

NETWORK SECURITY ESSENTIALS APPLICATIONS AND STANDARDS 5TH

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Introduction to Modern Cryptography - Jonathan Katz 2020-12-21
Now the most used textbook for introductory cryptography courses in both mathematics and computer science, the Third Edition builds upon previous editions by offering several new sections, topics, and exercises. The authors present the core principles of modern cryptography, with emphasis on formal definitions, rigorous proofs of security.

Handbook of Research on Threat Detection and Countermeasures in Network Security - Al-Hamami, Alaa Hussein 2014-10-31

Cyber attacks are rapidly becoming one of the most prevalent issues in the world. As cyber crime continues to escalate, it is imperative to explore new approaches and technologies that help ensure the security of the online community. The Handbook of Research on Threat Detection and Countermeasures in Network Security presents the latest methodologies and trends in detecting and preventing network threats. Investigating the potential of current and emerging security technologies, this publication is an all-inclusive reference source for academicians, researchers, students, professionals, practitioners, network analysts, and technology specialists interested in the simulation and application of computer network protection.

Penetration Testing - Georgia Weidman 2014-06-14

Penetration testers simulate cyber attacks to find security weaknesses in networks, operating systems, and applications. Information security experts worldwide use penetration techniques to evaluate enterprise defenses. In Penetration Testing, security expert, researcher, and trainer Georgia Weidman introduces you to the core skills and techniques that every pentester needs. Using a virtual machine-based lab that includes Kali Linux and vulnerable operating systems, you'll run through a series of practical lessons with tools like Wireshark, Nmap, and Burp Suite. As you follow along with the labs and launch attacks, you'll experience the key stages of an actual assessment—including information gathering, finding exploitable vulnerabilities, gaining access to systems, post exploitation, and more. Learn how to: -Crack passwords and wireless network keys with brute-forcing and wordlists -Test web applications for vulnerabilities -Use the Metasploit Framework to launch exploits and write your own Metasploit modules -Automate social-engineering attacks -Bypass antivirus software -Turn access to one machine into total control of the enterprise in the post exploitation phase You'll even explore writing your own exploits. Then it's on to mobile hacking—Weidman's particular area of research—with her tool, the Smartphone Pentest Framework. With its collection of hands-on lessons that cover key tools and strategies, Penetration Testing is the introduction that every aspiring hacker needs.

Network Security Essentials - William Stallings 2003

This book provides a practical, up-to-date, and comprehensive survey of network-based and Internet-based security applications and standards. This books covers e-mail security, IP security, Web security, and network management security. It also includes a concise section on the discipline of cryptography—covering algorithms and protocols underlying network security applications, encryption, hash functions, digital signatures, and key exchange. For system engineers, engineers, programmers, system managers, network managers, product marketing personnel, and system support specialists.

Network Security Essentials - William Stallings 2016-08-07

" For courses in Corporate, Computer and Network Security . " Network Security: Innovations and Improvements Network Securities Essentials: Applications and Standards introduces readers to the critical importance of internet security in our age of universal electronic connectivity. Amidst viruses, hackers, and electronic fraud, organizations and

individuals are constantly at risk of having their private information compromised. This creates a heightened need to protect data and resources from disclosure, guarantee their authenticity, and safeguard systems from network-based attacks. The Sixth Edition covers the expanding developments in the cryptography and network security disciplines, giving readers a practical survey of applications and standards. The text places emphasis on applications widely used for Internet and corporate networks, as well as extensively deployed internet standards.

