The Art Of Computer Virus Research And Defense

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The Art Of Computer Virus Research And Defense ***2024-03-01***

MARISSA KARTER

Computer Viruses: from theory to applications Springer Science & Business Media
bull; Real-world tools needed to prevent, detect, and handle malicious code attacks. bull; Computer infection from viruses, worms, Trojan Horses etc., collectively known as malware is a growing cost problem for businesses. bull; Discover how attackers install malware and how you can peer through their schemes to keep systems safe. bull; Bonus malware code analysis laboratory.
The Art Of Computer Virus Research And Defense Addison Wesley Publishing Company
Thought viruses are unconscious thought patterns that distort our perceptions and cause crippling effects on our lives and health. The author of POWERLEARNING, Dr. Donald Lofland, Ph.D., offers step-by-step exercises and antiviral remedies for moving beyond destructive thought patterns to maximize personal health and fulfillment.
Learning Malware Analysis John Wiley & Sons
The rapid growth and development of Android-based devices has resulted in a wealth of sensitive information on mobile devices that offer minimal malware protection. This has created an immediate need for security professionals that understand how to best approach the subject of Android malware threats and analysis.In Android Malware and Analysis, K
Enhancing Computer Security with Smart Technology John Wiley & Sons
This book deals with malware detection in terms of Artificial Immune System (AIS), and presents a number of AIS models and immune-based feature extraction approaches as well as their applications in computer security Covers all of the current achievements in computer security based on immune principles, which were obtained by the Computational Intelligence Laboratory of Peking University, China Includes state-of-the-art information on designing and developing artificial immune systems (AIS) and AIS-based solutions to computer security issues Presents new concepts such as immune danger theory, immune concentration, and class-wise information gain (CIG)
Malicious Mobile Code Peter Lang
Helps you guard against Internet pests like adware, spyware, Trojans, spam, phishing, and more. This comprehensive guide describes each problem and its symptoms, rates the danger level, and then shows you how to solve the problem step by step. It helps you surf the web with a whole new level of confidence.
The Art of Memory Forensics Francesco Cammardella
The author examines issues such as the rightness of web-based applications, the programming language renaissance, spam filtering, the Open Source Movement, Internet startups and more. He also tells important stories about the kinds of people behind technical innovations, revealing their character and their craft.
Worm Springer Science & Business Media
Hack your antivirus software to stamp out future vulnerabilities The Antivirus Hacker's Handbook guides you through the process of reverse engineering antivirus software. You explore how to detect and exploit vulnerabilities that can be leveraged to improve future software design, protect your network, and anticipate attacks that may sneak through your antivirus' line of defense. You'll begin building your knowledge by diving into the reverse engineering process, which details how to start from a finished antivirus software program and work your way back through its development using the functions and other key elements of the software. Next, you leverage your new knowledge about software development to evade, attack, and exploit antivirus software—all of which can help you strengthen your network and protect your data. While not all viruses are damaging, understanding how to better protect your computer against them can help you maintain the integrity of your network. Discover how to reverse engineer your antivirus software Explore methods of antivirus software evasion Consider different ways to attack and exploit antivirus software Understand the current state of the antivirus software market, and get recommendations for users and vendors who are leveraging this software The Antivirus Hacker's Handbook is the essential reference for software reverse engineers, penetration testers, security researchers, exploit writers, antivirus vendors, and software engineers who want to understand how to leverage current antivirus software to improve future applications.
Malware Analyst's Cookbook and DVD Elsevier
The Comprehensive Guide to Computer Security, Extensively Revised with Newer Technologies, Methods, Ideas, and Examples In this updated guide, University of California at Davis Computer Security Laboratory co-director Matt Bishop offers clear, rigorous, and thorough coverage of modern computer security. Reflecting dramatic growth in the quantity, complexity, and consequences of security incidents, Computer Security, Second Edition, links core principles with technologies, methodologies, and ideas that have emerged since the first edition’s publication. Writing for advanced undergraduates, graduate students, and IT professionals, Bishop covers foundational

