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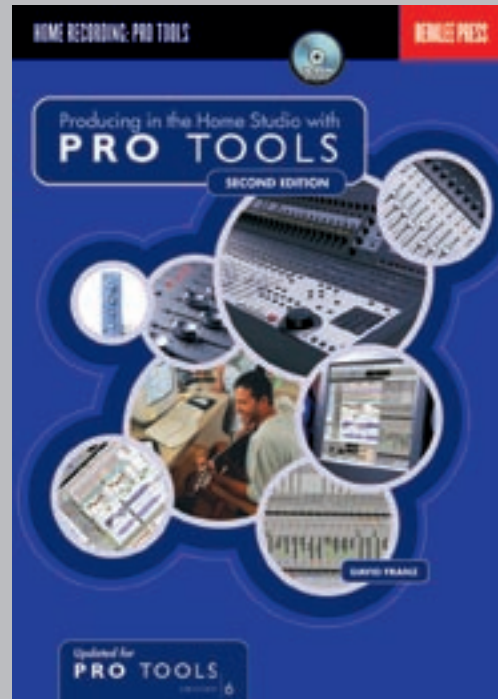
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**Producing in the Home Studio
with Pro Tools, Second Edition**
David Franz

Chapter 1
Setting Up Your Studio

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In this chapter:

- **Documentation to read**
- **The Pro Tools interface**
- **Equipment setup**
- **The ins and outs of signal flow**
- **Smart speaker placement and acoustics**

Congratulations . . . you have Pro Tools! You're now a member of a rapidly expanding community of musicians around the world who use this state-of-the-art software to compose, record, and produce their music. This book was written to help you get the most out of Pro Tools, introduce the arts of digital recording and editing, and start you down the path towards better productions.

Chapter 1 will introduce you to the Pro Tools software interface and help you set up your home studio (including speaker placement and acoustical treatment).



If you have Pro Tools LE already installed on your computer, do not install Pro Tools Free. Pro Tools LE will not launch and will have to be re-installed to function properly.

LET'S GET STARTED . . .

If you haven't already, please read the Introduction section in this book as well as first few chapters in the *Quick Start/Getting Started Guide* that came with your Digidesign product. The introduction lays the groundwork for learning using this book and the guide will help you to correctly configure your computer, install the Pro Tools software, and connect your Digidesign hardware.

If you don't have Pro Tools, you can download a free version from Digidesign's Web site for either Mac or PC. Visit www.digidesign.com and click on Pro Tools Free. Be sure to check that it is compatible with your computer and operating system.

Throughout the rest of the book, unless specifically noted I'll refer to Pro Tools LE (both 6.X and 5.X versions) and Pro Tools Free simply as Pro Tools because most techniques described in this book apply to all versions of Pro Tools. Also, many directions in this book apply specifically to both Digi 002 and Digi 001, so I will often collectively refer to those pieces of equipment as 002/001.

PRO TOOLS SOFTWARE

What is Pro Tools?

Pro Tools is a software application that enables digital audio and MIDI recording, editing, and mixing on your personal computer. It utilizes **non-linear** hard disk recording and **non-destructive** digital editing to help you create your musical masterpieces, with the help of another program called DAE.

Non-linear recording means your audio files are recorded and stored in chunks on your hard drive and not linearly as they would be recorded on tape. **Non-destructive editing** means that any cutting, pasting, trimming, separating, or clearing of audio data occurs virtually... the source audio files are not harmed in any way. Pro Tools only performs editing functions on a map of the actual audio data, never touching the recorded source data.

What is DAE?

When you launch the Pro Tools software, another application called DAE (Digidesign Audio Engine) also launches in the background. (In Pro Tools 5.3 and above, DAE is actually built into Pro Tools itself.) This program is an additional operating system that enables advanced digital recording. Pro Tools and DAE run simultaneously to provide hard disk recording, digital signal processing and mixing, and MIDI functionality.

If you've never used Pro Tools before, the Pro Tools interface may seem a bit daunting. However, it will soon become second nature to you. Here are some of the basic terms and elements you'll use in Pro Tools.

Sessions

Every time you launch Pro Tools, you can create a new session or open a pre-existing session. A Pro Tools session is much like a word processing file...it's a document that contains information. A Pro Tools session contains maps of all the data associated with a project, including audio files, MIDI data, edit and mix information, as well as comments and titles. You can only have one session open at a time, but as you work you can save multiple versions of the session for backups and for trying new ideas. The user interface of a Pro Tools session consists of two separate screens called the Edit and Mix windows.

The Edit and Mix Windows

The Edit window displays audio waveforms, MIDI data, timeline information, and all of the tools for editing the waveforms and data. All other pertinent track data (volume, panning, solo, mute, blocks, and automation data) can also be viewed in this window. Almost all editing tasks are performed in this window.

The Mix window is designed like a mixing console. Its primary function is for mixing multiple tracks down to a stereo (2-track) mix. There are vertical channel strips for each track, with sections for inserts, sends, input/output routing, and volume faders, as well as automation, pan, solo, and mute controls.

