



Introduction to Pro Tools[®]

Legal Notices

© 2015 Avid Technology, Inc., ("Avid"), all rights reserved.
This guide may not be duplicated in whole or in part without the written consent of Avid.

003, 192 Digital I/O, 192 I/O, 96 I/O, 96i I/O, Adrenaline, AirSpeed, ALEX, Alienbrain, AME, AniMatte, Archive, Archive II, Assistant Station, AudioPages, AudioStation, AutoLoop, AutoSync, Avid, Avid Active, Avid Advanced Response, Avid DNA, Avid DNxcel, Avid DNxHD, Avid DS Assist Station, Avid Ignite, Avid Liquid, Avid Media Engine, Avid Media Processor, Avid MEDIArray, Avid Mojo, Avid Remote Response, Avid Unity, Avid Unity ISIS, Avid VideoRAID, AvidRAID, AvidShare, AVIDStripe, AVX, Beat Detective, Beauty Without The Bandwidth, Beyond Reality, BF Essentials, Bomb Factory, Bruno, C|24, CaptureManager, ChromaCurve, ChromaWheel, Cineractive Engine, Cineractive Player, Cineractive Viewer, Color Conductor, Command|8, Control|24, Cosmonaut Voice, Countdown, d2, d3, DAE, D-Command, D-Control, Deko, DekoCast, D-Fi, D-fx, Digi 002, Digi 003, DigiBase, Digidesign, Digidesign Audio Engine, Digidesign Development Partners, Digidesign Intelligent Noise Reduction, Digidesign TDM Bus, DigiLink, DigiMeter, DigiPanner, DigiProNet, DigiRack, DigiSerial, DigiSnake, DigiSystem, Digital Choreography, Digital Nonlinear Accelerator, DigiTest, DigiTranslator, DigiWear, DINR, DNxchange, Do More, DPP-1, D-Show, DSP Manager, DS-StorageCalc, DV Toolkit, DVD Complete, D-Verb, Eleven, EM, Euphonix, EUCON, EveryPhase, Expander, ExpertRender, Fairchild, FastBreak, Fast Track, Film Cutter, FilmScribe, Flexevent, FluidMotion, Frame Chase, FXDeko, HD Core, HD Process, HDpack, Home-to-Hollywood, HyperSPACE, HyperSPACE HDCAM, iKnowledge, Impact, Improv, iNEWS, iNEWS Assign, iNEWS ControlAir, InGame, Instantwrite, Instinct, Intelligent Content Management, Intelligent Digital Actor Technology, IntelliRender, Intelli-Sat, Intelli-Sat Broadcasting Recording Manager, InterFX, Interplay, inTONE, Intraframe, iS Expander, iS9, iS18, iS23, iS36, ISIS, IsoSync, LaunchPad, LeaderPlus, LFX, Lightning, Link & Sync, ListSync, LKT-200, Lo-Fi, MachineControl, Magic Mask, Make Anything Hollywood, make manage move|media, Marquee, MassivePack, MassivePack Pro, Maxim, Mbox, Media Composer, MediaFlow, MediaLog, MediaMix, Media Reader, Media Recorder, MEDIArray, MediaServer, MediaShare, MetaFuze, MetaSync, MIDI I/O, Mix Rack, Moviestar, MultiShell, NaturalMatch, NewsCutter, NewsView, NewsVision, Nitris, NL3D, NLP, NSDOS, NSWIN, OMF, OMF Interchange, OMM, OnDVD, Open Media Framework, Open Media Management, Painterly Effects, Palladium, Personal Q, PET, Podcast Factory, PowerSwap, PRE, ProControl, ProEncode, Profiler, Pro Tools, Pro Tools|HD, Pro Tools LE, Pro Tools M-Powered, Pro Transfer, QuickPunch, QuietDrive, Realtime Motion Synthesis, Recti-Fi, Reel Tape Delay, Reel Tape Flanger, Reel Tape Saturation, Reprise, Res Rocket Surfer, Reso, RetroLoop, Reverb One, ReVibe, Revolution, rS9, rS18, RTAS, Salesview, Sci-Fi, Scorch, ScriptSync, SecureProductionEnvironment, Shape-to-Shape, ShuttleCase, Sibelius, SimulPlay, SimulRecord, Slightly Rude Compressor, Smack!, Soft SampleCell, Soft-Clip Limiter, SoundReplacer, SPACE, SPACESHift, SpectraGraph, SpectraMatte, SteadyGlide, Streamfactory, Streamgenie, StreamRAID, SubCap, Sundance,

Sundance Digital, SurroundScope, Symphony, SYNC HD, SYNC I/O, Synchronic, SynchroScope, Syntax, TDM FlexCable, TechFlix, Tel-Ray, Thunder, TimeLiner, Titansync, Titan, TL Aggro, TL AutoPan, TL Drum Rehab, TL Everyphase, TL Fauxlder, TL In Tune, TL MasterMeter, TL Metro, TL Space, TL Utilities, tools for storytellers, Transit, TransJammer, Trillium Lane Labs, TruTouch, UnityRAID, Vari-Fi, Video the Web Way, VideoRAID, VideoSPACE, VTEM, Work-N-Play, Xdeck, X-Form, and XMON are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries.

Bonjour, the Bonjour logo, and the Bonjour symbol are trademarks of Apple Computer, Inc.

Thunderbolt and the Thunderbolt logo are trademarks of Intel Corporation in the U.S. and/or other countries.

This product may be protected by one or more U.S. and non-U.S. patents. Details are available at www.avid.com/patents.

Product features, specifications, system requirements, and availability are subject to change without notice.

Guide Part Number 9329-65516-00 REV A 3/15

Contents

- Introduction to Pro Tools 1**
 - Connecting Headphones or Speakers 1
 - Playing Back the Demo Session 2
 - Creating a New Session 6
 - Recording Audio 6
 - Measuring Time in Minutes and Seconds or Bars and Beats. 9
 - Importing Audio 13
 - Editing Audio 16
 - Sequencing MIDI with a Virtual Instrument Plug-In 20
 - Mixing and Plug-In Processing 28
 - Exporting Your Mix. 36
 - Learn More 37

Introduction to Pro Tools

Read this guide if you are new to Pro Tools® | Software. This guide provides examples of how to record, edit, and mix audio, as well as how to use MIDI in Pro Tools.

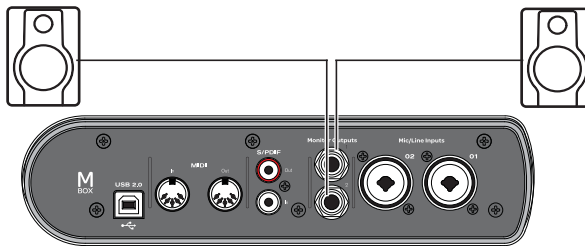
If you have not yet installed Pro Tools, install it now according to the instructions in the *Pro Tools Installation Guide*. For information on connecting and installing drivers for your audio hardware, refer to its documentation.

Connecting Headphones or Speakers

To hear the audio from Pro Tools, connect headphones or speakers to your audio hardware (this guide uses a Pro Tools | Mbox® audio interface as an example). If you are using headphones, lower the Headphone level control (by turning it counterclockwise). If you are using speakers, lower the Master volume control (by turning it counterclockwise). It is important to start with the volume sufficiently low to avoid damaging your ears or your equipment. Once you have started Pro Tools and opened a session (or created a new one) you can adjust the volume controls to a comfortable listening level.



Mbox front panel connectors and controls



Mbox back panel speaker connections

Playing Back the Demo Session

Use the demo session to test your headphones and speakers, and start exploring what you can do with Pro Tools.

To install and open the demo session:

- Download the Pro Tools demo session from your online Avid account to your hard drive (for best performance, use an Avid-qualified external hard drive rather than the system drive).

- 1 Launch Pro Tools.
- 2 Do one of the following, depending on what you see on-screen:
 - If the Dashboard window appears, click Open from Disk. Locate the Demo Session file (.ptx), select it, and click Open.

- If the Dashboard window does not appear, choose File > Open Session, then locate the Demo Session file (.ptx), select it, and click Open.



Alternately, you can double click the demo session file in the Mac Finder or in Windows Explorer and it will launch in Pro Tools.



For more information about the demo session, see the Demo Session Read Me.



