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InfoWorld's **ESSENTIAL** **GUIDE**

TO

CP/M

*Tony Bove, Cheryl Rhodes & The Editors
of InfoWorld show you how to get the most
out of Hardware, Software & Peripherals.*

InfoWorld's **ESSENTIAL GUIDE TO** **CP/M**

Tony Bove, Cheryl Rhodes *and*
the Editors of InfoWorld



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Preface

Welcome to *InfoWorld's Essential Guide to CP/M*. This book will help you get the most out of your CP/M-based computer system. Whether you already own a CP/M system or are trying to decide which computer to buy, we think you'll find this guide essential.

As a buying guide, it will help you sort out the complexities of the CP/M operating system.

If you already own a CP/M-based computer system, you'll want to keep this book next to it as a resource of additional information.

To make this guide easy to use, we've divided it into two major parts: an overview of CP/M and reviews — a representative sampling of hardware and software products. Part 1, the overview, is divided into sections, with an explanation of what's in each section. In Part 2, the reviews — which follow InfoWorld's well-known, well-respected format — are arranged by general applications, such as Words and Numbers.

With this arrangement, you can read the whole book straight through or skip around to various areas that especially interest you.

In the back of the book, you'll find a glossary.

Prepared by the editors of *InfoWorld*, noted authors Tony Bove and Cheryl Rhodes, and the *InfoWorld* product-evaluation team, this guide to CP/M should be on every CP/M user's bookshelf.

Foreword

Personal computers are being used to manage homes, businesses and professions. Home computers are sold in department stores, and business-oriented computer stores are proliferating.

When the business market for personal computers started to expand in early 1982, nearly every new personal computer for business or professional users was a "CP/M-type" computer. CP/M machines represented a class of computers that strongly resembled one another in terms of features and the way they worked. These computers could also be programmed using the same languages, and they could all run the same programs.

Many people in the computer field endorsed CP/M computers as an industry standard. The operating system known as "CP/M" became available for Radio Shack and Apple computers, and most new computers were capable of using CP/M or were supplied with CP/M.

During 1982, CP/M computers enjoyed immense popularity and media attention. Then IBM introduced its Personal Computer (the IBM PC), and considerable media attention focused on it. The result of this notice paid to IBM's new product was the largest bandwagon effect ever felt in the personal-computer market. Nearly every software developer in the market produced new software for the IBM PC.

CP/M computers fell out of the limelight, but today there are at least one million users of CP/M systems. Some new CP/M computers are available at much lower prices, and new low-cost CP/M computers are being readied for the

home and professional markets. Other traditional CP/M computers are being upgraded to be compatible with the IBM PC.

Loss of the media spotlight has not diminished the value of computers that are based on CP/M. CP/M computers such as the Kaypro, the Radio Shack Model 4, the Heath/Zenith Z-100, the Morrow Micro Decision, the DEC Rainbow and even the Osborne computers sold well in early 1984. CP/M computers have held their position in the market, and their prices have indeed fallen, so that the systems provide more performance and value for a consumer's dollar than many of the new IBM PC-compatible computers.



