

MIKE COLLINS

# PRO TOOLS 11

MUSIC PRODUCTION, RECORDING,  
EDITING, AND MIXING



# Pro Tools 11

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# Pro Tools 11

## Music Production, Recording, Editing, and Mixing

**Mike Collins**



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# About the Author



Mike Collins is a studio musician, recording engineer, and producer who has worked with all the major audio and music software applications on professional music recording, TV, and film scoring sessions since 1988.

During that time, Mike has regularly reviewed music and audio software and hardware for magazines including Future Music, Computer Music, PRS for Music's M magazine, Macworld, MacUser, Personal Computer World, Sound On Sound, AudioMedia, Studio Sound, Electronic Musician, EQ, MIX, and others. Mike also writes industry news and technical reports for Pro Sound News Europe.

Mike has been writing for Focal Press since 2000. His first book, 'Pro Tools 5.1 for Music Production', was published in December of that year. A second book, 'A Professional Guide to Audio Plug-ins and Virtual Instruments' was published in May 2003. 'Choosing & Using Audio & Music Software', Mike's third title for Focal Press was published in 2004 along with 'Pro Tools for Music Production Second Edition'. Mike's fifth book, 'Pro Tools LE & M-Powered', was published in the summer of 2006.

'Pro Tools 8' was published in the summer of 2009 and 'Pro Tools 9' followed this in the summer of 2011.

In 2010, Mike was invited to join a team of audio transfer engineers at Iron Mountain's Xepa Digital Studios in Slough, near London, to help to transfer a large part of Universal Music's back catalogue of classic popular recordings from analogue and digital tape copies of the archive stored in the United Kingdom to WAV files for archiving at Iron Mountain's secure underground facility in the United States. Using an Ampex ATR100 tape machine and Sonic Studio digital audio equipment, Mike personally transferred from ¼" tape much of the Chess catalogue along with many albums by Cat Stevens, Joe Jackson, Louis Armstrong, Quincy Jones, Barry White, Tricia Yearwood, and lots of other famous bands and artists from Universal's library of 'hit' recordings from the past 60 years.

Throughout 2011, Mike regularly performed 'live' as a duo with vocalist Aurora Colson at venues in and around London – see [www.michaelandaurora.co.uk](http://www.michaelandaurora.co.uk) for more info. In the final quarter of 2011, Mike set up Rude Note Records – [www.rudenoterecords.com](http://www.rudenoterecords.com) – to release recordings he has produced, including Jim Mullen's solo jazz guitar album 'Thumbnail Sketches', together with three EPs and nine singles featuring Aurora Colson. Two collaborative albums featuring Mike with Jim Mullen, 'Blues, Jazz, & Beyond' and 'Pop, Rock, & Gospel', were released in December 2011 and February 2012, respectively. In April 2012, the label released Mike's remix of Vivienne McKone's song 'Everything is Gonna Be Alright', along with a 'cover' version of the Loose Ends hit, 'Hangin' On A String', featuring vocalist Joanna Kay. These recordings are all available from the Rude Note Records website via Spotify, iTunes, Amazon, and various other online retailers.

Between May 2012 and May 2013, Mike worked on a new album with singer/songwriter David 'DaPaul' Philips, recording and mixing the album, playing guitars on various tracks, and co-producing most of the tracks with David. This Gospel-influenced soul album, 'Soulful Spirit', was released in the summer of 2013 and is available at CD Baby – <http://www.cdbaby.com/cd/dapaul2>

Also active as a Music Technology Consultant, Mike Collins often presents seminars and chairs discussion panels on Pro Tools, Music Production, Music Technology, Music Rights, and Copyrights.

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Special thanks to my old friend Paul de Benedictis who came through at the last moment with some information from Bob Muller at Dangerous Music – <http://www.dangerousmusic.com> – clarifying how the Dangerous 2-bus is used with Pro Tools. Colin McDowell provided lots of useful information together with his entire suite of McDSP AAX plug-ins – <http://www.mcdsp.com>. Matt Ward, President at Universal Audio, and Erik Hanson, Director of Marketing at Universal Audio – <http://www.uaudio.com> – kindly supplied a UAD-2 system with its extremely comprehensive suite of plug-ins for Pro Tools.

Jean-Paul 'Bluey' Maunick, Kirk Whalum, and Dario Marianelli all took time out from their busy schedules to review and comment on the original edition of this book prior to publication for which I am extremely grateful. And record producer John Leckie also pointed out a couple of important things that I had overlooked in the Mixing chapter – explaining some basic points about mixing consoles that he had been shown during his training at Abbey Road Studios that really helped to clarify everything for me.

To all my regular musical collaborators and partners, including Jim Mullen, Lyn Dobson, John McKenzie, Winston Blissett, José Joyette, Marc Parnell, Vivienne McKone, Rouhangeze Baichoo, and David Philips, my wholehearted thanks for the musical inspirations and motivations with which they have kept me sane and fulfilled while I have developed my ideas for this book.

To Ernest Ranglin, Jamaica's foremost guitarist, who has not only been a major source of musical inspiration but has also acted as a personal and musical mentor – providing much-welcomed encouragement and positive feedback since we met back in 2009 – I offer my greatest respects and appreciation – see <http://www.ernestranglin.co.uk> for more info.

I would also like to thank all the members of my family, most importantly my father Luke Collins, my mother Patricia Collins, my brothers Anthony and Gerard Collins, and all my close friends, in particular Sia Duma, Dario Marianelli, Barry Stoller, Anthony Washington, Clive Mellor, and Keith O'Connell for their continuing support throughout.

**Mike Collins,  
August 2013**

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# CHAPTER 1

## Pro Tools - The world's leading digital audio workstation

Figure 1.1  
Pro Tools 11  
Splash Screen.



### Introduction

Pro Tools digital audio workstation systems are used all over the world in professional recording situations: for 'live' recording at gigs and concerts, for film scoring, for audio-for-video and for audio post production – the list goes on and on...

This book will be particularly useful for people who are upgrading from previous versions of Pro Tools or 'cross-grading' from other digital audio workstations. It will also serve as a useful handbook to use alongside any Pro Tools system to clarify how things work and to provide useful operational tips and notes.

Although this book is not intended to be an entry-level text, I have explained things as simply as I can wherever possible. Mindful of the fact that some

readers may not have English as their first language, I have tried to avoid colloquialisms and slang as much as possible and have done my best to write as clearly as possible. I hope that more experienced audio professionals will regard the sometimes-lengthy explanations of what they may consider to be basic points as useful reminders about how things work, which they can skip past easily enough if they wish.

There are several excellent books available that may be more suitable for beginners, which take a more step-by-step approach. And the Pro Tools Reference Guide and other Help documents are always available from the Pro Tools Help menu.

This book is about *music production* using Pro Tools. This is not to suggest for a moment that Pro Tools is not the leading system used for putting sound and music to picture or for mixing in surround. It is just a reflection of the fact that Pro Tools has truly come of age as a music production system – and the greater part of my experience is with music production, so I am naturally inclined to write about the things that I know most about. So the main focus of the book is firmly on using Pro Tools for music production and mixing in stereo – although surround formats have been with us for many years now. When did you ever hear of a Top 40 ‘hit’ being released primarily as a 5.1 surround mix and making it because of this? I never heard of this happening – not one time! So this book will not digress into the fascinating world of surround sound – as interesting as this is to me and to many people I know.

Having read all the Pro Tools manuals and documentation in depth, along with most of the other books written about Pro Tools, I have noticed that some areas are not covered as thoroughly or as accurately as they could be, so I have made a point of addressing as many of these areas as possible. One example would be levels and metering, which are covered in plenty of detail in the chapter on Mixing.

You will not find every feature of Pro Tools covered in this book: it makes no attempt to be ‘all things to all people’. What you will find is clear explanations of most of the things you definitely need to know about to record, edit, and mix audio and MIDI in Pro Tools in stereo. There is a substantial chapter on MIDI that covers all the technical stuff about Pro Tools that you need to get professional results, whether using hardware or software MIDI instruments.

Wherever possible, I have tried to explain topics that are covered in the Reference guide in a clearer or alternative way. Throughout the book you will find highlighted Tips and Notes. The tips are often taken from my personal



experience, and the notes are often technical points taken from the Pro Tools Reference guide or other documentation that may otherwise be overlooked, so watch out for these.

## Learning Pro Tools

The only way to learn Pro Tools is to use Pro Tools as often as possible in as many contexts as possible. Even if you own a Pro Tools HD system, I strongly recommend that you get yourself a laptop with Pro Tools software, so that you can take it wherever you go. This way, you can practice recording, editing, sequencing, and mixing Pro Tools sessions, or making music with virtual instruments and loops or whatever, while you are away from your main studio setup. Or you could get a compact desktop such as an iMac at home and practice using this with Pro Tools and an Mbox or other compact hardware.

If you are really determined to be the fastest Pro Tools operator around, you will have to 'eat, sleep and breathe' Pro Tools until you have learned as many of the keyboard commands as you can remember and get as much varied experience of recording as possible.

On the contrary, you may prefer to take a more relaxed approach – exploring the menus at a more leisurely pace rather than constantly typing commands on the keyboard. And Pro Tools has the advantage that it is simpler to get familiar with than most of its competitors – especially as it has just two main screens, the Mix and Edit windows.

## Pro Tools 10

If you are upgrading from Pro Tools 9, you will be interested to learn about the changes that took place when Pro Tools 10 was introduced in 2011. For example, when Clip Gain was introduced, what was formerly the 'Region' menu underwent a name change and became the 'Clip' menu. For more details, read 'Appendix 13 – New for Pro Tools 10' on the companion website.