Strengthening Forensic Science in the United States - National Research Council 2009-07-29

Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

CWNA Guide to Wireless LANs - Mark Ciampa 2012-06-19

CWNA GUIDE TO WIRELESS LANS, 3rd Edition provides students with the conceptual knowledge and hands-on skills needed to work with wireless technology in a network administration environment as well as pass the Certified Wireless Network Administrator (CWNA) exam. The text covers fundamental topics, such as planning, designing, installing, securing, and configuring wireless LANs. It also details common wireless LAN uses including maintenance, security, and business applications. The third edition is designed around the latest version of the CWNA exam, as well as the new IEEE 802.11 standard, making CWNA GUIDE TO WIRELESS LANS the practical guide that prepares students for real-world wireless networking. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Communication System Security - Lidong Chen 2012-05-29

Helping current and future system designers take a more productive approach in the field, Communication System Security shows how to apply security principles to state-of-the-art communication systems. The authors use previous design failures and security flaws to explain common pitfalls in security design. Divided into four parts, the book begins with the necessary background on practical cryptography primitives. This part describes pseudorandom sequence generators, stream and block ciphers, hash functions, and public-key cryptographic algorithms. The second part covers security infrastructure support and the main subroutine designs for establishing protected communications.

The authors illustrate design principles through network security protocols, including transport layer security (TLS), Internet security protocols (IPsec), the secure shell (SSH), and cellular solutions. Taking an evolutionary approach to security in today's telecommunication networks, the third part discusses general access authentication protocols, the protocols used for UMTS/LTE, the protocols specified in IETF, and the wireless-specific protection mechanisms for the air link of UMTS/LTE and IEEE 802.11. It also covers key establishment and authentication in broadcast and multicast scenarios. Moving on to system security, the last part introduces the principles and practice of a trusted platform for communication devices. The authors detail physical-layer security as well as spread-spectrum techniques for anti-jamming attacks. With much of the material used by the authors in their courses and drawn from their industry experiences, this book is appropriate for a wide audience, from engineering, computer science, and mathematics students to engineers, designers, and computer scientists. Illustrating security principles with existing protocols, the text helps readers understand the principles and practice of security analysis.

Proceedings of International Conference on Advances in Information and Communication Engineering -

Networking For Dummies - Doug Lowe 2020-07-14

Set up a secure network at home or the office Fully revised to cover Windows 10 and Windows Server 2019, this new edition of the trusted *Networking For Dummies* helps both beginning network administrators and home users to set up and maintain a network. Updated coverage of broadband and wireless technologies, as well as storage and back-up procedures, ensures that you'll learn how to build a wired or wireless network, secure and optimize it, troubleshoot problems, and much more. From connecting to the Internet and setting up a wireless network to solving networking problems and backing up your data—this #1 bestselling guide covers it all. Build a wired or wireless network Secure and optimize your network Set up a server and manage Windows user accounts Use the cloud—safely Written by a seasoned technology author—and jam-packed with tons of helpful step-by-step instructions—this is the book network administrators and everyday computer users will turn to again and again.

Introduction to Network Security - Douglas Jacobson 2008-11-18

Unlike data communications of the past, today's networks consist of numerous devices that handle the data as it passes from the sender to the receiver. However, security concerns are frequently raised in circumstances where interconnected computers use a network not controlled by any one entity or organization. *Introduction to Network Security* exam

Cryptography and Network Security - William Stallings 2011

This text provides a practical survey of both the principles and practice of cryptography and network security.

Security in Computing - Charles P. Pfleeger 2009

Applied Network Security - Arthur Salmon 2017-04-28

Master the art of detecting and averting advanced network security attacks and techniques About This Book Deep dive into the advanced network security attacks and techniques by leveraging tools such as Kali Linux 2, Metasploit, Nmap, and Wireshark Become an expert in cracking WiFi passwords, penetrating anti-virus networks, sniffing the network, and USB hacks This step-by-step guide shows you how to confidently and quickly detect vulnerabilities for your network before the hacker does Who This Book Is For This book is for network security professionals, cyber security professionals, and Pentesters who are well versed with fundamentals of network security and now want to master it. So whether you're a cyber security professional, hobbyist, business manager, or student aspiring to becoming an ethical hacker or just want to learn more about the cyber security aspect of the IT industry, then this book is definitely for you. What You Will Learn Use SET to clone webpages including the login page Understand the concept of Wi-Fi cracking and use PCAP file to obtain passwords Attack using a USB as payload injector Familiarize yourself with the process of trojan attacks Use Shodan to identify honeypots, rogue access points, vulnerable webcams, and other exploits found in the database Explore various tools for wireless penetration testing and auditing Create an evil twin to intercept network traffic Identify human patterns in networks attacks In Detail Computer networks are increasing at an exponential rate and the most challenging factor organisations are currently facing is network security. Breaching a network is not considered an ingenious effort anymore, so it is very important to gain expertise in securing your network. The book begins by

