How To Defeat Advanced Malware New Tools For Protection And Forensics Henry Dalziel

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.

This handbook provides an overarching view of cyber security and digital forensic challenges related to big data and IoT environment, prior to reviewing existing data mining solutions and their potential application in big data context, and existing authentication and access control for IoT devices. An IoT access control scheme and an IoT forensic framework is also presented in this book, and it explains how the IoT forensic framework can be used to guide investigation of a popular cloud storage service. A distributed file system forensic approach is also presented, which is used to guide the investigation of Ceph. Minecraft, a Massively Multiplayer Online Game, and the Hadoop distributed file system environment are also forensically studied and their findings reported in this book. A forensic IoT source camera identification algorithm is

introduced, which uses the camera's sensor pattern noise from the captured image. In addition to the IoT access control and forensic frameworks, this handbook covers a cyber defense triage process for nine advanced persistent threat (APT) groups targeting IoT infrastructure, namely: APT1, Molerats, Silent Chollima, Shell Crew, NetTraveler, ProjectSauron, CopyKittens, Volatile Cedar and Transparent Tribe. The characteristics of remote-controlled real-world Trojans using the Cyber Kill Chain are also examined. It introduces a method to leverage different crashes discovered from two fuzzing approaches, which can be used to enhance the effectiveness of fuzzers. Cloud computing is also often associated with IoT and big data (e.g., cloud-enabled IoT systems), and hence a survey of the cloud security literature and a survey of botnet detection approaches are presented in the book. Finally, game security solutions are studied and explained how one may circumvent such solutions. This handbook targets the security, privacy and forensics research community, and big data research community, including policy makers and government agencies, public and private organizations policy makers. Undergraduate and postgraduate students enrolled in cyber security and forensic programs will also find this handbook useful as a reference. The cyber security of vital infrastructure and services has become a major concern for countries worldwide. The members of NATO are no exception, and they share a responsibility to help the global community to strengthen its cyber defenses against malicious cyber activity. This book presents 10 papers and 21 specific findings from the NATO Advanced Research Workshop (ARW) ‘Best Practices in Computer Network Defense (CND): Incident Detection and Response, held in Geneva, Switzerland, in September 2013. The workshop was attended by a multi-disciplinary team of experts from 16 countries and three international institutions. The book identifies the state-of-the-art tools and processes being used for cyber defense and highlights gaps in the technology. It presents the best practice of industry and government for incident detection and response and examines indicators and metrics for progress along the security continuum.This book provides those operators and decision makers whose work it is to strengthen the cyber defenses of the global community with genuine tools and expert advice. Keeping pace and deploying advanced process or technology is only possible when you know what is available. This book shows what is possible and available today for computer network defense and for incident detection and response. This book provides an advanced understanding of cyber threats as well as the risks companies are facing. It includes a detailed analysis of many technologies and approaches important to decreasing, mitigating or remediating those threats and risks. Cyber security technologies discussed in this book are futuristic and current. Advanced security topics such as secure remote work, data security, network security, application and device security, cloud security, and cyber risk and privacy are presented in this book. At the end of every chapter, an evaluation of the topic from a CISOs perspective is provided. This book also addresses quantum computing, artificial intelligence and machine learning for cyber security The opening chapters describe the power and danger of quantum computing, proposing two solutions for protection from probable quantum computer attacks: the tactical enhancement of existing algorithms to make them quantum-resistant, and the strategic implementation of quantum-safe algorithms and cryptosystems. The following chapters make the case for using supervised and unsupervised AI/ML to develop predictive, prescriptive, cognitive and auto-reactive

threat detection, mitigation, and remediation capabilities against advanced attacks perpetrated by sophisticated threat actors, APT and polymorphic/metamorphic malware. CISOs must be concerned about current on-going sophisticated cyber-attacks, and can address them with advanced security measures. The latter half of this book discusses some current sophisticated cyber-attacks and available protective measures enabled by the advancement of cybersecurity capabilities in various IT domains. Chapters 6-10 discuss secure remote work; chapters 11-17, advanced data security paradigms; chapters 18-28, Network Security; chapters 29-35, application and device security; chapters 36-39, Cloud security; and chapters 40-46 organizational cyber risk measurement and event probability. Security and IT engineers, administrators and developers, CIOs, CTOs, CISOs, and CFOs will want to purchase this book. Risk personnel, CROs, IT and Security Auditors as well as security researchers and journalists will also find this useful.