## The Companion Website

The publisher hosts a companion website at:

*[www.taylorandfrancis.com/cw/collins](http://www.taylorandfrancis.com/cw/collins)*



In addition to information about the book, here you will also find a set of useful Appendices:

Appendix 1 – About Summing Mixers

Appendix 2 – The Trouble with Dongles

Appendix 3 – Avid Eucon Support

Appendix 4 – Pro Tools LE Hardware

Appendix 5 – Pro Tools HD Hardware

Appendix 6 – The Eleven Rack & The Mbox Family

Appendix 7 – Pro Tools HD New Hardware 2010

Appendix 8 – Pro Tools 8 New Features

Appendix 9 – Pro Tools 9 Laptop System

Appendix 10 – Universal Audio Powered Plug-ins

Appendix 11 – New for Pro Tools 9

Appendix 12 – McDSP Plug-ins Roundup

Appendix 13 – New for Pro Tools 10

## Pro Tools 10 | Pro Tools 11 Co-installation

Although Pro Tools 11 has been available since the summer of 2013, a number of users may still need to work with Pro Tools 10 for some projects so that they can continue to use any 32-bit TDM and RTAS plug-ins that are not available in the 64-bit AAX format that Pro Tools 11 requires.

Having both versions of the software installed on the same computer was not possible with older versions of Pro Tools. However, because version 11 uses the Avid Audio Engine while Pro Tools 10 uses the Digidesign Audio Engine (DAE) to interface the software with audio hardware, it is possible to install both versions of the software onto the same hard disk partition without any conflict.

For this to work successfully, you do need to be using version 10.3.5 (or higher) of the older Pro Tools software. With both software versions installed, it is only

possible to run one of these at any given time – but it only takes a short time to quit one of these and then launch the other.

And why might you wish to do this? The main reason would be so that you can access older TDM and RTAS plug-ins that are not available in AAX format. Also, PT 11 does not use the Sound Designer II file format, so you would need to use PT 10 (or older) software to open and convert these files to WAV format for use with PT 11. And PT 11 will not open Pro Tools 4.x sessions or lower, so, if you need to access these older formats, this is another reason for keeping the Pro Tools 10 software installed.

You may also have computers with older operating systems that you still wish to use, such as a laptop or an iMac or an older Mac Pro that have Mac OS X 10.6.8 (Snow Leopard) or Mac OS X Lion installed, or a PC with Windows 7 Home Premium or Professional. Pro Tools 10 will run on these older operating systems, but Pro Tools 11 will only run on Mac OS X Mountain Lion (10.8) or Windows 7 or 8 Home Premium, Professional, or Ultimate (64-bit).

### TIP

Pro Tools 11 and Pro Tools 10 have the same application icon and will look the same in the Dock, so you need to adopt some sort of strategy to deal with this situation. I simply rename one application as 'Pro Tools 11' and the other as 'Pro Tools 10' – or maybe just rename one of these so that it is clear which is which. Then, when you roll the mouse cursor over these icons in the Dock, the file name of the Application will appear as you hover over each icon – see [Figure 1.2](#) screenshot. Another option is to place the icons in a different position in the Dock and simply remember which you placed in which position – such as the Pro Tools 11 icon to the right of the Pro Tools 10 icon.

Figure 1.2  
Part of the Dock,  
showing the mouse  
cursor rolling over the  
Pro Tools 11 icon.



## NOTE

Pro Tools 11 sessions that use more than 4 gigabytes of RAM will cause Pro Tools 10 or lower to quit unexpectedly. The fix for this is to reduce the amount of session RAM usage to less than 4 gigabytes while working in Pro Tools 11 by removing virtual instruments that take up system memory and then saving this version to disk, safe in the knowledge that it will open successfully in Pro Tools 10.

## Pro Tools 11 versus Pro Tools HD 11

Pro Tools 11 gives you 96/48/24 voices of simultaneous audio playback at 48/96/192 kHz, whereas Pro Tools HD 11 gives you 256/128/64 voices of simultaneous audio playback at 48/96/192 kHz per audio card.

PT 11 can record up to 32 tracks at once, whereas PT HD 11 can record up to 256 tracks at once (per card with HDX systems) – depending on the capabilities of your hardware.

Pro Tools 11 now supports up to 128 Instrument tracks, whereas Pro Tools HD 11 supports up to 256 Instrument tracks. Bear in mind that these are theoretical maximum numbers: any real-world system will be constrained by the demands placed on the computer you are using and by the particular virtual instruments that you are using.

Both can use up to 512 MIDI tracks and both can use up to 256 busses, but PT 11 only offers up to 160 Aux tracks, whereas PT HD 11 can use up to 512 Aux tracks.

The video features in PT 11 are quite good, with one HD video track available to play and edit, but the video features in PT HD 11 are much better, with up to 64 tracks of video available. Perhaps the best new feature is that you can add, play, and edit Avid DNxHD format files and other popular industry-standard HD video formats directly in the timeline – without having to transcode these first: a time-consuming step that was necessary with previous versions of Pro Tools.

Both Pro Tools 11 and Pro Tools HD 11 use the AAX plug-ins format, but systems that incorporate one or more Pro Tools|HDX cards can also use the AAX DSP format that runs on the processors on the HDX cards.

Features that are only available in Pro Tools HD 11 include Surround Mixing with up to 7.1 channels; Advanced metering with gain reduction metering; Advanced video editing with multiple video tracks and playlists; Track Punch/Destructive Punch; Input Monitoring; VCA mixing; Solo bus AFL/PFL; Advanced audio editing capabilities such as Continuous Scrolling, Scrub Trim Tools, Replace Clip command, field recorder workflows; and Advanced automation features such as Punch, Capture, Write on Stop, Write to All Enable, Automatch and Preview. Satellite link is also included, which allows you to control multiple Pro Tools|HD systems.

## Complete Production Toolkit

Available for Pro Tools 10 and earlier versions, the Complete Production Toolkit expands the software to include many of the same features found in Pro Tools HD software. So, you get up to 256 simultaneous audio playback tracks (up from 96), 768 total audio tracks (up from 256), 128 instrument tracks (up from 64), and 64 video tracks (up from one). With the extended disk cache, you can have Pro Tools load your entire session into RAM to boost storage performance, system responsiveness, and reliability. For complex sessions with lots of automation, you can create VCA groups to get another layer of gain control over groups that already have automation. And you can add movement to your mixes beyond the standard stereo field – using up to 7.1 surround sound.

You also get TrackPunch/DestructivePunch; Input monitoring; Solo bus AFL/PFL; Advanced audio editing (Continuous Scrolling, Scrub Trim tool, Replace Clip command, field recorder workflows, and more); Advanced automation (Punch, Capture, Write on stop, Write to all enabled, Automatch, Preview, and more); and Advanced video editing (multiple video tracks, multiple video playlists, and video editing tools).

### NOTE

The Complete Production Toolkit is not offered as an option with Pro Tools 11 software, so if you need these more advanced features, your only option is to buy Pro Tools HD 11.

Normally, Pro Tools HD 11 can only be purchased together with Avid hardware such as the Pro Tools|HDX or Pro Tools Native cards.

However, owners of PT 9 or PT 10 and the Complete Production Toolkit are allowed to upgrade to Pro Tools HD 11 software (which works with most hardware), without being required to purchase Avid hardware. These upgrades are priced at \$999 and \$599, respectively.

## PT 11 Hardware Support

Pro Tools 11 will work with the following Avid systems and interfaces: Pro Tools|HDX; Pro Tools|HD Native; all Pro Tools HD Series interfaces (HD I/O, HD Omni, HD MADI); Mbox family (second and third generation); Eleven Rack; Fast Track Solo and Duo; Mojo DX; Nitris DX; VENUE systems with an FWx or HDx option card; and VENUE systems with a built-in Pro Tools interface.

Pro Tools HD systems no longer officially support the blue range of interfaces, including the 96 I/O, 96i I/O, 193 I/O, Sync HD, MIDI I/O, and PRE I/O – but these should still work.

The 003 and Mbox 2 families will be officially supported for Pro Tools 11. The 002 family, although ‘Not Officially Supported’, should continue to work. The Control 24 and Command 8 control surfaces are also ‘Not Officially Supported’, but will still work, while the HD Accel TDM PCIe and PCI card and the Pro Control are now ‘Not Compatible’ and will not work with PT 11.

You may also need a new iLok if you are still using an original iLok to authorize your Pro Tools software: Pro Tools 11 requires the license (or bundle that includes a Pro Tools 11 license) to be on a Second Generation iLok (iLok 2).

To get the latest information about hardware compatibility, go to Avid’s support site at [www.avid.com/us/support](http://www.avid.com/us/support) and type ‘Pro Tools 11 compatibility’ into the Search field to bring up a list of articles about System Requirements, Approved Audio Interfaces and Peripherals, Qualified Windows and Apple Computers, and so forth.

## Summary

Pro Tools 11 offers improved workflows with much faster operation and enhanced performance overall compared with previous versions. In my view, Pro Tools HD11, especially when paired with one or more HDX cards, offers the best performance from a digital audio workstation that money can buy.

The changes to the Pro Tools software user interface going from version 8 through versions 9 and 10 to the current version 11 are relatively minimal. The biggest change was probably the renaming of regions as clips. This stability of the user interface design is a reflection of the reality that this design is working extremely well and an acknowledgement that it has been accepted by large numbers of users in preference to alternative software from rival companies. Avid's professional hardware systems are also used by most of the leading professional music-recording and film-scoring studios for the very good reasons that they provide the largest numbers of inputs and outputs, highest track counts, and high-quality interface options, together with on-board processing that delivers consistent results to the highest standards.

Proffering its reasons for discontinuing support for its older hardware, Avid says 'As a 64-bit application, Pro Tools 11 runs natively on 64-bit operating systems and hardware, but it cannot run on 32-bit operating systems. It also cannot support 32-bit hardware, such as Pro Tools|HD Accel hardware. This is a technical limitation due to the DSP chips on Pro Tools|HD hardware - Pro Tools|HD PCI and PCIe cards use a 32-bit architecture and cannot be modified to support 64-bit software. HDX and HD Native cards are 64-bit, as are many USB and FireWire interfaces (such as the third generation Mbox series of audio interfaces)'. So there you have it – straight from 'the horse's mouth'!

