Ssl And Tls Designing And Building Secure Systems

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DEREK EMMALEE

IPSec Pearson Education
This updated report provides an overview of firewall technology, and helps organizations plan for and implement effective firewalls. It explains the technical features of firewalls, the types of firewalls that are available for implementation by organizations, and their security capabilities. Organizations are advised on the placement of firewalls within the network architecture, and on the selection, implementation, testing, and management of firewalls. Other issues covered in detail are the development of firewall policies, and recommendations on the types of network traffic that should be prohibited. The appendices contain helpful supporting material, including a glossary and lists of acronyms and abreviations; and listings of in-print and online resources. Illus.
Encyclopedia of Cryptography and Security John Wiley & Sons Incorporated
This completely revised and expanded second edition of SSL and TLS: Theory and Practice provides an overview and a comprehensive discussion of the Secure Sockets Layer (SSL), Transport Layer Security (TLS), and Datagram TLS (DTLS) protocols that are omnipresent in today's e-commerce and e-business applications and respective security solutions. It provides complete details on the theory and practice of the protocols, offering readers a solid understanding of their design principles and modes of operation. Updates to this edition include coverage of the recent attacks against the protocols, newly specified extensions and firewall traversal, as well as recent developments related to public key certificates and respective infrastructures. This book targets software developers, security professionals, consultants, protocol designers, and chief security officers who will gain insight and perspective on the many details of the SSL, TLS, and DTLS protocols, such as cipher suites,

certificate management, and alert messages. The book also comprehensively discusses the advantages and disadvantages of the protocols compared to other Internet security protocols and provides the details necessary to correctly implement the protocols while saving time on the security practitioner's side.
Current Standards, Tools, and Practices Addison-Wesley Professional
This book constitutes the refereed proceedings of the 5th International Workshop on Cryptographic Hardware and Embedded Systems, CHES 2003, held in Cologne, Germany in September 2003. The 32 revised full papers presented were carefully reviewed and selected from 111 submissions. The papers are organized in topical sections on side channel attack methodology, hardware factorization, symmetric cypher attacks and countermeasures, secure hardware logic, random number generators, efficient multiplication, efficient arithmetics, attacks on asymmetric cryptosystems, implementation of symmetric cyphers, hyperelliptic curve cryptography, countermeasures to side channel leakage, and security of standards.
Secure Messaging Scenarios with WebSphere MQ McGraw Hill Professional
The classic guide to network security—now fully updated!"Bob and Alice are back!" Widely regarded as the most comprehensive yet comprehensible guide to network security, the first edition of Network Security received critical acclaim for its lucid and witty explanations of the inner workings of network security protocols. In the second edition, this most distinguished of author teams draws on hard-won experience to explain the latest developments in this field that has become so critical to our global network-dependent society. Network Security, Second Edition brings together clear, insightful, and clever explanations of every key facet of information security, from the basics to advanced cryptography and authentication, secure Web and email services, and emerging security standards. Coverage includes: All-new discussions of the Advanced Encryption Standard (AES), IPsec, SSL, and Web security Cryptography: In-depth, exceptionally clear introductions to secret and public keys, hashes, message digests, and other crucial concepts Authentication: Proving identity across networks, common attacks against authentication systems, authenticating people, and avoiding the pitfalls of authentication handshakes Core Internet security standards: Kerberos 4/5, IPsec, SSL, PKIX, and X.509 Email security: Key elements of a secure email system-plus detailed coverage of PEM, S/MIME, and PGP Web security: Security issues associated with URLs, HTTP, HTML, and cookies Security implementations in diverse platforms, including Windows, NetWare, and Lotus Notes The authors go far beyond documenting standards and technology: They contrast competing schemes, explain strengths and weaknesses, and identify the crucial errors most likely to compromise secure systems. Network Security will appeal to a wide range of professionals, from those who design or evaluate security systems to system administrators

