Operating System Security (Synthesis Lectures On Information Security, Privacy, And Trust)

Trent Jaeger

SYNTHESIS LECTURES ON INFORMATION SECURITY, PRIVACY, AND TRUST

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Synopsis

Operating systems provide the fundamental mechanisms for securing computer processing. Since the 1960s, operating systems designers have explored how to build "secure" operating systems - operating systems whose mechanisms protect the system against a motivated adversary. Recently, the importance of ensuring such security has become a mainstream issue for all operating systems.

In this book, we examine past research that outlines the requirements for a secure operating system and research that implements example systems that aim for such requirements. For system designs that aimed to satisfy these requirements, we see that the complexity of software systems often results in implementation challenges that we are still exploring to this day. However, if a system design does not aim for achieving the secure operating system requirements, then its security features fail to protect the system in a myriad of ways. We also study systems that have been retrofit with secure operating system features after an initial deployment. In all cases, the conflict between function on one hand and security on the other leads to difficult choices and the potential for unwise compromises. From this book, we hope that systems designers and implementors will learn the requirements for operating systems that effectively enforce security and will better understand how to manage the balance between function and security.

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Book Information

Paperback: 220 pages
Publisher: Morgan and Claypool Publishers; 1 edition (October 7, 2008)
Language: English
ISBN-10: 1598292129
Product Dimensions: 7.5 x 0.5 x 9.2 inches
Shipping Weight: 1.2 pounds (View shipping rates and policies)
Average Customer Review: 4.5 out of 5 stars — See all reviews (2 customer reviews)
Best Sellers Rank: #577,003 in Books (See Top 100 in Books) #92 in Computers & Technology > Programming > APIs & Operating Environments > Operating Systems Theory #145 in Books > Computers & Technology > Certification > CompTIA #1432 in Books > Computers &...
Customer Reviews

Great book on the history, fundamentals and current implementations of secure operating systems. I picked this book up due to a mention on the grsecurity homepage and I'm very glad I did, it's very through and provides excellent references if you still have an appetite for more information.

Good

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