To play the Demo Session:

- 1 Turn the volume down on your audio interface so that you don't play back audio at an uncomfortably high level.
- 2 Start playback of the demo session in Pro Tools.
To start or stop Pro Tools, do one of the following:
 - Press the Spacebar on your computer keyboard.
 - Click the Play or Stop button in the Transport window (Window > Transport) or in the Edit window toolbar.



Stop and Play controls in the Transport window

- 3 While the session plays, raise the volume on your audio interface to a comfortable listening level.
- 4 Explore Pro Tools while the demo session plays back (see the different options available in the Window menu):
 - The Edit window provides a Timeline display of audio, video, MIDI data, and mixer automation for recording, editing, and arranging on tracks. Use the Edit window for editing and arranging audio, MIDI, and automation data in your session.
 - The Mix window shows tracks as channel strips—much like a mixing board—with level meters and controls for plug-in and hardware inserts, sends, input and output assignments, panning, volume, solo, mute, and record enable. Use the Mix window for routing and mixing audio and MIDI in your session.

- The Transport window provides controls for transport related functions such as Play, Stop, Record, Fast Forward, and Rewind.
 - Plug-In windows provide controls for audio processing and virtual instrument plug-ins.
 - MIDI Editor windows let you edit MIDI data using a “piano-roll” style interface, breakpoint editing, and traditional music notation.
 - The Score Editor window lets you edit the session's MIDI data using traditional music notation. You can even print the score directly from Pro Tools.
 - The Workspace provides an interactive database for all of the media in your session as well as for your system.
- 5 Press the Spacebar or click the Stop button to stop playback.
 - 6 When you're finished checking out the Demo Session, choose File > Close Session.

💡 *The Demo Session is an example of a finished project that has been arranged, edited, and mixed. You don't need to return to the Demo Session for anything else in this guide, but you might want to check it out again later, after you've been introduced to a few more Pro Tools features.*

Viewing the Edit and Mix Windows

The Edit window and the Mix window are the two main work areas in Pro Tools. Throughout the rest of this guide, you will see examples of both windows being used for different types of production work.

Viewing the Edit Window

To display the Edit window:

- Choose Window > Edit.

To display all Edit window view options:

- Select View > Edit Window > All.



Edit window

Viewing the Mix Window

To display the Mix window:

- Choose Window > Mix.

To display all Mix window view options:

- Select View > Mix Window > All.



Mix window (with Transport and Plug-In windows shown)

Creating a New Session

This section shows you how to create a new *session*. You can create a new session when you first launch Pro Tools or while it is already running.

To create a new session:

- 1 If Pro Tools is not already running, launch Pro Tools.
- 2 Do one of the following:
 - When launching Pro Tools, if the Dashboard window opens, click the Create tab, name and then configure the settings for the new session, click Create.
 - Choose File > New Session. If you currently have a session open, you will be prompted to save any changes. In the Dashboard window, click the Create tab, name and then configure the settings for the new session, click Create.
- 3 In the Save dialog, navigate to where you want to save the session, name it, and then click Save.

You have just created a new session with no tracks. Next, you will connect a microphone or instrument cable and create new tracks for audio recording.

Recording Audio

This section shows how to connect a microphone or instrument (such as a guitar or keyboard) to an Mbox and record audio.

Connecting a Microphone or Instrument to an Mbox

To connect a microphone or an instrument:

- 1 Do one of the following:
 - If you are using a microphone, connect it to a Mic/Line input on the Mbox using an XLR cable.
 - If you are using an instrument, connect it to a DI input on the Mbox using a 1/4-inch cable.
- 2 Do one of the following:
 - With an Mbox, ensure that the Front/Rear switch is set correctly for either a front panel or rear panel connection.
 - With an Mbox Mini, depending on which input you are using, ensure that the Line/DI switch or the Mic/Line switch is set correctly for the type of connection.



Connecting a mic to Mic/Line Input 1 on the rear panel of an Mbox with an XLR cable

Creating a Track

Pro Tools uses *tracks* for recording audio and MIDI in a session. Before you can record audio, you need to create an Audio track.

To create and prepare an audio track for recording:

- 1 Create a new session, or open an existing session.
- 2 Choose Track > New.
- 3 To record a single microphone or instrument connected to your audio interface, set the New Tracks dialog for 1 Mono Audio Track, in Samples, and click Create.

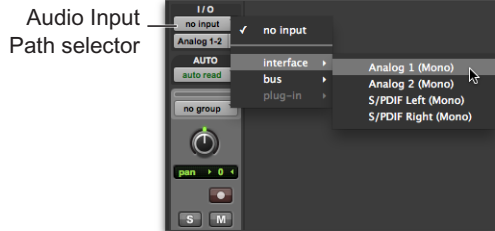


Creating a new mono audio track

If you want to record both inputs at once, create one stereo track or two mono tracks depending on what you have plugged in and what you plan to record:

- To record two different sources (such as one vocal mic and one electric guitar), create 2 *Mono* audio tracks. This lets you record two input signals simultaneously. After recording, these can be edited, processed, and balanced independently.
 - To record a two-channel stereo source (such as a stereo keyboard), create 1 *Stereo* audio track.
- 4 Make sure the Mix window is open by choosing Window > Mix.

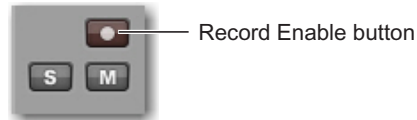
- 5 In the middle of the new track's channel strip, notice where it says "Analog 1 (Mono)." This shows which Input channel (Input 1 or Input 2) is assigned to this track. (To specify a different Input channel, click the Audio Input Path selector and choose the other channel.)



Recording Your Performance to a Track

To record an audio track:

- 1 Click the track's Record Enable button to arm the track for recording. The button flashes red.



Record enabling a track in the Mix window

- 2 Sing or play into the mic, or play your instrument.

Watch the meter level in the Pro Tools track while you raise the input gain on your audio interface. (Note that moving the on-screen fader has no effect on *input* levels; it's only for adjusting *monitoring* levels.)

- 3 Turn up the input gain on your audio interface until you see the on-screen track meter show green most of the time, or yellow for louder passages.

Input 1 Gain (Mbox)



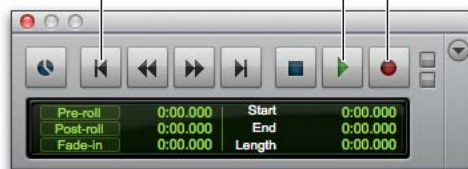
- If the track meter shows red, gain is too high; lower the input gain.
- If you barely see green in the track meter, gain is too low; raise the input gain.



Track meter

- 4 In the Transport window, click the Return to Zero button if you want to start recording from the beginning of the session.
- 5 Click the Record button in the Transport to record arm the session. The button flashes red. (This tells Pro Tools that you are ready to record—think of this as a “master” record enable button for the session.)

Return to Zero Play Record



- 6 Choose Window > Edit so you can watch what happens when you record.
- 7 When you are ready to start recording, press the Spacebar or click the Play button in the Transport. The Transport Record button and the track's Record Enable button turn solid red while recording.
- 8 To stop recording, press the Spacebar again or click the Stop button in the Transport. (The Transport Record button disengages, but the track's Record Enable button remains enabled and flashes red until you click it).

You have just recorded your first audio track.



A mono audio track after recording

Listening to Your Recording

After you have recorded some audio, you can play it back for review, editing, and mixing.

To play back a recorded track:

- 1 Click the track's Record Enable button again to take it out of Record mode. The Record Enable button stops flashing red.
- 2 To start playback, press the Spacebar or click Play in the Transport.
- 3 To stop playback, press the Spacebar or click Stop in the Transport.

Recording More Tracks

Simply repeat the same steps to create another audio track (mono or stereo) and continue recording more tracks. In this way, you can record additional parts against the tracks you have recorded previously. This is a common production technique for layering different parts to create an arrangement of a song.

Measuring Time in Minutes and Seconds or Bars and Beats

Pro Tools lets you measure time in *minutes and seconds* (absolute time), or *bars and beats* (relative time). For music production, it is often desirable to measure time in bars and beats. The timing of beats is relative in that it depends on the tempo. The timing of bars is relative in that it depends on the meter.

Pro Tools lets you set tempo and meter changes using markers in the session Timeline at the top of the Edit window. These settings scale the relative time of *bars and beats* against the absolute time of *minutes and seconds* (or samples). This distinction is referred to in Pro Tools as tick-based (relative) time versus sample-based (absolute) time, and both audio and MIDI data can be set to follow either on a track-by-track basis (for more information, see the *Pro Tools Reference Guide*).



