PT Tips

Since the release of its flagship PowerMac G5 systems in June of last year, Apple is once more able to offer a range of machines that are at least comparable in power to the high-end PC-based hardware currently on the market. While the G5's initial claim to be 'the world's fastest personal computer' has been rejected by some (and indeed, conspicuously removed from Apple's own marketing), there can be little doubt that this is an extremely powerful machine, and that the leap from the previous range of G4s is a massive one. BILL CUNNINGHAM answers some questions.

SO HOW DOES THE new G5 affect the Pro Tools user? Would a change of CPU provide a significantly more powerful system? Will it be faster at carrying out everyday tasks? Does it make tea?

The purpose of this article is to answer these questions (apart from the tea one, which should be obvious) and to look at how the G5 and Digidesign's range of Pro Tools systems live together, what advantages or disadvantages the new computers can bring, and whether or not the Windows-based competition is made a poorer choice by the mere existence of these machines.

For any manufacturer of computer-based systems, the introduction of a new family of CPUs is met with a combination of joy and horror. Digidesign prides itself on its direct approach to issues of compatibility — if a machine doesn't pass the rigorous testing imposed on it, it will not pass as an officially qualified CPU. Similarly, unlike many digital audio workstations, both TDM and LE versions of Pro Tools will report audio playback problems down to a single dropped sample — a feature that is clearly essential in any truly professional work. Thus thoroughly testing every machine to these high standards brings about an enormous amount of work, and this, coupled with the fact that there are so many different flavours of Pro Tools systems, goes some way

to explaining why new CPUs aren't often qualified immediately after their release.

For better or worse, Apple made Digidesign's life a little easier with the G5 as many of the older PCI-based Pro Tools systems simply weren't going to work at all. This is due to a change in the PCI architecture — a G5 can only support 3.3 volt powered cards, whereas previous generation Macs were able to support mixed voltages. That immediately rendered older cards (the d24, Digi 001, and Mix I/O cards, for example) incompatible from the outset.

It's also important to realise that the G5 is so radically different from its predecessors that some fundamental code had to be recompiled or even rewritten to be compatible. Add to that Apple's constant operating system changes and tweaks, and the nightmare of qualification only deepens. Pro Tools software was not, therefore, immediately compatible with the G5, and Digi has been working hard since its introduction to achieve it. However, a few software releases and patches later, and Pro Tools version 6.2.3 has been released, providing full G5 compatibility for all currently shipping Pro Tools systems, both TDM and LE (including Pro Tools HD, HD Accel, Digi 002, Digi 002-Rack, Mbox, AV Option XL, etc). All of these systems work with the very latest iteration of Apple's

OS X operating system, Panther version 10.3.2 (unsurprisingly, the G5 cannot boot into Mac OS 9).

Pro Tools comes in two distinct varieties — TDM and LE. Pro Tools TDM is the high-end system, currently represented by the Pro Tools HD family, and the main thing about a TDM system is the existence of dedicated DSP processing power to handle large parts of the audio processing. With a suitable TDM system, the user can expect to be able to run 192 disk tracks simultaneously at 48kHz sampling rate, all routing to surround panners, with plenty of real-time processing plug-ins on the channels, and even up to 96 real-time streaming inputs on auxiliary tracks as well.

This kind of power is only made possible by the DSP chips on the HD and HD Accel cards themselves, and it simply would not be possible to achieve these levels at this time with a host-based (i.e. CPU only) system alone. This raises one of the major questions when looking at the increasing speed of processors — how long until you simply don't need DSP? Digidesign believes that this is a long way off, and indeed, seems intent on continuing to improve the power of its TDM systems to match the curve of CPU speeds. Changes in the audio industry, such as the move towards surround production and the desire to operate at higher

sample rates, only act to further the argument that dedicated DSP is still very much a requirement for professional audio production.