How to Defeat Advanced MalwareNew Tools for Protection and ForensicsSyngress

The only official body of knowledge for SSCP—(ISC)2's popular credential for hands-on security professionals—fully revised and updated. Systems Security Certified Practitioner (SSCP) is an elite, hands-on cybersecurity certification that validates the technical skills to implement, monitor, and administer IT infrastructure using information security policies and procedures. SSCP certification—fully compliant with U.S. Department of Defense Directive 8140 and 8570 requirements—is valued throughout the IT security industry. The Official (ISC)2 SSCP CBK Reference is the only official Common Body of Knowledge (CBK) available for SSCP-level practitioners, exclusively from (ISC)2, the global leader in cybersecurity certification and training. This authoritative volume contains essential knowledge practitioners require on a regular basis. Accurate, up-to-date chapters provide in-depth coverage of the seven SSCP domains: Access Controls; Security Operations and Administration; Risk Identification, Monitoring and Analysis; Incident Response and Recovery; Cryptography; Network and Communications Security; and Systems and Application Security. Designed to serve as a reference for information security professionals throughout their careers, this indispensable (ISC)2guide: Provides comprehensive coverage of the latest domains and objectives of the SSCP Helps better secure critical assets in their organizations Serves as a complement to the SSCP Study Guide for certification candidates The Official (ISC)2 SSCP CBK Reference is an essential resource for SSCP-level professionals, SSCP candidates and other practitioners involved in cybersecurity.

An urgently needed examination of the current cyber revolution that draws on case studies to develop conceptual frameworks for understanding its effects on international order The cyber revolution is the revolution of our time. The rapid expansion of cyberspace brings both promise and peril. It promotes new modes of political interaction, but it also disrupts interstate dealings and empowers non-state actors who may instigate diplomatic and military crises. Despite significant experience with cyber phenomena, the conceptual apparatus to analyze, understand, and address their effects on international order remains primitive. Here, Lucas Kello adapts and applies international relations theory to create new ways of thinking about cyber strategy. Kello draws on a broad range of case studies, including the Estonian crisis, the Olympic Games operation against Iran, and the cyber attack against Sony Pictures. Synthesizing qualitative data from government documents, forensic reports of major

incidents and interviews with senior officials from around the globe, this important work establishes new conceptual benchmarks to help security experts adapt strategy and policy to the unprecedented challenges of our times.

This book explores a broad cross section of research and actual case studies to draw out new insights that may be used to build a benchmark for IT security professionals. This research takes a deeper dive beneath the surface of the analysis to uncover novel ways to mitigate data security vulnerabilities, connect the dots and identify patterns in the data on breaches. This analysis will assist security professionals not only in benchmarking their risk management programs but also in identifying forward looking security measures to narrow the path of future vulnerabilities.

Explaining cybercrime in a highly networked world, this book provides a comprehensive yet accessible summary of the history, modern developments, and efforts to combat cybercrime in various forms at all levels of government—international, national, state, and local. • Provides accessible, comprehensive coverage of a complex topic that encompasses identity theft to copyright infringement written for non-technical readers • Pays due attention to important elements of cybercrime that have been largely ignored in the field, especially politics • Supplies examinations of both the domestic and international efforts to combat cybercrime • Serves an ideal text for first-year undergraduate students in criminal justice programs

This book constitutes the proceedings of the 17th International Symposium on Research in Attacks, Intrusions and Defenses, RAID 2014, held in Gothenburg, Sweden, in September 2014. The 22 full papers were carefully reviewed and selected from 113 submissions, and are presented together with 10 poster abstracts. The papers address all current topics in computer security, including network security, authentication, malware, intrusion detection, browser security, web application security, wireless security, vulnerability analysis.