Pro Tools Timeline and Main Counter (with the Main Time Scale set to Minutes and Seconds)

The Pro Tools *Main Time Scale* for the session's Timeline is set to Min:Secs (*minutes and seconds*) by default, but you can change the Main Time Scale to Bar|Beats (*bars and beats*) if you want to record with a click track in a specified meter at a specified tempo. Setting the Main Time Scale to *bars and beats* is also useful if you want to create, edit, and arrange audio and MIDI on a bar/beat grid.

Changing the Main Time Scale


To set the Main Time Scale, do one of the following:

- Click a Main Counter selector (located at the top of the Edit or Transport window (when it is set to display Counters) and select a Time Scale.



Main Counter selector (in the Edit window)

- If a Timebase ruler is displayed, click its name so it becomes highlighted.

 *Setting the Main Time Scale to the timebase currently displayed in the Sub Counter switches the two Time Scales, setting the Sub Time Scale to the previous timebase of the Main Time Scale.*



Setting the Main Time Scale to Bars|Beats

Recording with a Click Track

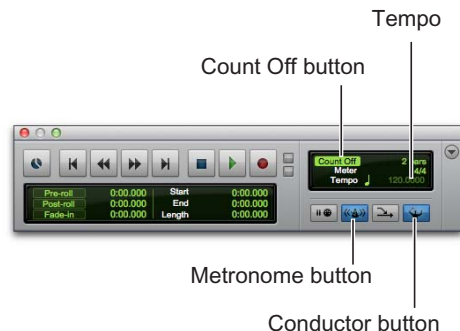
A *click track* provides a metronomic click for tempo reference while recording. Set the Main Scale to Bar|Beats to record and edit your track material according to the specified meter and tempo instead of Min:Secs.

To create a click track:

- 1 Choose Track > Create Click Track.

Pro Tools creates a new Auxiliary Input track with the Click II plug-in on the first track insert. When you start playback or recording, the click provides a countoff and continues according to the meter and tempo map in the Pro Tools Timeline.

- 2 Select View > Transport > MIDI Controls to view the MIDI controls in the Transport Window.
- 3 In the Transport, ensure that the Metronome and Count Off buttons are selected.
- 4 Ensure that the Conductor button is enabled if you want the click to follow the session tempo (on the Timeline). Disable the Conductor button if you want to adjust the tempo manually.
- 5 Press the Spacebar or click the Play button in the Transport to start playback and hear the click.



To set the Click settings:

- 1 Choose Setup > Click/Countoff.
- 2 Select one of the following options:
 - During play and record—the click sounds during playback and recording
 - Only during record—the click only sounds while recording and not during playback
 - Only during countoff—the click only sounds when counting off before recording or playback starts



Click/Countoff dialog

- 3 Click OK.

To silence the click track, do one of the following:

- Mute the Click track by clicking the M (Mute) button in the Track controls for the Click track.
- In the Transport window, deselect the Metro-nome button so it is not highlighted blue. Then deselect the Count Off button so it is not highlighted. (Doing both silences the click track and disables Count Off.)

Setting the Session Meter

Be sure to set the session meter to match the meter of your music. If your session's meter does not match the music you're recording, the accented clicks from the Click track will not line up with what you're playing, and, as a result, the recorded material may not align with the bars and beats grid in the Edit window.

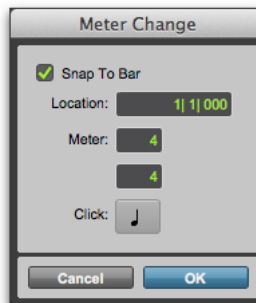
To set the meter for a session:

- 1 Double-click the Current Meter button in the Transport window.



Current Meter button

- 2 Enter the Meter for the session and set the Location to 1|1|000 (to ensure that the inserted meter event replaces the default).



Meter Change dialog

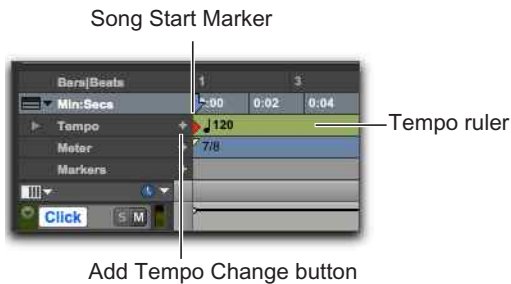
- 3 From the Click pop-up menu, select a note value for the beat. (For example, if you are in 6/8, select a dotted-quarter note).
- 4 Click OK to insert the new meter event.

Setting the Session Tempo

New sessions in Pro Tools default to a tempo of 120 BPM. If you want to record with a click at a tempo other than 120 BPM, make sure to set the tempo accordingly.

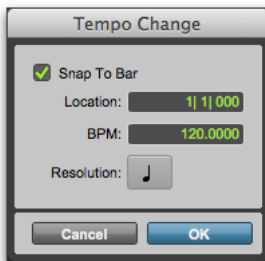
To change the session tempo:

- 1 Do one of the following:
 - Double-click the Song Start Marker in the Edit window.
 - Click the Add Tempo Change button (+) at the head of the Tempo ruler.




Tempo ruler

- 2 In the Tempo Change dialog, enter the BPM value for the session.



Tempo Change dialog

 You can type in a specific tempo, or you can use the T key to tap in the tempo.

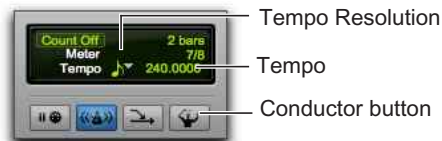
- 3 Set the Location to 1|1|000 (to ensure that the inserted tempo event replaces the default session tempo).
- 4 From the Resolution pop-up menu, select the note value for the beat. (For example, if you are in 6/8, select a dotted-quarter note.)
- 5 Click OK.

Using Manual Tempo Mode

In *Manual Tempo* mode, Pro Tools ignores tempo events in the Tempo ruler and instead plays back a Manual Tempo. This tempo can be set numerically by tapping in the tempo.

To set tempo manually:

- 1 Ensure that the MIDI controls are shown in the Transport by selecting View > Transport > MIDI Controls.
- 2 In the Transport, disable the Tempo ruler by clicking the Conductor button so it is not highlighted. Pro Tools switches to Manual Tempo mode. In this mode, any tempo events in the Tempo ruler are ignored.



Manual Tempo mode

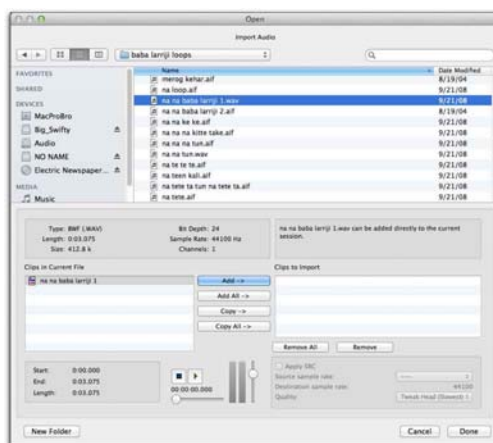
- 3 Click the Tempo Resolution selector and select a note value. (For example, if you are in 6/8, select the dotted-quarter note, or if you are in 3/4, select the quarter note.)

- ## Importing Audio

Pro Tools provides a number of ways to import audio files from different sources into a session. You can import audio from a hard drive, a network volume, an audio CD, or removable media using the Import Audio command, or by dragging from a Workspace browser, or from the Finder (Mac) or Windows Explorer (Windows).

The Import Audio command lets you import audio files or clips into your Pro Tools session.

- 1 Choose File > Import > Audio.
- 2 In the Import Audio dialog, locate and select an audio file to display its properties and associated clips.



Import Audio dialog

- 3 To preview a selected file or clip before you import it, click the Play button in the Import Audio dialog. Click the Stop button to stop preview. You can adjust the preview volume with the vertical slider. To navigate to a particular location in the file, use the horizontal slider under the Play and Stop buttons.

