Virlization And Forensics A Digital Forensic Investigators Guide To Virl Environments By Diane Barrett Published By Syngress Media 2010

Open Source Software for Digital Forensics is the first book dedicated to the use of FLOSS (Free Libre Open Source Software) in computer forensics. It presents the motivations for using FLOSS applications as tools for collection, preservation and analysis of digital evidence in computer and network forensics. It also covers extensively several forensic FLOSS tools, their origins and evolution. Open Source Software for Digital Forensics is based on the OSSCoNF workshop, which was held in Milan, Italy, September 2008 at the World Computing Congress, co-located with OSS 2008. This edited volume is a collection of contributions from researchers and practitioners world wide. Open Source Software for Digital Forensics is designed for advanced level students and researchers in computer science as a secondary text and reference book. Computer programmers, software developers, and digital forensics professionals will also find this book to be a valuable asset.

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 redusing 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.

Master the art of digital forensics and analysis with Python About This Book Learn to perform forensic analysis and investigations with the help of Python, and gain an advanced understanding of the various Python libraries and frameworks Analyze Python scripts to extract metadata and investigate forensic artifacts The writers, Dr. Michael Spreitzenbarth and Dr. Johann Uhrmann, have used their experience to craft this hands-on guide to using Python for forensic analysis and investigations Who This Book Is For If you are a network security professional or forensics analyst who wants to gain a deeper understanding of performing forensic analysis with Python, then this book is for you. Some Python experience would be helpful. What You Will Learn Explore the forensic analysis of different platforms such as Windows, Android, and vSphere Semi-automatically reconstruct major parts of the system activity and time-line Leverage Python ctypes for protocol decoding Examine artifacts from mobile, Skype, and browsers Discover how to utilize Python to improve the focus of your analysis Investigate in volatile memory with the help of volatility on the Android and Linux platforms In Detail Digital forensic analysis is the process of examining and extracting data digitally and examining it. Python has the combination of power, expressiveness, and ease of use that makes it an essential complementary tool to the traditional, off-the-shelf digital forensic tools. This book will teach you how to perform forensic analysis and investigations by exploring the capabilities of various Python libraries. The book starts by explaining the building blocks of the Python programming language, especially ctypes in-depth, along with how to automate typical tasks in file system analysis, common correlation tasks to discover anomalies, as well as templates for investigations. Next, we'll show you cryptographic algorithms that can be used during forensic investigations to check for known files or to compare suspicious files with online services such as VirusTotal or Mobile-Sandbox. Moving on, you'll learn how to sniff on the network, generate and analyze network flows, and perform log correlation with the help of Python scripts and tools. You'll get to know about the concepts of virtualization and how virtualization influences IT forensics, and you'll discover how to perform forensic analysis of a jailbroken/rooted mobile device that is based on iOS or Android. Finally, the book teaches you how to analyze volatile memory and search for known malware samples based on YARA rules. Style and approach This easy-to-follow guide will demonstrate forensic analysis techniques by showing you how to solve real-word-scenarios step by step.

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virlization-and-forensics-a-digital-forensic-investigators-guide-to-virl-environments-by-diane-barrett-published-by-syngress-media-2010

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 VIII 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, mobile phone forensics, cloud forensics, network forensics, and advanced forensic techniques. This book is the eighth volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of twenty-two edited papers from the Eighth Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the University of Pretoria, Pretoria, South Africa in the spring of 2012. Advances in Digital Forensics VIII 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.
Information Security Management Handbook, Sixth Edition
Third International ICST Conference, e-Forensics 2010, Shanghai, China, November 11-12, 2010, Revised Selected Papers
Methods and Solutions
Implementing Digital Forensic Readiness
Advances in Digital Forensics V
Advances in Digital Forensics VIII
Guide to Computer Forensics and Investigations

This book constitutes the thoroughly refereed post-conference proceedings of the Third International ICST Conference on Forensic Applications and Techniques in Telecommunications, Information and Multimedia, E-Forensics 2010, held in Shanghai, China, in November 2010. The 32 revised full papers presented were carefully reviewed and selected from 42 submissions in total. These, along with 5 papers from a collocated workshop of E-Forensics Law, cover a wide range of topics including digital evidence handling, data carving, records tracing, device forensics, data tamper identification, and mobile device locating.

