Getting Started with Pro Tools M-Powered

Version 6.8 for M-Powered Systems on Windows or Macintosh

digidesign

contents

chapter 1

Welcome to Pro Tools M-Powered

This guide documents how to install and configure Pro Tools M-Powered software on M-Powered systems.

The basic components of an M-Powered system are as follows:

- Digidesign-qualified M-Audio interface (not supplied)
- Digidesign-qualified Windows or Macintosh computer (not supplied)
- Pro Tools M-Powered software (included)

⚠️ *For a list of Digidesign-qualified M-Audio interfaces and computers, refer to the compatibility page of the Digidesign Web site (www.digidesign.com/compato).*

Pro Tools M-Powered Software Package

The Pro Tools M-Powered package includes the following:

- Pro Tools M-Powered Installer CD-ROM, which contains Pro Tools M-Powered software, updated M-Audio drivers, DigiRack RTAS (Real-Time AudioSuite) and AudioSuite plug-ins, and electronic PDF guides.
- Pre-authorized iLok for running Pro Tools M-Powered.
- This *Getting Started with Pro Tools M-Powered Guide*, covering installation, configuration, and basic tutorials for M-Powered systems.
- The *M-Powered Basics Guide*, designed to give new users specific methods for accomplishing common tasks (such as getting sound in and out of your M-Audio interface, connecting a mic or instrument, and recording a session).
- Digidesign registration card.

Pro Tools M-Powered Capabilities

Pro Tools M-Powered software provides the following capabilities:

- Playback of up to 32 mono digital audio tracks, or a combination of playing back and recording up to 32 mono digital audio tracks, depending on your M-Audio interface and computer's capabilities.

- Sessions can include up to 128 audio tracks (with 32 voiceable tracks maximum), 256 MIDI tracks, 128 Auxiliary Input tracks, and 64 Master Fader tracks.

- 16-bit or 24-bit audio resolution, at sample rates up to the sample rates supported by your M-Audio interface.

- Non-destructive, random-access editing and mix automation.

- Audio processing with up to 5 RTAS plugins per track, depending on your computer's capabilities.

- Up to 5 inserts and 5 sends per track.

- Up to 16 internal mix busses.

⚠ *Pro Tools uses your computer's CPU to mix and process audio tracks (host processing). Computers with faster clock speeds yield higher track counts and more plug-in processing.*

System Requirements

Pro Tools M-Powered can be used with a Digidesign-qualified M-Audio interface, running on a Digidesign-qualified Windows or Macintosh computer.

For complete system requirements, visit the compatibility page of the Digidesign Web site (www.Digidesign.com/compato).

Compatibility Information

Digidesign can only assure compatibility and provide support for hardware and software it has tested and approved.

For a list of Digidesign-qualified computers, operating systems, hard drives, and third-party devices, refer to the latest compatibility information on the Digidesign Web site (www.digidesign.com/compato).

Pre-Authorized iLok

M-Powered software is authorized using the iLok USB Smart Key (iLok) from PACE Anti-Piracy.

The iLok is similar to a dongle, but unlike a dongle, it is designed to securely authorize multiple software applications from a variety of software developers.

This key can hold over 100 authorizations for all of your iLok-enabled software. Once an iLok is authorized for a given piece of software, you can use the iLok to authorize that software on any computer.

Pro Tools M-Powered provides one iLok, which is pre-authorized for Pro Tools M-Powered software.

⚠ *The M-Powered pre-authorized iLok must be inserted in an available USB port on your computer to run Pro Tools M-Powered.*

▤ *For additional information about iLok technology and authorizations, see the electronic PDF of the iLok Usage Guide.*

MIDI Requirements

USB MIDI interfaces work effectively with Pro Tools systems on Windows or Macintosh. Serial MIDI interfaces are supported on Windows systems only.

⚠ *Only USB MIDI interfaces are compatible with Pro Tools systems for Mac OS X. Modem-to-serial port adapters and serial MIDI devices are not supported.*

For a list of supported adapters, refer to the Digidesign Web site (www.digidesign.com).

Hard Drive Considerations

Hard Drive Configuration and Maintenance

It is recommended that you start with a newly initialized audio drive. You should also periodically defragment your audio drive to ensure continued system performance.

For a list of Digidesign-qualified hard drives, see our Web site (www.digidesign.com/compato).

If you are using an ATA/IDE or FireWire hard drive, initialize your drive with Windows Disk Management (Windows) or the Disk Utility application included with Apple System software (Macintosh).

Avoid Recording to System Drives

Although Pro Tools will let you record to your system drive, this is generally not recommended. Recording and playback on system drives results in lower track counts and fewer plug-ins.

Hard Disk Storage Space

Mono audio tracks recorded with 16-bit resolution at 44.1 kHz (CD quality) require approximately 5 MB of hard disk space per minute. The same tracks recorded with 24-bit resolution require about 7.5 MB per minute.

Stereo audio tracks recorded with 16-bit resolution at 44.1 kHz (CD quality) require approximately 10 MB of hard disk space per minute. The same tracks recorded with 24-bit resolution require about 15 MB per minute.

Table 2 lists the required disk space for certain track numbers and track lengths, to help you estimate your hard disk usage.

Table 2. Required hard drive space for audio tracks (44.1 kHz and 48 kHz sessions shown)

Number of tracks and length	16-bit at 44.1 kHz	16-bit at 48 kHz	24-bit at 44.1 kHz	24-bit at 48 kHz
1 mono track, 1 minute	5 MB	5.5 MB	7.5 MB	8.2 MB
1 stereo track (or two mono tracks), 5 minutes	50 MB	55 MB	75 MB	83 MB
1 stereo track (or two mono tracks), 60 minutes	600 MB	662 MB	900 MB	991 MB
24 mono tracks, 5 minutes	600 MB	662 MB	900 MB	991 MB
24 mono tracks, 60 minutes	7 GB	7.8 GB	10.5 GB	11.6 GB
32 mono tracks, 5 minutes	800 MB	883 MB	1.2 GB	1.3 GB
32 mono tracks, 60 minutes	9.4 GB	10.4 GB	14 GB	15.4 GB

How Pro Tools M-Powered Differs from Pro Tools LE

Pro Tools M-Powered does not support the following Pro Tools LE options:

- DigiTranslator
- DV Toolkit
- Digidesign Ethernet-based control surfaces (such as Control|24)
- Avid video peripherals

Some Pro Tools M-Powered configuration dialogs differ from the Pro Tools LE configuration dialogs that are presented in the *Pro Tools Reference Guide*. For specific Pro Tools M-Powered configuration dialogs, see Chapter 2, "Windows Configuration" or Chapter 3, "Macintosh Configuration."

Digidesign Registration

Complete and return the registration card included with your Pro Tools M-Powered system. Registered users will receive periodic software update and upgrade notices. Refer to the registration card for information on technical support.

About the Pro Tools Guides

The *Getting Started with Pro Tools M-Powered Guide* explains how to install Pro Tools M-Powered software, and use an M-Audio interface to record, edit, and mix audio and MIDI tracks in Pro Tools.

Online guides provided with Pro Tools M-Powered refer to Pro Tools LE and TDM systems. References to Pro Tools LE are usually interchangeable with Pro Tools M-Powered, except as documented differently in this *Getting Started Guide*, or on the compatibility page of the Digidesign Web site (www.digidesign.com/compato).

If you are new to working with digital workstations, it is recommended that you read the following:

- *M-Powered Basics Guide* provides simple steps for how to get sound in and out of your M-Audio interface, connect a microphone or instrument, record to a Pro Tools M-Powered session, import audio from a CD, create an audio CD from a Pro Tools M-Powered session, and other topics.

For additional information, see the following online (.pdf) guides:

- *Pro Tools Reference Guide* explains Pro Tools software in detail.
- *Pro Tools Menus Guide* covers all the Pro Tools on-screen menus.
- *DigiRack Plug-Ins Guide* explains how to use the RTAS and AudioSuite plug-ins included with Pro Tools.
- *Digidesign Plug-Ins Guide* explains how to use optional Digidesign plug-ins.
- *DigiBase Guide* provides details on using Pro Tools DigiBase databasing and browsers for data and media management.
- *Pro Tools Keyboard Shortcuts* lists keyboard shortcuts for Pro Tools.

PDF versions of the Pro Tools guides are installed automatically with Pro Tools M-Powered, and are accessible from the Pro Tools Help menu. To view or print the PDF guides, you can use Acrobat Reader or Macintosh Preview.

☼ *A copy of Acrobat Reader is included on the Pro Tools M-Powered Installer CD-ROM for Windows.*

☼ *Printed copies of Pro Tools guides (including the Pro Tools Reference Guide) can be purchased separately from the DigiStore (www.digidesign.com).*

Conventions Used in This Guide

Digidesign guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save Session	Choose Save Session from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click (Windows)	Click with the right mouse button

The following symbols are used to highlight important information:

☼ *User Tips are helpful hints for getting the most from your Pro Tools system.*

⚠ *Important Notices include information that could affect your data or the performance of your system.*

⌨ *Shortcuts show you useful keyboard or mouse shortcuts.*

▤ *Cross References point to related sections in other Digidesign guides.*

About www.digidesign.com

The Digidesign Web site (www.digidesign.com) is your best source for information to help you get the most out of your Pro Tools system. The following are just a few of the services and features available.

Support Contact Digidesign Technical Support or Customer Service; download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Answerbase; join the worldwide Pro Tools community on the Digidesign User Conference.

Training and Education Become a certified Pro Tools Operator or Expert; study on your own using courses available online, or find out how you can learn in a classroom setting at a certified Pro Tools Training Center.

Products and Developers Learn about Digidesign products; download demo software; learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Digidesign; sign up for a Pro Tools demo.

To learn more about these and other resources available from Digidesign, visit the Digidesign Web site (www.digidesign.com).

chapter 2

Windows Configuration

This chapter contains information for Windows systems only. If you are installing Pro Tools M-Powered on a Macintosh computer, see Chapter 3, "Macintosh Configuration."

⚠ *Before installing this version of Pro Tools, please refer to the Read Me information included on the Pro Tools M-Powered Installer CD-ROM.*

Installation Overview

Installing Pro Tools M-Powered on a Windows computer includes the following steps:

1 Configuring "Windows System Settings" on page 7.

2 "Installing Your M-Audio Interface" on page 9.

3 "Installing M-Audio Drivers" on page 10.

4 "Installing Pro Tools M-Powered Software" on page 10.

5 "Launching Pro Tools M-Powered" on page 11. (This step includes inserting the pre-authorized iLok into an available USB port on your computer.)

6 "Configuring Pro Tools M-Powered" on page 12.

7 Making audio connections to the M-Audio interface. (See your M-Audio documentation for details.)

Windows System Settings

Configure your Window system settings as follows:

Required Settings These instructions must be followed before installing Pro Tools.

Recommended Configuration These instructions should be followed to optimize your system's capabilities, or to let older computers run Pro Tools.

⚠ *If problems occur after configuring all required and recommended settings, see Appendix A, "Windows System Optimizations" for information on troubleshooting and configuring advanced settings.*

Required Settings

To ensure optimum performance with Pro Tools, configure the following Control Panel settings for your version of Windows XP.

Disable Hyper-Threading

For Pentium IV computers with Hyper-Threading, disable Hyper-Threading in the BIOS.

Refer to your computer's documentation for steps on how to enter your computer's BIOS and disable Hyper-Threading.

Enable DMA for any IDE hard drives:

1 Choose Start > Control Panel.

2 Launch System.

3 Click the Hardware tab.

4 Under Device Manager, choose Device Manager.

5 In the Device Manager window, double-click IDE ATA/ATAPI controllers, then double-click the Primary IDE Channel for your IDE hard drive.

6 Click the Advanced Settings tab.

7 For each device, set the Transfer Mode to "DMA if available," and click OK.

In most cases, this will already be set correctly as Windows XP will detect and activate DMA mode by default.

8 Repeat steps 5–7 for any additional IDE Channels.

9 Close the Computer Management window.

Disable System Standby and Power Management

When using Pro Tools, the Windows System Standby power scheme must be set to Always On. This helps prevent long record or playback passes from stopping due to system resources powering down.

To configure Windows Power Management:

1 Choose Start > Control Panel.

2 Launch Power Options.

3 Click the Power Schemes tab.

4 From the Power Schemes pop-up menu, select Always On.

5 Click OK.

This sets System Standby, System Hibernate, and "Turn off hard disks" to Never.

Disable ClearType Font Smoothing

When using Pro Tools, the Effects "Clear Type" setting must be disabled.

To disable ClearType font smoothing:

1 Choose Start > Control Panel.

2 Launch Display.

3 Click the Appearance tab.

4 Click Effects.

5 Deselect "Use the following methods to smooth edges of screen fonts."

6 Click OK to save your settings and close the Effects dialog.

7 Click OK.

Disable Data Executive Prevention (DEP)

When using Pro Tools, Data Execute Prevention should be disabled to prevent system crashes.

To disable Data Executive Prevention: (DEP)

1 Choose Start > Control Panel.

2 Launch System.

3 Click the Advanced tab.

4 From the Startup and Recovery section, click Settings.

5 Click on the down arrow in the Default Operating System pop-up menu, and note if the "/NoExecute=" line reads as follows:

/NoExecute=Alwaysoff

6 Do one of the following:

• If the "/NoExecute=" reads "/NoExecute=Alwaysoff," data prevention is disabled, and you do not need to change any settings. Click OK to close the Startup and Recovery dialog, click OK to close the Systems Property dialog, and continue with "Completing Required Windows System Settings" on page 9

– or –

• If the "/No Execute=" does not read "/NoExecute=Alwaysoff" (for example, it reads "NoExecuteOptIn"), continue with the following steps.

