Protocols For Authentication And Key Establishment

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Second International Conference, ACNS 2004, Yellow Mountain, China, June 8-11, 2004. Proceedings
Advances in Authentication
23rd Annual International Cryptology Conference, Santa Barbara, California, USA, August 17-21, 2003, Proceedings
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Proceedings of the First International Conference on Security of Information and Networks (Sin 2007), 7-10 ZMay 2007, Gazimagusa (TRNC), North Cyprus
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13th Annual International Cryptology Conference Santa Barbara, California, USA August 22–26, 1993 Proceedings
16th International Workshop, Cambridge, UK, April 16-18, 2008. Revised Selected Papers
AAA and Network Security for Mobile Access
Building Secure Systems in Untrusted Networks
A New Protocol for Password Authentication and Key Exchange
11th Asian Computing Science Conference, Tokyo, Japan, December 6-8, 2006, Revised Selected Papers
Introduction to Network Security
User's Guide to Cryptography and Standards
The Modelling and Analysis of Security Protocols
Cryptography for Secure Communications

SHAMAR ASHTYN

Protocols for Authentication and Key Establishment Prentice Hall Professional
With the scope and frequency of attacks on valuable corporate data growing enormously in recent years, a solid understanding of cryptography is essential for anyone working in the computer/network security field. This timely book delivers the hands-on knowledge you need, offering comprehensive coverage on the latest and most-important standardized cryptographic techniques to help you protect your data and computing resources to the fullest. Rather than focusing on theory like other books on the market, this unique resource describes cryptography from an end-user perspective, presenting in-depth, highly practical comparisons of standards and techniques.
Second International Conference, ACNS 2004, Yellow Mountain, China, June 8-11, 2004. Proceedings CRC Press
The LNCS journal Transactions on Computational Science reflects recent developments in the field of Computational Science, conceiving the field not as a mere ancillary science but rather as an innovative approach supporting many other scientific disciplines. The journal focuses on original high-quality research in the realm of computational science in parallel and distributed environments, encompassing the facilitating theoretical foundations and the applications of large-scale computations and massive data processing. It addresses researchers and practitioners in areas ranging from aerospace to biochemistry, from electronics to geosciences, from mathematics to software architecture, presenting verifiable computational methods, findings, and solutions and enabling industrial users to apply techniques of leading-edge, large-scale, high performance computational methods. The 17th issue of the Transactions on Computational Science journal consists of two parts. The first part is comprised of four papers, spanning the areas of robotics and augmented reality, computer game evaluation strategies, cognitive perception in crowd control simulation, and reversible processor design using look-ahead. The second part consists of five papers covering the topics of secure congestion adaptive routing, cryptographic schemes for wireless sensor networks, intersection attacks on anonymity, and reliable message delivery in Vehicular Ad Hoc Networks (VANET).
Advances in Authentication John Wiley & Sons
The importance of an authenticated key exchange (AKE) protocol has long been known in the field of cryptography. Two of the questions still being asked today are (1) what properties or features does a secure AKE protocol possess, and (2) How does one, in a step by step fashion, create a secure AKE protocol? This thesis aims to answer these two questions. The thesis contains two parts: one is a survey of previous works on the desired features of the Station-to-Station (STS) protocol, and the other is a study of a previously proposed design methodology in designing secure AKE protocols, as well as contributing an original idea of such methodologies. Descriptions and comparisons of the two design methodologies are included. The thesis surveys the literature and conducts a case study of the STS protocol, analyzes various attacks on STS through some known attacks to it, and extracts the desired properties and features of a secure AKE protocol via the case study. This part of the thesis does not propose any new result, but summarizes a complete list of issues one should take consideration of while designing an AKE protocol. We also show that at the end of this part, a secure version of STS which possesses the desired features of an AKE protocol. The other major part of the thesis surveys one design methodology of

creating a secure AKE protocol by Bellare, Canetti, and Krawczyk; it is based on having a secure key exchange protocol then adding (mutual) authentication to it. The thesis then proposes another original design methodology; it starts with a secure mutual authentication protocol, then adds the secure key exchange feature without modifying overheads and number of flows of the original mutual authentication protocol. We show in this part the "secure" AKE protocol developed through these two design approaches is identical to the secure version of STS described in the other part, and thus possesses the desired features of a secure AKE protocol. We also give a proof of security of the secure AKE protocol developed under our design methodology.

