

# Practical Mobile Forensics – Third Edition

Covering up-to-date mobile platforms, *Practical Mobile Forensics – Third Edition* focuses on teaching you the most recent techniques for investigating mobile devices.

This book will delve into mobile forensics techniques in iOS 9-11, Android 7-8, and Windows 10. It will demonstrate the latest open source and commercial mobile forensics tools, enabling you to analyze and retrieve data effectively.

You will learn how to inspect and retrieve data from the cloud, and document and prepare reports of your investigations.

By the end of this book, you will have mastered the current operating systems and the relevant techniques to recover data from mobile devices by leveraging open source and commercial solutions.

## Things you will learn:

- Discover the new techniques in practical mobile forensics
- Understand the architecture and security mechanisms present in iOS and Android platforms
- Identify sensitive files on the iOS and Android platforms
- Set up a forensic environment
- Extract data from the iOS and Android platforms
- Recover data on the iOS and Android platforms
- Understand the forensics of Windows mobile devices
- Explore various third-party application techniques and data recovery techniques

# Practical Mobile Forensics

**Iosif I. Androulidakis**



## **Practical Mobile Forensics:**

**Practical Mobile Forensics** Satish Bommisetty,Rohit Tamma,2014-07-13 The book is an easy to follow guide with clear instructions on various mobile forensic techniques The chapters and the topics within are structured for a smooth learning curve which will swiftly empower you to master mobile forensics If you are a budding forensic analyst consultant engineer or a forensic professional wanting to expand your skillset this is the book for you The book will also be beneficial to those with an interest in mobile forensics or wanting to find data lost on mobile devices It will be helpful to be familiar with forensics in general but no prior experience is required to follow this book

**Practical Mobile Forensics** Satish Bommisetty,Rohit Tamma,Heather Mahalik,2014-07-21 The book is an easy to follow guide with clear instructions on various mobile forensic techniques The chapters and the topics within are structured for a smooth learning curve which will swiftly empower you to master mobile forensics If you are a budding forensic analyst consultant engineer or a forensic professional wanting to expand your skillset this is the book for you The book will also be beneficial to those with an interest in mobile forensics or wanting to find data lost on mobile devices It will be helpful to be familiar with forensics in general but no prior experience is required to follow this book

Practical Mobile Forensics Rohit Tamma,Oleg Skulkin,Heather Mahalik,Satish Bommisetty,2020-04-09 Become well versed with forensics for the Android iOS and Windows 10 mobile platforms by learning essential techniques and exploring real life scenarios Key FeaturesApply advanced forensic techniques to recover deleted data from mobile devicesRetrieve and analyze data stored not only on mobile devices but also on the cloud and other connected mediumsUse the power of mobile forensics on popular mobile platforms by exploring different tips tricks and techniquesBook Description Mobile phone forensics is the science of retrieving data from a mobile phone under forensically sound conditions This updated fourth edition of Practical Mobile Forensics delves into the concepts of mobile forensics and its importance in today s world The book focuses on teaching you the latest forensic techniques to investigate mobile devices across various mobile platforms You will learn forensic techniques for multiple OS versions including iOS 11 to iOS 13 Android 8 to Android 10 and Windows 10 The book then takes you through the latest open source and commercial mobile forensic tools enabling you to analyze and retrieve data effectively From inspecting the device and retrieving data from the cloud through to successfully documenting reports of your investigations you ll explore new techniques while building on your practical knowledge Toward the end you will understand the reverse engineering of applications and ways to identify malware Finally the book guides you through parsing popular third party applications including Facebook and WhatsApp By the end of this book you will be proficient in various mobile forensic techniques to analyze and extract data from mobile devices with the help of open source solutions What you will learnDiscover new data extraction data recovery and reverse engineering techniques in mobile forensicsUnderstand iOS Windows and Android security mechanismsIdentify sensitive files on every mobile platformExtract data from iOS Android and Windows platformsUnderstand malware analysis reverse

engineering and data analysis of mobile devices Explore various data recovery techniques on all three mobile platforms Who this book is for This book is for forensic examiners with basic experience in mobile forensics or open source solutions for mobile forensics Computer security professionals researchers or anyone looking to gain a deeper understanding of mobile internals will also find this book useful Some understanding of digital forensic practices will be helpful to grasp the concepts covered in the book more effectively