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# CHAPTER 2

## Using Pro Tools

### Introduction

Getting started with any software environment involves something of a learning curve and, if you are new to Pro Tools, you will find that this is no exception. Even if you have just upgraded from an earlier version, there may be a number of new features that you have not encountered previously. And if you are 'cross-grading' from another platform such as Apple Logic, MOTU Digital Performer, or Steinberg Cubase or Nuendo, you may be looking for features or trying to use keyboard commands that you are used to and wondering where these are in Pro Tools. So boot up your Pro Tools system and spend as much time as possible working 'hands-on' with the software until you know it inside out! Oh, and reading this book will help...

### Getting Started

If you are using Pro Tools for the first time, you will need to spend some time familiarizing yourself with the user interface, or with its more recent features if you are upgrading. You will also probably find it helpful to configure the software to suit the ways you like to work. You should take some time out to practice using the system in a non-critical situation first (without impatient clients breathing down your neck) and take the trouble to learn at least a basic set of keyboard commands so that you don't have to use the mouse and menus all the time. You should also learn how to quickly find your way around whichever piece of music you are working on – zooming in and out and navigating along the timeline until you feel comfortable with all this.

### Help

Avid provides excellent manuals for Pro Tools as Adobe Acrobat .pdf document files that you can access from the Help menu. When you open the Pro Tools Reference Manual, for example, the Acrobat application launches and the document file opens into a new window on your computer. You should resize this window and position it in a convenient place on your screen.

It can be very useful to keep the relevant manual open on your computer, but hidden until you need it. You can use the standard menu command or the keyboard Command-H on the Mac to hide the Acrobat application. When you

want to reveal the manual again, you can always select it again from the Help menu or use the Show All menu command. One of the quickest ways to do this is to press and hold the Command key, then repeatedly press the Tab key until you see the application you want displayed in the middle of the screen. When the Tab has moved you along the list of open applications to Acrobat, let go of the Command key and this will be shown and brought to the front. Windows users will have their own preferred ways of doing these things.

## Starting the Engines

As with any complex piece of machinery, there are various settings that you may need to adjust each time you want to use it. This is certainly the case with Pro Tools. I recommend that you always check the Playback Engine settings and the I/O Setup at the start of any new session. You may also need to make some changes to the Hardware Setup if you want to hook up additional hardware.

### Avid Audio Engine

If you are using Avid hardware, Pro Tools 11 will use the Avid Audio Engine. This Audio Engine is a real-time operating system for digital audio recording, playback, and processing designed for use with Pro Tools and Avid audio hardware that is automatically installed on your system when you install Pro Tools. If you are using hardware made by another manufacturer, Pro Tools 11 will use Core Audio on the Mac or Audio Stream Input/Output (ASIO) on Windows.

Apple's Core Audio provides the audio connections between software applications, such as Pro Tools 11, Digital Performer, Cubase, Nuendo or Logic, and any audio hardware installed on a computer that uses Mac OS X.

Similarly, Steinberg's ASIO provides the audio connections between software applications such as Pro Tools 11, Digital Performer, Cubase or Nuendo, and audio hardware installed on a computer that uses Windows.

#### NOTE

Pro Tools software can only record up to 32 input channels of audio or play back up to 32 output channels of audio, when using audio interfaces with the Avid Audio Engine, or supported Core Audio (Mac), or ASIO (Windows) drivers. So if you need more channels for I/O (Input and Output), you will have to use Pro Tools HD software with Avid HDX or Native hardware.

## Avid Video Engine

Avid's Video Engine works with QuickTime video, so you can use any video that you have available in this format. The Video Engine also works with a wide range of Avid HD and SD MXF video formats on Pro Tools video tracks without the need for transcoding these first, including Avid DNxHD. It also lets you monitor Avid HD and SD MXF, and QuickTime media using Avid Nitris DX, Mojo DX, and other Avid qualified third-party video interfaces.

### NOTE

If you want to use video in your Pro Tools session, then you will need to tick the box in the Playback Engine dialog to enable the Video Engine – otherwise, the video track(s) in Pro Tools will not work.

## The Playback Engine Dialog

In the Playback Engine dialog, Pro Tools provides a pop-up selector that allows you to choose the audio 'Playback Engine' for use with your audio interfaces. The available options will depend on which audio interfaces are connected and have compatible drivers installed.

Changing the Playback Engine can be useful if you have two or more audio interfaces connected to your computer with different routing configurations in your studio or if you want to prepare a session for use with a specific interface on a different system (e.g. you might want to prepare a session created on your Avid HDX system for use with the built-in audio on your Mac laptop).

On the Mac, for example, there will always be a 'Built-in' audio interface, and there may be another if you are using an Apple display monitor that has audio input and output capabilities. On Mac systems, you can also select the Pro Tools Aggregate I/O option, which lets you use a combination of built-in inputs and outputs at the same time – see [Figure 2.1](#).

You can configure the I/O options for Pro Tools Aggregate I/O using the Audio Devices window from the Mac's Audio MIDI Setup utility software – choosing an appropriate combination of inputs and outputs – see [Figure 2.2](#). These inputs and outputs will become available in the I/O Setup dialog if you open this and click on the Default buttons in the Insert, Input, and Output tabs.

The H/W (Hardware) Buffer Size pop-up selector in the Playback Engine dialog – see [Figure 2.3](#) – lets you choose the size of the buffer used to handle host-processing tasks such as processing with host-based, or "Native" plug-ins.

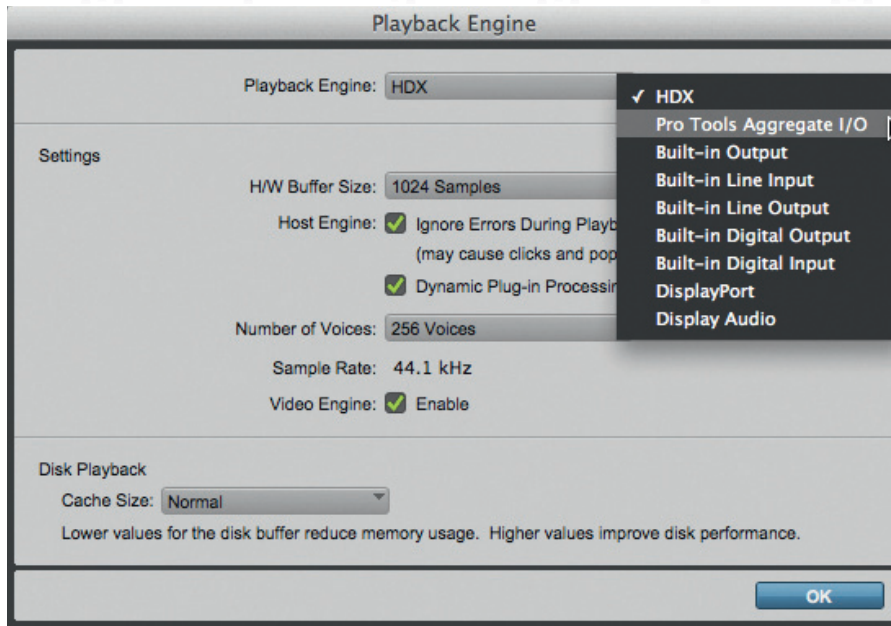


Figure 2.1  
Choosing Pro Tools  
Aggregate I/O in the  
Playback Engine on  
the Mac.

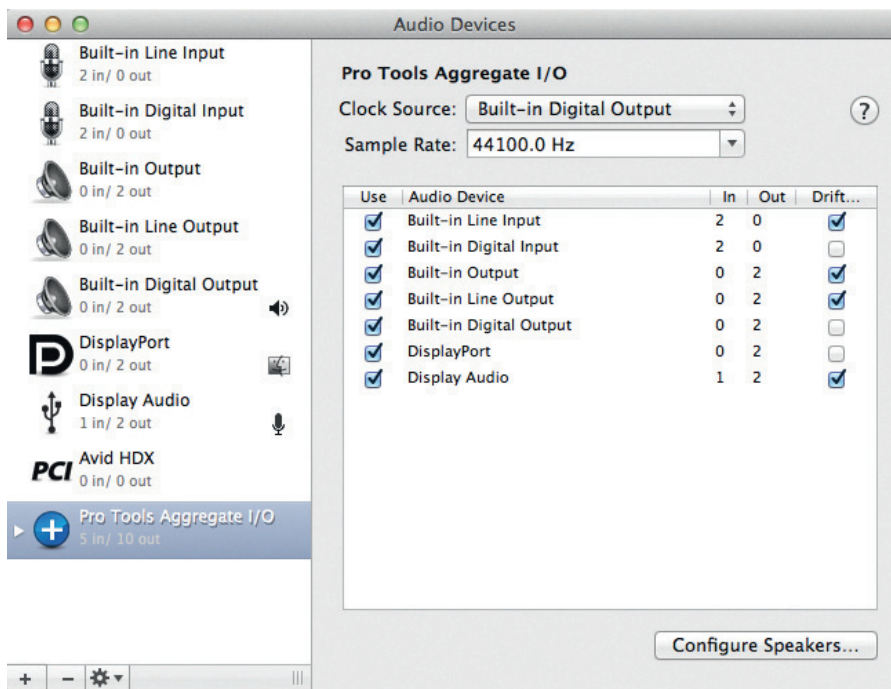
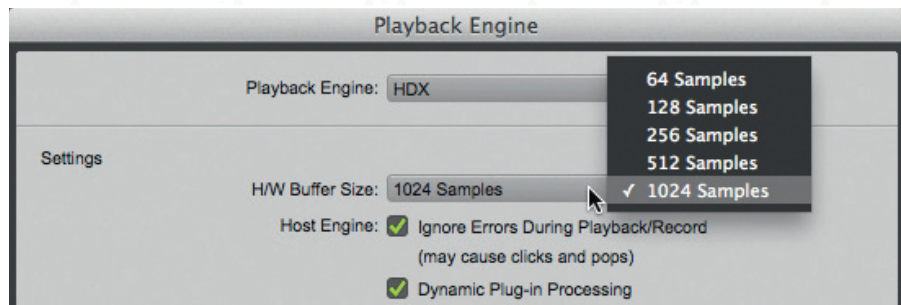


Figure 2.2  
Configuring Pro Tools  
Aggregate I/O in the  
Audio Devices window.