and programmers who want a better understanding of this important field. It can also be used as a textbook at the graduate or advanced undergraduate level.
Implementing SSL / TLS Using Cryptography and PKI John Wiley & Sons
The second volume of this book includes selected high-quality research papers presented at the Fourth International Congress on Information and Communication Technology, which was held at Brunel University, London, on February 27–28, 2019. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT), and e-mining. Written by respected experts and researchers actively working in ICT, the book offers a valuable resource, especially for researchers who are newcomers to the field.
Interprocess Communications in UNIX John Wiley & Sons Incorporated
This book describes the essential components of the SCION secure Internet architecture, the first architecture designed foremost for strong security and high availability. Among its core features, SCION also provides route control, explicit trust information, multipath communication, scalable quality-of-service guarantees, and efficient forwarding. The book includes functional specifications of the network elements, communication protocols among these elements, data structures, and configuration files. In particular, the book offers a specification of a working prototype. The authors provide a comprehensive description of the main design features for achieving a secure Internet architecture. They facilitate the reader throughout, structuring the book so that the technical detail gradually increases, and supporting the text with a glossary, an index, a list of abbreviations, answers to frequently asked questions, and special highlighting for examples and for sections that explain important research, engineering, and deployment features. The book is suitable for researchers, practitioners, and graduate students who are interested in network security.
Securing the Web Elsevier
Develop a greater intuition for the proper use of cryptography. This book teaches the basics of writing cryptographic algorithms in Python, demystifies cryptographic internals, and demonstrates common ways cryptography is used incorrectly. Cryptography is the lifeblood of the digital world’s security infrastructure. From governments around the world to the average consumer, most communications are protected in some form or another by cryptography. These days, even Google searches are encrypted. Despite its ubiquity, cryptography is easy to misconfigure, misuse, and misunderstand. Developers building cryptographic operations into their applications are not typically experts in the subject, and may not fully grasp the implication of different algorithms, modes, and other parameters. The concepts in this book are largely taught by example, including incorrect uses of cryptography and how "bad" cryptography can be broken. By digging into the guts of cryptography,

you can experience what works, what doesn't, and why. What You'll Learn Understand where cryptography is used, why, and how it gets misused Know what secure hashing is used for and its basic propertiesGet up to speed on algorithms and modes for block ciphers such as AES, and see how bad configurations breakUse message integrity and/or digital signatures to protect messagesUtilize modern symmetric ciphers such as AES-GCM and CHACHAPractice the basics of public key cryptography, including ECDSA signaturesDiscover how RSA encryption can be broken if insecure padding is usedEmploy TLS connections for secure communicationsFind out how certificates work and modern improvements such as certificate pinning and certificate transparency (CT) logs Who This Book Is For IT administrators and software developers familiar with Python. Although readers may have some knowledge of cryptography, the book assumes that the reader is starting from scratch.

TOP-DOWN NET DES _c3 John Wiley & Sons Covers topics including HTTP methods and status codes, optimizing proxies, designing web crawlers, content negotiation, and load-balancing strategies.

Threat Modeling DIANE Publishing

This book looks at network security in a new and refreshing way. It guides readers step-by-step through the "stack" -- the seven layers of a network. Each chapter focuses on one layer of the stack along with the attacks, vulnerabilities, and exploits that can be found at that layer. The book even includes a chapter on the mythical eighth layer: The people layer. This book is designed to offer readers a deeper understanding of many common vulnerabilities and the ways in which attacker's exploit, manipulate, misuse, and abuse protocols and applications. The authors guide the readers through this process by using tools such as Ethereal (sniffer) and Snort (IDS). The sniffer is used to help readers understand how the protocols should work and what the various attacks are doing to break them. IDS is used to demonstrate the format of specific signatures and provide the reader with the skills needed to recognize and detect attacks when they occur. What makes this book unique is that it presents the material in a layer by layer approach which offers the readers a way to learn about exploits in a manner similar to which they most likely originally learned networking. This methodology makes this book a useful tool to not only security professionals but also for networking professionals, application programmers, and others. All of the primary protocols such as IP, ICMP, TCP are discussed but each from a security perspective. The authors convey the mindset of the attacker by examining how seemingly small flaws are often the catalyst of potential threats. The book considers the general kinds of things that may be monitored that would have alerted users of an attack. * Remember being a child and wanting to take something apart, like a phone, to see how it worked? This book is for you then as it details how specific hacker tools and techniques accomplish the things they do. * This book will not only give you knowledge of security tools but will provide you the ability to design more robust security solutions *

