Hidden gems

Roger Gann explores the undocumented options, features and useful shortcuts lurking in DOS.

Back in those dim and distant days when you were supplied with proper, decent manuals when you bought software, MS-DOS was accompanied by a 300-page user guide. By contrast, Windows 98, an infinitely more complicated operating system, comes with a sylph-like "Getting Started" manual which weighs in at a mere 130 pages or so. However, as we all know, size isn't everything, and despite the thoroughness of the old MS-DOS User Guide, it doesn't tell us about the world's most popular operating system. It omitted to describe certain DOS commands that Microsoft has chosen to keep schtumm about. This should come as no real surprise, because there can be few apps written that don't have at least some undocumented features. And because these DOS commands are undocumented, they don't officially exist. Microsoft maintains they are "experimental" and won't guarantee to maintain them from one release of DOS to another. Because of this, Microsoft conservatively recommends that you stick to the tried and tested (i.e. documented) bits of DOS and that you ignore the undocumented stuff.

Many of these features hark back many years, to ancient versions of MS-DOS

In common with most other users, I find these secret DOS features intriguing. I've tracked down over a dozen of these DOS secrets for you to try and to decide for yourself, some well-known, others less so. Most are fairly trivial, it has to be said, but one or two are quite useful. Surprisingly, many of these features hark back many years, to ancient versions of MS-DOS; but many, however, still work under Windows 98! So explore away. Don't forget that because they are unsupported by Microsoft, not every version of MS-DOS will feature them.

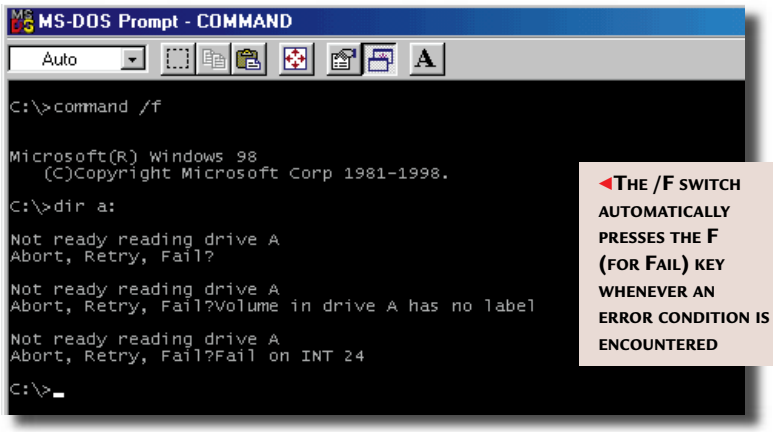
Format /Autotest and /Backup

These little gems first surfaced way back with MS-DOS 4.x. They allow you to format floppies with minimal hassle. Simply enter:

```
FORMAT A:  /AUTOTEST <CR>
```

This option begins reading and formatting the disk contained in the A: drive — at default capacity —without further user input. When the formatting is complete, it returns you straight to DOS. To format another disk, simply press F3, which restores the contents of the previous command line to the current one, and press Return. This command switch is a real time-saver: using the standard Windows 98 format routine, it took me 115 seconds to format a floppy disk. But by using the /AUTOTEST switch in a DOS box, the time dropped to 50 seconds. And you don't have to keep hitting the Enter key, either. Make up a batch file with this command in it, and then make a shortcut to it on your desktop. Cool or what? If you format a disk with a rated capacity less than the full capacity of the drive, say a 720Kb disk in a 1.44Mb drive, specify the disk's formatted size with a /F switch. This command formats a 720K floppy in a 1.44Mb drive: for example,

```
FORMAT A:
/AUTOTEST /
F:720 <CR>
```