showing you how to identify malicious network behaviour and improve your wireless security. We will teach you what network sniffing is, the various tools associated with it, and how to scan for vulnerable wireless networks. Then we'll show you how attackers hide the payloads and bypass the victim's antivirus. Furthermore, we'll teach you how to spoof IP / MAC address and perform an SQL injection attack and prevent it on your website. We will create an evil twin and demonstrate how to intercept network traffic. Later, you will get familiar with Shodan and Intrusion Detection and will explore the features and tools associated with it. Toward the end, we cover tools such as Yardstick, Ubertooth, Wifi Pineapple, and Alfa used for wireless penetration testing and auditing. This book will show the tools and platform to ethically hack your own network whether it is for your business or for your personal home Wi-Fi. Style and approach This mastering-level guide is for all the security professionals who are eagerly waiting to master network security skills and protecting their organization with ease. It contains practical scenarios on various network security attacks and will teach you how to avert these attacks.

CISSP Guide to Security Essentials - Peter Gregory 2015-03-25

CISSP GUIDE TO SECURITY ESSENTIALS, Second Edition, provides complete, focused coverage to prepare students and professionals alike for success on the Certified Information Systems Security Professional (CISSP) certification exam. The text opens with an overview of the current state of information security, including relevant legislation and standards, before proceeding to explore all ten CISSP domains in great detail, from security architecture and design to access control and cryptography. Each chapter opens with a brief review of relevant theory and concepts, followed by a strong focus on real-world applications and learning tools designed for effective exam preparation, including key terms, chapter summaries, study questions, hands-on exercises, and case projects. Developed by the author of more than 30 books on information security the Second Edition of this trusted text has been updated to reflect important new developments in technology and industry practices, providing an accurate guide to the entire CISSP common body of knowledge. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Counter Hack Reloaded - Ed Skoudis 2006

This guide empowers network and system administrators to defend their information and computing assets—whether or not they have security experience. Skoudis presents comprehensive, insider's explanations of today's most destructive hacker tools and tactics, and specific, proven countermeasures for both UNIX and Windows environments.

Handbook of Applied Cryptography - Alfred J. Menezes 2018-12-07

Cryptography, in particular public-key cryptography, has emerged in the last 20 years as an important discipline that is not only the subject of an enormous amount of research, but provides the foundation for information security in many applications. Standards are emerging to meet the demands for cryptographic protection in most areas of data communications. Public-key cryptographic techniques are now in widespread use, especially in the financial services industry, in the public sector, and by individuals for their personal privacy, such as in electronic mail. This Handbook will serve as a valuable reference for the novice as well as for the expert who needs a wider scope of coverage within the area of cryptography. It is a necessary and timely guide for professionals who practice the art of cryptography. The Handbook of Applied Cryptography provides a treatment that is multifunctional: It serves as an introduction to the more practical aspects of both conventional and public-key cryptography It is a valuable source of the latest techniques and algorithms for the serious practitioner It provides an integrated treatment of the field, while still presenting each major topic as a self-contained unit It provides a mathematical treatment to accompany practical discussions It contains enough abstraction to be a valuable reference for theoreticians while containing enough detail to actually allow implementation of the algorithms discussed Now in its third printing, this is the definitive cryptography reference that the novice as well as experienced developers, designers, researchers, engineers, computer scientists, and mathematicians alike will use.