Anyone can tell you what a tool does but this book shows you how the tool works

SSL and TLS: Theory and Practice, Second Edition Cisco Press

Master the basics of data centers to build server farms that enhance your Web site performance Learn design guidelines that show how to deploy server farms in highly available and scalable environments Plan site performance capacity with discussions of server farm architectures and their real-life applications to determine your system needs Today's market demands that businesses have an Internet presence through which they can perform e-commerce and customer support, and establish a presence that can attract and increase their customer base. Underestimated hit ratios, compromised credit card records, perceived slow Web site access, or the infamous "Object Not Found" alerts make the difference between a successful online presence and one that is bound to fail. These challenges can be solved in part with the use of data center technology. Data centers switch traffic based on information at the Network, Transport, or Application layers. Content switches perform the "best server" selection process to direct users' requests for a specific service to a server in a server farm. The best server selection process takes into account both server load and availability, and the existence and consistency of the requested content. Data Center Fundamentals helps you understand the basic concepts behind the design and scaling of server farms using data center and content switching technologies. It addresses the principles and concepts needed to take on the most common challenges encountered during planning, implementing, and managing Internet and intranet IP-based server farms. An in-depth analysis of the data center technology with real-life scenarios make Data Center Fundamentals an ideal reference for understanding, planning, and designing Web hosting and e-commerce environments.

The Definitive Guide Springer Nature

Windows 2003 Server is unquestionably the dominant enterprise level operating system in the industry, with 95% of all companies running it. And for the last tow years, over 50% of all product upgrades have been security related. Securing Windows Server, according to bill gates, is the company's #1 priority. While considering the security needs of your organiztion, you need to balance the human and the technical in order to create the best security design for your organization. Securing a Windows Server 2003 enterprise network is hardly a small undertaking, but it becomes quite manageable if you approach it in an organized and systematic way. This includes configuring software, services, and protocols to meet an organization’s security needs. * The Perfect Guide if "System Administrator is NOT your primary job function * Avoid "time drains" configuring the many different security standards built into Windows 2003 * Secure VPN and Extranet Communications

Computer Security and the Internet Springer Science & Business Media

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

Data Center Fundamentals "O'Reilly Media, Inc."

In the five years since the first edition of this classic book was published, Internet use has exploded. The commercial world has rushed headlong into doing business on the Web, often without integrating sound security technologies and policies into their products and methods. The security risks--and the need to protect both business and personal data--have never been greater. We've updated Building Internet Firewalls to address these newer risks. What kinds of security threats does the Internet pose? Some, like password attacks and the exploiting of known security holes, have been around since the early days of networking. And others, like the distributed denial of service attacks that crippled Yahoo, E-Bay, and other major e-commerce sites in early 2000, are in current headlines. Firewalls, critical components of today's computer networks, effectively protect a system from most Internet security threats. They keep damage on one part of the network--such as eavesdropping, a worm program, or file damage--from spreading to the rest of the network. Without firewalls, network security problems can rage out of control, dragging more and more systems down. Like the bestselling and highly respected first edition, Building Internet Firewalls, 2nd Edition, is a practical and detailed step-by-step guide to designing and installing firewalls and configuring Internet services to work with a firewall. Much expanded to include Linux and Windows coverage, the second edition describes: Firewall technologies: packet filtering, proxying, network address translation, virtual private networks Architectures such as screening routers, dual-homed hosts, screened hosts, screened subnets, perimeter networks, internal firewalls Issues involved in a variety of new Internet services and protocols through a firewall Email and News Web services and scripting languages (e.g., HTTP, Java, JavaScript,

ActiveX, RealAudio, RealVideo) File transfer and sharing services such as NFS, Samba Remote access services such as Telnet, the BSD "r" commands, SSH, BackOrifice 2000 Real-time conferencing services such as ICQ and talk Naming and directory services (e.g., DNS, NetBT, the Windows Browser) Authentication and auditing services (e.g., PAM, Kerberos, RADIUS); Administrative services (e.g., syslog, SNMP, SMS, RIP and other routing protocols, and ping and other network diagnostics) Intermediary protocols (e.g., RPC, SMB, CORBA, IIOP) Database protocols (e.g., ODBC, JDBC, and protocols for Oracle, Sybase, and Microsoft SQL Server) The book's complete list of resources includes the location of many publicly available firewall construction tools.

