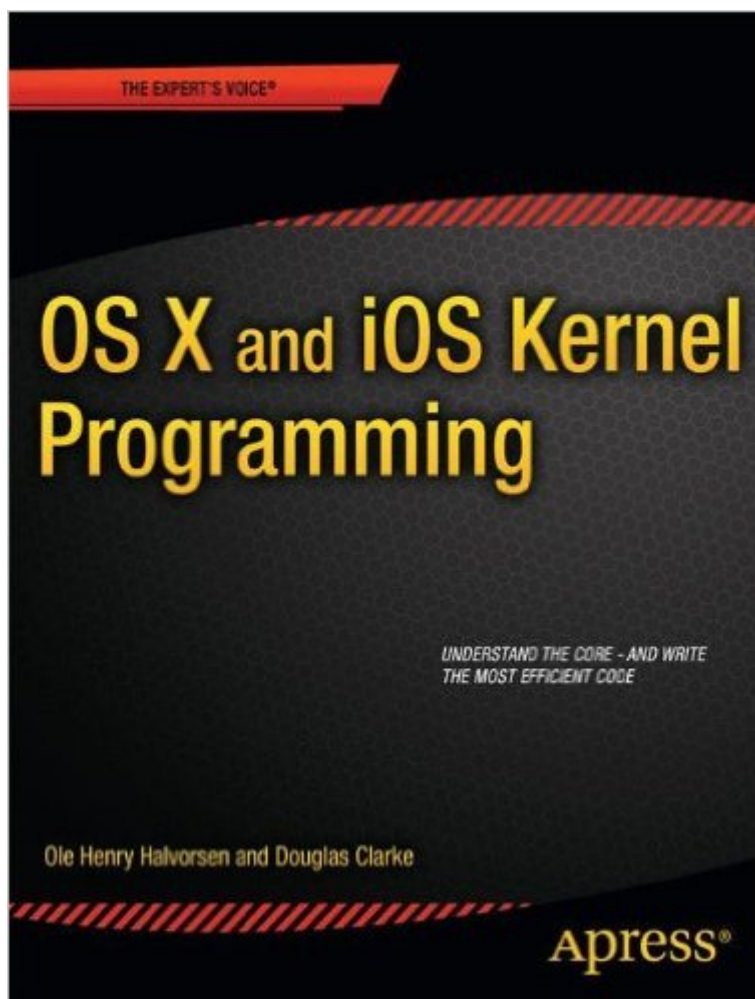


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# OS X And iOS Kernel Programming



## Synopsis

OS X and iOS Kernel Programming combines essential operating system and kernel architecture knowledge with a highly practical approach that will help you write effective kernel-level code. You'll learn fundamental concepts such as memory management and thread synchronization, as well as the I/O Kit framework. You'll also learn how to write your own kernel-level extensions, such as device drivers for USB and Thunderbolt devices, including networking, storage and audio drivers. OS X and iOS Kernel Programming provides an incisive and complete introduction to the XNU kernel, which runs iPhones, iPads, iPods, and Mac OS X servers and clients. Then, you'll expand your horizons to examine Mac OS X and iOS system architecture. Understanding Apple's operating systems will allow you to write efficient device drivers, such as those covered in the book, using I/O Kit. With OS X and iOS Kernel Programming, you'll: Discover classical kernel architecture topics such as memory management and thread synchronization Become well-versed in the intricacies of the kernel development process by applying kernel debugging and profiling tools Learn how to deploy your kernel-level projects and how to successfully package them Write code that interacts with hardware devices Examine easy to understand example code that can also be used in your own projects Create network filters Whether you're a hobbyist, student, or professional engineer, turn to OS X and iOS Kernel Programming and find the knowledge you need to start developing

## Book Information

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## Customer Reviews

First of all "OS X and iOS Kernel Programming" is basically the second book on the development in xnu kernel environment, the first being of course Amit Singh's wonderful "Mac OS X Internals". While Amit's book is more of a greatly detailed overview of the inner functioning of the xnu kernel the "OS X and iOS Kernel Programming" deals more with the practice of kernel development, at least this is my impression. Based on that i find only one big flaw with this book: incomplete coverage. This is really a book about IOKit driver development. BSD file system drivers, KAuth framework, sysctl, etc. is only very briefly mentioned if at all. This leaves a huge gap in the overview since those are integral parts of the Mac OS X kernel. More minor flaws basically have to do with coding examples and lack thereof. This book can greatly benefit with the more complete examples since most of the early chapters often end the discussion abruptly without having shown the full application of the topic in practice. Nevertheless this book succeeds in a more practical and rarely discussed topics such as kernel debugging, driver deployment, file IO from the kernel, user/kernel notifications and memory mapping, thread management and user land interaction, device DMA. The IOKit focus of the book also let the authors describe a lot of device driver types. All in all this is in my opinion a long needed book to fill the gap on practical issues of xnu kernel development and i greatly enjoyed reading it. I recommend it to anyone beginning the IOKit driver development.

Completely skips anything video related. Might better be called: "OS X and iOS USB & PCI Drivers Kernel Programming". The parts that are included are not bad though.

I was actually surprised how much I liked this book. It does an excellent job of collecting all of the scattered information about Apple device drivers. Granted, most of this information is available elsewhere, but it can be difficult to find in one location, and Apple's technical documentation is notoriously incomplete.

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