The newest threat to security has been categorized as the Advanced Persistent Threat or APT. The APT bypasses most of an organization’s current security devices, and is typically carried out by an organized group, such as a foreign nation state or rogue group with both the capability and the intent to persistently and effectively target a specific entity and wreak havoc. Most organizations do not understand how to deal with it and what is needed to protect their network from compromise. In Advanced Persistent Threat: Understanding the Danger and How to Protect your Organization Eric Cole discusses the critical information that readers need to know about APT and how to avoid being a victim. Advanced Persistent Threat is the first comprehensive manual that discusses how attackers are breaking into systems and what to do to protect and defend against these intrusions. How and why organizations are being attacked How to develop a "Risk based Approach to Security" Tools for protecting data and preventing attacks Critical information on how to respond and recover from an intrusion The emerging threat to Cloud based networks

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Networked computing, wireless communications and portable electronic devices 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. Digital forensics also has myriad intelligence applications. Furthermore, it has a vital role in information assurance -- investigations of security breaches yield valuable information that can be used to design more secure systems. Advances in Digital Forensics X 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: - Internet Crime Investigations; - Forensic Techniques; - Mobile Device Forensics; - Forensic Tools and Training. This book is

the 10th 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 twenty-two edited papers from the 10th Annual IFIP WG 11.9 International Conference on Digital Forensics, held in Vienna, Austria in the winter of 2014. Advances in Digital Forensics X 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.

WILEY CIAexcel EXAM REVIEW 2019 THE SELF-STUDY SUPPORT YOU NEED TO PASS THE CIA EXAM Part 3: Internal Audit Knowledge Elements Provides comprehensive coverage based on the exam syllabus, along with multiple-choice practice questions with answers and explanations Deals with governance and business ethics, risk management, information technology, and the global business environment Features a glossary of CIA Exam terms—good source for candidates preparing for and answering the exam questions Assists the CIA Exam candidate in successfully preparing for the exam Based on the CIA body of knowledge developed by The Institute of Internal Auditors (IIA), Wiley CIAexcel Exam Review 2019 learning system provides a student-focused and learning-oriented experience for CIA candidates. Passing the CIA Exam on your first attempt is possible. We'd like to help. Feature section examines the topics of Governance and Business Ethics, Risk Management, Organizational Structure and Business Processes and Risks, Communications, Management and Leadership Principles, IT and Business Continuity, Financial Management, and Global Business Environment

These days all kinds of malware are pervasive on the Internet. Compared to their ancestors that were commonly used for vandalism or demonstration of skills, modern malware, such as Bots, are driven by the underground economics. Often consisting of hundreds to thousands of bots, botnets are one of the most serious threats on the Internet, responsible for various attacks, such as spamming and distributed denial of service (DDoS). As web browsers are the main interface for the majority of Internet users to surf the Internet today, many of such stealthy malware seek to invade via web browsers in the form of browser helper objects (BHO) and browser toolbars. To defend against Internet malware, existing schemes mainly rely on either signature-based or anomaly-based detection approaches. Signature-based detection is effective for known malware if the malware signature has been generated. However, the effectiveness of signature-based schemes is challenged by polymorphism, metamorphism, obfuscation, encryption, and other techniques. Moreover, signature-based schemes do not work for zero-day (or unknown) malware. On the other hand, anomaly-based detection schemes seek to detect behavior patterns that do not conform to the established normal patterns. Anomaly-based detection schemes do not require malware signatures. However, modern computer software and systems are often complicated, building and analyzing a comprehensive behavior model is time consuming and even impractical. To overcome these challenges, we propose a novel execution-based approach for stealthy malware detection. In order to facilitate such run-time detection, we aim to design and implement multi-level sandboxing techniques to create controlled running environments to execute testing programs so that their behaviors can be closely observed and analyzed. First, we leverage virtual machines for OS-level sandboxing to detect bots on individual hosts. By cloning the host image to a virtual machine and screening user input on the virtual machine, the detection noise is significantly reduced. We find that a typical bot exhibits three invariant features along its onset: (1) the startup of a bot is automatic without requiring any user actions; (2) a bot must establish a command and control channel with its botmaster; and (3) a bot will perform local or remote attacks sooner or later. These invariants indicate three indispensable phases (startup,

