feature | **pro tools explained**

tools of the trade

DIGIDESIGN'S PRO TOOLS EXPLAINED: PART 2

Simon Price continues his look at Pro Tools, focusing this month on the software and how it can be used in the studio alongside other MIDI + Audio recording and editing applications.

Last month, I provided an overview of the current Digidesign and Pro Tools universe. This time, I want to look at the Pro Tools software as it compares to other packages, and offer some pointers to recent purchasers of Digidesign systems, especially those wishing to integrate their existing MIDI + Audio software.

The last few months has seen large numbers of people trying out *Pro Tools* software for the first time. Last year the Digi 001 found its way into many new and existing home recording setups, and in the short time since its release, the free version of *Pro Tools* software (see www.digidesign.com) has been downloaded over 150,000 times! I am assuming that most 001 buyers intend to use *Pro Tools* software for at least some tasks, given that there are so many other brands of soundcard (without *Pro Tools* support) that they could have chosen to use with their MIDI software.

Three issues seem to arise for most of the people who bring Pro Tools systems into their studio. Firstly, which of its many possible roles will the Pro Tools system play in your particular studio? Secondly -- a more specific refinement of the first problem -- you now have at least two decent bits of software that can record, edit, and mix MIDI and audio -- so which will you use? Finally, if you're used to working with other MIDI + Audio software, you'll find *Pro Tools* behaves in ways you don't expect. I'll consider this in more detail in a moment, but now let's look at the first two points, which are concerned with integrating the system into your studio and working practices.

I explained last month that Pro Tools can be gainfully employed in many different ways: as a multitrack recorder, an editor, a MIDI sequencer, a mixer, or most likely as a system capable of several of these tasks at once. Personally, I still find myself wondering how best to go about integrating my Pro Tools system, my hardware mixer and Emagic's *Logic Audio* software. I don't want to offer too much hard-

and-fast advice based on my personal setup here, as I think the very flexibility of the system is one of its strengths, but by way of an example, my setup has changed over time as I've found a working style I'm comfortable with. Like many people, I used to do composition and arrangement in *Logic* (with *Logic* running the Digidesign hardware for audio), and then transfer what I'd done into *Pro Tools* for final editing and mixing. My sound sources were all running through the external mixer. These days, I've all but completely moved into the *Pro Tools* software, purely because I now know the program better than *Logic* and it saves me having to move between the two software environments. In addition, my sound sources are now piped directly into the Digidesign interface so that I can mix in software; my hardware mixer is now only used for mic inputs.
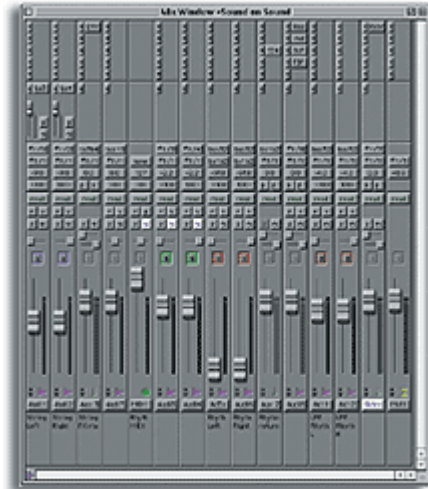
So what other options are there? For many keen users of MIDI, it will still be preferable to work within *Logic*, *Cubase VST* or the like, as more development has gone into the MIDI functionality of these applications compared to *Pro Tools*. The MIDI + Audio programs are all perfectly capable of recording, editing and mixing audio, so if you want to keep things simple you can steer clear of the *Pro Tools* software altogether (see the box on setting up third-party software to work with your Digidesign hardware). However, for my money the editing, mixing and automation sides of *Pro Tools* are a bit special, so next month I'll include some tips for transferring projects between programs. The really heavy option is to run both *Pro Tools* and your MIDI + Audio sequencer concurrently. It's possible to have both programs sync'ed together internally, with the audio and MIDI tasks shared between the two. This method requ ires a lot of RAM in the computer, and can be a serious technical headache, but I'll include the recipe for pulling it off next month for the brave-hearted.

