

[PDF] Computer Forensics Procedures Tools And Digital Evidence

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High Performance Architecture and Grid Computing-Archana Mantri 2011-07-05 This book constitutes the refereeds proceedings of the International Conference on High Performance Architecture and Grid Computing, HPAGC 2011, held in Chandigarh, India, in July 2011. The 87 revised full papers presented were carefully reviewed and selected from 240 submissions. The papers are organized in topical sections on grid and cloud computing; high performance architecture; information management and network security.

Digital Forensics with Open Source Tools-Cory Altheide 2011-03-29 Digital Forensics with Open Source Tools is the definitive book on investigating and analyzing computer systems and media using open source tools. The book is a technical procedural guide, and explains the use of open source tools on Mac, Linux and Windows systems as a platform for performing computer forensics. Both well-known and novel forensic methods are demonstrated using command-line and graphical open source computer forensic tools for examining a wide range of target systems and artifacts. Written by world-renowned forensic practitioners, this book uses the most current examination and analysis techniques in the field. It consists of 9 chapters that cover a range of topics such as the open source examination platform; disk and file system analysis; Windows systems and artifacts; Linux systems and artifacts; Mac OS X systems and artifacts; Internet artifacts; and automating analysis and extending capabilities. The book lends itself to use by students and those entering the field who do not have means to purchase new tools for different investigations. This book will appeal to forensic practitioners from areas including incident response teams and computer forensic investigators; forensic technicians from legal, audit, and consulting firms; and law enforcement agencies. Written by world-renowned forensic practitioners Details core concepts and techniques of forensic file system analysis Covers analysis of artifacts from the Windows, Mac, and Linux operating systems

Digital Forensics with Kali Linux-Shiva V. N Parasram 2017-12-19 Learn the skills you need to take advantage of Kali Linux for digital forensics investigations using this comprehensive guide Key Features Master powerful Kali Linux tools for digital investigation and analysis Perform evidence acquisition, preservation, and analysis using various tools within Kali Linux Implement the concept of cryptographic hashing and imaging using Kali Linux Perform memory forensics with Volatility and internet forensics with Xplico. Discover the capabilities of professional forensic tools such as Autopsy and DFF (Digital Forensic Framework) used by law enforcement and military personnel alike Book Description Kali Linux is a Linux-based distribution used mainly for penetration testing and digital forensics. It has a wide range of tools to help in forensics investigations and incident response mechanisms. You will start by understanding the fundamentals of digital forensics and setting up your Kali Linux environment to perform different investigation practices. The book will delve into the realm of operating systems and the various formats for file storage, including secret hiding places unseen by the end user or even the operating system. The book will also teach you to create forensic images of data and maintain integrity using hashing tools. Next, you will also master some advanced topics such as autopsies and acquiring investigation data from the network, operating system memory, and so on. The book introduces you to powerful tools that will take your forensic abilities and investigations to a professional level, catering for all aspects of full digital forensic investigations from hashing to reporting. By the end of this book, you will have had hands-on experience in implementing all the pillars of digital forensics—acquisition, extraction, analysis, and presentation using Kali Linux tools. What you will learn Get to grips with the fundamentals of digital forensics and explore best practices Understand the workings of file systems, storage, and data fundamentals Discover incident response procedures and best practices Use DC3DD and Guymager for acquisition and preservation techniques Recover deleted data with Foremost and Scalpel Find evidence of accessed programs and malicious programs using Volatility. Perform network and internet capture analysis with Xplico Carry out professional digital forensics investigations using the DFF and Autopsy automated forensic suites Who this book is for This book is targeted at forensics and digital investigators, security analysts, or any stakeholder interested in learning digital forensics using Kali Linux. Basic knowledge of Kali Linux will be an advantage.