7 Click Edit to edit the startup options file manually

8 Change the "/NoExecute=" line to read as follows:

/NoExecute=Alwaysoff

9 Save the boot.ini file if it was changed.

10 Choose File > Exit.

11 From the Startup and Recovery dialog, click OK.

12 From the System Properties dialog, click OK.

Completing Required Windows System Settings

When finished updating required Windows system settings, restart your computer.

Recommended Configuration

Pro Tools can also be affected by other software and hardware drivers installed on your computer. For best possible performance, it is recommended (but not required) that you:

• Avoid running other Windows programs at the same time as Pro Tools.

• Turn off any software utilities that run in the background, such as Windows Messenger, calendars, and disk maintenance programs.

• Turn off any non-essential USB devices while using Pro Tools.

• If your video display card supports it, enable Bus Mastering in the manufacturer's Control Panel.

• Disable any networking cards (other than any 1394 "FireWire" card that you might use to connect an external drive to your system). If you have a wireless network card, and no wireless network is present, the card should still be disabled.

For information on disabling networking cards, see "Disabling Network Cards" on page 49.

Installing Your M-Audio Interface

Before you install Pro Tools M-Powered, you must first install your M-Audio interface. Connect your M-Audio interface according to the instructions that came with it.

Installing M-Audio Drivers

The Pro Tools M-Powered Installer CD-ROM includes M-Audio drivers for using Digidesign-qualified M-Audio interfaces on Windows XP.

⚠ *Pro Tools will not see your M-Audio interface if you do not install the M-Audio driver that is included with Pro Tools M-Powered.*

To install the M-Audio driver for your M-Audio interface:

1 If you are using an M-Audio FireWire interface, disconnect it before proceeding.

2 Insert the Pro Tools M-Powered Installer CD-ROM for Windows in your CD-ROM drive.

3 Locate and open the M-Audio Driver Installers folder, and double-click the driver for your interface type, as follows:

- For M-Audio FireWire interfaces, double-click on FW_WDM_5.10.0.5034.exe.
- For M-Audio PCI interfaces, double-click on Delta_WDM_5.10.0.5050.exe.

4 Follow the on-screen instructions.

⚠ *If you get a warning dialog about the driver not passing Windows Logo testing, click Continue Anyway.*

5 When installation is complete, shut down your computer.

6 If you are using an M-Audio FireWire interface, do the following:

- Once your computer has shut down completely, connect your FireWire interface and power it on.

7 Turn on your computer.

8 When your system recognizes the new hardware, run the Found New Hardware Wizard. Follow the on-screen instructions.

⚠ *If you are prompted to run the Found New Hardware Wizard a second time, run it again.*

⚠ *In your M-Audio Control Panel, make sure that output channels 1 and 2 are not set to –Infinity (–∞).*

Installing Pro Tools M-Powered Software

After the Windows System software settings are configured and you have installed your M-Audio interface and drivers, you are ready to install Pro Tools M-Powered.

To install Pro Tools M-Powered on Windows:

1 Make sure you have configured all the required Windows system settings, and restarted your computer. See "Windows System Settings" on page 7 for more information.

2 Start up Windows, logging in with Administrator privileges. If you do not have Administrator privileges or do not know how to set them up, see your Windows User's Guide or ask the administrator.

3 Insert the Pro Tools M-Powered Installer CD-ROM for Windows in your CD-ROM drive. Locate and open the Pro Tools Installer folder, and double-click the Setup icon.

4 Click Next to begin installation.

5 Select the components you want to install and click Next.

⚠️ *If you get a warning dialog about the driver not passing Windows Logo testing, click Continue Anyway.*

6 Wait for the installer to finish installing all software components, drivers, and PACE System files before proceeding to the next step.

7 Click Quit when prompted to install Quick-Time. If required, you can install QuickTime later (see "Installing QuickTime" on page 11).

8 Restart your computer.

MIDI Studio Setup

(Optional)

If you plan to use any MIDI devices with Pro Tools, configure your MIDI setup with MIDI Studio Setup. See Appendix B, "Configuring Midi Studio Setup (Windows Only)" for details.

Installing QuickTime

(Optional)

QuickTime 6.5 or later is required for Pro Tools if you plan to include movie files in your sessions. QuickTime is available as a free download from the Apple Web site (www.apple.com).

Optional Software on the Pro Tools M-Powered Installer CD-ROM

Your Pro Tools M-Powered Installer CD-ROM includes several software options.

Pro Tools Demo Session

The Pro Tools M-Powered Installer CD includes a demo session that you can use to verify that your system is working.

⚠️ *Before installing the demo session to your audio drive, make sure the drive is configured as described in "Formatting an Audio Drive" on page 15.*

To install the demo session:

1 Insert the Pro Tools M-Powered Installer CD in your CD-ROM drive. Locate and double-click the Pro Tools M-Powered Demo installer icon.

2 Set the install location to your audio drive and click Install.

3 When installation is complete, click OK.

Launching Pro Tools M-Powered

To use Pro Tools M-Powered with an M-Audio interface, you must always have an iLok with an authorization for Pro Tools M-Powered. One pre-authorized iLok is included with the Pro Tools M-Powered package.

To authorize Pro Tools M-Powered software:

1 Insert the pre-authorized iLok into an available USB port on your computer.

2 Double-click the Pro Tools M-Powered shortcut on your desktop (or the application in Program Files\Digidesign\Pro Tools).

⚠️ *Do not remove the iLok during Pro Tools launch or use.*

Configuring Pro Tools M-Powered

Pro Tools System Settings

Pro Tools lets you adjust the performance of your system by changing *system settings* that affect its capacity for processing, playback, and recording

In most cases, the default settings for your system provide optimum performance, but you may want to adjust them to accommodate large or processing-intensive Pro Tools sessions.

Hardware Buffer Size

The Hardware Buffer Size (H/W Buffer Size) controls the size of the hardware cache used to handle host processing tasks such as Real-Time AudioSuite (RTAS) plug-ins. The H/W Buffer setting can also be used to manage monitoring latency.

◆ Lower Hardware Buffer Size settings reduce monitoring latency, and are useful when you are recording live input.

◆ Higher Hardware Buffer Size settings allow for more audio processing and effects, and are useful when you are mixing and using more RTAS plug-ins.

⚠ *In addition to causing slower screen response and monitoring latency, higher Hardware Buffer Size settings can affect the accuracy of plug-in automation, mute data, and timing for MIDI tracks.*

To change the Hardware Buffer Size:

1 Choose Setups > Playback Engine.
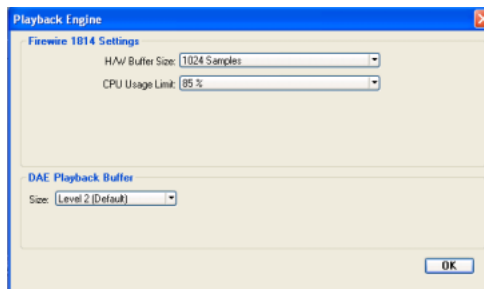
Playback Engine dialog for Pro Tools M-Powered

2 From the H/W Buffer Size pop-up menu, select the audio buffer size, in samples.

3 Click OK.

CPU Usage Limit

The CPU Usage Limit controls the percentage of CPU resources allocated to Pro Tools host processing tasks such as Real-Time AudioSuite (RTAS) plug-ins, as follows:

◆ Lower CPU usage settings reduce how much Pro Tools processing affects other CPU-intensive tasks (such as screen redraws), and limit the amount of processor resources available for Pro Tools tasks. They are useful when you are experiencing slow system response, or when running other applications at the same time as Pro Tools.

◆ Higher CPU Usage Limit settings allocate more processing power to Pro Tools, and are useful for playing back large sessions or using more real-time plug-ins.

⚠ *Increasing the CPU Usage Limit may slow down screen response on slower computers.*

The maximum CPU Usage Limit is 85 percent for single-processor computers, and 99 percent for multi-processor computers. (The 99 percent setting dedicates one entire processor to Pro Tools.)

To change the CPU Usage Limit:

1 Choose Setups > Playback Engine.

2 From the CPU Usage Limit pop-up menu, select the percentage of CPU processing you want to allocate to Pro Tools.

3 Click OK.

DAE Playback Buffer Size

The DAE Playback Buffer Size determines the amount of memory DAE uses to manage disk buffers, which affects system performance, as follows:

◆ Lower DAE Playback Buffer Size settings can improve playback and recording initiation speed. However, a lower setting can make it difficult for slower hard drives to play or record tracks reliably.

◆ Higher DAE Playback Buffer Size settings can allow for a higher density of edits in a session. However, a higher setting can cause a time lag to occur before playback or recording begins. It can also cause a time lag to occur when you are editing during playback.

To change the DAE Playback Buffer Size:

1 Choose Setups > Playback Engine.

2 From the DAE Playback Buffer pop-up menu, select a buffer size.

3 Click OK.

Pro Tools Hardware Settings and M-Audio Control Panel

The Hardware Setup dialog in Pro Tools (Setups > Hardware Setup) displays the name of your M-Audio peripheral. The dialog also displays a message, which tells you that various hardware functions can be changed in the M-Audio Control Panel.

Using the M-Audio Control Panel, you can change settings in the following areas:

- Mixer Settings
- Output Settings
- Hardware Settings (including sample rate, hardware buffer size, and sync source).

You can change the sample rate when creating a new Pro Tools session by selecting a different sample rate in the New Session dialog. (Refer to the Pro Tools Reference Guide for details.)

Pro Tools does not support the M-Audio Control Panel low latency monitor feature.

To change M-Audio Control Panel settings:

1 If Pro Tools is open, close it.

2 Choose Start > Control Panel.

3 Launch the M-Audio Control Panel as follows:
- For FireWire interfaces, launch M-Audio FW Audio.
- For PCI interfaces, launch M-Audio Delta Audio.

4 To change settings in the M-Audio Control Panel, refer to the documentation that came with your M-Audio interface.

5 When finished, close the M-Audio Control Panel.

Sync Source (Pro Tools Clock Source)

If your M-Audio interface has a digital I/O (such as a S/PDIF I/O), use the M-Audio Control Panel to select the Sync Source for the system.

⚠ *With Pro Tools M-Powered, Sync Source cannot be set in the Pro Tools Session Setup window.*

To select the Sync Source:

1 If Pro Tools is open, close it.

2 Choose Start > Control Panel.

3 Launch the M-Audio Control Panel as follows:
  - For FireWire interfaces, launch M-Audio FW Audio.
  - For PCI interfaces, launch M-Audio Delta Audio.

4 Launch the M-Audio Control panel.

5 Click the Hardware tab.

6 Select a Sync Source.

⚠ *Your digital input device must be connected and turned on. If your input device is not turned on, leave the Sync Source set to Internal.*

📃 *For more information on selecting the Sync Source for your M-Audio interface, refer to your M-Audio interface documentation.*

7 Click OK.

Configuring I/O Setup

Using the I/O Setup dialog, you can label Pro Tools input, output, insert, and bus *signal paths*. The I/O Setup dialog provides a graphical representation of the inputs, outputs, and signal routing of the M-Audio interface.

💡 *Pro Tools M-Powered bypasses the M-Audio mixer that is displayed in the M-Audio Control Panel. The interface's hardware inputs and outputs show up directly in Pro Tools I/O Setup.*

Pro Tools M-Powered has default I/O Setup settings that will get you started. Use the I/O Setup dialog only if you want to rename the default I/O paths.

To rename I/O paths in I/O Setup:

1 Choose Setups > I/O Setup.

I/O Setup dialog for Pro Tools M-Powered (M-Audio FireWire 1814 shown)

2 Click the Input, Output, Insert, or Bus tab to display the corresponding connections.

3 To change the name of a path or subpath, double-click directly on the Path Name, type a new name for the path, and press Return.

4 Click OK.

Refer to the Pro Tools Reference Guide (or choose Help > Pro Tools Reference Guide) for more information on renaming I/O paths.

After configuring Pro Tools M-Powered and your system, you should save an image of your system using Norton Ghost. Norton Ghost lets you save and recall known good configurations of your system and settings, which can help you recover if you encounter any problems in the future.

For more information on Ghost, visit the Symantec Web site (www.symantec.com)

Hard Drive Configuration and Maintenance

Formatting an Audio Drive

On Windows, it is recommended that you start with newly formatted drives dedicated for audio, such as a secondary hard drive purchased just for audio. For optimum performance, audio drives should be formatted with the FAT32 or NTFS file system.

To format and configure an audio drive:

1 Right-click My Computer and choose Manage.

2 Under Storage, choose Disk Management.

3 In the Disk Management window, right-click the hard drive you will use for audio and choose Format.

4 For optimal disk performance, select 32K from the Allocation unit size pull-down. This increases how efficiently audio data is written to and read from the drive.

5 Make sure the Quick Format option is deselected, then click Start, and follow the on-screen instructions.

Pro Tools only supports Basic drive Types.

6 When formatting is complete, close the Format window.

Audio Drives and Disk Cleanup

The process of recording, editing, and deleting tracks and sessions can quickly decrease overall drive performance. It is suggested that you regularly use Disk Cleanup (or an equivalent utility) to asses the condition of drives and, if necessary, delete temporary files and other unused data.

To use Disk Cleanup:

1 Choose Start > Control Panel.

2 In Classic View, launch Administrative Tools.

3 Double-click Computer Management.

4 Double-click Storage.

5 Double-click Disk Management.

6 Select the desired volume in the list, then choose File > Options.

Disk Cleanup determines how performance is being affected by drive condition, and lets you review and delete temporary and other unnecessary files from the selected volume. For more information on using Disk Cleanup, see your Windows XP documentation.

