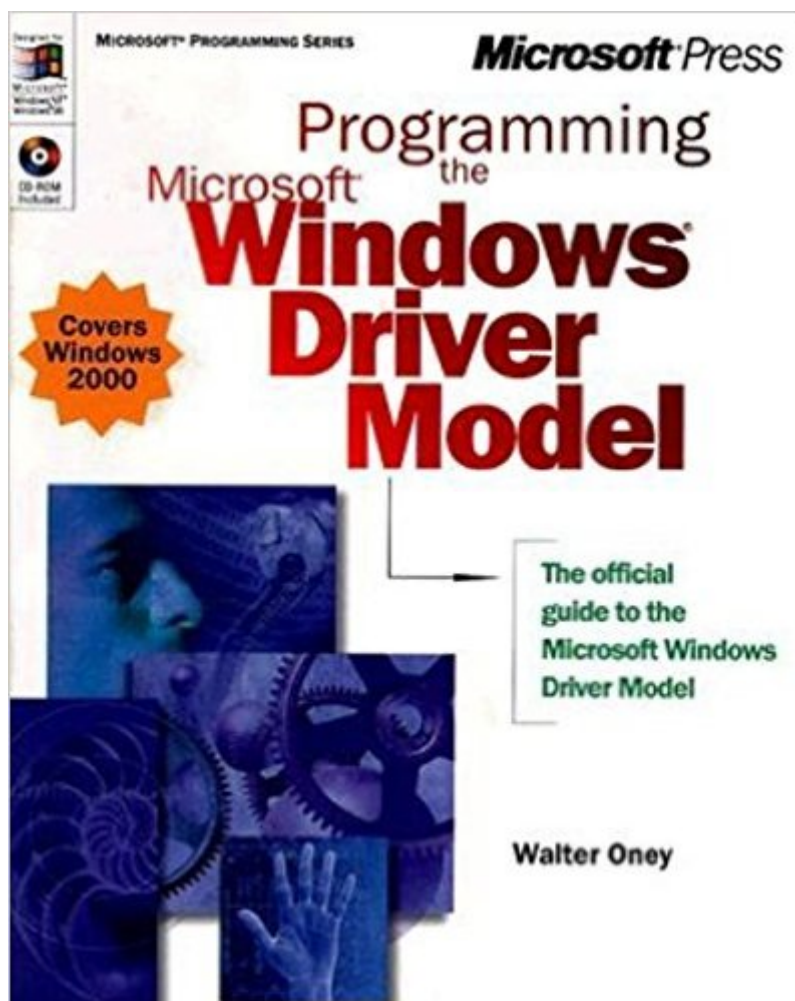# Programming The Microsoft Windows Driver Model (Microsoft Programming Series)

Synopsis

Microsoft’s new driver model for Windows 98 and Windows 2000 supports Plug and Play, provides power management capabilities, and expands on the driver/minidriver approach. Written by device-driver expert Walter Oney in cooperation with the Windows DDK team, this book provides extensive practical examples, illustrations, advice, and line-by-line analysis of code samples to clarify real-world driver-programming issues. Topics covered include:• An introduction to the Windows Driver Model architecture• Programming techniques, including error handling, memory and data-structure management, and registry and file access• Synchronization and driver development in a multitasking, multiprocessor environment• Creating and processing I/O request packets• Taking advantage of Windows 98 and Windows 2000 Plug and Play support • Techniques for reading from and writing to devices• Installation and power management• Creating filter drivers, controlling hardware, and logging errors • Windows Management Instrumentation (WMI)• Developing device drivers for the new universal serial bus (USB) architecture• Installing WDM drivers• Understanding Windows 98 compatibilityAn electronic version of this book is available on the companion CD.

Book Information

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Customer Reviews

Walter Oney is an expert who doesn't talk down to you. There's a lot of gold in this well-written book, but to extract it happily you'll need a strong background in Windows programming, including

first and foremost a couple of years of professional driver-writing experience for Win9X/NT platforms; in a few places, some knowledge of COM and MFC will also be helpful. Plug and Play, power management, and USB issues are covered in detail, as well as driver basics (from an advanced perspective), the intricacies of cancelling IRPs, etc.I like Oney's approach to teaching -- he concentrates on the logic of the few dozen basic steps needed to write a driver, leaving it to the samples on the accompanying CD to flesh out the skeleton. This has the advantage of highlighting the mechanics, and the often convoluted reasoning behind them, without sacrificing completeness. He identifies and analyzes many potential race conditions and other pitfalls that you might not think of on your own.One of the best things about the book is the tips and sidebars. Some examples: why you should use the PAGED_CODE macro and Driver Verifier when using Soft-Ice/W on Win2k; the hazards of using DDK "function calls" that are actually macros; how to ship a single binary for both Win2000 and Win98, given that Win98 doesn't support some key functions (such as those involving IO_REMOVE_LOCK) -- the book suggests writing a VDD with stubs for the missing functions, as explained in Appendix A. The sample code also contains very instructive workarounds for the shortcomings of Win98. Another strong point is the DEVQUEUE code that Oney has developed to extend the standard Windows driver model to handle PlugandPlay.

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