Network forensics is an evolution of typical digital forensics, in which evidence is gathered from network traffic in near real time. This book will help security and forensics professionals as well as network administrators build a solid foundation of processes and controls to identify incidents and gather evidence from the network. Forensic scientists and investigators are some of the fastest growing jobs in the United States with over 70,000 individuals employed in 2008. Specifically in the area of cybercrime and digital forensics, the federal government is conducting a talent search for 10,000 qualified specialists. Almost every technology company has developed or is developing a cloud computing strategy. To cut costs, many companies are moving toward network-based applications like SalesForce.com, PeopleSoft, and HR Direct. Every day, we are moving companies' proprietary data into a cloud, which can be hosted anywhere in the world. These companies need to understand how to identify where their data is going and what they are sending. Key network forensics skills and tools are discussed-for example, capturing network traffic, using Snort for network-based forensics, using NetWitness Investigator for network traffic analysis, and deciphering TCP/IP. The current and future states of network forensics analysis tools are addressed. The admissibility of network-based traffic is covered as well as the typical life cycle of a network forensics investigation.

This wwo volume set of the Computing Handbook, Third Edition (previously theComputer Science Handbook) provides up-to-date information on a wide range of topics in computer science, information systems (IS), information technology (IT), and software engineering. The third edition of this popular handbook addresses not only the dramatic growth of computing as a discipline but also the relatively new delineation of computing as a family of separate disciplines as

described by the Association for Computing Machinery (ACM), the IEEE Computer Society (IEEE-CS), and the Association for Information Systems (AIS). Both volumes in the set describe what occurs in research laboratories, educational institutions, and public and private organizations to advance the effective development and use of computers and computing in today's world. Research-level survey articles provide deep insights into the computing discipline, enabling readers to understand the principles and practices that drive computing education, research, and development in the twenty-first century. Chapters are organized with minimal interdependence so that they can be read in any order and each volume contains a table of contents and subject index, offering easy access to specific topics. The first volume of this popular handbook mirrors the modern taxonomy of computer science and software engineering as described by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS). Written by established leading experts and influential young researchers, it examines the elements involved in designing and implementing software, new areas in which computers are being used, and ways to solve computing problems. The book also explores our current understanding of software engineering and its effect on the practice of software development and the education of software professionals. The second volume of this popular handbook demonstrates the richness and breadth of the IS and IT disciplines. The book explores their close links to the practice of using, managing, and developing IT-based solutions to advance the goals of modern organizational environments. Established leading experts and influential young researchers present introductions to the current status and future directions of research and give in-depth perspectives on the contributions of academic research to the practice of IS and IT development, use, and management.

Virtualization and Forensics: A Digital Forensic Investigators Guide to Virtual Environments offers an in-depth view into the world of virtualized environments and the implications they have on forensic investigations. Named a 2011 Best Digital Forensics Book by InfoSec Reviews, this guide gives you the end-to-end knowledge needed to identify server, desktop, and portable virtual environments, including: VMware, Parallels, Microsoft, and Sun. It covers technological advances in virtualization tools, methods, and issues in digital forensic investigations, and explores trends and emerging technologies surrounding virtualization technology. This book consists of three parts. Part I explains the process of virtualization and the different types of virtualized environments. Part II details how virtualization interacts with the basic forensic process, describing the methods used to find virtualization artifacts in dead and live environments as well as identifying the virtual activities that affect the examination process. Part III addresses advanced virtualization issues, such as the challenges of virtualized environments, cloud computing, and the future of virtualization. This book will be a valuable resource for forensic investigators (corporate and law enforcement) and incident response professionals. Named a 2011 Best Digital Forensics Book by InfoSec Reviews Gives you the end-to-end knowledge needed to identify server, desktop, and portable virtual environments, including: VMware, Parallels, Microsoft, and Sun Covers technological advances in virtualization tools, methods, and issues in digital forensic investigations Explores trends and emerging technologies surrounding virtualization technology

Mastering Windows Network Forensics and Investigation
Techno Security's Guide to Managing Risks for IT Managers, Auditors, and Investigators
Digital Forensics for Handheld Devices
First International Joint Conference, SPIT 2011, Amsterdam, The Netherlands, December 1-2, 2011, Revised Selected Papers
15th IFIP WG 11.9 International Conference, Orlando, FL, USA, January 28–29, 2019, Revised Selected Papers
Proceedings of International Conference on Big Data, Machine Learning and their Applications
A Digital Forensic Investigator's Guide to Virtual Environments

