Network Security Issues And Solutions

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Network Security John Wiley & Sons
Research Paper (postgraduate) from the year 2011 in the subject Computer Science - Internet, New Technologies, Middlesex University in London, course: Telecommunication Engineering , language: English, abstract: Network has become a very important aspect in the technology development because it has the biggest effect on the communication between people, exchange and share resources. Network is a group of computers and other devices connected together in order to allow information to be exchanged or shared between each other. Having a high level of security in any system in network has become the desire that most of people want to reach. Therefore, the intention of this paper is to explore the security Issues in mobile Ad-hoc network. The paper has been divided into five impotent sections. The first section discusses the weaknesses or vulnerabilities in mobile Ad-hoc network. The second section mentions the types of Attack in mobile Ad-hoc network. The third discusses the routing protocols in mobile Ad-hoc network. Fourth, discusses the goals security of mobile Ad-hoc network. Finally, the paper will offer security solutions for mobile Ad-hoc network which can provide a high performance security to mobile Ad-hoc network.

Research Anthology on Artificial Intelligence Applications in Security Springer
In recent years, virtual meeting technology has become a part of the everyday lives of more and more people, often with the help of global online social networks (OSNs). These help users to build both social and professional links on a worldwide scale. The sharing of information and opinions are important features of OSNs. Users can describe recent activities and interests, share photos, videos, applications, and much more. The use of OSNs has increased at a rapid rate. Google+, Facebook, Twitter, LinkedIn, Sina Weibo, VKontakte, and Mixi are all OSNs that have become the preferred way of communication for a vast number of daily active users. Users spend substantial amounts of time updating their information, communicating with other users, and browsing one another ' s accounts. OSNs obliterate geographical distance and can breach economic barrier. This popularity has made OSNs a fascinating test bed for cyberattacks comprising Cross-Site Scripting, SQL injection, DDoS, phishing, spamming, fake profile, spammer, etc. OSNs security: Principles, Algorithm, Applications, and Perspectives describe various attacks, classifying them, explaining their consequences, and offering. It also highlights some key contributions related to the current defensive approaches. Moreover, it shows how machine-learning and deep-learning methods can mitigate attacks on OSNs. Different technological solutions that have been proposed are also discussed. The topics, methodologies, and outcomes included in this book will help readers learn the importance of incentives in any technical solution to handle attacks against OSNs. The best practices and guidelines will show how to implement various attack-mitigation methodologies.

Computing Techniques, Network Security and Challenges Pearson Education
A unique overview of network security issues, solutions, and methodologies at an architectural and research level Network Security provides the latest research and addresses likely future developments in network security protocols, architectures, policy, and implementations. It covers a wide range of topics dealing with network security, including secure routing, designing firewalls, mobile agent security, Bluetooth security, wireless sensor networks, securing digital content, and much more. Leading authorities in the field provide reliable information on the current state of security protocols, architectures, implementations, and policies. Contributors analyze research activities, proposals, trends, and state-of-the-art aspects of security and provide expert insights into the future of the industry. Complete with strategies for implementing security mechanisms and techniques, Network Security features: * State-of-the-art technologies not covered in other books, such as Denial of Service (DoS) and Distributed Denial-of-Service (DDoS) attacks and countermeasures * Problems and solutions for a wide range of network technologies, from fixed point to mobile * Methodologies for real-time and non-real-time applications and protocols

The Executive Guide to Information Security Guide to Computer Network Security
This book provides a thorough examination and analysis of cutting-edge research and security solutions in wireless and mobile networks. It begins with coverage of the basic security concepts and fundamentals which underpin and provide the knowledge necessary for understanding and evaluating security issues, challenges, and solutions. This material will be of invaluable use to all those working in the network security field, and especially to the many people entering the field. The next area of focus is on the security issues and available solutions associated with off-the-shelf wireless and mobile technologies such as Bluetooth, WiFi, WiMax, 2G, and 3G. There is coverage of the security techniques used to protect applications downloaded by mobile terminals through mobile cellular networks, and finally the book addresses security issues and solutions in emerging wireless and mobile technologies such as ad hoc and sensor networks, cellular 4G and IMS networks.