preparation, and attack) for a bot attack. Thus, we propose BotTracer to detect these three phases with the assistance of OS-level sandboxing techniques. To validate BotTracer, we implement a prototype of BotTracer based on VMware. The results show that BotTracer can successfully detect all the bots in the experiments. However, BotTracer may slightly degrade the user performance. Furthermore, advanced malware could evade BotTracer by performing virtual machine fingerprinting. Second, to overcome the limitations of OS-level sandboxes, we build Malyzer based on process-level sandboxes for malware detection. The key of Malyzer is to defeat malware anti-detection mechanisms at startup and runtime so that malware behaviors during execution can be accurately captured and distinguished. For analysis, Malyzer always starts a copy, referred to as a shadow process, of any suspicious process in the process-level sandbox by defeating all startup anti-detection mechanisms employed in the suspicious process. To defeat internal runtime anti-detection attempts, Malyzer further makes this shadow process mutually invisible to the original suspicious process. To defeat external anti-detection at- tempts, Malyzer makes as if the shadow process runs on a different machine to the outside. Since ultimately malware will conduct local information harvesting or dispersion, Malyzer constantly monitors the shadow processs behaviors and adopts a hybrid scheme for its behavior analysis. In our experiments, Malyzer can accurately detect all malware samples that employ various anti-detection techniques. Lastly, to detect and contain malicious browser plugins, we develop sePlugin with intraprocess sandboxing techniques. With an intra-process sandbox, only plugins are closely monitored for misbehavior detection without confining the entire process. This further reduces the detection overhead while maintaining transparency to end-users. Based on intra-process sandboxing techniques, we build sePlugin to enhance the security of a browser by enforcing security policies on plugins' accessing requests to the browser's internal objects and external system-level resources, such as file systems and network interfaces. sePlugin deals with both native and .NET-based plugins and its unique design renders it possible xii to work with commodity web browsers without requiring any modifications to the legacy browser architecture or plugin code. We implement sePlugin in Windows XP and IE8.

This book constitutes revised selected papers from the International Conference on Advanced Computing, Networking and Security, ADCONS 2011, held in Surathkal, India, in December 2011. The 73 papers included in this book were carefully reviewed and selected from 289 submissions. The papers are organized in topical sections on distributed computing, image processing, pattern recognition, applied algorithms, wireless networking, sensor networks, network infrastructure, cryptography, Web security, and application security.

SUCCESSFUL WRITING AT WORK, 11th Edition, features an abundance of real-world examples and problems, an accessible writing style, and detailed guidelines for planning, drafting, revising, editing, formatting, and producing professional documents and graphics in the global workplace. Students are presented with topics in four logically sequenced sections, beginning with a discussion of the writing process and collaboration, followed by material on basic business communications (including e-communications and social media), letters, and resumes; conducting research and documenting sources; and more advanced tasks such as preparing visuals, websites, instructions, procedures, proposals, short and long reports, and presentations. With each new writing assignment, students learn to become effective problem solvers, to work effectively as members of a collaborative team, to understand their global audience, and to select the best communication technologies to accomplish their goals. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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.

Bridging the divide between theory and practice, Deception: Counterdeception and Counterintelligence provides a thorough overview of the principles of deception and its uses in intelligence operations. This masterful guide focuses on practical training in deception for both operational planners and intelligence analysts using a case-based approach. Authors Robert M. Clark and William L. Mitchell draw from years of professional experience to offer a fresh approach to the roles played by information technologies such as social media. By reading and working through the exercises in this text, operations planners will learn how to build and conduct a deception campaign, and intelligence analysts will develop the ability to recognize deception and support deception campaigns. Key Features New channels for deception, such as social media, are explored to show you how to conduct and detect deception activities through information technology. Multichannel deception across the political, military, economic, social, infrastructure, and information domains provides you with insight into the variety of ways deception can be used as an instrument for gaining advantage in conflict. Contemporary and historical cases simulate real-world raw intelligence and provide you with opportunities to use theory to create a successful deception operation. A series of practical exercises encourages you to think critically about each situation. The exercises have several possible answers, and conflicting raw material is designed to lead readers to different answers depending on how the reader evaluates the material. Individual and team assignments offer you the flexibility to proceed through the exercises in any order and assign exercises based on what works best for the classroom setup.

This book constitutes the refereed proceedings of the 8th International Conference On Secure Knowledge Management In Artificial Intelligence Era, SKM 2019, held in Goa, India, in December 2019. The 12 full papers presented were carefully reviewed and selected from 34 submissions. They were organized according to the following topical sections: cyber security; security and artifcial intelligence; access control models; and social networks.