Fig. 1.1.
Pro Tools Edit Window

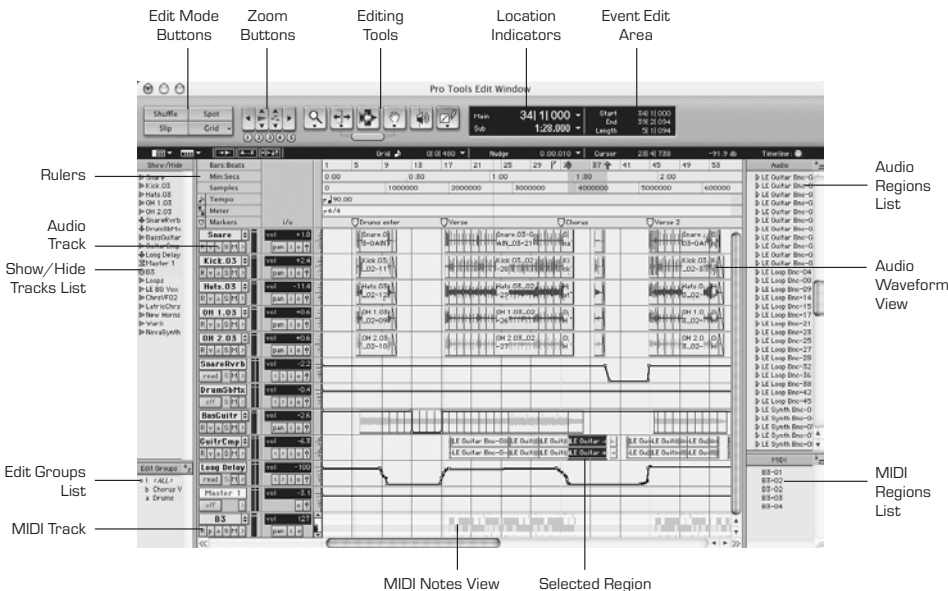
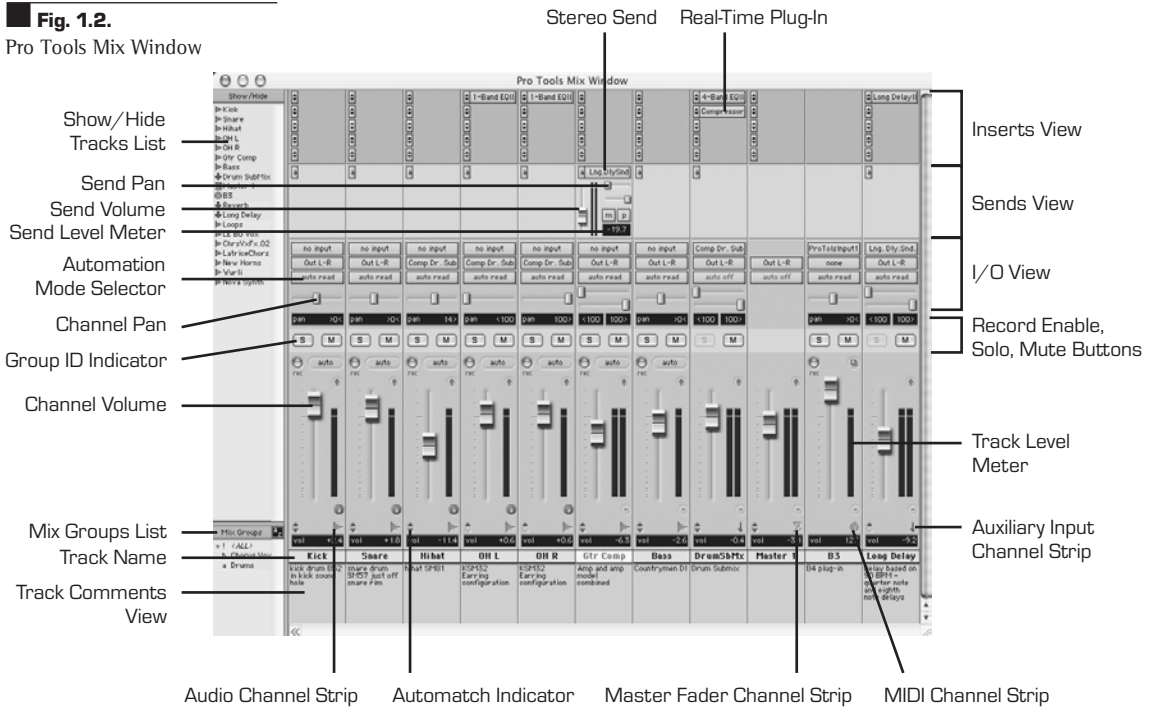


Fig. 1.2.
Pro Tools Mix Window



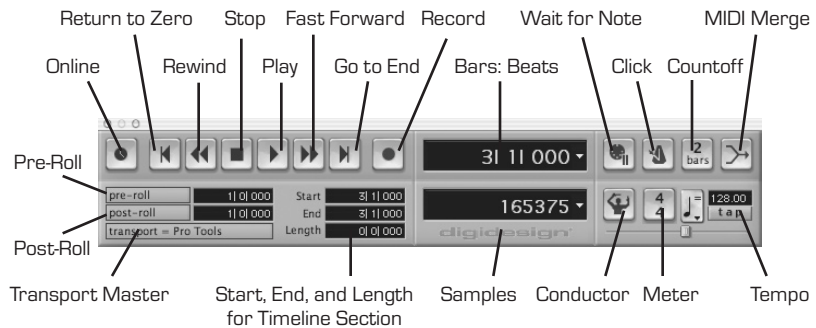
The Transport Window

The Transport window has controls like those on a cassette player or analog tape machine and is used to play, stop, record, fast-forward, and rewind your recorded material, as well as some more advanced functions. You can use the buttons in this window to control playback, recording, and navigation in Pro Tools.