From Perimeter to Data National Academies Press
From the Section Editor's Foreword by Dr. Madhusanka Liyanage, University College Dublin, Ireland. The Wiley 5G Ref: Security offers a stellar collection of articles selected from the online-only Work, The Wiley 5G Reference. It aims to provide a solid educational foundation for researchers and practitioners in the field of 5G Security and Privacy to expand their knowledge base by including the latest developments in these disciplines. The book introduces the security landscape of 5G, and significant security and privacy risks associated with the 5G networks. Then, the security solutions for different segments of the 5G network, i.e., radio network, edge network, access network, and core network, are discussed. Since 5G is developed based on network softwarization, security threats associated with key network softwarization technologies such as SDN, NFV, NS, and MEC are also presented in detail. Then, the security issues related to the new 5G and IoT services are delivered. Finally, a detailed discussion on the privacy of 5G networks is presented by considering Datafied Society. Written by leading experts in security and privacy for the telecommunication network, this book is intended to provide additional learning opportunities for a wide range of readers, from graduate-level students to seasoned engineering professionals. We are confident that this book and the entire collection of selected articles will continue Wiley's tradition of excellence in technical publishing and provide a lasting and positive contribution to the teaching and practice of security and privacy of 5G and beyond networks.

Privacy and Security Challenges in Cloud Computing BoD – Books on Demand
As industries are rapidly being digitalized and information is being more heavily stored and transmitted online, the security of information has become a top priority in securing the use of online networks as a safe and effective platform. With the vast and diverse potential of artificial intelligence (AI) applications, it has become easier than ever to identify cyber vulnerabilities, potential threats, and the identification of solutions to these unique problems. The latest tools and technologies for AI applications have untapped potential that conventional systems and human security systems cannot meet, leading AI to be a frontrunner in the fight against malware, cyber-attacks, and various security issues. However, even with the tremendous progress AI has made within the sphere of security, it's important to understand the impacts, implications, and critical issues and challenges of AI applications along with the many benefits and emerging trends in this essential field of security-based research. Research Anthology on Artificial Intelligence Applications in Security seeks to address the fundamental advancements and technologies being used in AI applications for the security of digital data and information. The included chapters cover a wide range of topics related to AI in security stemming from the development and design of these applications, the latest tools and technologies, as well as the utilization of AI and what challenges and impacts have been discovered along the way. This resource work is a critical exploration of the latest research on security and an overview of how AI has impacted the field and will continue to advance as an essential tool for security, safety, and privacy online. This book is ideally intended for cyber security analysts, computer engineers, IT specialists, practitioners, stakeholders, researchers, academicians, and students interested in AI applications in the realm of security research.

Network Security Metrics Routledge
A revolutionary, soups-to-nuts approach to network security from two of Microsoft's leading security experts.

Secure Wireless Sensor Networks CRC Press
This fully revised and updated new edition of the definitive text/reference on computer network and information security presents a comprehensive guide to the repertoire of security tools, algorithms and best practices mandated by the technology we depend on. Topics and features: highlights the magnitude of the vulnerabilities, weaknesses and loopholes inherent in computer networks; discusses how to develop effective security solutions, protocols, and best practices for the modern computing environment; examines the role of legislation, regulation, and enforcement in securing computing and mobile systems; describes the burning security issues brought about by the advent of the Internet of Things and the eroding boundaries between enterprise and home networks (NEW); provides both quickly workable and more thought-provoking exercises at the end of each chapter, with one chapter devoted entirely to hands-on exercises; supplies additional support materials for instructors at an associated website.

Network Security Technologies and Solutions (CCIE Professional Development Series) Elsevier
This book presents architectural solutions of wireless network and its variations. It basically deals with modeling, analysis, design and enhancement of different architectural parts of wireless network. The main aim of this book is to enhance the applications of wireless network by reducing and controlling its architectural issues. The book discusses efficiency and robustness of wireless network as a platform for communication and data transmission and also discusses some challenges and security issues such as limited hardware resources, unreliable communication, dynamic topology of some wireless networks, vulnerability and unsecure environment. This book is edited for users, academicians and researchers of wireless network. Broadly, topics include modeling of security enhancements, optimization model for network lifetime, modeling of aggregation systems and analyzing of troubleshooting techniques.

