Introduction To Computer Forensics Course Syllabus

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The Art of Memory Forensics - Michael Hale Ligh 2014-07-22

Memory forensics provides cutting edge technology to help investigate digital attacks Memory forensics is the art of analyzing computer memory (RAM) to solve digital crimes. As a follow-up to the best seller Malware Analyst's Cookbook, experts in the fields of malware, security, and digital forensics bring you a step-by-step guide to memory forensics—now the most sought after skill in the digital forensics and incident response fields. Beginning with introductory concepts and moving toward the advanced, The Art of Memory Forensics: Detecting Malware and Threats in Windows, Linux, and Mac Memory is based on a five day training course that the authors have presented to hundreds of students. It is the only book on the market that focuses exclusively on memory forensics and how to deploy such techniques properly. Discover memory forensics techniques: How volatile memory analysis improves digital investigations Proper investigative steps for detecting stealth malware and advanced threats How to use free, open source tools for conducting thorough memory forensics Ways to acquire memory from suspect systems in a forensically sound manner The next era of malware and security breaches are more sophisticated and targeted, and the volatile memory of a computer is often overlooked or destroyed as part of the incident response process. The Art of Memory Forensics explains the latest technological innovations in digital forensics to help bridge this gap. It covers the most popular and recently released versions of Windows, Linux, and Mac, including both the 32 and 64-bit editions.

An Overview on Cybercrime & Security, Volume - I - Akash Kamal Mishra 2020-08-17

Cybersecurity is significant in light of the fact that cybersecurity chance is expanding. Driven by worldwide network and use of cloud administrations, similar to Amazon Web Services, to store touchy information and individual data. Across the board, helpless setup of cloud administrations combined with progressively refined cybercriminals implies the hazard that your association experiences a fruitful digital assault or information break is on the ascent. Digital dangers can emerge out of any degree of your association. You should teach your staff about basic social building tricks like phishing and more complex cybersecurity assaults like ransomware or other malware intended to take protected innovation or individual information and many more. I hereby present a manual which will not only help you to know your rights as well as how to keep yourself safe on cyberspace. The book has been awarded by many experts as well as it has also been recognised by the University of Mumbai for their B.com - Banking & Insurance as well as on Investment Management Program.

Cyber Forensics - Jr., Albert Marcella 2002-01-23

Given our increasing dependency on computing technology in daily business processes, and the growing opportunity to use engineering technologies to engage in illegal, unauthorized, and unethical acts aimed at corporate infrastructure, every organization is at risk. Cyber Forensics: A Field Manual for Collecting, Examining, and Preserving Evidence o

Digital Forensics - André Årnes 2017-05-18

The definitive text for students of digital forensics, as well as professionals looking to deepen their understanding of an increasingly critical field Written by faculty members and associates of the world-renowned Norwegian Information Security Laboratory (NisLab) at the Norwegian University of Science and Technology (NTNU), this textbook takes a scientific approach to digital forensics ideally suited for university courses in digital forensics and information security. Each chapter was written by an accomplished expert in his or her field, many of them with extensive experience in law enforcement and industry. The author team comprises experts in digital forensics, cybercrime law, information security and related areas. Digital forensics is a key competency in meeting the growing risks of cybercrime, as well as for criminal investigation generally. Considering the astonishing pace at which new information technology – and new ways of exploiting information technology – is brought on line, researchers and practitioners regularly face new technical challenges, forcing them to continuously upgrade their investigatory skills. Designed to prepare the next generation to rise to those challenges, the material contained in Digital Forensics has been tested and refined by use in both graduate and undergraduate programs and subjected to formal evaluations for more than ten years. Encompasses all aspects of the field, including methodological, scientific, technical and legal matters Based on the latest research, it provides novel insights for students, including an informed look at the future of digital forensics Includes test questions from actual exam sets, multiple choice questions suitable for online use and numerous visuals, illustrations and case example images Features real-word examples and scenarios, including court cases and technical problems, as well as a rich library of academic references and references to online media Digital Forensics is an excellent introductory text for programs in computer science and computer engineering and for master degree programs in military and police education. It is also a valuable reference for legal practitioners, police officers, investigators, and forensic practitioners seeking to gain a deeper understanding of digital forensics and cybercrime.

An Introduction to American Policing - Dennis J. Stevens 2017-05-08

An Introduction to American Policing, Second Edition connects the US criminal justice system, criminology, and law enforcement knowledge to the progress of the police community. It is the perfect resource for a Police Science course.

Python Forensics - Chet Hosmer 2014-05-19

Python Forensics provides many never-before-published proven forensic modules, libraries, and solutions that can be used right out of the box. In addition, detailed instruction and documentation provided with the code samples will allow even novice Python programmers to add their own unique twists or use the models presented to build new solutions. Rapid development of new cybercrime investigation tools is an essential ingredient in virtually every case and environment. Whether you are performing post-mortem investigation, executing live triage, extracting evidence from mobile devices or cloud services, or you are collecting and processing evidence from a network, Python forensic implementations can fill in the gaps. Drawing upon years of practical experience and using numerous examples and illustrative code samples, author Chet Hosmer discusses how to: Develop new forensic solutions independent of large vendor software release schedules Participate in an open-source workbench that facilitates direct involvement in the design and implementation of new methods that augment or replace existing tools Advance your career by creating new solutions along with the construction of cutting-edge automation solutions to solve old problems Provides hands-on tools, code samples, and detailed instruction and documentation that can be put to use immediately Discusses how to create a Python forensics workbench Covers effective forensic searching and indexing using Python Shows how to use Python to examine mobile device operating systems: iOS, Android, and Windows 8 Presents complete coverage of how to use Python scripts for network investigation

Digital Forensics, Investigation, and Response - Chuck Easttom 2021-08-10

Digital Forensics, Investigation, and Response, Fourth Edition examines the fundamentals of system forensics, addresses the tools, techniques, and methods used to perform computer forensics and investigation, and explores incident and intrusion response,

Introduction to Forensic Science and Criminalistics, Second Edition - Howard A. Harris 2019-06-20

This Second Edition of the best-selling Introduction to Forensic Science and Criminalistics presents the practice of forensic science from a broad viewpoint. The book has been developed to serve as an introductory textbook for courses at the undergraduate level—for both majors and non-majors—to provide students with a working understanding of forensic science. The Second Edition is fully updated to cover the latest scientific methods of evidence collection, evidence analytic techniques, and the application of the analysis results to an investigation and use in court. This includes coverage of physical evidence, evidence collection, crime scene processing, pattern evidence, fingerprint evidence, questioned documents, DNA and biological evidence, drug evidence, toolmarks and fireams, arson and explosives, chemical testing, and a new chapter of computer and digital forensic evidence. Chapters address crime scene evidence, laboratory procedures, emergency technologies, as well as an adjudication of both criminal and civil cases utilizing the evidence. All coverage has been fully updated in all areas that have advanced since the publication of the last edition. Features include: Progresses from introductory concepts—of the legal system and crime scene concepts—to DNA, forensic biology, chemistry, and laboratory principles Introduces students to the scientific method and the application of it to the analysis to various types, and classifications, of forensic evidence The authors' 90-plus years of real-world police, investigative, and forensic science laboratory experience is brought to bear on the application of forensic science to the investigation and prosecution of cases Addresses the latest developments and advances in forensic sciences, particularly in evidence collection Offers a full complement of instructor's resources to qualifying professors Includes full pedagogy—including learning objectives, key terms, end-of-chapter questions, and boxed case examples—to encourage classroom learning and retention Introduction to Forensic Science and Criminalistics, Second Edition, will serve as an invaluable resource for students in their quest to understand the application of science, and the scientific method, to various forensic disciplines in the pursuit of law and justice through the court system. An Instructor's Manual with Test Bank and Chapter PowerPoint® slides are available upon qualified course adoption.

Computer Forensics InfoSec Pro Guide - David Cowen 2013-04-19

Security Smarts for the Self-Guided IT Professional Find out how to excel in the field of computer forensics investigations. Learn what it takes to transition from an IT professional to a computer forensic examiner in the private sector. Written by a Certified Information Systems Security Professional, Computer Forensics: InfoSec Pro Guide is filled with real-world case studies that demonstrate the concepts covered in the book. You'll learn how to set up a forensics lab, select hardware and software, choose forensic imaging procedures, test your tools, capture evidence from different sources, follow a sound investigative process, safely store evidence, and verify your findings. Best practices for documenting your results, preparing reports, and presenting evidence in court are also covered in this detailed resource. Computer Forensics: InfoSec Pro Guide features: Lingo—Common security terms defined so that you're in the know on the job IMHO—Frank and relevant opinions based on the author's years of industry experience Budget Note—Tips for getting security technologies and processes into your organization's budget In Actual Practice—Exceptions to the rules of security explained in real-world contexts Your Plan—Customizable checklists you can use on the job now Into Action—Tips on how, why, and when to apply new skills and techniques at work

Computer Forensics and Cyber Crime - Marjie Britz 2013

The leading introduction to computer crime and forensicsis now fully updated to reflect today's newest attacks, laws, and investigatory best practices. Packed with new case studies, examples, and statistics, Computer Forensics and Cyber Crime, Third Edition adds up-to-the-minute coverage of smartphones, cloud computing, GPS, Mac OS X, Linux, Stuxnet, cyberbullying, cyberterrorism, search and seizure, online gambling, and much more. Covers all forms of modern and traditional computer crime, defines all relevant terms, and explains all technical and legal concepts in plain English, so students can succeed even if they have no technical, legal, or investigatory background.

Introduction to Computer Security - Matthew A. Bishop 2005

Introduction to Computer Security draws upon Bishop's widely praised Computer Security: Art and Science, without the highly complex and mathematical coverage that most undergraduate students would find difficult or unnecessary. The result: the field's most concise, accessible, and useful introduction. Matt Bishop thoroughly introduces fundamental techniques and principles for modeling and analyzing security. Readers learn how to express security requirements, translate requirements into policies, implement mechanisms that enforce policy, and ensure that policies are effective. Along the way, the author explains how failures may be exploited by attackers--and how attacks may be discovered, understood, and countered. Supplements available including slides and solutions.