To view any of these windows, select the window name from the appropriately titled Windows menu at the top of your Pro Tools screen.

In the following chapters, we'll cover many of the important features and functions found in these Pro Tools windows while keeping a broad perspective on the concepts and realities of producing music in your home studio.

Fig. 1.3.
Pro Tools Transport Window

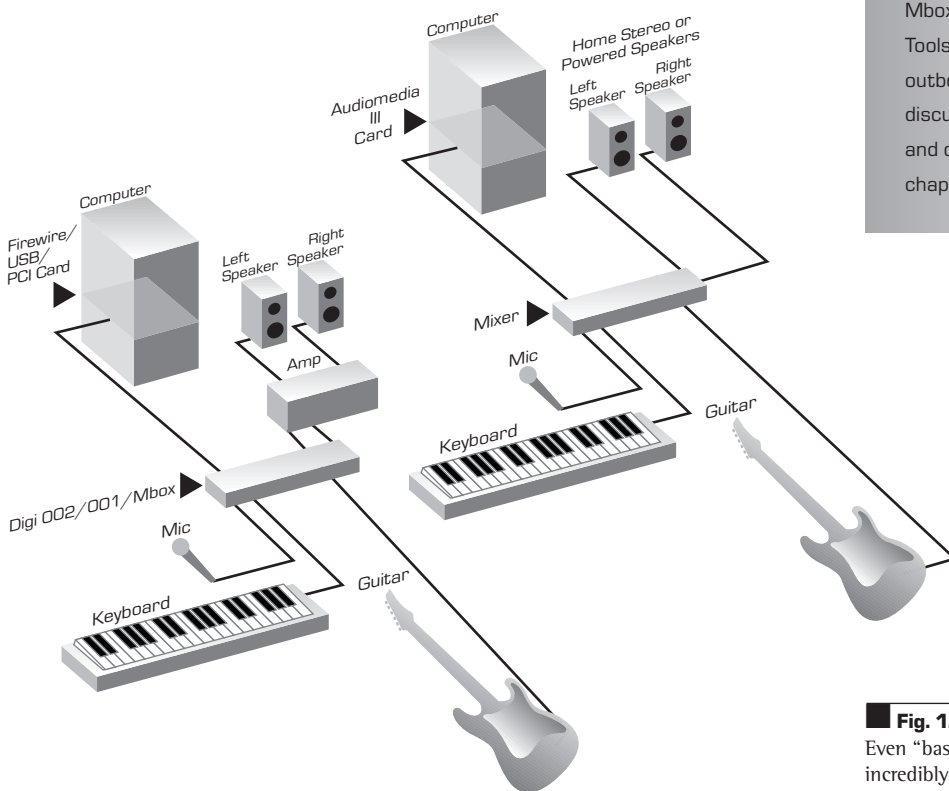


CONNECTING YOUR STUDIO

After you have connected your Digidesign hardware and you've installed your Pro Tools software, what's the next step? Plug in the rest of your gear, of course! Some of you may have just a microphone and a MIDI keyboard. Others may have a small rack of gear and a couple of instruments. Those who are blessed have racks and racks of gear and many acoustic, electric, and MIDI instruments. For those in the last category this chapter may be of help – but also consult chapter 8, “Advanced Studio Setup,” for more information on larger rigs.

The Basic Setup

- 002/001/Mbox, keyboard and/or guitar, mic, computer, home stereo
- Audiomedia III card, keyboard and/or guitar, mic, computer, home stereo, mic pre-amplifier or small mixer



Because Pro Tools software has advanced mixing capabilities and the Digi 002/001 have many inputs and outputs, you really don't need an outboard (external) mixer to use Digi 002/001, though there may be benefits depending on how you like to work. You can also use the Mbox, ToolBox, or Pro Tools Free without an outboard mixer. See the discussion on inputs and outputs later in this chapter.

Fig. 1.4.

Even “basic” setups can be incredibly powerful in tandem with digital recording tools.

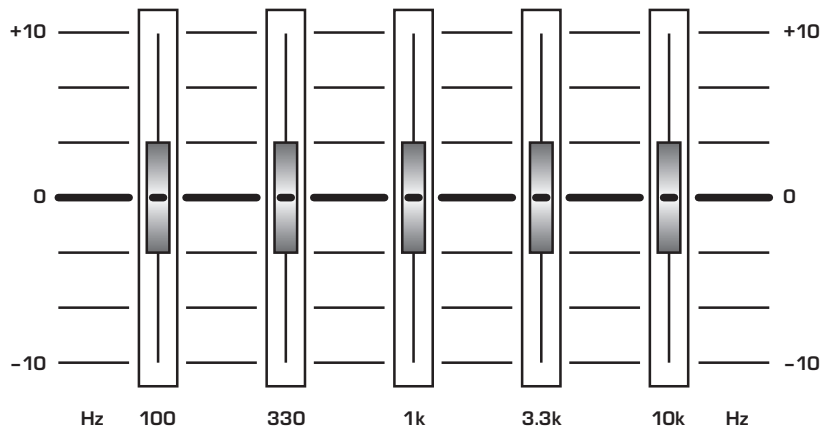
If you're using home stereo speakers as studio monitors, I recommend connecting the monitor outputs from Digi 001, the RCA outputs from Digi 002, the TRS line outputs from your Mbox, or the RCA outputs from your Audiomedia III card to your home stereo amplifier on an open line-in jack. For example, I've connected my 001 monitor outs to the VCR input on my stereo amp so I can still listen to my CD, tape, and

record players without having to reconnect them. The Vol knob on the front of Digi 001 controls the monitor volume to your stereo. Set the level of this knob close to the output of your CD or tape player, so if you switch between devices the levels will be matched and you won't get any ear-splitting surprises.

Most home stereos use RCA connectors, however Digi 001/Mbox has 1/4" outputs. This means you'll need to buy a pair of 1/4"-to-RCA adapters (or cables) to monitor your 001/Mbox through your home speakers. These adapters are available at most audio dealers. Digi 002 and ToolBox XP have stereo RCA outputs so you don't need an adapter. A stereo RCA cable will do for this purpose.

Using your home stereo for monitoring can work very well, but watch out if you apply a lot of equalization. You may have a graphic EQ built into your amplifier, or even a stand-alone unit. You might consider flattening the settings (by positioning the EQ levels to 0dB boost/cut) to hear exactly what your mix sounds like on nonequalized systems. Also, home stereos often have preset EQ settings for increased low- and high-end response. In fact, some systems have settings that make your music sound like it's coming from a different ambient space (e.g., a jazz hall or sports arena). I recommend turning off all of these features (bass boost, surround, and EQ presets) and setting everything to normal. This will ensure that you're listening to an accurate representation of your music – the way it really sounds in Pro Tools.

Fig. 1.5.
If there's a graphic EQ in your monitoring chain, you'll probably want to "zero" all of the settings while recording and mixing.



To use a microphone, electric guitar, or any other instrument that has a magnetic pickup, plug the XLR or 1/4" cable into a mic/line input on Digi 002/001/Mbox. To plug these devices into the Audiomeia III card, you'll need a piece of gear that has a mic preamplifier (or "preamp"), such as a mixer. A **preamplifier** boosts the mic signal to *line level*, the required level that the inputs to the Audiomeia III card can accept.

Line-level instruments with 1/4" cables (e.g., keyboards, preamps, and mixer outputs) can be plugged directly into any of the inputs on Digi 002/001/Mbox. All of these inputs can be used with balanced or

unbalanced cables. However, because the Audiomeia III card has RCA inputs, 1/4"-to-RCA converters should be used for direct inputs to the card. Otherwise, you can run line-level instruments into a mixer that has RCA outputs connected to the Audiomeia III card.

In addition, every Digidesign home studio product has digital 2-channel S/PDIF inputs, and Digi 002/001 also has an 8-channel optical (also referred to as “lightpipe”) input. Advanced studio setups (including digital inputs and outputs) are discussed further in chapter 8.

OH YEAH? WHAT’S IN YOUR STUDIO?

My current studio can be described as a mid-level setup—falling somewhere between the basic setup described previously and a fully decked-out system. I have a Mackie 16-channel mixer (1604-VLZ Pro), Mackie HR824 monitors, a Line 6 Guitar Pod Pro, a Line 6 Bass Pod Pro, a General MIDI keyboard (Yamaha PSR-410), a small MIDI sound module (Roland JV 1010), a home stereo system with several pairs of speakers, a Macintosh G4 computer (500MHz and 768 megs of RAM), a PreSonus Digimax, a headphone amplifier, and several pairs of headphones. I also have numerous Shure microphones, a Line 6 FlexTone II XL guitar amp, an acoustic drum set, an electric guitar, an acoustic guitar, and an electric bass. (Information about Shure, Mackie, PreSonus, and Line 6 and their products is included in appendix D.)

Self-powered monitors (like the Mackie HR824s) have amplifiers built into them, thus you don’t need to run them through an amplifier as you would for your home stereo speakers. You can connect self-powered monitors directly to the outputs of your Digidesign home studio product, or to an outboard mixer. Even if you’re using self-powered monitors, I suggest also connecting Digi 002/001/Mbox to your home stereo. This way you can listen to your mixes through at least two different sets of speakers for comparison. In my home studio, I have a set of Mackie powered monitors (HR824s), a set of Fisher home stereo speakers, and a set of Sony boombox speakers. With the flip of a button or two, I can switch between sets of speakers, making it easier to create a mix that sounds good on multiple systems. (More information on the importance of using several sets of speakers for mixing can be found in chapter 12.)

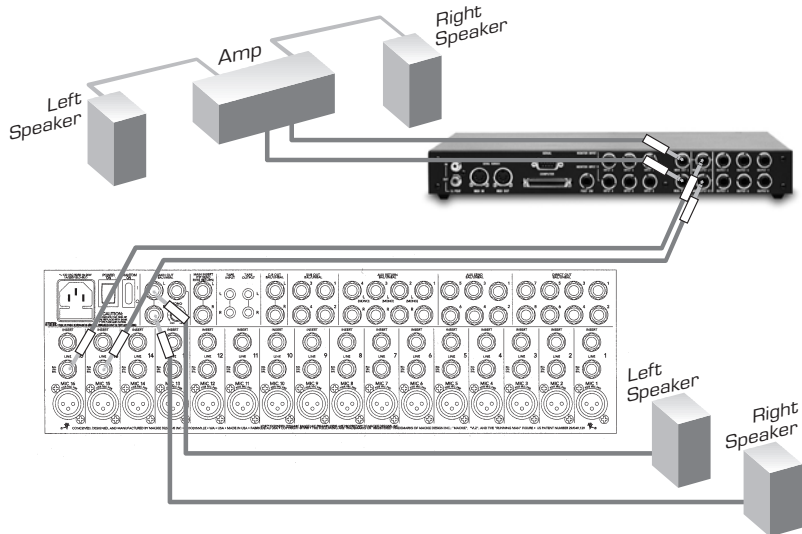
To set up your studio like this, connect your home stereo to the monitor outputs of Digi 002/001 and your mixer to the main outputs of Digi 002/001. For the Mbox, you can connect your mixer, amplifier, or self-powered monitors to the line outputs and your home stereo to one of the headphone outputs. If your home stereo amp has speaker A and B outputs, connect a different set of speakers to each of the stereo amp outputs. If not, your mixer may have several stereo output options. My Mackie 1604-VLZ Pro has main outs, tape outs, submix outs, control

room outs, direct outs, and a mono output, all of which can send audio to other sets of speakers if configured correctly.

