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### KEY=ANALYSIS - JOSEPH MELODY

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**Practical Malware Analysis The Hands-On Guide to Dissecting Malicious Software No Starch Press** *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.* **Learning Malware Analysis Explore the concepts, tools, and techniques to analyze and investigate Windows malware Packt Publishing Ltd** *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.* **Machine Learning and Data Mining in Pattern Recognition 8th International Conference, MLDM 2012, Berlin, Germany, July 13-20, 2012, Proceedings Springer** *This book constitutes the refereed proceedings of the 8th International Conference, MLDM 2012, held in Berlin, Germany in July 2012. The 51 revised full papers presented were carefully reviewed and selected from 212 submissions. The topics range from theoretical topics for classification, clustering, association rule and pattern mining to specific data mining methods for the different multimedia data types such as image mining, text mining, video mining and web mining.* **Malware Analysis Techniques Tricks for the triage of adversarial software Packt Publishing Ltd** *Analyze malicious samples, write reports, and use industry-standard methodologies to confidently triage and analyze adversarial software and malware Key Features Investigate, detect, and respond to various types of malware threat Understand how to use what you've learned as an analyst to produce actionable IOCs and reporting Explore complete solutions, detailed walkthroughs, and case studies of real-world malware samples Book Description Malicious software poses a threat to every enterprise globally. Its growth is costing businesses*

millions of dollars due to currency theft as a result of ransomware and lost productivity. With this book, you'll learn how to quickly triage, identify, attribute, and remediate threats using proven analysis techniques. *Malware Analysis Techniques* begins with an overview of the nature of malware, the current threat landscape, and its impact on businesses. Once you've covered the basics of malware, you'll move on to discover more about the technical nature of malicious software, including static characteristics and dynamic attack methods within the MITRE ATT&CK framework. You'll also find out how to perform practical malware analysis by applying all that you've learned to attribute the malware to a specific threat and weaponize the adversary's indicators of compromise (IOCs) and methodology against them to prevent them from attacking. Finally, you'll get to grips with common tooling utilized by professional malware analysts and understand the basics of reverse engineering with the NSA's Ghidra platform. By the end of this malware analysis book, you'll be able to perform in-depth static and dynamic analysis and automate key tasks for improved defense against attacks. What you will learn

Discover how to maintain a safe analysis environment for malware samples  
 Get to grips with static and dynamic analysis techniques for collecting IOCs  
 Reverse-engineer and debug malware to understand its purpose  
 Develop a well-polished workflow for malware analysis  
 Understand when and where to implement automation to react quickly to threats  
 Perform malware analysis tasks such as code analysis and API inspection

Who this book is for This book is for incident response professionals, malware analysts, and researchers who want to sharpen their skillset or are looking for a reference for common static and dynamic analysis techniques. Beginners will also find this book useful to get started with learning about malware analysis. Basic knowledge of command-line interfaces, familiarity with Windows and Unix-like filesystems and registries, and experience in scripting languages such as PowerShell, Python, or Ruby will assist with understanding the concepts covered.

**Malware Analyst's Cookbook and DVD Tools and Techniques for Fighting Malicious Code** John Wiley & Sons A computer forensics "how-to" for fighting malicious code and analyzing incidents With our ever-increasing reliance on computers comes a never-growing risk of malware. Security professionals will find plenty of solutions in this book to the problems posed by viruses, Trojan horses, worms, spyware, rootkits, adware, and other invasive software. Written by well-known malware experts, this guide reveals solutions to numerous problems and includes a DVD of custom programs and tools that illustrate the concepts, enhancing your skills. Security professionals face a constant battle against malicious software; this practical manual will improve your analytical capabilities and provide dozens of valuable and innovative solutions. Covers classifying malware, packing and unpacking, dynamic malware analysis, decoding and decrypting, rootkit detection, memory forensics, open source malware research, and much more. Includes generous amounts of source code in C, Python, and Perl to extend your favorite tools or build new ones, and custom programs on the DVD to demonstrate the solutions. *Malware Analyst's Cookbook* is indispensable to IT security administrators, incident responders, forensic analysts, and malware researchers.

**Cuckoo Malware Analysis** Packt Publishing Ltd This book is a step-by-step, practical tutorial for analyzing and detecting malware and performing digital investigations. This book features clear and concise guidance in an easily accessible format. *Cuckoo Malware Analysis* is great for anyone who wants to analyze malware through programming, networking, disassembling, forensics, and virtualization. Whether you are new to malware analysis or have some experience, this book will help you get started with Cuckoo Sandbox so you can start analysing malware effectively and efficiently.

