CORIOLIS GROUP BOOK

DOS 6 INSIDER

THE GUIDE TO HARD-TO-FIND AND UNDOCUMENTED FEATURES

AUTOMATING TASKS WITH DOS BATCH COMMANDS

CUSTOMIZING DOS FOR PEAK PERFORMANCE

MASTERING DOS UTILITIES

RON PRONK

Edited by KEITH WEISKAMP

See ordering form at back for DOS utilities disk!

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Introduction

Let's start by being completely up front and honest. Depending on which "expert" you consult, you'll either be told that DOS 6 is a bug-riddled operating system to be avoided or it's the best thing to happen to the PC since Windows. You can probably guess which side of the fence we lean on. (We wouldn't have spent several months of our time writing a book that describes a faulty operating system.)

We've talked to hundreds of users in dozens of corporations, and the overwhelming viewpoint is this: DOS 6 is a hit. The new utilities and options available with DOS 6 address problems and concerns that users have been voicing for almost a decade. With DOS 6, you won't ask why Microsoft has provided the enhancements available in this package; instead, you'll probably be inclined to ask, "Why did this take so long?"

In our view, the answer to this question also happens to explain most of the bad press that DOS 6 has received. The new utilities provided with this upgrade add literally hundreds of services unavailable with previous versions of DOS. As you might expect, all of these new capabilities invite problems. It isn't possible to test an operating system on all the various hardware/software configurations that it will eventually be installed on.

A very vocal minority of users has begun hollering about problems encountered with DOS 6. Again, we've talked to hundreds of DOS 6 users, and our experience tells us that the vocal minority is very small indeed. (By the way, that's why we use the editorial "we" throughout this book; its contents have been influenced and directed by many astute users, so this book is genuinely a collaborative effort.) Yes, you might encounter problems after you install DOS 6 or one of its utilities.

Don't sweat it.

Think about it in this way: You'll often encounter problems if you install QEMM-386, 386 MAX, Stacker, SuperStor, Norton Utilities, PC Tools, OS/2, DR DOS 6, or any of a hundred or so other operating-system utilities—even when you install Windows. All operating-system utilities are highly susceptible to hardware quirks. DOS 6 provides dozens of utilities, in one package, that formerly were only available by buying separate third-party utilities. Since DOS 6 provides numerous utilities for managing your hardware, you shouldn't be surprised that it doesn't work 100 percent with all hardware configurations. That's a fact of life in the PC realm.

But DOS 6 works remarkably well for most (and we mean 95 percent) of hardware/software configurations. That's a claim that Microsoft should make with a certain amount of pride. And when problems do arise, you can usually apply a solution quickly, especiallly if you've got this book handy.

So hang the naysayers. DOS 6 is the way to go if you want a low-cost, high-results way to optimize all of your PC's resources. It's a reliable operating system, and at times it can even be fun to use. And we'll prove these claims throughout this book. If you want to make the most of DOS 6, and you're still thirsting for more information after perusing the *User's Guide* and the online help system, this book is for you. We provide a wealth of useful information, regardless of whether you're a new DOS user or an experienced, old hand at using DOS commands.

A Few Goals of this Book

We don't pretend that this book is going to be all things to all DOS users; but we do believe that it will have *someting* to say to every DOS 6 user.

To make this book as useful as possible, we want to provide you with the same guidelines, as a reader, that we followed in putting together the book:

1. If the DOS 6 *User's Guide* covers a topic (in our humble opinon) incompletely or too cryptically, we'll elaborate on the topic for you. Microsoft was limited by space in its *User's Guide*, and we understand that. However, you might not be so sympathetic. Case in point: It's 11:30 P.M.; you're trying to improve the way your system uses conventional and upper memory, and you've tried for the umpteenth time to make heads or tails out of the User's Guide's cryptic sections on optimization. We'll come to the rescue, with detailed, step-by-step explanations of numerous optimization techniques, along with descriptions that explain why and how these techniques work.
2. *If you can do it in DOS, but the DOS* User's Guide *ignores the technique, you'll probably find it described in this book.* We've interviewed hundreds of users, in dozens of different office and personal-user settings, to determine how people use DOS 6 and how they would like to use DOS 6. And that's the kicker. This book is geared toward results. If we give you a tip, we'll also suggest some

practical situations for using the tip. At the very least, we'll always explain how you can benefit from any concept, tip, or warning given in the book.

3. *If the DOS 6* User's Guide *covers a topic satisfactorily, you won't find the topic discussed here.* We're not out to reinvent the wheel. The Microsoft DOS 6 *User's Guide* is a good piece of writing; so is the DOS 6 online help system. You'll find a lot of good information within these resources. This book focuses on information that you can't find anywhere else.
4. *We present tips, warnings, and other information not available at the time DOS 6 was released.* Microsoft is constantly releasing news bulletins about hardware problems and solutions, new software for use with DOS, and updated device drivers and other information that can help you get the best possible performance out of DOS 6. We've included much of this late-breaking information in this book. In cases where information is available via modem or phone, we'll tell you how to contact these sources.

