PRO TOOLS
QUICK REFERENCE GUIDE

Learn how to record, compose, edit
and mix using Pro Tools®

GET STARTED ▶

PRO TOOLS
QUICK REFERENCE GUIDE

▶ **OVERVIEW & RESOURCES**

▶ **GETTING STARTED** | Open Pro Tools for the first time, take a quick tour, then create your own Pro Tools session.

▶ **COMPOSING WITH VIs & LOOPS** | Record and program MIDI, and integrate loops and samples.

▶ **TRACKS & SESSIONS** | Create audio tracks for vocals and guitar, an instrument track for MIDI composition, and more.

▶ **EDITING & ARRANGING** | Tighten up tracks, get as detailed as you want, and always keep an ear on the big picture.

▶ **RECORDING AUDIO** | Record an audio track, listen back, punch in and out, layer tracks, and more.

▶ **MIXING & MASTERING** | Use plugins and automation to create an album-quality mix, then share it with the world.

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WELCOME TO
PRO TOOLS

Based on an example pop music project, this guide shows how to set up Pro Tools right the first time, record and edit audio and MIDI, use plugins, mix, master, and share your music.

If you are using Pro Tools for the first time, go to Getting Started to get set up and start to learn your way around. If you are also somewhat new to music production, continue to Before You Begin and on through the rest of this guide in order to see how a typical pop project might develop.

If you already know the basics such as how to create sessions and tracks, go directly to any topic that interests you.

If you are using Pro Tools Intro, go to Fast Start for video resources.

VIDEO RESOURCES

Look for this camera icon throughout the guide for links to video tutorials.

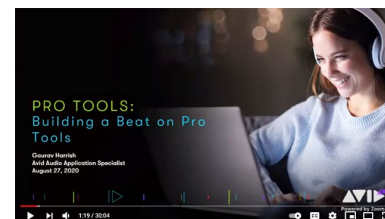Pro Tools Quick Tips demonstrate most of the things you will find throughout this guide. Other videos cover additional, more advanced features.

PLAY ALL

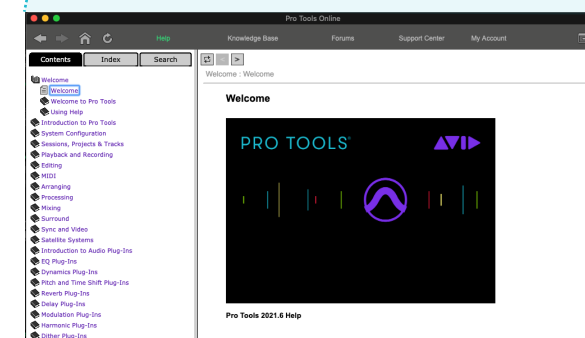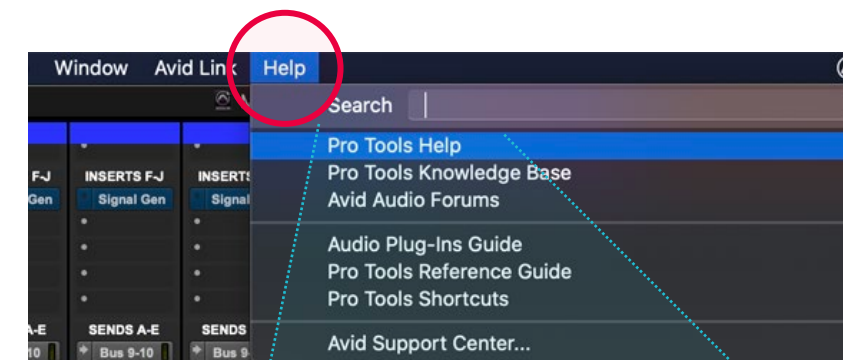You can find more video tutorials on the Avid YouTube channel.

You can also check out the Pro Tools videos from the Avid Online Learning series.

DOCUMENTATION AND HELP

Within Pro Tools, the **Help** menu provides quick access to built-in help, installed PDF documentation, and more.

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GETTING STARTED

Open Pro Tools for the first time, take a quick tour, then create your own Pro Tools Session.

▶ **BEFORE YOU BEGIN** | Connect your audio interface, headphones, speakers, microphone, instruments, and MIDI controller.

▶ **OPENING PRO TOOLS FOR THE FIRST TIME** | Launch Pro Tools and learn about the Dashboard.

▶ **PRIMARY PRO TOOLS WINDOWS** | Take a quick tour of the main Pro Tools windows.

▶ **SYSTEM SETUP** | Optimize Pro Tools settings for a music project.

▶ **CREATE A SESSION** | Create a new Pro Tools session.

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BEFORE YOU BEGIN

SOFTWARE INSTALLATION

Make sure you have installed and authorized Pro Tools (you can find instructions on our website here). For more resources to help you get started, visit Pro Tools Getting Started.

Recommended: If you haven't already, download the **Low Roar** demo session from your Avid account.

Headphones and Speakers

Pro Tools can use the built-in audio of your Mac or Windows computer, or an external audio interface such as MBOX Studio or Pro Tools | Carbon. If your system includes an audio interface, connect headphones and speakers. For information on connecting other audio equipment and installing drivers for your audio hardware, if any, refer to its documentation (such as the *MBOX Studio Guide.pdf*). You can download this and other Pro Tools user guides from our Knowledge Base. Visit Pro Tools Documentation.
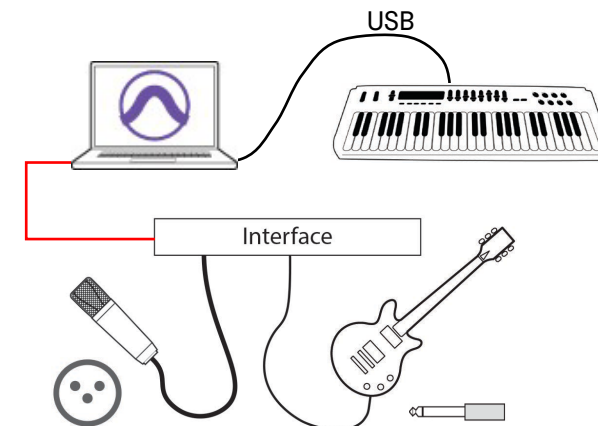

Interface
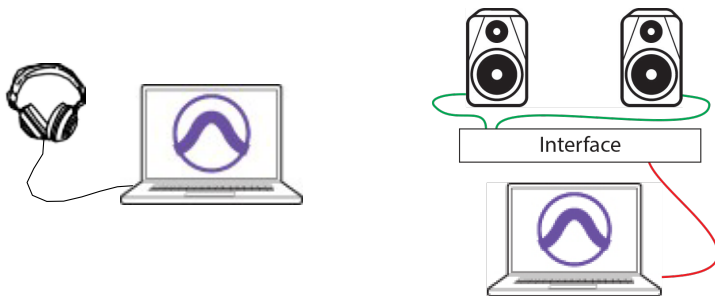
TIP: On Windows you can use ASIO4ALL to be able to use your computer's built-in audio. For instructions, see the How to use Pro Tools and ASIO4ALL article on our Knowledge Base.

Microphones and Instruments

Connect your microphone(s), guitar, keyboard, or other audio source to your audio interface (such as Pro Tools | Carbon). Make sure you have configured the audio interface for the connected source. For example:

- If using a microphone that requires phantom power be sure it is enabled.
- If connecting a guitar or the audio outputs from a keyboard, make sure the hardware input on your interface is set to the correct level and impedance. Refer to the guide for your audio interface for instructions.
- Connect your MIDI keyboard or other controller (if you have one) to your computer according to the manufacturer's instructions.

USB

Interface

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OPENING PRO TOOLS FOR THE FIRST TIME

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1 Launch Pro Tools

To launch Pro Tools software:

Mac

Click the application icon in the **Dock**, or double-click the icon in the **Applications** folder
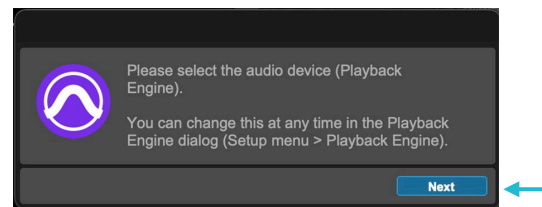
Windows

Double-click the Pro Tools shortcut on the desktop or double-click the application in **Program Files\Avid\Pro Tools**

The Dashboard lets you create a new blank session, create a new session from a pre-built template, open an existing session, and access resources to help you get started.
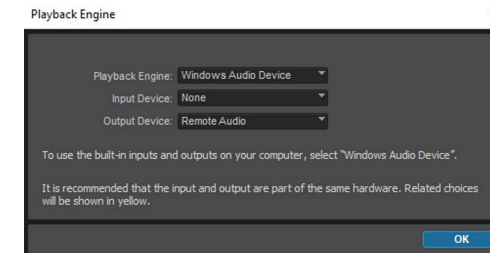
2 Select a Playback Engine

The first time you launch Pro Tools you are guided to select the device you want to use as the Pro Tools *Playback Engine*.

Please select the audio device (Playback Engine).

You can change this at any time in the Playback Engine dialog (Setup menu > Playback Engine).

Next

- Click **Next** to be taken directly to the Playback Engine dialog.
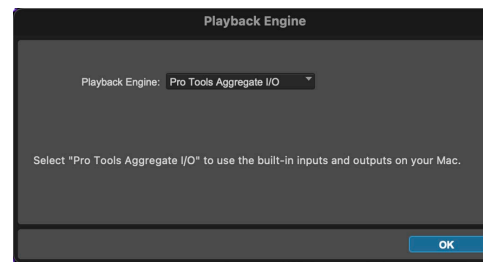
Mac

Windows

On Windows, choices and text vary depending on which Playback Engine is selected.

- Click the Playback Engine selector and choose the desired audio device, such as MBOX Studio. Or choose Pro Tools Aggregate I/O to use the built-in input and output on your computer.
- After selecting your audio device, click **OK** to proceed to the Dashboard.

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OPENING PRO TOOLS FOR THE FIRST TIME

**3** In the Dashboard window do the following:

Open a Demo Session

The demo session installed by Pro Tools (Can't Get Enough) is a medium size song project that you can explore to quickly check audio connections and see Pro Tools in action. To open the included demo session, in the Dashboard (File › Open Dashboard) click **Getting Started,** then click **Go to Session**.

Optional:
If you haven't already:
- Download the **Low Roar** demo session from your <u>Avid account</u>.
- Double-click the compressed file you downloaded to extract it, then move it to **Documents › Pro Tools › Demo Sessions** so it is easy to find.
- Then use the Dashboard to open it by clicking **Open From Disk...**, navigate to the Low Roar session file and click **Open**.
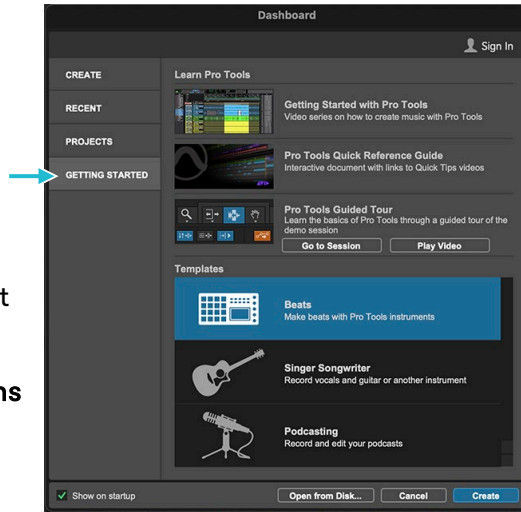
PRO TOOLS DASHBOARD

Or open a session *Template* to start with tracks, routing, and processing already in place. You can also create your own session templates (see **Help › Pro Tools Help**).

Watch the Demo Video

To take a video tour of the Can't Get Enough Demo Session, in the Dashboard (File › Open Dashboard) click **Getting Started,** then click **Play Video**.
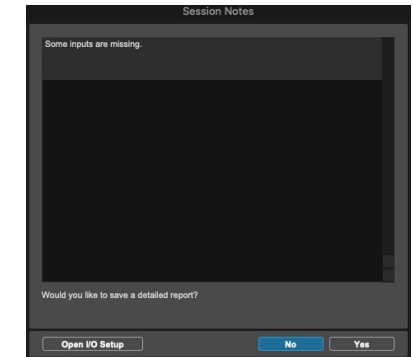There are two versions of the video, one for Pro Tools Intro, and another for Pro Tools Artist, Studio, and Ultimate.
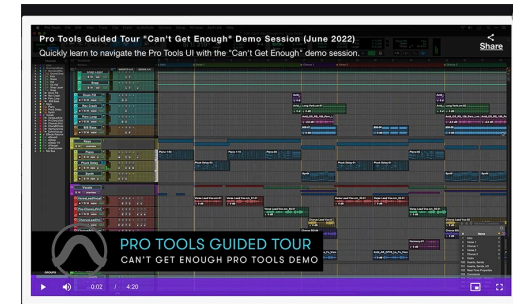
VIDEO DEMO

Dive Right In!

Dive right into creating your first session, click **Cancel** to close the Dashboard and then proceed to <u>System Setup: Playback Engine and IO Setup</u>

SESSION INFO

If you open a session created on a different system you might see the Session Info dialog, telling you of any plugins, I/O, or other attributes that are unavailable on your system. Click **No** to dismiss the Session Info dialog.

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LISTENING TO PLAYBACK

If you haven't already, start playback so you can listen and adjust monitor levels.

To begin playback and listen to the Demo Session, do any of the following:

- Press the Spacebar on your computer keyboard to start or stop playback.

- Click Play in the Transport controls (either at the top of the Edit window or in the Transport window, if shown).