Pro Tools Software

As I mentioned earlier, it's common to find *Pro Tools* a bit frustrating at first, especially if you're coming from a sequencing environment. This is because Digi's software is designed rather differently to the popular musical sequencing applications like *Logic* or *Cubase*. *Pro Tools* is built entirely around two windows -- the Mix window (see screenshot on page 86) is the familiar virtual mixer arrangement, and the Edit window (illustrated on pages 84 and 86) looks something like the Arrange pages in the likes of *Logic* and *Cubase VST*. Despite this familiar-looking layout, however, the key to getting your head around *Pro Tools* is *not* to think of the Edit window as behaving entirely like a MIDI sequencer's main Arrange area. In *Cubase* and *Logic*, editing of regions or snippets of audio and MIDI is usually performed in dedicated windows, such as *Logic*'s Sample editor (for audio) or Matrix editor (for MIDI). These building blocks can then be assembled in the Arrange area. *Pro*

Free Launch

Since the release of version 3 of *Pro Tools*, Digidesign have usually made available cut-down versions of the software that can run independently of any particular audio hardware. This not only serves as a demo version, but also makes transferring work to a laptop possible. Most recently, free releases of *Pro Tools* v5.0 have been published at the company's web site (www.digidesign.com) for both Mac OS and Windows 98/ME. This free version has all the functionality of *Pro Tools LE* v5.0, including the plug-in support, but is limited to eight tracks of audio and 48 tracks of MIDI. There are no time or save limitations as there are with many trial software releases, so it's well worth the download if you are curious, or need a free audio editor! On Apple machines, the free software uses the built-in stereo sound hardware, while on PCs, drivers are supplied to run stereo I/O through the 'preferred' sound hardware as defined in the Control Panel. Those anxious to know if they can persuade the free *Pro Tools* to access more than two channels of hardware via non-Digidesign soundcards will be disappointed. Digidesign's core business is hardware

Tools' design concept has always been to keep all production work within the two main windows, so all editing is performed *in situ*, in the tracks of the Edit window. Having said this, all active regions of MIDI and audio in the session are listed in a common pool area, available for assembling alternative arrangements. Commonly, those moving from a MIDI-oriented package to *Pro Tools* find advantages and frustrations to this way of working. On the plus side, you are always editing your audio and MIDI in the context of the surrounding tracks -- so, for example, you can zoom right in and edit MIDI notes visually with respect to audio in the adjacent tracks. In this way, it feels as though you have much more hands-on access to the data within the main Arrange area than you do with a sequencer package. The frustration can come from sometimes wanting to take a step back from this 'lower-level' interaction with the data, and just move bars of music around! However, a little experimentation with grid edit mode and various data display options should allow you to create something that you feel comfortable with.

manufacture, so it's no surprise that while they make every effort to accommodate other companies' software on their hardware, they don't do the reverse. Some PC users have struggled to get the free *Pro Tools* to run properly (make sure you get the Release 2 update), and you don't get any technical support, but I suppose you can't grumble when, for no cost, you get all the editing and automation power for which Pro Tools is famous. There must be people who paid thousands for a Pro Tools four-channel system a few years ago feeling decidedly unwell...information Digidesign +44 (0)1753 653322.
W www.digidesign.com