**Practical Mobile Forensics** Heather Mahalik, Rohit Tamma, Satish Bommisetty, 2016-05-20 A hands on guide to mastering mobile forensics for the iOS Android and the Windows Phone platforms About This Book Get to grips with the basics of mobile forensics and the various forensic approaches Retrieve and analyze the data stored on mobile devices and on the cloud A practical guide to leverage the power of mobile forensics on the popular mobile platforms with lots of tips tricks and caveats Who This Book Is For This book is for forensics professionals who are eager to widen their forensics skillset to mobile forensics and acquire data from mobile devices What You Will Learn Discover the new features in practical mobile forensics Understand the architecture and security mechanisms present in iOS and Android platforms Identify sensitive files on the iOS and Android platforms Set up the forensic environment Extract data on the iOS and Android platforms Recover data on the iOS and Android platforms Understand the forensics of Windows devices Explore various third party application techniques and data recovery techniques In Detail Mobile phone forensics is the science of retrieving data from a mobile phone under forensically sound conditions This book is an update to Practical Mobile Forensics and it delves into the concepts of mobile forensics and its importance in today s world We will deep dive into mobile forensics techniques in iOS 8 9 2 Android 4 4 6 and Windows Phone devices We will demonstrate the latest open source and commercial mobile forensics tools enabling you to analyze and retrieve data effectively You will learn how to introspect and retrieve data from cloud and document and prepare reports for your investigations By the end of this book you will have mastered the current operating systems and techniques so you can recover data from mobile devices by leveraging open source solutions Style and approach This book takes a very practical approach and depicts real life mobile forensics scenarios with lots of tips and tricks to help acquire the required forensics skillset for various mobile platforms

**Practical Mobile Forensics**, Heather Mahalik, Satish Bommisetty, Oleg Skulkin, Rohit Tamma, 2018-01-23 Investigate analyze and report iOS Android and Windows devices Key Features Get hands on experience in performing simple to complex mobile forensics techniques Retrieve and analyze data stored not only on mobile devices but also through the cloud and other connected mediums A practical guide to leveraging the power of mobile forensics on popular mobile platforms with lots of tips tricks and caveats Book Description Covering up to date mobile platforms this book will focuses on teaching you the most recent techniques for investigating mobile devices We delve mobile forensics techniques in iOS 9 11 Android 7 8 devices and Windows 10 We will demonstrate the latest open source and commercial mobile forensics tools enabling you to analyze and retrieve data effectively You will learn how to introspect and retrieve data from the cloud and document and prepare reports

