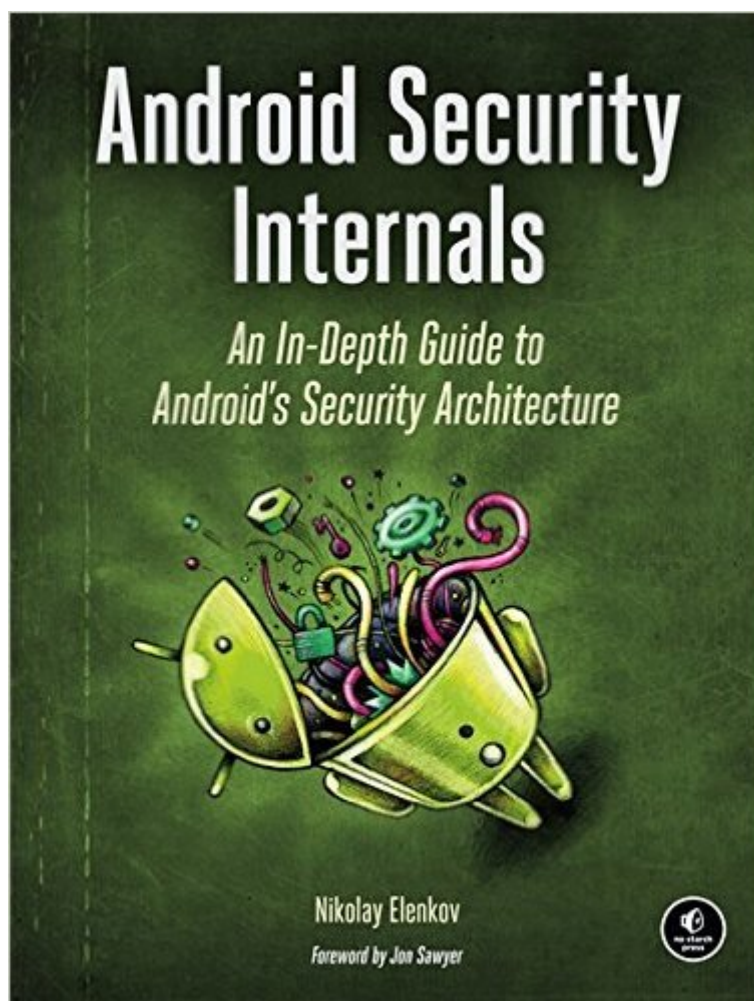


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# Android Security Internals: An In-Depth Guide To Android's Security Architecture



## Synopsis

"I honestly didn't believe I'd learn much from the book because I've been working on Android security for many years. This belief could not have been more wrong. Android Security Internals has earned a permanent spot on my office bookshelf." — Jon "jcase" Sawyer, from the Foreword

There are more than one billion Android devices in use today, each one a potential target. Unfortunately, many fundamental Android security features have been little more than a black box to all but the most elite security professionals — until now. In *Android Security Internals*, top Android security expert Nikolay Elenkov takes us under the hood of the Android security system. Elenkov describes Android security architecture from the bottom up, delving into the implementation of major security-related components and subsystems, like Binder IPC, permissions, cryptographic providers, and device administration. You'll learn:

- How Android permissions are declared, used, and enforced
- How Android manages application packages and employs code signing to verify their authenticity
- How Android implements the Java Cryptography Architecture (JCA) and Java Secure Socket Extension (JSSE) frameworks
- About Android's credential storage system and APIs, which let applications store cryptographic keys securely
- About the online account management framework and how Google accounts integrate with Android
- About the implementation of verified boot, disk encryption, lockscreen, and other device security features
- How Android's bootloader and recovery OS are used to perform full system updates, and how to obtain root access

With its unprecedented level of depth and detail, *Android Security Internals* is a must-have for any security-minded Android developer.

## Book Information

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## Customer Reviews

After spending the past few weeks quickly reading through this book, I have to say that I'm truly impressed. I've read a number of other texts focusing on Android Security, but none hold a candle to the quality of information contained herein. Recent (the author talks about changes up to the shiny new 5.0), well written, complete, and, above all, highly informative, this is certainly a book for your shelf should you consider yourself any type of Android security aficionado. I'm about to begin my second read-through to reinforce concepts and pick up on things I may have missed during my first. I'll update this with more details when I'm through. My only gripe (and I admit, this is a small one) is that fully grasping everything this book has to offer requires at least a working knowledge of Android application development. While it's nice to see a security book focusing absolutely on security, a quick review of the main terms and usages would have been nice. Also, for those of you that may not know, the book's official website contains the table of contents and the index and is located here: <http://www.nostarch.com/androidsecurity> As I'm going through the book a second time, I figured it would be useful to take a closer look at each chapter. Hope it helps those of you on the fence about pulling the trigger and buying this book. I'd also like to update what the book contains in general so as to not leave anyone with any false impressions. This is a book regarding, through and through, Android's Security Architecture. You won't be learning about hot-topic Android hacking techniques and you won't learn how to root or jailbreak your device (see Wiley's Android Hacker's Handbook if you're into that stuff).

This is the first security book I have read on Android that was not primarily about hacking the Android platform. This book completely covers all the tools available to the Android software architects and developers. Instead of showing us how to root the device at the beginning of the book and then showing us exploits and vulnerabilities throughout the rest of it, he covers how root access is achieved in different types of Android builds, and different ways get Root Access, but late in the book. The book starts out with an overview of the Android security model, and then each chapter is dedicated to a specific feature of Android's security model. I have listed the chapters below.

Chapter 1: Android's Security Model  
Chapter 2: Permissions  
Chapter 3: Package Management  
Chapter 4: User Management  
Chapter 5: Cryptographic Providers  
Chapter 6: Network Security and PKI  
Chapter 7: Credential Storage  
Chapter 8: Online Account Management  
Chapter 9: Enterprise Security  
Chapter 10: Device Security  
Chapter 11: NFC and Secure Elements  
Chapter 12: SELinux  
Chapter 13: System

Updates and Root Access Although the chapter titles give you a pretty good idea of what is in them, I have listed some of the chapters below along with the topics covered that I liked best. Chapter 2: Permissions covers The Nature of Permissions, Requesting Permissions, Permission Management, Permission Protection Levels, Permission Assignment, Permission Enforcement, System Permissions, Shared User ID, Custom Permissions, Public and Private Components, Activity and Service Permissions, Broadcast Permissions, Content Provider Permissions, and Pending Intents.

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