**Advances in Digital Forensics XVII 17th IFIP WG 11.9 International Conference, Virtual Event, February 1-2, 2021, Revised Selected Papers** Springer Nature Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Computer networks, cloud computing, smartphones, embedded devices and the Internet of Things have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence in legal proceedings. Digital forensics also has myriad intelligence applications; furthermore, it has a vital role in cyber security -- investigations of security breaches yield valuable information that can be used to design more secure and resilient systems. *Advances in Digital Forensics XVII* describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: themes and issues, forensic techniques, filesystem forensics, cloud forensics, social media forensics, multimedia forensics, and novel applications. This book is the seventeenth volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of thirteen edited papers from the Seventeenth Annual IFIP WG 11.9 International Conference on Digital Forensics, held virtually in the winter of 2021. *Advances in Digital Forensics XVII* is an important resource for researchers, faculty members and graduate students, as well as for practitioners and individuals engaged in research and development efforts for the law enforcement and intelligence communities.

**Mastering Malware Analysis A malware analyst's practical guide to combating malicious software, APT, cybercrime, and IoT attacks** Packt Publishing Ltd Learn effective malware analysis tactics to prevent your systems from getting infected Key Features Investigate cyberattacks and prevent malware-related incidents from occurring in the future Learn core concepts of static and dynamic malware analysis, memory forensics, decryption, and much more Get practical guidance in developing efficient solutions to handle malware incidents

Book Description New and developing technologies inevitably bring new types of malware with them, creating a huge demand for IT professionals that can keep malware at bay. With the help of this updated second edition of *Mastering Malware Analysis*, you'll be able to add valuable reverse-engineering skills to your CV and learn how to protect organizations in the most efficient way. This book will familiarize you with multiple universal patterns behind different malicious software types and teach you how to analyze them using a variety of approaches. You'll learn how to examine malware code and determine the damage it can possibly cause to systems, along with ensuring that the right prevention or remediation steps are followed. As you cover all aspects of malware analysis for Windows, Linux, macOS, and mobile platforms in detail, you'll also get to grips with obfuscation, anti-debugging, and other advanced anti-reverse-engineering techniques. The skills you acquire in this cybersecurity book will help you deal with all types of modern malware, strengthen your defenses, and prevent or promptly mitigate breaches regardless of the platforms involved. By the end of this book, you will have learned how to efficiently analyze samples, investigate suspicious activity, and build innovative solutions to handle malware incidents. What you will learn

Explore assembly languages to strengthen your reverse-engineering skills  
 Master