Understanding the other main difference between *Pro Tools* and the other MIDI + Audio packages can save no end of irritation. It can be summarised by saying that in the *Pro Tools* universe, audio is always the Master. In *Logic*, *Cubase*, and the like, time is measured in intervals that are divisions of musical note values, usually expressed as x number of parts-per-quarter-note. Any block of MIDI or audio in the arrangement starts at a time described in this way, for example, 'bar 1, beat 1'. In *Pro Tools,* MIDI behaves in the same way, but audio is always anchored to a sample value, or, put better, it's locked to absolute or real time. One place in *Pro Tools* where you can see these two separate 'timebases' in action is when you drop a marker (by hitting the Enter key on the keypad). You are immediately asked whether the marker is to be locked to absolute time, or bars-and-beats time. If you subsequently change the tempo of the whole session, you will see that the marker either stays anchored to real time, or moves to maintain its musical time, depending on which timebase you chose for it. This demonstrates what happens when you create tempo changes in a *Pro Tools* session that already contains audio tracks -- the audio regions stay right where they are, while the MIDI shifts out of sync against them. Conversely, in *Logic* or *Cubase VST* (where the audio is locked to bars-and-beats time), changing the tempo will mean that all the start times of audio regions stay in time with the MIDI, but of course the audio within the regions does not. Compare both these scenarios with a program like Sonic Foundry's *Acid*, which shifts audio regions and automatically time-stretches audio to compensate for a change in timing. The best way to consider these differences is to think of audio tracks in *Logic* or *Cubase* as being like samples triggered by MIDI tracks in a sampler (audio is the slave, MIDI the master), whereas using *Pro Tools* is more like sync'ing MIDI to a multitrack tape machine (audio is the master, MIDI the slave).
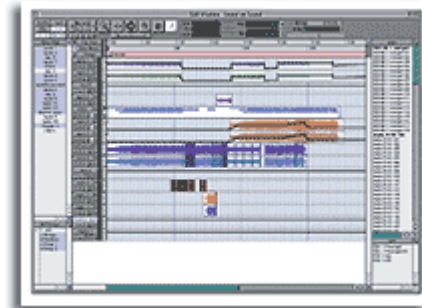
Integrating Digidesign Hardware With *Logic* and *Cubase VST*

* RUNNING *CUBASE VST* WITH DIGIDESIGN HARDWARE

As most people are aware, *Cubase VST* uses Steinberg's ASIO protocol for interfacing with audio

hardware, and there's no exception with Digidesign products. The bad news is that there are no Digidesign ASIO drivers available for Windows yet, so full integration is a straightforward no-go if you have a PC. On the Mac, there is a single standard ASIO driver file that works for all Digidesign PCI cards, including the Digi 001 and Toolbox (see last month's instalment of this series for more on these systems). The driver file, 'ASIO DigiDesign DirectIO', is usually installed as standard with *Cubase VST.* It needs to reside loose in the 'ASIO Drivers' folder (which is in the main *Cubase* Folder). Some installs place it in a separate folder within the 'ASIO Drivers' folder, so you may need to move it out of there before *Cubase* will recognise it. Once the file is in place, you go to the Options menu within *Cubase VST* and choose System from the Audio Setup sub-menu. In the panel that appears, you should now be able to change the ASIO device setting from 'Apple Sound Manager', to 'ASIO DigiDesign DirectIO', giving you access to the Digi hardware (see screenshot, opposite).

* RUNNING *LOGIC* WITH NON-TDM HARDWARE (INCLUDING DIGI 001 AND AMIII/TOOLBOX)

As usual with *Logic*, there are two ways of achieving your goal. The recommended route is to use *Logic*'s built-in support for Direct I/O (Digidesign's I/O drivers; these will already be installed if you have any kind of Pro Tools system). This is simple: from the Audio menu choose Audio Hardware and Drivers. From the list tick the 'Direct IO' box. It's up to you whether you als o leave 'MacAV' checked; this gives you the option of using the Mac's built-in sound connections in addition to your Digidesign hardware.

Alternatively, you can use *Logic*'s built-in ASIO support to run the hardware via the 'DigidesignDirectIO' ASIO driver, but as this adds a further layer of software, it's likely to result in higher latency times. The Direct I/O section of *Logic*'s Audio Hardware and Drivers page also contains a number of settings for controlling how *Logic* interfaces with the hardware. These are largely self-explanatory, but it's worth mentioning that if you are using a Digi 001, it's important to tick the 'Use 16 (Or More) Ins And Outs' box, or you won't be able to access all the audio connections from the *Logic* mixer.

* RUNNING *LOGIC* WITH TDM HARDWARE

As with the non-TDM hardware, as long as your Pro Tools hardware has been installed, there is no need for any special files or installations to run *Logic* as the front-end software. Simply choose 'DAE' from the 'Audio Hardware and Drivers' menu option. Unlike *Logic*'s Direct I/O section (see above), there is no direct access to the hardware setup panel. Instead this is reached from the Options menu of the Audio window.