Figure 2.3  
Hardware Buffer Size  
and Host Engine  
settings.



### TIP

You can open the Audio MIDI Setup utility by choosing the MIDI Studio sub-menu item available from the MIDI menu item in the Setup menu in Pro Tools. This opens the MIDI window by default, but then you can open the Audio window from the Window menu in the Setup utility.

On all Pro Tools systems, lower settings reduce MIDI-to-audio latency – for example, the delay between playing notes on your MIDI keyboard and hearing the audio response from a virtual instrument. Lower settings can also improve screen response and the accuracy of plug-in and mute automation data.

If you are using lots of 'Native' plug-ins, you should choose a higher buffer size to allow for the greater amounts of audio processing required.

The Host Engine settings provide options for error suppression during playback and recording and the option to use dynamic plug-in processing.

There may be times when it makes sense to tick the box to Ignore Errors During Playback/Record. For example, when you are working with several instrument plug-ins and these are stretching the capabilities of your computer's CPU to the point where you are hearing clicks and pops in the audio. In this case, you may choose to work with reduced audio quality, accepting that there are clicks and pops in the audio while you are trying out arrangement ideas. Later, when you want to make sure that you are getting the highest possible audio quality, you can disable this option.

Ignoring errors requires at least 128 samples of additional buffering on some systems. Host-based Pro Tools systems have an option to Minimize Additional I/O Latency. Enabling this option restricts any additional latency due to ignoring errors during playback and recording to 128 samples. With this option



## NOTE

On host-based Pro Tools systems, lower settings reduce all input-to-output monitoring latency on any record-armed tracks or Auxiliary Input tracks with 'live' inputs. On Avid HDX systems, lower settings reduce the monitoring latency that occurs on tracks that have one or more Native plug-ins. Lower settings can also improve the accuracy of MIDI track timing on systems without a MIDI interface that supports time stamping and on tracks using MIDI virtual instruments that do not support time stamping.

disabled, the buffer used for error suppression will be at least 128 samples or half the H/W Buffer Size – whichever is greater.

The Dynamic Plug-In Processing option maximizes plug-in counts by dynamically reallocating host-based processing resources as needed, so plug-ins only use CPU cycles when they are actually processing audio. Normally, you will want to make sure that this option is enabled.

## TIP

If you are using a slower computer, you may want to disable the Minimize Additional I/O Latency option to avoid adverse performance.

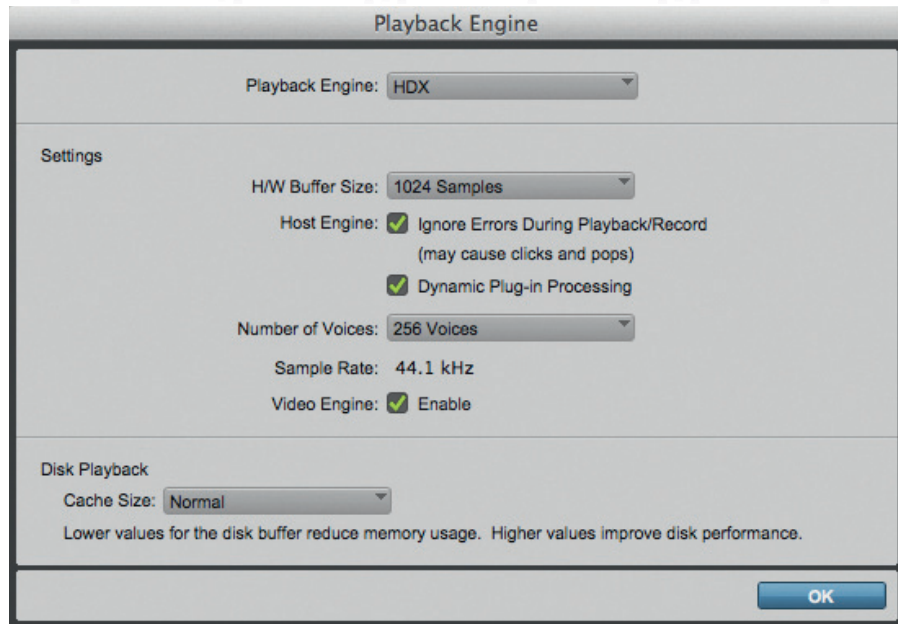
## NOTE

The Minimize Additional I/O Latency option is only available if the Ignore Errors During Playback/Record option is enabled and the Pro Tools system you are using requires additional buffering for error suppression, as is the case with the following: Mbox Pro and Mbox 2 Pro on Windows and the Mbox family devices, Digi 002 and 003 devices, Eleven Rack, and Pro Tools Aggregate I/O on the Mac.

## Pro Tools HDX systems

On Pro Tools HDX systems, there is a Number of Voices setting in the Playback Engine dialog – see [Figure 2.4](#) – that lets you choose the number of available voices and how those voices are allocated to DSPs in your system. Changing the number of voices affects DSP usage, the total number of voiceable tracks, and overall system performance. The maximum number of voices available will depend on the session sample rate and the number of Avid HDX cards in your system.

Figure 2.4  
Playback Engine  
dialog on an HDX  
system.



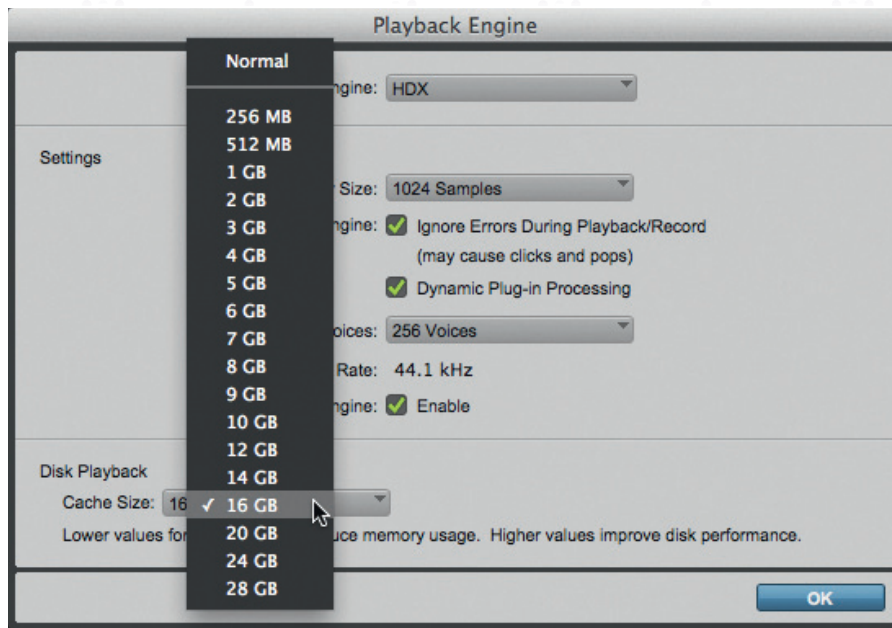
- ▶ If you are using high-bandwidth PCIe cards (such as video capture cards) along with your Avid HDX cards, you should select the minimum number of voices.
- ▶ If your HD cards are in an expansion chassis, or when you are using other PCIe cards along with Avid HDX cards, select a medium number of voices.
- ▶ If your Avid HDX cards are the only PCIe cards in your computer, or when you are using an expansion chassis to run higher track counts (such as 64 tracks at 96 kHz) and you want more voices per DSP (such as 16 voices per DSP at 96 kHz), then you should select higher numbers of voices.

## Pro Tools HD Software

The Playback Engine dialog in Pro Tools HD software has an additional section for Disk Playback Cache Size settings. Here, you can choose the amount of memory the Avid Audio Engine will use to pre-buffer audio for playback and recording using the Cache Size pop-up selector in the Playback Engine – see [Figure 2.5](#).

Pro Tools HD loads audio files used in Pro Tools sessions into a RAM cache prior to playback, prioritizing files closest to the current play head location so that these are already in the cache when you start playback.





**Figure 2.5**  
Disk Playback Cache  
Sizes available  
with 32 GB of RAM  
installed on the  
computer.

The Pro Tools HD software checks to see how much RAM you have installed on your computer and then subtracts 4 GB from this amount to work out the maximum amount of RAM that you could allocate to the Disk Cache.

For example, my computer has 32 GB of RAM installed, so the largest amount of RAM available for the Disk Cache is 28 GB – although, in practice, I normally choose a smaller amount unless I am working on a large session.