Digital Forensics Tools and Techniques-Alfredo Lopez 2019-06-03 Essay from the year 2015 in the subject Computer Science - Miscellaneous, UNITEC New Zealand, language: English, abstract: Nowadays the use of computers is increasing more and more. This has allowed the development of the internet. In turn, the Internet has brought many benefits, but the internet has also contributed to the rise of cyber-crime. So, with the rise of cybercrime, it has become critical to increase and develop computer systems security. Each time, the techniques used by cybercriminals are more sophisticated, making it more difficult to protect corporate networks. Because of this, the computer security of these companies has been violated, and it is here at this point when digital analysis forensic is needed to discover cybercriminals. So, with the rise of cybercrime, digital forensics is increasingly gaining importance in the area of information technology. For this reason, when a crime is done, the crime information is stored digitally. Therefore, it must use appropriate mechanisms for the collection, preservation, protection, analysis and presentation of digital evidence stored in electronic devices. It is here that the need arises for digital forensics. In this report, I am going to explain what digital forensics is. Also, I will describe some forensic software and hardware and the importance of suitable forensic labs. So, let's start.

Digital Forensics Processing and Procedures-David Lilburn Watson 2013-08-30 This is the first digital forensics book that covers the complete lifecycle of digital evidence and the chain of custody. This comprehensive handbook includes international procedures, best practices, compliance, and a companion web site with downloadable forms. Written by world-renowned digital forensics experts, this book is a must for any digital forensics lab. It provides anyone who handles digital evidence with a guide to proper procedure throughout the chain of custody—from incident response through analysis in the lab. A step-by-step guide to designing, building and using a digital forensics lab A comprehensive guide for all roles in a digital forensics laboratory Based on international standards and certifications

Handbook of Computer Crime Investigation-Eoghan Casey 2001-10-22 Following on the success of his introductory text, Digital Evidence and Computer Crime, Eoghan Casey brings together a few top experts to create the first detailed guide for professionals who are already familiar with digital evidence. The Handbook of Computer Crime Investigation helps readers master the forensic analysis of computer systems with a three-part approach covering tools, technology, and case studies. The Tools section provides the details on leading software programs, with each chapter written by that product's creator. The section ends with an objective comparison of the strengths and limitations of each tool. The main Technology section provides the technical "how to" information for collecting and analyzing digital evidence in common situations, starting with computers, moving on to networks, and culminating with embedded systems. The Case Examples section gives readers a sense of the technical, legal, and practical challenges that arise in real computer investigations. The Tools section provides details of leading hardware and software The main Technology section provides the technical "how to" information for collecting and analysing digital evidence in common situations Case Examples give readers a sense of the technical, legal, and practical challenges that arise in real computer investigations

Guide to Computer Forensics and Investigations-Bill Nelson 2009-09-28 Learners will master the skills necessary to launch and complete a successful computer investigation with the updated fourth edition of this popular book, GUIDE TO COMPUTER FORENSICS AND INVESTIGATIONS. This resource guides readers through conducting a high-tech investigation, from acquiring digital evidence to reporting its findings. Updated coverage includes new software and technologies as well as up-to-date reference sections. Learn how to set up a forensics lab, how to acquire the proper and necessary tools, and how to conduct the investigation and subsequent digital analysis. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Digital Forensics and Cyber Crime-Claus Vielhauer 2011-03-07 This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Digital Forensics and Cyber Crime, ICDf2C 2010, held October 4-6, 2010 in Abu Dhabi, United Arab Emirates. The field of digital forensics is becoming increasingly important for law enforcement, network security, and information assurance. It is a multidisciplinary area that encompasses a number of fields, including law, computer science, finance, networking, data mining, and criminal justice. The 14 papers in this volume describe the various applications of this technology and cover a wide range of topics including law enforcement, disaster recovery, accounting frauds, homeland security, and information warfare.

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 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

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

Advances in Digital Forensics IX-Gilbert Peterson 2013-10-09 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 IX describe original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: Themes and Issues, Forensic Models, Forensic Techniques, File system Forensics, Network Forensics, Cloud Forensics, Forensic Tools, and Advanced Forensic Techniques. This book is the ninth 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-five edited papers from the Ninth Annual IFIP WG 11.9 International Conference on Digital Forensics, held in Orlando, Florida, USA in the winter of 2013. Advances in Digital Forensics IX 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. Gilbert Peterson is an Associate Professor of Computer Engineering at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA. Sujeet Shenoi is the F.P. Walter Professor of Computer Science and a Professor of Chemical Engineering at the University of Tulsa, Tulsa, Oklahoma, USA.