various file formats and relevant APIs used by attackers Discover attack vectors and start handling IT, OT, and IoT malware Understand how to analyze samples for x86 and various RISC architectures Perform static and dynamic analysis of files of various types Get to grips with handling sophisticated malware cases Understand real advanced attacks, covering all their stages Focus on how to bypass anti-reverse-engineering techniques Who this book is for If you are a malware researcher, forensic analyst, IT security administrator, or anyone looking to secure against malicious software or investigate malicious code, this book is for you. This new edition is suited to all levels of knowledge, including complete beginners. Any prior exposure to programming or cybersecurity will further help to speed up your learning process. **Malware Forensics Field Guide for Windows Systems Digital Forensics Field Guides Elsevier** Malware Forensics Field Guide for Windows Systems is a handy reference that shows students the essential tools needed to do computer forensics analysis at the crime scene. It is part of Syngress Digital Forensics Field Guides, a series of companions for any digital and computer forensic student, investigator or analyst. Each Guide is a toolkit, with checklists for specific tasks, case studies of difficult situations, and expert analyst tips that will aid in recovering data from digital media that will be used in criminal prosecution. This book collects data from all methods of electronic data storage and transfer devices, including computers, laptops, PDAs and the images, spreadsheets and other types of files stored on these devices. It is specific for Windows-based systems, the largest running OS in the world. The authors are world-renowned leaders in investigating and analyzing malicious code. Chapters cover malware incident response - volatile data collection and examination on a live Windows system; analysis of physical and process memory dumps for malware artifacts; post-mortem forensics - discovering and extracting malware and associated artifacts from Windows systems; legal considerations; file identification and profiling initial analysis of a suspect file on a Windows system; and analysis of a suspect program. This field guide is intended for computer forensic investigators, analysts, and specialists. A condensed hand-held guide complete with on-the-job tasks and checklists Specific for Windows-based systems, the largest running OS in the world Authors are world-renowned leaders in investigating and analyzing malicious code **Malware Forensics Field Guide for Linux Systems Digital Forensics Field Guides Newnes** Malware Forensics Field Guide for Linux Systems is a handy reference that shows students the essential tools needed to do computer forensics analysis at the crime scene. It is part of Syngress Digital Forensics Field Guides, a series of companions for any digital and computer forensic student, investigator or analyst. Each Guide is a toolkit, with checklists for specific tasks, case studies of difficult situations, and expert analyst tips that will aid in recovering data from digital media that will be used in criminal prosecution. This book collects data from all methods of electronic data storage and transfer devices, including computers, laptops, PDAs and the images, spreadsheets and other types of files stored on these devices. It is specific for Linux-based systems, where new malware is developed every day. The authors are world-renowned leaders in investigating and analyzing malicious code. Chapters cover malware incident response - volatile data collection and examination on a live Linux system; analysis of physical and process memory dumps for malware artifacts; post-mortem forensics - discovering and extracting malware and associated artifacts from Linux systems; legal considerations; file identification and profiling initial analysis of a suspect file on a Linux system; and analysis of a suspect program. This book will appeal to computer forensic investigators, analysts, and specialists. A compendium of on-the-job tasks and checklists Specific for Linux-based systems in which new malware is developed every day Authors are world-renowned leaders in investigating and analyzing malicious code **Mastering Malware Analysis The complete malware analyst's guide to combating malicious software, APT, cybercrime, and IoT attacks Packt Publishing Ltd** Master malware analysis to protect your systems from getting infected Key Features Set up and model solutions, investigate malware, and prevent it from occurring in future Learn core concepts of dynamic malware analysis, memory forensics, decryption, and much more A practical guide to developing innovative solutions to numerous malware incidents Book Description With the ever-growing proliferation of technology, the risk of encountering malicious code or malware has also increased. Malware analysis has become one of the most trending topics in businesses in recent years due to multiple prominent ransomware attacks. Mastering Malware Analysis explains the universal patterns behind different malicious software types and how to analyze them using a variety of approaches. You will learn how to examine malware code and determine the damage it can possibly cause to your systems to ensure that it won't propagate any further. Moving forward, you will cover all aspects of malware analysis for the Windows platform in detail. Next, you will get to grips with obfuscation and anti-disassembly, anti-debugging, as well as anti-virtual machine techniques. This book will help you deal with modern cross-platform malware. Throughout the course of this book, you will explore real-world examples of static and dynamic malware analysis, unpacking and decrypting, and rootkit detection. Finally, this book will help you strengthen your defenses and prevent malware breaches for IoT devices and mobile platforms. By the end of this book, you will have learned to effectively analyze, investigate, and build innovative solutions to handle any malware incidents. What you will learn Explore widely used assembly languages to strengthen your reverse-engineering skills Master different executable file formats, programming languages, and relevant APIs used by attackers Perform static and dynamic analysis for multiple platforms and file types Get to grips with handling sophisticated malware cases Understand real advanced attacks, covering all stages from infiltration to hacking the system Learn to bypass anti-reverse engineering techniques Who this book is for If you are an IT security administrator, forensic analyst, or malware researcher looking to secure against malicious software or investigate malicious code, this book is for you. Prior programming experience and a fair understanding of malware attacks and investigation is expected. **Malware Forensics Investigating and Analyzing Malicious Code Syngress** Malware Forensics: Investigating and Analyzing Malicious Code covers the complete process of responding to a malicious code incident. Written by authors who have investigated and prosecuted federal malware cases, this book deals with the emerging and evolving field of live forensics, where investigators examine a computer system to collect and preserve critical live data that may be lost if the system is shut down. Unlike other forensic texts that discuss live forensics on a particular operating system, or in a generic context, this book emphasizes a live forensics and evidence collection methodology on both Windows and Linux operating systems in the context of identifying and capturing malicious code and evidence of its effect on the compromised system. It is the first book detailing how to perform live forensic techniques on malicious code. The book gives deep coverage on the tools and techniques of conducting runtime behavioral malware analysis (such as file, registry, network and port monitoring) and static code analysis (such as file identification and profiling, strings discovery, armoring/packing detection, disassembling, debugging), and more. It explores over 150 different tools for malware incident response and analysis, including