However, this doesn't mean that a faster CPU will not benefit a Pro Tools TDM user. First, there are many elements of the Pro Tools software that are dependent on the host processor, such as screen redraw, waveform calculation, and offline plug-in processing (Audiosuite). There is no doubt that these factors are noticeably snappier on a G5 system than on a G4, particularly in graphically intensive areas such as playback scrolling.

More importantly, there are a great many real-time plug-ins available in RTAS (Real-Time Audiosuite) format, and these are plug-ins that use the CPU as opposed to DSP (as with TDM plug-ins). Since Pro Tools 5.1, Digidesign has also allowed TDM systems to run RTAS plug-ins at the same time as TDM, and here is where the move from a G4 to a G5 really becomes an attractive prospect.

A fun way of freaking a G4 owner out is to sit them in front of a dual 2GHz G5 and show how many host-intensive plug-ins you can run simultaneously (a notoriously hungry plug-in like Spectrasonics' Atmosphere or Audioease's Altiverb is a good place to start). The results are almost always very impressive — I was, for example, only able to run two Atmosphere plug-ins simultaneously on my old first generation 450MHz G4, and a staggering 18 of them on my shiny dual 2GHz G5. This must surely be the right message to high-end Pro Tools users — you're still going to need the DSP power for track count, higher sampling rates, surround work, and the huge range of highly powerful and complex TDM plug-ins available, but you can also harness the power of today's powerful CPUs at the same time.

But what about Windows? Pro Tools is available for the Mac and Windows platforms, and making the choice of which operating system you're going to use can be difficult. Digidesign's stance is that it's just about giving the end user a choice. Traditionally, Pro Tools has been a very Mac-centric application, and early attempts at Windows versions were less than stable. There was also a notably low initial uptake from the third party plug-in developers, which meant that, for a while, going Windows might not have been very attractive. This has all changed and with the exception of a couple of unavailable plug-ins, Digi have achieved feature and stability parity across the two platforms. Indeed, if you want to work with video solutions, such as the forthcoming AV OptionV10, or connect to an Avid Unity Media Network, Windows is likely to be the better choice for you, at least at the present time.

But what about raw power comparisons? It's extremely difficult to ever say one processor is faster than another. There are scores of benchmarking websites available, all of which have a different slant and run different tests. The general consensus from the unbiased, and indeed from Digidesign itself, is that a PowerMac G5 is roughly as powerful as the high-end PC systems available today. Note also that Digidesign is very specific about which PCs are supported by Pro Tools, especially with TDM (again, back to the testing grid) so the common theory that PCs are simply cheaper is unlikely to ring true at this level.

Ultimately, then, it all has to come down to personal choice. There will always be people who sing the praises of one platform over another, but it's the choice of a machine for a customer who wants to spend their

working day sitting in front of it. This choice is, in some ways, made harder by the fact that with Pro Tools there's really no major discernible difference between platforms (with the exception of the postproduction options as outlined above). It's simply a question of personal taste.

So, should you buy a G5? There's little doubt that the PowerMac G5 marks a significant increase in power to Apple's high-end desktop range, and anybody used to using an older Mac will feel the difference straight out of the box (not least because the damn things are about three times heavier). Pro Tools users will be impressed by the striking improvement in host-based processes, like screen redraws and RTAS plug-in counts. There are disadvantages too, though.

For example, there are only three PCI card slots in the currently shipping configuration, which means if you want to run an HD3 Accel system with a SCSI card, you're going to have to look at (and probably hear) a PCI expansion chassis. Also, if you're working on an Avid Unity Media Network or wish to use Digidesign's high-end video systems, you're better off on Windows at the present time.

However, with version 6.2.3 of Pro Tools bringing full support for G5 and Panther, most of the concerns about upgrading to G5 can be forgotten. If you're a Mac kind of a person and you have a heavy enough wallet, you can be pretty confident that this new machine will put a big smile on your face. Now, if it could just make tea... ■