



# All that glitters...

Even if you upgrade your RAM, you may still get "low memory" messages; it's the *first* megabyte which sets the gold standard. Panicos Georgiades and Gabriel Jacobs explain.

**O**ur March column, which dealt with installing Windows 95 and Windows 3.x/DOS on the same machine, struck a chord with many readers. We have been fairly inundated with queries about specifics, so here is a selection.

**Q.** "Your article encouraged me to try the Win95/3.x/DOS combination. As my present setup already has a multi-config start-up menu, I'd like to check whether or not this may cause problems? I hope it will be straightforward and that I can continue to enjoy multi-choice in DOS."

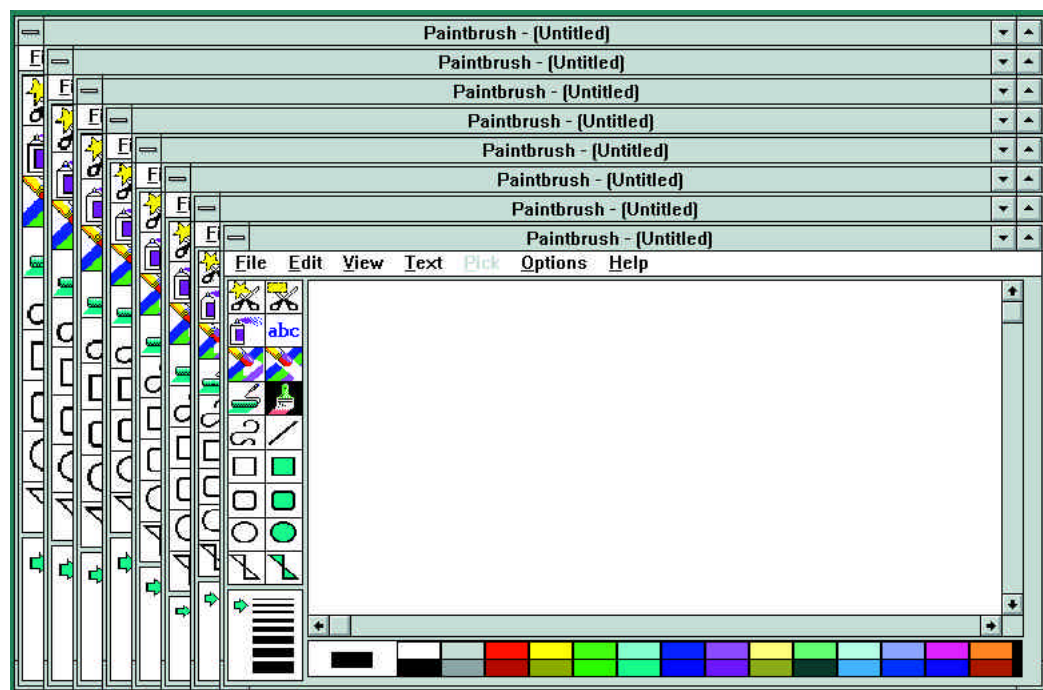
James McFarlane  
j.mcfarlane@uea.ac.uk

**A.** There will be no problems with your present DOS multiple-boot configuration menu. Since this is part of your DOS config.sys and autoexec.bat setup, it will come into effect only after you have selected to start with DOS instead of Windows 95.

**Q.** "Having installed Windows 3.11 and Windows 95 onto the same hard drive in directories Win3.1 and Win95, is it necessary to load software into C:\win95\application or C:\win31\application, or do you just load them into C:\application?"

John Wright  
john.wright@compuserve.com

**A.** As we said in the article, only a few simple programs can be run from both 3.1



**Fig 1** The size of the opening window of some applications depends on available resources. As resources get less, so does the size of the window [see James Thompson's letter, overleaf]

and 95 installations: those that don't, keep settings in the Windows INI files, and don't have their own INI files in the Windows directories. All the others must be installed twice: once for 3.1 and again for 95.

We don't recommend that you run programs installed under Win3.1 in Win95 or vice-versa. The idea is to use 3.1 for those programs that can't be run under Win95, either because they do something specific or incompatible, or because they use hardware peripherals for which you don't have 32-bit 95 drivers. Anyway, if a program runs OK in Win95, why run it under Windows 3.1?

To avoid problems, think of the two installations as two sides of a coin which

should never interfere with one another. The straight answer in your case is that you need to keep both application directories separate.

**Q.** "I'm using Win3.1 but I also want to use Win95, and having read your article, I want to attempt the dual operating system. However, I've managed to get myself Win95 OEM, and was wondering if it is still OK to load it together with Win3.1. I understand that the OEM version handles FAT32, and I am not sure if it will still be safe."

Panos Panayides  
PAN4DEM@aol.com

**A.** You can't install both operating systems

using the method we described if you have the OEM version that uses FAT32 (File Allocation Table), otherwise known as the OSR2 version. Microsoft technical support says that you need a fix program which you can get from them.