This setup enables me to easily switch between my powered Mackie monitors and two different sets of home speakers. How? When you press the Monitor Mode switch on Digi 001, this stops the stereo signal from reaching the monitor outs (to my home stereo), but allows it to pass through the main outputs. The main outs (connected to two channels on the mixer) pass signal to the powered speakers. Muting those channels on the mixer and unpressing the Monitor Mode switch swaps the sound output back to my home stereo, which can also switch between two sets of speakers. So in total, I can hear my audio on three different pairs of speakers. (For stereo mixing, make sure you're only listening to one pair of speakers at a time!)

Fig. 1.6.

The Digi 001 provides flexible speaker connectivity. Here, the monitor outs are connected directly to a home stereo and the main outs are connected to two inputs on the mixer, allowing you to monitor using two different sets of speakers.



If you want to record more than two microphones at once with Digi 001 (or four with Digi 002) you'll need additional preamps – the outputs of the preamps can be patched to the line inputs of Digi 002/001. If you want to record more than eight mics or instruments at once and you can't access the other 002/001 inputs (S/PDIF and optical inputs, discussed in chapter 8), you'll have to set up a submix of the inputs in your mixer (because there are only eight analog inputs on Digi 002/001). A **submix** combines multiple signals and allows you to use fewer input tracks. For example, if you're recording a guitar amp with three different mics, you can combine the three mic inputs to one output on the mixer and send that submix to just one track in Pro Tools. Consult chapters 9 and 11 for more detailed explanations of submixing.

MIDI SETUPS WITH YOUR DIGIDESIGN GEAR

Setting up MIDI instruments can be confusing, but Digi 001 makes connections simple with a one-in/out MIDI interface. If you have a MIDI device, simply connect the MIDI out of your device to the MIDI in of Digi 001 and the MIDI in of your device to the MIDI out of Digi 001. Digi 002 has a one-in/two out interface that allows you to hook up one MIDI controller as the input to operate two MIDI sound modules through the two MIDI out ports. If you have several MIDI devices, you can build a daisy-chain MIDI setup (as discussed in chapter 5) or you'll need some sort of MIDI interface to connect and route your MIDI data. The MIDI interface will connect to your computer through a port (e.g., parallel, serial, USB, etc.); it does not connect to Digi 002/001. To use MIDI with the Mbox or AudioMedia III card, you also need a MIDI interface.

Information on the basics of MIDI, setting up your own MIDI network, and setting up Pro Tools for MIDI is provided in chapter 5, and chapter 8 explains MIDI interface connections.

SEPARATE LIVES — PARTITIONING YOUR HARD DRIVE

If you're just getting started with a new computer and don't have an external hard drive for audio, it's a good idea to create two (or more) hard drives from your one existing internal drive. This is called **partitioning** your hard drive, and is done to separate audio files from all of your other files (system software, applications, documents, etc.) so that it's easier to locate them — not only for you, but also for the computer. If a computer has to look all over the place for different files, jumping back and forth between areas on one hard disk, it will slow down and the audio playback and recording performance may suffer. For example, separate a 40GB internal drive into a 10GB drive (for applications, documents, etc.) and a dedicated 30GB drive for audio. Partitions are useful for external drives as well. For instance, consider partitioning a 120GB external drive into four partitions of 30GB to improve hard drive performance and project organization. Consult your computer's manual to learn more about partitions.

INPUTS AND OUTPUTS

How you approach the signal flow in, out, and through your Pro Tools software is integral to your studio setup. The internal signal routing in Pro Tools software is very flexible, and the number of choices far outnumber what's available in outboard mixers. A **signal path** is the way you route audio or MIDI signals through Pro Tools and your gear.

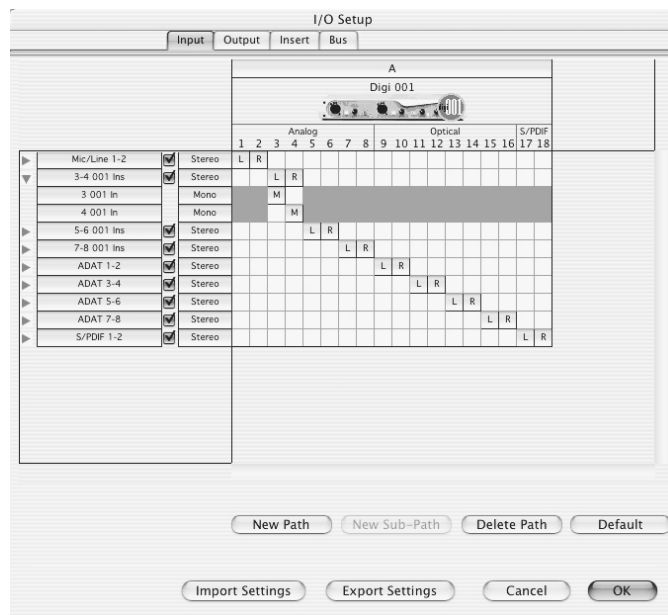
Outboard mixers usually have hard-wired signal paths used specifically for one of the following functions: inputs/outputs, sends, inserts, and/or auxiliary routing. In Pro Tools software, outputs can be used for all of these signal paths; they can be assigned to feed aux