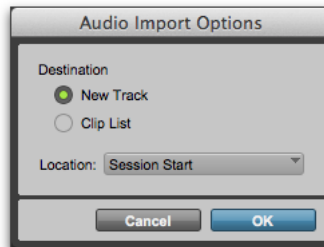
A *The Preview Volume control in the Import Audio dialog also affects the preview volume when auditioning clips in the Clip List.*

- 4 Do any of the following:
 - To place a file or clip in the Import list, select the file and click Add or Convert.
 - To import all files and clips in the current directory, click Add All or Convert All.
 - To remove a file or clip from the Import list, select it and click Remove.
 - To remove all files and clips, click Remove All.

! *Pro Tools lets you add files to a session that are at a different sample rate than the session. In the comments field of the Import Audio dialog, a warning is posted that these files will play back at the wrong speed and pitch if they are not converted.*

- 5 When you have added all audio files and clips you want to the Import list, you can apply sample rate conversion by doing the following:
 - Enable Apply SRC.
 - Specify the Source Sample Rate either by typing a number, or by selecting a sample rate from the pop-up menu.
 - Select the sample rate conversion quality from the Quality pop-up menu. This setting overrides the Sample Rate Conversion Quality setting in the Processing Preferences page.
- 6 Click Done.
- 7 If you are copying or converting files, select a location for the new files, such as the Audio Files folder for the current session. When adding files, the file is referenced from its original location.

- 8 In the Audio Import Options dialog, select where the imported files will go in the session:



Audio Import Options dialog

New Track Each audio file is imported into its own individual track and into the Clip List.

Clip List Audio files are imported into the Clip List without creating a new track. Imported audio files appear in the Clip List and can then be dragged to audio tracks.

- 9 If you chose to create a new track, select a location for the imported file in the track:

Session Start Places the file or clip at the start of the session.

Song Start Aligns the beginning of the file or clip to the Song Start marker.

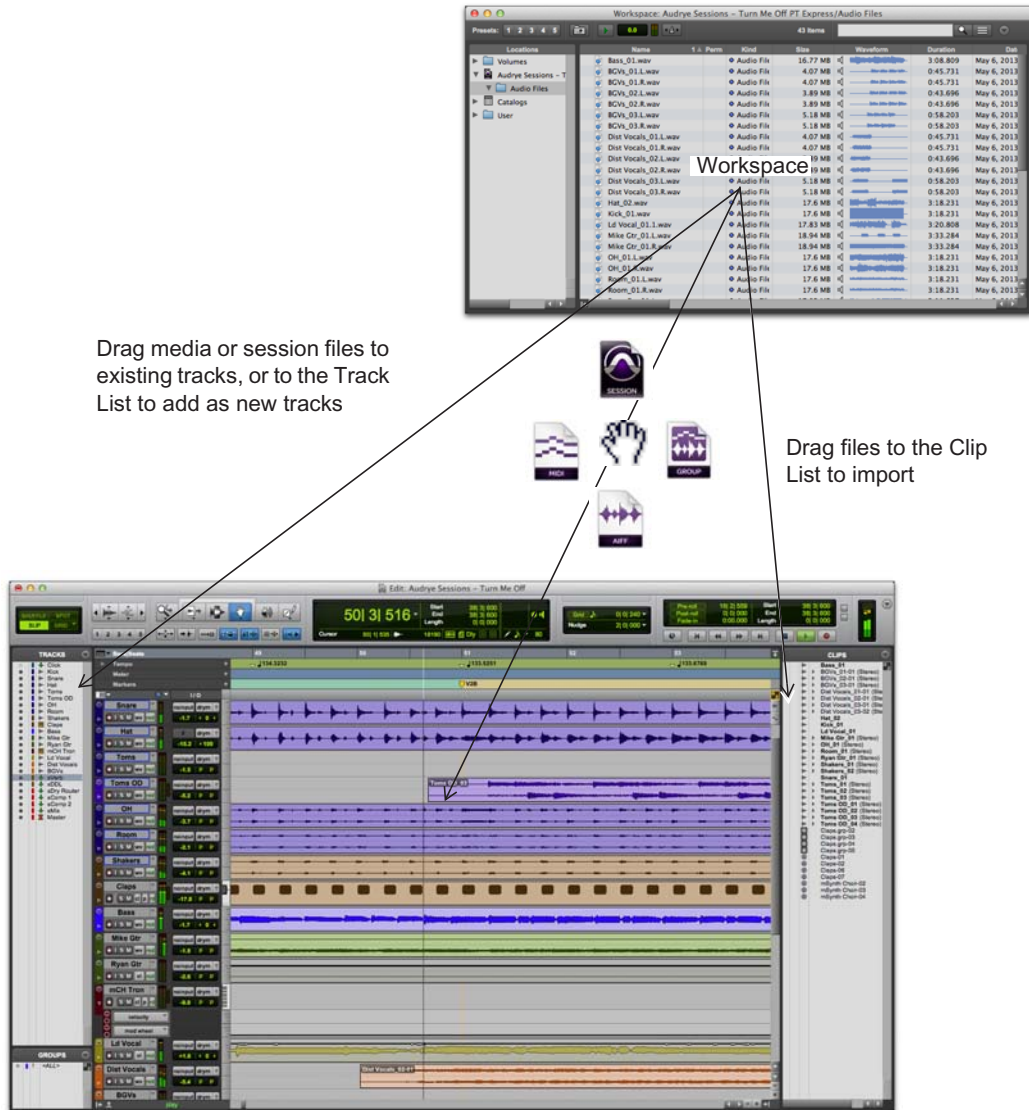
Selection Aligns the beginning of the file or clip to the edit cursor or to the beginning of a selection in the Timeline.

Spot Displays the Spot dialog, which lets you spot the file or clip to a precise location based on any of the available Time Scales.

- 10 Click OK.

Importing Files by Dragging

Pro Tools lets you import audio, MIDI, video, and session files by dragging files from a Workspace browser, the Mac Finder, or Windows Explorer to the Pro Tools application icon, the session Timeline, a track, the Track List, or the Clip List.



Importing from the Workspace by dragging

The preceding figure illustrates some of the options available to import files by dragging from a Workspace browser.

To import files into the Clip List:

- 1 Select audio, video, MIDI, clip group, REX, or ACID files in a Workspace browser, or in the Mac Finder or Windows Explorer.
- 2 Drag the selected files onto the Clip List.

To import files into an existing track:

- 1 Select the files you want to import in a Workspace browser, or in the Mac Finder or Windows Explorer.
- 2 Drag the selected file to a location on a compatible track.

To import files as new tracks:

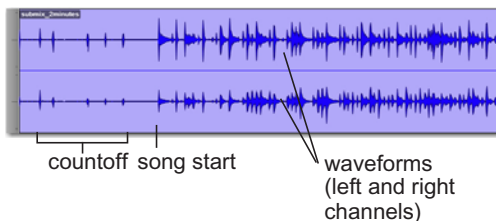
- 1 Select the files you want to import in a Workspace browser, or in the Mac Finder or Windows Explorer.
- 2 Do any of the following:
 - Shift-drag files anywhere in the Edit window.
 - Drag files to the Track List.
 - Drag files to empty space in the Edit window, below or between tracks.

Editing Audio

Pro Tools lets you edit audio on tracks by trimming, separating, cutting or copying and pasting, moving, re-arranging, and more.

Trimming Audio Clips

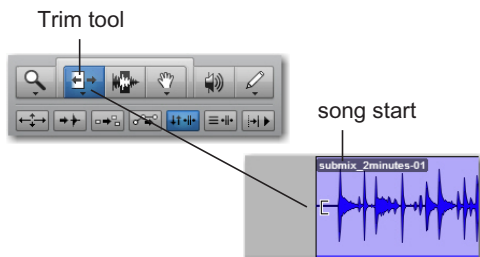
The following example shows you how to do a simple edit to change where a song starts. In this example, the drummer is heard “counting off” the tempo (“1...2...1.2.3...”) before the song starts (let’s assume this stereo track recorded the overhead mics on the drum kit). Here’s what the audio looks like in Pro Tools.



The stereo *waveforms* let you visualize the different sections of the song. You can take advantage of this “what you see is what you hear” aspect of Pro Tools to be able to quickly silence the countoff by “trimming” the beginning of the song.

To trim an audio clip:

- 1 Click to select the Trim tool (located in the Edit window Toolbar).



- 2 Click in the track after the countoff and before the start of the song (you'll see the cursor display the Trim icon). Drag right to trim the beginning of the clip in, or drag left to trim the beginning of the clip out.