Android Forensics - Andrew Hoog 2011-06-15

The open source nature of the platform has not only established a new direction for the industry, but enables a developer or forensic analyst to understand the device at the most fundamental level. Android Forensics covers an open source mobile device platform based on the Linux 2.6 kernel and managed by the Open Handset Alliance. The Android platform is a major source of digital forensic investigation and analysis. This book provides a thorough review of the Android platform including supported hardware devices, the structure of the Android development project and implementation of core services (wireless communication, data storage and other low-level functions). Finally, it will focus on teaching readers how to apply actual forensic techniques to recover data. Ability to forensically acquire Android devices using the techniques outlined in the book Detailed information about Android applications needed for forensics investigations Important information about SQLite, a file based structured data storage relevant for both Android and many other platforms.

What Every Engineer Should Know About Cyber Security and Digital Forensics - Joanna F. DeFranco 2013-10-18

Most organizations place a high priority on keeping data secure, but not every organization invests in training its engineers or employees in understanding the security risks involved when using or developing technology. Designed for the non-security professional, What Every Engineer Should Know About Cyber Security and Digital Forensics is an overview of the field of cyber security. Exploring the cyber security topics that every engineer should understand, the book discusses: Network security Personal data security Cloud computing Mobile computing Preparing for an incident Incident response Evidence handling Internet usage Law and compliance Security and forensic certifications Application of the concepts is demonstrated through short case studies of real-world incidents chronologically delineating related events. The book also discusses certifications and reference manuals in the area of cyber security and digital forensics. By mastering the principles in this volume, engineering professionals will not only better understand how to mitigate the risk of security incidents and keep their data secure, but also understand how to break into this expanding profession.

Cyber Forensics - Albert J. Marcella 2021-09-12

Threat actors, be they cyber criminals, terrorists, hacktivists or disgruntled employees, are employing sophisticated attack techniques and anti-forensics tools to cover their attacks and breach attempts. As emerging and hybrid technologies continue to influence daily business decisions, the proactive use of cyber forensics to better assess the risks that the exploitation of these technologies pose to enterprise-wide operations is rapidly becoming a strategic business objective. This book moves beyond the typical, technical approach to discussing cyber forensics processes and procedures. Instead, the authors examine how cyber forensics can be applied to identifying, collecting, and examining evidential data from emerging and hybrid technologies, while taking steps to proactively manage the influence and impact, as well as the policy and governance aspects of these technologies and their effect on business operations. A world-class team of cyber forensics researchers, investigators, practitioners and law enforcement professionals have come together to provide the reader with insights and recommendations into the proactive application of cyber forensic methodologies and procedures to both protect data and to identify digital evidence related to the misuse of these data. This book is an essential guide for both the technical and non-technical executive, manager, attorney, auditor, and general practitioner who is seeking an authoritative source on how cyber forensics may be applied to both evidential data collection and to proactively managing today's and tomorrow's emerging and hybrid technologies. The book will also serve as a primary or supplemental text in both under- and post-graduate academic programs addressing information, operational and emerging technologies, cyber forensics, networks, cloud computing and cybersecurity.

Windows Forensic Analysis DVD Toolkit - Harlan Carvey 2018-04-22

Windows Forensic Analysis DVD Toolkit, 2nd Edition, is a completely updated and expanded version of Harlan Carvey's best-selling forensics book on incident response and investigating cybercrime on Windows systems. With this book, you will learn how to analyze data during live and post-mortem investigations. New to this edition is Forensic Analysis on a Budget, which collects freely available tools that are essential for small labs, state (or below) law enforcement, and educational organizations. The book also includes new pedagogical elements, Lessons from the Field, Case Studies, and War Stories that present real-life experiences by an expert in the trenches, making the material real and showing the why behind the how. The companion DVD contains significant, and unique, materials (movies, spreadsheet, code, etc.) not available anyplace else because they were created by the author. This book will appeal to digital forensic investigators, IT security professionals, engineers, and system administrators as well as students and consultants. Best-Selling Windows Digital Forensic book completely updated in this 2nd Edition Learn how to Analyze Data During Live and Post-Mortem Investigations DVD Includes Custom Tools, Updated Code, Movies, and Spreadsheets!

Criminal Investigation Command (CID) Illustrative Crime Scene Forensics Presentations - 2008-01-01

CONTENTS by CHAPTER: 1. TRACE EVIDENCE, 62 slides 2. LATENT EVIDENCE, 73 slides 3. PATENT EVIDENCE, 67 slides 4. BLOOD SPLATTER ANALYSIS, 24 slides 5. HUMAN REMAINS RECOVERY, 34 slides 6. FORENSIC ENTOMOLOGY, 33 slides 7. CRIME SCENE PHOTOGRAPHY, 127 slides 8. GRID PHOTOGRAPHY, 37 slides 9. ALTERNATE LIGHT SOURCE AND OBLIQUE LIGHTING, 61 slides 10. POST BLAST SCENE PROCESSING, 59 slides 11. HAZARD IDENTIFICATION, 103 slides 12. POST BLAST INVESTIGATION, 59 slides 13. REMAINS PROCESSING, 125 slides ++++ PLUS MORE ++++