Play

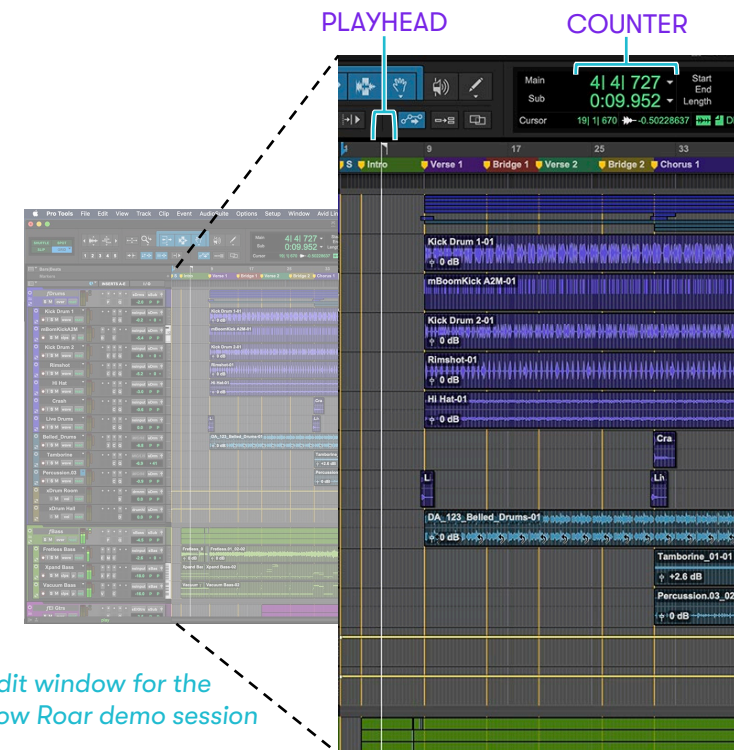Adjust the volume of your audio interface, speakers, or computer to a comfortable listening level.

If you can't hear sound, check the Playback Engine.

In both the Mix and Edit windows, track *meters* show which tracks are producing sound.

Mix window for the Low Roar demo session

SHORTCUT: To toggle between Mix and Edit window views, press Command+Equals (=) (Mac), or Control+Equals (=) (Windows).

In the Edit window, the *Playhead* begins to move across the Timeline, and the current Playhead location is shown in the Counter.

PLAYHEAD   COUNTER

Edit window for the Low Roar demo session

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ABOUT THE DEMO SESSIONS

Spend a few minutes listening to and exploring the Demo Session.

- Quickly listen to a completed song in Pro Tools, confirm installation and audio cable connections, and adjust listening volume for your headphones and monitors.
- Take a tour of the main windows and tools you will use in your own sessions.
- Dig deeper, if desired, for examples of "beyond the basics" capabilities, features, and workflows.

The demo session installed by Pro Tools (Can't Get Enough) is a medium size song project that you can explore to quickly check audio connections and see Pro Tools in action. The Low Roar Demo is a multitrack session of a fully tracked, edited, and mixed pop song.

While listening to either Demo session, you can use Pro Tools *Markers* to navigate through the different sections of the songs.

In the Memory Locations window (**Windows › Memory Locations**) click on any marker name to recall it and go to its saved location, custom view, or other saved attributes. Or use the numeric keypad to recall markers by number (listed in the **#** column) by pressing the Memory Location number followed by Period (.).
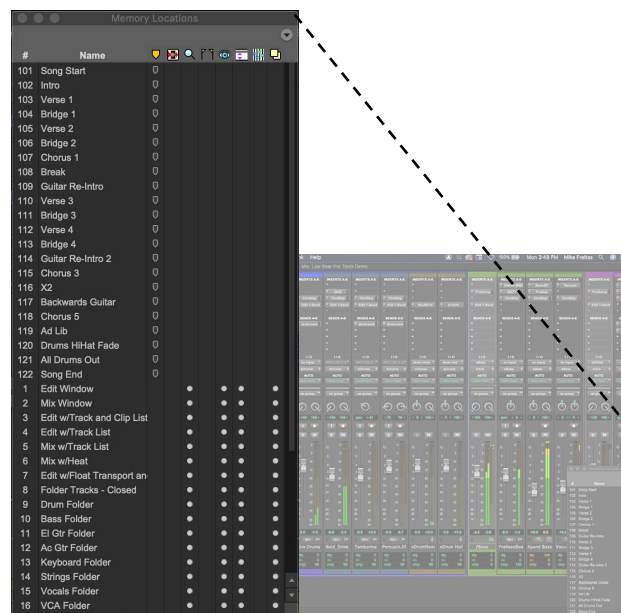
MEMORY LOCATIONS
Click to navigate to different parts of the song.

VIEWS
Click to see different windows and window configurations.
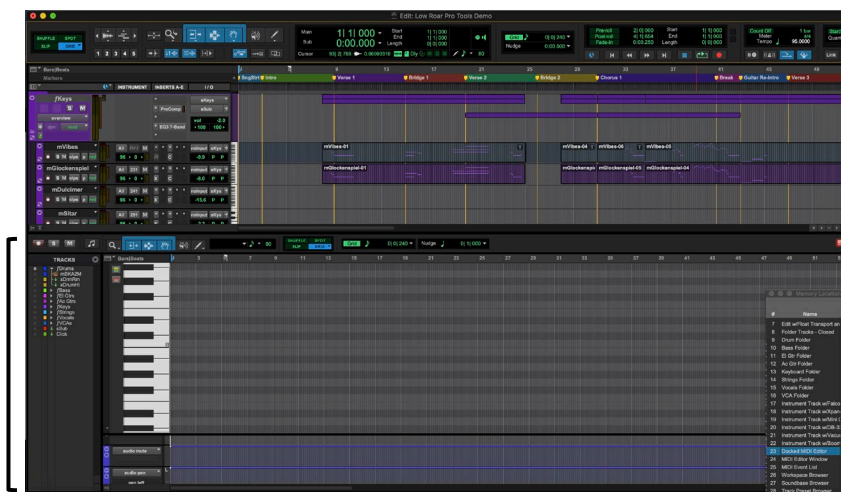
FOLDER TRACKS
Click to focus on tracks within the different Folder tracks.

Memory Locations window

MIDI EDITOR

Edit window after recalling an example Memory Location

MEMORY LOCATIONS

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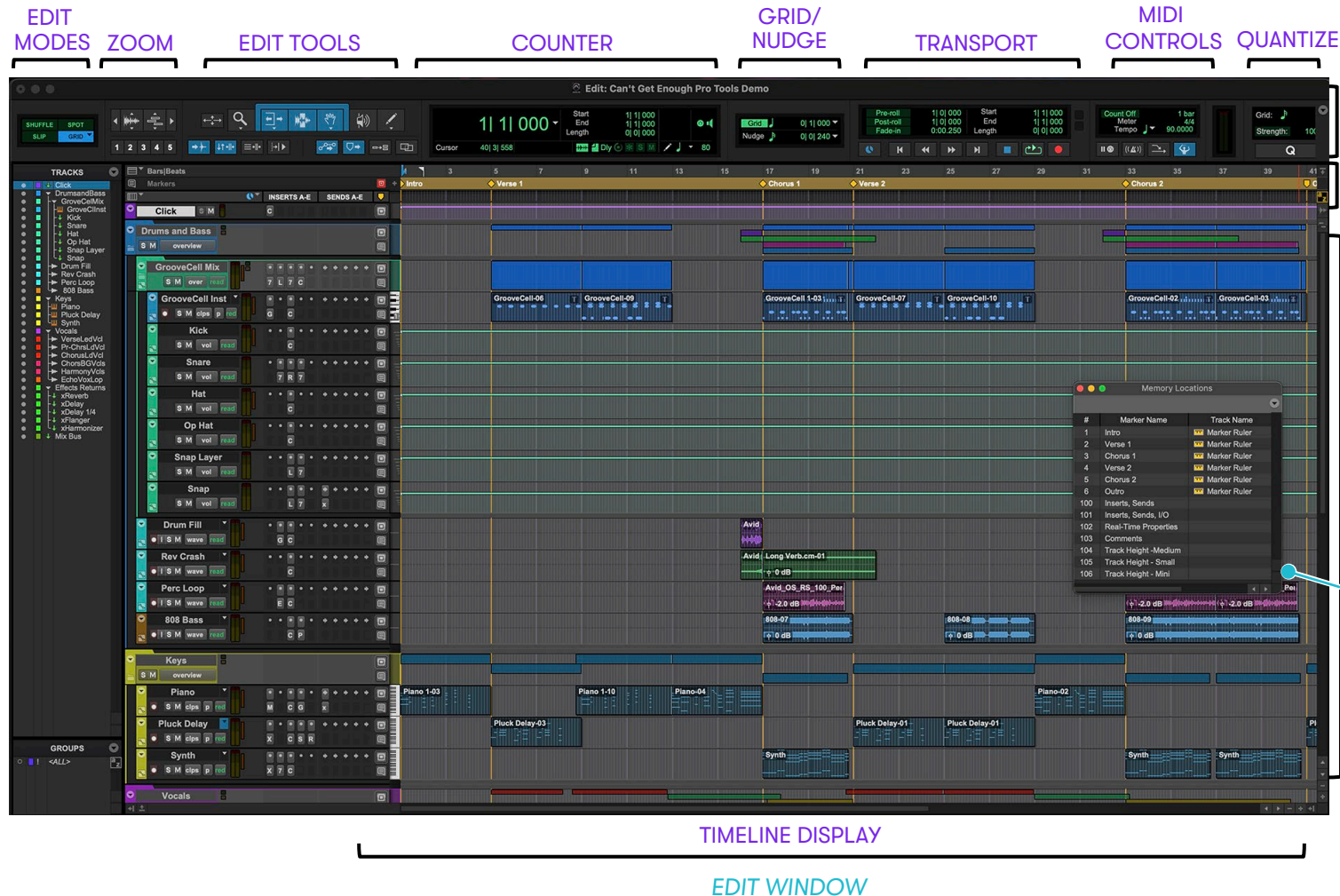MASTERING | ?

PRIMARY PRO TOOLS WINDOWS: EDIT WINDOW

The *Edit* and *Mix* windows are the primary work areas of Pro Tools. Here are quick descriptions of these and other Pro Tools windows (all are available from the Window menu).

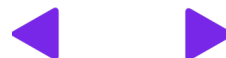Use the *Edit window* to edit and arrange audio, MIDI, and automation.

To view the Edit window, choose **Window** › **Edit**.

- Across the top is the *Toolbar*, with edit and navigation tools, the counter, transport controls, and more.

- Below the Toolbar are the *Rulers* for bars and beats, minutes and seconds, and other time formats.

- *Tracks* are displayed vertically below the Rulers.

- To the right of the track names is the *Timeline* display, where audio, MIDI data, and mix automation for reach track are displayed and edited in their own *track* rows.

The Edit window can show or hide many different elements, which can be selected from the **View** › **Edit Window** submenu. Other options are available directly from the View menu and the Edit Window Toolbar menu.

VIDEO TIP: Pro Tools Edit Window

EDIT MODES ZOOM EDIT TOOLS COUNTER GRID/NUDGE TRANSPORT MIDI CONTROLS QUANTIZE

TOOLBAR

RULERS

TRACKS

MEMORY LOCATIONS

TIMELINE DISPLAY

EDIT WINDOW

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PRIMARY PRO TOOLS WINDOWS: EDIT WINDOW HIGHLIGHTS

Here are a few more important features and options you'll want to know about.

EDIT MODES

The different *Edit Modes* determine how the cursor, Edit Tools, and editing actions function.

For Bars & Beats-based music you will probably use **Grid** mode most frequently, to constrain actions to the Bars|Beat grid.

In Slip mode, actions ignore the grid and current timebase. (Shuffle and Spot mode are more specialized modes you can learn about later.)

ZOOM

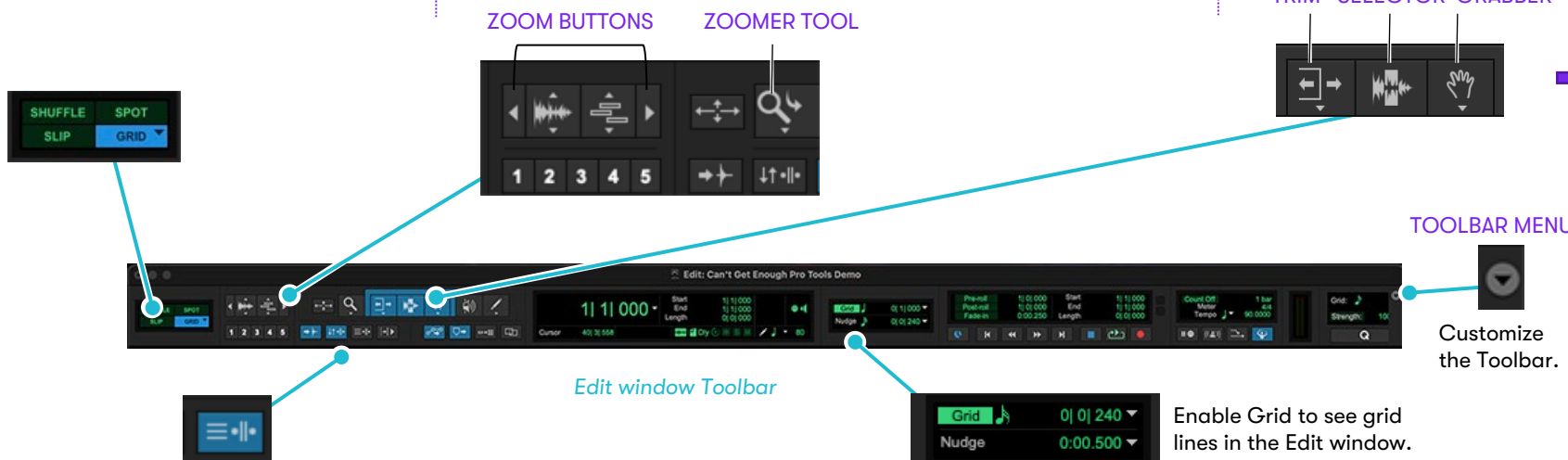The different Zoom tools let you zoom in and out on track data.

* **Zoom Buttons** Use the Zoom buttons to zoom in and out vertically and horizontally. You can also store and recall five Zoom presets.
* **Zoomer Tool** Use the Zoomer tool to select a zoom view in a track.
* **Zoom Toggle** Use the Zoom Toggle to switch between the current zoom view and a pre-defined zoom view.