This best-selling guide provides a complete, practical, up-to-date introduction to network and computer security. SECURITY+ GUIDE TO NETWORK SECURITY FUNDAMENTALS, Fifth Edition, maps to the new CompTIA Security+ SY0-401 Certification Exam, providing thorough coverage of all domain objectives to help readers prepare for professional certification and career success. The text covers the essentials of network security, including compliance and operational security; threats and vulnerabilities; application, data, and host security; access control and identity management; and cryptography. The extensively updated Fifth Edition features a new structure based on major domains, a new chapter dedicated to mobile device

security, expanded coverage of attacks and defenses, and new and updated information reflecting recent developments and emerging trends in information security, such as virtualization. New hands-on and case activities help readers review and apply what they have learned, and end-of-chapter exercises direct readers to the Information Security Community Site for additional activities and a wealth of learning resources, including blogs, videos , and current news and information relevant to the information security field. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This book presents a comprehensive study of different tools and techniques available to perform network forensics. Also, various aspects of network forensics are reviewed as well as related technologies and their limitations. This helps security practitioners and researchers in better understanding of the problem, current solution space, and future research scope to detect and investigate various network intrusions against such attacks efficiently. Forensic computing is rapidly gaining importance since the amount of crime involving digital systems is steadily increasing. Furthermore, the area is still underdeveloped and poses many technical and legal challenges. The rapid development of the Internet over the past decade appeared to have facilitated an increase in the incidents of online attacks. There are many reasons which are motivating the attackers to be fearless in carrying out the attacks. For example, the speed with which an attack can be carried out, the anonymity provided by the medium, nature of medium where digital information is stolen without actually removing it, increased availability of potential victims and the global impact of the attacks are some of the aspects. Forensic analysis is performed at two different levels: Computer Forensics and Network Forensics. Computer forensics deals with the collection and analysis of data from computer systems, networks, communication streams and storage media in a manner admissible in a court of law. Network forensics deals with the capture, recording or analysis of network events in order to discover evidential information about the source of security attacks in a court of law. Network forensics is not another term for network security. It is an extended phase of network security as the data for forensic analysis are collected from security products like firewalls and intrusion detection systems. The results of this data analysis are utilized for investigating the attacks. Network forensics generally refers to the collection and analysis of network data such as network traffic, firewall logs, IDS logs, etc. Technically, it is a member of the already-existing and expanding the field of digital forensics. Analogously, network forensics is defined as "The use of scientifically proved techniques to collect, fuses, identifies, examine, correlate, analyze, and document digital evidence from multiple, actively processing and transmitting digital sources for the purpose of uncovering facts related to the planned intent, or measured success of unauthorized activities meant to disrupt, corrupt, and or compromise system components as well as providing information to assist in response to or recovery from these activities." Network forensics plays a significant role in the security of today’s organizations. On the one hand, it helps to learn the details of external attacks ensuring similar future attacks are thwarted. Additionally, network forensics is essential for investigating insiders’ abuses that constitute the second costliest type of attack within organizations. Finally, law enforcement requires network forensics for crimes in which a computer or digital system is either being the target of a crime or being used as a tool in carrying a crime. Network security protects the system against attack while network forensics focuses on recording evidence of the attack. Network security products are generalized and look for possible harmful behaviors. This monitoring is a continuous process and is performed all through the day. However, network forensics involves post mortem investigation of the attack and is initiated after crime notification. There are many tools which assist in capturing data transferred over the networks so that an attack or the malicious intent of the intrusions may be investigated. Similarly, various network forensic frameworks are proposed in the literature.

This book is designed for those who want a better grasp of the nature and existential threat of today's information wars. It uses a conceptual approach to explain the relevant concepts as well as the structural challenges and responsibilities with which policy makers struggle and practitioners must work.