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teaching you the latest forensic techniques to investigate mobile devices across various mobile platforms You will learn forensic techniques for multiple OS versions including iOS 11 to iOS 13 Android 8 to Android 10 and Windows 10 The book then takes you through the latest open source and commercial mobile forensic tools enabling you to analyze and retrieve data effectively From inspecting the device and retrieving data from the cloud through to successfully documenting reports of your investigations you ll explore new techniques while building on your practical knowledge Toward the end you will understand the reverse engineering of applications and ways to identify malware Finally the book guides you through parsing popular third party applications including Facebook and WhatsApp By the end of this book you will be proficient in various mobile forensic techniques to analyze and extract data from mobile devices with the help of open source solutions What you will learn Discover new data extraction data recovery and reverse engineering techniques in mobile forensics Understand iOS Windows and Android security mechanisms Identify sensitive files on every mobile platform Extract data from iOS Android and Windows platforms Understand malware analysis reverse engineering and data analysis of mobile devices Explore various data recovery techniques on all three mobile platforms Who this book is for This book is for forensic examiners with basic experience in mobile forensics or open source solutions for mobile forensics Computer security professionals researchers or anyone looking to gain a deeper understanding of mobile internals will also find this book useful Some underst **Practical Mobile Forensics** Satish Bommisetty,Rohit Tamma,Heather Mahalik,2014-01-01 The book is an easy to follow guide with clear instructions on various mobile forensic techniques The chapters and the topics within are structured for a smooth learning curve which will swiftly empower you to master mobile forensics If you are a budding forensic analyst consultant engineer or a forensic professional wanting to expand your skillset this is the book for you The book will also be beneficial to those with an interest in mobile forensics or wanting to find data lost on mobile devices It will be helpful to be familiar with forensics in general but no prior experience is required to follow this book [Practical Mobile Forensics - Third Edition](#) Rohit Tamma. Oleg Skulkin. Satish Bommisetty,2018 Investigate analyze and report iOS Android and Windows devices About This Book Get hands on experience in performing simple to complex mobile forensics techniques Retrieve and analyze data stored not only on mobile devices but also through the cloud and other connected mediums A practical guide to leveraging the power of mobile forensics on popular mobile platforms with lots of tips tricks and caveats Who This Book Is For If you are a forensics professional and are eager to widen your forensics skill set to mobile forensics then this book is for you Some understanding of digital forensics practices would do wonders What You Will Learn Discover the new techniques in practical mobile forensics Understand the architecture and security mechanisms present in iOS and Android platforms Identify sensitive files on the iOS and Android platforms Set up a forensic environment Extract data from the iOS and Android platforms Recover data on the iOS and Android platforms Understand the forensics of Windows devices Explore various third party application techniques and data recovery techniques In Detail Covering up to date mobile

platforms this book will focus on teaching you the most recent techniques for investigating mobile devices. We delve into mobile forensics techniques in iOS 9, 11, Android 7, 8 devices, and Windows 10. We will demonstrate the latest open source and commercial mobile forensics tools enabling you to analyze and retrieve data effectively. You will learn how to introspect and retrieve data from the cloud and document and prepare reports of your investigations. By the end of this book, you will have mastered the current operating systems and the relevant techniques to recover data from mobile devices by leveraging open source solutions.

**Style and approach** This book takes a very practical approach and depicts real-life mobile forensics scenarios with lots of tips and tricks to help you acquire the required forensics skillset for various mobile platforms.

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**Practical Forensic Analysis of Artifacts on iOS and Android Devices** Mohammed Moreb, 2022-05-17 Leverage foundational concepts and practical skills in mobile device forensics to perform forensically sound criminal investigations involving the most complex mobile devices currently available on the market. Using modern tools and techniques, this book shows you how to conduct a structured investigation process to determine the nature of the crime and to produce results that are useful in criminal proceedings. You'll walk through the various phases of the mobile forensics process for both Android and iOS-based devices, including forensically extracting, collecting, and analyzing data and producing and disseminating reports. Practical cases and labs involving specialized hardware and software illustrate practical application and performance of data acquisition, including deleted data and the analysis of extracted information. You'll also gain an advanced understanding of computer forensics focusing on mobile devices and other devices not classifiable as laptops, desktops, or servers. This book is your pathway to developing the critical thinking, analytical reasoning, and technical writing skills necessary to effectively work in a junior-level digital forensic or cybersecurity analyst role.

**What You'll Learn** Acquire and investigate data from mobile devices using forensically sound industry standard tools. Understand the relationship between mobile and desktop devices in criminal and corporate investigations. Analyze backup files and artifacts for forensic evidence.

**Who This Book Is For** Forensic examiners with little or basic experience in mobile forensics or open source solutions for mobile forensics. The book will also be useful to anyone seeking a deeper understanding of mobile internals.

