Contents

Contributing Authors ix
Preface xix

Part I  Role-Based Access Control

1  Shielding RBAC Infrastructures from Cyberterrorism 3
András Belokosztolszki and David Eyers

2  Privilege Administration for the Role Graph Model 15
Cecilia Ionita and Sylvia Osborn

3  Implementing RBAC Policies 27
Steve Barker, Paul Douglas and Terry Fanning

4  Role Delegation for a Resource-Based Security Model 37
M. Liebrand, H. Ellis, C. Phillips, S. Demurjian, T.C. Ting and J. Ellis

5  Using X.509 Attribute Certificates for Role-Based EAM 49
Dongwan Shin, Gail-Joon Ahn and Sangrae Cho

6  Implementing Workflow Systems 61
Lucas Dreyer and Martin Olivier

Part II  Database Security

7  Multiphase Damage Confinement System for Databases 75
Peng Liu and Ying Wang
Analyzing Transaction Logs for Effective Damage Assessment 89
Prahalad Ragothaman and Brajendra Panda

Deductive Database Security 103
Steve Barker

Part III  XML Security

Towards Secure XML Federations 117
Lingyu Wang, Duminda Wijesekera and Sushil Jajodia

Secure XML Views 133
Andrei Stoica and Csilla Farkas

Distributed Cooperative Updates of XML Documents 147
Elisa Bertino, Elena Ferrari and Giovanni Mella

Part IV  Data Mining and Inference

On Security and Privacy Risks in Association Mining Algorithms 163
Tom Johnsten, Vijay Raghavan and Kevin Hill

Mining Malicious Corruption of Data with Hidden Markov Models 175
Daniel Barbará, Rajni Goel and Sushil Jajodia

A Study of Inference Problems in Distributed Databases 191
LiWu Chang and Ira Moskowitz

Part V  Multimedia System Security

Uniform Indexing for Geospatial Data and Authorizations 207
Vijayalakshmi Atluri and Pietro Mazzoleni

Access Control of SVG Documents 219
E. Damiani, S. De Capitani di Vimercati, E. Fernández-Medina and P. Samarati
Part VI  Network Security

18
On Modeling Computer Networks for Vulnerability Analysis
C. Campbell, J. Dawkins, B. Pollet, K. Fitch, J. Hale and M. Papa

19
On-line Intrusion Protection by Detecting Attacks with Diversity
J. Reynolds, J. Just, E. Lawson, L. Clough and R. Maglich

Part VII  Public Key Infrastructure

20
Recertification: A Technique to Improve Services in PKI
Ravi Mukkamala, Satyam Das and Mahantesh Halappanavar

21
A Hybrid PKI Model: Application to Secure Mediation
Joachim Biskup and Yücel Karabulut

Part VIII  Formal Methods and Protocols

22
Implementation and Verification of Programmable Security
Stephen Magill, Bradley Skaggs, Mauricio Papa and John Hale

23
A Process Algebraic Approach to Security Policies
Peter Ryan and Ragni Ryvold Arnesen

24
Anonymous and Secure Multicast Subscription
Indrajit Ray and Indrakshi Ray

Part IX  Security and Privacy

25
Privacy and Civil Liberties
D. Chadwick, M. Olivier, P. Samarati, E. Sharpston and B. Thuraisingham