A provocative, comprehensive analysis of Vladimir Putin and Russia's master plan to destroy democracy in the age of Donald Trump. In the greatest intelligence operation in the history of the world, Donald Trump was made President of the United States with the assistance of a foreign power. For the first time, The Plot to Destroy Democracy reveals the dramatic story of how blackmail, espionage, assassination, and psychological warfare were used by Vladimir Putin and his spy agencies to steal the 2016 U.S. election -- and attempted to bring about the fall of NATO, the European Union, and western democracy. It will show how Russia and its fifth column allies tried to flip the cornerstones of democracy in order to re-engineer the world political order that has kept most of the world free since 1945. Career U.S. Intelligence officer Malcolm Nance will examine how Russia has used cyber warfare, political propaganda, and manipulation of our perception of reality -- and will do so again -- to weaponize American news, traditional media, social media, and the workings of the internet to attack and break apart democratic institutions from within, and what we can expect to come should we fail to stop their next attack. Nance has utilized top secret Russian-sourced political and hybrid warfare strategy documents to demonstrate the master plan to undermine American institutions that has been in effect from the Cold War to the present day. Based on original research and countless interviews with espionage experts, Nance examines how Putin's recent hacking accomplished a crucial first step for destabilizing the West for Russia, and why Putin is just the man to do it. Nance exposes how Russia has supported the campaigns of right-wing extremists throughout both the U.S. and Europe to leverage an axis of autocracy, and how Putin's agencies have worked since 2010 to bring fringe candidate Donald Trump into elections. Revelatory, insightful, and shocking, The Plot To Destroy Democracy puts a professional spy lens on Putin's plot and unravels it play-by-play. In the end, he provides a better understanding of why Putin's efforts are a serious threat to our national security and global alliances -- in much more than one election -- and a blistering indictment of Putin's puppet, President Donald J. Trump.

How to Defeat Advanced Malware is a concise introduction to the concept of micro-virtualization. The book provides current facts and figures that prove detection- based security products have become ineffective. A simple strategy is then presented that both leverages the opportunities presented by Bring Your Own Device (BYOD) and protects enterprise end users against advanced malware. The book concludes with case studies demonstrating how hardware- isolated micro-VMs are helping Fortune 500 financial service providers defeat advanced malware. This book is primarily designed for infosec professionals, consultants, network administrators, CIO's, CTO's, CISO's and senior executives who work within the financial industry and are responsible for their company's endpoint protection. How to Defeat Advanced Malware: New Tools for Protection and Forensics is the first book to compare and contrast current endpoint security products, while making a case for encouraging and facilitating the growth of BYOD and social media by adopting micro-virtualization. Learn the basics of protecting your company's online-accessible assets Discover strategies that take advantage of micro-virtualization and BYOD Become adept at comparing and utilizing different endpoint security products and strategies

This book presents the combined proceedings of the 13th International Conference on Multimedia and Ubiquitous Engineering (MUE 2019) and the 14th International Conference on Future Information Technology (Future Tech 2019), both held in Xi'an, China, April 24 - 26, 2019. The aim of these two meetings was to promote discussion and interaction among academics, researchers and

professionals in the field of ubiquitous computing technologies. These proceedings reflect the state of the art in the development of computational methods, involving theory, algorithms, numerical simulation, error and uncertainty analysis and novel applications of new processing techniques in engineering, science, and other disciplines related to ubiquitous computing.

Learn the key objectives and most crucial concepts covered by the Security+ Exam SY0-601 with this comprehensive and practical study guide! An online test bank offers 650 practice questions and flashcards! The Eighth Edition of the CompTIA Security+ Study Guide Exam SY0-601 efficiently and comprehensively prepares you for the SY0-601 Exam. Accomplished authors and security experts Mike Chapple and David Seidl walk you through the fundamentals of crucial security topics, including the five domains covered by the SY0-601 Exam: Attacks, Threats, and Vulnerabilities Architecture and Design Implementation Operations and Incident Response Governance, Risk, and Compliance The study guide comes with the Sybex online, interactive learning environment offering 650 practice questions! Includes a pre-assessment test, hundreds of review questions, practice exams, flashcards, and a glossary of key terms. The book is written in a practical and straightforward manner, ensuring you can easily learn and retain the material. Perfect for everyone planning to take the SY0-601 Exam—as well as those who hope to secure a high-level certification like the CASP+, CISSP, or CISA—the study guide also belongs on the bookshelves of everyone who has ever wondered if the field of IT security is right for them. It’s a must-have reference!