forensic tools for preserving and analyzing computer memory. Readers from all educational and technical backgrounds will benefit from the clear and concise explanations of the applicable legal case law and statutes covered in every chapter. In addition to the technical topics discussed, this book also offers critical legal considerations addressing the legal ramifications and requirements governing the subject matter. This book is intended for system administrators, information security professionals, network personnel, forensic examiners, attorneys, and law enforcement working with the inner-workings of computer memory and malicious code. \* Winner of Best Book Bejtlich read in 2008! \* <http://taosecurity.blogspot.com/2008/12/best-book-bejtlich-read-in-2008.html> \* Authors have investigated and prosecuted federal malware cases, which allows them to provide unparalleled insight to the reader. \* First book to detail how to perform "live forensic" techniques on malicious code. \* In addition to the technical topics discussed, this book also offers critical legal considerations addressing the legal ramifications and requirements governing the subject matter **Malware Analysis and Detection Engineering A Comprehensive Approach to Detect and Analyze Modern Malware Apress** Discover how the internals of malware work and how you can analyze and detect it. You will learn not only how to analyze and reverse malware, but also how to classify and categorize it, giving you insight into the intent of the malware. Malware Analysis and Detection Engineering is a one-stop guide to malware analysis that simplifies the topic by teaching you undocumented tricks used by analysts in the industry. You will be able to extend your expertise to analyze and reverse the challenges that malicious software throws at you. The book starts with an introduction to malware analysis and reverse engineering to provide insight on the different types of malware and also the terminology used in the anti-malware industry. You will know how to set up an isolated lab environment to safely execute and analyze malware. You will learn about malware packing, code injection, and process hollowing plus how to analyze, reverse, classify, and categorize malware using static and dynamic tools. You will be able to automate your malware analysis process by exploring detection tools to modify and trace malware programs, including sandboxes, IDS/IPS, anti-virus, and Windows binary instrumentation. The book provides comprehensive content in combination with hands-on exercises to help you dig into the details of malware dissection, giving you the confidence to tackle malware that enters your environment. What You Will Learn Analyze, dissect, reverse engineer, and classify malware Effectively handle malware with custom packers and compilers Unpack complex malware to locate vital malware components and decipher their intent Use various static and dynamic malware analysis tools Leverage the internals of various detection engineering tools to improve your workflow Write Snort rules and learn to use them with Suricata IDS Who This Book Is For Security professionals, malware analysts, SOC analysts, incident responders, detection engineers, reverse engineers, and network security engineers "This book is a beast! If you're looking to master the ever-widening field of malware analysis, look no further. This is the definitive guide for you." Pedram Amini, CTO Inquest; Founder OpenRCE.org and ZeroDayInitiative **Automatic Malware Analysis An Emulator Based Approach Springer Science & Business Media** Malicious software (i.e., malware) has become a severe threat to interconnected computer systems for decades and has caused billions of dollars damages each year. A large volume of new malware samples are discovered daily. Even worse, malware is rapidly evolving becoming more sophisticated and evasive to strike against current malware analysis and defense systems. Automatic Malware Analysis presents a virtualized malware analysis framework that addresses common challenges in malware analysis. In regards to this new analysis framework, a series of analysis techniques for automatic malware analysis is developed. These techniques capture intrinsic characteristics of malware, and are well suited for dealing with new malware samples and attack mechanisms. **Windows Malware Analysis Essentials Packt Publishing Ltd** Master the fundamentals of malware analysis for the Windows platform and enhance your anti-malware skill set About This Book Set the baseline towards performing malware analysis on the Windows platform and how to use the tools required to deal with malware Understand how to decipher x86 assembly code from source code inside your favourite development environment A step-by-step based guide that reveals malware analysis from an industry insider and demystifies the process Who This Book Is For This book is best for someone who has prior experience with reverse engineering Windows executables and wants to specialize in malware analysis. The book presents the malware analysis thought process using a show-and-tell approach, and the examples included will give any analyst confidence in how to approach this task on their own the next time around. What You Will Learn Use the positional number system for clear conception of Boolean algebra, that applies to malware research purposes Get introduced to static and dynamic analysis methodologies and build your own malware lab Analyze destructive malware samples from the real world (ITW) from fingerprinting and static/dynamic analysis to the final debrief Understand different modes of linking and how to compile your own libraries from assembly code and integrate the code in your final program Get to know about the various emulators, debuggers and their features, and sandboxes and set them up effectively depending on the required scenario Deal with other malware vectors such as pdf and MS-Office based malware as well as scripts and shellcode In Detail Windows OS is the most used operating system in the world and hence is targeted by malware writers. There are strong ramifications if things go awry. Things will go wrong if they can, and hence we see a salvo of attacks that have continued to disrupt the normal scheme of things in our day to day lives. This book will guide you on how to use essential tools such as debuggers, disassemblers, and sandboxes to dissect malware samples. It will expose your innards and then build a report of their indicators of compromise along with detection rule sets that will enable you to help contain the outbreak when faced with such a situation. We will start with the basics of computing fundamentals such as number systems and Boolean algebra. Further, you'll learn about x86 assembly programming and its integration with high level languages such as C++. You'll understand how to decipher disassembly code obtained from the compiled source code and map it back to its original design goals. By delving into end to end analysis with real-world malware samples to solidify your understanding, you'll sharpen your technique of handling destructive malware binaries and vector mechanisms. You will also be encouraged to consider analysis lab safety measures so that there is no infection in the process. Finally, we'll have a rounded tour of various emulations, sandboxing, and debugging options so that you know what is at your disposal when you need a specific kind of weapon in order to nullify the malware. Style and approach An easy to follow, hands-on guide with descriptions and screenshots that will help you execute effective malicious software investigations and conjure up solutions creatively and confidently. **Cyber Threat Intelligence Springer** This book provides readers with up-to-date research of emerging cyber threats and defensive mechanisms, which are timely and essential. It covers cyber threat intelligence concepts against a range of threat actors and threat tools (i.e. ransomware) in cutting-edge technologies, i.e., Internet of Things (IoT), Cloud computing and