Advances in Digital Forensics VI-Kam-Pui Chow 2010-09-16 Advances in Digital Forensics VI describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: Themes and Issues, Forensic Techniques, Internet Crime Investigations, Live Forensics, Advanced Forensic Techniques, and Forensic Tools. This book is the sixth 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-one edited papers from the Sixth Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the University of Hong Kong, Hong Kong, China, in January 2010.

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.

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

Digital Forensics and Incident Response-Gerard Johansen 2017-07-24 A practical guide to deploying digital forensic techniques in response to cyber security incidents About This Book Learn incident response fundamentals and create an effective incident response framework Master forensic investigation utilizing digital investigative techniques Contains real-life scenarios that effectively use threat intelligence and modeling techniques Who This Book Is For This book is targeted at Information Security professionals, forensics practitioners, and students with knowledge and experience in the use of software applications and basic command-line experience. It will also help professionals who are new to the incident response/digital forensics role within their organization. What You Will Learn Create and deploy incident response capabilities within your organization Build a solid foundation for acquiring and handling suitable evidence for later analysis Analyze collected evidence and determine the root cause of a security incident Learn to integrate digital forensic techniques and procedures into the overall incident response process Integrate threat intelligence in digital evidence analysis Prepare written documentation for use internally or with external parties such as regulators or law enforcement agencies In Detail Digital Forensics and Incident Response will guide you through the entire spectrum of tasks associated with incident response, starting with preparatory activities associated with creating an incident response plan and creating a digital forensics capability within your own organization. You will then begin a detailed examination of digital forensic techniques including acquiring evidence, examining volatile memory, hard drive assessment, and network-based evidence. You will also explore the role that threat intelligence plays in the incident response process. Finally, a detailed section on preparing reports will help you prepare a written report for use either internally or in a courtroom. By the end of the book, you will have mastered forensic techniques and incident

response and you will have a solid foundation on which to increase your ability to investigate such incidents in your organization. Style and approach The book covers practical scenarios and examples in an enterprise setting to give you an understanding of how digital forensics integrates with the overall response to cyber security incidents. You will also learn the proper use of tools and techniques to investigate common cyber security incidents such as malware infestation, memory analysis, disk analysis, and network analysis.

Malware Forensics Field Guide for Windows Systems-Cameron H. Malin 2012 Dissecting the dark side of the Internet with its infectious worms, botnets, rootkits, and Trojan horse programs (known as malware) is a treacherous condition for any forensic investigator or analyst. Written by information security experts with real-world investigative experience, Malware Forensics Field Guide for Windows Systems is a "tool" with checklists for specific tasks, case studies of difficult situations, and expert analyst tips. *A condensed hand-held guide complete with on-the-job tasks and checklists *Specific for Windows-based systems, the largest running OS in the world *Authors are world-renowned leaders in investigating and analyzing malicious code

Computer Forensics: Investigation Procedures and Response (CHFI)-EC-Council 2016-04-11 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 four 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 three 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. The first book in the Computer Forensics series is Investigation Procedures and Response. Coverage includes a basic understanding of the importance of computer forensics, how to set up a secure lab, the process for forensic investigation including first responder responsibilities, how to handle various incidents and information on the various reports used by computer forensic investigators. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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.

Digital Forensics and Cyber Crime-Claus Vielhauer 2011-03-07 This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2010, held October 4-6, 2010 in Abu Dhabi, United Arab Emirates. The field of digital forensics is becoming increasingly important for law enforcement, network security, and information assurance. It is a multidisciplinary area that encompasses a number of fields, including law, computer science, finance, networking, data mining, and criminal justice. The 14 papers in this volume describe the various applications of this technology and cover a wide range of topics including law enforcement, disaster recovery, accounting frauds, homeland security, and information warfare.