This textbook provides an introduction to digital forensics, a rapidly evolving field for solving crimes. Beginning with the basic concepts of computer forensics, each of the book's 21 chapters focuses on a particular forensic topic composed of two parts: background knowledge and hands-on experience through practice exercises. Each theoretical or background section concludes with a series of review questions, which are prepared to test students' understanding of the materials, while the practice exercises are intended to afford students the opportunity to apply the concepts introduced in the section on background knowledge. This experience-oriented textbook is meant to assist students in gaining a better understanding of digital forensics through hands-on practice in collecting and preserving digital evidence by completing various exercises. With 20 student-directed, inquiry-based practice exercises, students will better understand digital forensic concepts and learn digital forensic investigation techniques. This textbook is intended for upper undergraduate and graduate-level students who are taking digital-forensic related courses or working in digital forensics research. It can also be used by digital forensics practitioners, IT security analysts, and security engineers working in the IT security industry, particular IT professionals responsible for digital investigation and incident handling or researchers working in these related fields as a reference book.

Investigating the Cyber Breach The Digital Forensics Guide for the Network Engineer · Understand the realities of cybercrime and today's attacks · Build a digital forensics lab to test tools and methods, and gain expertise · Take the right actions as soon as you discover a breach · Determine the full scope of an investigation and the role you'll play · Properly collect, document, and preserve evidence and data · Collect and analyze data from PCs, Macs, IoT devices, and other endpoints · Use packet logs, NetFlow, and

scanning to build timelines, understand network activity, and collect evidence · Analyze iOS and Android devices, and understand encryption-related obstacles to investigation · Investigate and trace email, and identify fraud or abuse · Use social media to investigate individuals or online identities · Gather, extract, and analyze breach data with Cisco tools and techniques · Walk through common breaches and responses from start to finish · Choose the right tool for each task, and explore alternatives that might also be helpful The professional's go-to digital forensics resource for countering attacks right now Today, cybersecurity and networking professionals know they can't possibly prevent every breach, but they can substantially reduce risk by quickly identifying and blocking breaches as they occur. Investigating the Cyber Breach: The Digital Forensics Guide for the Network Engineer is the first comprehensive guide to doing just that. Writing for working professionals, senior cybersecurity experts Joseph Muniz and Aamir Lakhani present up-to-the-minute techniques for hunting attackers, following their movements within networks, halting exfiltration of data and intellectual property, and collecting evidence for investigation and prosecution. You'll learn how to make the most of today's best open source and Cisco tools for cloning, data analytics, network and endpoint breach detection, case management, monitoring, analysis, and more. Unlike digital forensics books focused primarily on post-attack evidence gathering, this one offers complete coverage of tracking threats, improving intelligence, rooting out dormant malware, and responding effectively to breaches underway right now. This book is part of the Networking Technology: Security Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers.

An authoritative guide to investigating high-technologycrimes Internet crime is seemingly ever on the rise, making the needfor a comprehensive resource on how to investigate these crimeseven more dire. This professional-level book--aimed at lawenforcement personnel, prosecutors, and corporateinvestigators--provides you with the training you need in order toacquire the sophisticated skills and software solutions to stay onestep ahead of computer criminals. Specifies the techniques needed to investigate, analyze, anddocument a criminal act on a Windows computer or network Places a special emphasis on how to thoroughly investigatecriminal activity and now just perform the initial response Walks you through ways to present technically complicatedmaterial in simple terms that will hold up in court Features content fully updated for Windows Server 2008 R2 andWindows 7 Covers the emerging field of Windows Mobile forensics Also included is a classroom support package to ensure academicadoption, Mastering Windows Network Forensics and Investigation,2nd Edition offers help for investigating high-technologycrimes.

The advancement of technology is a standard of modern daily life, whether it be the release of a new cellphone, computer, or a self-driving car. Due to this constant advancement, the networks on which these technologies operate must advance as well. Innovations in Software-Defined Networking and Network Functions Virtualization is a critical scholarly publication that observes the advances made in network infrastructure through achieving cost efficacy while maintaining maximum flexibility for the formation and operation of these networks. Featuring coverage on a broad selection of topics, such as software-defined storage, openflow controller, and storage virtualization, this publication is geared toward professionals, computer engineers, academicians, students, and researchers seeking current and relevant research on the advancements made to network infrastructures.