◀THE /F SWITCH AUTOMATICALLY PRESSES THE F (FOR FAIL) KEY WHENEVER AN ERROR CONDITION IS ENCOUNTERED

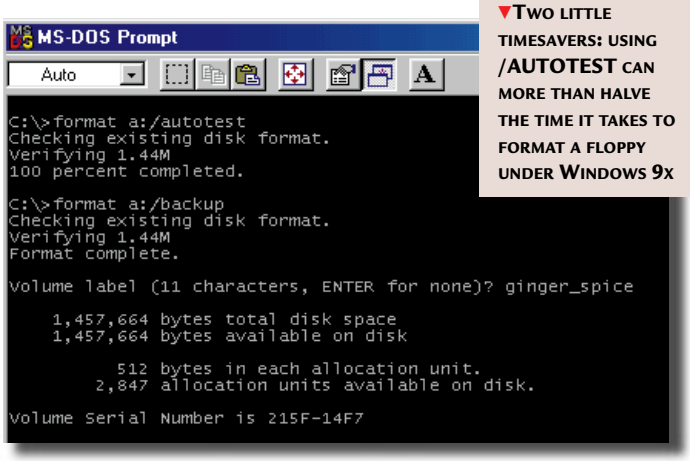
If you want the same simple formatting routine but also want to give the disk a label, use this switch:

```
FORMAT A: /BACKUP <CR>
```

When the format is over, you may enter a volume label of up to 11 characters. When you press Enter, FORMAT provides a listing of the disk size, the space available, and the size and number of allocation units. Both these switches can be used with other FORMAT switches, such as /U and /S, though not with the quick format switch, /Q.

Command /F

This is an odd one. The DOS command-line interpreter, COMMAND.COM, accepts a variety of switches, such as /P and /E, to modify its behaviour and you can see them all if you simply enter COMMAND /? . However, this list isn't exhaustive: there's another, /F. If you add



▼TWO LITTLE TIMESAVERS: USING /AUTOTEST CAN MORE THAN HALVE THE TIME IT TAKES TO FORMAT A FLOPPY UNDER WINDOWS 9X

this switch after COMMAND.COM in your SHELL statement in CONFIG.SYS, then whenever DOS's critical error handler is triggered, the action in question will fail. For instance, if you wanted to copy a file onto a duff floppy, DOS would give you an "Abort, Retry, Fail?" error message. With the /F switch, DOS automatically selects Fail for you, as though you had typed "F" yourself.

FDISK /MBR

This undocumented switch concerns the MS-DOS partitioning utility, FDISK, something most users won't have to use too often. By adding the /MBR switch, the Master Boot Record — as Microsoft calls the boot and partition tracks — is rewritten, without touching the partition table. The MBR is located in the first sector on a hard disk. Microsoft left the /MBR switch undocumented for a reason: some programs, such as multiple-boot programs, modify the master boot record for legitimate reasons. Typing FDISK /MBR erases the changes that these programs have made. Don't use this command if you use programs that need to modify the master boot record. For example, many users with large hard disks will use special overlay software to make sure the full capacity of the drive is available. These programs modify the Master Boot Record, and if you use this switch, the MBR will be reset to its original state and your hard disk will then "disappear". Dual-boot programs will also be zapped in this way.

Getting Stoned

As well as being useful in times of disk crisis, this FDISK switch is also a great way of despatching boot sector viruses — the most common viruses — such as Joshi, Stoned, and Michelangelo. These hide themselves in a tiny bit of executable "bootstrap" code located in the boot sector. It's this bit of code that reads the operating system in to memory. The /MBR switch makes FDISK rewrite this code, erasing any viruses hiding there in the process. Just boot from a known, write-protected system floppy and enter:

```
FDISK /MBR <CR>
```