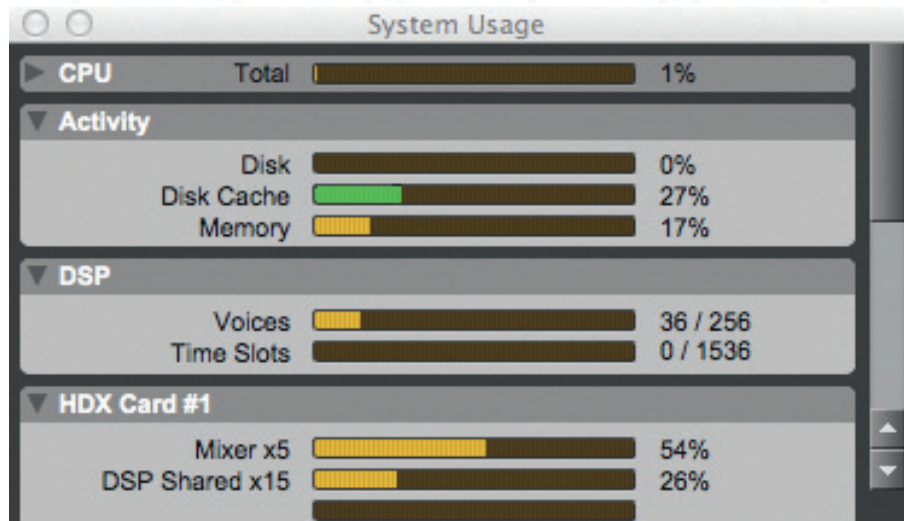
## NOTE

The Sample Rate setting available in the Playback Engine when using HDX systems shows the default sample rate used when you create a new session. If a session is open, the current session sample rate is displayed, but cannot be changed. If no session is open, you can set the default sample rate for new sessions.

It is usually best to leave the Cache Size on the default setting of Normal, which is the optimum Cache Size. However, if you do select a fixed Cache Size in the Playback Engine dialog, a Disk Cache meter will appear in the Activity meters section of the System Usage window – see [Figure 2.6](#).

The Activity meters section has Disk Cache and Memory meters that you can use to help you to decide whether to assign more or less RAM to the Disk Cache for the current session.

Figure 2.6  
System Usage Window  
Activity meters showing  
the amount of Disk  
Cache memory in use.



### NOTE

The Disk Cache meter indicates the amount of allocated memory being used to cache audio in the timeline (up to the amount of RAM selected for the Disk Cache setting in the Playback Engine). An additional peak-meter style indicator is included to show how much of the allocated RAM is needed for caching the session. The Memory meter displays how much of the installed physical RAM in the system is being used by Pro Tools. This includes RAM used by the audio engine, the video engine (if enabled), plug-ins, and the disk cache. It does not show any RAM usage in your computer system other than by Pro Tools.

### TIP

If the Memory meter approaches 100%, install more physical RAM or lower the Disk Cache setting in the Playback Engine dialog.

### NOTE

Avid HDX systems provide additional meters below the Activity meter for Voices, Time Slots, and DSP:

The Voices meter displays the total number of voices that can be allocated and the number of voices currently allocated. This includes all voices

(Continued)

whether they are allocated explicitly or dynamically, as well as any voices used for routing host-based processing.

The Time Slots meter displays the total number of DSP Time Slots available and the number of DSP Time Slots currently used.

The DSP meters display how much of each DSP chip on each Avid HDX card is currently being used for mixer configurations and DSP-based plug-ins.

## Hardware Setup

The Hardware Setup dialog (see [Figure 2.7](#)) lets you make various settings for your hardware interface or interfaces. On most systems, you will make these settings when you install your Pro Tools system and then leave them alone from that point onwards.

If you are using a third-generation Mbox family audio interface or a third-party Core Audio (Mac) or ASIO (Windows) compatible audio interface, a Launch Control Panel button is provided to launch the control panel for your particular audio interface to configure its settings.

If you are using an Mbox family or a third-party audio interface, there will be either a Launch Control Panel button or a Launch Setup App button (depending on which audio interface you are using) in the Hardware Setup dialog.

When you open this control panel or setup application, you can change the mixer, output, and hardware settings, including the sample rate, hardware buffer size, and sync source.



Figure 2.7  
Hardware Setup with  
a Focusrite Saffire  
third-party audio  
interface.

Avid HDX and HD Native systems can have HD I/O, HD OMNI, or HD MADI audio interfaces connected to HDX cards or HD Native hardware. Large recording studios will be using some combination of HD I/O audio interfaces,

each of which supports 16 channels of simultaneous I/O and multiple I/O formats (such as analog, AES/EBU, ADAT Optical, S/PDIF, and TDIF), or HD MADI interfaces, which support up to 64 channels of MADI I/O. Smaller studios are more likely to be using the HD OMNI interface, which supports up to eight channels of simultaneous I/O and multiple I/O formats (such as analog, AES/EBU, ADAT Optical, and S/PDIF). The HD I/O and HD OMNI can also have additional interfaces attached using the Expansion port on each interface.

**NOTE**

If you have multiple audio interfaces of the same type connected to your system, make sure that you choose the appropriate interface in the Peripherals list when you define its inputs and outputs in the Hardware Setup.

**TIP**

You can set the sample rate when creating a new Pro Tools session by selecting a different sample rate in the New Session dialog.

**NOTE**

On Mac systems using Core Audio, you can select Pro Tools Aggregate I/O as the Current Engine to use the built-in audio inputs and outputs on your Mac computer. You can configure the Pro Tools Aggregate I/O setting in the Mac Audio Setup, which can be accessed from the Pro Tools Hardware Setup dialog. The Pro Tools Aggregate I/O device is intended for use only with the built-in audio on your Mac computer. For best performance, use the default settings.

If you are using an Avid HD audio interface, the Hardware Setup dialog lets you configure the signal routing, digital I/O format, default sample rate, clock source, and other hardware-based settings for each HD peripheral connected to your system.

**NOTE**

You can also configure similar settings in the Hardware Setup dialog if you are using Avid 003 or 002 family interfaces.

For example, using an HD Omni interface, the Main page of the Hardware Setup dialog is where you define which physical inputs and outputs on your audio interface are routed to available inputs and outputs in Pro Tools. The numbers at the left of the central section (1–2 through to 7–8) are the numbers of the pairs of inputs and outputs that you will see in the Pro Tools software. The columns marked Input and Output have pop-up selectors that let you select which physical inputs or output will be routed to the Pro Tools inputs and outputs represented by the numbers to the left. In the example shown, in [Figure 2.8](#), the pop-up selector has been used to select the S/P DIF input to be routed to Pro Tools input pair 5–6.

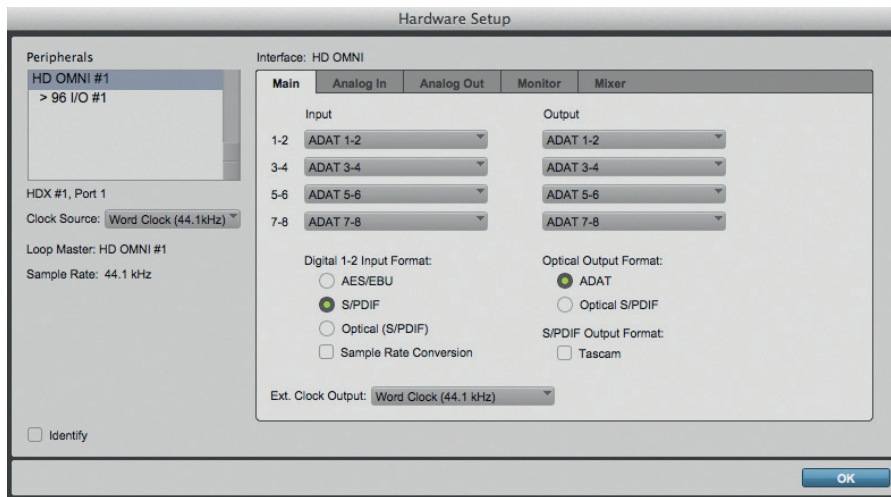


Figure 2.8  
Hardware Setup for  
HD Omni Interface.

In the area of the Hardware Setup Window nearest to the left-hand side of this window, you can select the Clock Source for the system using the Clock Source pop-up selector. You can also change the Clock Source in the Session Setup window, in which case the changes will be reflected here. When you are recording analog audio directly into Pro Tools, you will normally choose the Internal clock source. If you are transferring material into Pro Tools from an external digital device, you will need to synchronize to that digital device – or to a house clock signal that you use to synchronize all your audio recording devices. External options can include AES/EBU, S/PDIF, Optical, TDIF, ADAT, and Word Clock.

The Sample Rate setting is also displayed at the left of the Hardware Setup window. When the session is open, this cannot be changed, but you can use this to change the default sample rate when you create a new session.

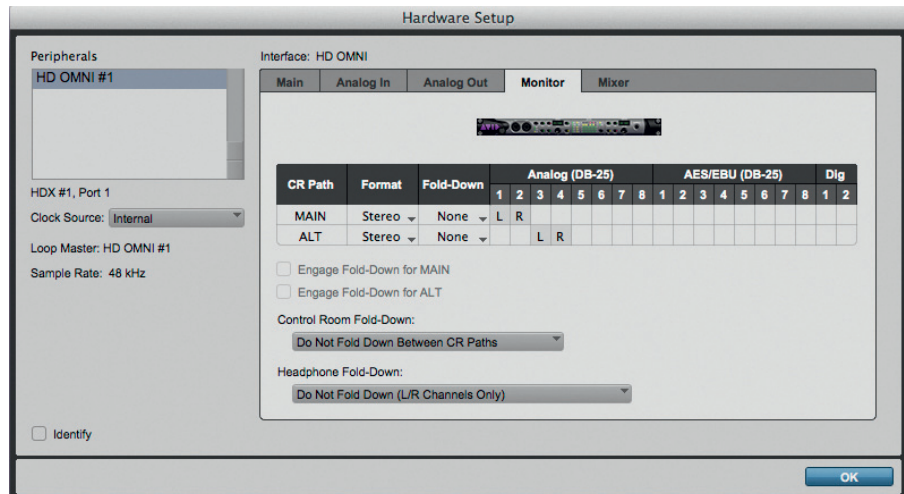
## NOTE

With Avid HDX and HD Native hardware, you can change the default Sample Rate in the Hardware Setup or in the Playback Engine. On other Pro Tools systems, you can only change the default sample rate in the Hardware Setup or using the control panel for third-party audio interfaces. Be aware that you can always change the sample rate when creating a new Pro Tools session by selecting a different sample rate in the New Session dialog.