Cloud Computing and Virtualization Technologies in Libraries

The Digital Forensics Guide for the Network Engineer

The Basics of Digital Forensics

Virtualization and Forensics

Encyclopedia of Information Assurance - 4 Volume Set (Print)

Advances in Digital Forensics IV

Two-Volume Set

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

Digital forensic science, or digital forensics, is the application of scientific tools and methods to identify, collect, and analyze digital (data) artifacts in support of legal proceedings. From a more

technical perspective, it is the process of reconstructing the relevant sequence of events that have led to the currently observable state of a target IT system or (digital) artifacts. Over the last three decades, the importance of digital evidence has grown in lockstep with the fast societal adoption of information technology, which has resulted in the continuous accumulation of data at an exponential rate. Simultaneously, there has been a rapid growth in network connectivity and the complexity of IT systems, leading to more complex behavior that needs to be investigated. The goal of this book is to provide a systematic technical overview of digital forensic techniques, primarily from the point of view of computer science. This allows us to put the field in the broader perspective of a host of related areas and gain better insight into the computational challenges facing forensics, as well as draw inspiration for addressing them. This is needed as some of the challenges faced by digital forensics, such as cloud computing, require qualitatively different approaches; the sheer volume of data to be examined also requires new means of processing it. Practically every crime now involves some aspect of digital evidence. This is the most recent volume in the Advances in Digital Forensics series. It describes original research results and innovative applications in the emerging discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. This book contains a selection of twenty-eight edited papers from the Fourth Annual IFIP WG. 11.9 Conference on Digital Forensics, held at Kyoto University, Kyoto, Japan in the spring of 2008. Master the skills you need to conduct a successful digital investigation with Nelson/Phillips/Steuart's GUIDE TO COMPUTER FORENSICS AND INVESTIGATIONS, Sixth Edition--the most comprehensive forensics resource available. Providing clear instruction on the tools and techniques of the trade, it walks you through every step of the computer forensics investigation--from lab setup to testifying in court. The authors also thoroughly explain how to use current forensics software. The text includes the most up-to-date coverage available of Linux and Macintosh, virtual machine software such as VMware and Virtual Box, Android, mobile devices, handheld devices, cloud forensics, email, social media and the Internet of Anything. 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.

Digital Forensic Science

Mastering Python Forensics

Information Security

Advances in Digital Forensics XVI

Digital Forensics and Investigations

ICBMA 2019

From Reactive to Proactive Process, Second Edition

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

Digital 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 XII 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, Mobile Device Forensics, Network Forensics, Cloud Forensics, Social Media Forensics, Image Forensics, Forensic Techniques, and Forensic Tools. This book is the twelfth 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 edited papers from the Twelfth Annual IFIP WG. 11.9 International Conference on Digital Forensics, held in New Delhi, India in the winter of 2016. Advances in Digital Forensics XII 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, Chair, IFIP WG. 11.9 on Digital Forensics, is a 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.

Approximately 80 percent of the world's population now owns a cell phone, which can hold evidence or contain logs about communications concerning a crime. Cameras, PDAs, and GPS devices can also contain information related to corporate policy infractions and crimes. Aimed to prepare investigators in the public and private sectors, Digital Forensics for Handheld Devices examines both the theoretical and practical aspects of investigating handheld digital devices. This book touches on all areas of mobile device forensics, including topics from the legal, technical, academic, and social aspects of the discipline. It provides guidance on how to seize data, examine it, and prepare it as evidence for court. This includes the use of chain of custody forms for seized evidence and Faraday Bags for digital devices to prevent further connectivity and tampering of evidence. Emphasizing the policies required in the work environment, the author provides readers with a clear understanding of the differences between a corporate investigation and a criminal investigation. The book also: Offers best practices for establishing an incident response policy and seizing data from company or privately owned digital devices Provides guidance in establishing dedicated examinations free of viruses, spyware, and connections to other devices that could taint evidence Supplies guidance on determining protocols for complicated

crime scenes with external media and devices that may have connected with the handheld device Considering important privacy issues and the Fourth Amendment, this book facilitates an understanding of how to use digital forensic tools to investigate the complete range of available digital devices, including flash drives, cell phones, PDAs, digital cameras, and netbooks. It includes examples of commercially available digital forensic tools and ends with a discussion of the education and certifications required for various careers in mobile device forensics.

