Pearls of wisdom

Having trouble with your favourite OS? Roger Gann makes it look easy with six simple DOS tips.

This month's column is exclusively devoted to a pot-pourri of hints and tips I've collected over the years. So in no particular order, here they are. Have fun!

1 Chain of COMMAND. COMMAND.COM is the command line interpreter for DOS. Its job is to interpret everything you type in at the C:\> prompt (aka the command line) as a command and does its best to obey. It's an unusual program because, if you run another program, it cuts itself in half, kicking half of itself (the so-called "transient" portion) from memory, to free up conventional memory for use by applications. It does this because you won't be able to access COMMAND.COM from within an application (unless it loads a second copy of it) and so isn't needed.

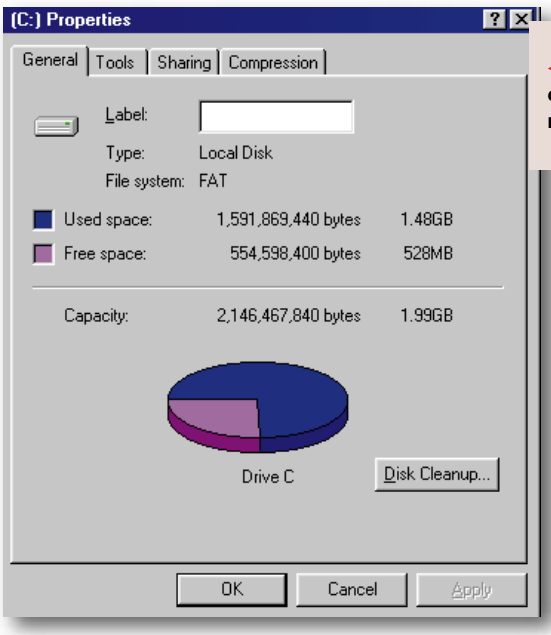
So, when you quit your programs, or "shell out" to MS-DOS, the command interpreter, COMMAND.COM, needs to be reloaded from disk. To speed up the process of reloading the command interpreter, you can store COMMAND.COM on a RAM Drive. To do this, follow these steps:

- **Add** a DEVICE=RAMDRIVE.SYS in your CONFIG.SYS.
- **Add** a line to your AUTOEXEC.BAT that copies COMMAND.COM to the RAM Drive.
- **Set** the COMSPEC environment variable (in AUTOEXEC.BAT) to "point" to the copy of COMMAND.COM on the RAM Drive.
- **Set** the PATH environment variable (in AUTOEXEC.BAT) to include COMMAND.COM's location on the RAM Drive.

The lines in AUTOEXEC.BAT will look like this:

```
COPY C:\COMMAND.COM D:\
SET COMSPEC=D:\COMMAND.COM
SET PATH=D:\;
```

(followed by the rest of your normal path description).



◄ HARD DRIVES ARE GREAT, BUT RAM DRIVES ARE FASTER

2 Share and share alike. For a year or two many PCs were shipped with both types of floppy-disk drive, 5.25in and 3.5in, which made copying one floppy disk to another a piece of cake. However, for the past decade or so PCs have been shipped with a single 3.5in floppy-disk drive only, which can make copying a disk slightly awkward. OK, it's easy enough to copy an entire floppy disk if you only have one floppy-disk drive; DISKCOPY takes care of the problem for you. But supposing you wanted to copy a file from one 3.5in disk to another, but you had both 3.5 and 5.25in floppy-disk drives?

For a year or two many PCs were shipped with both types of floppy-disk drives

Ordinarily, you'd have to copy it on to the hard disk, swap disks, copy it from the hard disk and erase the copy on the hard disk. Yet it is possible to use one floppy-disk drive to copy a file between two different-sized floppy disks if you install DRIVER.SYS with the appropriate switches in your CONFIG.SYS file. Simply add this line to your CONFIG.SYS:

```
DEVICE=DRIVER.SYS
/D:0 /F:1
```

Then, when you reboot, you'll see this message when the driver is installed :

```
Loaded external
disk driver for
drive <x>
```

where <x> is the new logical drive letter associated with drive A. You can then use the single floppy-disk drive and the MS-DOS COPY command to copy files between disks (swapping disks when prompted), as in the following example:

```
COPY A:FILENAME.EXT X:
```

DRIVER.SYS is only needed if you have two different, and possibly incompatible, floppy-disk drive types; however, you still need to use two floppies of the same media type (for example, 360K to 360K). Note that you can't use DRIVPARM — this only modifies an existing drive without adding that vital extra drive letter.

3 The sub's bench. While the number of files you can store in a root directory is strictly limited, the number of files you can store in a sub-directory isn't, and you can store as many files as you like in one. But be warned: you may notice a performance slowdown in MS-DOS when creating many files in a sub-directory. MS-DOS is much slower at accessing a sub-directory that contains many files or deleted files than at accessing a brand-new sub-directory — that is, one that contains no deleted files.

This slowdown occurs because MS-DOS directories do not get smaller when you delete a file. MS-DOS simply pads out the directory by inserting a "no file here" mark for each deleted file in a directory.