Computer Forensics For Dummies-Carol Pollard 2008-10-13 Uncover a digital trail of e-evidence by using the helpful, easy-to-understand information in Computer Forensics For Dummies! Professional and armchair investigators alike can learn the basics of computer forensics, from digging out electronic evidence to solving the case. You won't need a computer science degree to master e-discovery. Find and filter data in mobile devices, e-mail, and other Web-based technologies. You'll learn all about e-mail and Web-based forensics, mobile forensics, passwords and encryption, and other e-evidence found through VoIP, voicemail, legacy mainframes, and databases. You'll discover how to use the latest forensic software, tools, and equipment to find the answers that you're looking for in record time. When you understand how data is stored, encrypted, and recovered, you'll be able to protect your personal privacy as well. By the time you finish reading this book, you'll know how to: Prepare for and conduct computer forensics investigations Find and filter data Protect personal privacy Transfer evidence without contaminating it Anticipate legal loopholes and opponents' methods Handle passwords and encrypted data Work with the courts and win the case Plus, Computer Forensics for Dummies includes lists of things that everyone interested in computer forensics should know, do, and build. Discover how to get qualified for a career in computer forensics, what to do to be a great investigator and expert witness, and how to build a forensics lab or toolkit. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

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

Malware Forensics-Cameron H. Malin 2008-08-08 Malware Forensics: Investigating and Analyzing Malicious Code covers the complete process of responding to a malicious code incident. Written by authors who have investigated and prosecuted federal malware cases, this book deals with the emerging and evolving field of live forensics, where investigators examine a computer system to collect and preserve critical live data that may be lost if the system is shut down. Unlike other forensic texts that discuss live forensics on a particular operating system, or in a generic context, this book emphasizes a live forensics and evidence collection methodology on both Windows and Linux operating systems in the context of identifying and capturing malicious code and evidence of its effect on the compromised system. It is the first book detailing how to perform live forensic techniques on malicious code. The book gives deep coverage on the tools and techniques of conducting runtime behavioral malware analysis (such as file, registry, network and port monitoring) and static code analysis (such as file identification and profiling, strings discovery, armoring/packing detection, disassembling, debugging), and more. It explores over 150 different tools for malware incident response and analysis, including forensic tools for preserving and analyzing computer memory. Readers from all educational and technical backgrounds will benefit from the clear and concise explanations of the applicable legal case law and statutes covered in every chapter. In addition to the technical topics discussed, this book also offers critical legal considerations addressing the legal ramifications and requirements governing the subject matter. This book is intended for system administrators, information security professionals, network personnel, forensic examiners, attorneys, and law enforcement working with the inner-workings of computer memory and malicious code. * Winner of Best Book Bejtlich read in 2008! * <http://taosecurity.blogspot.com/2008/12/best-book-bejtlich-read-in-2008.html> * Authors have investigated and prosecuted federal malware cases, which allows them to provide unparalleled insight to the reader. * First book to detail how to perform "live forensic" techniques on malicious code. * In addition to the technical topics discussed, this book also offers critical legal considerations addressing the legal ramifications and requirements governing the subject matter

Digital Forensics Explained-Greg Gogolin 2012-12-03 The field of computer forensics has experienced significant growth recently and those looking to get into the industry have significant opportunity for upward mobility. Focusing on the concepts investigators need to know to conduct a thorough investigation, Digital Forensics Explained provides an overall description of the forensic practice from a practitioner's perspective. Starting with an overview, the text describes best practices based on the author's decades of experience conducting investigations and working in information technology. It illustrates the forensic process, explains what it takes to be an investigator, and highlights emerging trends. Filled with helpful templates and contributions from seasoned experts in their respective fields, the book includes coverage of: Internet and email investigations Mobile forensics for cell phones, iPads, music players, and other small devices Cloud computing from an architecture perspective and its impact on digital forensics Anti-forensic techniques that may be employed to make a forensic exam more difficult to conduct Recoverability of information from damaged media The progression of a criminal case from start to finish Tools that are often used in an examination, including commercial, free, and open-source tools; computer and mobile tools; and things as simple as extension cords Social media and social engineering forensics Case documentation and presentation, including sample summary reports and a cover sheet for a cell phone investigation The text includes acquisition forms, a sequential process outline to guide your investigation, and a checklist of supplies you'll need when responding to an incident. Providing you with the understanding and the tools to deal with suspects who find ways to make their digital activities hard to trace, the book also considers cultural implications, ethics, and the psychological effects that digital forensics investigations can have on investigators.

Digital Forensics and Cyber Crime-Pavel Gladyshev 2014-12-22 This book constitutes the thoroughly refereed post-conference proceedings of the 5th International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2013, held in September 2013 in Moscow, Russia. The 16 revised full papers presented together with 2 extended abstracts and 1 poster paper were carefully reviewed and selected from 38 submissions. The papers cover diverse topics in the field of digital forensics and cybercrime, ranging from regulation of social networks to file carving, as well as technical issues, information warfare, cyber terrorism, critical infrastructure protection, standards, certification, accreditation, automation and digital forensics in the cloud.

Implementing Digital Forensic Readiness-Jason Sachowski 2019-06-07 Implementing Digital Forensic Readiness: From Reactive to Proactive Process, Second Edition presents the optimal way for digital forensic and IT security professionals to implement a proactive approach to digital forensics. The book details how digital forensic processes can align strategically with business operations and an already existing information and data security program. Detailing proper collection, preservation, storage, and presentation of digital evidence, the procedures outlined illustrate how digital evidence can be an essential tool in mitigating risk and reducing the impact of both internal and external, digital incidents, disputes, and crimes. By utilizing a digital forensic readiness approach and stances, a company's preparedness and ability to take action quickly and respond as needed. In addition, this approach enhances the ability to gather evidence, as well as the relevance, reliability, and credibility of any such evidence. New chapters to this edition include Chapter 4 on Code of Ethics and Standards, Chapter 5 on Digital Forensics as a Business, and Chapter 10 on Establishing Legal Admissibility. This book offers best practices to professionals on enhancing their digital forensic program, or how to start and develop one the right way for effective forensic readiness in any corporate or enterprise setting.

Handbook of Electronic Security and Digital Forensics-Hamid Jahankhani 2010 The widespread use of information and communications technology (ICT) has created a global platform for the exchange of ideas, goods and services, the benefits of which are enormous. However, it has also created boundless opportunities for fraud and deception. Cybercrime is one of the biggest growth industries around the globe, whether it is in the form of violation of company policies, fraud, hate crime, extremism, or terrorism. It is therefore paramount that the security industry raises its game to combat these threats. Today's top priority is to use computer technology to fight computer crime, as our commonwealth is protected by firewalls rather than firepower. This is an issue of global importance as new technologies have provided a world of opportunity for criminals. This book is a compilation of the collaboration between the researchers and practitioners in the security field; and provides a comprehensive literature on current and future e-security needs across applications, implementation, testing or investigative techniques, judicial processes and criminal intelligence. The intended audience includes members in academia, the public and private sectors, students and those who are interested in and will benefit from this handbook.

Digital Forensics and Cyber Crime-Marcus K. Rogers 2013-10-01 This book contains a selection of thoroughly refereed and revised papers from the Fourth International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2012, held in October 2012 in Lafayette, Indiana, USA. The 20 papers in this volume are grouped in the following topical sections: cloud investigation; malware; behavioral; law; mobile device forensics; and cybercrime investigations. Windows Registry Forensics-Harlan Carvey 2011-01-03 Windows Registry Forensics provides the background of the Windows Registry to help develop an understanding of the binary structure of Registry hive files. Approaches to live response and analysis are included, and tools and techniques for postmortem analysis are discussed at length. Tools and techniques are presented that take the student and analyst beyond the current use of viewers and into real analysis of data contained in the Registry, demonstrating the forensic value of the Registry. Named a 2011 Best Digital Forensics Book by InfoSec Reviews, this book is packed with real-world examples using freely available open source tools. It also includes case studies and a CD containing code and author-created tools discussed in the book. This book will appeal to computer forensic and incident response professionals, including federal government and commercial/private sector contractors, consultants, etc. Named a 2011 Best Digital Forensics Book by InfoSec Reviews Packed with real-world examples using freely available open source tools Deep explanation and understanding of the Windows Registry - the most difficult part of Windows to analyze forensically Includes a CD containing code and author-created tools discussed in the book