IFIP WG 11.4 International Workshop, INetSec 2010, Sofia, Bulgaria, March 5-6, 2010, Revised Selected Papers CRC Press
This book examines different aspects of network security metrics and their application to enterprise networks. One of the most pertinent issues in securing mission-critical computing networks is the lack of effective security metrics which this book discusses in detail. Since "you cannot improve what you cannot measure", a network security metric is essential to evaluating the relative effectiveness of potential network security solutions. The authors start by examining the limitations of existing solutions and standards on security metrics, such as CVSS and attack surface, which typically focus on known vulnerabilities in individual software products or systems. The first few chapters of this book describe different approaches to fusing individual metric values obtained from CVSS scores into an overall measure of network security using attack graphs. Since CVSS scores are only available for previously known vulnerabilities, such approaches do not consider the threat of unknown attacks exploiting the so-called zero day vulnerabilities. Therefore, several chapters of this book are dedicated to develop network security metrics especially designed for dealing with zero day attacks where the challenge is that little or no prior knowledge is available about the exploited vulnerabilities, and thus most existing methodologies for designing security metrics are no longer effective. Finally, the authors examine several issues on the application of network security metrics at the enterprise level. Specifically, a chapter presents a suite of security

metrics organized along several dimensions for measuring and visualizing different aspects of the enterprise cyber security risk, and the last chapter presents a novel metric for measuring the operational effectiveness of the cyber security operations center (CSOC). Security researchers who work on network security or security analytics related areas seeking new research topics, as well as security practitioners including network administrators and security architects who are looking for state of the art approaches to hardening their networks, will find this book helpful as a reference. Advanced-level students studying computer science and engineering will find this book useful as a secondary text.

Security Issues In Mobile Ad-Hoc Network & Solutions John Wiley & Sons

A practical handbook for network adminstrators 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)

Threats, Challenges, and Solutions Springer Nature

Internet usage has become a facet of everyday life, especially as more technological advances have made it easier to connect to the web from virtually anywhere in the developed world. However, with this increased usage comes heightened threats to security within digital environments. The Handbook of Research on Modern Cryptographic Solutions for Computer and Cyber Security identifies emergent research and techniques being utilized in the field of cryptology and cyber threat prevention. Featuring theoretical perspectives, best practices, and future research directions, this handbook of research is a vital resource for professionals, researchers, faculty members, scientists, graduate students, scholars, and software developers interested in threat identification and prevention.

Research Anthology on Cross-Industry Challenges of Industry 4.0 John Wiley & Sons

This reference text discusses various security techniques and challenges for cloud data protection from both software and hardware aspects. The text provides readers with an overview of cloud computing, beginning with historical perspectives on mainframe computers and early networking protocols, moving to current issues such as security of hardware and networks, performance, evolving IoT areas, edge computing, etc. It also deals with threat detection and incident response in cloud security. It covers important topics including operational security agitations in cloud computing, cyber artificial intelligence (AI) platform for cloud security, and security concerns of virtualization in cloud computing. The book will serve as a useful resource for graduate students and professionals in the fields of electrical engineering, electronics engineering, computer science, and information technology.

Architectural Wireless Networks Solutions and Security Issues IGI Global

Provides information on ways to evealuate and improve information security in any enterprise.

A Practical Guide Elsevier

As Industry 4.0 brings on a new bout of transformation and fundamental changes in various industries, the traditional manufacturing and production methods are falling to the wayside. Industrial processes must embrace modern technology and the most recent trends to keep up with the times. With “smart factories”; the automation of information and data; and the inclusion of IoT, AI technologies, robotics, and cloud computing comes new challenges to tackle. These changes are creating new threats in security, reliability, the regulations around legislation and standardization of technologies, malfunctioning devices or operational disruptions, and more. These effects span a variety of industries and need to be discussed. Research Anthology on Cross-Industry Challenges of Industry 4.0 explores the challenges that have risen as multidisciplinary industries adapt to the Fourth Industrial Revolution. With a shifting change in technology, operations, management, and business models, the impacts of Industry 4.0 and digital transformation will be long-lasting and will forever change the face of manufacturing and production. This book highlights a cross-industry view of these challenges, the impacts they have, potential solutions, and the technological advances that have brought about these new issues. It is ideal for mechanical engineers, electrical engineers, manufacturers, supply chain managers, logistics specialists, investors, managers, policymakers, production scientists, researchers, academicians, and students looking for cross-industry research on the challenges associated with Industry 4.0.