Features of this Book

We don't expect you to read through this book page by page, cover to cover. We know that most readers of computer books have specific questions or problems that they want resolved, or they want to learn how to use specific features of a program. If this is what you expect from a computer book, you also want to be able to find information quickly and easily. This book is designed with this kind of easy access in mind.

Each chapter contains several major topics. For each topic, we'll first provide some general information. Then, the topic is broken down further into subtopics, with each subtopic describing a particular DOS concept in more detail or showing you how to use a particular feature or solve a specific problem. Each subtopic begins with an informative heading, followed by a few brief sentences (printed in bold italic type) that tell you quickly what you can expect to discover by reading through the rest of the material in the topic.

We've also included several *Hot Tips* throughout each chapter. Each Hot Tip provides you with information that you can use immediately to solve some of the more sticky DOS 6 problems or to put to use some little-known DOS 6 technique that we think every DOS user should know.

Although this book includes a lot of reference material regarding DOS 6, it's not your run-of-the-mill reference book. We want you to know *how* DOS 6 works—from the ground floor up—and we want you to enjoy and understand what you're reading. Above all, we want this book to be *practical*. So, general reference sections aren't included in this book. However, general DOS 6 troubleshooting topics are covered in Chapters 14 and 15, and information on setting up DOS 6 is provided in Appendix A.

The DOS 6 Insider Disk

A diskette is available (see Appendix B for detailed information) that includes an assortment of DOS 6 utilities and extensive troubleshooting information. References to this disk are made throughout this book; just look for the "On Disk" icon. However, the *DOS 6 Insider Disk* contains several additional files and utilities not mentioned in the book (simply because some information provided on the disk was not available at the time the chapters were written).

Ten Great DOS 6 Tips

To get you started, we've gathered together ten tips exploiting features that are new in DOS 6. You'll find some of these techniques mentioned elsewhere in the book. But by presenting these tips together, we think we can give you a good sense of the direction we take in this book, and you'll get a good feel for the improved performance of DOS 6 over DOS 5.

Your PATH Can Exceed 127 Characters

A longstanding limitation of previous versions of DOS was the inability to create a PATH statement that exceeds 127 characters. (Your PATH line normally appears in AUTOEXEC.BAT.) This limitation has serious repercussions because many users today install dozens, if not hundreds, of programs, and the directories for all of these programs might not be able to fit within the existing PATH limit.

In DOS 6, you can create a PATH of virtually unlimited length. The trick is to place the PATH statement in CONFIG.SYS, not AUTOEXEC.BAT.

DOS will create an environment variable for the PATH automatically when it is detected in CONFIG.SYS. However, you should be aware that the DOS SET command won't display a variable entry that contains more than 127 characters. The most significant drawback here: If you create a PATH from your CONFIG.SYS file, you can't change it during the course of processing. For more information on PATH and on CONFIG.SYS and AUTOEXEC.BAT files, see Chapter 9.

Tip 2

DELTREE and MOVE Can Handle Directory Names That Include a Space

Many third-party utilities allow you to create directory names that contain a space—for example: TEST DIR. In previous version of DOS, you couldn't use DOS commands with these directory names because a space is an illegal character. For instance, you couldn't delete the directory or its contents because the CD command and the DEL command won't accept a name that contains a space. (You'll just see a "Too many parameters" message if you try to use CD to change to a directory that contains a space in its name.)

The new DELTREE and MOVE commands now recognize directory names that contain illegal characters, including a space. You can use DELTREE to delete directory names that contain illegal characters, and you can use MOVE to rename one of these directories. However, you need to enclose the illegal directory name in quotation marks. For instance, here's how to delete a directory named TEST DIR:

```
deltree "test dir"
```

Here's how to use MOVE to rename this directory:

```
move "test dir" test_dir
```

See Chapter 4 for more information on using DELTREE, MOVE, and many other DOS 6 file-management commands.

Tip 3

You Can Quick-Format a Diskette Previously Used to Store Backup Files

If you use the new Microsoft Backup or Backup for Windows program to backup files to diskettes, the backup program uses all of the disk space to create a compressed backup file on each diskette. If you later try to quick-format one of these disks in order to reclaim the disk space

(using the FORMAT /Q command), you'll receive the following error messages:

```
There was an error creating the format recovery file.
This disk cannot be unformatted.
Proceed with Format (Y/N)?
```

These messages occur because the diskette is too full for FORMAT to create its MIRROR file on the diskette. This confuses some users, who assume that the /Q switch can't be used to reformat a diskette that contains a backup file. That's an incorrect assumption. DOS still peforms a quick format after the error messages display, but it doesn't create a MIRROR file. The diskette will format correctly, but you won't be able to unformat it later. If that doesn't bother you, just ignore the error messages when you quick-format one of these diskettes.

You Can Make HIMEM.SYS and EMM386.EXE Verbose

With DOS 5, HIMEM.SYS and EMM386.EXE display their initialization information by default whenever you boot your system. In DOS 6, HIMEM.SYS and EMM386.EXE display startup information only if they detect errors. If you want to instruct these memory managers to display all startup information, add the /V (for VERBOSE) switch at the *end* of the DEVICE lines (in CONFIG.SYS) for HIMEM.SYS and EMM386.EXE. For instance, your HIMEM.SYS line in CONFIG.SYS might look like this:

```
DEVICE=C:\DOS\HIMEM.SYS /V
```

See Chapter 9 for general information on how DOS uses memory; see Chapter 10 for more information on HIMEM.SYS, EMM386.EXE, and many other memory-management topics.

Use FASTHELP to Display a List of DOS Commands and Their Syntax

If you've used DOS 5, you probably know that you can display a list of DOS commands and their syntax by typing **help** at the DOS prompt. If you try this in DOS 6, the online help system will start instead. You can still display a list of commands with DOS 6. Just type **fasthelp** from the DOS prompt, rather than **help**. See Chapter 4 for more information on the DOS 6 help system.

Tip 6

You Can Use the HELP Command to Go Directly to a Command's Notes or Examples Screen

This undocumented feature is useful if you tend to refer repeatedly to the Notes or Examples screen for a particular command. DOS allows you to specify the full name of any help screen when you issue the HELP command at the DOS prompt. For instance, the complete name of the Notes screen for the DOSKEY command is DOSKEY--Notes, and the Examples screen for the DOSKEY command is DOSKEY--Examples. So, if you want to directly display the DOSKEY--Examples screen, type the following at the DOS prompt:

```
help doskey--examples
```

To display the DOSKEY--Notes screen, type this:

```
help doskey--notes
```

Remember that it isn't important whether you use uppercase or lowercase letters. However, you must enter the title of the help screen exactly as it appears within the Help system.

Tip 7

Use MEM /F to Determine when to Run MEMMAKER

DOS 6 provides a much-improved MEM command that you can use to display detailed information about your system's memory usage. And, of course, MEMMAKER is the new DOS 6 memory optimization program. You can use the MEM command to help you determine when it's time to run MEMMAKER.

Specifically, the MEM command includes an /F switch that lets you view how much free memory is available within conventional memory and each available region of the UMA. The amount of free conventional memory helps you determine whether your conventional memory space is insufficient to support a particular DOS application.

You can also compare free conventional memory totals with the free upper memory totals to judge whether a new TSR or driver would fit better within conventional memory or in the UMA. You can use the DIR command, of course, to find out the size of a TSR program or a device driver. Do remember, though, that many TSRs require additional space to initialize before they shrink to their resident size. The program size that appears in a DIR listing identifies only the resident size, not the initialization size. See Chapter 10 for more information on the MEM command and MEMMAKER.

Tip 8

Use the Backspace Key to Back Up through Startup Submenus

DOS 6 now includes commands that allow you to specify multiple startup configurations. To support this feature, you create a main startup menu and optional submenus that list available startup configurations and ask the user to choose the desired startup configuration.

So what do you do if you display a submenu, then decide you want to return to the main startup menu without selecting an item from the submenu? Many users think there is no choice at this point except to select an item from the submenu. However, you can return to the main startup menu from any submenu simply by pressing the Backspace key. See Chapter 11 for more information on creating and using multiple startup configurations.

Tip 9

Use the /CH Switch with DIR to Display the Most Accurate Disk Compression Ratio Information

The DIR /CH command is undocumented, but usually provides a more accurate compression ratio than DIR /C (which *is* documented). In any case, it's important to understand the distinction between these two switches.

When you type **dir /c** to display compression ratio information for a compressed drive, the DIR command reports a file size by assuming a cluster (allocation unit) size of 8K.

By contrast, DIR /CH uses the cluster size of your host drive (uncompressed drive on your hard disk) to determine the compression ratio of files. Even though the DBLSPACE FAT stores sectors not clusters, it groups every four sectors into a 2K cluster in order to report information to DOS.

Now, suppose DBLSPACE reports to DIR that a file contains 4K compressed bytes and is 9K when it is uncompressed. Since DIR /C assumes a cluster size of 8K, it determines that the 4K compressed file would have to be stored in two 8K clusters in uncompressed format (16K total storage space), and so reports a compression ratio of about 4:1.

But DIR /CH assumes a cluster size of 2K. So, a 4K compressed file that uncompresses to 9K could be stored in uncompressed format in 5 2K clusters (10K total). As a result, DIR /CH reports that the compression ratio is slightly higher than 2:1. This is a more accurate representation of the actual compression ratio, since a 2K cluster is much closer in

size to a 512K sector (the *true* allocation unit for a compressed drive) than an 8K cluster. For more information on DBLSPACE, see Chapter 12 and Chapter 14.

Tip 10

You Can Use POWER.EXE Even If Your System Does Not Support APM

The online documentation for the POWER.EXE program contains the following sentence: "The power manager device driver conforms to the Advanced Power Management (APM) specification." Many users assume this means they can't use POWER.EXE to conserve battery power on their portable computer unless their system's BIOS supports the APM specification.

That's not true. POWER.EXE can also conserve battery power on laptop and notebook computers that don't support the APM specification. Microsoft reports an average of 5 percent battery-power savings on these system. POWER.EXE does achieve much better results if your system conforms to APM, but this specification isn't a requirement. See Chapter 13 for more information on POWER.EXE and for information on many other advanced disk-management topics.

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