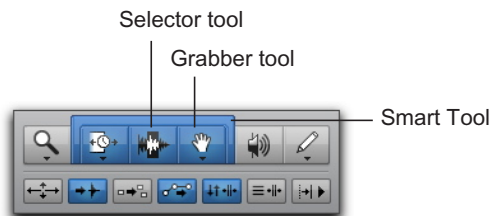
You can “untrim” the clip by clicking and dragging back to the left with the Trim tool. You'll see that the previous audio (the countoff) is still there. This is an example of how Pro Tools lets you edit *non-destructively*.

Copying and Pasting Clips

The following example shows you how to copy and paste an audio clip on a track to different timeline and track locations in a session. This example uses an imported rhythmic audio loop.

To copy and paste a clip:

- 1 Import a rhythmic audio loop into a Pro Tools session (see “Importing Audio” on page 13).
- 2 Click to select the Grabber tool or the Selector tool (located in the Edit window Toolbar).



Edit Tools

- 3 If using the Grabber tool, click the clip you want to copy and paste. If using the Selector tool, double-click the clip you want to copy and paste.

💡 Use the Smart Tool to have the Edit cursor switch between different Edit tools, depending on where you place it over a clip.




Selecting a clip with the Grabber tool

- 4 Choose Edit > Copy.
- 5 With the Selector tool, place the Edit cursor at the location where you want to paste the copied clip.

6 Choose Edit > Paste.



Pasting a clip to a different time location on a different track

 Press **Command+C** (Mac) or **Control+C** (Windows) to copy the current Edit selection to the clipboard. Press **Command+V** (Mac) or **Control+V** (Windows) to paste the contents of the clipboard to the current Edit location.

Separating and Rearranging Clips

There are many ways to create new audio clips in Pro Tools. You can import or record *whole file* audio clips. You can also create audio clips that only refer to parts of audio files by trimming (see “Trimming Audio Clips” on page 16) or by separating whole file clips.

The following example demonstrates different ways that you can separate and rearrange audio clips in a session. This example uses an imported rhythmic audio loop.

Separating Clips at the Edit Selection


To separate a clip at the current Edit location:

- 1 With the Selector tool, make an Edit selection within an audio clip.




Making an Edit selection

- 2 Choose **Edit > Separate Clip > At Selection**.

 Press **Command+E** (Mac) or **Control+E** (Windows) to separate clips at the current Edit selection.



New clips created by separating the parent clip at the boundaries of the Edit selection

 Use **Edit > Separate Clip > On Grid** to separate the audio selection according to the current grid. This is useful when working with audio on a Bar/Beat grid. Use **Edit > Separate Clip > At Transients** to separate the audio selection according to individual attacks in the audio. This is useful for separating audio out into individual “hits,” such as each hit in a drum loop or each note in a guitar riff.

Rearranging Separated Clips

There are many ways to rearrange clips in Pro Tools. The selected Edit mode (set in the left-most section of the Edit window Toolbar) determines how Pro Tools handles audio clips when you move them. The following provides just a few of the many possibilities for arranging audio clips in your Pro Tools session.




Edit modes, Grid mode selected

To rearrange clips, do any of the following:

- With the Grabber tool in Slip mode, drag an audio clip to a new location. The clip moves to the exact location where you moved it.
- With the Grabber tool in Grid mode, drag an audio clip to a new location. The clip snaps to the nearest grid location where you moved it.
- With the Grabber tool in Spot mode, drag an audio clip to a new location. The Spot dialog opens and you can specify an exact time location for the clip.
- With the Grabber tool in Shuffle mode, drag an audio clip to a new location between other clips. Adjacent clips shuffle to make room for the moved clip.
- Select a clip with the Grabber or Selector tool and choose **Edit > Duplicate**. The selected clip is duplicated and placed directly after the current selection.
- Select a clip with the Grabber or Selector tool and choose **Edit > Repeat**. In the subsequent Repeat dialog, enter the number of times you want to repeat the selection and click OK. The selection is repeated as separate clips, which are then placed one after the other.




A rhythmic audio loop separated at transients and “shuffled”

 For more information about editing and arranging audio, see the sections on *Edit Modes* and *Edit Tools*, *Clip Groups*, and *Elastic Audio* in the *Pro Tools Reference Guide*.

Sequencing MIDI with a Virtual Instrument Plug-In

The following provides an example of how to program a MIDI sequence on an Instrument track to play a virtual instrument plug-in. This example uses the Xpand!² plug-in from AIR Music Technology.

 *The Xpand!² plug-in is part of the AIR Creative Collection, which is bundled with Pro Tools as a separate, downloaded installer. Be sure to run the AIR Creative Collection Installer, including the associated content, before proceeding with this example. For more information, see the AIR Creative Collection Plug-Ins Guide.*

What is MIDI?

MIDI (Musical Instrument Digital Interface) data is *not* audio. MIDI does not generate sound. MIDI is a way for MIDI-equipped devices—like synthesizers, samplers, controllers, keyboards, and sequencers—to communicate control data, to “talk” to one another. MIDI effectively tells sound generating devices (like hardware synthesizers or samplers, or software virtual instruments) what to play.

USB and FireWire-compatible MIDI interfaces send and receive MIDI messages to and from the computer over USB or FireWire. Hardware MIDI instruments are connected using MIDI cables to the MIDI inputs and outputs on your MIDI interface. Virtual instruments are inserted as plug-ins on Instrument tracks in Pro Tools and accessed directly from within Pro Tools.

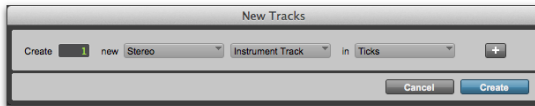
Creating an Instrument Track with an Instrument Plug-In

You can use either an Instrument track or a MIDI track to record, program, and play back MIDI sequences in Pro Tools. If you are working with virtual instrument plug-ins (such as Xpand!² from AIR), you will generally want to use an *Instrument* track. Instrument tracks let you both work with MIDI sequences and monitor audio.

You can also use Instrument tracks with external MIDI devices.

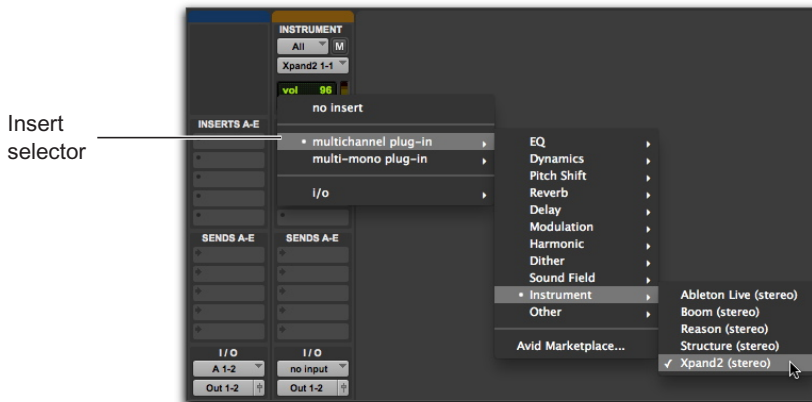
To create an Instrument track and insert an instrument plug-in:

- 1 Choose Track > New. In the New Track dialog, do the following:
 - Select Stereo.
 - Click the pop-up menu that shows Audio Track and select Instrument Track.
 - Click Create.




New Track dialog, Stereo and Instrument track selected

- 2 If necessary, select Window > Mix to show the Mix window.
- 3 Click the track Insert selector near the top of the Instrument track and select Xpand2 from the Instrument submenu.



Inserting the Xpand!² plug-in on an Instrument track

- 4 A plug-in window appears showing the Xpand!² plug-in. You can now select a sound preset to play using MIDI.

 For more information about the Xpand!² plug-in, see the AIR Creative Collection Plug-Ins Guide.

To select a preset sound in the Xpand!² plug-in:

- At the top of the plug-in window, click the Librarian menu (<factory default>) and select a preset from any of the sub-menus. With Xpand!², presets are grouped in sub-menus by category.



Selecting an Xpand!² factory preset from the Plug-In Librarian menu

Playing a Virtual Instrument

You can play a virtual instrument (such as Xpand!2) using a MIDI sequence or from an external MIDI controller.

To play a virtual instrument using an Instrument track, do one of the following:

- If you have a MIDI controller connected, you can play the virtual instrument as long as the Instrument track on which it is inserted is selected or record enabled. You can record your performance as a MIDI sequence while you play.
- Import a MIDI sequence (or program a MIDI sequence) to the Instrument track on which the virtual instrument is inserted, and then start playback.