Essential SNMP - Douglas Mauro 2005

Simple Network Management Protocol (SNMP) provides a "simple" set of operations that allows you to more easily monitor and manage network devices like routers, switches, servers, printers, and more. The information you can monitor with SNMP is wide-ranging—from standard items, like the amount of traffic flowing into an interface, to far more esoteric items, like the air temperature inside a router. In spite of its

name, though, SNMP is not especially simple to learn. O'Reilly has answered the call for help with a practical introduction that shows how to install, configure, and manage SNMP. Written for network and system administrators, the book introduces the basics of SNMP and then offers a technical background on how to use it effectively. Essential SNMP explores both commercial and open source packages, and elements like OIDs, MIBs, community strings, and traps are covered in depth. The book contains five new chapters and various updates throughout. Other new topics include: Expanded coverage of SNMPv1, SNMPv2, and SNMPv3 Expanded coverage of SNMPc The concepts behind network management and change management RRDTTool and Cricket The use of scripts for a variety of tasks How Java can be used to create SNMP applications Net-SNMP's Perl module The bulk of the book is devoted to discussing, with real examples, how to use SNMP for system and network administration tasks. Administrators will come away with ideas for writing scripts to help them manage their networks, create managed objects, and extend the operation of SNMP agents. Once demystified, SNMP is much more accessible. If you're looking for a way to more easily manage your network, look no further than Essential SNMP, 2nd Edition.

VoIP Technologies - Shigeru Kashihara 2011-02-14

This book provides a collection of 15 excellent studies of Voice over IP (VoIP) technologies. While VoIP is undoubtedly a powerful and innovative communication tool for everyone, voice communication over the Internet is inherently less reliable than the public switched telephone network, because the Internet functions as a best-effort network without Quality of Service guarantee and voice data cannot be retransmitted. This book introduces research strategies that address various issues with the aim of enhancing VoIP quality. We hope that you will enjoy reading these diverse studies, and that the book will provide you with a lot of useful information about current VoIP technology research.

Cyberspace & Sovereignty - Hongrui Zhao 2022-01-13

How do you describe cyberspace comprehensively? This book examines the relationship between cyberspace and sovereignty as understood by jurists and economists. The author transforms and abstracts cyberspace from the perspective of science and technology into the subject, object, platform, and activity in the field of philosophy. From the three dimensions of 'ontology' (cognition of cyberspace and information), 'epistemology' (sovereignty evolution), and 'methodology' (theoretical refinement), he uses international law, philosophy of science and technology, political philosophy, cyber security, and information entropy to conduct cross-disciplinary research on cyberspace and sovereignty to find a scientific and accurate methodology. Cyberspace sovereignty is the extension of modern state sovereignty. Only by firmly establishing the rule of law of cyberspace sovereignty can we reduce cyber conflicts and cybercrimes, oppose cyber hegemony, and prevent cyber war. The purpose of investigating cyberspace and sovereignty is to plan good laws and good governance. This book argues that cyberspace has sovereignty, sovereignty governs cyberspace, and cyberspace governance depends on comprehensive planning. This is a new theory of political philosophy and sovereignty law.

Effective Cybersecurity - William Stallings 2018-07-20

The Practical, Comprehensive Guide to Applying Cybersecurity Best Practices and Standards in Real Environments In Effective Cybersecurity, William Stallings introduces the technology, operational procedures, and management practices needed for successful cybersecurity. Stallings makes extensive use of standards and best practices documents that are often used to guide or mandate cybersecurity implementation. Going beyond these, he offers in-depth tutorials on the "how" of implementation, integrated into a unified framework and realistic plan of action. Each chapter contains a clear technical overview, as well as a detailed discussion of action items and appropriate policies. Stallings offers many pedagogical features designed to help readers master the material: clear learning objectives, keyword lists, review questions, and QR codes linking to relevant standards documents and web resources. Effective Cybersecurity aligns with the comprehensive Information Security Forum document "The Standard of Good Practice for Information Security," extending ISF's work with extensive insights from ISO, NIST, COBIT, other official standards and guidelines, and modern professional, academic, and industry literature. • Understand the cybersecurity discipline and the role of standards and best practices • Define security governance, assess risks, and manage strategy and tactics • Safeguard information and privacy, and ensure GDPR compliance • Harden systems across the system development life cycle (SDLC) • Protect servers, virtualized systems, and storage • Secure networks and electronic communications, from email to VoIP • Apply the

most appropriate methods for user authentication • Mitigate security risks in supply chains and cloud environments This knowledge is indispensable to every cybersecurity professional. Stallings presents it systematically and coherently, making it practical and actionable.

Principles of Information Security - Michael E. Whitman 2021-07-06

Discover the latest trends, developments and technology in information security today with Whitman/Mattord's market-leading PRINCIPLES OF INFORMATION SECURITY, 7th Edition. Designed specifically to meet the needs of those studying information systems, this edition's balanced focus addresses all aspects of information security, rather than simply offering a technical control perspective. This overview explores important terms and examines what is needed to manage an effective information security program. A new module details incident response and detection strategies. In addition, current, relevant updates highlight the latest practices in security operations as well as legislative issues, information management toolsets and digital forensics. Coverage of the most recent policies and guidelines that correspond to federal and international standards further prepare you for success both in information systems and as a business decision-maker. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Network Security Essentials - William Stallings 2013-06-19

For computer science, computer engineering, and electrical engineering majors taking a one-semester undergraduate courses on network security. A practical survey of network security applications and standards, with unmatched support for instructors and students. In this age of universal electronic connectivity, viruses and hackers, electronic eavesdropping, and electronic fraud, security is paramount. Network Security: Applications and Standards, Fifth Edition provides a practical survey of network security applications and standards, with an emphasis on applications that are widely used on the Internet and for corporate networks. An unparalleled support package for instructors and students ensures a successful teaching and learning experience. Adapted from Cryptography and Network Security, Sixth Edition, this text covers the same topics but with a much more concise treatment of cryptography.

Computer Security - Dieter Gollmann 2006-01-18

Computer Security, Second Edition offers security newcomers a grounding in the basic principles involved in preventing security breaches and protecting electronic data. It outlines security strategies to counter problems that will be faced in UNIX and Windows NT operating systems, distributed systems, the Web, and object-oriented systems.

Designing Data-Intensive Applications - Martin Kleppmann 2017-03-16

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

Enterprise Software Security - Kenneth R. van Wyk 2014-12-01

STRENGTHEN SOFTWARE SECURITY BY HELPING DEVELOPERS AND SECURITY EXPERTS WORK TOGETHER Traditional approaches to securing software are inadequate. The solution: Bring software engineering and network security teams together in a new, holistic approach to protecting the entire enterprise. Now, four highly respected security experts explain why this "confluence" is so crucial, and show how to implement it in your organization. Writing for all software and security practitioners and leaders, they show how software can play a vital, active role in protecting your organization. You'll learn how to construct software that actively safeguards sensitive data and business processes and contributes to intrusion detection/response in sophisticated new ways. The authors cover the entire development lifecycle, including project inception, design, implementation, testing,

deployment, operation, and maintenance. They also provide a full chapter of advice specifically for Chief Information Security Officers and other enterprise security executives. Whatever your software security responsibilities, Enterprise Software Security delivers indispensable big-picture guidance—and specific, high-value recommendations you can apply right now. **COVERAGE INCLUDES:**

- Overcoming common obstacles to collaboration between developers and IT security professionals
- Helping programmers design, write, deploy, and operate more secure software
- Helping network security engineers use application output more effectively
- Organizing a software security team before you've even created requirements
- Avoiding the unmanageable complexity and inherent flaws of layered security
- Implementing positive software design practices and identifying security defects in existing designs
- Teaming to improve code reviews, clarify attack scenarios associated with vulnerable code, and validate positive compliance
- Moving beyond pentesting toward more comprehensive security testing
- Integrating your new application with your existing security infrastructure
- "Ruggedizing" DevOps by adding infosec to the relationship between development and operations
- Protecting application security during maintenance

Cyber Security Essentials - James Graham 2016-04-19

The sophisticated methods used in recent high-profile cyber incidents have driven many to need to understand how such security issues work. Demystifying the complexity often associated with information assurance, Cyber Security Essentials provides a clear understanding of the concepts behind prevalent threats, tactics, and procedures. To accomplish

Distributed and Cloud Computing - Kai Hwang 2013-12-18

Distributed and Cloud Computing: From Parallel Processing to the Internet of Things offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include: facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online

IPv6 Essentials - Silvia Hagen 2014-06-09

If your organization is gearing up for IPv6, this in-depth book provides the practical information and guidance you need to plan for, design, and implement this vastly improved protocol. Author Silvia Hagen takes system and network administrators, engineers, and network designers through the technical details of IPv6 features and functions, and provides options for those who need to integrate IPv6 with their current IPv4 infrastructure. The flood of Internet-enabled devices has made migrating to IPv6 a paramount concern worldwide. In this updated edition, Hagen distills more than ten years of studying, working with, and consulting with enterprises on IPv6. It's the only book of its kind. IPv6 Essentials covers: Address architecture, header structure, and the ICMPv6 message format IPv6 mechanisms such as Neighbor Discovery, Stateless Address autoconfiguration, and Duplicate Address detection Network-related aspects and services: Layer 2 support, Upper Layer Protocols, and Checksums IPv6 security: general practices, IPsec basics, IPv6 security elements, and enterprise security models Transitioning to IPv6: dual-stack operation, tunneling, and translation techniques Mobile IPv6:

technology for a new generation of mobile services Planning options, integration scenarios, address plan, best practices, and dos and don'ts Computer Security - William Stallings 2012

Computer Security: Principles and Practice, 2e, is ideal for courses in Computer/Network Security. In recent years, the need for education in computer security and related topics has grown dramatically – and is essential for anyone studying Computer Science or Computer Engineering. This is the only text available to provide integrated, comprehensive, up-to-date coverage of the broad range of topics in this subject. In addition to an extensive pedagogical program, the book provides unparalleled support for both research and modeling projects, giving students a broader perspective. The Text and Academic Authors Association named Computer Security: Principles and Practice, 1e, the winner of the Textbook Excellence Award for the best Computer Science textbook of 2008.

Computer Security and the Internet - Paul C. van Oorschot 2021-10-13

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.

Network Security Assessment - Chris McNab 2004

A practical handbook for network administrators who need to develop and implement security assessment programs, exploring a variety of offensive technologies, explaining how to design and deploy networks that are immune to offensive tools and scripts, and detailing an efficient testing model. Original. (Intermediate)

Security Essentials - Linda Lavender 2021-03-29

This Laboratory Manual complements the Security Essentials textbook and classroom-related studies. The laboratory activities in this manual help develop the valuable skills needed to pursue a career in the field of information security. Laboratory activities should be an essential part of your training. They link the concepts presented in the textbook to hands-on performance. You should not expect to learn cybersecurity skills only through the textbook, lectures, and demonstrations. Information and data security is an advanced topic. To be successful, you should have completed courses in basic computer hardware and networking. Many students will have obtained the CompTIA A+ and Network+ certifications prior to taking a cybersecurity class. Completing this class using Security Essentials will help prepare you for the CompTIA Security+ Exam. The CompTIA Security+ Certification Exams are designed to test persons with computer and networking security experience. The object of this Laboratory Manual is to teach you the skills necessary not only to obtain a Security+ certification but also to help you begin your career. The goal of the Security+ Certification Exam is to verify a candidate's ability to assess an organization's security posture and recommend or implement security solutions secure and

monitor hybrid computing environments and comply with applicable laws and standards that govern data security. CompTIA recommends a candidate possess a Network+ certification as well as two years of experience in an IT administration role with a focus in security.

Network Security Essentials: Applications and Standards, 4/e - William Stallings 2003

Introduction to Modern Cryptography - Jonathan Katz 2014-11-06

Cryptography is ubiquitous and plays a key role in ensuring data secrecy and integrity as well as in securing computer systems more broadly.

Introduction to Modern Cryptography provides a rigorous yet accessible treatment of this fascinating subject. The authors introduce the core principles of modern cryptography, with an emphasis on formal defini

Network Security with OpenSSL - John Viega 2002-06-17

Most applications these days are at least somewhat network aware, but how do you protect those applications against common network security threats? Many developers are turning to OpenSSL, an open source version of SSL/TLS, which is the most widely used protocol for secure network communications. The OpenSSL library is seeing widespread adoption for web sites that require cryptographic functions to protect a broad range of sensitive information, such as credit card numbers and other financial transactions. The library is the only free, full-featured SSL implementation for C and C++, and it can be used programmatically or from the command line to secure most TCP-based network protocols.