Computer Forensics: Hard Disk and Operating Systems - EC-Council 2009-09-17

The Computer Forensic Series by EC-Council provides the knowledge and skills to identify, track, and prosecute the cyber-criminal. The series is comprised of five books covering a broad base of topics in Computer Hacking Forensic Investigation, designed to expose the reader to the process of detecting attacks and collecting evidence in a forensically sound manner with the intent to report crime and prevent future attacks. Learners are introduced to advanced techniques in computer investigation and analysis with interest in generating potential legal evidence. In full, this and the other four books provide preparation to identify evidence in computer related crime and abuse cases as well as track the intrusive hacker's path through a client system. The series and accompanying labs help prepare the security student or professional to profile an intruder's footprint and gather all necessary information and evidence to support prosecution in a court of law. Hard Disks, File and Operating Systems provides a basic understanding of file systems, hard disks and digital media devices. Boot processes, Windows and Linux Forensics and application of password crackers are all discussed. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

File System Forensic Analysis - Brian Carrier 2005-03-17

The Definitive Guide to File System Analysis: Key Concepts and Hands-on Techniques Most digital evidence is stored within the computer's file system, but understanding how file systems work is one of the most technically challenging concepts for a digital investigator because there exists little documentation. Now, security expert Brian Carrier has written the definitive reference for everyone who wants to understand and be able to testify about how file system analysis is performed. Carrier begins with an overview of investigation and computer foundations and then gives an authoritative, comprehensive, and illustrated overview of contemporary volume and file systems: Crucial information for discovering hidden evidence, recovering deleted data, and validating your tools. Along the way, he describes data structures, analyzes example disk images, provides advanced investigation scenarios, and uses today's most valuable open source file system analysis tools—including tools he personally developed. Coverage includes Preserving the digital crime scene and duplicating hard disks for "dead analysis" Identifying hidden data on a disk's Host Protected Area (HPA) Reading source data: Direct versus BIOS access, dead versus live acquisition, error handling, and more Analyzing DOS, Apple, and GPT partitions; BSD disk labels; and Sun Volume Table of Contents using key concepts, data structures, and specific techniques Analyzing the contents of multiple disk volumes, such as RAID and disk spanning Analyzing FAT, NTFS, Ext2, Ext3, UFS1, and UFS2 file systems using key concepts, data structures, and specific techniques Finding evidence: File metadata, recovery of deleted files, data hiding locations, and more Using The Sleuth Kit (TSK), Autopsy Forensic Browser, and related open source tools When it comes to file system analysis, no other book offers this much detail or expertise. Whether you're a digital forensics specialist, incident response team member, law enforcement officer, corporate security specialist, or auditor, this book will become an indispensable resource for forensic investigations, no matter what analysis tools you use.

E-Discovery: An Introduction to Digital Evidence - Amelia Phillips 2013-08-09

Essential for anyone who works with technology in the field, E-DISCOVERY is a hands-on, how-to training guide that provides students with comprehensive coverage of the technology used in e-discovery in civil and criminal cases. From discovery identification to collection, processing, review, production, and trial presentation, this practical text covers everything your students need to know about e-discovery, including the Federal Rules of Civil Procedure, Federal Rules of Criminal Procedure, and Federal Rules of Evidence. Throughout the text, students will have the opportunity to work with e-discovery tools such as Discovery Attender, computer forensics tools such as AccessData's Forensics ToolKit, as well as popular processing and review platforms such as iConect, Concordance, and iPro. An interactive courtroom tutorial and use of Trial Director are included to complete the litigation cycle. Multiple tools are discussed for each phase, giving your students a good selection of potential resources for each task. Finally , real-life examples are woven throughout the text, revealing little talked-about potential pitfalls, as well as best practice and cost management suggestions. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Cybercrime and Digital Forensics - Thomas J. Holt 2015-02-11

The emergence of the World Wide Web, smartphones, and Computer-Mediated Communications (CMCs) profoundly affect the way in which people interact online and offline. Individuals who engage in socially unacceptable or outright criminal acts increasingly utilize technology to connect with one another in ways that are not otherwise possible in the real world due to shame, social stigma, or risk of detection. As a consequence, there are now myriad opportunities for wrongdoing and abuse through technology. This book offers a comprehensive and integrative introduction to cybercrime. It is the first to connect the disparate literature on the various types of cybercrime, the investigation and detection of cybercrime and the role of digital information, and the wider role of technology as a facilitator for social relationships between deviants and criminals. It includes coverage of: key theoretical and methodological perspectives, computer hacking and digital piracy, economic crime and online fraud, pornography and online sex crime, cyber-bulling and cyber-stalking, cyber-terrorism and extremism, digital forensic investigation and its legal context, cybercrime policy. This book includes lively and engaging features, such as discussion questions, boxed examples of unique events and key figures in offending, quotes from interviews with active offenders and a full glossary of terms. It is supplemented by a companion website that includes further students exercises and instructor resources. This text is essential reading for courses on cybercrime, cyber-deviancy, digital forensics, cybercrime investigation and the sociology of technology.

E-Discovery: An Introduction to Digital Evidence - Amelia Phillips 2013-08-09

Essential for anyone who works with technology in the field, E-DISCOVERY is a hands-on, how-to training guide that provides students with comprehensive coverage of the technology used in e-discovery in civil and criminal cases. From discovery identification to collection, processing, review, production, and trial presentation, this practical text covers everything your students need to know about e-discovery, including the Federal Rules of Civil Procedure, Federal Rules of Criminal Procedure, and Federal Rules of Evidence. Throughout the text, students will have the opportunity to work with e-discovery tools such as Discovery Attender, computer forensics tools such as AccessData's Forensics ToolKit, as well as popular processing and review platforms such as iConect, Concordance, and iPro. An interactive courtroom tutorial and use of Trial Director are included to complete the litigation cycle. Multiple tools are discussed for each phase, giving your students a good selection of potential resources for each task. Finally , real-life examples are

woven throughout the text, revealing little talked-about potential pitfalls, as well as best practice and cost management suggestions. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Learn Ethical Hacking from Scratch - Zaid Sabih 2018-07-31

Learn how to hack systems like black hat hackers and secure them like security experts Key Features Understand how computer systems work and their vulnerabilities Exploit weaknesses and hack into machines to test their security Learn how to secure systems from hackers Book Description This book starts with the basics of ethical hacking, how to practice hacking safely and legally, and how to install and interact with Kali Linux and the Linux terminal. You will explore network hacking, where you will see how to test the security of wired and wireless networks. You'll also learn how to crack the password for any Wi-Fi network (whether it uses WEP, WPA, or WPA2) and spy on the connected devices. Moving on, you will discover how to gain access to remote computer systems using client-side and server-side attacks. You will also get the hang of post-exploitation techniques, including remotely controlling and interacting with the systems that you compromised. Towards the end of the book, you will be able to pick up web application hacking techniques. You'll see how to discover, exploit, and prevent a number of website vulnerabilities, such as XSS and SQL injections. The attacks covered are practical techniques that work against real systems and are purely for educational purposes. At the end of each section, you will learn how to detect, prevent, and secure systems from these attacks. What you will learn Understand ethical hacking and the different fields and types of hackers Set up a penetration testing lab to practice safe and legal hacking Explore Linux basics, commands, and how to interact with the terminal Access password-protected networks and spy on connected clients Use server and client-side attacks to hack and control remote computers Control a hacked system remotely and use it to hack other systems Discover, exploit, and prevent a number of web application vulnerabilities such as XSS and SQL injections Who this book is for Learning Ethical Hacking from Scratch is for anyone interested in learning how to hack and test the security of systems like professional hackers and security experts.

Incident Response & Computer Forensics, Third Edition - Jason T. Luttgens 2014-08-01

The definitive guide to incident response--updated for the first time in a decade! Thoroughly revised to cover the latest and most effective tools and techniques, Incident Response & Computer Forensics, Third Edition arms you with the information you need to get your organization out of trouble when data breaches occur. This practical resource covers the entire lifecycle of incident response, including preparation, data collection, data analysis, and remediation. Real-world case studies reveal the methods behind--and remediation strategies for--today's most insidious attacks. Architect an infrastructure that allows for methodical investigation and remediation Develop leads, identify indicators of compromise, and determine incident scope Collect and preserve live data Perform forensic duplication Analyze data from networks, enterprise services, and applications Investigate Windows and Mac OS X systems Perform malware triage Write detailed incident response reports Create and implement comprehensive remediation plans

Handbook of Digital Forensics and Investigation - Eoghan Casey 2009-10-07

Handbook of Digital Forensics and Investigation builds on the success of the Handbook of Computer Crime Investigation, bringing together renowned experts in all areas of digital forensics and investigation to provide the consummate resource for practitioners in the field. It is also designed as an accompanying text to Digital Evidence and Computer Crime. This unique collection details how to conduct digital investigations in both criminal and civil contexts, and how to locate and utilize digital evidence on computers, networks, and embedded systems. Specifically, the Investigative Methodology section of the Handbook provides expert guidance in the three main areas of practice: Forensic Analysis, Electronic Discovery, and Intrusion Investigation. The Technology section is extended and updated to reflect the state of the art in each area of specialization. The main areas of focus in the Technology section are forensic analysis of Windows, Unix, Macintosh, and embedded systems (including cellular telephones and other mobile devices), and investigations involving networks (including enterprise environments and mobile telecommunications technology). This handbook is an essential technical reference and on-the-job guide that IT professionals, forensic practitioners, law enforcement, and attorneys will rely on when confronted with computer related crime and digital evidence of any kind. *Provides methodologies proven in practice for conducting digital investigations of all kinds *Demonstrates how to locate and interpret a wide variety of digital evidence, and how it can be useful in investigations *Presents tools in the context of the investigative process, including EnCase, FTK, ProDiscover, foremost, XACT, Network Miner, Splunk, flow-tools, and many other specialized utilities and analysis platforms *Case examples in every chapter give readers a practical understanding of the technical, logistical, and legal challenges that arise in real investigations

Computer Forensics - Warren G. Kruse II 2001-09-26

Every computer crime leaves tracks–you just have to know where to find them. This book shows you how to collect and analyze the digital evidence left behind in a digital crime scene. Computers have always been susceptible to unwanted intrusions, but as the sophistication of computer technology increases so does the need to anticipate, and safeguard against, a corresponding rise in computer-related criminal activity. Computer forensics, the newest branch of computer security, focuses on the aftermath of a computer security incident. The goal of computer forensics is to conduct a structured investigation to determine exactly what happened, who was responsible, and to perform the investigation in such a way that the results are useful in a criminal proceeding. Written by two experts in digital investigation, Computer Forensics provides extensive information on how to handle the computer as evidence. Kruse and Heiser walk the reader through the complete forensics process–from the initial collection of evidence through the final report. Topics include an overview of the forensic relevance of encryption, the examination of digital evidence for clues, and the most effective way to present your evidence and conclusions in court. Unique forensic issues associated with both the Unix and the Windows NT/2000 operating systems are thoroughly covered. This book provides a detailed methodology for collecting, preserving, and effectively using evidence by addressing the three A's of computer forensics: Acquire the evidence without altering or damaging the original data. Authenticate that your recorded evidence is the same as the original seized data. Analyze the data without modifying the recovered data. Computer Forensics is written for everyone who is responsible for investigating digital criminal incidents or who may be interested in the techniques that such investigators use. It is equally helpful to those investigating hacked web servers, and those who are investigating the source of illegal pornography.

The Basics of Digital Forensics - John Sammons 2014-12-09

The Basics of Digital Forensics provides a foundation for people new to the digital forensics field. This book teaches you how to conduct examinations by discussing what digital forensics is, the methodologies used, key tactical concepts, and the tools needed to perform examinations. Details on digital forensics for computers, networks, cell phones, GPS, the cloud and the Internet are discussed. Also, learn how to collect evidence, document the scene, and how deleted data can be recovered. The new Second Edition of this book provides you with completely up-to-date real-world examples and all the key technologies used in digital forensics, as well as new coverage of network intrusion response, how hard drives are organized, and electronic discovery. You'll also learn how to incorporate quality assurance into an investigation, how to prioritize evidence items to examine (triage), case processing, and what goes into making an expert witness. The Second Edition also features expanded resources and references, including online resources that keep you current, sample legal documents, and suggested further reading. Learn what Digital Forensics entails Build a toolkit and prepare an investigative plan Understand the common artifacts to look for in an exam Second Edition features all-new coverage of hard drives, triage, network intrusion response, and electronic discovery; as well as updated case studies, expert interviews, and expanded resources and references

Computer Forensics JumpStart - Micah Solomon 2008-05-05

Launch Your Career in Computer Forensics—Quickly and Effectively Written by a team of computer forensics experts, Computer Forensics JumpStart provides all the core information you need to launch your career in this fast-growing field: Conducting a computer forensics investigation Examining the layout of a network Finding hidden data Capturing images Identifying, collecting, and preserving computer evidence Understanding encryption and examining encrypted files Documenting your case Evaluating common computer forensic tools Presenting computer evidence in court as an expert witness

The Best Damn Cybercrime and Digital Forensics Book Period - Jack Wiles 2011-04-18

Electronic discovery refers to a process in which electronic data is sought, located, secured, and searched with the intent of using it as evidence in a legal case. Computer forensics is the application of computer investigation and analysis techniques to perform an investigation to find out exactly what happened on a computer and who was responsible. IDC estimates that the U.S. market for computer forensics will be grow from $252 million in 2004 to $630 million by 2009. Business is strong outside the United States, as well. By 2011, the estimated international market will be $1.8 billion dollars. The Techno Forensics Conference has increased in size by almost 50% in its second year; another example of the rapid growth in the market. This book is the first to combine cybercrime and digital forensic topics to provides law enforcement and IT security professionals with the information needed to manage a digital investigation. Everything needed for analyzing forensic data and recovering digital evidence can be found in one place, including instructions for building a digital forensics lab. * Digital investigation and forensics is a growing industry * Corporate I.T. departments investigating corporate espionage and criminal activities are learning as they go and need a comprehensive guide to e-discovery * Appeals to law enforcement agencies with limited budgets

Advances in Digital Forensics X - Gilbert Peterson 2014-10-09

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.

Human Aspects of Information Security and Assurance - Steven Furnell 2021-07-07

This book constitutes the proceedings of the 15th IFIP WG 11.12 International Symposium on Human Aspects of Information Security and Assurance, HAISA 2020, held virtually in July 2021. The 18 papers presented in this volume were carefully reviewed and selected from 30 submissions. They are organized in the following topical sections: attitudes and perspectives; cyber security education; and people and technology.

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

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

A Practical Guide to Computer Forensics Investigations - Darren R. Hayes 2015

A Practical Guide to Computer Forensics Investigations introduces the newest technologies along with detailed information on how the evidence contained on these devices should be analyzed. Packed with practical, hands-on activities, students will learn unique subjects from chapters including Mac Forensics, Mobile Forensics, Cyberbullying, and Child Endangerment. This well-developed book will prepare students for the rapidly-growing field of computer forensics for a career with law enforcement, accounting firms, banks and credit card companies, private investigation companies, or government agencies.