While cloud computing continues to transform developments in information technology services, these advancements have contributed to a rise in cyber attacks, producing an urgent need to extend the applications of investigation processes. Cybercrime and Cloud Forensics: Applications for Investigation Processes presents a collection of research and case studies of applications for investigation processes in cloud computing environments. This reference source brings together the perspectives of cloud customers, security architects, and law enforcement agencies in the developing area of cloud forensics.

Digital Forensics Basics

Innovations in Software-Defined Networking and Network Functions Virtualization

Evolution of Traditional Digital Forensics in Virtualization by Using Virtual Machine Introspection

Digital Forensics with Open Source Tools

Digital Forensics for Network, Internet, and Cloud Computing

16th IFIP WG. 11.9 International Conference, New Delhi, India, January 6–8, 2020, Revised Selected Papers

Signal Processing and Information Technology

This book constitutes the thoroughly refereed post-conference proceedings of the First International Joint Conference on Advances in Signal Processing and Information Technology (SPIT 2011) and Recent Trends in Information Processing and Computing (IPC 2011) held in Amsterdam, The Netherlands, in December 2011. The 50 revised full papers presented were carefully selected from 298 submissions. Conference papers promote research and development activities in computer science, information technology, computational engineering, image and signal processing, and communication.

This book contains high-quality peer-reviewed papers of the International Conference on Big Data, Machine Learning and their Applications (ICBMA 2019) held at Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India, during 29–31 May 2020. The book provides significant contributions in a structured way so that prospective readers can understand how these techniques are used in finding solutions to complex engineering problems. The book covers the areas of big data, machine learning, bio-inspired algorithms, artificial intelligence and their applications.

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 technical concepts and the tools needed to perform examinations. Details on digital forensics for computers, networks, cell phones, GPS, the cloud, and Internet are discussed. Also learn how to collect evidence, document the scene, and how deleted data is recovered. Learn all about what Digital Forensics entails Build a toolkit and prepare an investigative plan Understand the common artifacts to look for during an exam

Charged with ensuring the confidentiality, integrity, availability, and delivery of all forms of an entity's information, Information Assurance (IA) professionals require a fundamental understanding of a wide range of specializations, including digital forensics, fraud examination, systems engineering, security risk management, privacy, and compliance. Establishing this understanding and keeping it up to date requires a resource with coverage as diverse as the field it covers. Filling this need, the Encyclopedia of Information Assurance presents an up-to-date collection of peer-reviewed articles and references written by authorities in their fields. From risk management and privacy to auditing and compliance, the encyclopedia's four volumes provide comprehensive coverage of the key topics related to information assurance. This complete IA resource: Supplies the understanding needed to help prevent the misuse of sensitive information Explains how to maintain the integrity of critical systems Details effective tools, techniques, and methods for protecting personal and corporate data against the latest threats Provides valuable examples, case studies, and discussions on how to address common and emerging IA challenges Placing the wisdom of leading researchers and practitioners at your fingertips, this authoritative reference provides the knowledge and insight needed to avoid common pitfalls and stay one step ahead of evolving threats. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) + 44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

People, Process, and Technologies to Defend the Enterprise

Issues, Methods, and Challenges

Introductory Computer Forensics

Cybercrime and Cloud Forensics: Applications for Investigation Processes

Open Source Software for Digital Forensics

Investigating the Cyber Breach

A Practical Guide Using Windows OS

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Computer networks, cloud computing, smartphones, embedded devices and the Internet of Things have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence in legal proceedings. Digital forensics also has myriad intelligence applications; furthermore, it has a vital role in cyber security -- investigations of security breaches yield valuable information that can be used to design more secure and resilient systems. Advances in Digital Forensics XV 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: forensic models, mobile and embedded device forensics, filesystem forensics, image forensics, and forensic techniques. This book is the fifteenth 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 fourteen edited papers from the Fifteenth Annual IFIP WG 11.9 International Conference on Digital Forensics, held in Orlando, Florida, USA in the winter of 2019. Advances in Digital Forensics XV 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.

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

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.

This book constitutes the refereed proceedings of the 17th International Conference on Information Security, ISC 2014, held in Hong Kong, China, in October 2014. The 20 revised full papers presented together with 16 short papers and two invited papers were carefully reviewed and selected from 106 submissions. The papers are organized in topical sections on public-key encryption, authentication, symmetric key cryptography, zero-knowledge proofs and arguments, outsourced and multi-party computations, implementation, information leakage, firewall and forensics, Web security, and android security.

8th IFIP WG 11.9 International Conference on Digital Forensics, Pretoria, South Africa, January 3-5, 2012, Revised Selected Papers

Digital Forensics and Incident Response

Advances in Digital Forensics XII

Fifth IFIP WG 11.9 International Conference on Digital Forensics, Orlando, Florida, USA, January 26-28, 2009, Revised Selected Papers

Handbook of Research on Computational Forensics, Digital Crime, and Investigation: Methods and Solutions

Cyber Forensics

12th IFIP WG 11.9 International Conference, New Delhi, January 4-6, 2016, Revised Selected Papers

This book covers the full life cycle of conducting a mobile and computer digital forensic examination, including planning and performing an investigation as well as report writing and testifying. Case reviews in corporate, civil, and criminal situations are also described from both prosecution and defense perspectives. Digital Forensics Explained, Second Edition draws from years of experience in local, state, federal, and international environments and highlights the challenges inherent in deficient cyber security practices. Topics include the importance of following the scientific method and verification, legal and ethical issues, planning an investigation (including tools and techniques), incident response, case project management and authorization, social media and internet, cloud, anti-forensics, link and visual analysis, and psychological considerations. The book is a valuable resource for the academic environment, law enforcement, those in the legal profession, and those working in the cyber security field. Case reviews include cyber security breaches, anti-forensic challenges, child exploitation, and social media investigations. Greg Gogolin, PhD, CISSP, is a Professor of Information Security and Intelligence at Ferris State University and a licensed Professional Investigator. He has worked more than 100 cases in criminal, civil, and corporate environments.

The emergence of open access, web technology, and e-publishing has slowly transformed modern libraries into digital libraries. With this variety of technologies utilized, cloud computing and virtual technology has become an advantage for libraries to provide a single efficient system that saves money and time. Cloud Computing and Virtualization Technologies in Libraries highlights the concerns and limitations that need addressed in order to optimize the benefits of cloud computing to the virtualization of libraries. Focusing on the latest innovations and technological advancements, this book is essential for professionals, students, and researchers interested in cloud library management and development in different types of information environments.

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 V 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, integrity and privacy, network forensics, forensic computing, investigative techniques, legal issues and evidence management. This book is the fifth 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-three edited papers from the Fifth Annual IFIP WG. 11.9 International Conference on Digital Forensics, held at the National Center for Forensic Science, Orlando, Florida, USA in the spring of 2009. Advances in Digital Forensics V 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.

One of the biggest buzzwords in the IT industry for the past few years, virtualization has matured into a practical requirement for many best-practice business scenarios, becoming an invaluable tool for security professionals at companies of every size. In addition to saving time and other resources, virtualization affords unprecedented means for intrusion and malware detection, prevention, recovery, and analysis. Taking a practical approach in a growing market underserved by books, this hands-on title is the first to combine in one place the most important and sought-after uses of virtualization for enhanced security, including sandboxing, disaster recovery and high availability, forensic analysis, and honeypotting. Already gaining buzz and traction in actual usage at an impressive rate, Gartner research indicates that virtualization will be the most significant trend in IT infrastructure and operations over the next four years. A recent report by IT research firm IDC predicts the virtualization services market will grow from $5.5 billion in 2006 to $11.7 billion in 2011. With this growth in adoption, becoming increasingly common even for small and midsize businesses, security is becoming a much more serious concern, both in terms of how to secure virtualization and how virtualization can serve critical security objectives. Titles exist and are on the way to fill the need for securing virtualization, but security professionals do not yet have a book outlining the many security applications of virtualization that will become increasingly important in their job requirements. This book is the first to fill that need, covering tactics such as isolating a virtual environment on the desktop for application testing, creating virtualized storage solutions for immediate disaster recovery and high availability across a network, migrating physical systems to virtual systems for analysis, and creating complete virtual systems to entice hackers and expose potential threats to actual production systems. About the Technologies A sandbox is an isolated environment created to run and test applications that might be a security risk. Recovering a compromised system is as easy as restarting the virtual machine to revert to the point before failure. Employing virtualization on actual production systems, rather than just test environments, yields similar benefits for disaster recovery and high availability. While traditional disaster recovery methods require time-consuming reinstallation of the operating system and applications before restoring data, backing up to a virtual machine makes the recovery process much easier, faster, and efficient. The virtual machine can be restored to same physical machine or an entirely different machine if the original machine has experienced irreparable hardware failure. Decreased downtime translates into higher availability of the system and increased productivity in the enterprise. Virtualization has been used for years in the field of forensic analysis, but new tools, techniques, and automation capabilities are making it an increasingly important tool. By means of virtualization, an investigator can create an exact working copy of a physical computer on another machine, including hidden or encrypted partitions, without altering any data, allowing complete access for analysis. The investigator can also take a live ?snapshot? to review or freeze the target computer at any point in time, before an attacker has a chance to cover his tracks or inflict further damage.

A Hands-on Practical Approach
17th International Conference, ISC 2014, Hong Kong, China, October 12-14, 2014, Proceedings
Examining Emerging and Hybrid Technologies
Advances in Digital Forensics XV
Virtualization for Security
Incident response techniques and procedures to respond to modern cyber threats
Computing Handbook

Build your organization's cyber defense system by effectively implementing digital forensics and incident management techniques Key Features Create a solid incident response framework and manage cyber incidents effectively Perform malware analysis for effective incident response Explore real-life scenarios that effectively use threat intelligence and modeling techniques Book Description An understanding of how digital forensics integrates with the overall response to cybersecurity incidents is key to securing your organization's infrastructure from attacks. This updated second edition will help you perform cutting-edge digital forensic activities and incident response. After focusing on the fundamentals of incident response that are critical to any information security team, you'll move on to exploring the incident response framework. From understanding its importance to creating a swift and effective response to security incidents, the book will guide you with the help of useful examples. You'll later get up to speed with digital forensic techniques, from acquiring evidence and examining volatile memory through to hard drive examination and network-based evidence. As you progress, you'll discover the role that threat intelligence plays in the incident response process. You'll also learn how to prepare an incident response report that documents the findings of your analysis. Finally, in addition to various incident response activities, the book will address malware analysis, and demonstrate how you can proactively use your digital forensic skills in threat hunting. By the end of this book, you'll have learned how to efficiently investigate and report unwanted security breaches and incidents in your organization. What you will learn Create and deploy an incident response capability within your own organization Perform proper evidence acquisition and handling Analyze the evidence collected and determine the root cause of a security incident Become well-versed with memory and log analysis Integrate digital forensic techniques and procedures into the overall incident response process Understand the different techniques for threat hunting Write effective incident reports that document

the key findings of your analysis Who this book is for This book is for cybersecurity and information security professionals who want to implement digital forensics and incident response in their organization. You will also find the book helpful if you are new to the concept of digital forensics and are looking to get started with the fundamentals. A basic understanding of operating systems and some knowledge of networking fundamentals are required to get started with this book.

"This book provides a media for advancing research and the development of theory and practice of digital crime prevention and forensics, embracing a broad range of digital crime and forensics disciplines"--Provided by publisher.

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

Virtualization and Forensics: A Digital Forensic Investigators Guide to Virtual Environments provides an introduction to virtualized environments and their implications on forensic investigations. It emphasizes the need for organizations using virtualization to be proactive rather than reactive. Being proactive means learning the methods in this book to train staff, so when an incident occurs, they can quickly perform the forensics and minimize the damage to their systems. The book is organized into three parts. Part I deals with the virtualization process and the different types of virtualized environments. It explains how virtualization happens along with the various methods of virtualization, hypervisors, and the main categories of virtualization. It discusses server virtualization, desktop virtualization, and the various portable virtualization programs, emulators, and appliances. Part II details how virtualization interacts with the basic forensic process. It describes the methods used to find virtualization artifacts in dead and live environments, and identifies the virtual activities that affect the examination process. Part III addresses advanced virtualization issues, such as the challenges of virtualized environments, cloud computing, and the future of virtualization. Named a 2011 Best Digital Forensics Book by InfoSec Reviews Gives you the end-to-end knowledge needed to identify server, desktop, and portable virtual environments, including: VMware, Parallels, Microsoft, and Sun Covers technological advances in virtualization tools, methods, and issues in digital forensic investigations Explores trends and emerging technologies surrounding virtualization technology

Digital Forensics Explained
A Digital Forensic Investigator's Guide to Virtual Environments
Security, Privacy, and Digital Forensics in the Cloud
Applications for Investigation Processes
Including Sandboxing, Disaster Recovery, High Availability, Forensic Analysis, and Honeypotting
A Forensic Evidence Guide for Moving Targets and Data
The Primer for Getting Started in Digital Forensics

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Computer networks, cloud computing, smartphones, embedded devices and the Internet of Things have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence in legal proceedings. Digital forensics also has myriad intelligence applications; furthermore, it has a vital role in cyber security -- investigations of security breaches yield valuable information that can be used to design more secure and resilient systems. Advances in Digital Forensics XVI describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: themes and issues, forensic techniques, filesystem forensics, cloud forensics, social media forensics, multimedia forensics, and novel applications. This book is the sixteenth 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 sixteen edited papers from the Sixteenth Annual IFIP WG 11.9 International Conference on Digital Forensics, held in New Delhi, India, in the winter of 2020. Advances in Digital Forensics XVI 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.

Every year, in response to new technologies and new laws in different countries and regions, there are changes to the fundamental knowledge, skills, techniques, and tools required by all IT security professionals. In step with the lightning-quick, increasingly fast pace of change in the technology field, the Information Security Management Handbook, updated yearly, has become the standard on which all IT security programs and certifications are based. It reflects new updates to the Common Body of Knowledge (CBK) that IT security professionals all over the globe need to know. Captures the crucial elements of the CBK Exploring the ten domains of the CBK, the book explores access control, telecommunications and network security, information security and risk management, application security, and cryptography. In addition, the expert contributors address security architecture and design, operations security, business continuity planning and disaster recovery planning. The book also covers legal regulations, compliance, investigation, and physical security. In this anthology of treatises dealing with the management and technical facets of information security, the contributors examine varied topics such as anywhere computing, virtualization, podslurping, quantum computing, mashups, blue snarfing, mobile device theft, social computing, voting machine insecurity, and format string vulnerabilities. Also available on CD-ROM Safeguarding information continues to be a crucial concern of all IT professionals. As new risks threaten the security of our systems, it is imperative that those charged with protecting that

information continually update their armor of knowledge to guard against tomorrow's hackers and software vulnerabilities. This comprehensive Handbook, also available in fully searchable CD-ROM format keeps IT professionals abreast of new developments on the security horizon and reinforces timeless concepts, providing them with the best information, guidance, and counsel they can obtain.

"This book contains some of the most up-to-date information available anywhere on a wide variety of topics related to Techno Security. As you read the book, you will notice that the authors took the approach of identifying some of the risks, threats, and vulnerabilities and then discussing the countermeasures to address them. Some of the topics and thoughts discussed here are as new as tomorrow's headlines, whereas others have been around for decades without being properly addressed. I hope you enjoy this book as much as we have enjoyed working with the various authors and friends during its development. —Donald Withers, CEO and Cofounder of TheTrainingCo. • Jack Wiles, on Social Engineering offers up a potpourri of tips, tricks, vulnerabilities, and lessons learned from 30-plus years of experience in the worlds of both physical and technical security. • Russ Rogers on the Basics of Penetration Testing illustrates the standard methodology for penetration testing: information gathering, network enumeration, vulnerability identification, vulnerability exploitation, privilege escalation, expansion of reach, future access, and information compromise. • Johnny Long on No Tech Hacking shows how to hack without touching a computer using tailgating, lock bumping, shoulder surfing, and dumpster diving. • Phil Drake on Personal, Workforce, and Family Preparedness covers the basics of creating a plan for you and your family, identifying and obtaining the supplies you will need in an emergency. • Kevin O'Shea on Seizure of Digital Information discusses collecting hardware and information from the scene. • Amber Schroader on Cell Phone Forensics writes on new methods and guidelines for digital forensics. • Dennis O'Brien on RFID: An Introduction, Security Issues, and Concerns discusses how this well-intended technology has been eroded and used for fringe implementations. • Ron Green on Open Source Intelligence details how a good Open Source Intelligence program can help you create leverage in negotiations, enable smart decisions regarding the selection of goods and services, and help avoid pitfalls and hazards. • Raymond Blackwood on Wireless Awareness: Increasing the Sophistication of Wireless Users maintains it is the technologist's responsibility to educate, communicate, and support users despite their lack of interest in understanding how it works. • Greg Kipper on What is Steganography? provides a solid understanding of the basics of steganography, what it can and can't do, and arms you with the information you need to set your career path. • Eric Cole on Insider Threat discusses why the insider threat is worse than the external threat and the effects of insider threats on a company. Internationally known experts in information security share their wisdom Free pass to Techno Security Conference for everyone who purchases a book—$1,200 value

Forensics in Telecommunications, Information and Multimedia