ZOOM BUTTONS   ZOOMER TOOL

EDIT TOOLS

The primary editing tools are the Trim tool, Selector tool, and Grabber.

* **Trim Tools** Use the Trim tools to *trim* clips and clip groups.
* **Selector Tool** Use the Selector to make *selections* on tracks.
* **Grabber Tools** Use the Grabber tools to *select*, *separate*, or *move* clips.

Click on any tool to select it; the cursor changes to the selected tool. Trim and Grab are multifunctional; click and hold to see other available tools (such as the Time Trimmer, or Object Grabber).

TRIM SELECTOR GRABBER

Smart Tool

Click right above the three primary edit tools to enable the *Smart Tool*.

Use the Smart tool to Trim, Select, or Grab clips, or apply or adjust *fades* in tracks. Function is determined by cursor location relative to the clip you want to edit, letting you perform many different editing tasks without having to manually switch tools.

TOOLBAR MENU

Edit window Toolbar

Customize the Toolbar.

Enable Grid to see grid lines in the Edit window.

Link Timeline and Edit Selection

When enabled (lit) clicking anywhere in any track moves the Playback cursor to that same location. When not enabled the playback location does not change when clicking in a track or when selecting a clip. (See also Using Dynamic Transport Mode.)

VIDEO TIPS:
* Edit Modes   • Edit Tools
* Zoom   • Smart Tool

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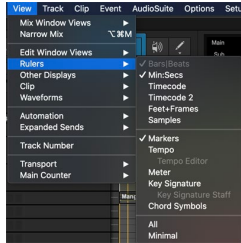
# PRIMARY PRO TOOLS WINDOWS: CUSTOMIZING THE EDIT WINDOW ○ ○ ● ○ ○

For music production, do the following to optimize the Edit window:

Choose **View** › **Rulers,** and enable **Bars|Beats, Min:Sec, Markers,** and **Tempo.** Leave other choices disabled.

Click the Edit Window Toolbar menu (in the upper-right corner of the Edit window) and do the following:

- Select (enable) **Tracks List** and **Clips List.**
- Select **Transport** and **MIDI Controls.**

- Deselect **Universe.**
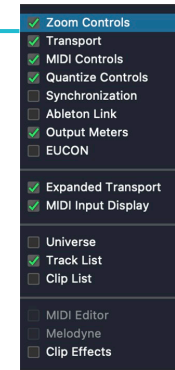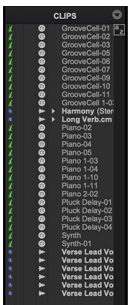- If necessary, enable Zoom Controls and leave other settings at their default.

TRACKS LIST

CLIPS LIST

VIDEO TIP: Track Views

GROUPS
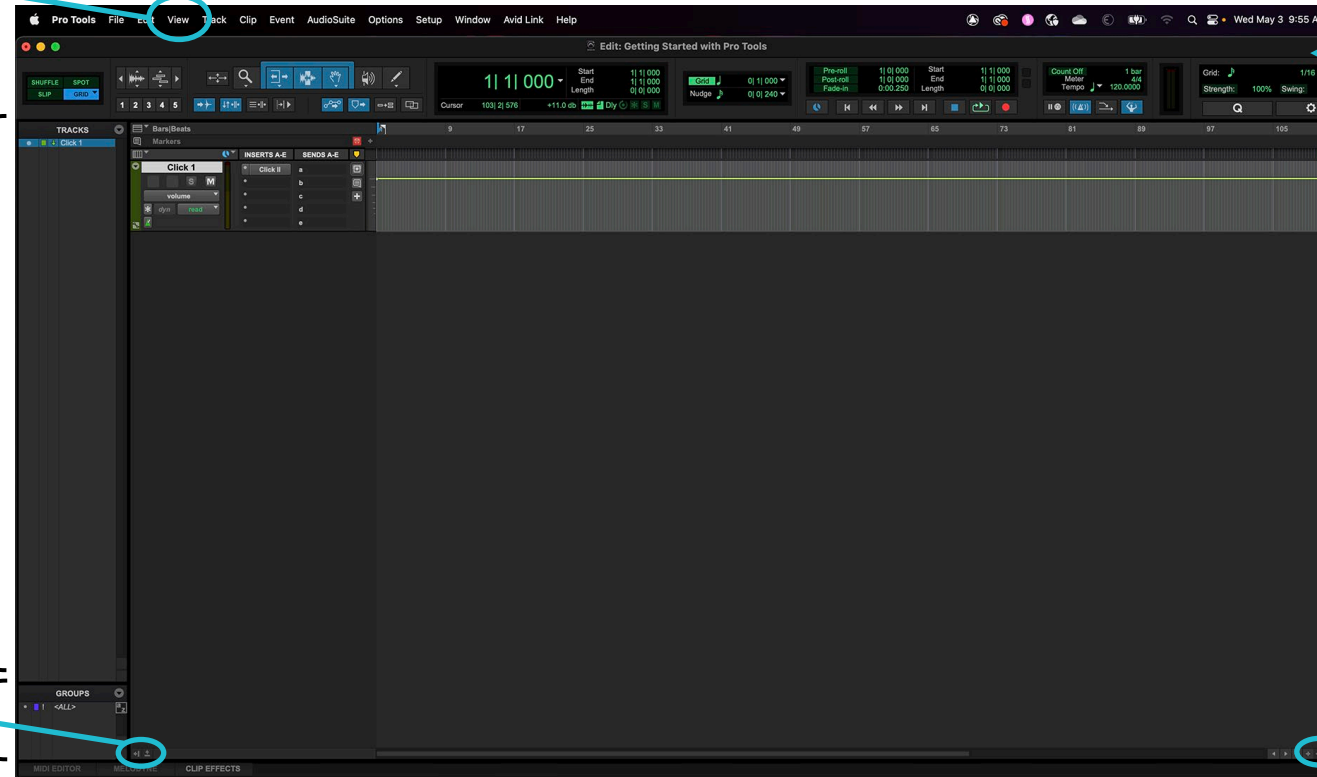
Click to open/close the Tracks List and Groups List.

Click to open/close the Clips List.

New session with a Click track

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PRIMARY PRO TOOLS WINDOWS: MIX WINDOW

To view the Mix window, press Command+Equals (=) (Mac) or Control+Equals (=) (Windows), or choose **Window › Mix.**

If you created a new session as instructed earlier, the Mix window will be empty. Below is an example of the Mix window in the Demo session.

Use the *Mix window* for routing and mixing audio and MIDI in your session.

The Mix window shows tracks as channel strips arranged left-to-right. Each strip provides faders, level meters, and controls for plugin and hardware inserts, sends, I/O (input and output), automation, panning, volume, solo, mute, and record enable.

Like the Edit window, the Mix window can show or hide different options to optimize its display.

To display all Mix window view options:

• Select **View › Mix Window › All**
• To display specific options, choose them from the **View › Mix Window Views** sub-menu

SHORTCUT: To toggle between Mix and Edit window views, press Command+Equals (=) (Mac), or Control+Equals (=) (Windows).

VIDEO TIP: Pro Tools Mix Window

Mix Window Views

INSERTS

SENDS

EQ GRAPHS

IO
AUTOMATION

FADERS
& METERS

COMMENTS

TRACKS

Mix window

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PRIMARY PRO TOOLS WINDOWS: OTHER WINDOWS

Transport

The *Transport* window is a floating window that provides controls for transport related functions such as Play, Stop, master Record, Fast Forward, and Rewind. Transport controls are also available in the Edit window Toolbar.

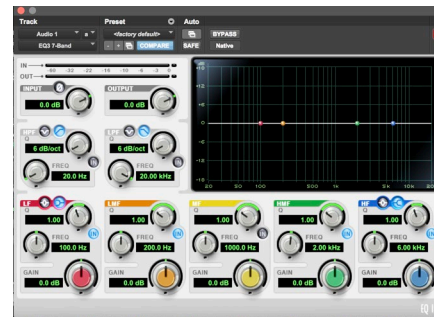- To open the Transport, choose **Window › Transport**.

TRANSPORT   COUNTER   MIDI

Transport window menu

Transport window

VIDEO TIPS:
- Transport   • Workspace
- Plugins   • MIDI Editor

Plugins

Plugin windows are floating windows that provide controls for audio processing and virtual instrument plugins.

- To open a plugin window click its name display in the Inserts list of any track.
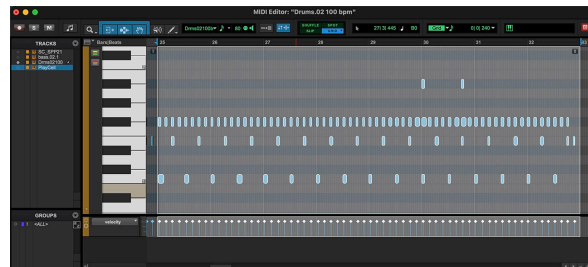

Plugin window

Workspace

Workspaces and *Soundbase* provide searchable database browsers for loops, clips, Track Presets, sessions, audio and video files, and more.

- To open a Workspace choose **Window › Workspace.**

Workspace window

MIDI Editor

The *MIDI Editor* window lets you compose and edit MIDI data using a "piano-roll" or music notation interface.
The MIDI Editor can also be shown in the Tabs view at the bottom of the Edit window, as can the Melodyne tab.

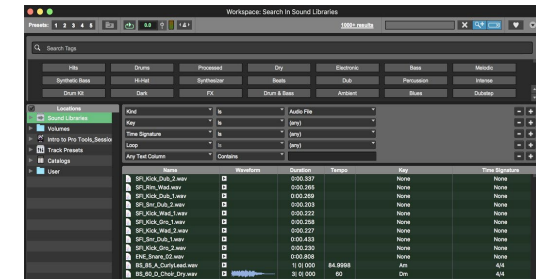*MIDI Editor window*

Score Editor

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.

Score Editor window

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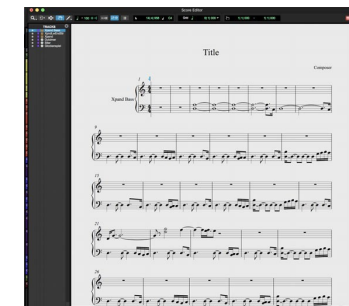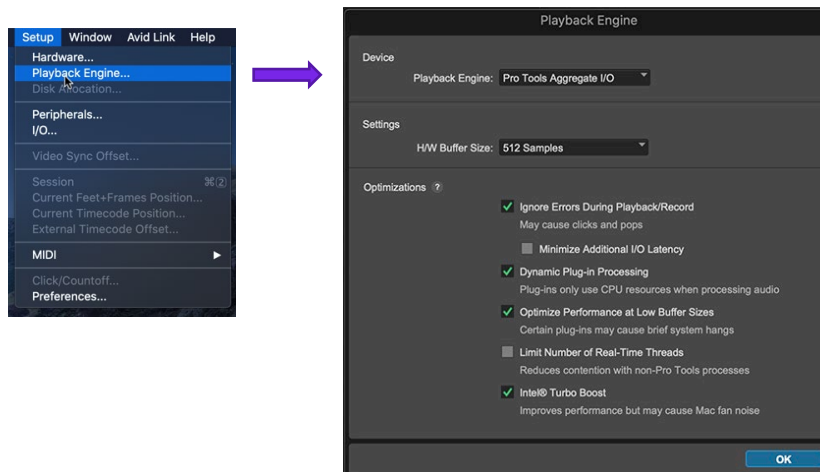
SYSTEM SETUP: PLAYBACK ENGINE

The Setup menu includes the **Playback Engine** and IO**...** settings, which let you verify and optimize your system configuration.

The first time you launch Pro Tools after installing it, you are guided to the Playback Engine dialog to choose your audio device.

Visit these dialog boxes to make sure Pro Tools is using the correct audio hardware, and to see how input, output, bus, and other signal paths are managed. Both are available regardless of whether a session or project is open.

The Playback Engine (**Setup** › **Playback Engine**) lets you adjust Pro Tools performance by changing *system settings* that affect its capacity for processing, playback, and recording.

Playback Engine

In most cases, the default settings for your system provide optimum performance. You can use the Playback Engine dialog at any time to adjust settings to accommodate large or processing-intensive Pro Tools sessions, or to optimize performance for your computer.

TIP: Use low HW Buffer settings for real-time MIDI performance and audio recording (low latency). Use high buffer settings for mixing and plugin processing (high latency).

In this example, the current Playback Engine is set to Pro Tools Aggregate IO to let Pro Tools use the computer's built-in audio. On your system, choose your audio interface to be the Playback Engine.

To learn more, see the *Pro Tools Reference Guide* (Help › Pro Tools Reference Guide).

VIDEO TIP: Playback Engine

TIP: To open the Playback Engine dialog when launching Pro Tools, press and hold the N key.

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SYSTEM SETUP: IO SETUP

The *I/O Setup* provides tools to label, format, and assign Pro Tools input, output, insert, and bus *audio signal paths* both for individual sessions as well as for your specific Pro Tools system.
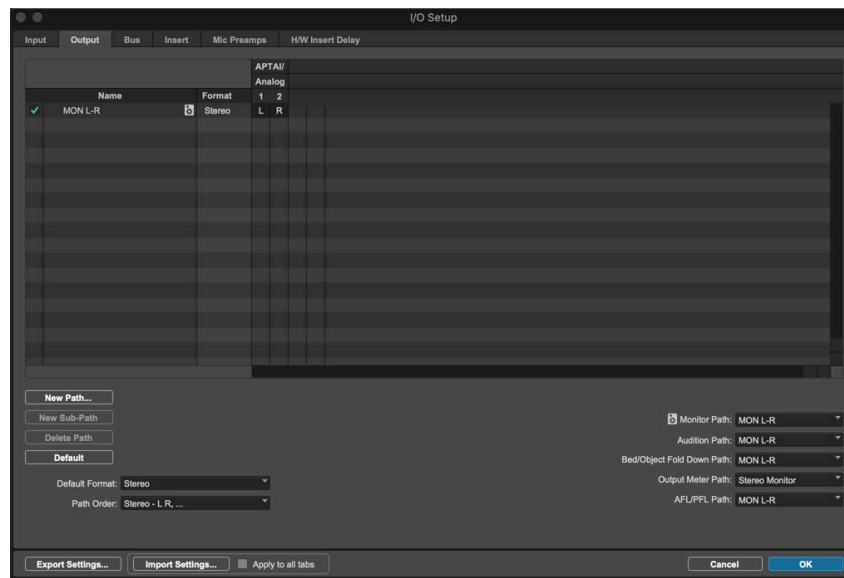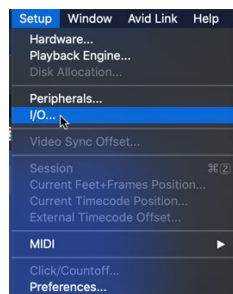
IO Setup

Like a virtual patchbay, I/O Setup controls let you route *physical* inputs and outputs on audio interfaces to Pro Tools input and output *channels*, *create* internal mix busses, and more. In most cases, the default settings provide all the signal paths you will need. Click to view the Inputs, Outputs, and Bus tabs to make sure you see paths appropriate for your audio interface.