Digital Forensics and Investigations - Jason Sachowski 2018-05-16

Digital forensics has been a discipline of Information Security for decades now. Its principles, methodologies, and techniques have remained consistent despite the evolution of technology, and, ultimately, it and can be applied to any form of digital data. However, within a corporate environment, digital forensic professionals are particularly challenged. They must maintain the legal admissibility and forensic viability of digital evidence in support of a broad range of different business functions that include incident response, electronic discovery (ediscovery), and ensuring the controls and accountability of such information across networks. Digital Forensics and Investigations: People, Process, and Technologies to Defend the Enterprise provides the methodologies and strategies necessary for these key business functions to seamlessly integrate digital forensic capabilities to guarantee the admissibility and integrity of digital evidence. In many books, the focus on digital evidence is primarily in the technical, software, and investigative elements, of which there are numerous publications. What tends to get overlooked are the people and process elements within the organization. Taking a step back, the book outlines the importance of integrating and accounting for the people, process, and technology components of digital forensics. In essence, to establish a holistic paradigm—and best-practice procedure and policy approach—to defending the enterprise. This book serves as a roadmap for professionals to successfully integrate an organization’s people, process, and technology with other key business functions in an enterprise’s digital forensic capabilities.

Digital Evidence and Computer Crime - Eoghan Casey 2011-04-20

Though an increasing number of criminals are using computers and computer networks, few investigators are well versed in the issues related to digital evidence. This work explains how computer networks function and how they can be used in a crime.

Learn Computer Forensics - William Oettinger 2020-04-30

Get up and running with collecting evidence using forensics best practices to present your findings in judicial or administrative proceedings Key Features Learn the core techniques of computer forensics to acquire and secure digital evidence skillfully Conduct a digital forensic examination and document the digital evidence collected Analyze security systems and overcome complex challenges with a variety of forensic investigations Book Description A computer forensics investigator must possess a variety of skills, including the ability to answer legal questions, gather and document evidence, and prepare for an investigation. This book will help you get up and running with using digital forensic tools and techniques to investigate cybercrimes successfully. Starting with an overview of forensics and all the open source and commercial tools needed to get the job done, you'll learn core forensic practices for searching databases and analyzing data over networks, personal devices, and web applications. You'll then learn how to acquire valuable information from different places, such as filesystems, e-mails, browser histories, and search queries, and capture data remotely. As you advance, this book will guide you through implementing forensic techniques on multiple platforms, such as Windows, Linux, and macOS, to demonstrate how to recover valuable information as evidence. Finally, you'll get to grips with presenting your findings efficiently in judicial or administrative proceedings. By the end of this book, you'll have developed a clear understanding of how to acquire, analyze, and present digital evidence like a proficient computer forensics investigator. What you will learn Understand investigative processes, the rules of evidence, and ethical guidelines Recognize and document different types of computer hardware Understand the boot process covering BIOS, UEFI, and the boot sequence Validate forensic hardware and software Discover the locations of common Windows artifacts Document your findings using technically correct terminology Who this book is for If you're an IT beginner, student, or an investigator in the public or private sector this book is for you.This book will also help professionals and investigators who are new to incident response and digital forensics and interested in making a career in the cybersecurity domain.

Incident Response - Douglas Schweitzer 2003-05-02

* Incident response and forensic investigation are the processes of detecting attacks and properly extracting evidence to report the crime and conduct audits to prevent future attacks * This much-needed reference covers the methodologies for incident response and computer forensics, Federal Computer Crime law information and evidence requirements, legal issues, and working with law enforcement * Details how to detect, collect, and eradicate breaches in e-mail and malicious code * CD-ROM is packed with useful tools that help capture and protect forensic data; search volumes, drives, and servers for evidence; and rebuild systems quickly after evidence has been obtained

Computer Forensics - John R. Vacca 2002

Provides an overview and case studies of computer crimes and discusses topics including data recovery, evidence collection, preservation of digital evidence, information warfare, and the cyber underground.

Digital Forensics Basics - Nihad A. Hassan 2019-02-25

Use this hands-on, introductory guide to understand and implement digital forensics to investigate computer crime using Windows, the most widely used operating system. This book provides you with the necessary skills to identify an intruder's footprints and to gather the necessary digital evidence in a forensically sound manner to prosecute in a court of law. Directed toward users with no experience in the digital forensics field, this book provides guidelines and best practices when conducting investigations as well as teaching you how to use a variety of tools to investigate computer crime. You will be prepared to handle problems such as law violations, industrial espionage, and use of company resources for private use. Digital Forensics Basics is written as a series of tutorials with each task demonstrating how to use a specific computer forensics tool or technique. Practical information is provided and users can read a task and then implement it directly on their devices. Some theoretical information is presented to define terms used in each technique and for users with varying IT skills. What You'll Learn Assemble computer forensics lab requirements, including workstations, tools, and more Document the digital crime scene, including preparing a sample chain of custody form Differentiate between law enforcement agency and corporate investigationsGather intelligence using OSINT sources Acquire and analyze digital evidence Conduct in-depth forensic analysis of Windows operating systems covering Windows 10–specific feature forensicsUtilize anti-forensic techniques, including steganography, data destruction techniques, encryption, and anonymity techniques Who This Book Is For Police and other law enforcement personnel, judges (with no technical background), corporate and nonprofit management, IT specialists and computer security professionals, incident response team members, IT military and intelligence services officers, system administrators, e-business security professionals, and banking and insurance professionals