Recording MIDI with an External Controller

Pro Tools lets you record MIDI data from a MIDI controller.

To record MIDI on an Instrument Track:

- 1 Make sure your MIDI controller is connected either to a MIDI interface with MIDI cables or directly to your computer with a USB cable.
- 2 Create a stereo Instrument track and insert Xpand!2 on it (see “Creating an Instrument Track with an Instrument Plug-In” on page 21).
- 3 Select a bass preset (also known as a “patch”).
- 4 Select Options > MIDI Thru. (Verify that MIDI Thru is checked; if not, select it.)
- 5 Click the track’s Record Enable button to enable the Instrument track for MIDI recording.
- 6 In the Transport window, click the Record button.

- 7 Play your MIDI controller’s keyboard. You should hear the sound you selected.
- 8 When you are ready to start recording, click Play or press the Spacebar. To stop, click Stop or press the Spacebar.



Recorded MIDI data on an Instrument track

- 9 Click the track Record Enable button again to take it out of record enable and play back what you just recorded.

Pencil In a MIDI Sequence

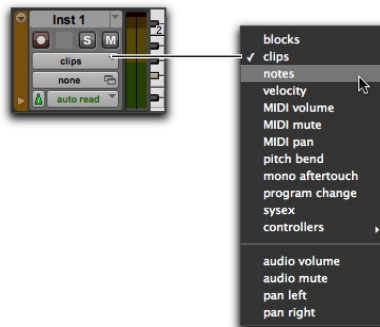
You can program a MIDI sequence in Pro Tools using the Pencil tool.



When inserting MIDI notes or other MIDI data with the Pencil tool, MIDI clip boundaries are created on the nearest barlines.

To insert a MIDI Note on a track in the Edit window:

- 1 In the Edit window, set the Instrument track (or MIDI track) to Notes view.



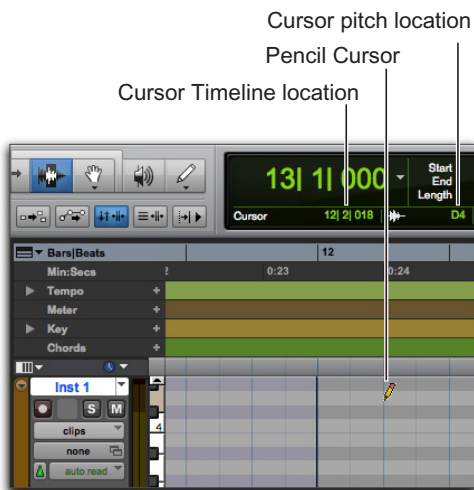
Selecting Notes view on an Instrument track

- 2 Select the Pencil tool and make sure it is set to Free Hand. The cursor will change to the Pencil tool when located over the playlist area of a MIDI or Instrument track in Notes view.



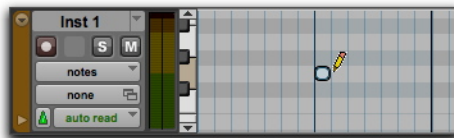
- 3 To insert quarter notes on the beat, do the following:
 - Set the Main Time Scale to Bars|Beats.
 - Set the Edit mode to Grid.
 - Set the Grid value to quarter note.
 - Set the Default Note Duration value either to quarter note (or to Follow Grid).
- 4 Move the Pencil tool into the playlist area for the MIDI or Instrument track. Use the Edit window's ruler and the track's mini-keyboard as a reference to locate the pitch and time location you want.

When using the Pencil tool, the Cursor location and value are displayed in the Window Toolbar.



Cursor location and value

- 5 When you reach the pitch and time location you want, click to insert the note.



MIDI note inserted with the Pencil tool

With Grid mode enabled, the start point of the MIDI note snaps to the nearest Grid boundary by default. With the Free Hand Pencil tool, hold Command (Mac) or Control (Windows) while clicking to temporarily suspend Snap to Grid.

The velocity for inserted notes is determined by the Default Note On Velocity setting. The duration is determined by the Default Note Duration value. When in Grid mode, the Note On location is determined by the Grid value.

If the Play MIDI Notes When Editing option is enabled, each note sounds as it is inserted.

The Pencil tool can be dragged after clicking (and before releasing) to adjust the note's pitch or duration. Drag right to lengthen the note without changing its start point. Drag left to shorten the note without changing its end point.

With the Grid mode enabled, the end point of the MIDI note snaps to the nearest Grid boundary by default. Command-drag (Mac) or Control-drag (Windows) with the Pencil tool to temporarily suspend Snap to Grid.

Editing MIDI Notes

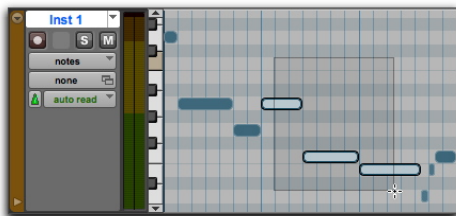
MIDI notes can be edited in the Edit window or in a MIDI Editor window, including start and end points, duration, pitch, and velocity. The Selector, Grabber, Trim, and Pencil tools can operate on individual notes or groups of notes.

Selecting MIDI Notes

MIDI notes must be selected before they can be edited.

To select MIDI notes:

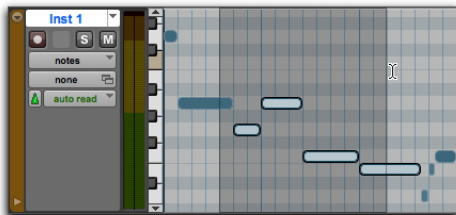
- 1 Set the MIDI or Instrument track to Notes view.
- 2 Do one of the following:
 - With the Pencil tool or any Grabber tool, Shift-click each note.
 - With any Grabber tool, move the cursor to where there are no notes (the Marquee appears) and draw a rectangle around the group of notes you want to edit.



Selecting notes with a Grabber tool

When using a Grabber tool, if any portion of the rectangle touches a note (either its start or end point), the note is included in the selection.

- With the Selector tool, drag across a range of notes.



Selecting notes with the Selector tool

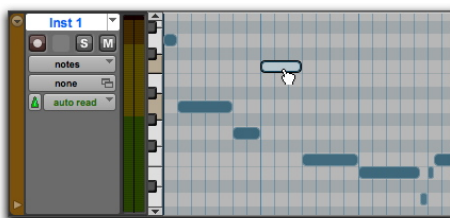
When using the Selector tool, a note's start point must be included in order for it to be selected.

Transposing Notes

MIDI notes can be transposed by dragging them up or down with the Pencil tool or any Grabber tool. If several notes are selected before dragging, each note is transposed.

To transpose a MIDI note:


- 1 Set the MIDI or Instrument track to Notes view.
- 2 Select the Pencil tool or any Grabber tool.
- 3 While holding Shift, drag the note up or down.




Transposing with a Grabber tool

The Shift key ensures that the transposed note maintains its original start point on the Pro Tools Timeline.

While dragging, each new note sounds and the Cursor Location Value indicator (in the Edit window) indicates the number of semitones and direction (+/-) for the transposition.

 Hold Control (Mac) or Start (Windows) and press Plus (+) on the numeric keypad to transpose the selected MIDI notes up by one semitone, or press Minus (-) on the numeric keypad to transpose the selected MIDI notes down by one semitone.

 To transpose a copy of the note, leaving the original unchanged, hold Option (Mac) or Alt (Windows) while dragging.

Moving Notes

Like clips, MIDI notes can be dragged left or right with the Pencil tool or any Grabber tool to change their start point on the Pro Tools Timeline. If several notes are selected before dragging, they are all moved together.

To move a MIDI note:

- 1 Set the MIDI or Instrument track to Notes view.
- 2 With the Pencil tool or any Grabber tool, drag the note left or right (press Shift while dragging to preserve the note's pitch).

As the note is dragged, the Cursor Location Value indicator (in the Edit window) displays the new start point.

If the Edit mode is set to Grid, the dragged note snaps to the nearest Grid boundary. If the Edit mode is set to Spot, the Spot dialog opens.

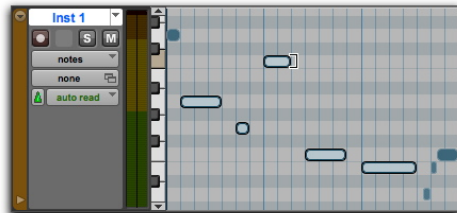
💡 *To copy the selected notes, leaving the originals intact, hold Option (Mac) or Alt (Windows) while dragging.*

Trimming Note Start and End Times

Like clips, start and end points for MIDI notes can be adjusted with the Trim tool. If several notes are selected when performing the trim, each note is changed.

To change the start or end points for a group of MIDI notes:

- 1 Set the MIDI or Instrument track to Notes view.
- 2 Select the notes you want to trim.
- 3 Do one of the following:
 - Select the Trim tool.
 - Use the Pencil tool.
- 4 Move the cursor near the beginning of any of the highlighted notes, so the Trim tool appears. Drag right to shorten the notes, or drag left to lengthen them.



Changing note end times with the Trim tool

If the Edit mode is set to Grid, the dragged start or end point snaps to the nearest Grid boundary. If the Edit mode is set to Spot, the Spot dialog opens, where you can enter the new location for the note's start or end point.

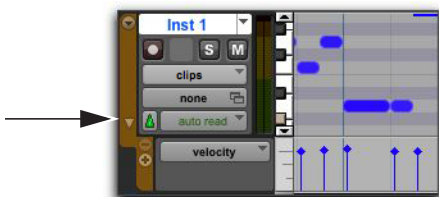
💡 *When in Grid mode, use the Command key (Mac) or the Control key (Windows) to temporarily disable Grid mode.*

Manually Editing Note Velocities

When a MIDI or Instrument track is set to Velocity view, or when the Velocity lane is revealed under a track, each note's attack velocity is represented with a velocity stalk. The taller the velocity stalk, the higher the velocity value (0–127).

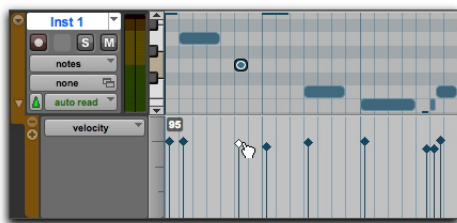
To edit MIDI velocity in the Edit window:

- 1 Do one of the following:
 - Set the MIDI or Instrument track to Velocity view.
 - Reveal the Controller lane for the MIDI or Instrument track and show Velocity.



Revealing the Velocity Lane

- 2 Select any Grabber tool.
- 3 Drag the top (diamond) of the velocity stalk up or down.



Dragging a velocity stalk

💡 The velocities for a range of notes can be edited with any Pencil tool.

Deleting MIDI Notes

In addition to deleting selected notes with the Clear command in the Edit menu, individual notes can also be deleted with the Pencil tool.

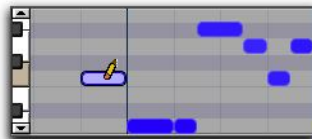
To delete a group of MIDI notes with the Clear command:

- 1 Select the notes to be deleted.
- 2 Do one of the following:
 - Choose Edit > Clear to delete the selected notes. The track's underlying controller data remains intact.
 - With any Edit tool, Right-click any selected note and choose Clear.
 - Press the Delete (Mac) or the Backspace (Windows) key.

⚠ When deleting MIDI notes within a time range selection, all underlying controller and automation data is also deleted.

To delete a single MIDI note with the Pencil tool:

- With the Pencil tool selected, Option-click (Mac) or Alt-click (Windows) the note. The Pencil tool changes to an Eraser when Option (Mac) or Alt (Windows) is pressed.



Deleting a note with Pencil tool


💡 Program change events and Sysex events can also be deleted by Option-clicking (Mac) or Alt-clicking (Windows) them with the Pencil tool.

Mixing and Plug-In Processing

Mixing in Pro Tools involves working with elements of audio signal flow, including inputs, outputs, buses, inserts, and sends, for purposes of submixing and mixdown.

In addition to the final mixdown, mixing tasks can occur any time during a session.

During mixing, real-time plug-ins and hardware inserts provide effects and signal processing. Pro Tools comes with a suite of audio effects processing plug-ins that you can use to change the sounds you've recorded. This section shows two examples of how to use plug-ins to *process* your sound.

 *For detailed information about the plug-ins included with Pro Tools, see the Audio Plug-Ins Guide (Help > Audio Plug-Ins Guide).*

Applying Equalization and Compression

Typically, when mixing audio, you will want to apply *equalization* and *compression* on individual tracks to get your audio to sound just right.

Equalization (EQ) Lets you shape the frequency spectrum of the sound. A simple example equalization is the bass and treble controls on many stereo systems. You can use these controls to *boost* (make louder) or *attenuate* (make quieter) the low frequencies and the high frequencies of the audio. You can use EQ to help separate the bass and guitar, to sharpen the drums, emphasize the vocals, and even to cut out unwanted noise. Pro Tools provides several different types of EQ plug-ins for sculpting your sound.

Compression Lets you smooth the dynamics of your audio. It acts like an automatic volume control by keeping the loud parts from getting too loud. You can use compression to make vocals sound more intimate, or to keep cymbals from sounding too shrill. Use a *limiter* to keep peaks in the audio signal from exceeding a certain threshold without affecting audio that doesn't exceed that level. Pro Tools provides several different types of dynamics plug-ins for shaping the dynamics your sound.

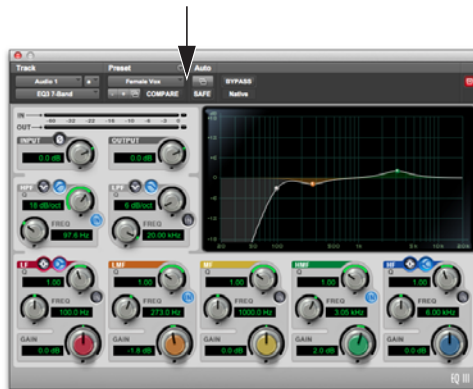
To apply EQ to a track:

- 1 Choose Window > Mix.
- 2 In the top part of the track, click the next Track Insert selector and choose EQ 3 7-Band from the EQ submenu.



Insert selector for a track in the Mix window

- 3 The EQ III Plug-In window opens. You can use the plug-in presets as a starting point for exploring how different settings affect the sound.



EQ III Plug-In window, Plug-In Preset selector

- 4 Start playback to hear the effect.

To apply compression to a track:

- 1 Choose Window > Mix.
- 2 In the top part of the track, click the next Track Insert selector and choose Dyn 3 Compressor/Limiter from the Dynamics submenu. Pro Tools inserts the Dynamics III Compressor/Limiter plug-in on your track and opens its plug-in window.
- 3 The Dyn III Plug-In window opens. You can use the plug-in presets as a starting point for exploring how different settings affect the sound.



Dyn III Plug-In window, Plug-In Preset selector

- 4 Start playback to hear the effect.

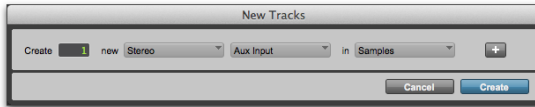
Using Reverberation

Reverberation (Reverb) provides a sense of room acoustics. Reverb effects are essentially a bunch of delays that are used to mimic the reflection of sound off of surfaces in different rooms, halls, and other spaces. You can use reverb effects to create a sense of space for your entire mix using *sends* from your source tracks and processing using an Auxiliary Input track. Reverb effects can make your mix sound like it is in a big concert hall, an intimate room, or even a narrow hallway.

One of the best ways to incorporate reverb in your mix is in a “send-and-return” configuration. In Pro Tools, using sends from tracks makes it easy to route audio from multiple tracks to and through the same reverb effect. This way, your source tracks will all sound as if they are in the same room.

To use reverb with an Auxiliary Input track and multiple source tracks:

- 1 Choose Window > Mix.
- 2 Choose Track > New, and set it to create 1 stereo Auxiliary Input track, then click Create.



Creating a new Auxiliary Input track

- 3 On the Auxiliary Input track you just added, click the Track Input selector and select Bus > Bus 1–2.

Track Input
selector



Selecting Bus 1–2 from the Input selector on an Auxiliary Input track

- 4 Click Send selector A on your source track as shown below and select Bus > Bus 1-2.



Selecting Bus 1–2 for Send A on an audio track

- 5 Repeat the previous step for each additional track that you want to send to the Auxiliary Input track for reverb processing.

- 6 Insert a Reverb plug-in on the Auxiliary Input track.