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

This is the eBook version of the print title. Note that the eBook may not provide access to the practice test software that accompanies the print book. Learn, prepare, and practice for CompTIA Advanced Security Practitioner (CASP) CAS-003 exam success with this CompTIA Approved Cert Guide from Pearson IT Certification, a leader in IT Certification learning and a CompTIA Authorized Platinum Partner. Master CompTIA Advanced Security Practitioner (CASP)

CAS-003 exam topics Assess your knowledge with chapter-ending quizzes Review key concepts with exam preparation tasks CompTIA Advanced Security Practitioner (CASP) CAS-003 Cert Guide is a best-of-breed exam study guide. Leading security certification training experts Robin Abernathy and Troy McMillan share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. The book presents you with an organized test preparation routine through the use of proven series elements and techniques. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Review questions help you assess your knowledge, and a final preparation chapter guides you through tools and resources to help you craft your final study plan. Well-regarded for its level of detail, assessment features, and challenging review questions and exercises, this CompTIA approved study guide helps you master the concepts and techniques that will enable you to succeed on the exam the first time, including: Enterprise security Risk management and incident response Research, analysis, and assessment Integration of computing, communications, and business disciplines Technical integration of enterprise components

This book constitutes the refereed proceedings of the International Symposium on Security in Computing and Communications, SSCC 2015, held in Kochi, India, in August 2015. The 36 revised full papers presented together with 13 short papers were carefully reviewed and selected from 157 submissions. The papers are organized in topical sections on security in cloud computing; authentication and access control systems; cryptography and steganography; system and network security; application security.

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.
The ubiquity of modern technologies has allowed for increased connectivity between people and devices across the globe. This connected infrastructure of networks creates numerous opportunities for applications and uses. As the applications of the internet of things continue to progress so do the security concerns for this technology. The study of threat prevention in the internet of things is necessary as security breaches in this field can ruin industries and lives. Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications is a vital reference source that examines recent developments and emerging trends in security and privacy for the internet of things through new models, practical solutions, and technological advancements related to security. Highlighting a range of topics such as cloud security, threat detection, and open source software, this multi-volume book is ideally designed for engineers, IT consultants, ICT procurement managers, network system integrators, infrastructure service providers, researchers, academics, and professionals interested in current research on security practices pertaining to the internet of things.
This book constitutes the refereed proceedings of the 21th International Conference on Information and Communications Security, ICICS 2019, held in Beijing, China, in December 2019. The 47 revised full papers were carefully selected from 199 submissions. The papers are organized in topics on malware analysis and detection, IoT and CPS security enterprise network security, software security, system security, authentication, applied cryptograph internet security, machine learning security, machine learning privacy, Web security, steganography and steganalysis.
Get effective and efficient instruction on all CIA business knowledge exam competencies in 2021 Updated for 2021, the Wiley CIA Exam Review 2021, Part 3 Business Knowledge for Internal Auditing offers readers a comprehensive overview of the internal auditing process as set out by the Institute of Internal Auditors. The Exam Review covers the four domains tested by the Certified Internal Auditor exam, including: Business acumen Information security Information technology Financial management The Wiley CIA Exam Review

2021, Part 3 Business Knowledge for Internal Auditing is a perfect resource for candidates preparing for the CIA exam. It provides an accessible and efficient learning experience for students regardless of their current level of proficiency. NOTE: The exam this book covered, CASP: CompTIA Advanced Security Practitioner (Exam CAS-002), was retired by CompTIA in 2019 and is no longer offered. For coverage of the current exam CASP+ CompTIA Advanced Security Practitioner: Exam CAS-003, Third Edition, please look for the latest edition of this guide: CASP+ CompTIA Advanced Security Practitioner Study Guide: Exam CAS-003, Third Edition (9781119477648). CASP: CompTIA Advanced Security Practitioner Study Guide: CAS-002 is the updated edition of the bestselling book covering the CASP certification exam. CompTIA approved, this guide covers all of the CASP exam objectives with clear, concise, thorough information on crucial security topics. With practical examples and insights drawn from real-world experience, the book is a comprehensive study resource with authoritative coverage of key concepts. Exam highlights, end-of-chapter reviews, and a searchable glossary help with information retention, and cutting-edge exam prep software offers electronic flashcards and hundreds of bonus practice questions. Additional hands-on lab exercises mimic the exam's focus on practical application, providing extra opportunities for readers to test their skills. CASP is a DoD 8570.1-recognized security certification that validates the skillset of advanced-level IT security professionals. The exam measures the technical knowledge and skills required to conceptualize, design, and engineer secure solutions across complex enterprise environments, as well as the ability to think critically and apply good judgment across a broad spectrum of security disciplines. This study guide helps CASP candidates thoroughly prepare for the exam, providing the opportunity to: Master risk management and incident response Sharpen research and analysis skills Integrate computing with communications and business Review enterprise management and technical component integration Experts predict a 45-fold increase in digital data by 2020, with one-third of all information passing through the cloud. Data has never been so vulnerable, and the demand for certified security professionals is increasing quickly. The CASP proves an IT professional's skills, but getting that certification requires thorough preparation. This CASP study guide provides the information and practice that eliminate surprises on exam day. Also available as a set, Security Practitoner & Crypotography Set, 9781119071549 with Applied Cryptography: Protocols, Algorithms, and Source Code in C, 2nd Edition. Cyber-Security Threats, Actors, and Dynamic Mitigation provides both a technical and state-of-the-art perspective as well as a systematic overview of the recent advances in different facets of cyber-security. It covers the methodologies for modeling attack strategies used by threat actors targeting devices, systems, and networks such as smart homes, critical infrastructures, and industrial IoT. With a comprehensive review of the threat landscape, the book explores both common and sophisticated threats to systems and networks. Tools and methodologies are