Forensic Discovery - Dan Farmer 2004-12-30

"Don''t look now, but your fingerprints are all over the cover of this book. Simply picking it up off the shelf to read the cover has left a trail of evidence that you were here. "If you think book covers are bad, computers are worse. Every time you use a computer, you leave elephant-sized tracks all over it. As Dan and Wietse show, even people trying to be sneaky leave evidence all over, sometimes in surprising places. "This book is about computer archeology. It''s about finding out what might have been based on what is left behind. So pick up a tool and dig in. There''s plenty to learn from these masters of computer security." --Gary McGraw, Ph.D., CTO, Cigital, coauthor of Exploiting Software and Building Secure Software "A wonderful book. Beyond its obvious uses, it also teaches a great deal about operating system internals." --Steve Bellovin, coauthor of Firewalls and Internet Security, Second Edition, and Columbia University professor "A must-have reference book for anyone doing computer forensics. Dan and Wietse have done an excellent job of taking the guesswork out of a difficult topic." --Brad Powell, chief security architect, Sun Microsystems, Inc. "Farmer and Venema provide the essential guide to ''fossil'' data. Not only do they clearly describe what you can find during a forensic investigation, they also provide research found nowhere else about how long data remains on disk and in memory. If you ever expect to look at an exploited system, I highly recommend reading this book." --Rik Farrow, Consultant, author of Internet Security for Home and Office "Farmer and Venema do for digital archaeology what Indiana Jones did for historical archaeology. Forensic Discovery unearths hidden treasures in enlightening and entertaining ways, showing how a time-centric approach to computer forensics reveals even the cleverest intruder." --Richard Bejtlich, technical director, ManTech CFIA, and author of The Tao of Network Security Monitoring "Farmer and Venema are ''hackers'' of the old school: They delight in understanding computers at every level and finding new ways to apply existing information and tools to the solution of complex problems." --Muffy Barkocy, Senior Web Developer, Shopping.com "This book presents digital forensics from a unique perspective because it examines the systems that create digital evidence in addition to the techniques used to find it. I would recommend this book to anyone interested in learning more about digital evidence from UNIX systems." --Brian Carrier, digital forensics researcher, and author of File System Forensic Analysis The Definitive Guide to Computer Forensics: Theory and Hands-On Practice Computer forensics--the art and science of gathering and analyzing digital evidence, reconstructing data and attacks, and tracking perpetrators--is becoming ever more important as IT and law enforcement professionals face an epidemic in computer crime. In Forensic Discovery, two internationally recognized experts present a thorough and realistic guide to the subject. Dan Farmer and Wietse Venema cover both theory and hands-on practice, introducing a powerful approach that can often recover evidence considered lost forever. The authors draw on their extensive firsthand experience to cover everything from file systems, to memory and kernel hacks, to malware. They expose a wide variety of computer forensics myths that often stand in the way of success. Readers will find extensive examples from Solaris, FreeBSD, Linux, and Microsoft Windows, as well as practical guidance for writing one''s own forensic tools. The authors are singularly well-qualified to write this book: They personally created some of the most popular security tools ever written, from the legendary SATAN network scanner to the powerful Coroner''s Toolkit for analyzing UNIX break-ins. After reading this book you will be able to Understand essential forensics concepts: volatility, layering, and trust Gather the maximum amount of reliable evidence from a running system Recover partially destroyed information--and make sense of it Timeline your system: understand what really happened when Uncover secret changes to everything from system utilities to kernel modules Avoid cover-ups and evidence traps set by intruders Identify the digital footprints associated with suspicious activity Understand file systems from a forensic analyst''s point of view Analyze malware--without giving it a chance to escape Capture and examine the contents of main memory on running systems Walk through the unraveling of an intrusion, one step at a time The book''s companion Web site contains complete source and binary code for open source software discussed in the book, plus additional computer forensics case studies and resource links.

Guide to Computer Forensics and Investigations - Bill Nelson 2014-11-07

Updated with the latest advances from the field, GUIDE TO COMPUTER FORENSICS AND INVESTIGATIONS, Fifth Edition combines all-encompassing topic coverage and authoritative information from seasoned experts to deliver the most comprehensive forensics resource available. This proven author team's wide ranging areas of expertise mirror the breadth of coverage provided in the book, which focuses on techniques and practices for gathering and analyzing evidence used to solve crimes involving computers. Providing clear instruction on the tools and techniques of the trade, it introduces readers to every step of the computer forensics investigation-from lab set-up to testifying in court. It also details step-by-step guidance on how to use current forensics software. Appropriate for learners new to the field, it is also an excellent refresher and technology update for professionals in law enforcement, investigations, or computer security. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.