i>	

Recoverable Tamper Proofing Technique for Image Authentication  
Using Irregular Sampling Coding..... 333  
*Kuo Lung Hung and Chin-Chen Chang*

**Trusted Computing and Communications**

A Decomposition Strategy Based Trusted Computing Method  
for Cooperative Control Problem Faced with Communication  
Constraints ..... 344  
*Shieh-Shing Lin*

Formal Analysis of Secure Bootstrap in Trusted Computing ..... 352  
*Shuyi Chen, Yingyou Wen, and Hong Zhao*

Calculating Trust Using Aggregation Rules in Social Networks ..... 361  
*Sanguk Noh*

Enhancing Grid Security Using Trusted Virtualization ..... 372  
*Hans Löhr, HariGovind V. Ramasamy, Ahmad-Reza Sadeghi,  
Stefan Schulz, Matthias Schunter, and Christian Stübke*

A Wearable System for Outdoor Running Workout State Recognition  
and Course Provision ..... 385  
*Katsuhiko Takata, Masataka Tanaka, Jianhua Ma, Runhe Huang,  
Bernady O. Apduhan, and Norio Shiratori*

**Key Management**

Malicious Participants in Group Key Exchange: Key Control and  
Contributiveness in the Shadow of Trust ..... 395  
*Emmanuel Bresson and Mark Manulis*

Efficient Implementation of the Keyed-Hash Message Authentication  
Code Based on SHA-1 Algorithm for Mobile Trusted Computing ..... 410  
*Mooseop Kim, Youngse Kim, Jaecheol Ryou, and Sungik Jun*

A Secure DRM Framework for User’s Domain and Key Management ... 420  
*Jinheung Lee, Sanggon Lee, and Sanguk Shin*

A Secret-Key Exponential Key Agreement Protocol with Smart  
Cards ..... 430  
*Eun-Jun Yoon and Kee-Young Yoo*

Key Establishment Scheme for Sensor Networks with Low  
Communication Cost ..... 441  
*Yong Ho Kim, Hwaseong Lee, Jong Hyuk Park,  
Laurence T. Yang, and Dong Hoon Lee*

## Worm Detection and Data Security

A Worm Containment Model Based on Neighbor-Alarm .....	449
<i>Jianming Fu, Binglan Chen, and Huanguo Zhang</i>	
A Distributed Self-healing Data Store .....	458
<i>Wolfgang Trumler, Jörg Ehrig, Andreas Pietzowski, Benjamin Satzger, and Theo Ungerer</i>	
Malicious Codes Detection Based on Ensemble Learning .....	468
<i>Boyun Zhang, Jianping Yin, Jingbo Hao, Dingxing Zhang, and Shulin Wang</i>	
Generating Simplified Regular Expression Signatures for Polymorphic Worms .....	478
<i>Yong Tang, Xicheng Lu, and Bin Xiao</i>	

## Secured Services and Applications

AAA for Spontaneous Roaming Agreements in Heterogeneous Wireless Networks .....	489
<i>Zhi (Judy) Fu, Minho Shin, John C. Strassner, Nitin Jain, Vishnu Ram, and William A. Arbaugh</i>	
A Prediction-Based Fair Replication Algorithm in Structured P2P Systems .....	499
<i>Xianshu Zhu, Dafang Zhang, Wenjia Li, and Kun Huang</i>	
TransCom: A Virtual Disk Based Self-management System .....	509
<i>Li Wei, Yaoxue Zhang, and Yuezhi Zhou</i>	
Defending Against Jamming Attacks in Wireless Local Area Networks .....	519
<i>Wei Chen, Danwei Chen, Guozi Sun, and Yingzhou Zhang</i>	

## Fault-Tolerant Systems

Schedulability Analysis of the Fault-Tolerant Hard Real-Time Tasks with Limited Priority Levels .....	529
<i>Jun Li, Fumin Yang, Gang Tu, Wanhua Cao, and Yansheng Lu</i>	
A Property-Based Technique for Tolerating Faults in Bloom Filters for Deep Packet Inspection .....	539
<i>Yoon-Hwa Choi and Myeong-Hyeon Lee</i>	
A Fuzzy Logic Approach for Secure and Fault Tolerant Grid Job Scheduling .....	549
<i>Congfeng Jiang, Cheng Wang, Xiaohu Liu, and Yinghui Zhao</i>	

An Enhanced DGIDE Platform for Intrusion Detection . . . . .	559
<i>Fang-Yie Leu, Fuu-Cheng Jiang, Ming-Chang Li, and Jia-Chun Lin</i>	
<b>Author Index</b> . . . . .	569