***Mobile Forensic Investigations: A Guide to Evidence Collection, Analysis, and Presentation, Second Edition*** Lee Reiber, 2018-12-06 Master the tools and techniques of mobile forensic investigations. Conduct mobile forensic investigations that are legal, ethical, and highly effective using the detailed information contained in this practical guide. *Mobile Forensic Investigations: A Guide to Evidence Collection, Analysis, and Presentation, Second Edition* fully explains the latest tools and methods along with features, examples, and real-world case studies. Find out how to assemble a mobile forensics lab, collect prosecutable evidence, uncover hidden files, and lock down the chain of custody.

This comprehensive resource shows not only how to collect and analyze mobile device data but also how to accurately document your investigations to deliver court ready documents Legally seize mobile devices USB drives SD cards and SIM cards Uncover sensitive data through both physical and logical techniques Properly package document transport and store evidence Work with free open source and commercial forensic software Perform a deep dive analysis of iOS Android and Windows Phone file systems Extract evidence from application cache and user storage files Extract and analyze data from IoT devices drones wearables and infotainment systems Build SQLite queries and Python scripts for mobile device file interrogation Prepare reports that will hold up to judicial and defense scrutiny

*Mobile Forensic Investigations: A Guide to Evidence Collection, Analysis, and Presentation* Lee Reiber,2015-11-22 This in depth guide reveals the art of mobile forensics investigation with comprehensive coverage of the entire mobile forensics investigation lifecycle from evidence collection through advanced data analysis to reporting and presenting findings Mobile Forensics Investigation A Guide to Evidence Collection Analysis and Presentation leads examiners through the mobile forensics investigation process from isolation and seizure of devices to evidence extraction and analysis and finally through the process of documenting and presenting findings This book gives you not only the knowledge of how to use mobile forensics tools but also the understanding of how and what these tools are doing enabling you to present your findings and your processes in a court of law This holistic approach to mobile forensics featuring the technical alongside the legal aspects of the investigation process sets this book apart from the competition This timely guide is a much needed resource in today s mobile computing landscape Notes offer personal insights from the author s years in law enforcement Tips highlight useful mobile forensics software applications including open source applications that anyone can use free of charge Case studies document actual cases taken from submissions to the author s podcast series Photographs demonstrate proper legal protocols including seizure and storage of devices and screenshots showcase mobile forensics software at work Provides you with a holistic understanding of mobile forensics

**Learning Android Forensics** Donnie Tindall,Rohit Tamma,2015-04-30 **Mobile Forensics Cookbook** Igor Mikhaylov,2017-12-15 Discover the tools and techniques of mobile forensic investigations and make sure your mobile autopsy doesn t miss a thing all through powerful practical recipes About This Book Acquire in depth knowledge of mobile device acquisition using modern forensic tools Understand the importance of clouds for mobile forensics and learn how to extract data from them Discover advanced data extraction techniques that will help you to solve forensic tasks and challenges Who This Book Is For This book is aimed at practicing digital forensics analysts and information security professionals familiar with performing basic forensic investigations on mobile device operating systems namely Android iOS Windows and Blackberry It s also for those who need to broaden their skillset by adding more data extraction and recovery techniques What You Will Learn Retrieve mobile data using modern forensic tools Work with Oxygen Forensics for Android devices acquisition Perform a deep dive analysis of iOS Android Windows and BlackBerry Phone file systems Understand the