Bussing sends from audio tracks to an Auxiliary Input track for reverb processing with D-Verb

- 7 You can use individual Send Output windows to adjust the Send level from source tracks; or, you can set the Sends view to display the send controls for a particular send (for example, select View > Sends A–E > Send A).
- 8 Press the Spacebar and slowly raise the small fader in the Send Output window or in the Sends track controls. This adjusts how much of the source track you are sending to the Auxiliary Input track for Reverb processing.
- 9 Keep playing and listening, adjusting the individual track send levels, and checking out different plug-in settings to find just the right effect for your mix.

Using Automation

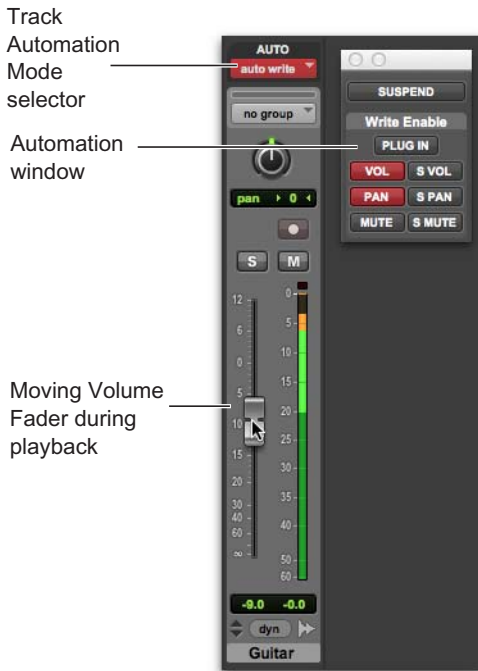
Pro Tools features dynamic automation of mixing controls on each of the track types. You can write automation moves and view them in real time during playback of your session. You can also edit automation data with many of the same techniques you use to edit audio and MIDI data.

Writing Automation

You can write automation for all write-enabled controls by moving those controls during playback.

To write automation on tracks:

- 1 Choose Window > Automation.
- 2 Make sure the automation type is write-enabled.



Automation window, volume automation enabled

- 3 In the Mix or Edit window, click the Automation Mode selector on each of the tracks you want to automate, and set the Automation mode. For the initial automation pass, select Write.
- 4 Start playback to begin writing automation.
- 5 Move the controls you want to automate (such as a track Volume fader).
- 6 When you have finished, stop playback.
- 7 Switch the Automation mode back to Read to play back the automation you just wrote.

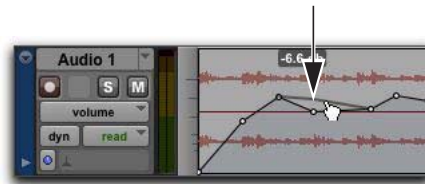


After the first automation pass, you can write additional automation to the track without completely erasing the previous pass by choosing Touch mode or Latch mode. These modes add new automation only when you actually move a control.

Manually Editing Automation

For all tracks in a session, Pro Tools provides several ways to edit automation data. You can edit automation data graphically by adjusting breakpoints in any *automation playlist*. You can also cut, copy, and paste automation data in the same manner as audio and MIDI data.

Automation data takes the form of a line graph with editable breakpoints.



Automation breakpoint

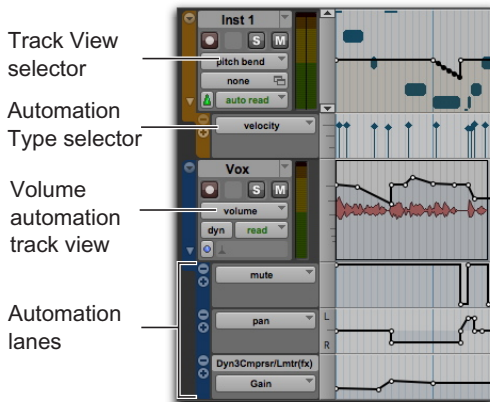
By dragging these breakpoints, you can modify the automation data directly in the Edit window and MIDI Editor windows. When you drag an automation breakpoint up or down, the change in value is indicated.



Automation breakpoint value

Dragging an automation breakpoint to the left or right adjusts the timing of the automation event.

To view the breakpoint automation type on any track, either select the corresponding Track View or reveal the corresponding Automation or Controller lane under the track. For example, you can view and edit Volume, Panning, Mute, MIDI controller data, or even plug-in automation.



Track View and Automation lanes

Using the Grabber Tools

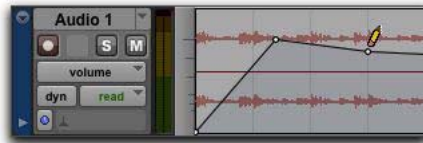
The Grabber tools let you create new breakpoints by clicking on the graph line, or adjust existing breakpoints by dragging them. Option-click (Mac) or Alt-click (Windows) breakpoints with a Grabber tool to remove them.



Using the Grabber tool to create a new breakpoint

Using the Pencil Tool

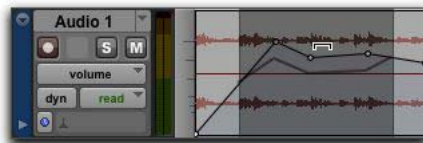
The Pencil tool lets you create new breakpoints by clicking once on the graph line. Option-click (Mac) or Alt-click (Windows) breakpoints with the Pencil tool to remove them.



Using the Pencil tool to delete a breakpoint

Using the Trim Tools

The Trim tools let you adjust all selected breakpoints up or down by dragging anywhere within that selection.



Using the Trim tool to move breakpoints

Exporting Your Mix

After you've finished recording, editing, and mixing tracks in a Pro Tools session, you're ready to *mix down* your session and export the results for burning to CD or publishing on the Internet. You can use the Bounce to Disk command to export your mix from the session to a single audio file.

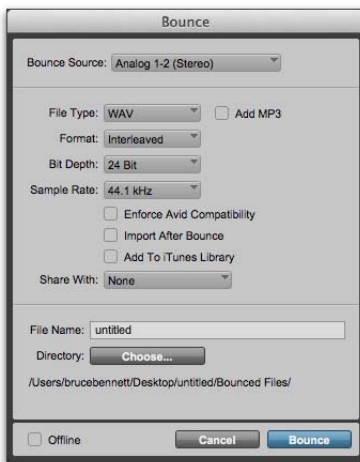
To export the mix from your session as a stereo audio file:

- 1 Use the Selector tool to select the length of the session in the Timeline (or on a track).



Making a Timeline selection to Bounce to Disk

- 2 Choose File > Bounce to > Disk.



Bounce dialog

- 3 In the Bounce Options dialog, do the following:

- Select the as the Bounce Source (this will be the main channel path for your mix, such as main (Stereo) → Analog 1–2).
- Select the File Type (for example, WAV).
- Select Interleaved for the Format.
- If you will be burning the bounced audio file to CD, select 16 Bit for the Bit Depth.
- If you will be burning the bounced audio file to CD, select 44.1 kHz for the Sample Rate.
- For faster than real-time Bounce, select the Offline option.

- 4 Click Bounce. (If you didn't make a Timeline selection, the entire session will bounce from start to finish.)

- 5 In the Save dialog, type the name for the audio file you are bouncing, and select the location where you want it saved.
- 6 Click Save.

Pro Tools begins the bounce to disk.

If the Offline option is not enabled, Pro Tools bounces are done in real time, so you can hear audio playback of your mix during the bounce. (However, you cannot adjust any Pro Tools controls during a bounce.)

Burning Your Mix to CD

After the bounce is completed, you will have an audio file that you can burn to an audio CD using CD burning software (such as iTunes or Roxio Toast) that can be played on standard CD players. Listening to a reference CD in an environment other than your studio is a time-tested way to hear how your mix translates to other systems and listening environments.

Learn More

We hope this quick introduction to Pro Tools has inspired you to make music. To learn more about any of the topics presented here, see the *Pro Tools Reference Guide* (Help > Pro Tools Reference Guide) for complete details on all Pro Tools systems and software. The *Pro Tools Reference Guide* provides a thorough explanation of all Pro Tools features and concepts, organized by audio and music production tasks (such as Recording, Editing, and Mixing).

You can also use the online Pro Tools Help (Help > Pro Tools Help) to search for specific topics.



Avid
280 N Bernardo Avenue
Mountain View, CA 94043 USA

Technical Support (USA)
Visit the Online Support Center at
www.avid.com/support

Product Information
For company and product information,
visit us on the web at www.avid.com