issues, policies, cryptography, systems design, assurance, and much more. He thoroughly addresses malware, vulnerability analysis, auditing, intrusion detection, and best-practice responses to attacks. In addition to new examples throughout, Bishop presents entirely new chapters on availability policy models and attack analysis. Understand computer security goals, problems, and challenges, and the deep links between theory and practice Learn how computer scientists seek to prove whether systems are secure Define security policies for confidentiality, integrity, availability, and more Analyze policies to reflect core questions of trust, and use them to constrain operations and change Implement cryptography as one component of a wider computer and network security strategy Use system-oriented techniques to establish effective security mechanisms, defining who can act and what they can do Set appropriate security goals for a system or product, and ascertain how well it meets them Recognize program flaws and malicious logic, and detect attackers seeking to exploit them This is both a comprehensive text, explaining the most fundamental and pervasive aspects of the field, and a detailed reference. It will help you align security concepts with realistic policies, successfully implement your policies, and thoughtfully manage the trade-offs that inevitably arise. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Hackers & Painters Compute! Publications

Malware analysis is big business, and attacks can cost a company dearly. When malware breaches your defenses, you need to act quickly to cure current infections and prevent future ones from occurring. For those who want to stay ahead of the latest malware, Practical Malware Analysis will teach you the tools and techniques used by professional analysts. With this book as your guide, you'll be able to safely analyze, debug, and disassemble any malicious software that comes your way. You'll learn how to: –Set up a safe virtual environment to analyze malware –Quickly extract network signatures and host-based indicators –Use key analysis tools like IDA Pro, OllyDbg, and WinDbg –Overcome malware tricks like obfuscation, anti-disassembly, anti-debugging, and anti-virtual machine techniques –Use your newfound knowledge of Windows internals for malware analysis –Develop a methodology for unpacking malware and get practical experience with five of the most popular packers –Analyze special cases of malware with shellcode, C++, and 64-bit code Hands-on labs throughout the book challenge you to practice and synthesize your skills as you dissect real malware samples, and pages of detailed dissections offer an over-the-shoulder look at how the pros do it. You'll learn how to crack open malware to see how it really works, determine what damage it has done, thoroughly clean your network, and ensure that the malware never comes back. Malware analysis is a cat-and-mouse game with rules that are constantly changing, so make sure you have the fundamentals. Whether you're tasked with securing one network or a thousand networks, or you're making a living as a malware analyst, you'll find what you need to succeed in Practical Malware Analysis.

Computer Viruses CRC Press

In this book you'll learn everything you wanted to know about computer viruses, ranging from the simplest 44-byte virus right on up to viruses for 32-bit Windows, Unix and the Internet. You'll learn how anti-virus programs stalk viruses and what viruses do to evade these digital policemen, including stealth techniques and poly-morphism. Next, you'll take a fascinating trip to the frontiers of science and learn about genetic viruses. Will such viruses take over the world, or will they become the tools of choice for the information warriors of the 21st century? Finally, you'll learn about payloads for viruses, not just destructive code, but also how to use a virus to compromise the security of a computer, and the possibility of beneficial viruses.

The Art of Computer Virus Research and Defense "O'Reilly Media, Inc."

If you thought hacking was just about mischief-makers hunched over computers in the basement, think again. As seasoned author Wallace Wang explains, hacking can also mean questioning the status quo, looking for your own truths and never accepting at face value anything authorities say or do. The completely revised fourth edition of this offbeat, non-technical book examines what hackers do, how they do it, and how you can protect yourself. Written in the same informative, irreverent, and entertaining style that made the first three editions hugely successful, Steal This Computer Book 4.0 will expand your mind and raise your eyebrows. New chapters discuss the hacker mentality, social engineering and lock picking, exploiting P2P file-sharing networks, and how people manipulate search engines and pop-up ads to obtain and use personal information. Wang also takes issue with the media for "hacking" the news and presenting the public with self-serving stories of questionable accuracy. Inside, you'll discover: –How to manage and fight spam and spyware –How Trojan horse programs and rootkits work and how to defend against them –How hackers steal software and defeat copy-protection mechanisms –How to tell if your machine is being attacked and what you can do to protect it –Where the hackers are, how they probe a target and sneak into a computer, and what they do once they get inside –How corporations use hacker techniques to infect your computer and invade your privacy –How you can lock down your computer to protect your data and your personal information using free programs If you've ever logged onto a website, conducted an online transaction, sent or received email, used a networked computer or even watched the evening news, you may have already been tricked, tracked, hacked, and manipulated. As the saying goes, just because you're paranoid doesn't mean they aren't after you. And, as Wallace Wang reveals, they probably are.