Wireless and Mobile Network Security Springer

A comprehensive survey of computer network security concepts, methods, and practices. This authoritative volume provides an optimal description of the principles and applications of computer network security in particular, and cyberspace security in general. The book is thematically divided into three segments: Part I describes the operation and security conditions surrounding computer networks; Part II builds from there and exposes readers to the prevailing security situation based on a constant security threat; and Part III - the core - presents readers with most of the best practices and solutions currently in use. It is intended as both a teaching tool and reference. This broad-ranging text/reference comprehensively surveys computer network security concepts, methods, and practices and covers network security tools, policies, and administrative goals in an integrated manner. It is an essential security resource for undergraduate or graduate study, practitioners in networks, and professionals who develop and maintain secure computer network systems.

Guide to Computer Network Security Springer Science & Business Media

CNN is reporting that a vicious new virus is wreaking havoc on theworld’s computer networks. Somebody’s hacked one ofyour favorite Web sites and stolen thousands of credit cardnumbers. The FBI just released a new report on computer crimethat’s got you shaking in your boots. The experts will tellyou that keeping your network safe from the cyber-wolves howlingafter your assets is complicated, expensive, and best left to them.But the truth is, anybody with a working knowledge of networks andcomputers can do just about everything necessary to defend theirnetwork against most security threats. Network Security For Dummies arms you with quick, easy,low-cost solutions to all your network security concerns. Whetheryour network consists of one computer with a high-speed Internetconnection or hundreds of workstations distributed across dozens oflocations, you’ll find what you need to confidently: Identify your network’s security weaknesses Install an intrusion detection system Use simple, economical techniques to secure your data Defend against viruses Keep hackers at bay Plug security holes in individual applications Build a secure network from scratch Leading national expert Chey Cobb fills you in on the basics ofdata security, and he explains more complex options you can use tokeep your network safe as your grow your business. Among otherthings, you’ll explore: Developing risk assessments and security plans Choosing controls without breaking the bank Anti-virus software, firewalls, intrusion detection systems andaccess controls Addressing Unix, Windows and Mac security issues Patching holes in email, databases, Windows Media Player,NetMeeting, AOL Instant Messenger, and other individualapplications Securing a wireless network E-Commerce security Incident response and disaster recovery Whether you run a storefront tax preparing business oryou’re the network administrator at a multinationalaccounting giant, your computer assets are your business. LetNetwork Security For Dummies provide you with provenstrategies and techniques for keeping your precious assetssafe.

Network Security: Know It All Springer Science & Business Media

Computers at Risk presents a comprehensive agenda for developing nationwide policies and practices for computer security. Specific recommendations are provided for industry and for government agencies engaged in computer security activities. The volume also outlines problems and opportunities in computer security research, recommends ways to improve the research infrastructure, and suggests topics for investigators. The book explores the diversity of the field, the need to engineer countermeasures based on speculation of what experts think computer attackers may do next, why the technology community has failed to respond to the need for enhanced security systems, how innovators could be encouraged to bring more options to the marketplace, and balancing the importance of security against the right of privacy.

Wireless Network Security Springer Nature

An examination of network security discusses risk analysis issues, the impact of security on performance, and the degree of security necessary, as well as providing a survey of commercially available security products. Original.

Boundary Elements, X GRIN Verlag

This book is a complete, single information source of techniques for complex security and privacy issues in vehicular ad hoc networks Take a cooperative approach towards addressing the technology’s challenges of security and privacy issues Explores interdisciplinary methods by combining social science, cryptography, and privacy enhancing technique Richly illustrated with detailed designs and results for all approaches used Introduces standardization and industry activities, and government regulation in secure vehicular networking