inputs, send inputs, busses (a **bus** carries several signals on one path), other software inputs, and outboard hardware inputs. You can essentially route any signal anywhere and – if you’re not using outboard gear – you won’t need any patch cords to do it! You can label, format, and map all Pro Tools inputs, outputs, inserts, and busses to your liking and then save the entire configuration with your session – it’s a total recall system. That means you can always pick up right where you left off with a session, even if you don’t work on it for months.

The I/O Setup dialog is where you create the routing for your signal paths by assigning track inputs, outputs, inserts, sends, and plug-ins. It can be found by choosing I/O Setup from the Setups menu.

Fig. 1.7.

The I/O Setup dialog for the Digi 001. Notice that inputs 3 and 4 are carrying a stereo signal, but can also be split off as individual mono sub-paths.



Audio signals are routed internally in Pro Tools on **paths**. *Main paths* are groupings of inputs, outputs, inserts, or busses and are most often stereo pairs. *Sub-paths* are the components of the group from the main path. For example, inputs 3 and 4 (“3–4 001 Ins,” as seen in figure 1.7) are connected to the left and right outputs from a synthesizer; “3–4 001 Ins” represents a main path (stereo), while the individual “3 001 In” and “4 001 In” are mono sub-paths of the main path.

You can customize Pro Tools signal paths in the I/O Setup and save them to match your studio configuration. (Notice how I’ve labeled the inputs for my home studio Pro Tools setup in figure 1.7.) To save an I/O setup, select Export Settings from the I/O Setup dialog and name the I/O Settings file. You can then import these settings to other sessions by choosing Import Settings in the I/O Setups dialog or by selecting the I/O Settings file in the session parameters when creating a new session. More information on routing is presented later in this book.

As you can see, Pro Tools software has a flexible mixer. But if you still want to use an outboard mixer you can do so (if using the Digi 001) by assigning all of your tracks to outputs 1–8 and connecting those outputs to eight inputs of your mixer. Or you can keep the audio inside Pro Tools, but use MIDI control surfaces to get that “hands-on” feel (more on this in chapter 8). Even cooler, Digi 002 itself is a mixer. You can assign any tracks and/or parameter controls to any of its faders and pots to control the software mixer entirely with your hands.

GAIN STAGES

It is important for you to understand the gain stages in your equipment. A **gain stage** is any amplifier (or attenuator) that boosts (or cuts) the level of an audio signal. On Digi 002/001/Mbox there’s one input gain stage: the Gain knobs for inputs 1 and 2 (plus 3 and 4 for Digi 002). However, the Input Gain window in Pro Tools (shown in figure 1.8) controls the gain for the other line inputs. To open this window, select Hardware under the Setups menu. Adjust the controls as necessary to get high enough levels into Pro Tools. (See chapter 2 for details on getting good recording levels.) Again, because Pro Tools is a total recall mixer, these settings – and all other internal Pro Tools gain stages such as fader levels – are saved with every session.



Always be aware of the signal path! If you find your input levels are too high or low, check every point in the path and adjust the mixer and software settings to achieve optimal levels. [Consult your mixer manual for assistance in proper gain staging.]

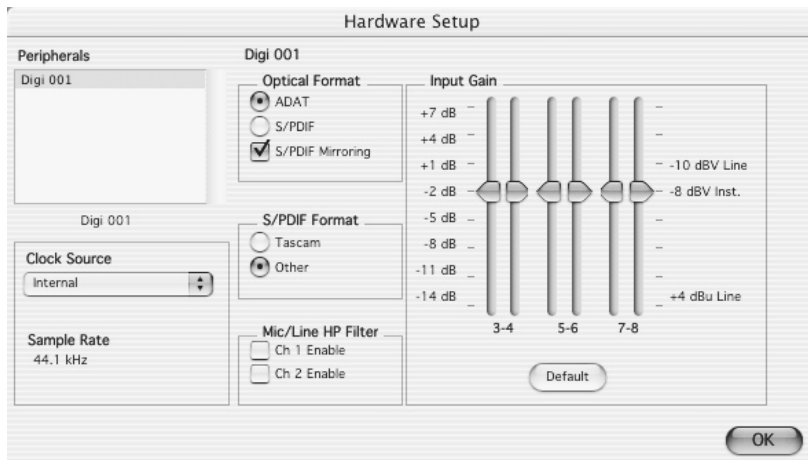


Fig. 1.8.

Digi 001’s Hardware Setup (Input Gain) is used to control the input gain for channels 3–8. If you’re using the Audiomedia III card, Digi 002, or Mbox, the window’s a bit different.

If you have an outboard mixer it’s important to understand the gain stages on it, too. A mixer will have a preamp gain control (usually a rotary knob located near the input area) and a mixer channel gain control (usually a vertical fader located at the bottom of each channel’s input/output module). Additionally, a mixer has a master fader and possibly some submix, auxiliary, and control room gain controls. Depending on how you set your mixer to interface with your 002, 001, Mbox, or Audiomedia card, you may use some or all of these gain stages.