**Q.** "I'm a long-time PCW subscriber, still on DOS 6 and Windows 3.1. Could you please tell me how to ensure that an application always starts in a maximised window? Some of the programs don't seem to have an INI file associated with them."

James Thompson

**A.** Under normal circumstances, unless your application has its own INI file or some special setting that goes in the win.ini file, you can't set it up to start maximised. This is true of applications such as Write and Paintbrush which open up windowed, and the size of the windows depends on resources — if you keep opening windows one after the other, they will get smaller and smaller (Fig 1). With applications that have an INI file, the setting would be

Maximize=1

If you have Visual Basic or some other Windows programming language, you can write a little program which will start the application you want and then maximise it, using the SENDKEYS command which sends keystrokes to the application you have executed.

## One megabyte is worth its weight in gold

You've just upgraded your memory to 16, 32, or even 64Mb of RAM and yet you are still getting messages like "Application Execution Error", "Insufficient memory to run this application", "Quit one or more Windows applications and then try again", or "Not enough memory available".

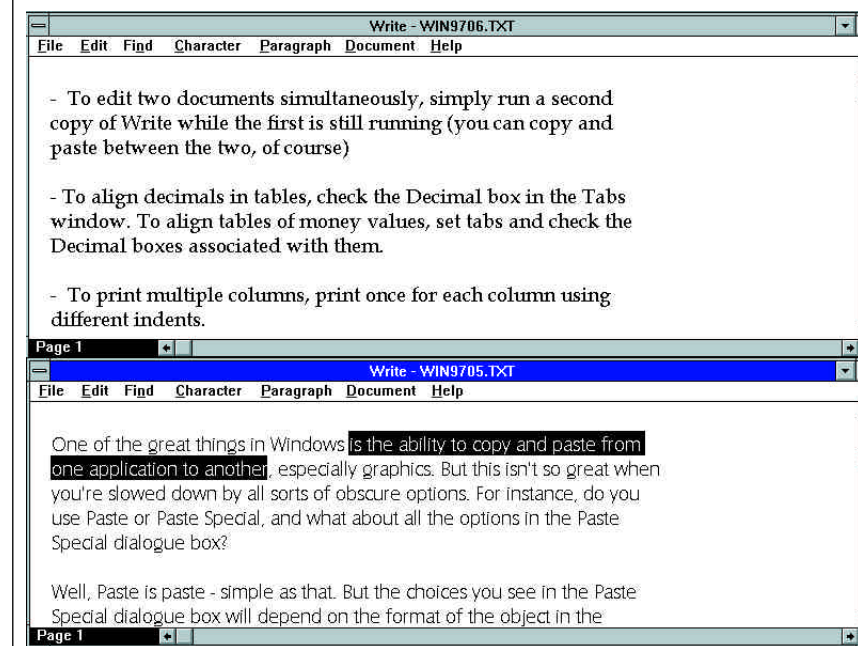
You're not alone. Low memory is the root of many computing problems, and in many circumstances this isn't due to the physical memory in your machine. Unfortunately, when error messages refer to "memory", they're not all alluding to the same thing. Computer memory is divided into many different chunks, each with its own name and its own job to do. And the most important of these chunks is the first megabyte: the one in which DOS resides.

When Windows starts a new program (a task), it creates a task database (a TDB) for it. This contains vital information such as its current directory, its instance handle, and so on. To maintain compatibility with 16-bit Intel processors and MSDOS, the TDB is

## The Write stuff

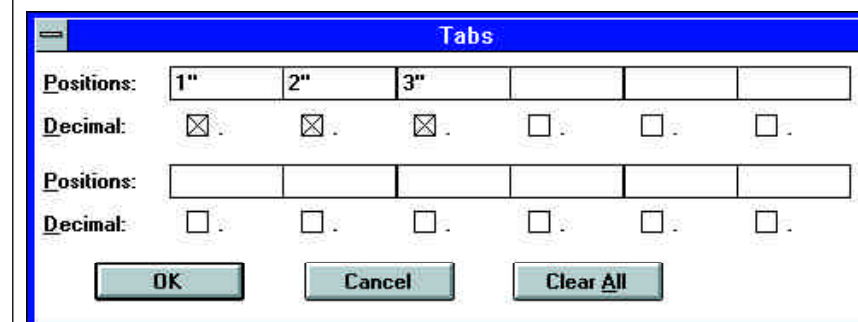
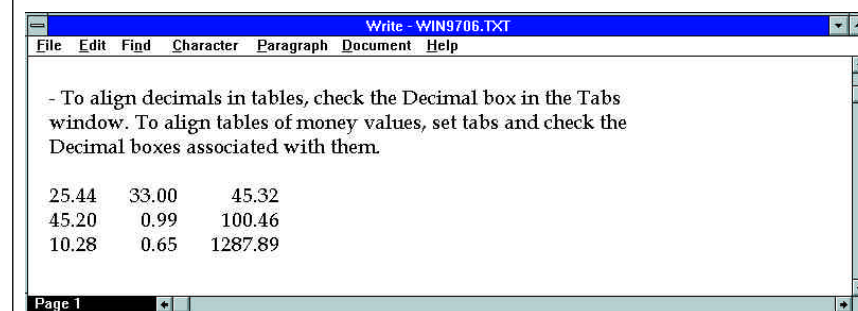
When using Write:

- For a soft hyphen, press Shift + Ctrl + Hyphen (this is useful with the paragraph justify setting).
- To select all, (mark) the entire document, press Ctrl and click between the left margin and the left edge of the screen. This is far easier than dragging the mouse through pages and pages of text.
- To edit two documents simultaneously, simply run a second copy of Write while the first is still running (you can copy and paste between the two, of course).
- To align decimals in tables, check the Decimal box in the Tabs window. To align tables of money values, set tabs and check the Decimal boxes associated with them.
- To print multiple columns, print once for each column using different indents.



**Above** To edit two documents simultaneously, run Write, twice

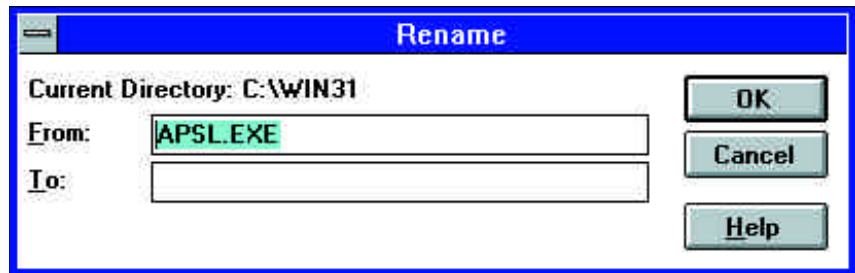
**Below** To align numbers or currency, use the Tabs settings and check the decimals box



## New names for old — a fast rename tip

When you rename a file in File Manager, the cursor goes automatically to the To: line in the Rename dialogue box, and you're expected to type in the new name. Very often you want the new name to be something like the old one. If so, you can avoid some re-typing by copying the old name in the From: line to the To: line. This is especially useful with convoluted or otherwise difficult filenames.

Unfortunately, you can't simply copy the filename by dragging and dropping. But there is a way around this. Highlight the old name (or part of it), press Ctrl + C, click on the To: line, and press Ctrl + V. You can then edit the new name in the To: line until you have the name you want.



Use Ctrl+C and Ctrl+V to copy the old name to the new name, then edit it.

created in memory below 1Mb — in fact, in the 640Kb of conventional memory. This section of memory on your machine is so much in demand and so limited, that it should be treated like gold.

TDBs are not the only block of memory that may end up below 1Mb. Applications such as Word for Windows, Microsoft Mail, Schedule+ and multimedia packages are examples of applications that put DLL files into the first megabyte of memory when loading or performing certain operations. As Windows loads segments of code, it gives each segment an attribute which determines how it will be treated. Segments are marked, by Windows, as fixed or moveable. Fixed code is allocated bottom-up and, as the name indicates, cannot be relocated. But moveable code can be moved or discarded to make room for other segments. If a fixed segment is too big to fit into the available space, Windows moves some moveable segments, if necessary, out of the first megabyte of memory.

If there's still insufficient room, discardable segments, which can be brought in later as required, are discarded. All this moving and discarding is controlled by a program called KRNL386.EXE.

An "out of memory" error that you get when you try to start an application may happen because fixed segments (precisely because they're loaded from the bottom up) have been loaded in the first megabyte. They cannot be moved and end up using space which Windows may require to load the TDBs.

What's the practical answer to all this?

There are several, but in general the idea is to free as much conventional memory as possible. You can optimise conventional memory (with DOS 6 or 6.2) using MemMaker, and/or you can achieve satisfactory results by changing the order in which programs and drivers are loaded. It's difficult to give precise advice here and trial and error is usually the order of the day: altering the loading order may well affect where the fixed code gets placed.

Creating a multiple-boot configuration can also help minimise what loads into conventional memory for particular operations — it may free enough space for Windows to load the TDBs.

Other techniques include:

- Disabling any applications that start automatically when you start Windows (check the win.ini file and the Startup group).
- Running Windows Setup and changing to standard Windows drivers (VGA, No Mouse, No Network).
- Using the Program Manager (PROGMAN.EXE) as your Windows shell.

Finally, for troubleshooting, remove any third-party Windows drivers or virtual device drivers (VxDs) by re-marking them using a semi-colon (;) at the start of the line in the system.ini file.

## PCW Contacts

If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georgiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk).