

Computer Forensics Procedures Tools And Digital Evidence

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

When it comes to computer crimes, the criminals got a big head start. But the law enforcement and IT security communities are now working diligently to develop the knowledge, skills, and tools to successfully investigate and prosecute Cybercrime cases. When the first edition of "Scene of the Cybercrime" published in 2002, it was one of the first books that educated IT security professionals and law enforcement how to fight Cybercrime. Over the past 5 years a great deal has changed in how computer crimes are perpetrated and subsequently investigated. Also, the IT security and law enforcement communities have dramatically improved their ability to deal with Cybercrime, largely as a result of increased spending and training. According to the 2006 Computer Security Institute's and FBI's joint Cybercrime report: 52% of companies reported unauthorized use of computer systems in the prior 12 months. Each of these incidents is a Cybercrime requiring a certain level of investigation and remediation. And in many cases, an investigation is mandated by federal compliance regulations such as Sarbanes-Oxley, HIPAA, or the Payment Card Industry (PCI) Data Security Standard. Scene of the Cybercrime, Second Edition is a completely revised and updated book which covers all of the technological, legal, and regulatory changes, which have occurred since the first edition. The book is written for dual audience; IT security professionals and members of law enforcement. It gives the technical experts a little peek into the law enforcement world, a highly structured environment where the "letter of the law" is paramount and procedures must be followed closely lest an investigation be contaminated and all the evidence collected rendered useless. It also provides law enforcement officers with an idea of some of the technical aspects of how cyber crimes are committed, and how technology can be used to track down and build a case against the criminals who commit them. Scene of the Cybercrime, Second Editions provides a roadmap that those on both sides of the table can use to navigate the legal and technical landscape to understand, prevent, detect, and successfully prosecute the criminal behavior that is as much a threat to the online community as "traditional" crime is to the neighborhoods in which we live. Also included is an all new chapter on Worldwide Forensics Acts and Laws. * Companion Web site provides custom tools and scripts, which readers can download for conducting digital, forensic investigations. * Special chapters outline how Cybercrime investigations must be reported and investigated by corporate IT staff to meet federal mandates from Sarbanes Oxley, and the Payment Card Industry (PCI) Data Security Standard * Details forensic investigative techniques for the most common operating systems (Windows, Linux and UNIX) as well as cutting edge devices including iPods, Blackberries, and cell phones.

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

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.

"This unique book delves down into the capabilities of hiding and obscuring data object within the Windows Operating System. However, one of the most noticeable and credible features of this publication is, it takes the reader from the very basics and background of data hiding techniques, and run's on the reading-road to arrive at some of the more complex methodologies employed for concealing data object from the human eye and/or the investigation. As a practitioner in the Digital Age, I can see this book siting on the shelves of Cyber Security Professionals, and those working in the world of Digital Forensics - it is a recommended read, and is in my opinion a very valuable asset to those who

are interested in the landscape of unknown unknowns. This is a book which may well help to discover more about that which is not in immediate view of the onlooker, and open up the mind to expand its imagination beyond its accepted limitations of known knowns." - John Walker, CSIRT/SOC/Cyber Threat Intelligence Specialist Featured in Digital Forensics Magazine, February 2017 In the digital world, the need to protect online communications increase as the technology behind it evolves. There are many techniques currently available to encrypt and secure our communication channels. Data hiding techniques can take data confidentiality to a new level as we can hide our secret messages in ordinary, honest-looking data files. Steganography is the science of hiding data. It has several categorizations, and each type has its own techniques in hiding. Steganography has played a vital role in secret communication during wars since the dawn of history. In recent days, few computer users successfully manage to exploit their Windows® machine to conceal their private data. Businesses also have deep concerns about misusing data hiding techniques. Many employers are amazed at how easily their valuable information can get out of their company walls. In many legal cases a disgruntled employee would successfully steal company private data despite all security measures implemented using simple digital hiding techniques. Human right activists who live in countries controlled by oppressive regimes need ways to smuggle their online communications without attracting surveillance monitoring systems, continuously scan in/out internet traffic for interesting keywords and other artifacts. The same applies to journalists and whistleblowers all over the world. Computer forensic investigators, law enforcements officers, intelligence services and IT security professionals need a guide to tell them where criminals can conceal their data in Windows® OS & multimedia files and how they can discover concealed data quickly and retrieve it in a forensic way. Data Hiding Techniques in Windows OS is a response to all these concerns. Data hiding topics are usually approached in most books using an academic method, with long math equations about how each hiding technique algorithm works behind the scene, and are usually targeted at people who work in the academic arenas. This book teaches professionals and end users alike how they can hide their data and discover the hidden ones using a variety of ways under the most commonly used operating system on earth, Windows®.

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.

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.