Additional pages are available in the Hardware Setup dialog and you can switch through the different pages either by clicking on the tabs marked Main, Analog In, Analog Out, Monitor, and Mixer or by holding down the Command key on your computer keyboard and pressing the Left or Right Arrow keys if you are using a Mac computer. Hold the Control key and press the Left or Right Arrow keys if you are using a Windows computer.

If you are working with the HD OMNI, Avid recommends that you configure the Monitor page first – see [Figure 2.9](#).

**Figure 2.9**  
HD OMNI Hardware  
Setup, Monitor page.



The Analog In page lets you set the operating levels for the inputs – see [Figure 2.10](#).



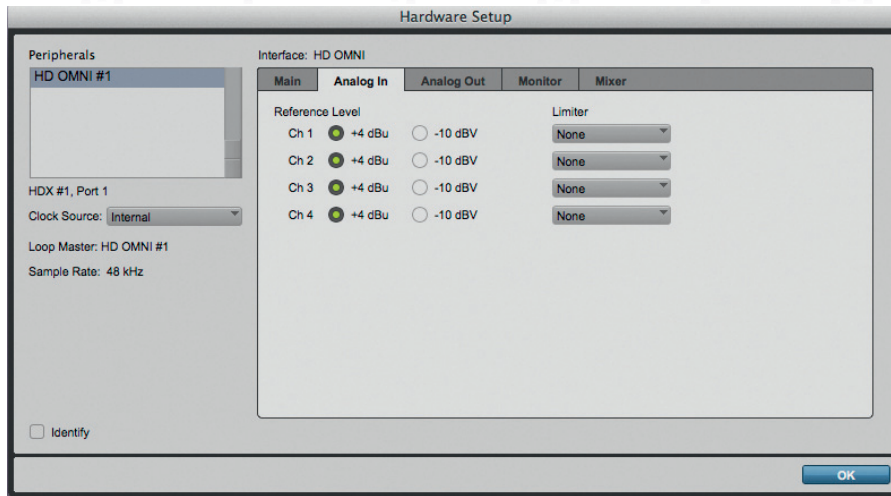


Figure 2.10  
HD OMNI Hardware  
Setup, Analog In  
page.

Similarly, the Analog Out tab page lets you set reference levels for the outputs – see [Figure 2.11](#).

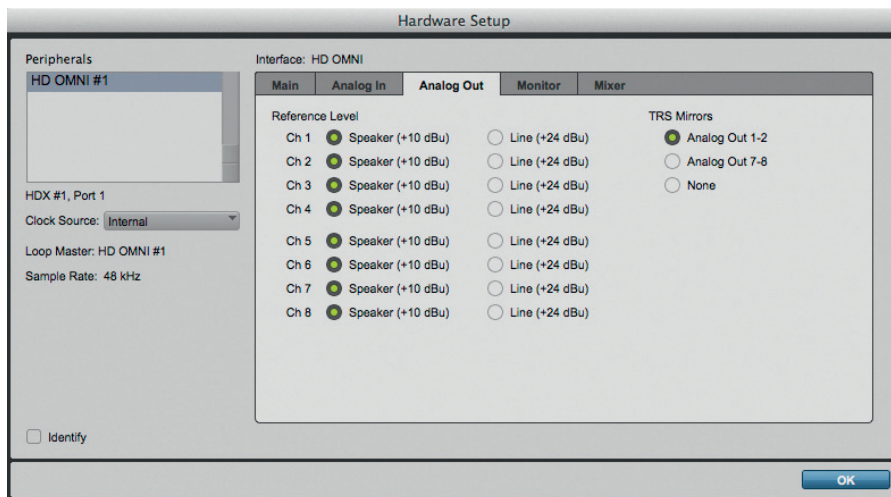
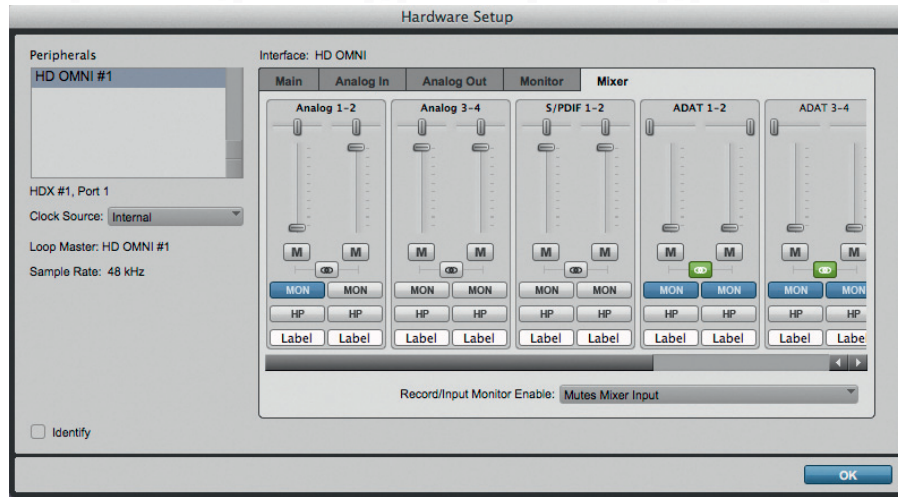


Figure 2.11  
HD OMNI Hardware  
Setup, Analog Out  
page.

The Mixer page lets you set up the levels for monitoring through the various outputs – see [Figure 2.12](#).

Figure 2.12  
HD OMNI Hardware  
Setup, Mixer page.



## The I/O Setup Window

The I/O Setup window lets you label, format, and assign Pro Tools input, output, insert, and bus audio signal paths for individual sessions and for your specific Pro Tools system. Input, Output, and Insert pages display a graphical representation of the signal routing (the Channel Grid) for physical input and output paths for each connected audio interface with controls that let you route physical inputs and outputs on audio interfaces to Pro Tools input and output channels. Controls for PRE (Mic Preamp) signal paths and Delay Compensation settings for hardware inserts are provided on additional pages within the I/O Setup window.

### NOTE

When you are working in the Mix and Edit windows, signals are routed to and from tracks, sends, and inserts using track Input, Output, Insert, and Send selectors. When you click any of these selectors, the paths created and defined in the I/O Setup are what you will see listed there.

A logical grouping of multiple inputs, outputs, inserts, or busses that has a single name and (channel) format is referred to as a signal 'path' in Pro Tools terminology. These paths can include main paths and sub-paths. An example



of a main path would be a master stereo output path with its left and right channels. A sub-path represents a signal path within a main path. For example, a default stereo output bus path consists of two mono sub-paths, left and right. Mono tracks and sends can be routed to either mono sub-path of the stereo output bus path. Multichannel bus paths can have any number of sub-paths.

## NOTE

With Avid HDX and HD Native systems, you can define which physical ports on your audio interface are routed to available input and output channels in the I/O Setup. Any changes made here are also reflected in the Hardware Setup, and vice versa.

For Pro Tools systems such as the Mbox Pro and the 003, and for HD MADI, physical outputs are fixed.

For third-party and built-in hardware, click the Launch Setup App button in the Hardware Setup for available configuration options.

The I/O Setup dialog window has six pages that you can access by clicking on the ‘tabs’ that run across the top of the window, marked Input, Output, Bus, Insert, Mic Preamps, and H/W Insert Delay.

## Input

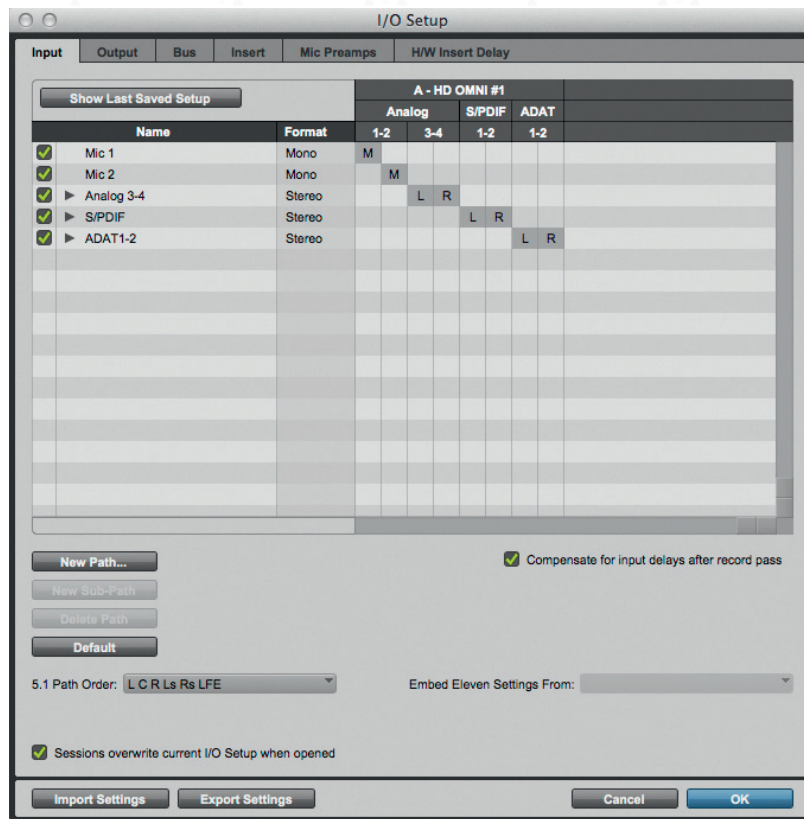
The Input page of the I/O Setup allows you to create and assign Pro Tools Input channels to receive audio from the physical inputs of your audio hardware – see [Figure 2.13](#).

## NOTE

Most of the time, you won’t need to change anything in the I/O Setup unless you change your system hardware or you want to customize your I/O paths.

If you double-click on the name of an input path, you can rename this with something more meaningful if you prefer, such as AKG C12 instead of Input 1. Also, under the column headed Format, pop-up selectors let you choose mono, stereo (or multichannel with PT HD) formats.