In this example, the Outputs tab shows a single stereo output path available when the Playback Engine is the computer's built-in audio (Pro Tools Aggregate IO on Mac; on Windows choices can include ASIO4all or WASAPI).

TIP: Some audio interfaces provide a separate control panel/app that can be launched from the HW Setup (**Setup › Hardware**). Refer to the documentation from the manufacturer for details about your specific audio interface.

VIDEO TIPS:
• I/O Setup: Inputs and Outputs
• I/O Setup: Busses

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OVERVIEW & RESOURCES | GETTING STARTED | TRACKS & SESSIONS | RECORDING AUDIO | COMPOSING WITH VIs & LOOPS | EDITING & ARRANGING | MIXING & MASTERING | ?
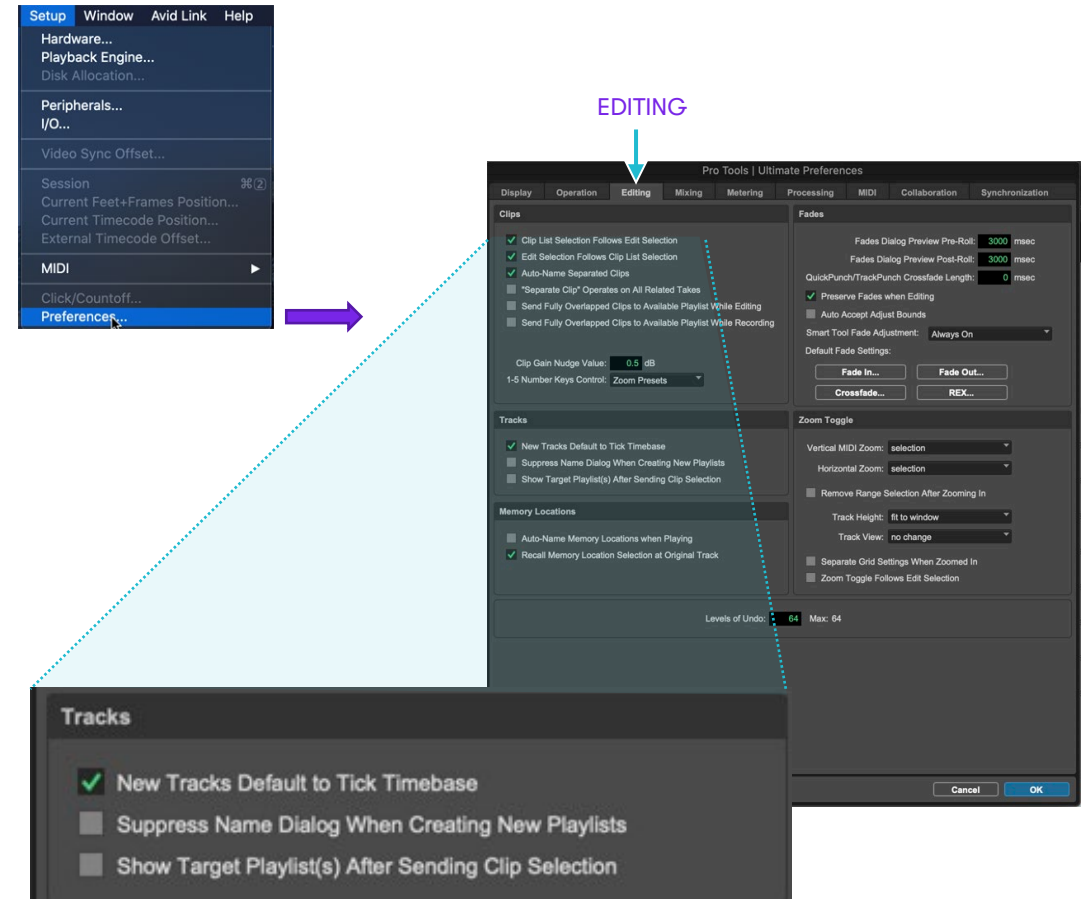
PRO TOOLS SETTINGS FOR MUSIC

To get started, quickly check a few session Preference settings common for music production to make sure they are enabled.

1. Choose **Setup › Preferences,** then click the tabs along the top and set each Preference.

2. Go to the **Editing** tab and in the **Tracks** section enable **New Tracks Default to Tick Timebase.** All new tracks you create will be ready to follow changes to session tempo.

3. Go to the Mixing tab and in the Automation section enable the **Plugins Controls Default to Auto-Enabled** setting. All plugins that you add will be ready for mix automation.

4. Go to the **Processing** tab and in the **Elastic Audio** section enable **Enable Elastic Audio on New Tracks.** All new audio tracks will be ready for time stretching and pitch adjustment using *Elastic Audio.*

5. Go to the **MIDI** tab and in the **Basics** section, first enable **Automatically Create Click Track in New Sessions** (all new sessions will start with a click track already created). Then click the **Default Thru Instrument** selector and choose **Follows First Selected MIDI Track** (so that playing a MIDI controller sends MIDI to whichever track you have selected).

6. Click **OK** to close Preferences.

Setup › Preferences example

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CREATE A PRO TOOLS SESSION

The first step in Pro Tools is creating a new *session*.

Session files can be saved, copied, and made into *templates*. Sessions and all associated media and settings files are stored locally on internal or external hard drives, or certain network storage systems.

Creating a New Session

Use the *Dashboard* to create a new session when you first launch Pro Tools or while it is already running.

To create a new session:

1. In Pro Tools, choose **File › Create New,** then in the Dashboard window click the **Create** tab.

2. Choose **Local Storage (Session).**

3. Enter a **Name** for the new session.

4. Optional: Open a Template (see below).

5. Click **Location** and choose where you want the new session to be created.

6. Set the **Sample Rate** to 48 kHz and set **Bit Depth** to 32-bit float. Configure other session settings as desired or use the default settings.

7. Click **Create.**

The new session is created.

If you chose to create a new session from a template, or open a session created by someone else or on a different system, you might see the Session Info dialog, informing you of session attributes such as plugins and I/O that are unavailable on your system. Click No to dismiss the Session Info dialog.

About Session Templates

Templates are session files that are pre-configured with tracks and settings for different types of audio production. If you want to create a new session from a template, select the **Create From Template** option, choose a Template category and then select a template from the list.

PRO TOOLS SESSION FILE
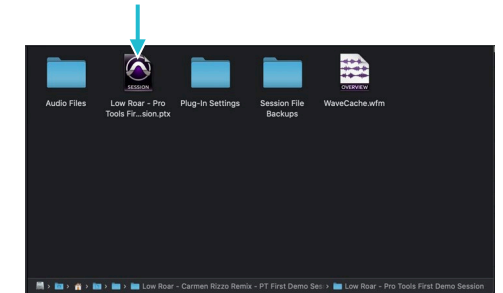
Example Session folder

▶ **VIDEO TIP:** Create a New Pro Tools Session

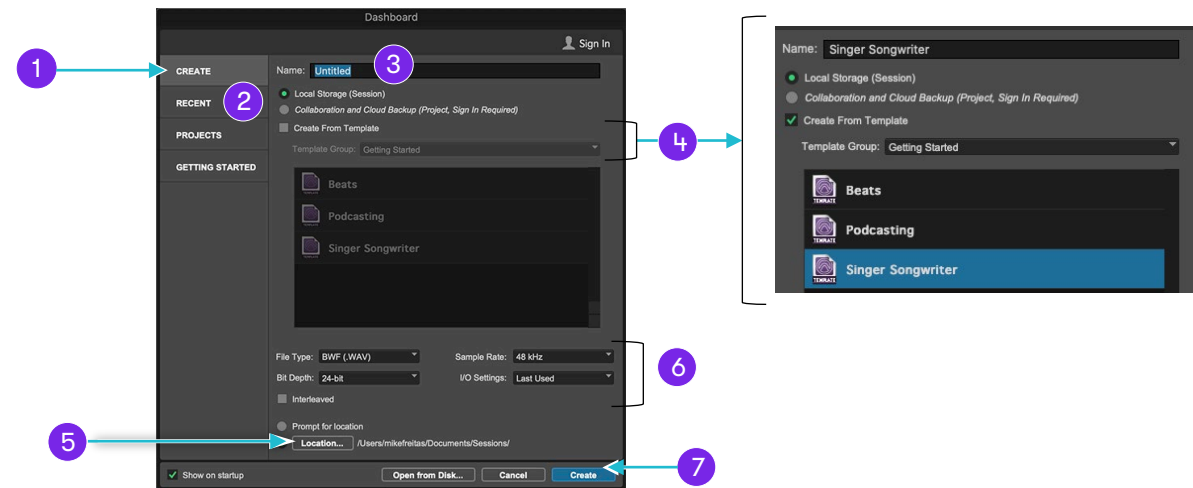**PRO TOOLS**
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TRACKS & SESSIONS

Create audio tracks for vocals and guitar, an Instrument track for MIDI composition, and more.

▶ **CREATE TRACKS** | Learn how to create tracks for vocals and guitar.

▶ **AMP SIMULATION FOR GUITAR** | Audition different amps and cabinets to find your tone.

▶ **REVERB FOR VOCALS** | Add reverb to process vocals using a Send.

▶ **VIRTUAL INSTRUMENT FOR DRUMS** | Quickly add a MIDI drum track using Track Presets.

▶ **ADD A CLICK TRACK** | Set up a click track so you can play and record in tempo.

▶ **TIME, TEMPO, AND METER** | Configure Pro Tools for your song's time signature, tempo, and meter.

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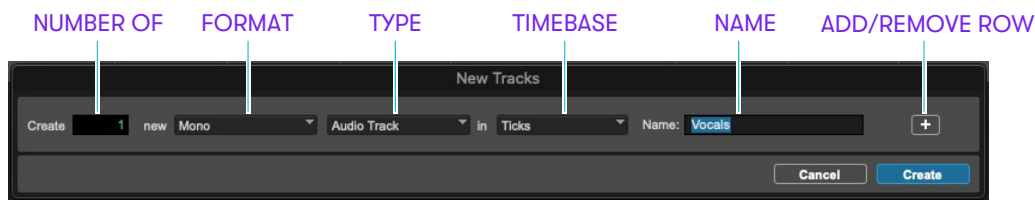
CREATING TRACKS: ADD A TRACK FOR VOCALS

Pro Tools uses *tracks* for recording audio and MIDI, signal routing, color coding, and processing.
You can easily add tracks to your session at any time by creating them, or by importing *Track Presets.*

To get started, create one audio track for vocals using the New Tracks command.

**VIDEO TIP:** Create New Audio Track

To create one or more tracks:

1. Choose **Track > New.** Or right-click any Track Name in the Mix or Edit windows and choose **New,** or press Command+Shift+N (Mac) or Control+Shift+N (Windows).

NUMBER OF   FORMAT   TYPE   TIMEBASE   NAME   ADD/REMOVE ROW

2. Leave Number Of, Format, and Type at their defaults, set Timebase to **Ticks,** then enter a Name such as "Vocals."

New Track dialog configured to create one new audio track named "Vocals"

3. When the New Track dialog is set how you want, click **Create.**
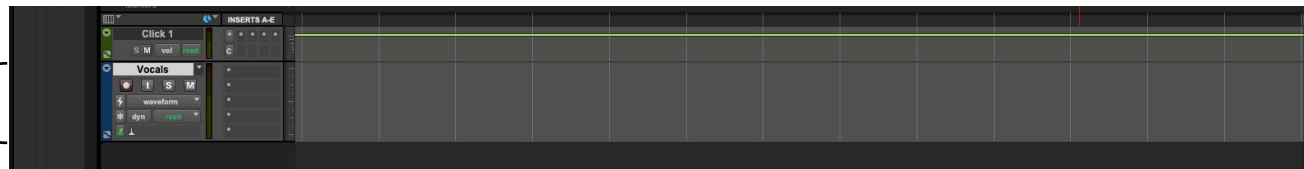
NEW TRACK

Edit window after creating one new track for vocals

4. Next, do any of the following:
   • To start adjusting levels and getting your vocal sound, see Create a Send & Return for Reverb.
   • To bring in a music track to sing or play along with, see Using Loops: Getting Started to learn how to import a track, then proceed to Recording Audio.
   • If you want to first add other tracks to record guitar or MIDI drums, see Creating Tracks: Using Track Presets.
   • To get right to setting up count off and pre-roll for recording, see Recording Audio.

Ticks or Samples?

If you set the Preference for **New Tracks Default to Tick Timebase,** all tracks will be pre-configured for Ticks and be ready to follow changes to session tempo. You can set the timebase for new tracks manually in the New Tracks dialog, and you can change the setting later after tracks have been created.

Mono or Stereo?

• To record a single microphone or instrument connected to your audio interface, use a mono track.

• If you want to record using two hardware inputs at once, create two mono or one stereo audio track 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 mic for acoustic guitar) create 2 *mono* audio tracks. 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.

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# CREATING TRACKS: USING TRACK PRESETS

Add a Track for Guitar

Pro Tools lets you create, save, and import *Track Presets*. You can import Track Presets to quickly create new preconfigured tracks in your session. You can also recall just the Inserts (plugins) or Sends configurations from Track Presets to tracks that are already in your session.