SETTING UP YOUR LISTENING ENVIRONMENT

When setting up your home studio, one of the most important things to consider is where to place your monitors (i.e., speakers). Whether you'll be listening through one pair of speakers, switching between multiple pairs, or using a surround sound setup, there are some accepted configurations.

SURROUND MIXING USING THE DIGI 002/001

Although Pro Tools LE does not officially support surround sound panning, you can still set up a surround speaker system using Digi 002/001 to create surround sound mixes. The only thing you really can't do is some of the crazy panning available in Pro Tools|HD and Mix systems. Information on surround configurations is presented later in the chapter and in the *Pro Tools Reference Guide*, and information on surround mixing using Digi 002/001 is presented in chapter 12.

Standard Stereo Systems

When listening to two speakers, your goal is to hear the optimal stereo image. Also called the **phantom image**, this occurs in the middle of two speakers placed at equal height from the floor. To hear the phantom image your head should be on the **median plane**, an imaginary line equidistant from each speaker (see figure 1.9). Ideally your head and the two speakers should form an equilateral triangle – the distance between you and each speaker is the same, and equal to the distance between the two speakers. This ensures that you're hearing the most accurate stereo image from your speakers. In this setup you'll perceive the sound coming from the area directly between the two speakers. (The way I have my studio set up, it often seems like the sound from my speakers is actually coming from my computer monitor, which is placed directly between them.) Additionally, if at all possible try to keep your speakers away from walls, which (along with the floor and ceiling) have a tendency to magnify bass frequencies.

The reason you should be equidistant from the speakers is that you want the sound from each speaker to reach your ears at exactly the same time, or you may experience the precedence effect. The **precedence effect** (or Haas effect) occurs when the listener is off the median plane (by as little as six inches). It shifts the phantom image toward the speaker closest to the listener. As a result, the sound from the closer speaker arrives at the listener's ear first, which may fool them into thinking it's louder. If you're basing a mix on this kind of false imaging, you may have to redo the entire thing!

To create the proper listening setup I recommend using a tape measure to accurately position your speakers. First sit down where

you'll normally be listening in your studio, then use the tape measure to approximate an equal distance from your head or chest to a spot on your left and right sides where your speakers could be placed. A good distance is 3–4 feet, which is the same distance the speakers should be apart from each other.

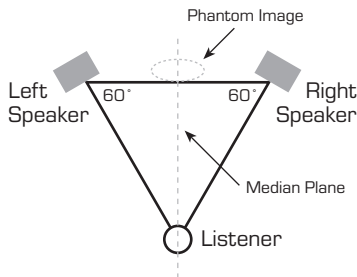


Fig. 1.9.

Properly placed stereo monitors should form an equilateral triangle with the listener.

In fact, the closer you are to your speakers, the less the room acoustics will color the sound. (This is called **near-field monitoring**, and is the most common approach for mixing.)

Next place your speakers at equal height from the floor in your approximated positions. If possible, the speaker height should correspond to your sitting height (or at least be pointed to that height). Angle the speakers at approximately 60 degrees toward the median plane. Finally, sit down again, use the tape measure, and precisely position the speakers to achieve the equilateral triangle setup. Now listen to some music and find out if you hear the phantom image. Try moving back and forth along the median plane and moving your head side-to-side. Can you hear the difference?

If you think you've placed your speakers correctly but still don't hear the phantom image, your speakers may be out of phase. Fortunately, this is an easy fix. If you're running speakers through an amplifier with positive (+) and negative (-) connections, make sure your speaker wire is attached correctly; that is, negative connector on the amp to negative connector on the speaker, and positive to positive. If this doesn't fix the problem, your speaker cables could be wired out-of-phase so try different ones. Correctly connecting your speakers with properly wired cables should eliminate speaker phase problems.

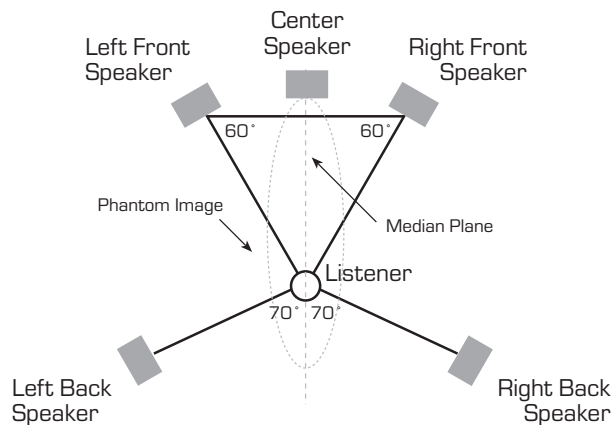
Surround Sound Systems

Unlike stereo (two-speaker systems), surround sound systems consist of five or more speakers. However, some of the same principles from two-speaker stereo apply. For instance, all speakers should be equidistant from the listener. (The subwoofer is an exception to this; see explanation below.) There's also a median plane and a phantom image in a surround sound system; the amount of musical material presented in the front and back speakers can move the phantom image along the median plane.

Most surround sound systems include a subwoofer, though there's no subwoofer shown in figure 1.10. Because of their low frequency, bass audio signals are difficult to localize spatially so precise placement of the subwoofer typically does not affect the phantom image. In most surround sound setups, however, the subwoofer is placed on the floor beneath and between the center and one of the front speakers.

There are many surround sound formats with different speaker placements and track layouts discussed in the *Pro Tools Reference Guide*. Although Pro Tools LE does not support true multi-channel mixing, there are other cool ways to mix for surround systems using Digi 002/001, covered in chapter 12.

Fig. 1.10.
A 5.1 surround speaker configuration (without the subwoofer, which is what the “.1” stands for). In this configuration, notice the back speakers are approximately 70 degrees off the median plane.



THE ACOUSTIC TREATMENT

Once your equipment and speakers are set up, you should consider the acoustical treatment of your room(s). Every room has its own sound, which has to do with its shape, the materials on the walls, floor, and ceiling, and the objects in the space. Each of these factors affects the way sound waves travel and how they're reflected or absorbed. For example, tiled bathrooms sound more “live” (i.e., they have more sound reflections, or reverb) than “dead” bedrooms with absorptive curtains and carpeting.

When setting up your studio, test the room where you'll record and listen to your tracks for the room's acoustical properties. Snap your fingers and talk aloud in different areas (you might want to make sure nobody's around when you do this). Listen for strange flutter echoes in those spots, and play some of your favorite music to listen for any frequency boosts/cuts in different areas (e.g., bass boosts in the corners). Finally, listen for noise within the studio, such as computer fans and hard drives, and for outside noise such as traffic or neighbors.

There are many things you can do to “treat” problems found while conducting your listening tests. Put diffusers, bass traps, or specially

designed absorptive materials (like Auralex Studiofoam) in spots that have unwanted frequency boosts/cuts or echoes. These also help soundproof your room, to keep sound from both coming in and getting out. Also place absorptive materials (a) on hard surfaces to deaden the room and (b) around anything that's noisy. Do everything you can to isolate your studio from outside noise, like double-paning or covering windows and sealing door jambs. Finally, you can remove or add objects in your room (such as furniture) to change its overall sound. Heck, sometimes just throwing a blanket or hanging a tapestry on a reflecting surface can have serious acoustical benefits.

In most home studios it's best to create a "dead" environment for recording and listening. That way you have control over the sounds you record because you can always *add* "liveness" by inserting effects (reverb, delay, etc.), but it's hard to remove too much from an already recorded track.

Okay. Your gear is set up and plugged in, your speakers are placed properly, and your room is acoustically treated. . . . Your studio is ready for action. Let's jump into making music with Pro Tools! ■■

PRO TOOLS HANDS-ON

In every chapter of the book, I'll present projects that explore the techniques explained in that chapter. Let's get started with some general projects.

Install, Register, and Configure

- Install Pro Tools
- Register with Digidesign (if using Pro Tools LE hardware and software)
- Configure your computer's operating system the way Digidesign recommends

Set Up Your Studio Listening Environment

Once your hardware and software is working, test your studio setup and listening environment by opening up and playing one of the sample Pro Tools sessions provided by Digidesign. Sample sessions are included on the CD that came with your Digi gear as well as on the CD that came with this book. As covered in this chapter, accurately measure the distance between your speakers and listening position. Be sure your speakers are placed so that

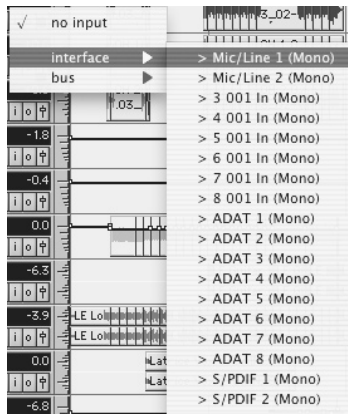


you can hear accurate stereo images. If something sounds funny, you may have a phasing problem. Try fixing the problem using the solutions presented in the chapter. If the output signal is noisy, you may have noisy gear and/or cables, or you may need to tweak your gain stages.

Test Gain Stages and I/O

Now test your gain stages. Start with the outputs. Follow the signal path starting from the output level in Pro Tools (check the Master Fader track) all the way to the speakers. Adjust any gain stages along the way to optimize the signal. This often means putting all volume faders/knobs at “0” and adjusting the last gain stage in the chain as your final volume control.

Next test your inputs. Plug an instrument or microphone into the first input of your signal path (e.g., input 1 of the 002/001/Mbox or channel 1 of your mixer/mic preamp). If using external mic pres or a mixer, route its output signal into an input on your Pro Tools hardware or sound card. With the sample Pro Tools session still open, assign the first audio track’s input to the input where you’ve plugged in your instrument or mic, as in the figure below.



Record-enable the track by pressing the Record button on that track and check for an input signal. Follow the signal path from the instrument to the mic and examine the levels on all gain stages along the way. Tweak the gain stages so that you can get a good recording level into Pro Tools without a lot of noise and without distorting any part of the input chain. Do this every time you insert a new piece of gear into the signal path because the gain structure will change. That way, you’ll always be sure to get the highest quality signal into Pro Tools.

Create an I/O Settings File

If you’ve already set up all of your gear, make a customized I/O Settings document. While still in the sample Pro Tools session,

choose I/O Setup from the Setups menu. As described in the Inputs and Outputs section of this chapter, label inputs, outputs, inserts, and busses the way you want and save the I/O setup by choosing Export Settings. Anytime you create a new session, you can import this setup (or make it the default setup in a session template – see chapter 3) so that your I/O is always labeled correctly. Make an I/O Settings file now, even if it's basic. You can always edit it or make a new one later if your setup changes.

When you're done with all of this, close the sample Pro Tools session by choosing Close from the File menu, or pressing Shift + Control + W (Win) or Shift + ⌘ + W (Mac).

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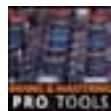
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