importance of cloud in mobile forensics and extract data from the cloud using different tools Learn the application of SQLite and Plists Forensics and parse data with digital forensics tools Perform forensic investigation on iOS Android Windows and BlackBerry mobile devices Extract data both from working and damaged mobile devices using JTAG and Chip off Techniques In Detail Considering the emerging use of mobile phones there is a growing need for mobile forensics Mobile forensics focuses specifically on performing forensic examinations of mobile devices which involves extracting recovering and analyzing data for the purposes of information security criminal and civil investigations and internal investigations Mobile Forensics Cookbook starts by explaining SIM cards acquisition and analysis using modern forensics tools You will discover the different software solutions that enable digital forensic examiners to quickly and easily acquire forensic images You will also learn about forensics analysis and acquisition on Android iOS Windows Mobile and BlackBerry devices Next you will understand the importance of cloud computing in the world of mobile forensics and understand different techniques available to extract data from the cloud Going through the fundamentals of SQLite and Plists Forensics you will learn how to extract forensic artifacts from these sources with appropriate tools By the end of this book you will be well versed with the advanced mobile forensics techniques that will help you perform the complete forensic acquisition and analysis of user data stored in different devices Style and approach This book delivers a series of extra techniques and methods for extracting and analyzing data from your Android iOS Windows and Blackberry devices Using practical recipes you will be introduced to a lot of modern forensics tools for performing effective mobile forensics

*Learning Android Forensics* Oleg Skulkin, Donnie Tindall, Rohit Tamma, 2018-12-28 A comprehensive guide to Android forensics from setting up the workstation to analyzing key artifacts Key Features Get up and running with modern mobile forensic strategies and techniques Analyze the most popular Android applications using free and open source forensic tools Learn malware detection and analysis techniques to investigate mobile cybersecurity incidents Book Description Many forensic examiners rely on commercial push button tools to retrieve and analyze data even though there is no tool that does either of these jobs perfectly Learning Android Forensics will introduce you to the most up to date Android platform and its architecture and provide a high level overview of what Android forensics entails You will understand how data is stored on Android devices and how to set up a digital forensic examination environment As you make your way through the chapters you will work through various physical and logical techniques to extract data from devices in order to obtain forensic evidence You will also learn how to recover deleted data and forensically analyze application data with the help of various open source and commercial tools In the concluding chapters you will explore malware analysis so that you ll be able to investigate cybersecurity incidents involving Android malware By the end of this book you will have a complete understanding of the Android forensic process you will have explored open source and commercial forensic tools and will have basic skills of Android malware identification and analysis What you will learn Understand Android OS and architecture Set up a forensics environment for Android analysis Perform logical and

physical data extractions Learn to recover deleted data Explore how to analyze application data Identify malware on Android devices Analyze Android malware Who this book is for If you are a forensic analyst or an information security professional wanting to develop your knowledge of Android forensics then this is the book for you Some basic knowledge of the Android mobile platform is expected

**Mobile Forensics: The Comprehensive Guide to Mobile Forensics** Vijay Kumar Gupta, 2024-08-04 Unlock the hidden secrets of mobile devices with *Unlocking Secrets The Comprehensive Guide to Mobile Forensics* This definitive guide provides an in depth exploration of mobile forensics offering essential knowledge and practical skills for digital investigators IT professionals and enthusiasts alike Inside this comprehensive ebook you will find

**Foundations of Mobile Forensics** Understand the basics including the importance of mobile forensics in today's digital landscape

**Techniques and Tools** Discover the latest methods and tools used to extract and analyze data from various mobile devices

**Case Studies and Real World Applications** Learn from real world scenarios and case studies that illustrate the application of mobile forensic techniques

**Legal and Ethical Considerations** Gain insight into the legal and ethical aspects of mobile forensics ensuring your investigations are compliant with current laws and standards

**Future Trends** Stay ahead of the curve with a look at emerging trends and technologies in mobile forensics Whether you are a seasoned professional or just beginning your journey in digital investigations

*Unlocking Secrets The Comprehensive Guide to Mobile Forensics* is your go to resource for mastering the art and science of mobile forensics Dive into the world of digital evidence and enhance your skills to become an expert in the field