Do the following to use Track Presets to quickly add a new audio track for electric guitar.

To create a new track from a Track Preset:

1. Choose **Tracks** › **New Track**.
2. From the Track Type selector, choose **Track Presets** and select a Track Preset *Category* (such as **Avid** › **Guitars**).
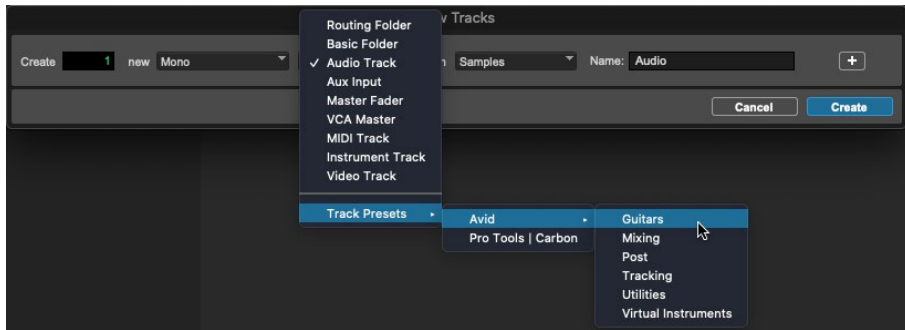
3. Select a Track Preset (such as **Rock**).
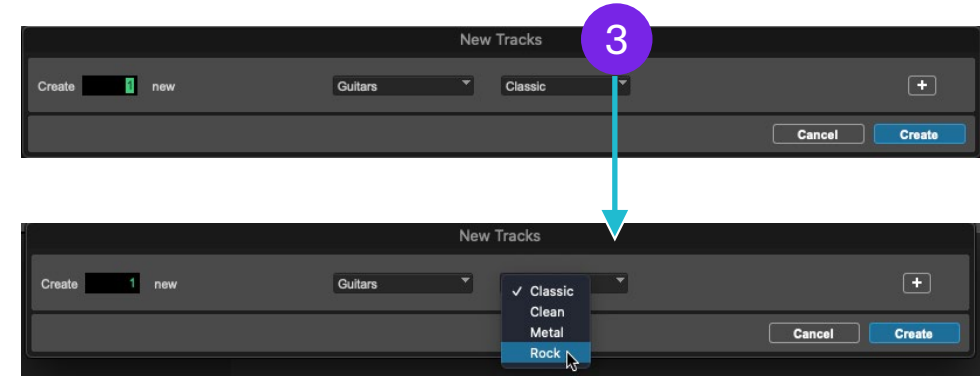
4. Click **Create**.

   The new track is created in your session, with Eleven MKII and C1 Chorus/Vibrato plugins already inserted.

   ELEC GUITAR TRACK

   PLUGINS FROM TRACK PRESET

5. Proceed to the next page to learn another way to insert a plugin.

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AMP SIMULATION FOR GUITAR: INSERT A PLUGIN

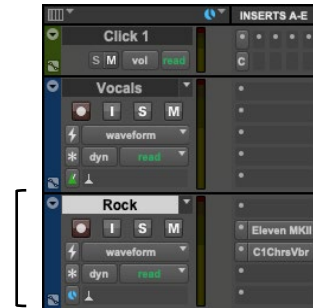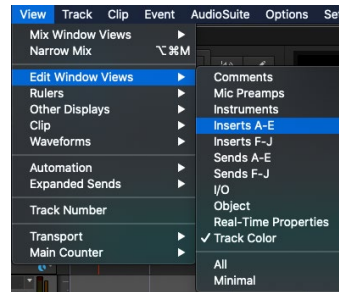On the previous page you saw how to use a Track Preset to create a track for electric guitar. You can also insert plugins manually as described to the right.

Do the following to insert a plugin on a track. You can insert plugins from either the Edit or Mix windows (the examples show the Edit window).

1 First, choose **View** › **Edit Window Views** › **Inserts A-E.**

2 In an audio track click the Insert Selector, then choose **Native plugin** › **Harmonic** › **Eleven MKII (mono).** If using Pro Tools Intro, choose **Eleven Lite.**
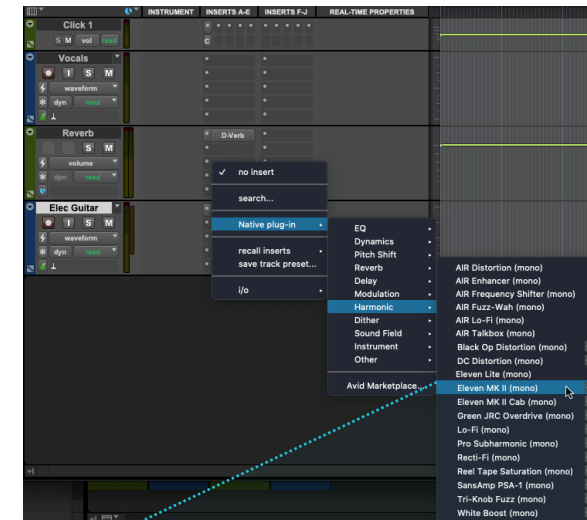
The Eleven amp sim plugin is inserted on the track, and its plugin window opens.

3 Next, do any of the following:
- If you want to start playing, auditioning amps, and adjusting levels, see Choosing Amps.
- If you want to first add a track for some MIDI drums, see Add a Virtual Instrument for MIDI Drums.
- To get right to recording, see Recording Audio.

To open any plugin window, click its name in its Insert slot.

ELEVEN MKII

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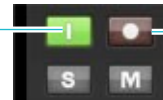
AMP SIMULATION FOR GUITAR: CHOOSING AMPS

Choosing an Amp

If you followed the instructions in Insert an Amp Sim Plugin on the Guitar, do the following to find an amp and settings you like:

1. Record enable, or Input Monitor enable, the electric guitar input track.

2. Click the amp sim plugin you added to the track to open its plugin window (we used Eleven MKII).

3. Click the plugin Librarian menu ("<factory default>") and choose an amp. Play and adjust its settings as desired.

4. Proceed to Recording Audio.

INPUT MONITOR (ENABLED) — RECORD ENABLE

LIBRARIAN MENU

Gain Staging and Amp Sims

There's no wrong way to do things when it comes to experimenting to get sounds and tone, but there are important guidelines for levels.

When using amp sim plugins like Eleven it is recommended to start with your guitar volume knob at 50%. Too much higher than that can overload the input stage of Eleven, which was modeled to expect the same level that real pedals and amps receive directly from your guitar.

Inserts, Pre-Fader, and Post-Fader

When you record a track with a plugin inserted on it, as shown in this guide's example, you will not record the amp sim on the guitar track, you will only record the "dry" guitar signal. When you play back to listen, the track plays from disk through the Pro Tools fader strip and *then* through plugins on that track. The benefit of this is that you are not locked into the sound you choose when you record, you can tweak the tone, automate individual knobs, or re-amplify with a whole different amp later as your song develops.

AUDIO INTERFACE → DISK → AUDIO TRACK → AMP SIM

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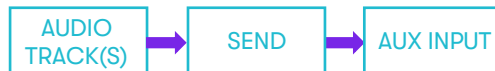# REVERB FOR VOCALS: CREATE A SEND & RETURN FOR REVERB

Reverb, delay, and similar effects are often inserted on Auxiliary Input tracks to process one or more tracks using *Sends*.

## Using Sends and the New Track Shortcut

Reverb provides a sense of room acoustics. Reverb can make one track, groups of tracks, or your whole mix sound like it is in a big concert hall, an intimate room, a narrow hallway, or other acoustic spaces.

One of the best ways to incorporate reverb in your mix is in a "send-and-return" configuration. In Pro Tools, use *sends* to route audio from one or more tracks to and through the same reverb plugin inserted on an Aux Input track. Pro Tools lets you create and route to a new Aux in one gesture.

AUDIO TRACK(S) → SEND → AUX INPUT

To create a send-and-return for reverb:

1. Show the Mix window, or use the Edit window with Sends view enabled (**View › Edit Window Views › Sends A-E**).

2. Click the top-most Send selector (for send A) on the Vocals tracks, and choose **new track…**

   The New Track dialog appears, pre-configured to create a stereo Aux Input.

New Track dialog

2

SEND SELECTOR
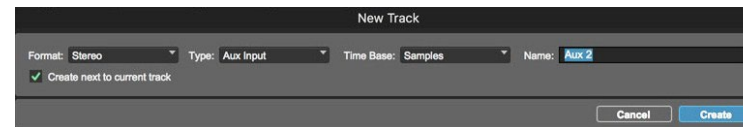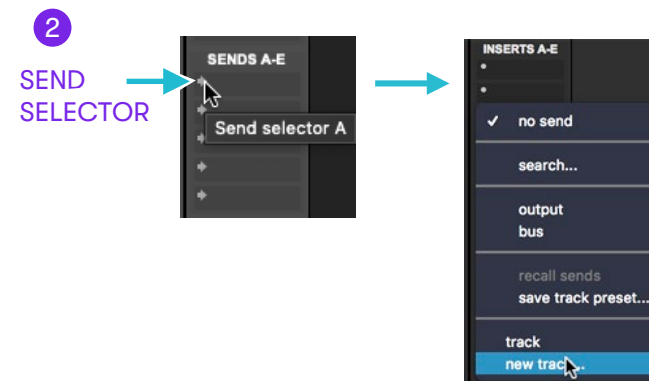
3. In the Name field, type "Reverb." Naming an Aux return by its effect name makes it easier to identify and locate the track.

4. Click **Create**. Pro Tools adds a stereo Aux Input and automatically sets the required signal routing.

Proceed to the next page to finish setting up our reverb send-and-return.

VIDEO TIP: Creating an Effects Return

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REVERB FOR VOCALS: CREATE A SEND & RETURN FOR REVERB

(Continued from previous page) Pro Tools adds a stereo Auxiliary Input named "Reverb" and automatically sets the required signal routing.
- A new *bus path* is created and named according to the destination track (such as "Reverb").
- The input of the Aux Input track is assigned to the new bus Reverb.
- A send to the new bus is assigned to the selected track(s), and the Send Output window appears.

4. Insert a reverb plugin on the Aux track by clicking an Insert selector on the Aux Input track and choosing a reverb plug-in (for example, choose **multichannel plugin > Reverb > D-Verb**).

5. From the D-Verb Librarian menu ("<factory default>"), choose a preset such as Vocal Plate.

To learn more about D-Verb or any other plugin choose **Help > Audio Plug-Ins Guide**.

INSERT SELECTOR
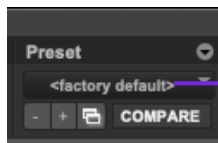
Send Output window for Send A ("Reverb") on the track "Vocals"

Send A assigned to new bus "Reverb"

Input of the Aux Input assigned to bus "Reverb"
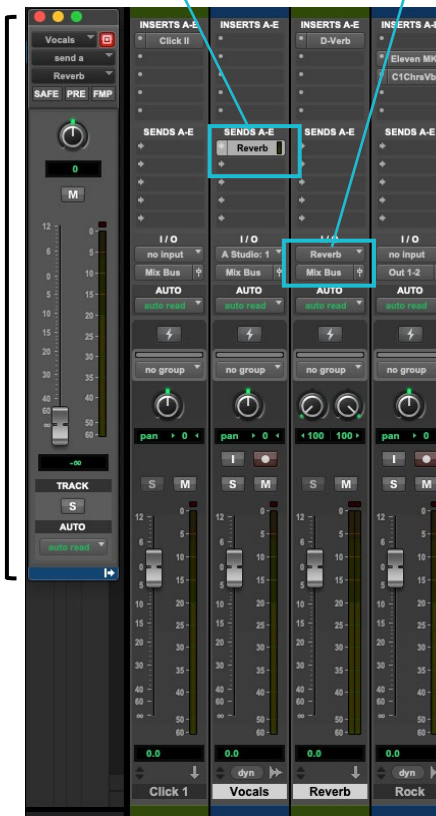
SENDS

INPUT

Solo Safe

Pro Tools lets you *solo safe* any track to prevent it from being muted even if you solo other tracks. By default, new Aux Input tracks are solo safed which is ideal for reverb send-and-returns. To put a track into (or out of) Solo Safe mode manually, Command-click (Mac) or Control-click (Windows) the **Solo** button on the track. The Solo button dims to indicate Solo Safe mode.

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REVERB FOR VOCALS: ADJUSTING REVERB LEVELS

Blending Vocals and Reverb

If you followed the instructions in Create a Send & Return for Reverb, do the following to adjust the balance between the input signal and the reverb plugin:

1. Record enable, or Input Monitor enable, your vocal/mic input track. This lets you hear the input signal.

2. Click the Send you added to the track to open the Send Output window.

3. As you sing or play, raise the Send level fader enough to send a healthy level to the plugin; enough to hear the effect, but not so much that it overloads or distorts the plugin.

4. Once you find the right level to send to the reverb, use its Auxiliary Input fader to adjust how much reverb you hear.

5. Proceed to Recording Audio.

To learn more about Avid plugins choose
Help > Audio Plug-Ins Guide.

VIDEO TIP: Creating an Effects Return

1

INPUT MONITOR — RECORD ENABLE

Track Input Monitoring enabled

2 Click to open the Send Output window

INSERTS

SENDS

INPUT

3 Adjust the Send level fader

4 Adjust the fader to balance the listening level

TIP: Check out some of the other "Mixing" Track Presets (**Avid** > **Track Presets** > **Mixing**) for more examples of send and return processing.

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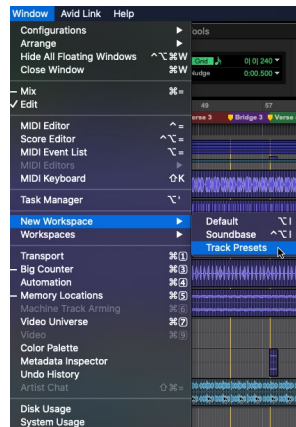
ADD A VIRTUAL INSTRUMENT FOR MIDI DRUMS

Do the following to add a new *Instrument* track to be able to play or program drums. This section uses another Track Preset, but showing how to add it using drag-and-drop from a Workspace browser.

