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SMART CARD SECURITY

Applications, Attacks,
and Countermeasures

B.B. Gupta
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Smart Card Security And Applications

Wolfgang Rankl, Wolfgang Effing



Smart Card Security And Applications:

Smart Cards, Tokens, Security and Applications Keith Mayes, Konstantinos Markantonakis, 2017-05-18 This book provides a broad overview of the many card systems and solutions that are in practical use today This new edition adds content on RFIDs embedded security attacks and countermeasures security evaluation javacards banking or payment cards identity cards and passports mobile systems security and security management A step by step approach educates the reader in card types production operating systems commercial applications new technologies security design attacks application development deployment and lifecycle management By the end of the book the reader should be able to play an educated role in a smart card related project even to programming a card application This book is designed as a textbook for graduate level students in computer science It is also as an invaluable post graduate level reference for professionals and researchers This volume offers insight into benefits and pitfalls of diverse industry government financial and logistics aspects while providing a sufficient level of technical detail to support technologists information security specialists engineers and researchers

Smart Card Security and Applications, Second Edition Mike Hendry, 2001 This extensively updated edition of the popular book offers a current overview of the ways smart cards address the computer security issues of today s varied applications Brand new discussions on multiapplication operating systems computer networks and the Internet are included to keep technical and business professionals abreast of the latest developments in this field

Smart Card Security B.B. Gupta, Megha Quamara, 2019-08-08 Smart Card Security Applications Attacks and Countermeasures provides an overview of smart card technology and explores different security attacks and countermeasures associated with it It covers the origin of smart cards types of smart cards and how they work It discusses security attacks associated with hardware software data and users that are a part of smart card based systems The book starts with an introduction to the concept of smart cards and continues with a discussion of the different types of smart cards in use today including various aspects regarding their configuration underlying operating system and usage It then discusses different hardware and software level security attacks in smart card based systems and applications and the appropriate countermeasures for these security attacks It then investigates the security attacks on confidentiality integrity and availability of data in smart card based systems and applications including unauthorized remote monitoring communication protocol exploitation denial of service DoS attacks and so forth and presents the possible countermeasures for these attacks The book continues with a focus on the security attacks against remote user authentication mechanisms in smart card based applications and proposes a possible countermeasure for these attacks Then it covers different communication standards for smart card based applications and discusses the role of smart cards in various application areas as well as various open source tools for the development and maintenance of smart card based systems and applications The final chapter explains the role of blockchain technology for securing smart card based transactions and quantum cryptography for designing secure smart card based

algorithms Smart Card Security Applications Attacks and Countermeasures provides you with a broad overview of smart card technology and its various applications *Smart Card Handbook* Wolfgang Rankl, Wolfgang Effing, 2004-04-02 Building on previous editions this third edition of the Smart Card Handbook offers a completely updated overview of the state of the art in smart card technology Everything you need to know about smart cards and their applications is covered Fully revised this handbook describes the advantages and disadvantages of smart cards when compared with other systems such as optical cards and magnetic stripe cards and explains the basic technologies to the reader This book also considers the actual status of appropriate European and international standards Features include New sections on smart card applications PKCS 15 USIM Tachosmart smart card terminals M U S C L E OCF MKT PC SC contactless card data transmission with smart cards Revised and updated chapters on smart cards in the telecommunications industry GSM UMTS U SIM application toolkit decoding of the files of a GSM card smart card security new attacks new protection methods against attacks A detailed description of the physical and technical properties and the fundamental principles of information processing techniques Explanations of the architecture of smart card operating systems data transfer to and from the smart card command set and implementation of the security mechanisms and the function of the smart card terminals Current applications of the technology on mobile telephones telephone cards the electronic purse and credit cards Discussions on future developments of smart cards USB MMU on microcontroller system on card flash memory and their usage Practical guidance on the future applications of smart cards including health insurance cards e ticketing wireless security digital signatures and advanced electronic payment methods The book is filled with information that students enthusiasts managers experts developers researchers and programmers will find useful The book is well structured and provides a good account of smart card state of the art technology There is a lot of useful information in this book and as a practicing engineer I found it fascinating and extremely useful Review of second edition in Measurement and Control The standard has got a lot higher if you work with smart cards then buy it Highly recommended Review of second edition in Journal of the Association of C and C Programmers Visit the Smart Card Handbook online at www.wiley.co.uk/commstech Smart Card Applications Wolfgang Rankl, 2007-04-30 A practical guide to the specification design and programming of smart card systems for working applications More than 3 billion smartcards are produced every year Generally defined as any pocket sized card with embedded integrated circuits or chips they have a huge number of applications including travel cards chip and pin cards pet tags mobile phone SIMs and pallet trackers Now with modern Smart Card technology such as Java Card and Basic Card it is possible for everyone to create his or her own applications on a smart card This book provides generic solutions for programming smart cards enabling the creation of working applications and systems Key features Presents a comprehensive introduction to the topic of smart cards explaining component elements and the smart card microcontrollers Sets out information on operating systems with case studies of a range of applications including credit card security mobile phones

and transport payment cards Gives detailed advice on the monitoring of smart card applications recognizing potential attacks on security and improving system integrity Provides modules and examples so that all types of systems can be built up from a small number of individual components Offers guidelines on avoiding and overcoming design errors Ideal for practising engineers and designers looking to implement smart cards in their business it is also a valuable reference for postgraduate students taking courses on embedded system and smart card design

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Mike Hendry, 2001 Annotation This extensively updated edition of the popular book offers a current overview of the ways smart cards address the computer security issues of today's varied applications Brand new discussions on multiapplication operating systems computer networks and the Internet are included to keep technical and business professionals abreast of the latest developments in this field

Information Security Applications

Heung Youl Youm, Moti Yung, 2010-01-08 This book constitutes the thoroughly refereed post conference proceedings of the 10th International Workshop on Information Security Applications WISA 2009 held in Busan Korea during August 25-27 2009 The 27 revised full papers presented were carefully reviewed and selected from a total of 79 submissions The papers are organized in topical sections on multimedia security device security HW implementation security applied cryptography side channel attacks cryptographanalysis

anonymity authentication access control and network security

Smart Cards Henry Dreifus, J. Thomas Monk, 1998-01-07 A complete nuts and bolts guide to designing building and managing the smart card system that's right for your company Already a well established medium of exchange in Europe smart card technology has made major inroads in the North American market in the past few years Visa and Mastercard are committed to replacing credit cards with them over the next five years and Microsoft is racing to use them for e-commerce Clearly the time for asking Why regarding smart cards has passed The important question companies now should be asking themselves is How how to plan how to develop how to implement and how to manage the smart card system that is right for our company This book provides complete unbiased answers to these and all your technical and business questions about smart card systems Dreifus and Monk guide you step by step through the entire process of selecting designing building and managing a smart card application tailored to your business They supply numerous checklists to help guarantee that you make the correct technical decisions during each phase of the process And they include real world case studies illustrating successful smart card implementations in a variety of industries including banking manufacturing entertainment healthcare and transportation Crucial topics covered in detail include Smart card architectures and standards Security and encryption Smart card operating systems Smart card application design and development Development tools Testing and certification Smart Cards arms you with everything you need to know to make informed decisions about the smart card system that's right for your company

Multi-application

Smart Cards Mike Hendry, 2007-06-28 Multi application smart cards have yet to realise their enormous potential partly because few people understand the technology market and behavioural issues involved Here Mike Hendry sets out to fill this

knowledge gap with a comprehensive and accessible guide Following a review of the state of the art in smart card technology the book describes the business requirements of each smart card using sector and the systems required to support multiple applications Implementation aspects including security are treated in detail and numerous international case studies cover identity telecoms banking and transportation applications Lessons are drawn from these studies to help deliver more successful projects in the future Invaluable for users and integrators specifying evaluating and integrating multi application systems the book will also be useful to terminal card and system designers network IT and security managers and software specialists

Smart Card Programming and Security Isabelle Attali, 2001-09-05 This book constitutes the refereed proceedings of the Second International Conference on Research in Smart Cards E smart 2001 held in Cannes France in September 2001 The 20 revised full papers presented were carefully reviewed and selected from 38 submissions Among the topics addressed are biometrics cryptography and electronic signatures on smart card security formal methods for smart card evaluation and certification architectures for multi applications and secure open platforms and middleware for smart cards and novel applications of smart cards

Smart Cards Timothy M. Jurgensen, Scott B. Guthery, 2002 This book provides readers with an overview to the design of multiapplication smart card environments including the selection of a platform the creation of applications and the logistics of initial deployment

Smart Card 2000 David Chaum, 1991 Compiled with the goal of bringing technology and application developers together with representatives from potential user organizations this proceedings includes contributions of both groups from a dozen countries including Japan and the United States The presentations cover a broad spectrum ranging from recent hardware developments through security issues and current applications in areas such as electronic money public telephones and medical data to new public key techniques

Information Security Applications, 2004 **Basics for Buying Your Personal Computer** Perry J. Radoff, 1987 This work outlines some basic facts and advice for people in the market for a personal computer It also includes a short glossary of computer terms a sample database printout and a partial list of service companies

Security, 2008 **Smart Card Research and Advanced Applications VI** Jean-Jacques Quisquater, Pierre Paradinas, Yves Deswarte, Anas Abou El Kalam, 2006-04-11 In the Information Society the smart card or smart device with its processing power and link to its owner will be the potential human representation or delegate in Ambient Intelligence Pervasive Computing where every appliance or computer will be connected and where control and trust of the personal environment will be the next decade challenge Smart card research is of increasing importance as the need for information security grows rapidly Smart cards will play a very large role in ID management in secure systems In many computer science areas smart cards introduce new dimensions and opportunities Disciplines like hardware design operating systems modeling systems cryptography and distributed systems find new areas of applications or issues smart cards also create new challenges for these domains CARDIS the IFIP Conference on Smart Card Research and Advanced Applications gathers researchers and technologists who are focused in all

aspects of the design development deployment validation and application of smart cards or smart personal devices This volume contains the 20 papers that have been selected by the CARDIS Program Committee for presentation at the 6th International Conference on Smart Card Research and Advanced Applications CARDIS 2004 which was held in conjunction with the IFIP 18th World Computer Congress in Toulouse France in August 2004 and sponsored by the International Federation for Information Processing IFIP With 20% of the papers coming from Asia 20% from America and 60% from Europe the competition was particularly severe this year with only 20 papers selected out of 45 very good submissions Smart Card Research and Advanced Applications VI presents the latest advances in smart card research and applications and will be essential reading for developers of smart cards and smart card applications as well as for computer science researchers in computer architecture computer security and cryptography *I-ways* ,1998 *Philips Telecommunication and Data Systems Review* ,1988 **PKI** Thomas Austin,Tom Austin,2001-01-11 A strategic guide to the future of security for Web based transactions The book offers a tutorial on the technical and business issues and a customizable methodology for your own organization Proceedings ,2005

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