Protocol Springer Science & Business Media

Understand malware analysis and its practical implementation Key Features Explore the key concepts of malware analysis and memory forensics using real-world examples Learn the art of detecting, analyzing, and investigating malware threats Understand adversary tactics and techniques Book Description Malware analysis and memory forensics are powerful analysis and investigation techniques used in reverse engineering, digital forensics, and incident response. With adversaries becoming sophisticated and carrying out advanced malware attacks on critical infrastructures, data centers, and private and public organizations, detecting, responding to, and investigating such intrusions is critical to information security professionals. Malware analysis and memory forensics have become must-have skills to fight advanced malware, targeted attacks, and security breaches. This book teaches you the concepts, techniques, and tools to understand the behavior and characteristics of malware through malware analysis. It also teaches you techniques to investigate and hunt malware using memory forensics. This book introduces you to the basics of malware analysis, and then gradually progresses into the more advanced concepts of code analysis and memory forensics. It uses real-world malware samples, infected memory images, and visual

diagrams to help you gain a better understanding of the subject and to equip you with the skills required to analyze, investigate, and respond to malware-related incidents. What you will learn Create a safe and isolated lab environment for malware analysis Extract the metadata associated with malware Determine malware's interaction with the system Perform code analysis using IDA Pro and x64dbg Reverse-engineer various malware functionalities Reverse engineer and decode common encoding/encryption algorithms Reverse-engineer malware code injection and hooking techniques Investigate and hunt malware using memory forensics Who this book is for This book is for incident responders, cyber-security investigators, system administrators, malware analyst, forensic practitioners, student, or curious security professionals interested in learning malware analysis and memory forensics. Knowledge of programming languages such as C and Python is helpful but is not mandatory. If you have written few lines of code and have a basic understanding of programming concepts, you'll be able to get most out of this book.

Artificial Immune System oshean collins

Symantec's chief antivirus researcher has written the definitive guide to contemporary virus threats, defense techniques, and analysis tools. Unlike most books on computer viruses, The Art of Computer Virus Research and Defense is a reference written strictly for white hats: IT and security professionals responsible for protecting their organizations against malware. Peter Szor systematically covers everything you need to know, including virus behavior and classification, protection strategies, antivirus and worm-blocking techniques, and much more. Szor presents the state-of-the-art in both malware and protection, providing the full technical detail that professionals need to handle increasingly complex attacks. Along the way, he provides extensive information on code metamorphism and other emerging techniques, so you can anticipate and prepare for future threats. Szor also offers the most thorough and practical primer on virus analysis ever published—addressing everything from creating your own personal laboratory to automating the analysis process. This book's coverage includes Discovering how malicious code attacks on a variety of platforms Classifying malware strategies for infection, in-memory operation, self-protection, payload delivery, exploitation, and more Identifying and responding to code obfuscation threats: encrypted, polymorphic, and metamorphic Mastering empirical methods for analyzing malicious code—and what to do with what you learn Reverse-engineering malicious code with disassemblers, debuggers, emulators, and virtual machines Implementing technical defenses: scanning, code emulation, disinfection, inoculation, integrity checking, sandboxing, honeypots, behavior blocking, and much more Using worm blocking, host-based intrusion prevention, and network-level defense strategies