Mastering Mobile Forensics-Soufiane Tahiri 2016-05-30 Develop the capacity to dig deeper into mobile device data acquisition About This Book A mastering guide to help you overcome the roadblocks you face when dealing with mobile forensics Excel at the art of extracting data, recovering deleted data, bypassing screen locks, and much more Get best practices to how to collect and analyze mobile device data and accurately document your investigations Who This Book Is For The book is for mobile forensics professionals who have experience in handling forensic tools and methods. This book is designed for skilled digital forensic examiners, mobile forensic investigators, and law enforcement officers. What You Will Learn Understand the mobile forensics process model and get guidelines on mobile device forensics Acquire in-depth knowledge about smartphone acquisition and acquisition methods Gain a solid understanding of the architecture of operating systems, file formats, and mobile phone internal memory Explore the topics of mobile security, data leak, and evidence recovery Dive into advanced topics such as GPS analysis, file carving, encryption, encoding, unpacking, and decompling mobile application processes In Detail Mobile forensics presents a real challenge to the forensic community due to the fast and unstoppable changes in technology. This book aims to provide the forensic community an in-depth insight into mobile forensic techniques when it comes to deal with recent smartphones operating systems Starting with a brief overview of forensic strategies and investigation procedures, you will understand the concepts of file carving, GPS analysis, and string analyzing. You will also see the difference between encryption, encoding, and hashing methods and get to grips with the fundamentals of reverse code engineering. Next, the book will walk you through the iOS, Android and Windows Phone architectures and filesystem, followed by showing you various forensic approaches and data gathering techniques. You will also explore advanced forensic techniques and find out how to deal with third-applications using case studies. The book will help you master data acquisition on Windows Phone 8. By the end of this book, you will be acquainted with best practices and the different models used in mobile forensics. Style and approach The book is a comprehensive guide that will help the IT forensics community to go more in-depth into the investigation process and mobile devices take-over.

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.

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 investigations Gather intelligence using OSINT sources Acquire and analyze digital evidence Conduct in-depth forensic analysis of Windows operating systems covering Windows 10-specific feature forensics Utilize 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

Digital Forensics for Legal Professionals-Lars E. Daniel 2012 Digital Forensics for Legal Professionals provides you with a guide to digital technology forensics in plain English. In the authors' years of experience in working with attorneys as digital forensics experts, common questions arise again and again: "What do I ask for?" "Is the evidence relevant?" "What does this item in the forensic report mean?" "What should I ask the other expert?" "What should I ask you?" "Can you explain that to a jury?" This book answers many of those questions in clear language that is understandable by non-technical people. With many illustrations and diagrams that will be usable in court, they explain technical concepts such as unallocated space, forensic copies, timeline artifacts and metadata in simple terms that make these concepts accessible to both attorneys and juries. The authors also explain how to determine what evidence to ask for, evidence might be that could be discoverable, and the methods for getting to it including relevant subpoena and motion language. Additionally, this book provides an overview of the current state of digital forensics, the right way

to select a qualified expert, what to expect from a qualified expert and how to properly use experts before and during trial. Includes a companion Web site with: courtroom illustrations, and examples of discovery motions Provides examples of direct and cross examination questions for digital evidence Contains a reference of definitions of digital forensic terms, relevant case law, and resources for the attorney

Big Data Analytics and Computing for Digital Forensic Investigations-Suneeta Satpathy 2020-04-07 Digital forensics has recently gained a notable development and become the most demanding area in today's information security requirement. This book investigates the areas of digital forensics, digital investigation and data analysis procedures as they apply to computer fraud and cybercrime, with the main objective of describing a variety of digital crimes and retrieving potential digital evidence. Big Data Analytics and Computing for Digital Forensic Investigations gives a contemporary view on the problems of information security. It presents the idea that protective mechanisms and software must be integrated along with forensic capabilities into existing forensic software using big data computing tools and techniques. Features Describes trends of digital forensics served for big data and the challenges of evidence acquisition Enables digital forensic investigators and law enforcement agencies to enhance their digital investigation capabilities with the application of data science analytics, algorithms and fusion technique This book is focused on helping professionals as well as researchers to get ready with next-generation security systems to mount the rising challenges of computer fraud and cybercrimes as well as with digital forensic investigations. Dr Suneeta Satpathy has more than ten years of teaching experience in different subjects of the Computer Science and Engineering discipline. She is currently working as an associate professor in the Department of Computer Science and Engineering, College of Bhubaneswar, affiliated with Biju Patnaik University and Technology, Odisha. Her research interests include computer forensics, cybersecurity, data fusion, data mining, big data analysis and decision mining. Dr Sachi Nandan Mohanty is an associate professor in the Department of Computer Science and Engineering at ICFAI Tech, ICFAI Foundation for Higher Education, Hyderabad, India. His research interests include data mining, big data analysis, cognitive science, fuzzy decision-making, brain-computer interface, cognition and computational intelligence.