In a unique and systematic way, this book discusses the security and privacy aspects of the cloud, and the relevant cloud forensics. Cloud computing is an emerging yet revolutionary technology that has been changing the way people live and work. However, with the continuous growth of cloud computing and related services, security and privacy has become a critical issue. Written by some of the top experts in the field, this book specifically discusses security and privacy of the cloud, as well as the digital forensics of cloud data, applications, and services. The first half of the book enables readers to have a comprehensive understanding and background of cloud security, which will help them through the digital investigation guidance and recommendations found in the second half of the book. Part One of Security, Privacy and Digital Forensics in the Cloud covers cloud infrastructure security; confidentiality of data; access control in cloud IaaS; cloud security and privacy management; hacking and countermeasures; risk management and disaster recovery; auditing and compliance; and security as a service (SaaS). Part Two addresses cloud forensics – model, challenges, and approaches; cyberterrorism in the cloud; digital forensic process and model in the cloud; data acquisition; digital evidence management, presentation, and court preparation; analysis of digital evidence; and forensics as a service (FaaS). Thoroughly covers both security and privacy of cloud and digital forensics Contributions by top researchers from the U.S., the European and other countries, and professionals active in the field of information and network security, digital and computer forensics, and cloud and big data Of interest to those focused upon security and implementation, and incident management Logical, well-structured, and organized to facilitate comprehension Security, Privacy and Digital Forensics in the Cloud is an ideal book for advanced undergraduate and master's-level students in information systems, information technology, computer and network forensics, as well as computer science. It can also serve as a good reference book for security professionals, digital forensics practitioners and cloud service providers.

"Digital forensics is the science of collecting the evidence that can be used in a court of law to prosecute the individuals who engage in electronic crime"--Provided by publisher. 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.

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

An understanding of how digital forensics integrates with the overall response to cybersecurity incidents is a must for all organizations. This book offers concrete and detailed guidance on how to conduct the full spectrum of incident response and digital forensic activities.

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.

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

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 forensics 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.

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

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

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.

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.

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

- * 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

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.

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 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

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

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. 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

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

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.

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.

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. This book offers a comprehensive and integrative introduction to cybercrime. It provides an authoritative synthesis of the disparate literature on the various types of cybercrime, the global 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 malicious software; digital piracy and intellectual theft; economic crime and online fraud; pornography and online sex crime; cyber-bullying and cyber-stalking; cyber-terrorism and extremism; digital forensic investigation and its legal context around the world; the law enforcement response to cybercrime transnationally; cybercrime policy and legislation across the globe. The new edition features two new chapters, the first looking at the law enforcement response to cybercrime and the second offering an extended discussion of online child pornography and sexual exploitation. 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. This new edition includes QR codes throughout to connect directly with relevant websites. It is supplemented by a companion website that includes further exercises for students and instructor resources. This text is essential reading for courses on cybercrime, cyber-deviancy, digital forensics, cybercrime investigation, and the sociology of technology.

Computer Forensics: Evidence Collection and Management examines cyber-crime, E-commerce, and Internet activities that could be used to exploit the Internet, computers, and electronic devices. The book focuses on the numerous vulnerabilities and threats that are inherent on the Internet and networking environments and presents techniques and suggestions for corporate security personnel, investigators, and forensic examiners to successfully identify, retrieve, and protect valuable forensic evidence for litigation and prosecution. The book is divided into two major parts for easy reference. The first part explores various crimes, laws, policies, forensic tools, and the information needed to understand the underlying concepts of computer forensic investigations. The second part presents information relating to crime scene investigations and management, disk and file structure, laboratory construction and functions, and legal testimony. Separate chapters focus on investigations involving computer systems, e-mail, and wireless devices. Presenting information patterned after technical, legal, and managerial classes held by computer forensic professionals from Cyber Crime Summits held at Kennesaw State University in 2005 and 2006, this book is an invaluable resource for those who want to be both efficient and effective when conducting an investigation.

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.

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

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

Developing a knowledge model helps to formalize the difficult task of analyzing crime incidents in addition to preserving and presenting the digital evidence for legal processing. The use of data analytics

techniques to collect evidence assists forensic investigators in following the standard set of forensic procedures, techniques, and methods used for evidence collection and extraction. Varieties of data sources and information can be uniquely identified, physically isolated from the crime scene, protected, stored, and transmitted for investigation using AI techniques. With such large volumes of forensic data being processed, different deep learning techniques may be employed.

Confluence of AI, Machine, and Deep Learning in Cyber Forensics contains cutting-edge research on the latest AI techniques being used to design and build solutions that address prevailing issues in cyber forensics and that will support efficient and effective investigations. This book seeks to understand the value of the deep learning algorithm to handle evidence data as well as the usage of neural networks to analyze investigation data. Other themes that are explored include machine learning algorithms that allow machines to interact with the evidence, deep learning algorithms that can handle evidence acquisition and preservation, and techniques in both fields that allow for the analysis of huge amounts of data collected during a forensic investigation. This book is ideally intended for forensics experts, forensic investigators, cyber forensic practitioners, researchers, academicians, and students interested in cyber forensics, computer science and engineering, information technology, and electronics and communication.

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.

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