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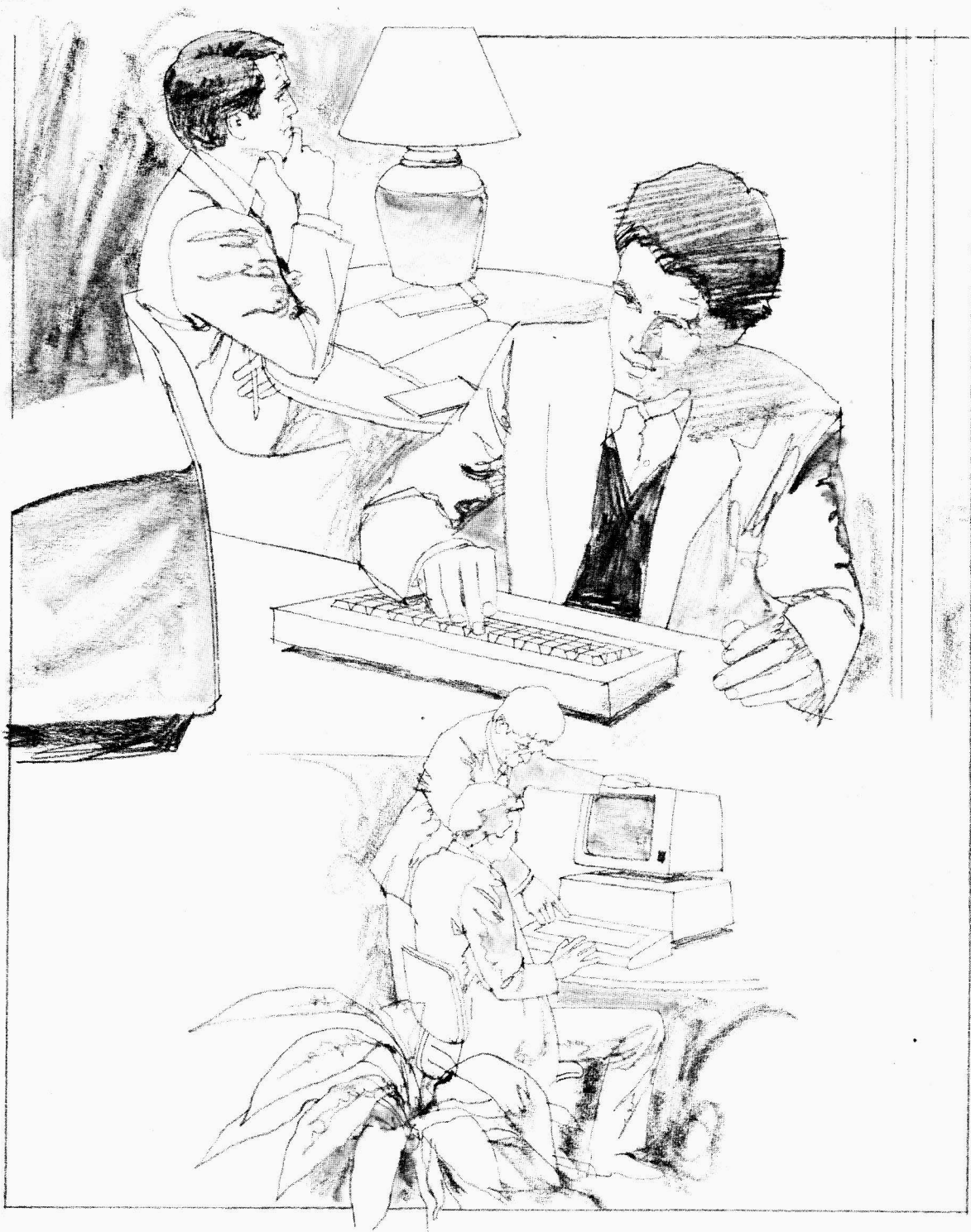
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Part 1

OVERVIEW



Section One

Getting Started

This section describes the world of CP/M computers. Its purpose is to introduce and explain the concepts and terms you need to understand to buy such a computer and to set it up to run your business or profession, or to perform other desired computing tasks.

The CP/M World
Buying and Installing CP/M

THE CP/M WORLD

What is “CP/M”? The letters stand for “Control Program for Microcomputers.” That “control program” is composed of preset computer instructions — *software* — that make it possible for you to type commands into a computer terminal and control the flow of data from disks to printers and to other devices attached to a computer. Such a set of instructions is called an *operating system*.

It is easy to confuse the commands you type to activate a computer program with the *language* used to create the program. A *programming language* is something used by computer professionals and amateurs to *write their own programs*. An operating system is something you use to *run* those programs. You don’t need a great deal of knowledge to operate CP/M.

You type a command, and CP/M performs the operation. Typical commands are DIR, which tells CP/M to display a list called a *directory* on your computer screen, and STAT, which tells the computer to display status information about the system on-screen.

CP/M also runs programs for you. In fact, you can’t run a program on your computer without starting CP/M first. CP/M is always acting as a controller for the computer, routing data to and from devices such as printers and drives.

CP/M has two fundamental purposes: (1) to store and retrieve information (the storage site is a floppy disk or hard disk) and (2) to run programs. Your fundamental reasons for using a computer are the same. You need to store and retrieve information and run *application programs*. Therefore, you need to learn how to use CP/M commands.

Why CP/M?

Some computer buyers never have to ask, "Why CP/M?" The CP/M operating system is supplied on a floppy disk with the computer they buy. The computer is not smart enough to run programs and handle data storage without use of an operating system, and many computer manufacturers choose to supply CP/M because it is an industry standard.

Other computer buyers find that CP/M is an option for the computer they have chosen. The computer comes with its *own* operating system, usually a *proprietary* one. What does that mean? It means the operating system runs only on that brand of computer or on similar brands. Examples are IBM's proprietary PC-DOS (which looks like but is not exactly like the MS-DOS operating system), and Radio Shack's TRSDOS. (PC-DOS stands for PC Disk Operating System, MS-DOS for Microsoft Disk Operating System and TRSDOS for Tandy/Radio Shack Disk Operating System.)

Why is CP/M built into some computers and an option with others? CP/M can be designed to run on about any computer, regardless of the computer's hardware configuration. There is a version of CP/M for nearly every personal computer on the market. In fact, it is probably the most widely used operating system in the world.

CP/M was not created by a computer manufacturer (which is one reason why it is not proprietary and used on only one machine). It was written and brought to market independently by Gary Kildall, a systems programmer and consultant for Intel and other corporations. As CP/M's popularity increased, partly because of its modular design and manufacturers' need for an operating system, and partly because of its success among the leading microcomputer pioneers and hobbyists, Dr. Kildall founded Digital Research, Inc. (DRI), to support it.

DRI (based in Pacific Grove, California) supplies CP/M to computer manufacturers and system packagers, who package CP/M with their computers and supply the systems to retailers. Those retailers then sell the systems to you, providing service, support and, possibly, training and system setup at the same time.

Some computer manufacturers do not supply CP/M with their machines, but CP/M is available for their computers. For example, Radio Shack did not sell CP/M for its computers until 1984, and at least four other software distributors sell versions of CP/M for Radio Shack computers (you must buy the computer from Radio Shack first).

Other computers, such as the Apple II family and the Commodore 64, can run CP/M if you add a circuit board to the system (available from Apple or Commodore or other vendors). These circuit boards are easy to install.

Once you have CP/M, you can purchase additional programs that make your CP/M system a useful business or professional computer. Word-processing, data-base management, forecasting, budgeting and accounting programs are available for CP/M systems from many independent distributors. At last

count, there were more than *two thousand* programs available for CP/M systems.

Why is CP/M so popular? CP/M is a standard software system available for use with nonstandard computers. Programs written for CP/M do not have to contain the instructions to operate the computer hardware, because CP/M can operate the hardware for the program (just as a butler would open and close the door for you and take your coat). Programmers can write one program for a “standard CP/M system” and then use it in many different computers.

CP/M has this advantage over proprietary operating systems: the ability to transfer your data that you have worked with on a certain system to a different manufacturer's computer. Your business can purchase an IBM or Xerox computer running CP/M, and you can buy a transportable Kaypro computer running CP/M for use in your home or while traveling and be able to exchange data between the different computers. You might be able to do this with two computer models from the same manufacturer, or with “compatible” computers; however, with CP/M, there is no doubt of this data compatibility.

Nearly any computer can run the CP/M operating system — you'll find a list of such computers in Chapter 3. Why would you want your computer to run this operating system? Most often, the reason is to have compatibility with personal computers made by other manufacturers.

Salespeople use the word *compatible* to describe how this manufacturer's computer is very much like, but not exactly like, that manufacturer's computer. In fact, different manufacturers' computers are never exactly alike, because manufacturers might find themselves in violation of a patent or copyright if they copied another machine exactly.

If a similar feature exists among computers from different manufacturers, the similarity is usually the operating system. When the operating system is CP/M, the different computers are compatible with one another and with any other computer running CP/M.

Compatibility is an issue in the personal-computer universe because there is a short supply of useful software to run in personal computers. Although thousands of programs exist for personal computers, most programs are written to be used with a specific machine such as an Apple or an IBM PC or a specific operating system such as CP/M.

Here's an example of a possible compatibility problem and its resolution: the Apple IIe computer uses an Apple-proprietary operating system (Apple DOS), and the IBM PC has its own IBM-proprietary system (called PC-DOS). IBM and Apple computers cannot run the same software programs unless those programs are available for *both* operating systems — PC-DOS and Apple DOS. If you decide to run the CP/M operating system on both computers, however, you may then be able to run the programs that are available for any CP/M computer on both computers.

Although CP/M computers differ from one another in a variety of ways, this section describes the typical CP/M computer, focusing on the similarities that make CP/M computers compatible with one another and useful.