23rd Annual International Cryptology Conference, Santa Barbara, California, USA, August 17-21, 2003, Proceedings Artech House Publishers

Implement end-to-end and gateway security for IP networks. "Internet Security Protocols: Protecting IP Traffic" is a complete networking professional's guide to providing end-to-end and gateway Internet security for the user's information. World-renowned consultant Uyless Black covers the essential Internet security protocols designed to protect IP traffic. The book's coverage includes: Key Internet security challenges: privacy, secrecy, confidentiality, integrity of information, authentication, access control, non-repudiation, denial of service attacks Dial-in authentication with CHAP, RADIUS, and DIAMETER The role of IPSec in acquiring privacy and authentication services The Internet Key Distribution, Certification, and Management Systems (ISAKMP and IKE) Security in mobile Internet applications From the basics of firewalls to the latest public key distribution systems, Uyless Black reviews the alternatives for securing Internet traffic. If you're responsible for securing information traveling on IP networks, "Internet Security Protocols" is a fine source for the authoritative answers you're looking for.

Provable Security Springer

SAC 2004 was the eleventh in a series of annual workshops on Selected Areas in Cryptography. This was the second time that the workshop was hosted by the University of Waterloo, Ontario, with previous workshops being held at Queen'sUniversityinKingston(1994,1996,1998and1999),CarletonUniversity in Ottawa (1995, 1997 and 2003), the Fields Institute in Toronto (2001) and Memorial University of Newfoundland in St. John's (2002). The primary intent of the workshop was to provide a relaxed atmosphere in which researchers in cryptography could present and discuss new work on selected areas of current interest. This year's themes for SAC were: – Design and analysis of symmetric key cryptosystems. – Primitives for symmetric key cryptography, including block and stream - phers, hash functions, and MAC algorithms. – E?cient implementation of cryptographic systems in public and symmetric key cryptography. – Cryptographic solutions for mobile (web) services. A record of 117 papers were submitted for consideration by the program committee. After an extensive review process, 25 papers were accepted for p- sentation at the workshop (two of these papers were merged). Unfortunately, many good papers could not be accommodated this year. These proceedings contain the revised versions of the 24 accepted papers. The revised versions were not subsequently checked for correctness. Also, we were very fortunate to have two invited speakers at SAC 2004. • Eli Biham arranged for some breaking news in his talk on "New Results on SHA-0 and SHA-1." This talk was designated as the Sta?ord Tavares L- ture.

Protecting IP Traffic Springer Science & Business Media

This book constitutes the refereed proceedings of the 23rd Annual International Cryptology Conference, CRYPTO 2003, held in Santa Barbara, California in August 2003. The 34 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 166 submissions. The papers are organized in topical sections on public key cryptanalysis, alternate adversary models, protocols, symmetric key cryptanalysis, universal composability, zero knowledge, algebraic geometry, public key constructions, new problems, symmetric key constructions, and new models.

Internet Security Protocols CRC Press

Security of Information and Networks includes invited and contributed papers on information assurance, security, and public policy. It covers Ciphers, Mobile Agents, Access Control, Security Assurance, Intrusion Detection, and Security Software.

Protocols and Security Models for Authentication and Key Establishment Springer Science & Business Media

"A staggeringly comprehensive review of the state of modern cryptography. Essential for anyone getting up to speed in information security." - Thomas Doylend, Green Rocket Security An all-practical guide to the cryptography behind common tools and protocols that will help you make excellent security choices for your systems and applications. In Real-World Cryptography, you will find: Best practices for using cryptography Diagrams and explanations of cryptographic algorithms Implementing digital signatures and zero-knowledge proofs Specialized hardware for attacks and highly adversarial environments Identifying and fixing bad practices Choosing the right cryptographic tool for any problem Real-World Cryptography reveals the cryptographic techniques that drive the security of web APIs, registering and logging in users, and even the blockchain. You'll learn how these techniques power modern security, and how to apply them to your own projects. Alongside modern methods, the book also anticipates the future of cryptography, diving into emerging and cutting-edge advances such as cryptocurrencies, and post-quantum cryptography. All techniques are fully illustrated with diagrams and examples so you can easily see how to put them into practice. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Cryptography is the essential foundation of IT security. To stay ahead of the bad actors attacking your systems, you need to understand the tools, frameworks, and protocols that protect your networks and applications. This book introduces authentication, encryption, signatures, secret-keeping, and other cryptography concepts in plain language and beautiful illustrations. About the book Real-World Cryptography teaches practical techniques for day-to-day work as a developer, sysadmin, or security practitioner. There's no complex math or jargon: Modern cryptography methods are explored through clever graphics and real-world use cases. You'll learn building blocks like hash functions and signatures; cryptographic protocols like HTTPS and secure messaging; and cutting-edge advances like post-quantum cryptography and cryptocurrencies. This book is a joy to read—and it might just save your bacon the next time you're targeted by an adversary after your data. What's inside Implementing digital signatures and zero-knowledge proofs Specialized hardware for attacks and highly adversarial environments Identifying and fixing bad practices Choosing the right cryptographic tool for any problem About the reader For cryptography beginners with no previous experience in the field. About the author David Wong is a cryptography engineer. He is an active contributor to internet standards including Transport Layer Security. Table of Contents PART 1 PRIMITIVES: THE INGREDIENTS OF CRYPTOGRAPHY 1 Introduction 2 Hash functions 3 Message authentication codes 4 Authenticated encryption 5 Key exchanges 6 Asymmetric encryption and hybrid encryption 7 Signatures and zero-knowledge proofs 8 Randomness and secrets PART 2 PROTOCOLS: THE RECIPES OF CRYPTOGRAPHY 9 Secure transport 10 End-to-end encryption 11 User authentication 12 Crypto as in cryptocurrency? 13 Hardware cryptography 14 Post-quantum cryptography 15 Is this it? Next-generation cryptography 16 When and where cryptography fails