Defragmenting an Audio Drive

Periodically *defragment* audio drives to maintain system performance.

To defragment an audio drive:

1 Right-click My Computer and choose Manage.

2 Under Storage, choose Disk Defragmenter.

3 In the Disk Defragmenter window, choose the drive you want to defragment

4 Click the Defragment button and follow the on-screen instructions.

5 When defragmenting is complete, close the Computer Management Window.

Avoid Recording to System Drives

Although Pro Tools will let you record to your system drive, this is generally not recommended. Recording and playback on system hard drives results in lower track counts and fewer plug-ins. You should record to system drives only when necessary (for example, if your computer has just one hard drive).

Removing Pro Tools on Windows XP

If you need to remove Pro Tools from your computer use the Add or Remove Programs command.

To remove Pro Tools from your computer:

1 Choose Start > Control Panel.

2 Launch Add or Remove Programs.

3 From the Currently installed programs list, select Digidesign Pro Tools M-Powered.

4 Click the Change/Remove button.

5 Follow the on-screen instructions to remove Pro Tools.

Macintosh Configuration

This chapter contains information for Macintosh systems only. If you are installing Pro Tools M-Powered on a Windows computer, see Chapter 2, "Windows Configuration."

⚠ *Before installing this version of Pro Tools, please refer to the Read Me information included on the Pro Tools M-Powered Installer CD-ROM.*

Installation Overview

Installation of Pro Tools M-Powered on a Macintosh includes the following steps:

1 Configuring "Apple System Settings for Mac OS X" on page 17.

2 "Installing Your M-Audio Interface" on page 18.

3 "Installing M-Audio Drivers" on page 18.

4 "Installing Pro Tools M-Powered Software" on page 18.

5 "Launching Pro Tools M-Powered" on page 19. (This step includes inserting the pre-authorized iLok into an available USB port on your computer.)

6 "Configuring Pro Tools M-Powered" on page 19.

7 Making audio connections to the M-Audio interface. (See your M-Audio documentation for details.)

Apple System Settings for Mac OS X

To ensure optimum performance with Pro Tools M-Powered, configure the following settings before you install Pro Tools software.

⚠ *Do not use the Mac OS X automatic Software Update feature, as it may install components that have not yet been qualified for Pro Tools. For details on qualified versions of Mac OS, refer to the latest compatibility information on the Digidesign Web site (www.digidesign.com).*

To configure Mac OS X for Pro Tools M-Powered:

1 Make sure you are logged into an administrator account where you want to install Pro Tools M-Powered. For details on Administrator privileges in Mac OS X, refer to your Mac OS X documentation.

2 Choose System Preferences from the Apple Menu and click Energy Saver.

3 Click the Sleep tab and turn off the Energy Saver feature by setting the sleep feature to Never.

4 Return to the System Preferences and click Software Update.

5 Deselect "Automatically check for updates when you have a network connection."

6 Close the Software Update dialog box.

7 Proceed to "Installing Pro Tools M-Powered Software" on page 18.

Installing Your M-Audio Interface

Before you install Pro Tools M-Powered, you must first install your M-Audio interface. Connect your M-Audio interface according to the instructions that came with it.

Installing M-Audio Drivers

The Pro Tools M-Powered Installer CD-ROM includes M-Audio drivers for using Digidesign-qualified M-Audio interfaces on Macintosh.

⚠ *Pro Tools will not see your M-Audio interface if you do not install the M-Audio driver that is included with Pro Tools M-Powered.*

To install the M-Audio driver for your M-Audio interface:

1 If you are using an M-Audio FireWire interface, disconnect it before proceeding.

2 Insert the Pro Tools M-Powered Installer CD-ROM for Macintosh in your CD-ROM drive.

3 Locate and open the M-Audio Driver Installers folder, and double-click the driver for your interface type, as follows:

- For M-Audio FireWire interfaces, double-click on FireWire_OSX_1.4.3-1140.dmg.
- For M-Audio PCI interfaces, double-click on Delta_OSX_2.0.0_234.dmg.

4 Follow the on-screen instructions.

5 When installation is complete, shut down your computer.

6 If you are using an M-Audio FireWire interface, do the following:

- Once your computer has shut down completely, connect your FireWire interface and power it on.

7 Turn on your computer.

⚠ *In your M-Audio Control Panel, make sure that output channels 1 and 2 are not set to –Infinity (–∞).*

Installing Pro Tools M-Powered Software

After the Apple System software settings are configured and you have installed your M-Audio interface and drivers, you are ready to install Pro Tools M-Powered.

To install Pro Tools M-Powered on Mac OS X:

1 Make sure you are logged in as an Administrator for the account where you want to install Pro Tools. For details on Administrator privileges in Mac OS X, refer to your Apple Mac OS X documentation.

2 Insert the Pro Tools M-Powered Installer CD-ROM in your CD-ROM drive. Double-click "Install Pro Tools M-Powered."

3 Enter your Administrator password and click OK to authenticate the installation.

4 Follow the on-screen instructions to continue and accept installation.

5 In the Installer window, choose Custom Install from the pop-up menu, and click Install.

6 Follow the remaining on-screen instructions to install Pro Tools.

7 When installation is complete, click Restart.

Audio MIDI Setup (AMS)

(Optional)

If you plan to use any MIDI devices with Pro Tools, configure your MIDI setup with the Apple Audio MIDI Setup (AMS) utility. See Appendix C, "Configuring AMS (Mac OS X Only)" for details.

Optional Software on the Pro Tools M-Powered Installer CD-ROM

Your Pro Tools M-Powered Installer CD-ROM includes several software options.

Pro Tools Demo Session

The Pro Tools M-Powered Installer CD-ROM includes a demo session that you can use to verify that your system is working.

To install the demo session:

1 Insert the Pro Tools M-Powered Installer CD in your CD-ROM drive. Locate and double-click the Pro Tools M-Powered Demo installer icon.

2 Select your audio drive as the install location and click Install.

3 When installation is complete, click Quit.

Launching Pro Tools M-Powered

To use Pro Tools M-Powered with an M-Audio interface, you must always have an iLok with an authorization for Pro Tools M-Powered. One pre-authorized iLok is included with the M-Powered package.

To authorize Pro Tools M-Powered software:

1 Insert the pre-authorized iLok into an available USB port on your computer.

2 Click the Pro Tools M-Powered shortcut in your Dock, (or the application in Applications\ Digidesign\Pro Tools).

⚠ *Do not remove the iLok during Pro Tools launch or use.*

Configuring Pro Tools M-Powered

Pro Tools System Settings

Pro Tools allows you to adjust the performance of your system by changing *system settings* that affect its capacity for processing, playback, and recording.

In most cases, the default settings for your system provide optimum performance, but you may want to adjust them to accommodate large or processing-intensive Pro Tools sessions.

Hardware Buffer Size

The Hardware Buffer Size (H/W Buffer Size) controls the size of the hardware cache used to handle host processing tasks such as Real-Time AudioSuite (RTAS) plug-ins. he H/W Buffer setting can also be used to manage monitoring latency.

◆ Lower Hardware Buffer Size settings reduce monitoring latency, and are useful when you are recording live input.

◆ Higher Hardware Buffer Size settings allow for more audio processing and effects, and are useful when you are using larger mixer configurations or more RTAS plug-ins on your system.

⚠ *In addition to causing slower screen response and monitoring latency, higher Hardware Buffer Size settings can affect the accuracy of plug-in automation, mute data, and timing for MIDI tracks.*

To change the Hardware Buffer Size:

1 Choose Setups > Playback Engine.

2 From the H/W Buffer Size pop-up menu, select the audio buffer size, in samples.

3 Click OK.

Playback Engine dialog for Pro Tools M-Powered (M-Audio FireWire 1814 shown)

CPU Usage Limit

The CPU Usage Limit controls the percentage of CPU resources allocated to Pro Tools host processing tasks such as Real-Time AudioSuite (RTAS) plug-ins, as follows:

◆ Lower CPU usage settings reduce how much Pro Tools processing affects other CPU-intensive tasks (such as screen redraws), and limit the amount of processor resources available for Pro Tools tasks. They are useful when you are experiencing slow system response, or when running other applications at the same time as Pro Tools.

◆ Higher CPU Usage Limit settings allocate more processing power to Pro Tools, and are useful for playing back large sessions or using more real-time plug-ins.

⚠ *Increasing the CPU Usage Limit may slow down screen response on slower computers.*

◆ The maximum CPU Usage Limit is 85 percent for single-processor computers, and 99 percent for multi-processor computers. (The 99 percent setting dedicates one entire processor to Pro Tools.)

To change the CPU Usage Limit:

1 Choose Setups > Playback Engine.

2 From the CPU Usage Limit pop-up menu, select the percentage of CPU processing you want to allocate to Pro Tools.

3 Click OK.

DAE Playback Buffer Size

The DAE Playback Buffer Size determines the amount of memory DAE uses to manage disk buffers, which affects system performance.

◆ Lower DAE Playback Buffer Size settings can improve playback and recording initiation speed. However, a lower setting can make it difficult for slower hard drives to play or record tracks reliably.

◆ Higher DAE Playback Buffer Size settings can allow for a higher density of edits in a session. However, a higher setting can cause a time lag to occur before playback or recording begins. It can also cause a time lag to occur when you are editing during playback.

To change the DAE Playback Buffer Size:

1 Choose Setups > Playback Engine.

2 From the DAE Playback Buffer pop-up menu, select a buffer size.

3 Click OK.

Pro Tools Hardware Settings and M-Audio Control Panel

The Hardware Setup dialog in Pro Tools (Setups > Hardware Setup) displays the name of your M-Audio peripheral. The dialog also displays a message, which tells you that various hardware functions can be changed in the M-Audio Control Panel.

Using the M-Audio Control Panel, you can change settings in the following areas:

- Mixer Settings
- Output Settings
- Hardware Settings (including sample rate, hardware buffer size, and sync source).

♡ You can change the sample rate when creating a new Pro Tools session by selecting a different sample rate in the New Session dialog. (Refer to the Pro Tools Reference Guide for details.)

⚠ *Pro Tools M-Powered does not support the M-Audio Control Panel low latency monitor feature.*

To change M-Audio Control Panel settings:

1 If Pro Tools M-Powered is open, close it.

2 In the Applications folder, locate and launch the M-Audio Control Panel as follows:

- For FireWire interfaces, launch M-Audio FW.
- For PCI interfaces, launch M-Audio Delta Control Panel.

3 To change settings in the M-Audio Control Panel, refer to the documentation that came with your M-Audio interface.

4 When finished, close the M-Audio Control Panel.

Sync Source (Pro Tools Clock Source)

If your M-Audio interface has a digital I/O (such as a S/PDIF I/O), use the M-Audio Control Panel to select the Sync Source for the system.

⚠ *With Pro Tools M-Powered, Sync Source cannot be set in the Pro Tools Session Setup window.*

To select the Sync Source:

1 If Pro Tools is open, close it.

2 In the Applications folder, locate and launch the M-Audio Control Panel, as follows:

- For FireWire interfaces, launch M-Audio FW.
- For PCI interfaces, launch M-Audio Delta Control Panel.

3 Click the Hardware tab.

4 Select a Sync Source.

⚠ *Your digital input device must be connected and turned on. If your input device is not turned on, leave the Sync Source set to Internal.*

▤ *For more information on selecting the Sync Source for your M-Audio interface, refer to your M-Audio interface documentation.*

5 When finished, close the M-Audio Control Panel.

Configuring I/O Setup

Using the I/O Setup dialog, you can label Pro Tools input, output, insert, and bus *signal paths*. The I/O Setup dialog provides a graphical representation of the inputs, outputs, and signal routing of the M-Audio interface.

♡ *Pro Tools M-Powered bypasses the M-Audio mixer that is displayed in the M-Audio Control Panel. The interface's hardware inputs and outputs show up directly in Pro Tools I/O Setup.*

Pro Tools M-Powered has default I/O Setup settings that will get you started. Use the I/O Setup dialog only if you want to rename the default I/O paths.

To rename I/O paths in I/O Setup:

1 Choose Setups > I/O Setups.
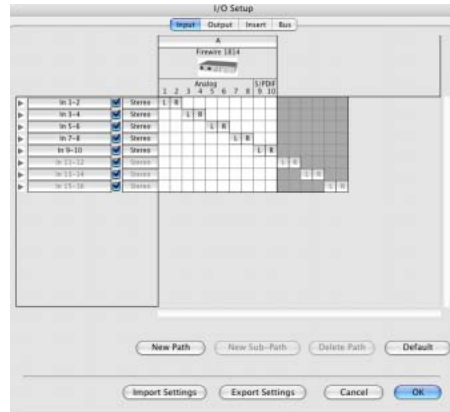
I/O Setup dialog for Pro Tools M-Powered (M-Audio FireWire 1814 shown)

2 Click the Input, Output, Insert, or Bus tab to display the corresponding connections.

3 To change the name of a path or subpath, double-click directly on the Path Name, type a new name for the path, and press Return.

4 Click OK.

▤ *Refer to the Pro Tools Reference Guide for more information on renaming I/O paths.*

Hard Drive Configuration and Maintenance

It is recommended that you start with a newly initialized audio drive. You should also periodically defragment your audio drive to ensure continued system performance.

If you are using an ATA/IDE or FireWire hard drive, initialize your drive with the utility named *Disk Utility* included with your Apple System software.

Avoid Recording to System Drives

Although Pro Tools will let you record to your system drive, this is generally not recommended. Recording and playback on system drives results in lower track counts and fewer plug-ins. You should record to system drives only when necessary—for example, if your computer system has just one hard drive.