To add a Track Preset using drag-and-drop:

1. Choose **Window › New Workspace › Track Presets**.

2. In the **Name** column in the Workspace click to open **Avid › Virtual Instruments** and then choose a kit (such as **Studio Drums**).

3. Drag the Track Preset from the Workspace and drop it on any empty space in the Edit Window.

EDIT WINDOW   WORKSPACE
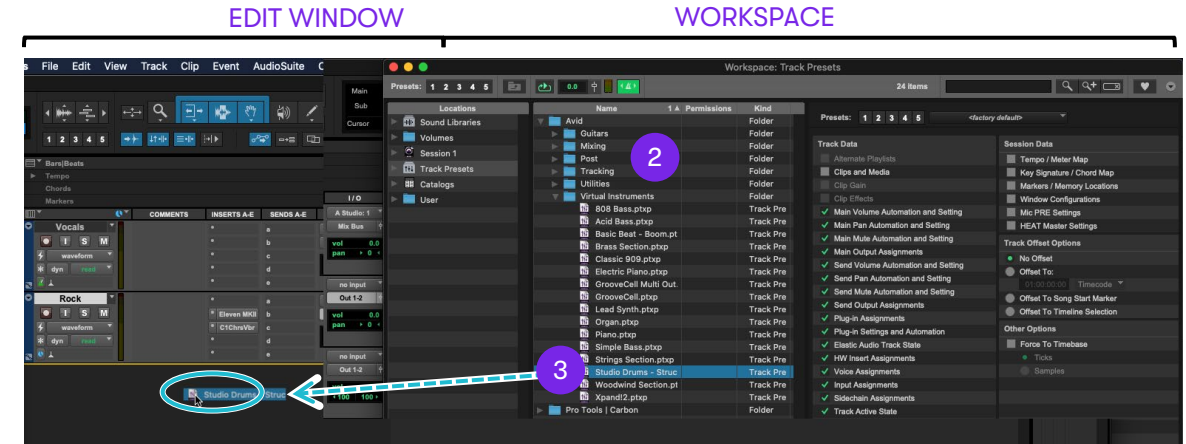
The new track is created in your session.

4. Proceed to Session Settings: Time, Tempo, and Meter to learn how to quickly set the tempo and other song-oriented settings.

VIDEO TIP: Create an Instrument Track for VIs

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ADD A CLICK TRACK

Recording with a Click Track

A *click track* provides a metronomic click for tempo reference while recording. When you start playback or recording, the click can provide a *countoff* and continue according to the meter and tempo map in the Pro Tools Timeline.

You can set Pro Tools to automatically create a click track every time you create a new session, as shown in Session Settings for Music, or create one manually.

VIDEO TIP:
- Click Track
- Count-Off

To set up a click track:

1. Choose **Track › Create Click Track**. Pro Tools creates a new Instrument track with the Click II plugin on the first track insert.

> **TIP:** Whenever you add a track, it is added after the currently selected track (below the currently selected track in the Edit window, and to the right of the currently selected track in the Mix window).

2. In the Transport controls at the top of the Edit window, or in the Transport window, make sure the Metronome and Count Off buttons are enabled. You can also toggle the Metronome on and off by choosing Options › Click.

COUNT OFF

METRONOME   CONDUCTOR

3. Press the Spacebar or click the Play button in the Transport controls to start playback and hear the click.

> **TIP:** You can customize the Click by choosing different sounds, and setting it to only sound during recording, while playing back and recording, or only during countoff. These settings can be found in the Click/Countoff dialog (Setup › Click/Countoff).

4. Click OK.

5. Proceed to Session Settings: Time, Tempo, and Meter.

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SESSION SETTINGS: TIME, TEMPO, AND METER

Here is how to configure session settings for Time, Tempo and Meter, and Click tracks. You might want to set some or all of these before you start recording and editing, especially when producing music.

Time (Bars and Beats or Minutes and Seconds)

Pro Tools provides several different *Timebase Rulers*, any of which can be used as the *Main Timescale*. The Main Timescale determines how session time can be displayed and measured, and how the timeline grid can be used for navigation and editing. For music production, it is often desirable to measure time in *Bars|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*.

Set the Main Time Scale to Bars|Beats if you want to use a click track, or create, edit, and arrange audio and MIDI on a tempo and meter-based grid.

TIP: For post-production (audio for video) you can use minutes and seconds, timecode, or other timebases.

Changing the Main Time Scale

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

• Click the Main Counter selector located at the top of the Edit window and select a Timebase. Or if a Timebase Ruler is displayed, click its name so it is lit.

MAIN COUNTER

TIMEBASE RULERS (click to select Bars|Beats)
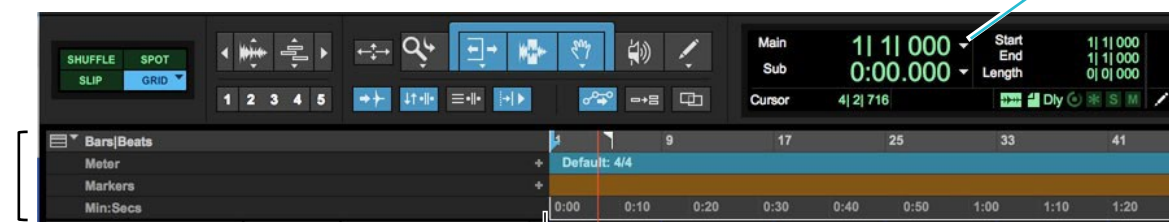
TIMELINE

Pro Tools Timeline and Main Counter with the Main Time Scale set to Bars|Beats

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SESSION SETTINGS: TIME, **TEMPO**, AND METER ○ ● ○ ○

When the main timescale is Bars|Beats, Pro Tools lets you set the *tempo* and *meter*.

Setting the Session Tempo

Pro Tools sessions default to a tempo of 120 BPM, but you can change this at any time using Manual Tempo Mode, or the Tempo ruler.

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 or by tapping in the tempo.

VIDEO TIP: Setting Tempo

1 **To set tempo manually:**
In the Transport controls at the top of the Edit window (or in the MIDI Controls view of the Transport window), enter a new tempo by doing one of the following:

- Click the Tempo value, type a new number, and press Enter.
- Click the Tempo value and drag up or down to change the setting. For finer resolution, hold Command (Mac) or Control (Windows) while dragging.
- Click the Tempo value and press the "T" key on your computer keyboard at the desired tempo.

TEMPO RESOLUTION

TEMPO VALUE

CONDUCTOR BUTTON

Manual Tempo mode

2 If you want to work in a time signature other than 4/4, see Session Settings: Time, Tempo, and Meter.

TIP: You can also import a loop and tell Pro Tools to set the session tempo to match that of the loop.

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SESSION SETTINGS: TIME, **TEMPO**, AND METER

To have tempo changes:

1. In the Transport controls at the top of the Edit window (or in the MIDI Controls view of the Transport window), make sure the Conductor is enabled.

2. Also make sure the Tempo Ruler is displayed. If it is not, choose it from the Ruler Views selector at the far left of the Rulers view (or choose View › Rulers › Tempo).

3. Do one of the following:

   • Click the Add Tempo Change button ("+" plus sign, located just to the left of the Tempo ruler).

   • Double-click the Song Start Marker in the Edit window.

   • Control + click (Mac) or Start + click (Windows) anywhere in the Tempo ruler.

CONDUCTOR ENABLED

4. In the Tempo Change dialog, enter a new **BPM** value. You can type in a specific tempo, or click and scroll up and down, or use the T key on your computer keyboard to tap in a tempo.

5. Set the **Location** to 1|1|000 to replace the default session tempo, or enter any other location where you want the tempo to change.

6. Click **Resolution** and select a beat value. For example, if you are in 6/8, select a dotted-quarter note.
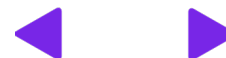
7. Click OK.

RULER VIEWS SELECTOR

SONG START MARKER

TEMPO RULER

TEMPO RULER

ADD TEMPO CHANGE BUTTON (+)

Tempo Change dialog
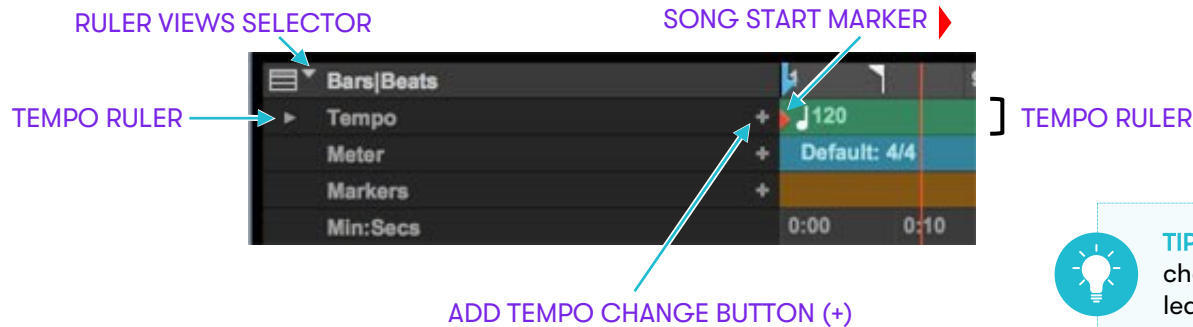
TIP: You can have gradual tempo changes using Tempo Operations. To learn more, see **Help › Pro Tools Help**.

VIDEO TIP: Setting Tempo

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SESSION SETTINGS: TIME, TEMPO, AND **METER**

Setting the Session Meter (Time Signature)

Meter is set to 4/4 by default, but you can change it at any time.

Set the session meter to match the time signature of your music, to make sure the accented clicks from the Click track line up with what you're playing.

VIDEO TIP: Time Signature/Meter

To set the meter for a session:

1. Double-click the Current Meter in the Edit window Toolbar, or in the Transport window.

Current Meter (shown at left) and Meter Change (shown at right)

2. Do the following in the Meter Change dialog:

   • Make sure the Location field is set to 1|1|000 (the beginning of the session).

   • If your song is in a time signature other than 4/4, enter the desired meter into the two Meter fields.

   • Optional: From the Click pop-up menu, select a note value for the beat. (For example, if you are in 6/8, you might want to select a dotted-quarter note).

3. Click **OK** to insert the new meter event.

4. If you are ready to start recording vocals or guitar, proceed to Recording Audio. If you want to start programming a MIDI drum track first, see MIDI: Getting Started.
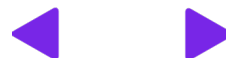
About Tempo and Meter Changes

Pro Tools lets you set tempo and meter changes by inserting tempo and meter *events* in their rulers.

To learn more about tempo and meter events, and how to use *tick-* and *sample-based* tracks, see Pro Tools Help (**Help › Pro Tools Help**).

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RECORDING AUDIO

Record an audio track, listen back, punch record, layer tracks, and more.

▶ **COUNT OFF AND PRE-ROLL** — Have Pro Tools cue you for when to start recording.

▶ **RECORDING AUDIO** — Recording an audio track.

▶ **INPUT ROUTING & SIGNAL LEVELS** — Assigning track input and adjusting levels for recording.

▶ **LISTENING TO YOUR RECORDING** — Listening to your recording, re-recording, and punching in.

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COUNT OFF AND PRE-ROLL

Getting Set Up to Record Audio

Enable count off and pre-roll, then record enable a track for audio recording.

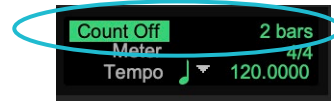VIDEO TIPS:
• Count-Off
• Pre-Roll

Enable Count Off:

• To hear the click *count off* before recording or playing, click the Count Off button in the Transport so it is highlighted.

Enable Pre-Roll:

• To have playback start a few bars ahead of the current Playback cursor location, click the Pre-roll button so it is highlighted. Click the bar indicator next to it and enter "2" to set pre-roll for 2 bars.
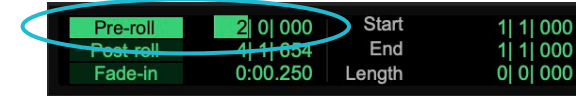
Press the Spacebar (Play/Stop) to begin playback and check the level of the Click. Raise or lower the Click track fader to adjust its volume.

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INPUT ROUTING AND SETTING LEVELS

Prepare a track for audio recording.

To prepare a track for recording:

1. Make sure the Edit window is showing I/O controls (choose **View › Edit Window Views › I/O**) or show the Mix window (choose **Window › Mix**).

   The upper I/O selector shows which *Input path* is assigned to this track (the lower shows the Output path).

2. Click the Audio Input Path selector and choose the hardware input(s) on your audio interface connected to your microphone or instrument source (such as Input 1 (Mono)).

3. Click the Track Input button ("I") so it lights green. This lets you hear your mic or instrument coming into Pro Tools.

INPUT MONITOR

*Track Input
Monitoring enabled*

AUDIO INPUT
PATH SELECTOR

4. 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.)

5. Turn up the input gain on your audio interface until the on-screen track meter shows green most of the time, or yellow for only the loudest passages. If the track meter shows red, or you hear distortion, gain is too high; lower the input gain. If you barely see any activity in the track meter, gain is too low; raise the input gain.

6. Get the sound you want by adjusting send/return levels and choosing a plugin setting (amp sim, or other). See Adjusting Reverb Levels and Choosing Amps, then return here to continue recording.

TRACK
METER

VIDEO TIP: Recording Audio

Aux I/O

Pro Tools on macOS lets you use Aux I/O to extend your Pro Tools I/O capabilities through Core Audio routing. To learn more, watch Aux I/O In Focus. *Note: Aux I/O is not available in Pro Tools Intro.*

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RECORDING AUDIO

To record an audio track:

1. Click the Track Input button again to disable Track Input monitoring.

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

RECORD ENABLE

> **TIP:** You can also record enable a track by first clicking in that track's row in the timeline, then pressing **Shift + R**.

3. In the Transport controls, click the Return to Zero button if you want to start recording from the beginning of the session.

4. Recommended: Double-click the track Name and enter a custom name (such as "Vocals" or "Electric Guitar"). The file names of your recordings and clips are based on their parent track name.