High Performance Browser Networking John Wiley & Sons

Your expert guide to information security As businesses and consumers become more dependent on complexmultinational information systems, the need to understand anddevise sound information security systems has never been greater.This title takes a practical approach to information security byfocusing on real-world examples. While not sidestepping the theory,the emphasis is on developing the skills and knowledge thatsecurity and information technology students and professionals needto face their challenges. The book is organized around four majorthemes: * Cryptography: classic cryptosystems, symmetric key cryptography,public key cryptography, hash functions, random numbers,information hiding, and cryptanalysis * Access control: authentication and authorization, password-basedsecurity, ACLs and capabilities, multilevel and multilateralsecurity, covert channels and inference control, BLP and Biba'smodels, firewalls, and intrusion detection systems * Protocols: simple authentication protocols, session keys, perfectforward secrecy, timestamps, SSL, IPSec, Kerberos, and GSM * Software: flaws and malware, buffer overflows, viruses and worms,software reverse engineering, digital rights management, securesoftware development, and operating systems security Additional features include numerous figures and tables toillustrate and clarify complex topics, as well as problems-rangingfrom basic to challenging-to help readers apply their newlydeveloped skills. A solutions manual and a set of classroom-testedPowerPoint(r) slides will assist instructors in their coursedevelopment. Students and professors in information technology,computer science, and engineering, and professionals working in thefield will find this reference most useful to solve theirinformation security issues. An Instructor's Manual presenting detailed solutions to all theproblems in the book is available from the Wiley editorialdepartment. An Instructor Support FTP site is also available.

Security without Obscurity "O'Reilly Media, Inc."

"Cryptographic Protocol: Security Analysis Based on Trusted Freshness" mainly discusses how to analyze and design cryptographic protocols based on the idea of system engineering and that of the trusted freshness component. A novel freshness principle based on the trusted freshness component is presented; this principle is the basis for an efficient and easy method for analyzing the security of cryptographic protocols. The reasoning results of the new approach, when compared with the security conditions, can either establish the correctness of a cryptographic protocol when the protocol is in fact correct, or identify the absence of the security properties, which leads the structure to construct attacks directly. Furthermore, based on the freshness principle, a belief multiset formalism is presented. This formalism's efficiency, rigorousness, and the possibility of its automation are also presented. The book is intended for researchers, engineers, and graduate students in the fields of communication, computer science and cryptography, and will be especially useful for engineers who need to analyze cryptographic protocols in the real world. Dr. Ling Dong is a senior engineer in the network construction and information security field. Dr. Kefei Chen is a Professor at the Department of Computer Science and Engineering, Shanghai Jiao Tong University.

Introduction to Modern Cryptography Addison-Wesley Professional

An up-to-date guide to an overview of authentication in the Internet of Things (IoT) The Internet of things (IoT) is the network of the countless physical devices that have the possibility to connect and exchange data. Among the various security requirements, authentication to the IoT is the first step to prevent the impact of attackers. IoT Security offers an important guide into the development of the many authentication mechanisms that provide IoT authentication at various levels such as user level, device level and network level. The book covers a wide range of topics including an overview of IoT and addresses in detail the security challenges at every layer by considering both the technologies and the architecture used. The authors—noted experts on the topic—provide solutions for remediation of compromised security, as well as methods for risk mitigation, and offer suggestions for prevention and improvement. In addition, IoT Security offers a variety of illustrative use cases. This important book: Offers an authoritative reference designed for use by all IoT stakeholders Includes information for securing devices at the user, device, and network levels Contains a classification of existing vulnerabilities Written by an international group of experts on the topic Provides a guide to the most current information available on IoT security Written for network operators, cloud operators, IoT device manufacturers, IoT device users, wireless users, IoT standardization organizations, and security solution developers, IoT Security is an essential guide that contains information on security features, including underlying networks, architectures, and security requirements.