Removing Pro Tools on Mac OS X

If you need to remove Pro Tools from your computer, you can use the Installer CD-ROM or the downloaded Installer file.

To remove Pro Tools from your computer:

1 Make sure you are logged in as an Administrator for the account where Pro Tools is installed. For details on Administrator privileges in Mac OS X, refer to your Apple OS X documentation.

2 Insert the Pro Tools M-Powered Installer CD-ROM in your CD-ROM drive. Double-click "Install Pro Tools M-Powered."

3 Enter your Administrator password and click OK.

4 In the Installer window, choose Uninstall from the pop-up menu, and click Uninstall.

5 Follow the on-screen instructions to remove Pro Tools.

6 When finished, click Quit to close the Installer window.

chapter 4

Working with Pro Tools M-Powered

This tutorial of Pro Tools M-Powered software introduces its main windows and features, and also includes a step-by-step overview of audio recording (see "Basic Recording" on page 37).

All features described in this chapter are explained fully in the *Pro Tools Reference Guide*.

You can view an electronic PDF version of the *Reference Guide* by choosing it from the Pro Tools Help menu.

Session Basics

Pro Tools M-Powered projects are created and saved as *sessions*. Sessions store all tracks, audio, MIDI, and other session information. Audio and fade files are stored in folders within the session folder.
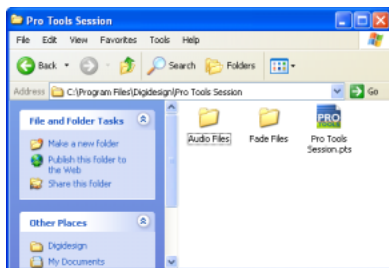
Session file, Audio Files and Fade Files folders

Starting a Session

To create a new session:

1 Launch Pro Tools M-Powered.

2 Choose File > New Session.

3 In the New Session dialog, set the sample rate, bit depth, and other options for the new session.
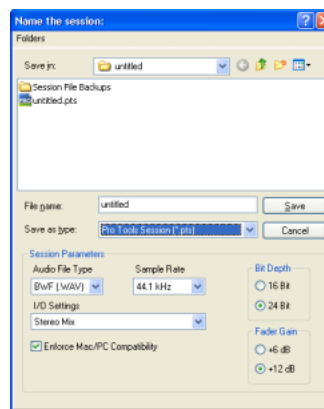
New Session dialog

4 Select where you want to save your session. If you are using external hard drives with your Pro Tools system, make sure you select the appropriate drive in the New Session dialog.

5 Type a name for your session.

6 Click Save. The new session opens its Mix, Edit, and Transport windows (see Figure 1 on page 26).

Main Windows

The Mix, Edit, and Transport windows are the main Pro Tools work areas. You can show any of these windows by choosing them from the Windows menu.

🔲 *Press Control+Equals (=) in Windows or Command+Equals (=) on Macintosh to switch between the Edit and Mix windows.*

Mix Window Displays the Pro Tools mixer, with its familiar fader strip controls for volume, pan, solo, mute, and signal routing.

Edit Window Displays tracks in the session along the Timeline, for editing of audio, MIDI, and automation data.

Transport Provides standard transport controls for Play, Stop, Rewind, Fast-Forward, Pause, and Record. The Transport window can also show Counter and MIDI Control displays.

Workspace The Workspace browser is a Digi-Base feature for managing files and auditioning audio files. For more information see the *Digi-Base Guide*.

Rulers

Pro Tools provides several different rulers to select as the timebase for your session.

Timebase Rulers, displayed along the top of the Edit window, include *Bars:Beats*, *Minutes:Seconds*, and *Samples*. The current timebase determines the format of the Main counter, and provides the basis for the Edit window Grid.

To select a Timebase Ruler:

■ Click the name of the ruler at the top left side of the Edit window (Bars:Beats, Minutes:Seconds, or Samples).
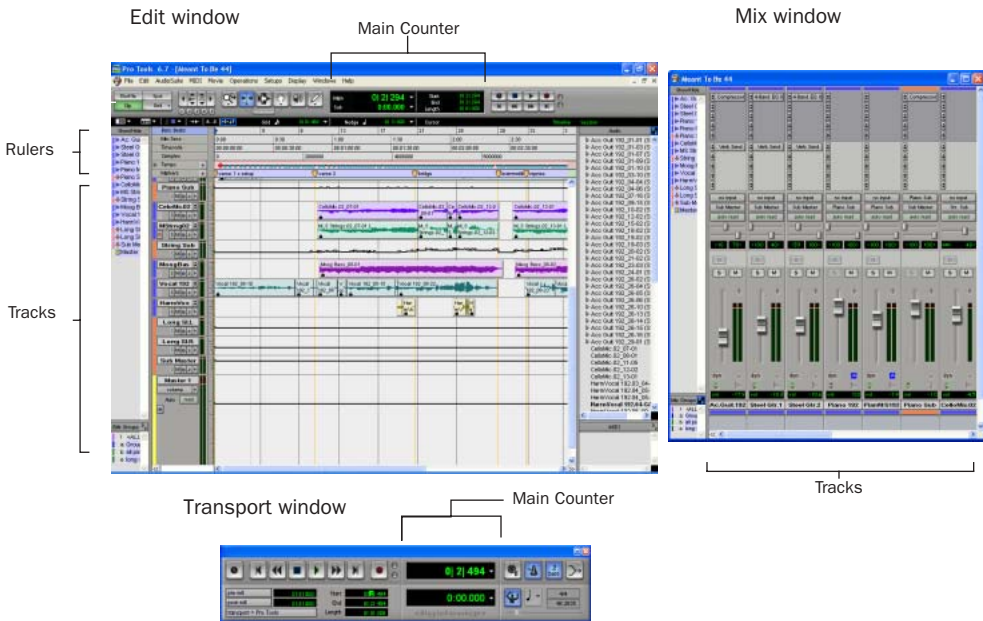
Figure 1. Main session windows

Setting a Tempo

You can set the tempo for your session by using the Song Start Marker, located in the Tempo Ruler.

To set the session tempo with the Song Start Marker:

1 In the Tempo Ruler, double-click the Song Start Marker.
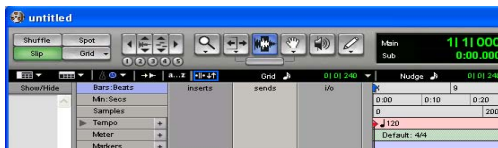
Song Start marker

2 In the Tempo Change dialog, enter the BPM (beats per minute) value you will use for the session (so the inserted tempo event replaces the default tempo).

Change Tempo dialog

3 To base the BPM value on a different note value (such as an eighth-note rather than the default quarter-note), select a note value in the Resolution section.

4 Click OK.

Using the Click Plug-In

The Click plug-in creates an audio click during session playback. This works like a metronome that you can use as a tempo reference when performing and recording.

The Click plug-in is synchronized to the tempo and meter of the Pro Tools session, and follows any changes in tempo and meter.

The Click plug-in is one of many plug-ins that can be inserted on a Pro Tools track. See "Plug-Ins" on page 45.
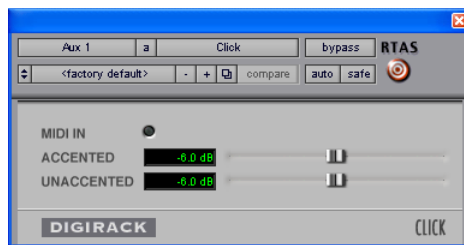
Click plug-in

Click Parameters

MIDI In LED Illuminates each time the Click plug-in receives a click message from the Pro Tools application, indicating the tempo.

Accented Controls the output level of the accent beat (beat 1 of each bar) of the audio click.

Unaccented Controls the output level of the unaccented beats of the audio click.

To use the Click plug-in:

1 Choose MIDI > Click to enable the Click option.

– or –

Select the Click button in the Transport window.

Click button
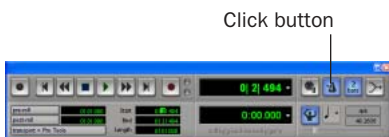
Click and Tempo Controls in the Transport window

2 Create a mono Auxiliary Input (Aux Input) track.

3 Insert a Click plug-in on the Auxiliary Input track.

4 In the Click plug-in window, choose a click sound from the Librarian pop-up menu (this menu displays "factory default" when you first insert the plug-in).

5 Choose MIDI > Click Options and set the Click and Countoff options as desired. (Click OK to apply these options.)

⚠ *The Note, Velocity, Duration, and Output options in this dialog are for use with MIDI instrument-based clicks and do not affect the Click plug-in.*

▤ *Refer to the Pro Tools Reference Guide for more information on configuring Click options.*

6 Begin playback. A click is generated according to the tempo and meter of the current session and the settings in the Click Options dialog.

Using an External MIDI Click

Pro Tools also provides a MIDI Click option that lets you use an external MIDI device to play a click. This feature can be turned on and off in the Transport window, and is configured from the MIDI Click Options dialog.

To configure and enable an external MIDI click:

1 Choose MIDI > Click Options.
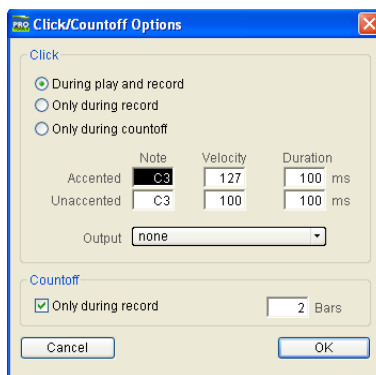
Click/Countoff Options dialog

2 Configure the click parameters as needed for your MIDI sound source.

⚠ *See Appendix B, "Configuring Midi Studio Setup (Windows Only)" or Appendix C, "Configuring AMS (Mac OS X Only)." for detailed information on how to identify external MIDI devices connected to your MIDI interface and configure your MIDI studio for use with Pro Tools.*

3 Select the desired MIDI sound source from the Output pop-up menu and click OK.

4 During recording or playback, you can turn the Click on or off with the Click button in the MIDI Controls display of the Transport window.

Click button
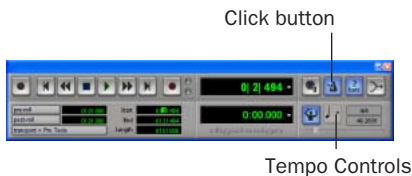
Tempo Controls

Click and Tempo Controls in the Transport window

Saving Sessions

As you build a session by adding tracks and changing session controls, you will want to save your work. Pro Tools provides three ways to save sessions.

To save a session:

■ Choose File > Save Session, Save Session As, or Save a Session Copy In.

Save Session Saves the currently open session file, leaving it open for you to continue working.

Save Session As Creates a duplicate session file with the name you choose, and leaves the duplicate open for you to continue working. It does not create a new Audio Files or Fade Files folder. This can be useful if you want to experiment with different arrangements in the session without affecting the original session.

Save Session Copy In Saves copies of the session file and the files that you are using in the current session. This can be useful for creating a final copy of the session that does not include audio files or fades you are no longer using.

System Resources and Settings

You can change specific Pro Tools system settings to optimize system performance.

Playback Engine Dialog

The Playback Engine dialog lets you adjust system buffer sizes and allocate CPU processing power to Pro Tools.

To configure system resources:

■ Choose Setups > Playback Engine.

📋 *For Windows systems, see Chapter 2, "Windows Configuration." For Macintosh systems, see Chapter 3, "Macintosh Configuration."*

System Usage Window

The System Usage window displays approximate information on CPU load, DSP usage, and (on Macintosh systems only) overall disk performance, so you can gauge your system's processing capacity.
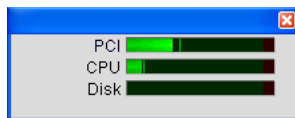
Meters in the System Usage window

To view system resources and usage:

■ Choose Windows > Show System Usage.

Transport Controls

The Transport window provides access to all Pro Tools transport commands. Different transport controls can be displayed or hidden in this window.

To show the Transport window:

■ Choose Window > Show Transport Window.
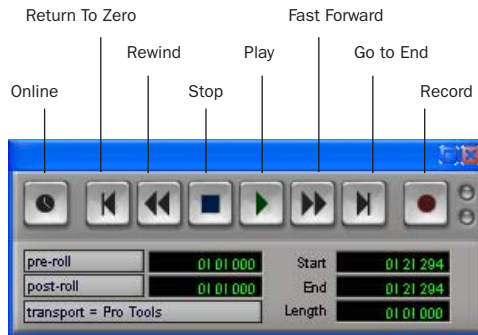
Transport window (Expanded view shown)

To configure the Transport window:

■ Choose Display > Transport Window Shows and select view options.

The Transport window provides Play, Stop, and other standard transport controls.

The Expanded view of the Transport window provides pre- and post-roll, start, end, and length indicators for Timeline selection, as well as the Transport Master selector.

The Transport window can also display a Master Counter, as well as the following MIDI controls: Wait for Note, Click, Countoff, MIDI Merge, Conductor, Meter, and Tempo.
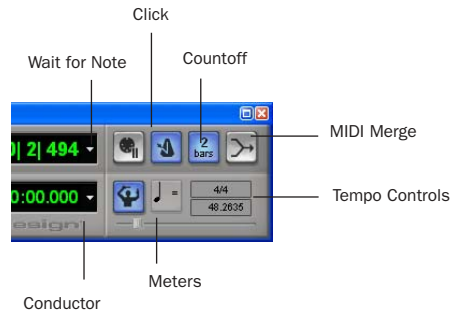
Transport window (MIDI Controls)

To start and stop playback:

1 Click Play in the Transport window to begin playback.

2 Click Stop in the Transport window to stop playback.

⇧ *Press the Spacebar on your computer keyboard to start and stop playback.*

💡 *Pro Tools starts playing from the location of the cursor, or from the beginning of the current selection. The current setting of the Link Edit and Timeline Selection command in the Operations menu also affects playback. See the Pro Tools Reference Guide for more information.*

Tracks

Pro Tools lets you create audio and MIDI tracks for audio and MIDI recording, submixing, routing, automating, and editing.

Pro Tools provides four types of tracks: audio tracks, Auxiliary Inputs, Master Faders, and MIDI tracks. Audio tracks, Auxiliary Inputs, and Master Faders can be mono or stereo.

Audio Tracks Record and play back audio to and from hard disk, monitor audio input when record-enabled, and edit audio regions

Auxiliary Inputs Audio mixer channels, used for input, routing, and submixing

Master Faders Provide master channel controls and options for any output or bus path

MIDI Tracks Record, play back, and edit MIDI data

To create a new track:

1 Choose File > New Track.
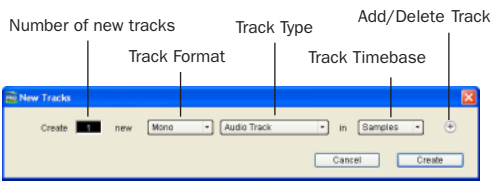
New Track dialog

2 Specify the number of tracks, track type, and mono or stereo track format (for all track types except MIDI).

3 To create multiple new track types in one step, click the "+" button in the New Tracks dialog. Specify the number of tracks, track type, and track format for each additional row of new tracks you want to create.

4 Click Create.

In the Mix window, audio tracks, Auxiliary Inputs, Master Faders, and MIDI tracks appear as vertical channel strips.

Track type is indicated by the Track Type icons just below the faders.

Tracks in the Mix window

Track colors are assigned based on track type (audio, Aux Input, Master Fader, or MIDI tracks). You can customize the color of tracks by clicking the color bar of each track, and choosing its color from the color palette that appears.

When the cursor is placed over the color bar at the top of a track, the track name is displayed in a tool tip

In the Edit window, tracks are displayed horizontally along the Timeline. The area in which audio appears for each track is the Playlist.
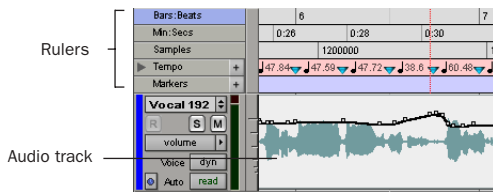
Timeline Rulers and a stereo audio track in the Edit window

Audio tracks, Auxiliary Inputs, Master Faders, and MIDI tracks can be automated.
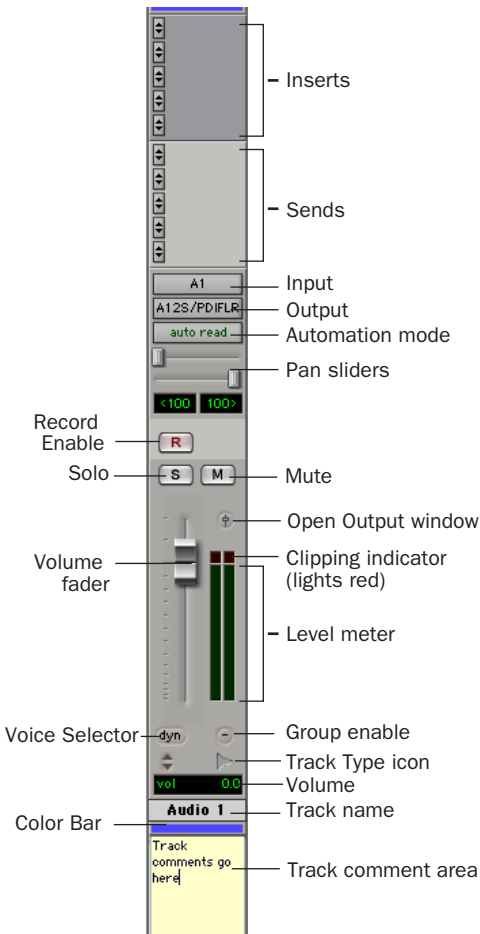
Figure 2. Stereo audio track in the Mix window

Audio Tracks

Audio tracks, Auxiliary Inputs, and Master Faders share many identical controls. Master Faders provide all the same features as audio tracks and Auxiliary Inputs, with the following exceptions:

Input Selector A Master Fader's output assignment determines its input, or source (always outputs 1–2).

Inserts Inserts on Master Faders are post-fader only. (Audio track and Aux input track inserts are all pre-fader.)

Sends Master Faders do not provide sends. To send an output to another destination, use an Auxiliary Input.

MIDI Tracks

MIDI tracks provide volume, solo, and mute, in addition to MIDI input, output, channel, and program (patch) controls. MIDI volume, mute, and pan can also be automated using Pro Tools automation features (see "Mix Automation" on page 46 for more information).

Regions Lists

A region is a piece of audio or MIDI data that can also have associated automation data. For example, a region could be a loop, a guitar riff, a verse of a song, a sound effect, a piece of dialog, or an entire sound file. In Pro Tools, regions are created from audio or MIDI files, and can be arranged in audio and MIDI track playlists.

All regions that are recorded, imported, or created by editing appear in the Audio and MIDI Regions Lists. Regions can be dragged from either list to tracks and arranged in any order. Audio regions can also be auditioned from the Re-

gions Lists by Option-clicking the audio region name. The Regions List pop-up menus provide features for managing regions and files (such as sorting, selecting, importing, or exporting files).

Drag border to resize width of Regions Lists

Click Audio Regions for pop-up menus

Drag border to resize height of Regions Lists

Click MIDI Regions for pop-up menus

Click to hide Regions Lists

Audio and MIDI Regions Lists
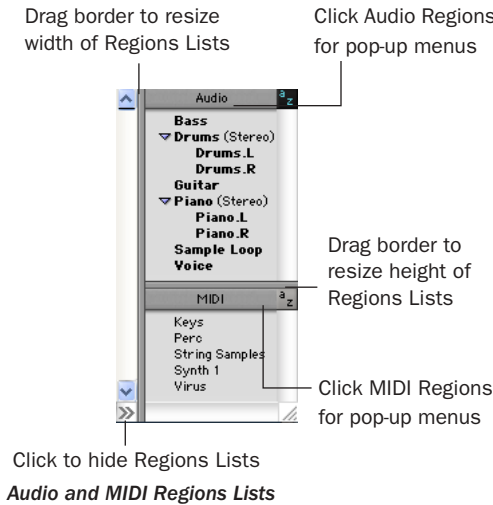
📖 *For more information on Regions Lists, refer to the Pro Tools Reference Guide or the DigiBase Guide.*

Navigating in a Session

Pro Tools provides many ways to navigate in a session, including using the mouse or entering a memory location into one of the counters.

To navigate to a location in the Edit window:

1 In the Operations menu, make sure Link Edit and Timeline Selection option is enabled.

2 Enable the Selector tool at the top of the Edit window by clicking it.

Selector tool

Edit tools in Edit window

3 Click in a track or Timebase Ruler. The cursor appears at the selected location and the counters display the current time location.

Click in a track or on a Timebase Ruler
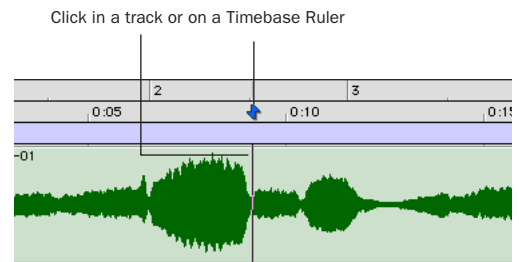
Clicking with the Selector in the Edit window

To navigate using the counters:

1 Click in the Main counter and enter a location using your computer keyboard.

2 Press Enter (Windows) or Return (Macintosh).

Navigating with the Counter

🔲 *Press the * (asterisk) key on the numeric keypad as an alternative to clicking in the counter. (The cursor will always appear in the Transport window's Main Counter if it is displayed.)*

Memory Locations

Memory Locations provide another way to navigate within sessions. Memory Locations appear as markers under the Timebase Rulers.

To define a memory location:

1 Do one of the following:

- Navigate to the location at which you want to store a marker or memory location.

– or –

- Begin playback.

2 Create a memory location by doing one of the following:

- Press Enter on the numeric keypad

💡 *On some Windows laptops, you can press Fn+Enter to create a memory location. This is especially useful for laptops that do not have a numeric keypad.*

– or –

- Click the Marker Well ("+") button, located to the left of the Markers Ruler.

Marker Well button

Song Start marker

In the New Memory Location window, you can define a marker, store a selection, or store any combination of the other available settings. These settings include track height, group enables, pre- and post-roll values, and track Show/Hide status.

3 Choose settings for the memory location and click OK.
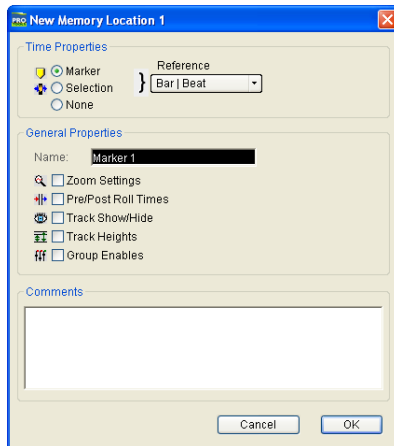
New Memory Location window

To go to a stored memory location:

1 Choose Windows > Show Memory Locations.

2 In the Memory Locations window, click the name of the memory location.

Viewing and Zooming

When viewing tracks in the Edit window, you can adjust the height of tracks as well as zoom in vertically and horizontally using the Track Height selector and Zoom tools.

Zoom buttons

Zoom presets

Zoomer

Track Height Selector
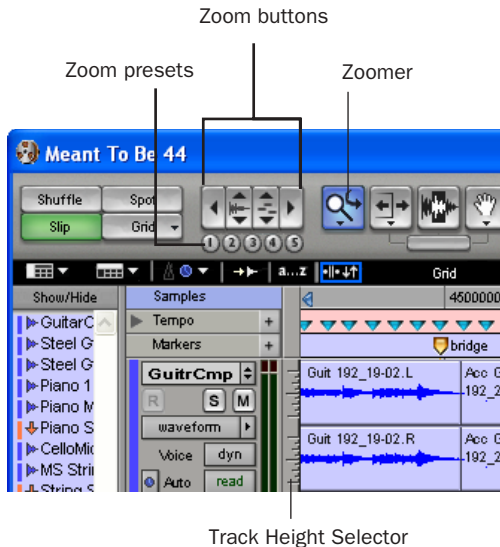
Zoom and Track Height tools in the Edit window

To change track height:

■ Click the Track Height Selector, and select a track height from the pop-up menu.

💡 *You can apply many commands, including track height selection, to more than just a single track. Hold down the Alt key (Windows) or Option key (Macintosh) while performing an operation to apply it to all tracks. Hold down both the Shift and Alt keys (Windows) or Shift and Option keys (Macintosh) while performing an operation to apply it to all selected tracks.*

To zoom in or out on any area of a track in the Edit window:

1 Click to select the Zoomer.

2 Click or drag with the Zoomer to zoom in horizontally for a track or Ruler.

– or –

Press Alt (Windows) or Option (Macintosh) and click with the Zoomer to zoom out horizontally for a track or Ruler.

To zoom in or out incrementally:

■ In Pro Tools, click the appropriate Zoom button:

- Left Arrow (Horizontal Zoom Out)
- Right Arrow (Horizontal Zoom In)
- Waveform and MIDI buttons, to increase or decrease vertical zoom of the appropriate track type (audio or MIDI)

Pro Tools also provides five Zoom preset buttons. You can use these to immediately return to established zoom levels; you can define the magnification level for each preset, on a session-by-session basis.

To use a stored Zoom preset:

■ Click the appropriate Zoom preset 1–5.

To store a new Zoom preset definition:

■ Command-click a Zoom preset number to store the current horizontal and vertical Zoom to that preset.

Using Memory Locations for Zoom Control

Pro Tools Memory Locations let you store many attributes with each marker or memory location, including Track Height and Zoom Settings. By creating Memory Locations that are neither

Markers nor Selections, but have Track Height, Zoom Settings, or other options enabled, you can use Memory Locations to zoom in and out using just the numeric keypad.

📄 *For more information on creating memory locations, see "Memory Locations" on page 34.*

Importing Audio

Pro Tools lets you import existing audio files from disk. This is very useful if you have audio files already recorded to disk or if you are working with CD-based sample libraries that you want to use in a new session.

To import audio files or regions from disk:

■ Choose File > Import Audio to Track to import files and regions to new audio tracks (they will also appear as regions in the Audio Regions List).

– or –

■ Choose Import Audio from the Audio Regions List pop-up menu to import files and regions to the Audio Regions List only.