mobile devices. This book also provides the technical information on cyber-threat detection methods required for the researcher and digital forensics experts, in order to build intelligent automated systems to fight against advanced cybercrimes. The ever increasing number of cyber-attacks requires the cyber security and forensic specialists to detect, analyze and defend against the cyber threats in almost real-time, and with such a large number of attacks is not possible without deeply perusing the attack features and taking corresponding intelligent defensive actions – this in essence defines cyber threat intelligence notion. However, such intelligence would not be possible without the aid of artificial intelligence, machine learning and advanced data mining techniques to collect, analyze, and interpret cyber-attack campaigns which is covered in this book. This book will focus on cutting-edge research from both academia and industry, with a particular emphasis on providing wider knowledge of the field, novelty of approaches, combination of tools and so forth to perceive reason, learn and act on a wide range of data collected from different cyber security and forensics solutions. This book introduces the notion of cyber threat intelligence and analytics and presents different attempts in utilizing machine learning and data mining techniques to create threat feeds for a range of consumers. Moreover, this book sheds light on existing and emerging trends in the field which could pave the way for future works. The inter-disciplinary nature of this book, makes it suitable for a wide range of audiences with backgrounds in artificial intelligence, cyber security, forensics, big data and data mining, distributed systems and computer networks. This would include industry professionals, advanced-level students and researchers that work within these related fields.

**Rootkits and Bootkits Reversing Modern Malware and Next Generation Threats No Starch Press** Rootkits and Bootkits will teach you how to understand and counter sophisticated, advanced threats buried deep in a machine's boot process or UEFI firmware. With the aid of numerous case studies and professional research from three of the world's leading security experts, you'll trace malware development over time from rootkits like TDL3 to present-day UEFI implants and examine how they infect a system, persist through reboot, and evade security software. As you inspect and dissect real malware, you'll learn:

- How Windows boots—including 32-bit, 64-bit, and UEFI mode—and where to find vulnerabilities
- The details of boot process security mechanisms like Secure Boot, including an overview of Virtual Secure Mode (VSM) and Device Guard
- Reverse engineering and forensic techniques for analyzing real malware, including bootkits like Rovnix/Carberp, Gapz, TDL4, and the infamous rootkits TDL3 and Festi
- How to perform static and dynamic analysis using emulation and tools like Bochs and IDA Pro
- How to better understand the delivery stage of threats against BIOS and UEFI firmware in order to create detection capabilities
- How to use virtualization tools like VMware Workstation to reverse engineer bootkits and the Intel Chipsec tool to dig into forensic analysis

Cybercrime syndicates and malicious actors will continue to write ever more persistent and covert attacks, but the game is not lost. Explore the cutting edge of malware analysis with Rootkits and Bootkits. Covers boot processes for Windows 32-bit and 64-bit operating systems.

**Malware Analysis Using Artificial Intelligence and Deep Learning Springer Nature** 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.

**Detection of Intrusions and Malware, and Vulnerability Assessment 4th International Conference, DIMVA 2007 Lucerne, Switzerland, July 12-13, 2007 Proceedings Springer Science & Business Media** This book constitutes the refereed proceedings of the 4th International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment, DIMVA 2007, held in Lucerne, Switzerland in July 2007. The 14 revised full papers presented were carefully reviewed and selected from 57 submissions. The papers are organized in topical sections on Web security, intrusion detection, traffic analysis, network security, and host security.

**Information, Communication and Computing Technology Second International Conference, ICICCT 2017, New Delhi, India, May 13, 2017, Revised Selected Papers Springer** This book constitutes the refereed proceedings of the Second International Conference on Information, Communication and Computing Technology, ICICCT 2017, held in New Delhi, India, in May 2017. The 29 revised full papers and the 5 revised short papers presented in this volume were carefully reviewed and selected from 219 submissions. The papers are organized in topical sections on network systems and communication security; software engineering; algorithm and high performance computing.

**Data Privacy Management and Autonomous Spontaneous Security 8th International Workshop, DPM 2013, and 6th International Workshop, SETOP 2013, Egham, UK, September 12-13, 2013, Revised Selected Papers Springer** This book constitutes the revised selected papers of the 8th International Workshop on Data Privacy Management, DPM 2013, and the 6th International Workshop on Autonomous and Spontaneous Security, SETOP 2013, held in Egham, UK, in September 2013 and co-located with the 18th European Symposium on Research in Computer Security (ESORICS 2013). The volume contains 13 full papers selected out of 46 submissions and 1 keynote lecturer from the DPM workshop and 6 full papers together with 5 short papers selected among numerous submissions to the SETOP workshop. The papers cover topics related to the management of privacy-sensitive information and automated configuration of security, focusing in particular on system-level privacy policies, administration of sensitive identifiers, data integration and privacy, engineering authentication and authorization, mobile security and vulnerabilities.