The Definitive Guide Springer Science & Business Media

This book provides a concise yet comprehensive overview of computer and Internet security, suitable for a one-term introductory course for junior/senior undergrad or first-year graduate students. It is also suitable for self-study by anyone seeking a solid footing in security – including software developers and computing professionals, technical managers and government staff. An overriding focus is on brevity, without sacrificing breadth of core topics or technical detail within them. The aim is to enable a broad understanding in roughly 350 pages. Further prioritization is supported by designating as optional selected content within this. Fundamental academic concepts are reinforced by specifics and examples, and related to applied problems and real-world incidents. The first chapter provides a gentle overview and 20 design principles for security. The ten chapters that follow provide a framework for understanding computer and Internet security. They regularly refer back to the principles, with supporting examples. These principles are the conceptual counterparts of security-related error patterns that have been recurring in software and system designs for over 50 years. The book is "elementary" in that it assumes no background in security, but unlike "soft" high-level texts it does not avoid low-level details, instead it selectively dives into fine points for exemplary topics to concretely illustrate concepts and principles. The book is rigorous in the sense of being technically sound, but avoids both mathematical proofs and lengthy source-code examples that typically make books inaccessible to general audiences. Knowledge of elementary operating system and networking concepts is helpful, but review sections summarize the essential background. For graduate students, inline exercises and supplemental references provided in per-chapter endnotes provide a bridge to