The Art of Deception Addison-Wesley Professional

This book is focused on the use of deep learning (DL) and artificial intelligence (AI) as tools to advance the fields of malware detection and analysis. The individual chapters of the book deal with a wide variety of state-of-the-art AI and DL techniques, which are applied to a number of challenging malware-related problems. DL and AI based approaches to malware detection and analysis are largely data driven and hence minimal expert domain knowledge of malware is needed. This book fills a gap between the emerging fields of DL/AI and malware analysis. It covers a broad range of modern and practical DL and AI techniques, including frameworks and development tools enabling the audience to innovate with cutting-edge research advancements in a multitude of malware (and closely related) use cases.

The Little Black Book of Computer Viruses: The basic technology Createspace Independent Pub

Analyzing how hacks are done, so as to stop them in the future Reverse engineering is the process of analyzing hardware or software and understanding it, without having access to the source code or design documents. Hackers are able to reverse engineer systems and exploit what they find with scary results. Now the good guys can use the same tools to thwart these threats. Practical Reverse Engineering goes under the hood of reverse engineering for security analysts, security engineers, and system programmers, so they can learn how to use these same processes to stop hackers in their tracks. The book covers x86, x64, and ARM (the first book to cover all three); Windows kernel-mode code rootkits and drivers; virtual machine protection techniques; and much more. Best of all, it offers a systematic approach to the material, with plenty of hands-on exercises and real-world examples. Offers a systematic approach to understanding reverse engineering, with hands-on exercises and real-world examples Covers x86, x64, and advanced RISC machine (ARM) architectures as well as deobfuscation and virtual machine protection techniques Provides special coverage of Windows kernel-mode code (rootkits/drivers), a topic not often covered elsewhere, and explains how to analyze drivers step by step Demystifies topics that have a steep learning curve Includes a bonus chapter on reverse engineering tools Practical Reverse Engineering: Using x86, x64, ARM, Windows Kernel, and Reversing Tools provides crucial, up-to-date guidance for a broad range of IT professionals.

Computer Security John Wiley & Sons

Viruses today are more prevalent than ever and the need to protect the network or company against attacks is imperative. Grimes gives strategies, tips and tricks needed to secure any system. He explains what viruses can and can't do, and how to recognize, remove and prevent them.

The Giant Black Book of Computer Viruses "O'Reilly Media, Inc."

How Control Exists after Decentralization Is the Internet a vast arena of unrestricted communication and freely exchanged information or a regulated, highly structured virtual bureaucracy? In Protocol, Alexander Galloway argues that the founding principle of the Net is control, not freedom, and that the controlling power lies in the technical protocols that make network connections (and disconnections) possible. He does this by treating the computer as a textual medium that is based on a technological language, code. Code, he argues, can be subject to the same kind of cultural and literary analysis as any natural language; computer languages have their own syntax, grammar, communities, and cultures. Instead of relying on established theoretical approaches, Galloway finds a new way to write about digital media, drawing on his backgrounds in computer programming and critical theory. "Discipline-hopping is a necessity when it comes to complicated socio-technical topics like protocol," he writes in the preface. Galloway begins by examining the types of protocols that exist, including TCP/IP, DNS, and HTML. He then looks at examples of resistance and subversion—hackers, viruses, cyberfeminism, Internet art—which he views as emblematic of the larger transformations now taking place within digital culture. Written for a nontechnical audience, Protocol serves as a necessary counterpoint to the wildly utopian visions of the Net that were so

widespread in earlier days.