Figure 2.13  
I/O Setup Input Page.



For example, I named Pro Tools input and output pair 9-10 'S/P DIF' to make it clear that these were connected to the S/P DIF I/O on the hardware. It is always a good idea to use descriptive names for the Inputs, Outputs, Inserts, and Buses, as this makes things much easier when you are setting up your tracks and mixer configurations during your Pro Tools Session.

### TIP

If you want to return the I/O settings to their initial states, re-setting all the names, formats, and assignments, you can go through the different tabs for Input, Output, Insert, Bus, and so forth, clicking on the Default button for each I/O Setup section to reset these labels to the defaults for your system.

## NOTE

With an Eleven Rack connected to your Pro Tools system, Pro Tools lets you embed the current Eleven Rack Rig settings into audio clips as you record them, so that you can retrieve these for further use later. This can also be helpful when collaborating or bringing sessions or clips to a different system using Eleven Rack, because your settings travel with the files. Here's how this works: set the Embed Eleven Settings from pop-up selector to the input you plan to record through, such as Eleven Rig L/R; create an audio track and set its input to the corresponding input on your audio interface; and record-enable the track and record your part. The settings of the currently loaded Rig will be embedded in each audio clip that is recorded from the input you selected. To help you identify these, Audio clips with embedded Rig data are marked with a small Eleven Rack logo icon in both the Edit Window and the Clip list in Pro Tools.

## Output

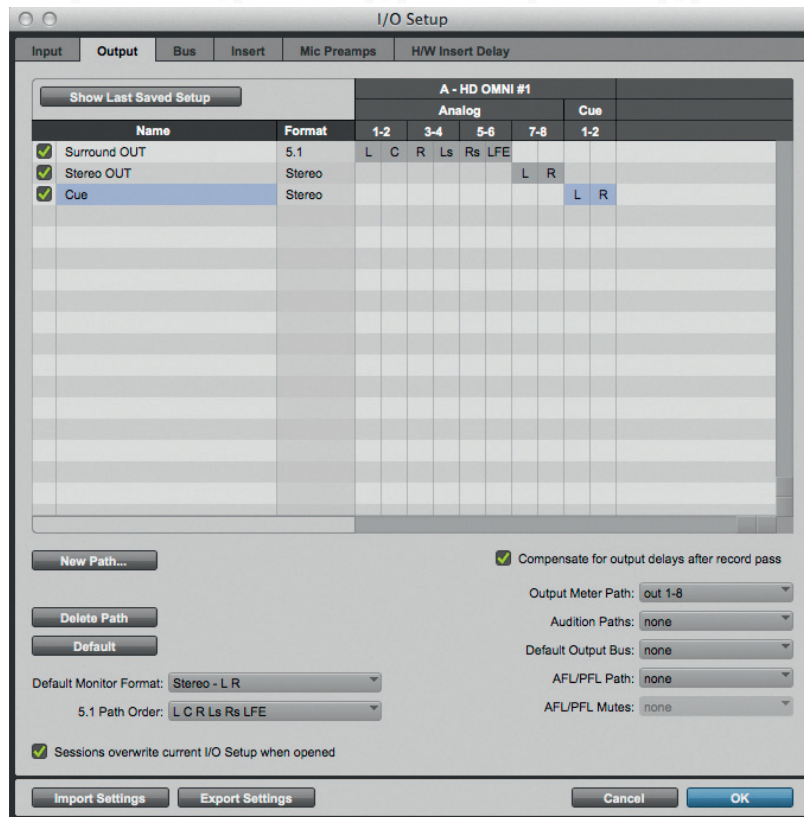
The Output section in the I/O Setup dialog (see [Figure 2.14](#)) lets you write your own names for the output signal paths, choose the formats for these, and choose which physical outputs of your audio hardware these output paths are assigned to.

Depending on your system hardware, there are various other settings that you can make. With the HD Omni, for example, you can also choose which physical outputs on your interface are to be used for the Output Meter Path, the Audition Paths, the Default Output Bus, the After Fader Listen (AFL)/Pre Fader Listen (PFL) path, and the AFL/PFL Mute. You can also choose a Default Monitor Format and a 5.1 Path Order for multichannel operation.

## NOTE

AFL is the acronym for After Fade Listen and PFL is for Pre Fade Listen. PFL is useful for monitoring channels with the faders all the way down so that you can listen for a noisy microphone coming through a channel without hearing this in your mix. You could send the PFL channels to a headphone amplifier, for example, so you can independently monitor these channels to make sure they are OK before feeding them into the mix that you are sending to a PA system or for broadcast. When you monitor using AFL, the volume level of what you hear depends on where the fader is set. So if you pull the channel fader all the way down, you won't hear anything through this channel when you are using AFL.

Figure 2.14  
I/O Setup  
Output Page.



The Output Meter Path selector lets you choose which output or bus paths will be monitored by the Output Meters in the transport.

Pro Tools HD software has a Default Monitor Format pop-up menu that lets you select the default monitor format (Stereo, 5.1, or 7.1) for new Output paths and for when you click the Default button. This setting does not affect existing path definitions or metering – it only specifies channel mapping in new 5.1-format paths.

With HD Native systems, the Output page of the I/O Setup also has an option to enable Low Latency Monitoring, using Outputs 1–2 by default. It also lets you specify any available Output Path for Low Latency Monitoring, and this can be of any channel width from Mono to 7.1.

## Bus

The Bus page of the I/O Setup (see [Figure 2.15](#)) lets you type in your own bus path names, choose the formats, and map any main bus path to any of the

available output paths of the same channel width or greater. So, for example, a mono bus can be mapped to a mono output path, a stereo bus can be mapped to a stereo output path, and a 5.1 surround bus can be mapped to a 5.1 surround output path. The bus page also lets you map output busses to output paths.

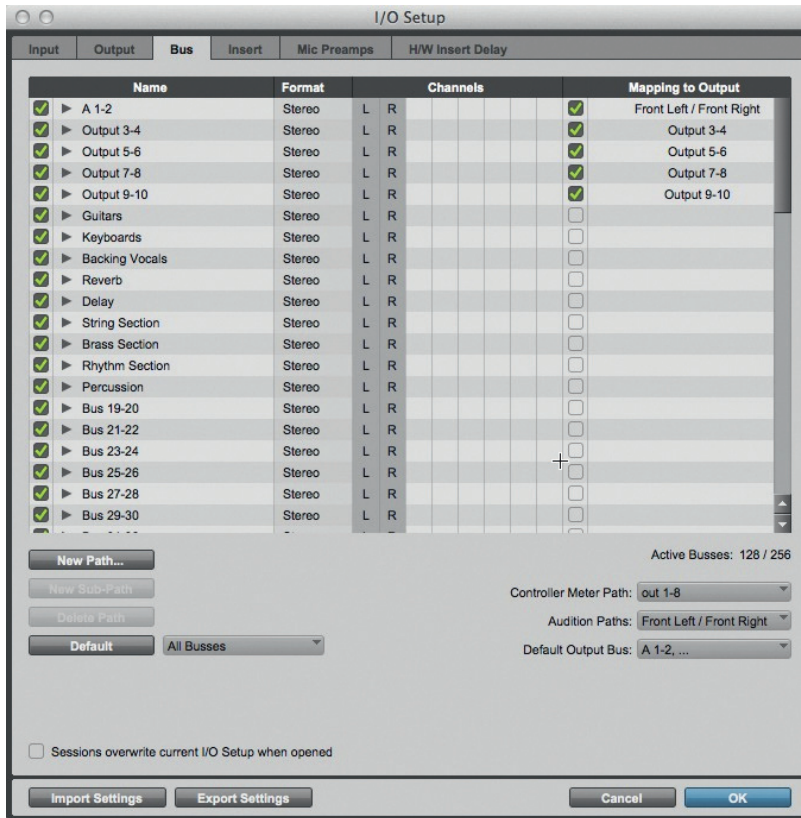


Figure 2.15  
I/O Setup Bus Page.

## TIP

You can configure these output paths – naming, formatting, and assigning them to physical outputs – in the Output page of the I/O Setup.

## NOTE

The Controller Meter Path selector, which is only available in the Bus page of the I/O Setup, determines the path displayed across the Output meters of D-Control or D-Command work surfaces.

Pro Tools provides up to 256 internal mix busses that can be used to route audio from track outputs and sends to other track inputs or to plug-in side-chains. Busses are typically used with the Sends in the Pro Tools Mix window to route audio from one or more audio tracks to an Auxiliary Input track used as a Reverb or Effects return (to the mix) channel. Another popular use is to create sub-mixes of groups of tracks containing Backing Vocals, Strings, Brass, Guitars, Keyboards – or whatever you find useful – by routing the outputs of these tracks via internal busses to Auxiliary Input tracks. Busses can also be used to route audio via Auxiliary tracks to physical outputs on an audio interface to use as Cue or Headphone mixes.

### Insert

You can create and edit hardware insert signal paths for the Pro Tools mixer using the Insert page of the I/O Setup, (see [Figure 2.16](#)), naming these appropriately and choosing which pairs of inputs and outputs to use for these on your audio interface. So, for example, if you want to be able to use some external ‘outboard’ effects devices, such as a Lexicon 224 reverb or even a vintage EMT 140 ‘echo’ plate, you would connect the inputs and outputs of these devices to available inputs and outputs on your Pro Tools audio interface.

Figure 2.16  
Part of I/O Setup  
Insert Page.



### Mic Preamps

If you are using an Avid PRE, you can map signal paths for one or more of the PRE’s microphone preamplifiers to your audio interface(s) using the Mic Preamps page of the I/O Setup.

### H/W Insert Delay

If you are using any external hardware devices, such as a reverb unit or a compressor, you can set a specific amount of Hardware Insert Delay Compensation, in milliseconds, for each external device to compensate for the delay (latency) that will occur between sending audio from Pro Tools to the device and Pro Tools receiving audio back from the device – see [Figure 2.17](#).