There are two different "no file here" marks in the first bytes of directories: 00h and E5h. Whenever you create a file, MS-DOS searches to the end of the directory to see if a file with that name already exists. Even if files have been deleted from the directory, MS-DOS must still check for the "no file here" entry for each deleted file. If you copied 100 files to a sub-directory, it would take DOS exactly as long for it to scan for the presence of a file as it would if you had deleted them all! The moral of the tale is that it's often better to copy files from a heavily used sub-directory, delete it, re-create it and copy them all back.

4 Shelling out. This is a tip that will benefit any DOS program that makes use of a TEMP directory, in particular that old clunker, the DOS Shell. While DOS Shell was dropped from MS-DOS 6.2, there are still a few MS-DOS 5.0 and 6.0 users who persevere with it. One of its more attractive features is task-swapping — a kind of poor man's multitasking — that allows you to load several programs into memory and lets you switch between them, with only the current app being active. The background tasks are in fact dumped to disk to save memory and this is a slow process, but it can be speeded up by swapping to a RAM Drive instead. To do this, add a line like this to your CONFIG.SYS:

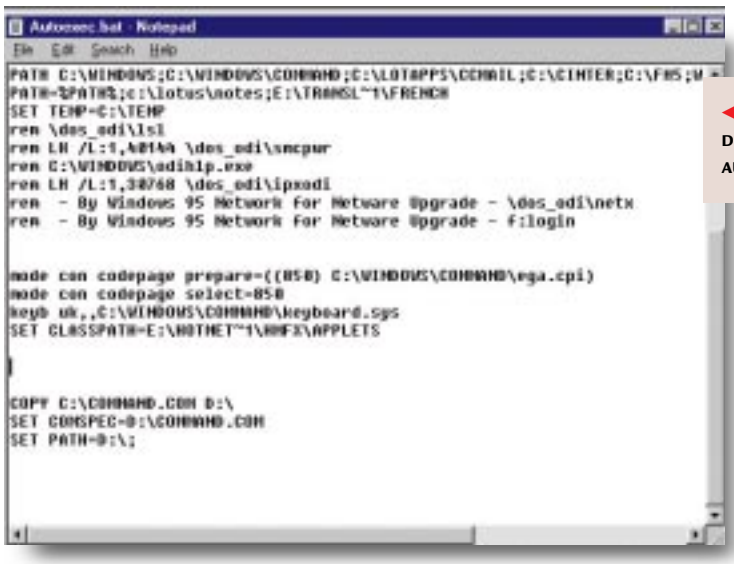
```
DEVICE=C:\DOS\RAMDRIVE.SYS→
 512 /E
```

Then add this line to your AUTOEXEC.BAT file:

```
SET TEMP=D:\
```

(or the drive letter of your RAM Drive). DOS Shell will see that the temp drive has changed and will write to the much faster RAM Drive instead.

5 Illegal entry. Sometimes, thanks to some glitch, you'll wind up with a directory name that contains one of MS-DOS's illegal characters, typically a space. The MS-DOS RD command cannot be used to delete a directory with, say, a blank space in the name, because it doesn't expect to come across illegal characters. However, you can use the MS-DOS programs DELTREE and MOVE to either delete or rename these directories.



◀ **ADDING A RAM DRIVE TO THE AUTOEXEC.BAT FILE**

Say you wanted to eliminate a directory with the illegal name DIREC RY. Simply enter

```
DELTREE DIREC RY <CR>
```

and the sub-directory "DIREC RY" in the above example, complete with an illegal space, will be deleted. You can also use MOVE to much the same effect:

```
MOVE DIREC RY DIRECTRY
```

This command effectively renames the sub-directory to a more DOS-legal DIRECTRY. Handy, eh?

6 Make room. One of the more attractive uses of DoubleSpace is to increase the size of RAM disks. But to do this you would normally have to go through the palaver of compressing the RAM Drive each time you turn your PC on. You can automate this process by temporarily storing a previously compressed RAM Drive compressed volume file (CVF) on your hard-disk drive, and then placing two commands in your AUTOEXEC.BAT to copy and mount the CVF on the RAM Drive when you start your computer.

First create a RAM disk in the usual way, thus:

```
DEVICE=C:\DOS\RAMDRIVE.→
SYS 1280 /E
```

Don't be tempted to change the default sector size of the RAM disk from 512 bytes — DoubleSpace won't like it.

Now compress the RAM Drive, using this command

```
DBLSPACE /COMPRESS D:
```

Next, resize the compressed drive to its maximum size (and thereby reduce the size of the host drive to zero bytes):

```
DBLSPACE /SIZE /RESERVE=0 D:
```

Then change the CVF attributes so the file can be copied. For example:

```
ATTRIB H:\DBLSPACE.→
000 -S -H -R
```

where H: is the host drive for the RAM disk. Now copy the CVF to an *uncompressed* hard disk, renaming it on the way to avoid confusing DoubleSpace, for example:

```
COPY H:\DBLSPACE.000 C:\DOS→
\RAMCVF.000
```

Finally, add the following lines to your AUTOEXEC.BAT so that the CVF is copied back to your RAM Drive and mounted each time you start up your computer.

```
COPY C:\DOS\RAMCVF.000→
 D:\DBLSPACE.000
DBLSPACE /MOUNT=000 D:→
 /NEWDRIVE=H:
```

Check that it has worked by entering

```
DBLSPACE /LIST <CR>
```

That's all for now. But remember, if you have shed new light on the "dark half" I call DOS, then do drop me a line.

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