presented for precise modeling of attack strategies, which can be used both proactively in risk management and reactively in intrusion prevention and response systems. Several contemporary techniques are offered ranging from reconnaissance and penetration testing to malware detection, analysis, and mitigation. Advanced machine learning-based approaches are also included in the area of anomaly-based detection, that are capable of detecting attacks relying on zero-day vulnerabilities and exploits. Academics, researchers, and professionals in cyber-security who want an in-depth look at the contemporary aspects of the field will find this book of interest. Those wanting a unique reference for various cyber-security threats and how they are detected, analyzed, and mitigated will reach for this book often.

Can machine learning techniques solve our computer security problems and finally put an end to the cat-and-mouse game between attackers and defenders? Or is this hope merely hype? Now you can dive into the science and answer this question for yourself! With this practical guide, you'll explore ways to apply machine learning to security issues such as intrusion detection, malware classification, and network analysis. Machine learning and security specialists Clarence Chio and David Freeman provide a framework for discussing the marriage of these two fields, as well as a toolkit of machine-learning algorithms that you can apply to an array of security problems. This book is ideal for security engineers and data scientists alike. Learn how machine learning has contributed to the success of modern spam filters Quickly detect anomalies, including breaches, fraud, and impending system failure Conduct malware analysis by extracting useful information from computer binaries Uncover attackers within the network by finding patterns inside datasets Examine how attackers exploit consumer-facing websites and app functionality Translate your machine learning algorithms from the lab to production Understand the threat attackers pose to machine learning solutions

This book presents the latest trends in attacks and protection methods of Critical Infrastructures. It describes original research models and applied solutions for protecting major emerging threats in Critical Infrastructures and their underlying networks. It presents a number of emerging endeavors, from newly adopted technical expertise in industrial security to efficient modeling and implementation of attacks and relevant security measures in industrial control systems; including advancements in hardware and services security, interdependency networks, risk analysis, and control systems security along with their underlying protocols. Novel attacks against Critical Infrastructures (CI) demand novel security solutions. Simply adding more of what is done already (e.g. more thorough risk assessments, more expensive Intrusion Prevention/Detection Systems, more efficient firewalls, etc.) is simply not enough against threats and attacks that seem to have evolved beyond modern analyses and protection methods. The knowledge presented here will help Critical Infrastructure authorities, security officers, Industrial Control Systems (ICS) personnel and relevant researchers to

(i) get acquainted with advancements in the field, (ii) integrate security research into their industrial or research work, (iii) evolve current practices in modeling and analyzing Critical Infrastructures, and (iv) moderate potential crises and emergencies influencing or emerging from Critical Infrastructures.

Complete exam review for the third part of the Certified Internal Auditor exam The Wiley CIA 2022 Part 3 Exam Review: Business Knowledge for Internal Auditing offers students preparing for the Certified Internal Auditor 2022 exam complete coverage of the business knowledge portion of the test. Entirely consistent with the guidelines set by the Institute of Internal Auditors (IIA), this resource covers each of the four domains explored by the test, including: Business acumen. Information security. Information technology. Financial management. This reference provides an accessible and efficient learning experience for students, regardless of their current level of comfort with the material.

Presents an introduction to different types of malware and viruses, describes antivirus solutions, offers ways to detect spyware and malware, and discusses the use of firewalls and other security options.