5. Click the Record button in the Transport to record arm the session. The button flashes red. This is the "master" record enable control for Pro Tools.

RETURN TO ZERO   PLAY RECORD ARM

6. Now 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. After any Count Off or pre-roll the Transport Record and track Record Enable buttons light solid red to indicate that you are recording.

8. To stop recording, press the Spacebar again or click the Stop button in the Transport.

9. You have just recorded your first audio track!

A mono audio track during recording

A mono audio track after recording

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LISTENING TO YOUR RECORDING

TIP: To learn how to use Loop and Punch record, and Input Monitoring modes, see the Audio Recording section in Pro Tools Help (choose **Help > Pro Tools Help**).

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 for Layering

Repeat the same steps to create additional audio tracks and record more material. You can also use Loop Record, QuickPunch, or other record modes.

- Loop Record lets you define a selection in a track, enable and begin recording, and Pro Tools loops the passage and records all your takes to unique *playlists*.

- QuickPunch lets you start playback and then manually "punch in" to record while the session plays by pressing the Transport Record button. (Tip: If you have an Avid Dock, S1, S3, or other supported control surface you can use a footswitch to engage punch-in/out).

VIDEO TIPS:
- Track Input Monitoring
- Auto-Input Monitoring

Re-recording and Punching In

If you want to re-record a portion of a performance, whether a chorus, a line, or even a single word or note, you can "punch in" and replace previously recorded material. You can have Pro Tools automatically punch in to record over a selected range of track material, or use Quick Punch to manually punch in.

To automatically punch in:

1. In the Edit window, use the Smart Tool in "Selector" (or "I-beam") mode to click and drag from the beginning to the end of what you want to replace.
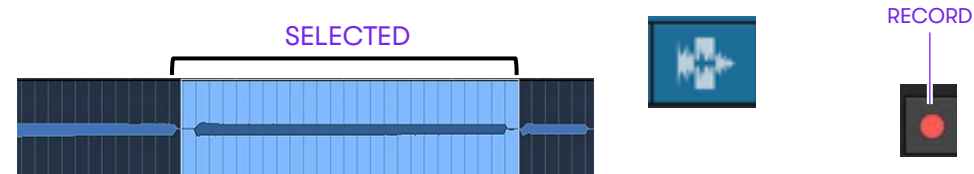
SELECTED   RECORD

2. Enable Pre-roll.
3. Record-enable the track, then click the Record button in the Transport.
4. To start recording, press the Spacebar or click Play in the Transport.
5. Because Pre-roll is enabled, playback starts before the beginning of your selected audio material, then punches into recording at the start of the selection. At the end of the selection, recording and playback stop (unless you also enabled post-roll).

By default, during pre-roll Pro Tools plays back existing track material up to the punch point, at which time it switches to the audio input signal being recorded. You can use Track *Input Monitoring* to instead hear only the audio input signal prior to the punch-in point (useful for matching levels and finding the pocket).

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COMPOSING WITH VIs AND LOOPS

Record and program MIDI and integrate loops and samples.

▶ **GETTING STARTED** | Learn the basics of MIDI, Instrument Tracks, and Pro Tools' Virtual Instruments.

▶ **INSTRUMENT VIEW & REAL-TIME PROPERTIES** | Managing MIDI communication and accessing Real-Time MIDI Properties.

▶ **RECORDING MIDI** | Recording a MIDI track.

▶ **OVERDUBBING & LAYERING MIDI** | Record more MIDI and Virtual Instruments.

▶ **QUANTIZING MIDI** | Learn how to quantize MIDI for improved timing.

▶ **TRACK FREEZE** | Render your MIDI tracks into audio to free up system resources for other tracks.

▶ **RETROSPECTIVE MIDI RECORD** | Let Pro Tools help you never miss a keeper take.

▶ **MIDI EDITING BASICS** | Edit MIDI notes and clips in tracks and in the MIDI Editor window.

▶ **USING LOOPS** | See how to quickly import loops for rhythm, beds, and other sounds, and learn about Dynamic Transport mode.

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GETTING STARTED WITH MIDI, VIs, AND LOOPS

It's easy to add software instruments and sounds using the included virtual instrument (VI) plugins and loops. This section shows how to:

- Use Instrument tracks to record MIDI for a nearly limitless range of drum machines, synths, pianos, strings and more (see Creating an Instrument Track).
- Use loops to add pre-recorded audio such as drum beats, breaks, atmospherics, vocals, and sound effects (see Using Loops: Getting Started).

Here are short descriptions of some of the included Virtual Instrument plugins.
(Note that not all Virtual Instrument plug-ins are included with Pro Tools Intro, so use AIR Xpand!² instead.)

Pro Tools | GrooveCell
Get your rhythmic ideas flowing in this drum machine with built-in sequencer.

AIR Boom
Create beats and rhythm with this drum machine and sequencer.

AIR Mini Grand
Play the sounds of a variety of acoustic grand pianos.

AIR Vacuum
Get the sound of a monophonic analog tube synthesizer, from soft overdrive to mega distortion.
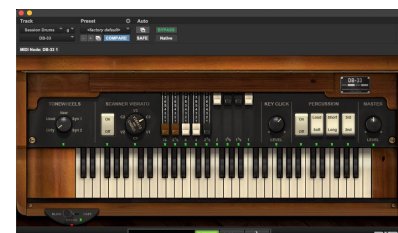

Pro Tools | SynthCell
Make new sounds or load up a preset and start sculpting with this fun new synth. To learn more, watch the video SynthCell: In Focus.

Pro Tools | PLayCell
A virtual sample player instrument that provides you with high-quality instruments to create music for any genre—no matter your level of expertise. Watch the PlayCell: In Focus video to get started.

AIR DB-33
Get the retro sounds of the B-3 tonewheel organ, complete with rotating speaker emulation.

AIR Xpand!²
Access hundreds of sounds, from drums and guitar, to strings, brass, loops, FX, and more.

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CREATING AN INSTRUMENT TRACK
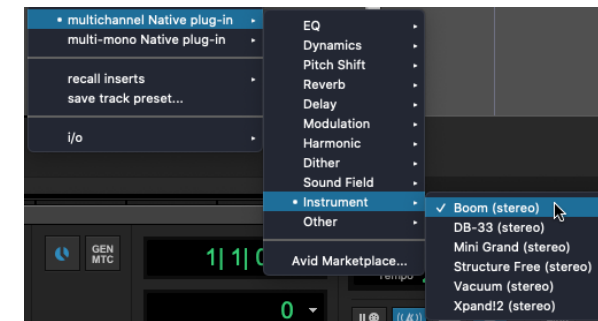
Sequencing MIDI with a Virtual Instrument Plugin

The following provides an example of how to program a MIDI sequence on two Instrument tracks to make a beat. This example uses the Boom and Xpand![2] plugins from AIR Music Technology (included with Pro Tools) to program a drum beat. First we will use Boom for kick and snare drums, then add a hi-hat using Xpand![2].

> **VIDEO TIP:** Create an Instrument Track for VIs

Creating Another Instrument Track

To create an Instrument track and insert an instrument plugin:

1. If you haven't already, follow the instruction in Add a Virtual Instrument for MIDI Drums to add an Instrument track with Structure Free. We will use this Instrument track later when we add a hi-hat part to the beat.

2. Now add another Instrument track for Boom, to provide our kick and snare drum sounds: Choose **Track › New**, configure the dialog to create 1 new stereo Instrument Track, then click **Create**.

3. Name the new track: In the Edit window, double-click the track name ("Inst 1"), enter a new name (such as "Boom Kick and Snare" and click OK.

> **TIP:** You can create the track manually or use a Track Preset (**Avid › Virtual Instruments › Basic Beat – Boom**), which also includes a pre-recorded MIDI clip.

4. Click the track Insert selector near the top of the Boom Instrument track and select **multi-channel plugin › Instrument › Boom**.
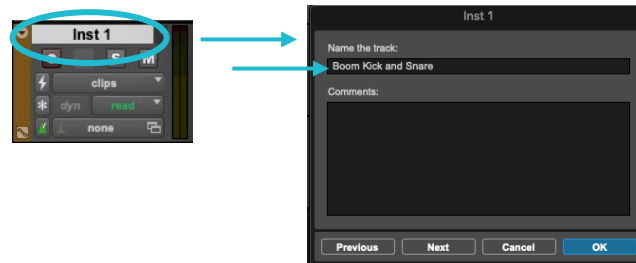

Inserting the Boom plugin on an Instrument track

5. The Boom plugin window appears. Proceed to the next page.

What is MIDI?

MIDI (Musical Instrument Digital Interface) data is *not* audio. MIDI, by itself, does not generate sound. MIDI is a way for MIDI-equipped devices like keyboard controllers, electronic drum kits, and sequencers to communicate control data and "talk" to one another. MIDI tells software virtual instruments and similar devices what, when, and how to play which sounds.

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CHOOSING A DRUM KIT

Selecting a Settings File

Plugin Settings files provide pre-configured setups for different effects. With Virtual Instrument plugins, Settings files (also known as presets) let you specify the instrument (such as drums, keyboards, or other) and the specific instrument sounds, or patch (such as "Studio Drums" or "Acoustic Bass").

Choosing a Drum Kit for Boom

The earlier section Create a Send & Return for Reverb showed how to choose a plugin Settings file. Boom provides the same capability, but its Settings files include not just sounds but also patterns (rhythmic patterns that play a complete beat when triggered from a single MIDI note). Since we will only be using Boom for a kick and snare pattern that we want to program ourselves, we only need to choose a **Drum Kit** we like.

To select a drum kit in the Boom plugin:

1. Click the **Drum Kit** menu and select a kit (such as "Dance 1").

Boom Drum Kit menu

2. Proceed to the next page.

> **TIP:** For more information about Boom, see its documentation available from the AIRMusic site.

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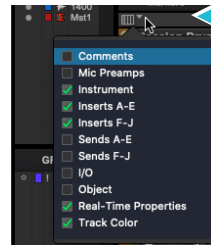
INSTRUMENTS VIEW AND REAL-TIME PROPERTIES

The Edit window lets you show Instruments view and Real-Time Properties.

- Use Instruments view if you need to check or change MIDI port, channel, or similar settings.
- Use Real-Time Properties to apply quantization, transposition, and other processes in real-time during playback.

<div style="border: 1px solid purple;">

VIDEO TIPS:
- Instruments View
- Track-Based MIDI Real-Time Properties
- Clip-Based MIDI Real-Time Properties

</div>

INSTRUMENT VIEW
To display Instrument view:
- Choose **View › Edit Window Views › Instrument**.

Or choose the desired view from the Edit Window View selector.

INSTRUMENT — **REAL-TIME PROPERTIES**

Instrument view lets you specify MIDI input and output, and other track-specific parameters.

On an Instrument track, the MIDI Input in Instrument view routes MIDI data from a controller to that track and its instrument plugin (such as the default "All" shown above). Track MIDI Output routes MIDI from the track to an Instrument plugin on the track (such as "Xpand!2" as shown above), or a different destination such as an external MIDI sound module, or even to a different Instrument track within Pro Tools.

REAL-TIME PROPERTIES
To show Real-Time Properties:
- Choose **View › Edit Window Views › Real-Time Properties**.

Real-Time Properties lets you apply *Event* operations such as quantization and transposition non-destructively, meaning you will hear their effect in real-time but track data is not altered.

This lets you try out the effect of various properties and settings and be able to "go back" at any time. When you like what you are hearing, you can leave the Real-Time Properties active or "freeze" (render) the track to rewrite its data based on Real-Time Properties settings.

To listen to the effect of Real-Time Properties, click to enable a property: **QUA** (Quantize, to align notes with the timebase grid), **DUR** (Duration, to shorten or lengthen notes), **DLY** (Delay, to move all notes slightly earlier or later), **VEL** (Velocity, to control note volume), or **TRN** (Transpose, to raise or lower the pitch of notes). Start playback and then adjust parameters as desired.

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RECORDING MIDI

Playing a Virtual Instrument

You can play and record a virtual instrument using the Pro Tools Virtual MIDI Keyboard, from an external MIDI controller, or by drawing.

To use the on-screen keyboard in Pro Tools:

Press Shift + K (or choose Window › MIDI Keyboard). The MIDI Keyboard can play a virtual instrument plugin using the letters on your computer keyboard as long as the Instrument or MIDI track is record enabled.

On-screen Virtual Keyboard

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* (meaning its name is highlighted in the Mix or Edit window) or record enabled.

USB

External USB MIDI controller

You can also program MIDI using the Pencil tool, or import MIDI clips.

Pencil Tool

To record kick and snare from Boom:

1. Make sure the Boom track is selected and that its Record Enable button is flashing red indicating it is record enabled. If it is not flashing, click it to record enable the track.

2. Press Shift + K to open the on-screen keyboard, then on your computer keyboard:

   • Press the letter **Z** key until the on-screen keyboard shows **Octave: C1**.

   • To listen, press A to play kick and press S for snare drum.

3. In the Transport window, press the RTZ button to "return to zero" (the beginning of the session) then click the Transport Record button so it also flashes red.

4. To start recording, click Play or press the Spacebar.

5. To stop, press the Spacebar.

   Here is an example recording of 4 bars of kick and snare.

6. To listen, click the track Record Enable button again so it becomes unlit, then press the Spacebar.

7. Proceed to the next page to add a hi-hat pattern, and then learn how to use Quantize to tighten up the rhythms.

TRACK SELECTED

Virtual MIDI Keyboard (Shift + K)

OCTAVE (down 1 = Z, up 1 = X)

VIDEO TIPS: Virtual MIDI Keyboard

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OVERDUBBING & LAYERING MIDI

Pro Tools makes it easy to layer additional Instrument tracks, add notes to existing MIDI recordings, and record multiple takes in a row without stopping to jam out ideas or perfect a performance. This section shows how to add a hi-hat part to a beat and introduces MIDI Merge and MIDI Loop Recording.

Add a Track
To add a hi-hat track:

1. If you have not already, follow the instructions in Add a Virtual Instrument for MIDI Drums to add an Instrument track with Xpand!². Click the track name of the Xpand!² track to select it and ensure incoming MIDI data is passed thru to the correct track.