When the hardware insert is in use and Delay Compensation is enabled, these delay times will be used by the Delay Compensation Engine to time-align the input paths.

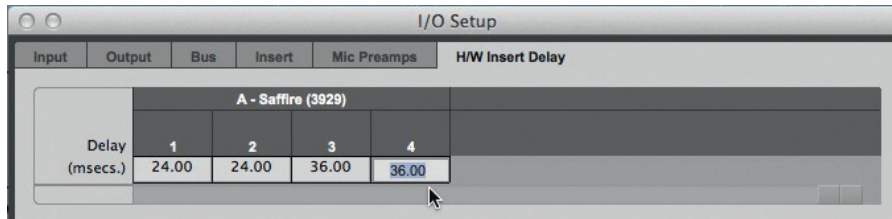


Figure 2.17  
Part of I/O Setup H/W  
Insert Delay Page.

## I/O Setup Options

Pro Tools systems have several additional I/O Setup options depending on which page of the I/O Setup you are viewing. These include default signal routing for metering and auditioning and default track layout for multichannel mix formats.

## I/O Delay Compensation

Pro Tools|HDX and Pro Tools|HD Native Systems provide two options for compensating for input and output latency (due to any inherent latency in the analog-to-digital and digital-to-analog converters of the audio interface) after recording.

A 'Compensation for Input Delays After Record Pass' option is available in the I/O Setup Input page – see [Figure 2.18](#). This provides automatic compensation for any analog or digital input delay with Avid HD interfaces, so you should enable this option whenever you are recording.

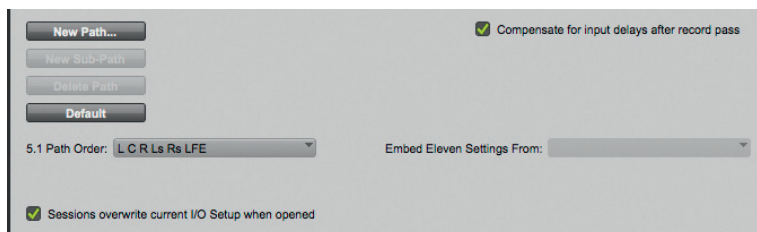
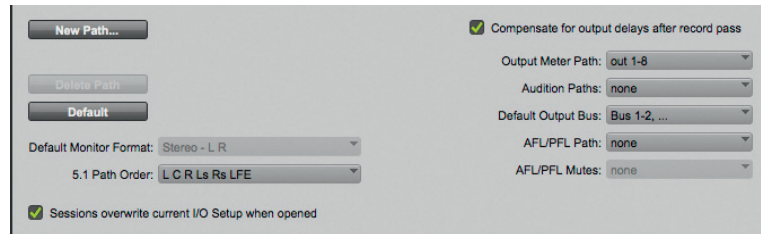


Figure 2.18  
Compensation for  
Input Delays After  
Record Pass option in  
the I/O Setup Input  
page.



Similarly, in the I/O Setup Output page, there is a 'Compensation for Output Delays After Record Pass' option that provides automatic compensation for any analog or digital output delay with Avid HD audio interfaces – see [Figure 2.19](#). You should enable this option whenever you are synchronized to an external clock source.

**Figure 2.19**  
Compensation for  
Output Delays After  
Record Pass option  
in the I/O Setup  
Output page.



## NOTE

When recording from a digital source, both the Compensation for Input Delays After Record Pass and the Compensation for Output Delays After Record Pass options must be enabled.

## Audition Paths

You can specify the output path to be used as the 'Audition Path' to playback files and clips when you audition or 'preview' these from the Clip List or Workspace browsers, and when previewing AudioSuite processes. Pro Tools assigns as default Audition Path, the first available main Output path of the corresponding format. If you prefer, you can select a specific Audition Path using the Audition Paths pop-up selector, which is available in the Output and Bus pages of the I/O Setup.

## Default Output Bus

You can also specify the default output bus path assignment for new tracks, in each available format using the Default Output Bus selector, which is available in the Output and Bus pages of the I/O Setup. The Default Output Bus can also be set for internal mix bus paths.

## AFL/PFL Path

When you are using Pro Tools HD with Avid HDX or HD Native Hardware, there is an AFL/PFL Path selector available in the Output and Bus pages of the I/O Setup. Tracks soloed in AFL or PFL Solo mode are played back via the current AFL/PFL Path that you have set using the AFL/PFL Path selector. Be aware that if you select 'None' as the AFL/PFL path, this disables the AFL and PFL solo modes.

### NOTE

In the Mix or Edit window, you can set separate master playback levels for all AFL and PFL solos. Here's how this works: choose the AFL or PFL solo mode from the Options menu Solo Mode sub-menu first. Next, Command-click (Mac) or Control-click (Windows) a Solo button on any track in the Mix or Edit window. Adjust the AFL/PFL Path fader then click on the new fader position (or press Esc) to close the fader display. To set the AFL/PFL Path level to 0 dB, Command-Control-click (Mac) or Control-Start-click (Windows) on any Solo button.

## AFL/PFL Mutes (Output Path)

The AFL/PFL Mutes selector becomes available in the Output and Bus pages of the I/O Setup when you are not using a D-Control or D-Command work surface. This allows you to mute the normal Pro Tools output path when you send a signal to the AFL/PFL Path. To set which output path will be muted when tracks are soloed in AFL or PFL Solo mode, select a path from the AFL/PFL Mutes (Output Path) pop-up selector.

## 5.1 Path Order

If you are using Pro Tools HD, a 5.1 Path Order selector is available in the Input, Output, and Insert pages of the I/O Setup. This lets you specify the default track layout for all new 5.1 format paths you create, and you can choose between C|24/Film, SMPTE/ITU, DTS/ProControl Monitoring, or D-Command/D-Control.

## I/O Setup Rules

Path configurations, Input, Output, Insert, and bus names, and channel widths in the I/O Setup are saved as I/O settings with both the session and the system and can be recalled from either.

When you take a session from one system to another, track and send assignments are maintained within the session and, where possible, Pro Tools automatically remaps the session's output busses to the output paths of the system on which the session is being opened.

A checkbox near the bottom of the Input, Output, Bus, and Insert pages of the I/O Setup window lets you choose whether the I/O settings saved with the session will overwrite the I/O settings saved with the system when you open the session. When this option is enabled, which is the default, Pro Tools recalls these settings from the session rather than the system. This option is the best choice when exchanging sessions with systems running Pro Tools 8.0.x and lower. When this option is disabled, Pro Tools recalls these settings from the system, which is the best choice when exchanging sessions among different systems running Pro Tools 8.1 or higher.

When you create a new session, you can specify which I/O Settings to use in the I/O Settings pop-up menu in the Quick Start and New Session dialogs. For example, you can use the factory installed default settings, the 'Last Used' setting, or one of any available custom I/O settings files.

If any changes are made to the I/O Setup, these changes are automatically saved to the I/O Settings folder as the Last Used settings file when the I/O Setup is closed.

Custom I/O Settings files can be created by changing I/O Setup settings and then exporting the settings. These I/O settings can then be restored by importing them into a system.

I/O settings can be imported and exported for use with sessions shared between systems, and these can be imported either before or after you open a session. I/O Settings are only imported for the current page of the I/O Setup – helping you to avoid overwriting any I/O settings you have made on the other pages. When you export I/O settings, on the other hand, all the pages of the I/O Setup are exported, so that all the latest changes you have made are preserved.

## Session Interchange Rules

Every time you save a Pro Tools session, the software finds an identifying number, or system ID, for the computer system you are using (based on the computer's MAC address) and saves this within the session file. If Pro Tools finds a matching system ID the next time you open this session, this means you are using the same computer that the session was created on, and the output paths are immediately restored with no need for any reconfiguration.

Whenever a Pro Tools session is opened on a system, Pro Tools attempts to automatically remap output busses. If Pro Tools does not find a matching system ID, it tries to find matching, identical, Path Names and Formats to remap output busses to, and if it cannot find these, it will look for paths of the same format to remap to. If it cannot find any matches for any output buses, these will be opened as 'Inactive' and you will have to manually remap these paths to active output paths.

## Getting Started

### The Quickstart Dialog

When you launch Pro Tools, the QuickStart dialog appears (unless you have previously deselected this option in the Warnings & Dialogs section of the Display Preferences or in the Quickstart Dialog itself). Using this dialog, you can create a blank session, create a new session from a template, open any of the last 10 previously opened sessions, or open any existing session.

#### TIP

If you click on the Session Parameters arrow in the QuickStart dialog, you can choose a different audio file type, bit depth, or sample rate for your new session.

A selection of templates is provided in the QuickStart dialog (see [Figure 2.20](#)) containing useful Session configurations – and you can easily create your own if you prefer. Simply create a new Pro Tools session, configure it however you like, and choose 'Save As Template' from the File menu. For songwriting, you might just have one mono track for guitar, a second mono track for voice, a stereo Instrument plug-in for drums or percussion, an Auxiliary Input with a reverb plug-in inserted, and a stereo Master Fader.

In the Save Session Template dialog, you can choose 'Install Template In System', which installs the template file in the system folder referenced by the Pro Tools Session Quick Start dialog.

Alternatively, you can choose 'Select Location For Template', which lets you select any other location, in which case the session template won't appear in the Pro Tools Session Quick Start dialog – but you can simply open this file to start a new session from this template.

Figure 2.20  
The Quick Start  
dialog.



### TIP

You might prefer this second method if you want to keep the template with the project that you are working on and intend to move this to another system at some point during the project.

When the Include Media option is enabled, any audio, MIDI, or video media in the session is included in the template. This is useful if you want to use some standard media elements, such as a particular sound effect or drum loop, in a series of related Pro Tools Sessions.