Lecture Notes in Computer Science

11091

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, Lancaster, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Zurich, Switzerland

John C. Mitchell

Stanford University, Stanford, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

C. Pandu Rangan

Indian Institute of Technology Madras, Chennai, India

Bernhard Steffen

TU Dortmund University, Dortmund, Germany

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Gerhard Weikum

Max Planck Institute for Informatics, Saarbrücken, Germany

More information about this series at http://www.springer.com/series/7410

Security and Trust Management

14th International Workshop, STM 2018 Barcelona, Spain, September 6–7, 2018 Proceedings



Editors
Sokratis K. Katsikas
Open University of Cyprus
Latsia
Cyprus

and

Norwegian University of Science and Technology Gjøvik Norway Cristina Alcaraz D University of Malaga Malaga Spain

ISSN 0302-9743 ISSN 1611-3349 (electronic) Lecture Notes in Computer Science ISBN 978-3-030-01140-6 ISBN 978-3-030-01141-3 (eBook) https://doi.org/10.1007/978-3-030-01141-3

Library of Congress Control Number: 2018955425

LNCS Sublibrary: SL4 - Security and Cryptology

© Springer Nature Switzerland AG 2018

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

This volume contains the papers presented at the 14th International Workshop on Security and Trust Management (STM 2018). The workshop was co-located with the 23rd European Symposium on Research in Computer Security (ESORICS 2018) and was held in Barcelona, Spain, during September 6–7, 2018.

STM (Security and Trust Management) is a working group of ERCIM (European Research Consortium in Informatics and Mathematics). The STM workshop seeks submissions from academia, industry, and government that present novel research on all theoretical and practical aspects of security and trust in ICTs.

STM 2018 attracted 28 high-quality submissions, each of which was assigned to three referees for review; the review process resulted in eight full papers being accepted to be presented and included in the proceedings. These contributions cover topics related to cryptosystems and applied cryptography; modelling and risk assessment; and trust computing.

We would like to express our deepest thanks to all those who assisted us in organizing the event and putting together the program. We are very grateful to the ERCIM STM Steering Committee, and particularly its chair, Pierangela Samarati, for entrusting us with organizing the workshop; to Nicholas Kolokotronis, for taking care of publicity; to Joaquin Garcia-Alfaro (ESORICS 2018 Workshops Chair) and Miquel Soriano (ESORICS 2018 General Chair) for their support in organizing the workshop and taking care of the logistics. Special thanks go to the members of the Program Committee for their timely and rigorous reviews that helped us greatly in putting together a stimulating program. Last, but by no means least, we would like to thank all the authors who submitted their work to the workshop and contributed to an interesting set of proceedings.

August 2018

Sokratis K. Katsikas Cristina Alcaraz

Organization

Sokratis Katsikas (Chair) Open University of Cyprus, Cyprus and Norwegian

University of Science and Technology, Norway

Cristina Alcaraz (Chair)

Ken Barker

David Chadwick

University of Malaga, Spain

University of Calgary, Canada

University of Kent, UK

Jorge Cuellar Siemens AG, Corporate Technology, Germany

Sabrina De Capitani di University of Milan, Italy

Vimercati

Josep Domingo-Ferrer Universitat Rovira i Virgili, Spain University of Malaga, Spain University of Milan, Italy Joaquin Garcia-Alfaro University of Milan, Italy Telecom SudParis, France

Vasileios Gkioulos Norwegian University of Science and Technology,

Norway

Ehud Gudes Ben-Gurion University, Israel

Nicholas Kolokotronis University of the Peloponnese, Greece

Costas Lambrinoudakis University of Piraeus, Greece Giovanni Livraga University of Milan, Italy

Fabio Martinelli IIT-CNR, Italy

Sjouke Mauw University of Luxembourg, Luxembourg

Catherine Meadows Naval Research Laboratory, USA

Chris Mitchell Royal Holloway, University of London, UK

Charles Morisset Newcastle University, UK

Pankaj Pandey Norwegian University of Science and Technology,

Norway

Günther Pernul Universität Regensburg, Germany

Marinella Petrocchi IIT-CNR, Italy

Benoit Poletti Ministry of Economy/INCERT GIE, Luxembourg

Silvio Ranise FBK-Irst, Italy

Pierangela Samarati University of Milan, Italy Ralf Sasse ETH Zurich, Switzerland

Daniele Sgandurra Royal Holloway, University of London, UK

Georgios Spathoulas University of Thessaly, Greece

Fabian Van Den Broek Open University in the Netherlands, The Netherlands

Contents

Cryptosystems and Applied Cryptography	
Achieving Strong Security and Verifier-Local Revocation for Dynamic Group Signatures from Lattice Assumptions	3
Modular Verification of Sequential Composition for Private Channels in Maude-NPA	20
A Spark Is Enough in a Straw World: A Study of Websites Password Management in the Wild	37
A Fast and Scalable Fragmentation Algorithm for Data Protection Using Multi-storage over Independent Locations Katarzyna Kapusta and Gerard Memmi	54
Modelling and Risk Assessment	
Cyber Insurance Against Electronic Payment Service Outages: A Document Study of Terms and Conditions from Electronic Payment Service Providers and Insurance Companies	73
Semi-automatically Augmenting Attack Trees Using an Annotated Attack Tree Library	85
Trust Computing	
Tux: Trust Update on Linux Booting	105
Verifiable Outsourcing of Computations Using Garbled Onions	122
Author Index	130