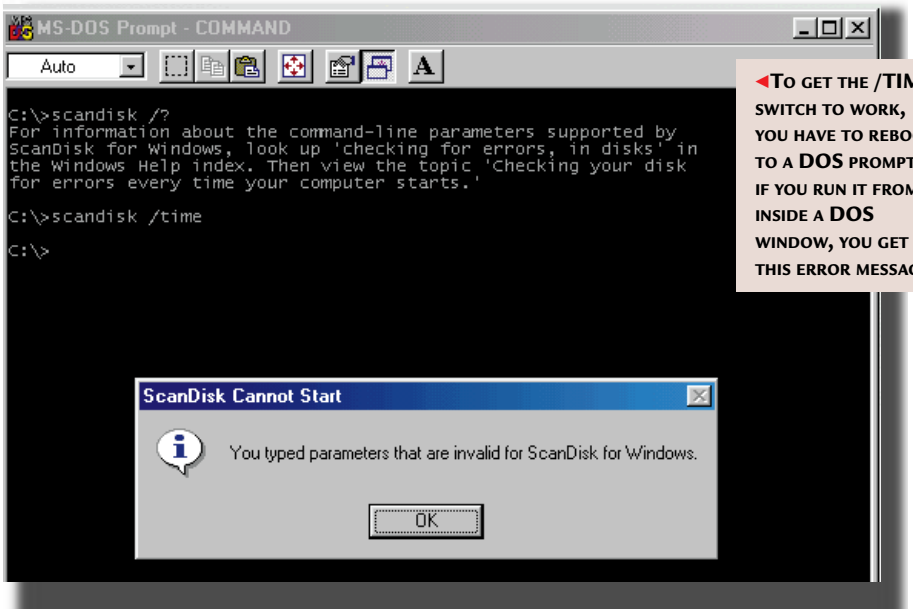
Note that FDISK /MBR will only eradicate the viral code in the master boot record. Nor will it fix the master partition table if it has been disabled by a virus. If this has happened, rather than repartitioning the disk — and zapping its contents in the process — employ a little-used switch that accompanies the old MIRROR command. MIRROR appeared on MS-DOS 5.0 but sadly disappeared from MS-DOS 6.2. But it is still available, on the MS-DOS 6.2 Supplemental Disk. Check your install disks to see if you still have this version of DOS. If you type:

```
MIRROR /PARTN <CR>
```

DOS creates PARTNSAV.FIL on a floppy disk. The file contains a copy of all your hard disk's partition tables. For convenience, keep the backup copy on a bootable floppy. If the partition data ever becomes corrupted — the DOS may refuse to recognise one or more logical drives on the hard disk — pop in the floppy containing the backup file and type:

```
UNFORMAT /PARTN <CR>
```

UNFORMAT, started with the /PARTN switch, restores the partition tables from the information in PARTNSAV.FIL. If the partition tables were the only part of the disk corrupted, it should be as good as new again.



◂To get the /TIME switch to work, you have to reboot to a DOS prompt. If you run it from inside a DOS window, you get this error message

SCANDISK /TIME

SCANDISK is the disk media-testing tool introduced with MS-DOS 6.2 to deal with iffy hard disks. It has a number of command switches, but one not listed is /TIME. In its default mode, SCANDISK will read and write to each sector on the hard disk. Any sectors that it has trouble writing to or reading from are marked as "unusable" after the data it contains has been removed to a safe spot. It's not entirely clear, but it seems that the /TIME switch makes SCANDISK more sensitive and can mark as bad any sectors it has any trouble reading/writing. Normally, if DOS has trouble reading a sector, it will re-try a number of times and sometimes it is successful. This is noticeable on floppies where you can hear the head tracking back and forth over a sector. But a sector that DOS has trouble accessing might be on its way out. SCANDISK will only deal with sectors that have already gone bad; with the /TIME switch it can deal with those that are on the slippery slope and nip any problems in the bud, before they get any worse. It does this by timing how long it takes for the drive head to access the sector, and any that take too long are candidates for attention. To get it to run under Windows 9x, boot to an MS-DOS prompt first, otherwise the DOS version of ScanDisk won't run.

This FDISK switch is a great way of despatching boot sector viruses like Michaelangelo

That's enough secrets until next month's column. If you know of any undocumented options or features, do drop me a line.

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