Network Security with OpenSSL enables developers to use this protocol much more effectively. Traditionally, getting something simple done in OpenSSL could easily take weeks. This concise book gives you the guidance you need to avoid pitfalls, while allowing you to take advantage of the library's advanced features. And, instead of bogging you down in the technical details of how SSL works under the hood, this book provides only the information that is necessary to use OpenSSL safely and effectively. In step-by-step fashion, the book details the challenges in securing network communications, and shows you how to use OpenSSL tools to best meet those challenges. As a system or network administrator, you will benefit from the thorough treatment of the OpenSSL command-line interface, as well as from step-by-step directions for obtaining certificates and setting up your own certification authority. As a developer, you will further benefit from the in-depth discussions and examples of how to use OpenSSL in your own programs. Although OpenSSL is written in C, information on how to use OpenSSL with Perl, Python and PHP is also included. OpenSSL may well answer your need to protect sensitive data. If that's the case, *Network Security with OpenSSL* is the only guide available on the subject.

Cryptography and Network Security - William Stallings 2016-02-18

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. *The Principles and Practice of Cryptography and Network Security* Stallings' *Cryptography and Network Security*, Seventh Edition, introduces the reader to the compelling and evolving field of cryptography and network security. In an age of viruses and hackers, electronic eavesdropping, and electronic fraud on a global scale, security is paramount. The purpose of this book is to provide a practical survey of both the principles and practice of cryptography and

network security. In the first part of the book, the basic issues to be addressed by a network security capability are explored by providing a tutorial and survey of cryptography and network security technology. The latter part of the book deals with the practice of network security: practical applications that have been implemented and are in use to provide network security. The Seventh Edition streamlines subject matter with new and updated material — including Sage, one of the most important features of the book. Sage is an open-source, multiplatform, freeware package that implements a very powerful, flexible, and easily learned mathematics and computer algebra system. It provides hands-on experience with cryptographic algorithms and supporting homework assignments. With Sage, the reader learns a powerful tool that can be used for virtually any mathematical application. The book also provides an unparalleled degree of support for the reader to ensure a successful learning experience.

Network Security Essentials - William Stallings 2007

Network Security Essentials, Third Edition is a thorough, up-to-date introduction to the deterrence, prevention, detection, and correction of security violations involving information delivery across networks and the Internet.

Network Security Essentials: Applications and Standards (For VTU) - Stallings William 2011

Guide to Computer Network Security - Joseph Migga Kizza 2020-06-03

This timely textbook presents a comprehensive guide to the core topics in cybersecurity, covering issues of security that extend beyond traditional computer networks to the ubiquitous mobile communications and online social networks that have become part of our daily lives. In the context of our growing dependence on an ever-changing digital ecosystem, this book stresses the importance of security awareness, whether in our homes, our businesses, or our public spaces. This fully updated new edition features new material on the security issues raised by blockchain technology, and its use in logistics, digital ledgers, payments systems, and digital contracts. Topics and features: Explores the full range of security risks and vulnerabilities in all connected digital systems Inspires debate over future developments and improvements necessary to enhance the security of personal, public, and private enterprise systems Raises thought-provoking questions regarding legislative, legal, social, technical, and ethical challenges, such as the tension between privacy and security Describes the fundamentals of traditional computer network security, and common threats to security Reviews the current landscape of tools, algorithms, and professional best practices in use to maintain security of digital systems Discusses the security issues introduced by the latest generation of network technologies, including mobile systems, cloud computing, and blockchain Presents exercises of varying levels of difficulty at the end of each chapter, and concludes with a diverse selection of practical projects Offers supplementary material for students and instructors at an associated website, including slides, additional projects, and syllabus suggestions This important textbook/reference is an invaluable resource for students of computer science, engineering, and information management, as well as for practitioners working in data- and information-intensive industries.