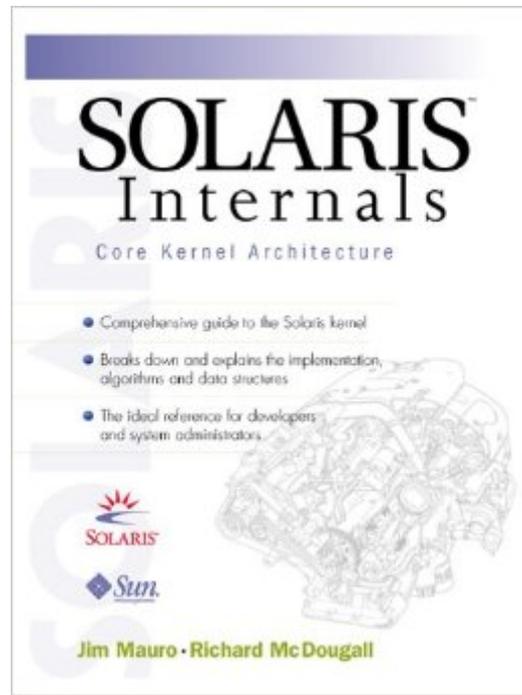


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# Solaris® Internals (Vol 1)



## Synopsis

This is Sun's definitive guide to the internals of SunOS, the operating system component of Sun's Solaris operating environment. It will be invaluable for anyone responsible for Solaris management, maintenance, performance and/or application tuning. This book covers all aspects of SunOS internals, especially major kernel data structures and kernel code algorithms, with a focus on practical applications. Understand how the Solaris operating environment is organized; including the kernel directory hierarchy, system facilities, interfaces, system calls, libraries, Posix support, and more. Review processes, threads, the dispatcher, and the Virtual File System (VFS). Understand the Solaris Memory Architecture, virtual memory, and interprocess communications -- and master memory analysis, sizing and capacity planning.

## Book Information

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## Customer Reviews

While taking the Sun Solaris Internals class, a pre-publication copy of this book was floating around the classroom. Of course I latched on and read as much of it as I could and was very impressed with the depth and amount of useful information contained in this book. It simply is the best resource on Solaris Internals that I have ever read. I finally received my own copy after 6 months of waiting, and am one happy camper. If you are a Solaris kernel developer, system admin, performance analysts, or kernel debugger, this is a must-have book. Almost all aspects of Solaris are covered with the exception of device drivers and low-level I/O. My only complaints are the length of time it took to release the book, it does not cover Solaris 8, and page 108 is missing.

Solaris Internals is a must read for system programmers and anyone interested in Operating System Design. The book is loaded with important information and splendidly organized into 4 major sections. Each section is well thought out and walks you from subject to subject, with serious technical depth. I found myself writing test programs throughout the book and am certain I've learned a great many things. Part One deals with traps, interrupts, callouts, contexts, and lock primitives and goes where the Sparc/SparcV9 Architecture Manuals did not. My favorite section was Part Two (Solaris Memory System), it left me with a clear understanding of everything related to memory: HAT, TSB's, TLB, MMU, phys mem organization, page table hashing, paging, page scanner, address spaces and segments, seg drivers, slab allocator, watchpoints, multiple page sizing, memory management strats, to name a few subjects... Part Three deals with threads, processes, and IPC. It has a large and very useful section on the Kernel Dispatcher and scheduling. Part Four deals with everything 'file system'; DNLC, pn lookups, mmap, direct io, aio, fs cache, vnodes, vfs, etc. It contains useful details of useful Solaris features, which are easy to overlook in system manual pages. Finally, Solaris Internals contains many data structure diagrams, charts, and tables -- the diagrams alone are enough to make the book useful! A well written and useful book ;) --joey

When my Sun SE showed up with a copy of "Solaris Internals," he immediately went to the top of my "favorite vendor contacts" list (right above the sales guy with the Starfire jackets). Mauro's "Solaris Internals" is a worthy addition to a distinguished line of Unix analyses (Goodheart and Cox; Vahalia; and, of course, Bach). Mauro's "Sunworld" columns have gained fame for their clarity and brevity, often showing up as Sun technical whitepapers. "Internals" continues this tradition by providing straightforward discussions of hardware memory management, process dispatching, shared memory, OS caches (such as the much-maligned DNLC), and many other topics. This is the sort of information that you would otherwise have to infer from SunSolve bug reports (an exercise that makes litigating Florida election laws look trivial). Those looking for cookbook solutions won't find this book to be of much help -- though Mauro often provides concrete advice amongst the abstractions, the book is dedicated largely to the sort of subtleties that dissertations are made of. Cockcroft and Wong are probably better choices for "in the trenches" sysadmin advice. But, if you're willing to invest the time and effort (and it's a *lot* of both!), Mauro's is as good an analysis as you will find.

This is an author response to a very bizarre review:>Ok so here's the deal. The author misleads you in order to "simplify" things. There is zero truth to this statement. I challenge the reviewer to provide just 1 example of a misleading or ambiguous line of text in this book. This is an nasty accusation - I have no idea where this person is coming from.> not somebody's watered down, easy to digest, but dangerously incorrect> simplification. Yikes! Again, I challenge this person to provide just 1 example of something they consider watered down, or something that is incorrect. "dangerously incorrect simplification" - how does someone have the audacity to make such strong statements, and not back them up with any proof?> Unfortunately, it's a must-have because it covers some of Sun's modifications> and extensions to the System V kernel.> Lastly, I have to mention that I found some sentences in the book that> match word for word other sentences in "The Magic Garden Explained?" This is a very serious accusation. There were zero references made to The Magic Garden during the writing of this book. Once again, this person sees fit to make a very serious accusation, backed by nothing. I would be happy to discuss any of these concerns with anyone interested. Please feel free to contact me at jim.mauro@gmail.com. A note to "husband of Sarah" - please contact me at the above email address, and provide me with specific examples of watered-down rubbish and simplified incorrect text. Thank you.

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