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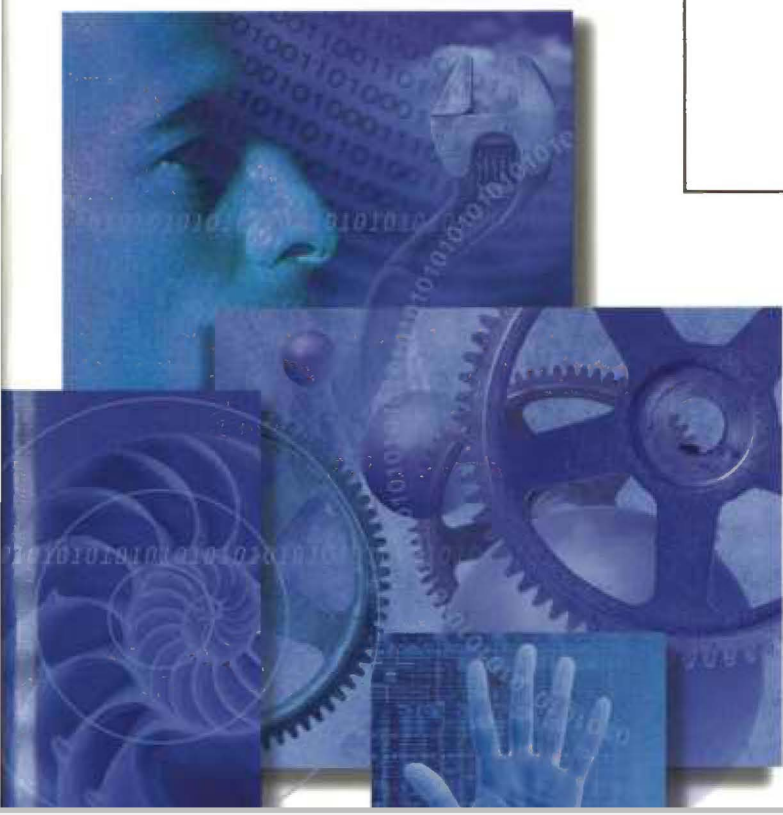
Includes Windows CE Platform SDKs

# Programming Microsoft® Windows® CE

“DOUG’S CODE DEMONSTRATES A PERFECT GRASP OF WINDOWS CE—CRAFTY AND ELEGANT.”  
—Charles Petzold, author, *Programming Windows*

The definitive guide to programming the Windows CE API

Douglas Boling



# Microsoft® Programming **Windows CE**

## Port your Win32 skills to the expanding realm of portable computing technology.

Design sleek, high-performance applications for the newest generation of smart devices with PROGRAMMING MICROSOFT WINDOWS CE. This practical, authoritative reference explains how to extend your Windows or embedded programming skills to the Windows CE environment. You'll review the basics of event-driven development, then tackle the intricacies and idiosyncrasies of this modular, compact architecture:

- Get under the hood of the streamlined Win32® API
- Investigate platform-specific programming considerations
- Use specialized techniques for handling memory, storage, and power constraints
- Delve into serial, network, and device-to-desktop communications
- Advance your skill with modules, processes, and threads
- Build or modify code to meet the requirements of different Windows CE shells

Use Doug's expert guidance and the software development tools on CD-ROM to mobilize your Win32 programming efforts for exciting new markets!



### Included on CD-ROM!

- Official documentation in *Microsoft Windows CE Programmer's Guide*
- Includes Windows CE Platform SDKs for Palm-size PCs and Handheld PCs
- Reusable code samples

### About the Author:

A longtime contributing editor to *PC Magazine* and a columnist for *Microsoft Interactive Developer (MIND)*, **Douglas Boling** is known as an astute observer of the computer industry. He is an electrical engineer by training, and a writer and a consultant by practice. Doug has widely recognized expertise in Windows CE and other programming topics, and he speaks at leading professional developer conferences.



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# **PROGRAMMING MICROSOFT® WINDOWS® CE**

*Douglas Boling*



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# Introduction

I was introduced to Microsoft Windows CE right before it was released in the fall of 1996. A Windows programmer for many years, I was intrigued by an operating system that applied the well-known Windows API to a smaller, more power-conserving operating system. The distillation of the API for smaller machines enables tens of thousands of Windows programmers to write applications for an entirely new class of systems. The subtle differences, however, make writing Windows CE code somewhat different from writing for Windows 98 or Windows NT. It's those differences that I'll address in this book.

## JUST WHAT IS WINDOWS CE?

Windows CE is the newest, smallest, and arguably the most interesting of the Microsoft Windows operating systems. Windows CE was designed from the ground up to be a small, ROM-based operating system with a Win32 subset API. Windows CE extends the Windows API into the markets and machines that can't support the larger footprints of Windows 98 and Windows NT.

Windows 98 is a great operating system for users who need backward compatibility with DOS and Windows 2.x and 3.x programs. While it has shortcomings, Windows 98 succeeds amazingly well at this difficult task. Windows NT, on the other hand, is written for the enterprise. It sacrifices compatibility and size to achieve its high level of reliability and robustness.

Windows CE isn't backward compatible with MS-DOS or Windows. Nor is it an all-powerful operating system designed for enterprise computing. Instead, Windows CE is a lightweight, multithreaded operating system with an optional graphical user interface. Its strength lies in its small size, its Win32 subset API, and its multiplatform support.

## PRODUCTS BASED ON WINDOWS CE

The first products designed for Windows CE were handheld "organizer" type devices with 480-by-240 or 640-by-240 screens and chiclets keyboards. These devices, dubbed Handheld PCs, were first introduced at Fall Comdex 96. Fall Comdex 97 saw the release of a dramatically upgraded version of the operating system, Windows CE 2.0,

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