* INPUT AND OUTPUT MAPPING WITH THE DIGI 001

The 001 has a variety of different connections on board, but third-party software doesn't know exactly which is which. The following tables describe how the list of I/Os in the likes of *Logic* will be mapped to the hardware. If you're only seeing eight channels in *Logic,* re-check that you've selected 'Use 16 (Or More) Ins and Outs' (see above).

Mixing In *Pro Tools*

All tracks in the Edit window are -- as you might expect -- also represented by faders in the Mix window (see the screenshot on page 86). In addition to level and pan controls, the Mix window gives access to other common mixer functionality, such as setting inputs and outputs, and configuring sends and inserts. For audio channels, these I/O options can represent connections with the outside world, or internal mix busses. The insert points (the column of five dotted squares at the top of each channel strip) can either be set to make physical insert connections with outboard gear, or call up software plug-ins. For faders relating to MIDI tracks, the I/O section is replaced with a pop-up menu for selecting the destination MIDI device and channel. On an Apple Mac, Pro Tools uses OMS (the Open Music System) for all its MIDI communication, so this pop-up displays all internal and

external MIDI ports and devices described in the *OMS Setup* utility's graphical environment. On a PC, the list contains all MIDI ports and channels available in the Multimedia Control Panel.

In addition to the track faders, there are two other kinds of channels found in the mixer. In the screenshot, the far right strip is a Master fader, which can control the overall level of any output or pair of outputs. As an example from the session pictured, *Pro Tools* is being used to create a stereo mix of all the tracks. To achieve this, all the audio is set to output on channels 1 and 2, so in this instance the master fader (which controls outputs 1 and 2) is setting the overall mix level. Other master faders could be added to control mix stems or groups as required.

Sticking with the session in the screenshot, next to the Master fader is a stereo auxiliary input channel. These are used to bring into the mix any audio sources that are not recorded on *Pro Tools* audio tracks (or disk tracks, as they are sometimes called). This particular aux input is being used to route in audio coming from a software synth that is running in the background. Two other auxes that are acting as effects returns are shown in this Session.

As far as comparisons with other software goes, the Mix window probably holds no big surprises for those already using Emagic, Steinberg or MOTU software. There are a couple of differences worth pointing out, though. First, something that many have complained is an oversight in *Pro Tools* -- the lack of dedicated stereo record tracks. In *Pro Tools*, stereo pairs appear more as they would on a traditional mixing console; that is, two faders locked together. The main disadvantage of this is that you need to buss the two tracks to a stereo aux channel to apply a stereo plug-in. On more of a positive note, the second difference is that the mix automation in *Pro Tools* has an especially rich set of features. In addition to basic recording of moves made within the mixer channels and plug-ins, there are numerous ways to create and edit automation to be mastered.
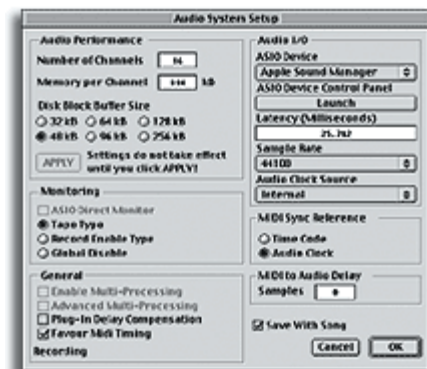
By the time you read this there's a reasonable chance that the new *Pro Tools* v5.1 software will be available (see page 132, in the Digidesign Control 24 review, for detailed information). This major upgrade will make some fundamental alterations to the mixing side of *Pro Tools*, including adding stereo and multi-channel tracks. Surround-sound mixing will also be at the heart of the new mixer. Bear in mind that the free version of *Pro Tools* will remain at v5.0.

In summary, despite the large degree of overlap between the functionality of *Pro Tools* and the other MIDI + Audio packages, Digidesign's software remains different in a number of ways. For that reason, it's well worth keeping your options open and learning the finer points of *Pro Tools* as well as your sequencer of choice. In the last of this series, next month, I'll round up some tips and techniques for the Pro Tools power-user. 🆘

Glossary
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