**Security Informatics Springer Science & Business Media** Intelligence and Security Informatics (ISI) is defined as the study of the development and use of advanced information systems and technologies for national, international, and societal security-related applications. With the rise of global terrorism, the field has been given an increasing amount of attention from academic researchers, law enforcement, intelligent experts, information technology consultants and practitioners. SECURITY INFORMATICS is global in scope and perspective. Leading experts will be invited as contributing authors from the US, UK, Denmark, Israel, Singapore, Hong Kong, Taiwan, Europe, etc. It is the first systematic, archival volume treatment of the field and will cover the very latest advances in ISI research and practice. It is organized in four major subject areas: (1) Information and Systems Security, (2) Information Sharing and Analysis in Security Informatics, (3) Infrastructure Protection and Emergency Responses, and (4) National Security and Terrorism Informatics.

**Advanced Malware Analysis McGraw Hill Professional** A one-of-a-kind guide to setting up a malware research lab, using cutting-edge analysis tools, and reporting the findings

*Advanced Malware Analysis is a critical resource for every information security professional's anti-malware arsenal. The proven troubleshooting techniques will give an edge to information security professionals whose job involves detecting, decoding, and reporting on malware. After explaining malware architecture and how it operates, the book describes how to create and configure a state-of-the-art malware research lab and gather samples for analysis. Then, you'll learn how to use dozens of malware analysis tools, organize data, and create metrics-rich reports. A crucial tool for combatting malware—which currently hits each second globally Filled with undocumented methods for customizing dozens of analysis software tools for very specific uses Leads you through a malware blueprint first, then lab setup, and finally analysis and reporting activities Every tool explained in this book is available in every country around the world*

**Practical Binary Analysis Build Your Own Linux Tools for Binary Instrumentation, Analysis, and Disassembly No Starch Press** Stop manually analyzing binary! Practical Binary Analysis is the first book of its kind to present advanced binary analysis topics, such as binary instrumentation, dynamic taint analysis, and symbolic execution, in an accessible way. As malware increasingly obfuscates itself and applies anti-analysis techniques to thwart our analysis, we need more sophisticated methods that allow us to raise that dark curtain designed to keep us out—binary analysis can help. The goal of all binary analysis is to determine (and possibly modify) the true properties of binary programs to understand what they really do, rather than what we think they should do. While reverse engineering and disassembly are critical first steps in many forms of binary analysis, there is much more to be learned. This hands-on guide teaches you how to tackle the fascinating but challenging topics of binary analysis and instrumentation and helps you become proficient in an area typically only mastered by a small group of expert hackers. It will take you from basic concepts to state-of-the-art methods as you dig into topics like code injection, disassembly, dynamic taint analysis, and binary instrumentation. Written for security engineers, hackers, and those with a basic working knowledge of C/C++ and x86-64, Practical Binary Analysis will teach you in-depth how binary programs work and help you acquire the tools and techniques needed to gain more control and insight into binary programs. Once you've completed an introduction to basic binary formats, you'll learn how to analyze binaries using techniques like the GNU/Linux binary analysis toolchain, disassembly, and code injection. You'll then go on to implement profiling tools with Pin and learn how to build your own dynamic taint analysis tools with libdft and symbolic execution tools using Triton. You'll learn how to: - Parse ELF and PE binaries and build a binary loader with libbfd - Use data-flow analysis techniques like program tracing, slicing, and reaching definitions analysis to reason about runtime flow of your programs - Modify ELF binaries with techniques like parasitic code injection and hex editing - Build custom disassembly tools with Capstone - Use binary instrumentation to circumvent anti-analysis tricks commonly used by malware - Apply taint analysis to detect control hijacking and data leak attacks - Use symbolic execution to build automatic exploitation tools With exercises at the end of each chapter to help solidify your skills, you'll go from understanding basic assembly to performing some of the most sophisticated binary analysis and instrumentation. Practical Binary Analysis gives you what you need to work effectively with binary programs and transform your knowledge from basic understanding to expert-level proficiency.

**Malware Data Science Attack Detection and Attribution No Starch Press** Malware Data Science explains how to identify, analyze, and classify large-scale malware using machine learning and data visualization. Security has become a "big data" problem. The growth rate of malware has accelerated to tens of millions of new files per year while our networks generate an ever-larger flood of security-relevant data each day. In order to defend against these advanced attacks, you'll need to know how to think like a data scientist. In Malware Data Science, security data scientist Joshua Saxe introduces machine learning, statistics, social network analysis, and data visualization, and shows you how to apply these methods to malware detection and analysis. You'll learn how to: - Analyze malware using static analysis - Observe malware behavior using dynamic analysis - Identify adversary groups through shared code analysis - Catch 0-day vulnerabilities by building your own machine learning detector - Measure malware detector accuracy - Identify malware campaigns, trends, and relationships through data visualization Whether you're a malware analyst looking to add skills to your existing arsenal, or a data scientist interested in attack detection and threat intelligence, Malware Data Science will help you stay ahead of the curve.

**Detecting and Mitigating Robotic Cyber Security Risks IGI Global** Risk detection and cyber security play a vital role in the use and success of contemporary computing. By utilizing the latest technological advances, more effective prevention techniques can be developed to protect against cyber threats. Detecting and Mitigating Robotic Cyber Security Risks is an essential reference publication for the latest research on new methodologies and applications in the areas of robotic and digital security. Featuring extensive coverage on a broad range of topics, such as authentication techniques, cloud security, and mobile robotics, this book is ideally designed for students, researchers, scientists, and engineers seeking current research on methods, models, and implementations of optimized security in digital contexts.

**Trends and Future Directions in Security and Emergency Management Springer Nature** This book aims to inform about the current empirical results of the work of experts in the field security and emergency management and risk management in connecting science, theory and practice in various fields related to security management and emergency management. The chapters present research work and case studies from international, state as well as regional levels. The book is divided into five sections, which deal with Safety and Security Science, Security and Emergency management, Threats and Risks, Cyber Risks and Extraordinary Event, Preparation and Solutions. The book is intended primarily for scientific communities established in security sciences, theorists and experts working in various positions and levels of security organizations, universities with specializations in security studies, but also for the expert public interested in security issues or entities directly responsible for security and emergency management.

**Recent Advances in Intrusion Detection 14th International Symposium, RAID 2011, Menlo Park, CA, USA, September 20-21, 2011, Proceedings Springer** This book constitutes the proceedings of the 14th International Symposium on Recent Advances in Intrusion Detection, RAID 2011, held in Menlo Park, CA, USA in September 2011. The 20 papers presented were carefully reviewed and selected from 87 submissions. The papers are organized in topical sections on application security; malware; anomaly detection; Web security and social networks; and sandboxing and embedded environments.

**Android Malware Springer Science & Business Media** Mobile devices, such as smart phones, have achieved computing and networking capabilities comparable to traditional personal computers. Their successful consumerization has also become a source of pain for adopting users and organizations. In particular, the widespread presence of information-stealing applications and other types of mobile malware raises substantial security and privacy concerns. Android Malware presents a systematic view on state-of-the-art mobile malware that targets the popular

Android mobile platform. Covering key topics like the Android malware history, malware behavior and classification, as well as, possible defense techniques. **Cyberspace Safety and Security 11th International Symposium, CSS 2019, Guangzhou, China, December 1-3, 2019, Proceedings, Part II Springer Nature** The two volumes LNCS 11982 and 11983 constitute the proceedings of the 11th International Symposium on Cyberspace Safety and Security, CSS 2019, held in Guangzhou, China, in December 2019. The 61 full papers and 40 short papers presented were carefully reviewed and selected from 235 submissions. The papers cover a broad range of topics in the field of cyberspace safety and security, such as authentication, access control, availability, integrity, privacy, confidentiality, dependability and sustainability issues of cyberspace. They are organized in the following topical sections: network security; system security; information security; privacy preservation; machine learning and security; cyberspace safety; big data and security; and cloud and security; **Windows Registry Forensics Advanced Digital Forensic Analysis of the Windows Registry Elsevier** Windows Registry Forensics provides the background of the Windows Registry to help develop an understanding of the binary structure of Registry hive files. Approaches to live response and analysis are included, and tools and techniques for postmortem analysis are discussed at length. Tools and techniques are presented that take the student and analyst beyond the current use of viewers and into real analysis of data contained in the Registry, demonstrating the forensic value of the Registry. Named a 2011 Best Digital Forensics Book by InfoSec Reviews, this book is packed with real-world examples using freely available open source tools. It also includes case studies and a CD containing code and author-created tools discussed in the book. This book will appeal to computer forensic and incident response professionals, including federal government and commercial/private sector contractors, consultants, etc. Named a 2011 Best Digital Forensics Book by InfoSec Reviews Packed with real-world examples using freely available open source tools Deep explanation and understanding of the Windows Registry - the most difficult part of Windows to analyze forensically Includes a CD containing code and author-created tools discussed in the book **Malware Detection Springer Science & Business Media** This book captures the state of the art research in the area of malicious code detection, prevention and mitigation. It contains cutting-edge behavior-based techniques to analyze and detect obfuscated malware. The book analyzes current trends in malware activity online, including botnets and malicious code for profit, and it proposes effective models for detection and prevention of attacks using. Furthermore, the book introduces novel techniques for creating services that protect their own integrity and safety, plus the data they manage. **Detection of Intrusions and Malware, and Vulnerability Assessment 15th International Conference, DIMVA 2018, Saclay, France, June 28-29, 2018, Proceedings Springer** This book constitutes the refereed proceedings of the 15th International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment, DIMVA 2018, held in Saclay, France, in June 2018. The 17 revised full papers and 1 short paper included in this book were carefully reviewed and selected from 59 submissions. They present topics such as malware analysis; mobile and embedded security; attacks; detection and containment; web and browser security; and reverse engineering. **Malware Fighting Malicious Code Prentice Hall Professional** Describes various types of malware, including viruses, worms, user-level RootKits, and kernel-level manipulation, their characteristics and attack method, and how to defend against an attack. **Advances in Information and Computer Security 5th International Workshop on Security, IWSEC 2010, Kobe, Japan, November 22-24, 2010, Proceedings Springer** The Fifth International Workshop on Security (IWSEC 2010) was held at Kobe International Conference Center, Kobe, Japan, November 22-24, 2010. The workshop was co-organized by CSEC, a special interest group concerned with the computer security of the Information Processing Society of Japan (IPSJ) and ISEC, a technical group concerned with the information security of The Institute of Electronics, Information and Communication Engineers (IEICE). The excellent Local Organizing Committee was led by the IWSEC 2010 General Co-chairs, Hiroaki Kikuchi and Toru Fujiwara. This year IWSEC 2010 had three tracks, the Foundations of Security (Track I), Security in Networks and Ubiquitous Computing Systems (Track II), and Security in Real Life Applications (Track III), and the review and selection processes for these tracks were independent of each other. We received 75 paper submissions including 44 submissions for Track I, 20 submissions for Track II, and 11 submissions for Track III. We would like to thank all the authors who submitted papers. Each paper was reviewed by at least three reviewers. In addition to the Program Committee members, many external reviewers joined the review process from their particular areas of expertise. We were fortunate to have this energetic team of experts, and are grateful to all of them for their hard work. This hard work included very active discussions; the discussion phase was almost as long as the initial individual reviewing. The review and discussions were supported by a very nice Web-based system, iChair. We would like to thank its developers. Following the review phases, 22 papers including 13 papers for Track I, 6 papers for Track II, and 3 papers for Track III were accepted for publication in this volume of Advances in Information and Computer Security. **IT Convergence and Security 2012 Springer Science & Business Media** The proceedings approaches the subject matter with problems in technical convergence and convergences of security technology. This approach is new because we look at new issues that arise from techniques converging. The general scope of the proceedings content is convergence security and the latest information technology. The intended readership are societies, enterprises, and research institutes, and intended content level is mid- to highly educated persons. The most important features and benefits of the proceedings are the introduction of the most recent information technology and its related ideas, applications and problems related to technology convergence, and its case studies and finally an introduction of converging existing security techniques through convergence security. Overall, through the proceedings, authors will be able to understand the most state of the art information strategies and technologies of convergence security. **Cyber and Digital Forensic Investigations A Law Enforcement Practitioner's Perspective Springer Nature** Understanding the latest capabilities in the cyber threat landscape as well as the cyber forensic challenges and approaches is the best way users and organizations can prepare for potential negative events. Adopting an experiential learning approach, this book describes how cyber forensics researchers, educators and practitioners can keep pace with technological advances, and acquire the essential knowledge and skills, ranging from IoT forensics, malware analysis, and CCTV and cloud forensics to network forensics and financial investigations. Given the growing importance of incident response and cyber forensics in our digitalized society, this book will be of interest and relevance to researchers, educators and practitioners in the field, as well as students wanting to learn about cyber forensics. **Advances in Cyber Security Second International Conference, ACeS 2020, Penang, Malaysia, December 8-9, 2020, Revised Selected Papers Springer Nature** This book presents refereed proceedings of the Second International Conference on Advances in Cyber Security, ACeS 2020, held in

Penang, Malaysia, in September 2020. Due to the COVID-19 pandemic the conference was held online. The 46 full papers and 1 short paper were carefully reviewed and selected from 132 submissions. The papers are organized in topical sections on internet of things, industry 4.0 and blockchain, and cryptology; digital forensics and surveillance, botnet and malware, and intrusion detection/prevention; ambient cloud and edge computing, wireless and cellular communication; governance, social media, mobile and web, data privacy, data policy and fake news. **Intelligent Computing Paradigm and Cutting-edge Technologies Proceedings of the First International Conference on Innovative Computing and Cutting-edge Technologies (ICICCT 2019), Istanbul, Turkey, October 30-31, 2019 Springer Nature** This book discusses fundamental and high-level concepts relating to intelligent computing and communications in the context of distributed computing, big data, high performance computing and the Internet of Things. It is becoming increasingly important to develop adaptive, intelligent, computing-centric, energy-aware, secure and privacy-aware mechanisms in high-performance computing and IoT applications. Serving as a useful guide for researchers and practitioners working in the field of information technology and computer science, the book also appeals to beginners wanting to learn more about the better computing paradigm. In addition, it provides a platform for researchers, engineers, academics and industry professionals from around the globe to share their research findings. **Client-Honeypots Exploring Malicious Websites Oldenbourg Verlag** This book introduces a new weapon in computer warfare which helps to collect more information about malicious websites, client-side exploits, attackers, and their proceeding. Client honeypots are a new technique to study malware that targets user client applications, like web browsers, email clients, or instant messengers. We introduce some of the more well-known client honeypots, how they work, and how they can be used to secure a computer network. Furthermore, the authors show a few of the most frequently used client application exploits and how they can be examined to get more information about the underground economy.