Computer and Intrusion Forensics-George M. Mohay 2003 Annotation A comprehensive and broad introduction to computer and intrusion forensics, covering the areas of law enforcement, national security and corporate fraud, this practical book helps professionals understand case studies from around the world, and treats key emerging areas such as stegoforensics, image identification, authorship categorization, and machine learning.

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 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.

Handbook of Digital Forensics of Multimedia Data and Devices-Anthony T. S. Ho 2015-09-28 Digital forensics and multimedia forensics are rapidly growing disciplines whereby electronic information is extracted and interpreted for use in a court of law. These two fields are finding increasing importance in law enforcement and the investigation of cybercrime as the ubiquity of personal computing and the internet becomes ever-more apparent. Digital forensics involves investigating computer systems and digital artefacts in general, while multimedia forensics is a sub-topic of digital forensics focusing on evidence extracted from both normal computer systems and special multimedia devices, such as digital cameras. This book focuses on the interface between digital forensics and multimedia forensics, bringing two closely related fields of forensic expertise together to identify and understand the current state-of-the-art in digital forensic investigation. Both fields are expertly attended to by contributions from researchers and forensic practitioners specializing in diverse topics such as forensic authentication, forensic triage, forensic photogrammetry, biometric forensics, multimedia device identification, and image forgery detection among many others. Key features: Brings digital and multimedia forensics together with contributions from academia, law enforcement, and the digital forensics industry for extensive coverage of all the major aspects of digital forensics of multimedia data and devices Provides comprehensive and authoritative coverage of digital forensics of multimedia data and devices Offers not only explanations of techniques but also real-world and simulated case studies to illustrate how digital and multimedia forensics techniques work Includes a companion website hosting continually updated supplementary materials ranging from extended and updated coverage of standards to best practice guides, test datasets and more case studies

System Forensics, Investigation and Response-Easttom 2013-08-16 PART OF THE NEW JONES & BARTLETT LEARNING INFORMATION SYSTEMS SECURITY & ASSURANCE SERIES Completely revised and rewritten to keep pace with the fast-paced field of Computer Forensics! Computer crimes call for forensics specialists, people who know how to find and follow the evidence. System Forensics, Investigation, and Response, Second Edition begins by examining the fundamentals of system forensics, such as what forensics is, the role of computer forensics specialists, computer forensic evidence, and application of forensic analysis skills. It also gives an overview of computer crimes, forensic methods, and laboratories. It then addresses the tools, techniques, and methods used to perform computer forensics and investigation. Finally, it explores emerging technologies as well as future directions of this interesting and cutting-edge field. New and Key Features of the Second Edition: Examines the fundamentals of system forensics Discusses computer crimes and forensic methods Written in an accessible and engaging style Incorporates real-world examples and engaging cases Instructor Materials for System Forensics, Investigation, and Response include: PowerPoint Lecture Slides Exam Questions Case Scenarios/Handouts Instructor's Manual

Computer Incident Response and Forensics Team Management-Leighton Johnson 2013-11-08 Computer Incident Response and Forensics Team Management provides security professionals with a complete handbook of computer incident response from the perspective of forensics team management. This unique approach teaches readers the concepts and principles they need to conduct a successful incident response investigation, ensuring that proven policies and procedures are established and followed by all team members. Leighton R. Johnson III describes the processes within an incident response event and shows the crucial importance of skillful forensics team management, including when and where the transition to forensics investigation should occur during an incident response event. The book also provides discussions of key incident response components. Provides readers with a complete handbook on computer incident response from the perspective of forensics team management Identify the key steps to completing a successful computer incident response investigation Defines the qualities necessary to become a successful forensics investigation team member, as well as the interpersonal relationship skills necessary for successful incident response and forensics investigation teams

Digital Evidence and Computer Crime-Eoghan Casey 2011 "Digital Evidence and Computer Crime" provides the knowledge necessary to uncover and use digital evidence effectively in any kind of investigation. This completely updated edition provides the introductory materials that new students require, and also expands on the material presented in previous editions to help students develop these skills.

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