further topics and a springboard to the research literature; for those in industry and government, pointers are provided to helpful surveys and relevant standards, e.g., documents from the Internet Engineering Task Force (IETF), and the U.S. National Institute of Standards and Technology.
Cryptographic Principles, Algorithms and Protocols Springer Science & Business Media
This book constitutes the thoroughly refereed post-proceedings of the 16th International Workshop on Security Protocols, SP 2008, held in Cambridge, UK, in April 2008. The 17 revised full papers presented together with edited transcriptions of some of the discussions following the presentations have gone through multiple rounds of reviewing, revision, and selection. The theme of this workshop was “Remodelling the Attacker” with the intention to tell the students at the start of a security course that it is very important to model the attacker, but like most advice to the young, this is an oversimplification. Shouldn’t the attacker’s capability be an output of the design process as well as an input? The papers and discussions in this volume examine the theme from the standpoint of various different applications and adversaries.
The New Security Standard for the Internet, Intranets, and Virtual Private Networks CRC Press
The 3rd edition of this highly successful text builds onthe achievement of the first two editions to provide comprehensivecoverage of IMS. It continues to explore the concepts,architecture, protocols and functionalities of IMS while providinga wealth of new and updated information. It is written in a mannerthat allows readers to choose the level of knowledge andunderstanding they need to gain about the IMS. With 35% new material, The IMS,IP Multimedia Concepts andServices, 3rd Edition has been completely revised toinclude updated chapters as well as totally new chapters on IMSmultimedia telephony and IMS voice call continuity. Additional newmaterial includes IMS transit, IMS local numbering, emergencysessions, identification of communication services in IMS, newauthentication model for fixed access, NAT traversal and globallyroutable user agents URI. Detailed descriptions of protocolbehaviour are provided on a level that can be used forimplementation and testing. Key features of the 3rd edition: Two new chapters on IMS multimedia telephony service and IMSVoice Call Continuity Updated information on Third Generation Partnership Project(3GPP) Release 7 level, including architecture, reference pointsand concepts Substantially extended coverage on IMS detailed procedures Completely rewritten and extended chapters on IMSservices
Zero Trust Networks John Wiley & Sons
This thesis includes my research on efficient cryptographic protocols, sensor network key management, and radio frequency identification (RFID) authentication protocols. Key exchange, identification, and public key encryption are among the fundamental protocols studied in cryptography. There are two important requirements for these protocols: efficiency and security. Efficiency is evaluated using the computational overhead to execute a protocol. In modern cryptography, one way to ensure the security of a protocol is by means of provable security. Provable security consists of a security model that specifies the capabilities and the goals of an adversary against the protocol, one or more cryptographic assumptions, and a reduction showing that breaking the protocol within the security model leads to breaking the assumptions. Often, efficiency and provable security are not easy to achieve simultaneously. The design of efficient protocols in a strict security model with a tight reduction is challenging. Security requirements raised by emerging applications bring up new research challenges in cryptography. One such application is pervasive communication and computation systems, including sensor networks and radio frequency identification (RFID) systems. Specifically, sensor network key management and RFID authentication protocols have drawn much attention in recent years.
Third International Conference, SCN 2002, Amalfi, Italy, September 11-13, 2002, Revised Papers University of Waterloo
This book constitutes the refereed proceedings of the First International Conference on Provable Security, ProvSec 2007, held in Wollongong, Australia. The 10 revised full papers presented together with seven short papers were carefully reviewed and selected. The papers are organized in topical sections on Authentication, Asymmetric Encryption, Signature, Protocol and Proving Technique, Authentication and Symmetric Encryption, Signature and Asymmetric Encryption.
Proceedings of the First International Conference on Security of Information and Networks (Sin 2007), 7-10 ZMay 2007, Gazimagusa (TRNC), North Cyprus Springer Nature
How prepared are you to build fast and efficient web applications? This eloquent book provides what every web developer should know about the network, from fundamental limitations that affect performance to major innovations for building even more powerful browser applications—including HTTP 2.0 and XHR improvements, Server-Sent Events (SSE), WebSocket, and WebRTC. Author Ilya Grigorik, a web performance engineer at Google, demonstrates performance optimization best practices for TCP, UDP, and TLS protocols, and explains unique wireless and mobile network optimization requirements. You’ll then dive into performance characteristics of technologies such as HTTP 2.0, client-side network scripting with XHR, real-time streaming with SSE and WebSocket, and P2P communication with WebRTC. Deliver superlative TCP, UDP, and TLS performance Speed up network performance over 3G/4G mobile networks Develop fast and energy-efficient mobile applications Address bottlenecks in HTTP 1.x and other browser protocols Plan for and deliver the best HTTP 2.0 performance Enable efficient real-time streaming in the browser Create efficient peer-to-peer videoconferencing and low-latency applications with real-time WebRTC transports
Security Protocols XVI "O'Reilly Media, Inc."
Cryptography is a field that is constantly advancing, due to exponential growth in new technologies within the past few decades. Applying strategic algorithms to cryptic issues can help save time and energy in solving the expanding problems within this field. Algorithmic Strategies for Solving Complex Problems in Cryptography is an essential reference source that discusses the evolution and current trends in cryptology, and it offers new insight into how to use strategic algorithms to aid in solving intricate difficulties within this domain. Featuring relevant topics such as hash functions, homomorphic encryption schemes, two party computation, and integer factoring, this publication is ideal for academicians, graduate students, engineers, professionals, and researchers interested in expanding their knowledge of current trends and techniques within the cryptology field.
Security in Communication Networks Simon and Schuster
This book constitutes the thoroughly refereed post-proceedings of the Third International Conference on Security in Communication Networks, SCN 2002, held in Amalfi, Italy in September 2002. The 24 revised full papers presented together with two invited papers were carefully selected from 90 submissions during two rounds of reviewing and revision. The papers are organized in topical sections on forward security, foundations of cryptography, key management, cryptanalysis, systems security, digital signature schemes, zero knowledge, and information theory and secret sharing.
IoT Security IGI Global
Kerberos, the single sign-on authentication system originally developed at MIT, deserves its name. It's a faithful watchdog that keeps intruders out of your networks. But it has been equally fierce to system administrators, for whom the complexity of Kerberos is legendary. Single sign-on is the holy grail of network administration, and Kerberos is the only game in town. Microsoft, by integrating Kerberos into Active Directory in Windows 2000 and 2003, has extended the reach of Kerberos to all networks large or small. Kerberos makes your network more secure and more convenient for users by providing a single authentication system that works across the entire network. One username; one password; one login is all you need. Fortunately, help for administrators is on the way. Kerberos: The Definitive Guide shows you how to implement Kerberos for secure authentication. In addition to covering the basic principles behind cryptographic authentication, it covers everything from basic installation to advanced topics like cross-realm authentication, defending against attacks on Kerberos, and troubleshooting. In addition to covering Microsoft's Active Directory implementation, Kerberos: The Definitive Guide covers both major implementations of Kerberos for Unix and Linux: MIT and Heimdal. It shows you how to set up Mac OS X as a Kerberos client. The book also covers both versions of the Kerberos protocol that are still in use: Kerberos 4 (now obsolete) and Kerberos 5, paying special attention to the integration between the different protocols, and between Unix and Windows implementations. If you've been avoiding Kerberos because it's confusing and poorly documented, it's time to get on board! This book shows you how to put Kerberos authentication to work on your Windows and Unix systems.

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