Understanding and Deploying SSL/TLS and PKI to Secure Servers and Web Applications "O'Reilly Media, Inc."

Design and build Web APIs for a broad range of clients—including browsers and mobile devices—that can adapt to change over time. This practical, hands-on guide takes you through the theory and tools you need to build evolvable HTTP services with Microsoft’s ASP.NET Web API framework. In the process, you’ll learn how design and implement a real-world Web API. Ideal for experienced .NET developers, this book’s sections on basic Web API theory and design also apply to developers who work with other development stacks such as Java, Ruby, PHP, and Node. Dig into HTTP essentials, as well as API development concepts and styles Learn ASP.NET Web API fundamentals, including the lifecycle of a request as it travels through the framework Design the Issue Tracker API example, exploring topics such as hypermedia support with collection+json Use behavioral-driven development with ASP.NET Web API to implement and enhance the application Explore techniques for building clients that are resilient to change, and make it easy to consume hypermedia APIs Get a comprehensive reference on how ASP.NET Web API works under the hood, including security and testability

SSL and TLS Adobe Press

Since the first edition of this classic reference was published, World Wide Web use has exploded and e-commerce has become a daily part of business and personal life. As Web use has grown, so have the threats to our security and privacy--from credit card fraud to routine invasions of privacy by marketers to web site defacements to attacks that shut down popular web sites.Web Security, Privacy & Commerce goes behind the headlines, examines the major security risks facing us today, and explains how we can minimize them. It describes risks for Windows and Unix, Microsoft Internet Explorer and Netscape Navigator, and a wide range of current programs and products. In vast detail, the book covers: Web technology--The technological underpinnings of the modern Internet and the cryptographic foundations of e-commerce are discussed, along with SSL (the Secure Sockets Layer), the significance of the PKI (Public Key Infrastructure), and digital identification, including passwords, digital signatures, and biometrics. Web privacy and security for users--Learn the real risks to

user privacy, including cookies, log files, identity theft, spam, web logs, and web bugs, and the most common risk, users' own willingness to provide e-commerce sites with personal information. Hostile mobile code in plug-ins, ActiveX controls, Java applets, and JavaScript, Flash, and Shockwave programs are also covered. Web server security--Administrators and service providers discover how to secure their systems and web services. Topics include CGI, PHP, SSL certificates, law enforcement issues, and more. Web content security--Zero in on web publishing issues for content providers, including intellectual property, copyright and trademark issues, P3P and privacy policies, digital payments, client-side digital signatures, code signing, pornography filtering and PICS, and other controls on web content. Nearly double the size of the first edition, this completely updated volume is destined to be the definitive reference on Web security risks and the techniques and technologies you can use to protect your privacy, your organization, your system, and your network.

Tools and Jewels from Malware to Bitcoin Elsevier

This book constitutes the refereed proceedings of the Cryptographers' Track at the RSA Conference 2010, CT-RSA 2010, held in San Francisco, CA, USA in April 2010. The 25 revised full papers presented together with 1 invited lecture were carefully reviewed and selected from 94 submissions. The papers are organized in topical sections on public-key cryptography, side-channel attacks, cryptographic protocols, cryptanalysis, and symmetric cryptography.

Using Snort and Ethereal to Master The 8 Layers of An Insecure Network Apress

Discusses how to choose and use cryptographic primitives, how to implement cryptographic algorithms and systems, how to protect each part of the system and why, and how to reduce system complexity and increase security.

Cryptography for Secure Communications Apress

""This is the best book on SSL/TLS. Rescorla knows SSL/TLS as well as anyone and presents it both clearly and completely.... At times, I felt like he's been looking over my shoulder when I designed SSL v3. If network security matters to you, buy this book."" Paul Kocher, Cryptography Research, Inc. Co-Designer of SSL v3 " "Having the right crypto is necessary but not sufficient to having secure communications. If you're using SSL/TLS, you should have "SSL and TLS"sitting on your shelf right next to "Applied Cryptography." Bruce Schneier, Counterpane Internet Security, Inc. Author of "Applied Cryptography"" "Everything you wanted to know about SSL/TLS in one place. It covers the protocols down to the level of packet traces. It covers how to write software that uses SSL/TLS. And it contrasts SSL with other approaches. All this while being technically sound and readable!"" Radia Perlman, Sun Microsystems, Inc. Author of "Interconnections" Secure Sockets Layer (SSL) and its IETF successor, Transport Layer Security (TLS), are the leading Internet security protocols, providing security for e-commerce, web services, and many other network functions. Using SSL/TLS effectively requires a firm grasp of its role in

network communications, its security properties, and its performance characteristics. "SSL and TLS" provides total coverage of the protocols from the bits on the wire up to application programming. This comprehensive book not only describes how SSL/TLS is supposed to behave but also uses the author's free ssldump diagnostic tool to show the protocols in action. The author covers each protocol feature, first explaining how it works and then illustrating it in a live implementation. This unique presentation bridges the difficult gap between specification and implementation that is a common source of confusion and incompatibility. In addition to describing the protocols, "SSL and TLS" delivers the essential details required by security architects, application designers, and software engineers. Use the practical design rules in this book to quickly design fast and secure systems using SSL/TLS. These design rules are illustrated with chapters covering the new IETF standards for HTTP and SMTP over TLS. Written by an experienced SSL implementor, "SSL and TLS" contains detailed information on programming SSL applications. The author discusses the common problems faced by implementors and provides complete sample programs illustrating the solutions in both C and Java. The sample programs use the free OpenSSL and PureTLS toolkits so the reader can immediately run the examples. 0201615983B04062001 *Security for Users, Administrators and ISPs* Prentice Hall Professional 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 Hardware and Embedded Systems -- CHES 2003 Feisty Duck

The differences between well-designed security and poorly designed security are not always readily apparent. Poorly designed systems give the appearance of being secure but can over-authorize users or allow access to non-users in subtle ways. The problem is that poorly designed security gives a false sense of confidence. In some ways, it is better to knowingly have no security than to have inadequate security believing it to be stronger than it actually is. But how do you tell the difference? Although it is not rocket science, designing and implementing strong security requires strong foundational skills, some examples to build on, and the capacity to devise new solutions in response to novel challenges. This IBM® Redbooks® publication addresses itself to the first two of these requirements. This book is intended primarily for security specialists and IBM WebSphere® MQ administrators that are responsible for securing WebSphere MQ networks but other stakeholders should find the information useful as well. Chapters 1 through 6 provide a foundational background for WebSphere MQ security. These chapters take a holistic approach positioning WebSphere MQ in the context of a larger system of security controls including those of adjacent platforms' technologies as well as human processes. This approach seeks to eliminate the simplistic model of security as an island, replacing it instead with the model of security as an interconnected and living system. The intended audience for these chapters includes all stakeholders in the messaging system from architects and designers to developers and operations. Chapters 7 and 8 provide technical background to assist in preparing and configuring the scenarios and chapters 9 through 14 are the scenarios themselves. These chapters provide fully realized example configurations. One of the requirements for any scenario to be included was that it must first be successfully implemented in the team's lab environment. In addition, the advice provided is the cumulative result of years of participation in the online community by the authors and reflect real-world practices adapted for the latest security features in WebSphere MQ V7.1 and WebSphere MQ V7.5. Although these chapters are written with WebSphere MQ administrators in mind, developers, project leaders, operations staff, and architects are all stakeholders who will find the configurations and topologies described here useful. The third requirement mentioned in the opening paragraph was the capacity to devise new solutions in response

to novel challenges. The only constant in the security field is that the technology is always changing. Although this book provides some configurations in a checklist format, these should be considered a snapshot at a point in time. It will be up to you as the security designer and implementor to stay current with security news for the products you work with and integrate fixes, patches, or new solutions as the state of the art evolves.