📄 *For more information on importing audio into sessions, refer to the Pro Tools Reference Guide.*

To import a CD audio track:

1 Put the source CD into your computer's CD drive.

2 Use a third party software program of your choice to extract audio from the CD.

3 In the session, create a new track by choosing File > New Track.
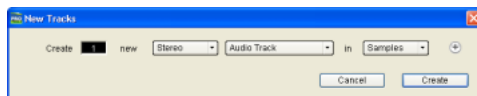
Creating a new stereo audio track

4 In the New Track dialog, specify 1 Stereo Audio Track, and click Create.

5 Open the Workspace Browser by choosing Windows > Show Workspace. The Workspace Browser is a window where you can find, audition, and manage your audio files.
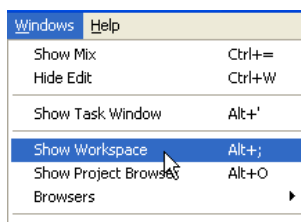
Opening the Workspace Browser

6 In the Workspace Browser, navigate to the location where you saved the audio you extracted from your CD in step 2.
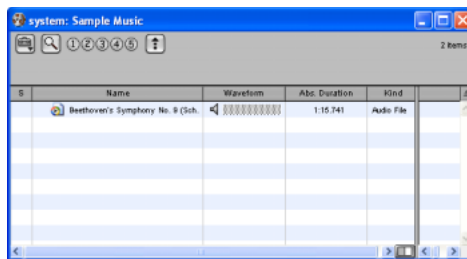
Browsing in the Workspace Browser

💡 *You can audition the audio file by clicking on its name in the Workspace Browser and pressing the Spacebar. To stop the audition, press the Spacebar again.*

7 Drag the audio file from the Workspace Browser to the audio track you created in your session.
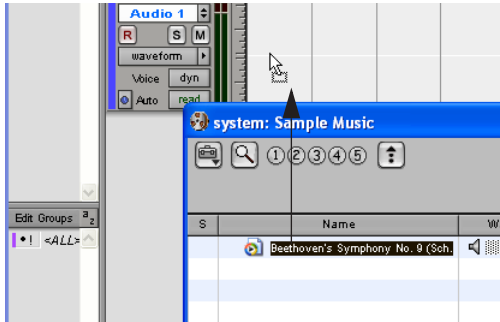
Dragging the audio file from the Workspace Browser to an audio track

> 💡 *If you are running Pro Tools on Mac OS X, you can import audio from a CD by using the Movie > Import Audio From Other Movie command. For more information, see the Pro Tools Reference Guide.*

> 💡 *DigiBase provides additional options for importing audio. See the DigiBase Guide for more information.*

Basic Recording

This section describes how to record audio and MIDI into Pro Tools.

Preparing for Recording

To prepare an audio track for recording:

1 Verify the connections to your instruments.

> 📄 *For more information about connecting instruments, refer to your M-Audio documentation.*

2 Create a new track to record on by choosing File > New Track. Specify 1 Mono Audio Track and click Create.

3 In the Mix window, click the Input Selector on the new track.
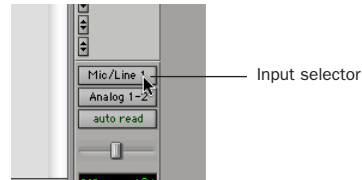
Choosing an input in the Mix window

4 From the pop-up menu, select the interface input you want to record. For example, select Mic/Line 1 if your audio source is plugged into the first jack of an M-Audio interface.
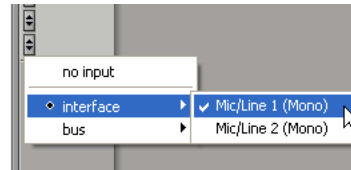
Routing an input to a mono track

5 Use the Gain controls on your M-Audio interface (if any) to maximize the signal going into Pro Tools while avoiding clipping.

> ⚠ *Clipping occurs when you feed a signal to an audio device that is louder than the circuitry can accept. To avoid clipping, adjust the Gain control to a level where the Peak LEDs on the front of an M-Audio interface do not flash. You can also attenuate the signal at its source.*

Recording an Audio Track

To record an audio track:

1 Assign the input for a track and set its input levels appropriately.

2 Click the Record Enable button for a track. (See Figure 2 on page 32).

3 Choose Windows > Show Transport to display the Transport window.

Transport window (Expanded view shown)

4 Click Return To Zero to start recording from the beginning of the session. You can also record according to a selection or from the cursor location in the Edit window.

5 Click Record in the Transport window to enable recording.

6 Click Play or press the Spacebar to record on all record-enabled tracks.

7 Record your performance.

8 Click Stop in the Transport window or press the Spacebar when you are finished recording.

To play back a recorded track:

1 Click the track's Record Enable button a second time to take it out of Record mode.

2 Click Play in the Transport window or press the Spacebar to start playback.

3 Click Stop in the Transport window or press the Spacebar to stop playback.

Recording MIDI

To configure a MIDI track for recording:

1 For Macintosh systems, choose MIDI > Input Devices and make sure your input device is selected in the MIDI Input Enable window. Click OK to apply your changes.

2 Choose File > New Track and specify 1 MIDI Track, then click Create.

3 In the Mix window, click the track's MIDI Output Selector and choose the destination (assignment) for that MIDI track by choosing a MIDI interface port, a channel, or a device from the pop-up menu. Choices vary depending on the operating system, Pro Tools version, and the hardware and instruments you have connected.
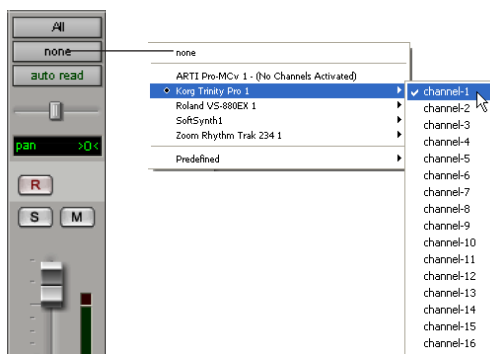
MIDI Output Selector

4 You can assign a default program change to the track by clicking on the Program button in the Mix window and making the necessary selections for program and bank select, and then clicking Done. Default program changes are sent when playing a track.

5 In the Mix Window, record-enable the MIDI track.

6 Make sure MIDI > MIDI Thru is selected, then play some notes on your MIDI controller. The MIDI instrument assigned to the track should sound, and the track's meters should register MIDI activity.

To record onto a MIDI track:

1 Verify that the MIDI track you want to record to is record-enabled and receiving MIDI.

2 In the Transport window, click Return To Zero to start recording from the beginning of the session. You can also record according to a selection or from the cursor location in the Edit window.

3 Click Record in the Transport window.

4 Click Play in the Transport window or press the Spacebar to begin recording.

   – or –

If using Wait for Note, the Play, Record, and Wait for Note buttons flash. Recording begins when the first MIDI event is received.

   – or –

If using Countoff, click Play. The Record and Play buttons flash during the Countoff, then recording begins.

5 Play your MIDI instrument.

6 When you have finished recording, click Stop in the Transport window, or press the Spacebar. The newly recorded MIDI data appears as a MIDI region on the track in the Edit window, as well as in the MIDI Regions List.

To play back a recorded MIDI track:

1 Click the Record Enable button to take the MIDI track out of Record mode.

2 In the Transport window, click Return To Zero to play back from the beginning of the track. You can also play back according to a selection or from the cursor location in the Edit window.

3 Click Play in the Transport window to begin playback. The recorded MIDI data plays back through the track's assigned instrument and channel.

Monitoring MIDI Instruments Without a Mixer

To monitor your MIDI instrument's analog output, you can use an Auxiliary Input. Auxiliary Inputs function as inputs for both internally bussed signals and external audio sources.

To configure an Auxiliary Input for MIDI monitoring:

1 Connect the MIDI instrument's audio output to the appropriate inputs on your M-Audio interface.

2 Choose File > New Track and specify 1 mono or stereo Auxiliary Input, then click Create.

3 Click the Input selector of the Auxiliary Input channel and choose the input to which your MIDI instrument is connected.

4 Adjust the level of the Auxiliary Input with its volume fader.

Editing

Pro Tools provides several tools for editing audio and MIDI. In the Edit window, audio and MIDI tracks can be edited into regions or repeated in different locations, to create loops, re-arrange sections or entire songs, or to assemble tracks using material from multiple takes.

Edit modes and tools (Slip mode, Smart Tool enabled)

Audio and MIDI editing are typically used to:

- Fix or replace mistakes
- Re-arrange songs and projects
- Clean up track timing and rhythm by aligning hits to Grid values like bars and beats
- Create final tracks using selections from multiple takes (also known as *comp tracks*).

Edit Modes

Pro Tools has four Edit modes: Shuffle, Spot, Slip, and Grid. The Edit mode is selected by clicking the corresponding button in the upper left of the Edit window.

Edit mode buttons

▣ *Press F1 (Shuffle), F2 (Slip), F3 (Spot), and F4 (Grid) to set the Edit mode.*

The Edit mode affects the movement and placement of audio and MIDI regions (and individual MIDI notes), how commands like Copy and Paste function, and also how the various edit tools (Trimmer, Selector, Grabber, and Pencil) work.

▤ *For detailed descriptions of Edit modes, refer to the Pro Tools Reference Guide.*

Edit Tools

Pro Tools has seven Edit tools: Zoomer, Trimmer, Selector, Grabber, Scrubber, Pencil, and Smart Tool. Select an Edit tool by clicking it in the Edit window. The Zoomer, Trimmer, Grabber, and Pencil tools have multiple modes, which you can select from a pop-up menu when you click the tool.
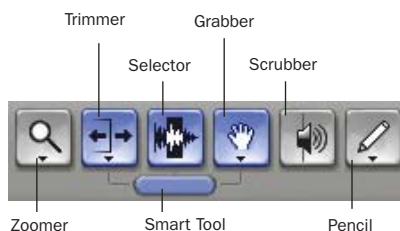
Edit tools in Edit window

▣ *Press the Escape key to toggle through the Edit tools.*

▤ *For detailed descriptions of the Edit Tools, refer to the Pro Tools Reference Guide.*

Editing Regions

The Edit tools in Pro Tools are used to edit regions in the Edit window.
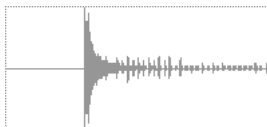
Audio region

Trimming Regions

After recording an audio track, you will have an audio region on that track. If there is some silence at the beginning of the region, or there is some extra audio at the end of the region, you can use the Trimmer tool in Slip mode to shorten the beginning or end of the region.

Audio region on a track

To trim an audio region:

1 Select Slip mode.

2 Select the Trimmer tool.

3 Move the cursor near the beginning of the audio region (notice the cursor displays as a "["").

Trimming the beginning of a region

4 Click at the beginning of the region and drag right to shorten the region.

5 Move the cursor near the end of the audio region (notice the cursor displays as a "]").

Trimming the end of a region

6 Click at the end of the region and drag left to shorten the region.

The trimmed region

You can also extend a region using the Trimmer tool if there is audio data beyond the current boundaries of the region. If extending the region's beginning, drag to the left; if extending the region's end, drag to the right.

Arranging Regions

There are many ways to edit and arrange regions; the following example demonstrates how you might create and arrange a drum loop to compose a rhythm track.

To create and arrange a rhythm sequence:

1 Open or create a session in Pro Tools.

2 Specify the session meter (MIDI > Change Meter) and tempo (MIDI > Change Tempo).

3 Select Grid mode.

4 Prepare to record using a MIDI click (see "Using the Click Plug-In" on page 27 or "Using an External MIDI Click" on page 28).

5 Record a drum track (see "Recording an Audio Track" on page 37) keeping in mind that you want to use only the best bar (measure). Your recording should fit the grid at the specified tempo and meter.

– or –

Import an existing audio file, such as a drum loop from a sample library, and place it on an audio track (see "Importing Audio" on page 36).

**6** Click the Selector tool, and drag on the waveform with the Selector to make a one-bar selection. Note that the selection snaps to the specified grid.
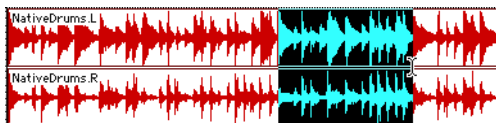
Making a selection in Grid mode

7 Create a new audio track (File > New Track).

8 From the Grabber pop-up menu, select the Separation Grabber tool.

9 With the Separation Grabber tool, drag the selection to the beginning of the new audio track. A new region is created and appears at the beginning of the new track.
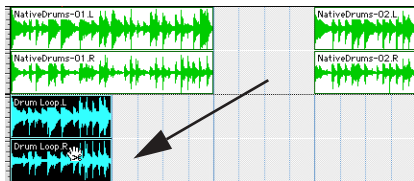
Dragging a selection with the Separation Grabber tool

10 With the new region still selected, choose Edit > Repeat.
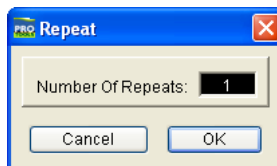
Repeat dialog

11 In the Repeat dialog, enter a number of repeats, and click OK.

You now have a new rhythm track with a "looped" (repeated) phrase. You can use these editing tools to do much more advanced and involved editing of regions. For example, you could separate beats or "hits" into individual regions and rearrange them in Grid or Shuffle mode as a way of coming up with new and interesting rhythms.

Playlists and Nondestructive Editing

Playlists let you create and retrieve multiple versions of track edits. A playlist can be a complete take, an overdub, or an arrangement of selections from multiple takes. You can duplicate playlists to save edits in their current state, then continue making additional edits to the new playlist knowing you can always go back to the previous version.

To create multiple playlists for editing:

1 Start with a track on which you want to try different edits.

2 From the Playlist Selector pop-up menu, choose Duplicate.
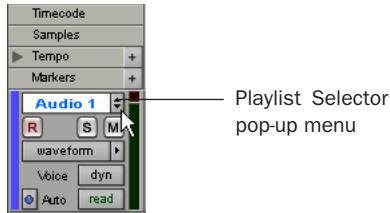
Playlist Selector pop-up menu

3 Name the duplicated playlist and click OK.

4 Make your first series of edits.

5 Return to the original playlist by selecting it from the Playlist Selector pop-up menu.

6 Repeat steps 2–5 for any further edits.

In this way, you can try out different edits of a track, and switch back and forth between playlists for comparison.