*Mobile Forensics - Advanced Investigative Strategies* Oleg Afonin, Vladimir Katalov, 2016-09-30 Master powerful strategies to acquire and analyze evidence from real life scenarios About This Book A straightforward guide to address the roadblocks face when doing mobile forensics Simplify mobile forensics using the right mix of methods techniques and tools Get valuable advice to put you in the mindset of a forensic professional regardless of your career level or experience Who This Book Is For This book is for forensic analysts and law enforcement and IT security officers who have to deal with digital evidence as part of their daily job Some basic familiarity with digital forensics is assumed but no experience with mobile forensics is required What You Will Learn Understand the challenges of mobile forensics Grasp how to properly deal with digital evidence Explore the types of evidence available on iOS Android Windows and BlackBerry mobile devices Know what forensic outcome to expect under given circumstances Deduce when and how to apply physical logical over the air or low level advanced acquisition methods Get in depth knowledge of the different acquisition methods for all major mobile platforms Discover important mobile acquisition tools and techniques for all of the major platforms In Detail Investigating digital media is impossible without forensic tools Dealing with complex forensic problems requires the use of dedicated tools and even more importantly the right strategies In this book you ll learn strategies and methods to deal with information stored on smartphones and tablets and see how to put the right tools to work We begin by helping you understand the concept of mobile devices as a source of valuable evidence Throughout this book

you will explore strategies and plays and decide when to use each technique We cover important techniques such as seizing techniques to shield the device and acquisition techniques including physical acquisition via a USB connection logical acquisition via data backups over the air acquisition We also explore cloud analysis evidence discovery and data analysis tools for mobile forensics and tools to help you discover and analyze evidence By the end of the book you will have a better understanding of the tools and methods used to deal with the challenges of acquiring preserving and extracting evidence stored on smartphones tablets and the cloud Style and approach This book takes a unique strategy based approach executing them on real world scenarios You will be introduced to thinking in terms of game plans which are essential to succeeding in analyzing evidence and conducting investigations

*Mobile Phone Security and Forensics* Iosif I. Androulidakis,2012-03-29

Mobile Phone Security and Forensics provides both theoretical and practical background of security and forensics for mobile phones Security and secrets of mobile phones will be discussed such as software and hardware interception fraud and other malicious techniques used against users will be analyzed Readers will also learn where forensics data reside in the mobile phone and the network and how to conduct a relevant analysis

**Mastering Mobile Forensics** Soufiane Tahiri,2016-05-30

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

acquainted with best practices and the different models used in mobile forensics Style and approach The book is a comprehensive guide that will help the IT forensics community to go more in depth into the investigation process and mobile devices take over *Seeking the Truth from Mobile Evidence* John Bair,2017-11-17 Seeking the Truth from Mobile Evidence Basic Fundamentals Intermediate and Advanced Overview of Current Mobile Forensic Investigations will assist those who have never collected mobile evidence and augment the work of professionals who are not currently performing advanced destructive techniques This book is intended for any professional that is interested in pursuing work that involves mobile forensics and is designed around the outcomes of criminal investigations that involve mobile digital evidence Author John Bair brings to life the techniques and concepts that can assist those in the private or corporate sector Mobile devices have always been very dynamic in nature They have also become an integral part of our lives and often times a digital representation of where we are who we communicate with and what we document around us Because they constantly change features allow user enabled security and or encryption those employed with extracting user data are often overwhelmed with the process This book presents a complete guide to mobile device forensics written in an easy to understand format Provides readers with basic intermediate and advanced mobile forensic concepts and methodology Thirty overall chapters which include such topics as preventing evidence contamination triaging devices troubleshooting report writing physical memory and encoding date and time stamps decoding Multi Media Messages decoding unsupported application data advanced validation water damaged phones Joint Test Action Group JTAG Thermal and Non Thermal chip removal BGA cleaning and imaging In System Programming ISP and more Popular JTAG boxes Z3X and RIFF RIFF2 are expanded on in detail Readers have access to the companion guide which includes additional image examples and other useful materials

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### **Practical Mobile Forensics Introduction**

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