Wyrm Three Rivers Press

While security is generally perceived to be a complicated and expensive process, Zen and the Art of Information Security makes security understandable to the average person in a completely non-technical, concise, and entertaining format. Through the use of analogies and just plain common sense, readers see through the hype and become comfortable taking very simple actions to secure themselves. Even highly technical people have misperceptions about security concerns and will also benefit from Ira Winkler's experiences making security understandable to the business world. Mr. Winkler is one of the most popular and highly rated speakers in the field of security, and lectures to tens of thousands of people a year. Zen and the Art of Information Security is based on one of his most well received international presentations. - Written by an internationally renowned author of Spies Among Us who travels the world making security presentations to tens of thousands of people a year - This short and concise book is specifically for the business, consumer, and technical user short on time but looking for the latest information along with reader friendly analogies - Describes the REAL security threats that you have to worry about, and more importantly, what to do about them

Malicious Cryptography John Wiley & Sons

This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. Symantec's chief antivirus researcher has written the definitive guide to contemporary virus threats, defense techniques, and analysis tools. Unlike most books on computer viruses, The Art of Computer Virus Research and Defense is a reference written strictly for white hats: IT and security professionals responsible for protecting their organizations against malware. Peter Szor systematically covers everything you need to know, including virus behavior and.

Hacking- The art Of Exploitation Spectra

An ex-hacker, a sexy college professor, stolen top secret hardware, a cover-up, a kidnapping, a government conspiracy, hacked defense computers, FBI, CIA, NSA, Armageddon. An excerpt from the actual deposition transcripts: "Let the record reflect that this deposition commenced at 9:15 am on December the 3rd, 2004 at the FBI offices in Atlanta, Georgia. Present for this recording are Special Agent Alvin Dirk, the Honorable Judge Ramiro Vasquez, and the witness, Robert O. Blain. This deposition is merely a recording of the events which transpired at Norwood University and is not now nor ever will be part of any trial or prosecution. Go ahead." "My name is Bobby Blain. Most people seem to think it all started when Dr. Jennings hired me, and all the computers started getting hacked. It was easy for people to think that, because I have a history and got myself in some trouble when I was younger. I hacked some computers and almost got the president impeached, but it really started before that, when I still worked for Dr. Karlyn." "Dr. Karlyn gave me a chance to redeem myself by allowing me to work on his computer for him. Then one day, this scientist I had never seen before comes and gives Dr. Karlyn a device. I was never told what he wanted, but I think he wanted Dr. Karlyn to help him reverse engineer it. I was only asked to build an interface to attach it to the computer. Dr. Karlyn did the rest. I think he figured out how to turn it on, but when he did, strange things started to happen." "We didn't know it then, but it turns out the device was stolen from a government facility. I don't know where they got it, that is more classified than this deposition. I can tell you with absolute certainty that they didn't make it themselves. I'd like to tell you more, but I don't think I'm allowed." "Anyway, someone at the university needed to get Dr. Karlyn out of the way and falsely accused him of inappropriate conduct with a student. He could have fought it, the dean believed him, but he decides to leave the school anyway. Before he goes, he gives his computer to Professor Jennings and he gives me a letter of recommendation, so after I help deliver and setup the computer, she agrees to hire me." "The first night it is up and running, at least two attempts are made to hack into the computer. I forgot to mention that even before I deliver the computer, this guy tries to break in and steal something from it, but I was there and he didn't get anything." "I can't divulge any secrets about Professor Jennings' project here, but my part is to prove that her process would work if she were given enough computer resources, so I re-write her process to work across a network and run on thousands of computers." "That's when things got really crazy. Someone keeps trying to hack into our computer; someone hacks the entire school and the phone company. Professor Jennings' secretary is kidnapped. The FBI gets involved, but they're chasing the wrong people for reasons only they can tell you." "Then someone plants a virus on our computer and the next thing we know, it's spread all over the internet, including some very sensitive government computers. Meanwhile, our project continues to gain speed and surpass anyone's expectations." "When the FBI come in and learn that the device that was given to Dr. Karlyn is actually some super cool futuristic computer that is able to grow and build more circuits for itself, they want to disconnect the computer and confiscate it." "That's when computers all over the world go out of control. The pentagon and all the armed forces are helpless. Air traffic is grounded. All the computer problems are traced back to the professor's computer. The FBI want it dismantled more than ever, but the academics involved want to get the device to relinquish control over the world before they do." "And, well, I guess that's all I'm allowed to say, thank you."