Mixing

The Pro Tools mix environment provides many familiar channel strip controls for setting volume, pan, solo, and mute. Mixer and I/O controls can be shown in both the Mix and Edit windows.

To view the Mix window:

■ Select Windows > Show Mix.

> 🔳 *Press Control+Equals (=) in Windows or Command+Equals (=) on Macintosh to switch between the Edit and Mix windows.*

Using Channel Strip Controls

Volume Increase or decrease the track level by dragging its Volume fader up or down.

Pan Pan a track left or right in the mix by dragging its Pan slider left or right.

Solo Solo a track (muting all other tracks) by clicking its Solo button.

Mute Mute a track by clicking its Mute button.

Basic Signal Routing

Signal routing is accomplished by assigning track inputs and outputs. Audio track inputs can be from any hardware input or bus path. Once recorded, an audio track's input is its audio file on disk. Auxiliary Inputs can be any hardware input or internal bus path. For all types of audio tracks, outputs can be routed to any hardware output or internal bus path.

Together, these signal routing features let you set up virtually any mixer architecture for your projects, including sends and returns for effects processing and submixing.

Send and Return Submixing for Effects Processing

When you are submixing for reverb, delay, and similar effects processing, you can use sends and Auxiliary Inputs to achieve traditional send/return bussing. You can use a real-time plug-in (see "Plug-Ins" on page 45) as a shared resource for all tracks included in a submix. The wet/dry balance in the mix can be controlled using the track faders (dry level) and Auxiliary Input fader (wet, or effect return level).

Creating a Send

Pro Tools provides up to five sends per audio track. A send can be mono or stereo, routing to an output or one of 16 internal bus paths.

To assign a send on a track:

1 Make sure Sends View is enabled in the Mix window (Display > Mix Window Shows > Sends View).

2 Click the Sends button on an audio track and choose a path from the pop-up menu.
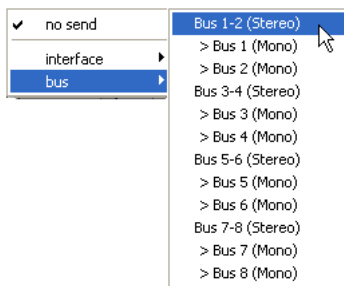

Assigning a send to a stereo bus path

3 Set the output level of the send. You can set the send level to zero by Option-clicking the send fader.

You can configure the default level for new sends to be –∞ or at unity gain (0 dB) by enabling or disabling the Sends Default To "–INF" option under the Operation Preferences.

Creating a Return

Auxiliary Inputs can be created to act as return channels for busses, as well as for inputs from hardware sources.
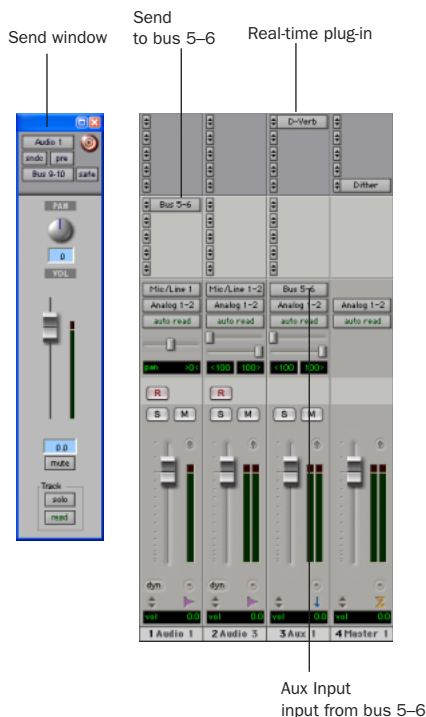
Audio and Auxiliary Input tracks configured for a send and return

To create a return:

1 Choose File > New Track and specify 1 mono or stereo Auxiliary Input, then click Create.

2 Click the Input Selector of the Auxiliary Input and set it to the bus path you assigned to the sends on the source tracks.

3 Click the Output Selector of the Auxiliary Input and choose an output path.

Master Faders

Master Faders are used as output and bus masters, and can control any mono or stereo output or bus path in a session. You can then use the controls on the Master Fader to control the volume, solo and mute, or apply inserts to those paths.

When you are mastering your final mix, it is recommended that you use a dither plug-in on the Master Fader controlling your main outputs (for more information on dither, see "Using Dither on Mixdown" on page 47.
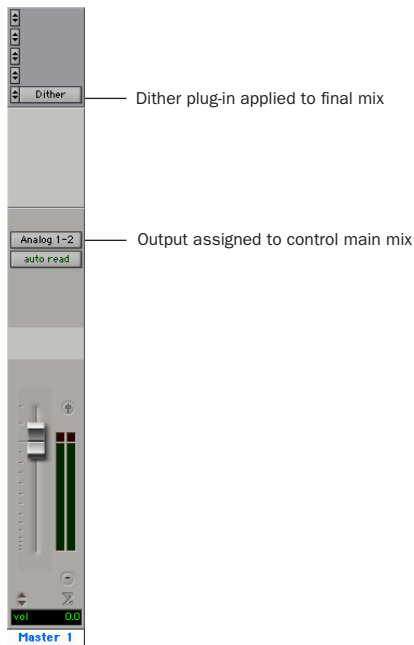
Master Fader controlling main outputs

To create a Master Fader:

1 Choose File > New Track and specify 1 mono or stereo Master Fader track, then click Create.

2 In the Mix window, click the Master Fader's Output Selector and choose the output path that you want to control. You can choose either outputs or internal busses.

To use a Master Fader as a master stereo volume control for all tracks in a session:

1 Choose File > New Track and specify 1 stereo Master Fader track, then click Create.

2 Set the outputs of all audio tracks in the session to outputs 1–2 and set the panning of each track.

3 Set the output of the Master Fader to your main output path (outputs 1–2).

Plug-Ins

Plug-ins provide EQ, dynamics, delay, and many other types of effects processing, and function either in real time or in non-real time.

RTAS plug-ins are nondestructive effects, which are inserted on tracks to process audio in real time—just like an external hardware processor (during playback).

AudioSuite plug-ins are used to process and modify audio files on disk, rather than non-destructively in real time. Depending on how you configure a non-real-time AudioSuite plug-in, it will either create an entirely new audio file, or alter the original source audio file.

Real-time plug-ins are assigned to tracks from the Inserts view in the Mix or Edit windows. Once assigned to a track, plug-ins appear in the track's Inserts view, and can be opened by clicking the Insert button.
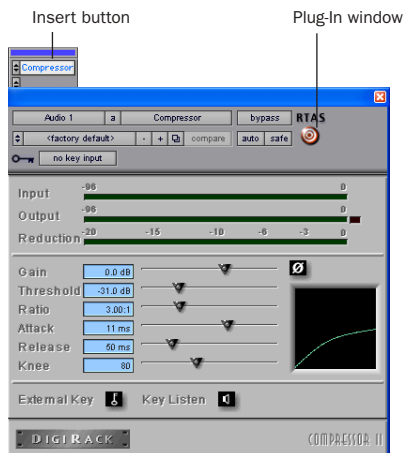
Compressor plug-in

To insert a real-time plug-in on a track:

1 Make sure the Inserts View is shown in the Mix or Edit window.

2 Click the Insert Selector on the track and select the plug-in that you want to use.

Pro Tools comes with a complete set of DigiRack plug-ins, and many more are available from Digidesign and our Development Partners.

For more information about plug-ins, see the DigiRack Plug-Ins Guide, the Digidesign Plug-Ins Guide, and the Plug-Ins chapter of the Pro Tools Reference Guide.

Mix Automation

Mix automation lets you record, or *automate*, changes to track and send levels, mutes, pan, and plug-in parameters. MIDI tracks provide volume, pan, and mute automation only.

To write automation:

1 In the Automation Enable window (Windows > Show Automation Enable), enable an automation *type* (volume, pan, mute, send level, send pan, send mute, or any plug-in automation).

2 Select an automation *mode* for the tracks to be automated (Write, Touch, or Latch mode).

3 Start playback and begin writing automation by adjusting faders and other controls during playback. Pro Tools remembers all moves performed on enabled parameters.

Enabling automation (left) and choosing a track Automation mode (right)

Once written, automation can be re-written or displayed and edited graphically in the Edit window.

Track view set to Volume

Volume breakpoint automation
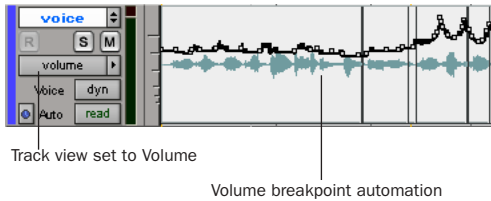
Volume automation in a track in the Edit window

📄 *For more information on using automation, see the Pro Tools Reference Guide.*

Final Mixdown

The Bounce to Disk command lets you write a final mix to disk, create a new loop, print effects, or bounce any submix. Once you have bounced your final mix to disk, you can use another program to burn the resulting file to compact disc.

When you bounce a track to disk, the bounced mix includes the following:

Audible Tracks All audible tracks are included in the bounce. Any muted tracks do not appear in the bounce. If you solo a track or region, only the soloed elements appear in the bounced mix.

Automation All read-enabled automation is played back and incorporated in the bounced mix.

Inserts and Sends All active inserts, including real-time plug-ins and hardware inserts, are applied to the bounced mix.

Selection or Track Length If you make a selection in a track, the bounced mix will be the length of the selection. If there is no selection in any track, the bounce will continue until it reaches the end of the session.

To Bounce to Disk:

1 Choose File > Bounce to Disk.

2 Select any mono or stereo output or bus path as the source for the bounce.

3 Select the File Type (such as .WAV), Format (such as mono or stereo), Resolution (such as 16-bit), and Sample Rate (such as 44.1 kHz).

💡 *To create a mixdown that can be written to an audio CD, be sure to select BWF (.WAV), stereo interleaved, 16-bit, 44.1 kHz.*

4 Click Bounce.

Using Dither on Mixdown

Dither is a form of randomized noise used to minimize quantization artifacts in digital audio systems. Quantization artifacts are most audible when the audio signal is near the low end of its dynamic range, such as during a quiet passage or fade-out.

You should use dither when using the Bounce To Disk command, or when mastering to an external device. Bounce to Disk does *not* automatically apply dither. To dither a bounce file, insert an included Digidesign Dither plug-in, or another dither plug-in, on a Master Fader assigned to the bounce source path. Master Faders are often preferable to Auxiliary Inputs because Master Fader inserts are post-fader (which is better for dither applications).

📄 *For more information on using dither, refer to the Pro Tools Reference Guide.*

appendix a

Windows System Optimizations

When installing Pro Tools on Windows XP, there are many system variables that affect performance. If you have followed all the Windows configuration instructions in Chapter 2, "Windows Configuration" and are still experiencing problems, try the following troubleshooting suggestions.

☼ *Norton Ghost is highly recommended, as it lets you save your system in a working state and easily revert to that state should you accidentally disable anything that your computer needs.*

For more information on Ghost, visit the Symantec Web site (www.symantec.com)

Troubleshooting

Blue Screen at Startup

If, after installing Pro Tools and QuickTime, your computer crashes with a blue screen, do the following:

- Use Add/Remove Programs to uninstall Pro Tools.
- Use Add/Remove Programs to uninstall QuickTime.
- Repeat the installation instructions in "Installing Pro Tools M-Powered Software" on page 10.

Advanced Settings

The following system optimizations may help Pro Tools perform better on some systems. It is recommended that you only try these optimizations if necessary, as they may disable or adversely affect the functionality of other programs on your system.

Disabling Network Cards

If applicable, disable any networking cards (other than a 1394 "FireWire" card that you might use to connect an external drive to your system).

To disable a network card:

1 Right-click My Computer and choose Manage.

2 Under System Tools, select Device Manager.

3 In the Device Manager window, double-click Network adapters, then double-click the Network Adapter card you want to disable.

4 Under the General tab, choose "Do not use this device (disable)" from the Device Usage pop-up menu, and click OK.

5 Close the Computer Management window.

Processor Scheduling

To Adjust Processor Scheduling Performance:

1 Choose Start > Control Panel.

2 In Classic View, launch System.

3 Click the Advanced tab.

4 Under the Performance section, click the Settings button.

5 Click the Advanced tab.

6 Under the Processor scheduling section, select the Background Services option.

7 Under the Memory Usage section, select the System cache option.

8 Click OK twice. You will need to restart your computer for the changes to take effect.

Startup Items

The fewer items in use by your computer, the more resources are available for Pro Tools. Some startup applications may be consuming unnecessary CPU resources, and should be turned off.

If you disable any of the following startup items, do so carefully:

- Portable media serial number (required for applications that utilize a copy protection key)
- Plug and play
- Event log
- Cryptographic services
- DHCP Client, TCP/IP Net BIOS, and other networking-related items (unless the computer has no network or internet connection, in which case these items can be disabled)

Norton Ghost is highly recommended, as it lets you save your system in a working state and easily revert to that state should you accidentally disable anything that your computer needs.

For more information on Ghost, visit the Symantec Web site (www.symantec.com)

To Disable System Startup Items:

1 From the Start menu, choose Run.

2 Type "msconfig" and click OK. The System Configuration Utility opens.

3 Under the General tab, choose Selective Startup.

4 Deselect Load Startup Items and click OK.

5 Click Restart to restart the computer.

6 After restarting your computer, a System Configuration message dialog is displayed. Try Pro Tools to see if performance has increased before you uncheck the don't show this message again box. If performance has not changed, run "msconfig" and return your computer Selective Startup back to Normal Startup. Alternatively, try disabling start up items and non-essential processes individually.

Configuring Midi Studio Setup (Windows Only)

MIDI Studio Setup

MIDI Studio Setup (MSS) lets you configure the MIDI controllers and sound modules that are connected to your system, and control the routing of MIDI data between your MIDI equipment and Pro Tools.

MSS automatically finds MIDI interfaces, and lets you specify a custom name for each of the MIDI ports within the MIDI Studio Setup document.

MSS also supports XML-based patch file names for storing and importing patch names for your external MIDI devices.

Entire MIDI Studio Setup configurations created within MSS can be imported and exported.

MIDI Studio Setup Window

The MIDI Studio Setup window is organized into three sections. Interface controls are at the top of the window. All the currently defined instruments are displayed in the Instrument Name list on the left side of the window. A detailed view of MIDI parameters is shown in the Properties section on the right.
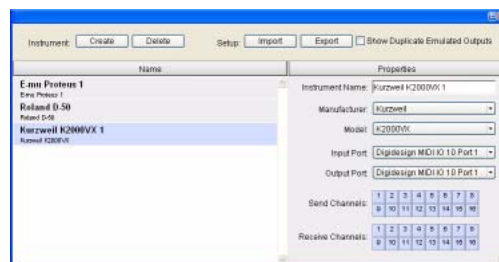
MIDI Studio Setup window

Interface Controls

Create This button adds a new instrument to the Instrument Name list.

Delete This button deletes the instrument or instruments selected in the Instrument Name list.

Import This button lets you import an existing MIDI Studio Setup file.

Export This button lets you export the current MIDI Studio Setup file.

Show Duplicate Emulated Ports If you are using a MIDI interface that supports timestamping (such as MIDI I/O), when the Show Duplicate Emulated Outputs option is selected, the MIDI Studio Setup window shows both the Direct-Music time-stamped output ports, and non-stamped duplicate emulated output ports.

⚠️ *Some MIDI Interfaces will not properly load or unload their drivers unless you quit and re-launch Pro Tools. Check the documentation that came with your MIDI interface for more information.*

Instrument List

The Instrument list contains all the currently defined instruments. Selecting an instrument in the list displays that instrument's properties in the Properties section of the window.

Properties Section

The Properties section lets you edit information for new instruments, or instrument currently selected in the Instrument list.

MIDI Studio Setup Properties section

When a previously defined instrument is selected in the Instrument list, the Properties section changes to reflect the properties of the selected instrument.

To define an instrument with MIDI Studio Setup:

1 Choose Setups > MIDI Studio Setup.

2 Click Create.

3 In the Instrument Name field, type the name of your instrument, and press enter.

💡 *If you do not enter an instrument name, the Instrument Name field will automatically inherit information from the Manufacturer and Model pop-up menu.*

4 Set a manufacturer and model for the new device from the corresponding pop-up menus. If the Manufacturer and Model pop-up menus do not provide a name for your particular device, choose None.

5 From the Input pop-up menu, choose the input port on your MIDI interface that is connected to the MIDI Out of your instrument.

6 From the Output pop-up menu, choose the output port on your MIDI interface that is connected to the MIDI In of your instrument.

7 Enable the appropriate MIDI channels (1–16) for the Send Channels and Receive Channels options (These determine which channels send and receive MIDI.)

Instrument Name

The Instrument Name field shows the user-definable instrument name for the currently selected instrument.

Manufacturer

The Manufacturer pop-up menu provides a list of MIDI equipment manufacturers. This list is derived from the XML-based MIDI device files.

📄 *For more information, see "Patch Name Support" on page 53.*

Model

The Model pop-up menu provides a list of MIDI devices, filtered by the manufacturer name. This list is derived from the XML-based MIDI device files provided with your Pro Tools installation.

📖 *For more information, see "Patch Name Support" on page 53.*

Input Port

The Input Port pop-up menu displays a list of available MIDI interface input ports. The MIDI interface port that is set and displayed here is the port through which MIDI data is sent from the external MIDI device specified in the Instrument Name field into your MIDI interface.

⚠ *If you set the input port to None, the defined instrument will not appear as a choice in a MIDI Input Selector.*

Output Port

The Output Port pop-up menu displays a list of available MIDI interface output ports. The port set and displayed here is the port through which MIDI data is sent from your MIDI interface to the MIDI device specified in the Instrument Name field.

⚠ *If you set the output port to None, the defined instrument will not appear as a choice in a MIDI Output Selector.*

Send Channels

The Send Channels grid sets the send channels for the MIDI device specified in the Instrument Name field.

Receive Channels

The Receive Channels grid sets the receive channels for the MIDI device specified in the Instrument Name field.

Patch Name Support

Pro Tools supports XML (Extensible Markup Language) for storing and importing patch names for you external MIDI devices. Pro Tools installs MIDI patch name files (.midnam) for the factory default patch names of many common MIDI devices. These files reside in directories, sorted by manufacturer, in Program Files\ Common Files\Digidesign\MIDI Patch Names\ Digidesign.

To import MIDI patch names into Pro Tools:

1 Verify the MIDI Device name in the MIDI Studio Setup window (see "MIDI Studio Setup" on page 51).

2 Verify the MIDI track's output is correctly assigned to the MIDI device.

3 Click the MIDI track's Program button.
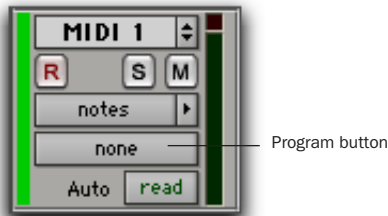
Program button, Edit window
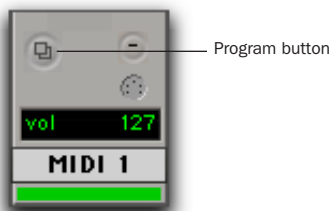
Program button, Mix window

4 In the Patch Select dialog, click the Change button.
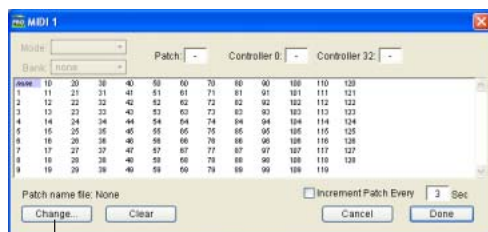
Change button

Patch Select dialog

5 In the Open dialog, navigate to Program Files\Common Files\Digidesign\MIDI Patch Names\Digidesign\<name of manufacturer>, and select the MIDI Patch Name file (.midnam) for the MIDI device.

6 Click Open.

The Patch Select dialog is populated with patch names and the Patch Name Bank pop-up menu appears in the upper left hand corner of the window.
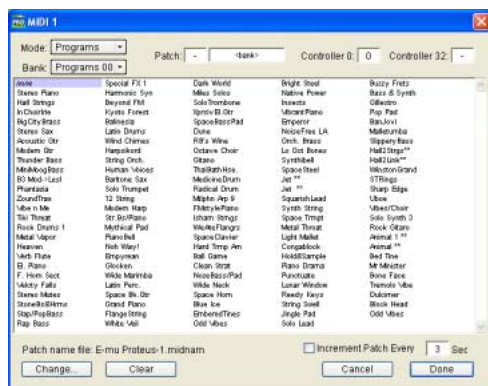
Patch Select dialog with patch names

Once patch names have been imported into Pro Tools, they are available for that MIDI device in all sessions.

To clear patch names:

■ In the Patch Select dialog, click the Clear button, and click Done.

☼ *MIDI patch name files (.midnam) can be edited in any text editor, or you can use third party patch librarian and editor software to create your own custom patch names.*

Configuring AMS (Mac OS X Only)

Audio MIDI Setup

Pro Tools recognizes the ports on your MIDI interface as generic ports. With Mac OS X, you use Apple's Audio MIDI Setup (AMS) utility to identify external MIDI devices connected to your MIDI interface and configure your MIDI studio for use with Pro Tools.

To configure your MIDI studio in AMS:

1 Launch Audio MIDI Setup (located in Applications/Utilities).

– or –

In Pro Tools, choose Setups > Edit MIDI Studio Setup.

2 Click the MIDI Devices tab. AMS scans your system for connected MIDI interfaces. If your MIDI interface is properly connected, it appears in the window with each of its ports numbered.

Audio MIDI Setup (MIDI Devices tab)

3 For any MIDI devices connected to the MIDI interface, click Add Device. A new external device icon with the default MIDI keyboard image will appear.

4 Drag the new device icon to a convenient location within the window.

5 Connect the MIDI device to the MIDI interface by clicking the arrow for the appropriate output port of the device and dragging a connection or "cable" to the input arrow of the corresponding port of the MIDI interface.
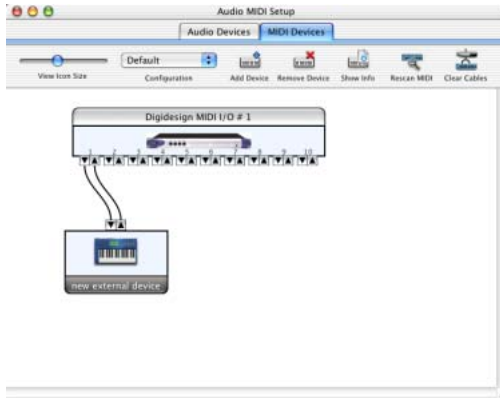
Making MIDI input and output connections

6 Click the arrow for the appropriate input port of the device and drag a cable to the output arrow of the corresponding port of the MIDI interface.

    💡 To *remove a connection, select the cable and press Delete. To delete all connections, click Clear Cables.*

7 Repeat steps 3–6 for each MIDI device in your MIDI setup.

To configure an external MIDI device:

1 Select the external device icon and click Show Info (or double-click the new device icon).

External Device Icon

2 Select a manufacturer and model for the new device from the corresponding pop-up menus. (If the Manufacturer and Model pop-up menus do not provide a name for your particular device, you can type a name.)

Naming a new MIDI device

    💡 *AMS refers to one or more files with the suffix ".middev" in the directory Root/Library/Audio/MIDI Devices for Manufacturer and Model names. Pro Tools installs two such files that contain information for many commercially available MIDI devices, "Legacy Devices.middev" and "Digidesign Devices.middev." If the Manufacturer or Model names for any of your external MIDI devices is not available in the AMS Manufacturer and Model pop-up menus, you can add them by editing any of the current .middev files in any text editor (such as TextEdit).*

3 Click the More Properties arrow to expand the dialog, then enable the appropriate MIDI channels (1–16) for the Transmits and Receives options. (These determine which channels the device will use to send and receive MIDI.)
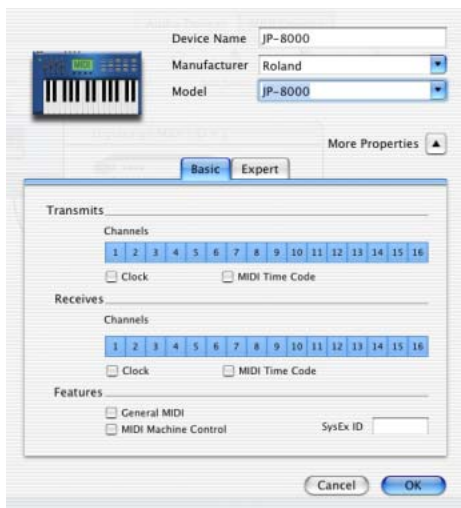
Enabling MIDI channels

4 Click the device image. The window expands to show images for various MIDI devices (such as keyboards, modules, interfaces, and mixers). Select an icon for your device.

Selecting a device icon

💡 *To use your own custom icons, you can place TIFF image files in /Library/ Audio/MIDI Devices/Generic/Images, and they will appear as choices in the AMS device window.*

5 Click OK.

The device names you enter appear as MIDI input and output choices in Pro Tools.

Patch Name Support

Pro Tools supports XML (Extensible Markup Language) for storing and importing patch names for you external MIDI devices. Pro Tools installs MIDI patch name files (.midnam) for the factory default patch names of many common MIDI devices. These files reside in directories, sorted by manufacturer, in /Library/Audio/MIDI Patch Names/Digidesign.

To import MIDI patch names into Pro Tools:

1 Verify the MIDI Device name in the Audio MIDI Setup window (see "Audio MIDI Setup" on page 55).

2 Verify the MIDI track's output is correctly assigned to the MIDI device.

3 Click the MIDI track's Program button.

Program button, Edit window

Program button, Mix window

4 In the Patch Select dialog, click the Change button.
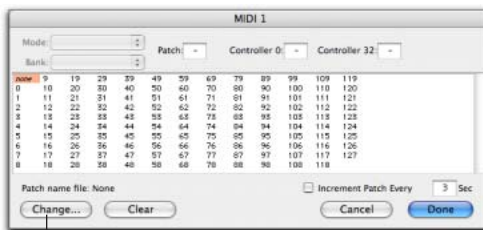
Patch Select dialog

5 In the Open dialog, navigate to /Library/Audio/MIDI Patch Names/Digidesign/<name of manufacturer>, and select the MIDI Patch Name file (.midnam) for the MIDI device.

6 Click Open.

The Patch Select dialog is populated with patch names and the Patch Name Bank pop-up menu appears in the upper left hand corner of the window.

Once patch names have been imported into Pro Tools, they are available for that MIDI device in all sessions.

To clear patch names:

■ In the Patch Select dialog, click the Clear button, and click Done.

☼ *MIDI patch name files (.midnam) can be edited in any text editor, or you can use third party patch librarian and editor software to create your own custom patch names.*

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