2. If you have not already, click the Librarian menu and choose **Drums > Session Drums**.

3. Record a hi-hat part by following the instructions in Recording MIDI. (To play a hi-hat in Xpand!²: In the on-screen virtual keyboard (Shift + K), make sure the octave is set to C1 then press the **T** key. If using an external controller, try F#0).

Here is an example of a hi-hat track (the track "Session Drums") and a Boom kick and snare track.

TRACK SELECTED

4 BARS OF HI-HAT

4 BARS OF KICK AND SNARE

MIDI Merge
Sometimes you want to overdub to add notes to a part, like adding a few off-beats or accents to a hi-hat track. At other times you might want to instead start over and replace a previous take.

When **MIDI Merge** is enabled, recording over existing MIDI clips results in the new data being *merged* with the old. When the MIDI Merge button is disabled, the new material *replaces* the old.
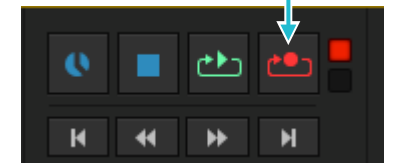
MIDI MERGE ENABLED

MIDI Loop Recording
Loop Record mode lets you record take after take (nondestructively) while the same section repeats.

This is a convenient technique for quickly recording multiple takes of a riff, verse, or chorus without losing spontaneity.

LOOP RECORD MODE

VIDEO TIPS:
- MIDI Loop Recording
- Drawing MIDI with the Pencil Tool

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QUANTIZING MIDI

There are many ways to modify MIDI data after it has been recorded, and even while it is being recorded. Let's look at two ways you can use *quantization* to tighten up the rhythm of a performance:

- **Manual Quantization** Uses the Quantize dialog to reposition selected clips or MIDI notes.

- **Real-Time Properties** Applies quantization "virtually" to an entire track while enabled.

In the following example, we will quantize the hi-hat using the Quantize dialog and then apply Real-Time quantization to the kick and snare.

Let's set the Edit window Grid to show 8th note grid lines so we can more easily see where notes occur relative to the Bars & Beats grid.

To adjust the Grid:

- In the Edit Window Toolbar, click next to Grid and choose **8th** notes.
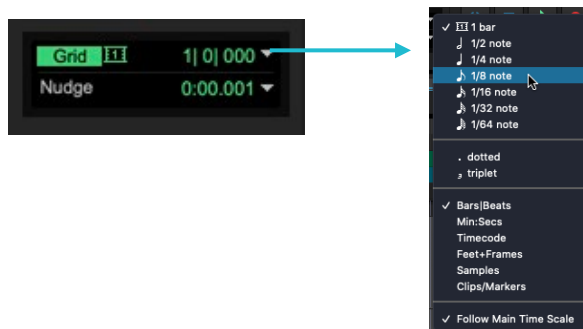
Shown at belpw is what the two example tracks look like when the Grid is set to 8th notes, with the Bars & Beats ruler shown directly above for reference.

Notice how some notes (especially the first notes in the upper clip) do not align with the 8th note Grid. Start playback again and you can hear that not all the notes line up with the audible Click track.
The hi-hat track also has what looks like a missing note; we'll see how to fix that a little later.

Proceed to the next page to learn how to apply quantization.

BARS|BEATS RULER
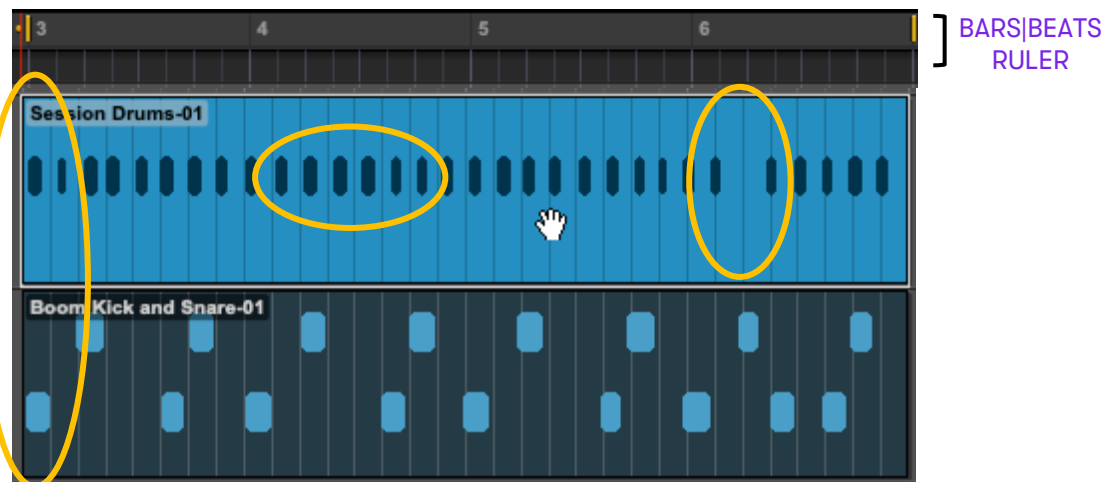
2 tracks of MIDI in the Edit window

Why Quantize?

Use quantization to align notes to the grid and grooves. Full (100% strength) quantization aligns strictly to the grid (think drum machine accuracy). Lesser amounts of quantization align notes less strictly to retain more or less of the original timing in the performance.

You can also apply variable swing while quantizing, and use *Groove Templates* to apply, create, and save pre-configured quantize factors.

VIDEO TIPS:
- Adjust Grid Value
- Adjust Nudge Value

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QUANTIZING MIDI

To apply quantization manually:

1. In the Edit window Toolbar, select the Grabber tool.
2. In the hi-hat track, click with the Grabber to *select* the entire clip. (You can also use the Selector tool to select a range within a clip, or put the track into Notes view to select specific notes).
3. Choose **Events > Event Operations > Quantize** (also available by right-clicking on a clip or pressing Option/Alt+0 (zero)).
4. In the Quantize dialog, set the Quantize Grid to **8th note then** click **Apply**.
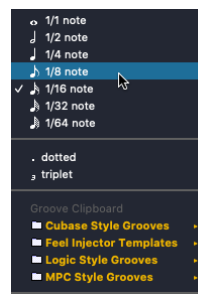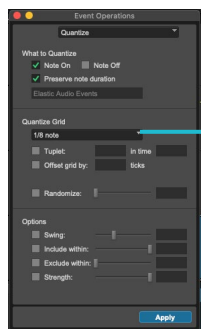
Quantize dialog, set to 8th note Quantize Grid

Notice how the notes are now aligned with the 8th note grid lines, resulting in a more consistent and accurate track that lines up with the Click. Press the Spacebar to begin playback and you can hear the improved timing, except now some of the kick and snare hits sound "out." To fix the kick and snare we will use Real-Time Properties.

Here is what the hi-hat track looks like after quantizing to 8th notes:

An unquantized clip selected with the Grabber
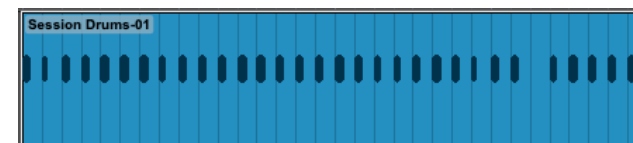
Hi-hat track after applying 8th note quantization

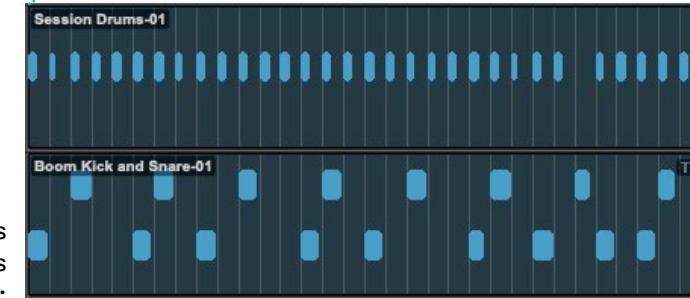**To apply quantization using Real-Time Properties:**

1. If you haven't already, choose **View > Edit Window Views > Real-Time Properties**.
2. In the Real-Time Properties controls of the kick and snare track (Boom) click to enable **QUA** (Quantize), then click the displayed note and choose **8th note** from the Quantize Grid/Groove menu.
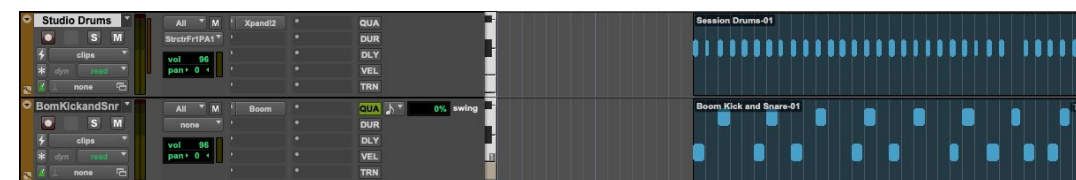
QUANTIZE ENABLED

QUANTIZE GRID/ GROOVE MENU

The hi-hat and kick/snare tracks now look like this, with notes aligned to the 8th note grid:

> **VIDEO TIPS:**
> • Quantize: Event Operations
> • Quantize: MIDI Real-Time Properties

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# QUANTIZING MIDI TO A GROOVE TEMPLATE

Experiment with different Quantization settings to hear how much timing contributes to the groove and feel of a beat. For example, try applying a percentage of Swing to only the hi-hat track, or just the kick and snare; combining different "feels" can add qualities like tension or suspense. Conversely, applying the same feel to both/all parts can impart different characteristics. As always, experiment and use your ears.

Both the Quantize dialog and Real-Time Properties panel provide different quantize *resolutions* based on traditional music notation (such as ¼ note, 1/8th note, and so on), dotted, and duple or triple meter. Many more feels are available using *Groove Templates*. The following example shows how to apply a Groove Template using Real-Time Properties. Note that the Quantize dialog not only lets you apply but also Save your own custom Groove Templates, which you can create using Beat Detective.

To apply quantization using a Groove Template:

1. If you haven't already, choose **View › Edit Window Views › Real-Time Properties**.

2. In the Real-Time Properties controls of the hi-hat track (Xpand!²) click to enable **QUA** (Quantize), then click the Quantize Grid/Groove menu, choose a Groove Template folder, then choose a Groove Template from the sub-menu (such as MPC Style Grooves › MPC 75% 16th Swing).

QUANTIZE ENABLED

QUANTIZE GRID/GROOVE MENU

GROOVE TEMPLATE FOLDERS
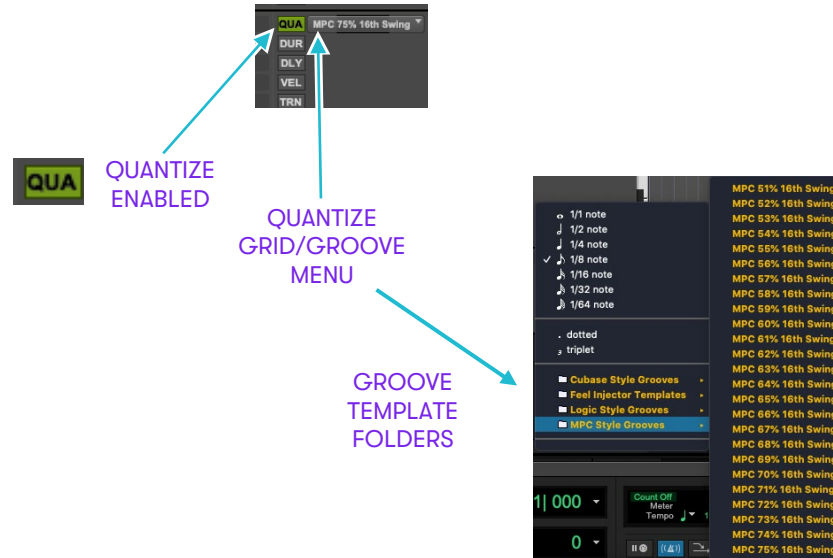
Toolbar Quantize

The Edit and MIDI Editor windows provide a group of controls for Quantize functions in Pro Tools. These display and let you set certain quantization. Click a Q button to apply the current settings.

For more information, choose **Help › Pro Tools Help**.

3. Press the Spacebar to play back and listen again. Experiment with other Groove Templates and hear their effect.

VIDEO TIPS: Groove Quantize

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TRACK FREEZE

Pro Tools lets you "freeze" (or render) audio, Auxiliary Input, and Instrument tracks. When you freeze a track, the source material (audio and MIDI) on the track is replaced with audio that has been processed by all the plug-ins on the track (or only up to a specified insert), including instrument plugins. This process is reversible, so you can "unfreeze" frozen tracks.

Freezing tracks is useful for freeing up processing power in your session for other tracks and processing tasks. It is especially useful for exchanging sessions with other systems that may not have all the same plugins as your system. Rather than committing tracks as final print tracks, you can freeze tracks that you want to share but might want to keep editing while that track is shared or out for review. The ability to unfreeze a track lets you go back and adjust plugin settings or edit track material (such as audio or MIDI data to correct a note or rhythm) and then re-freeze the track.

VIDEO TIPS:
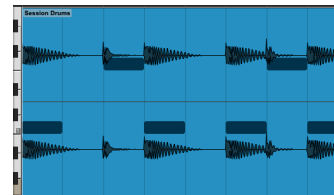• [Track Freeze](#)
• [Track Commit](#)

To freeze (or un-freeze) one or more tracks, do one of the following:
• Select one or more tracks and choose Track › Freeze (or Unfreeze).
• Click the Track Freeze icon in the Track controls so that it is highlighted (or unhighlighted).
• Right-click on the track name and select Freeze (or Unfreeze).

FREEZE ICON →

When a track is frozen, any plugins on the track are made *inactive*. On Instrument tracks, the waveform of the frozen audio is superimposed over the MIDI data on the track as a visual cue.

Example of a Frozen track

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RETROSPECTIVE MIDI RECORD (NEVER MISS A TAKE)

Sometimes our best ideas come when we are just "playing around" to learn a song or come up with a part, without any pressure or tension that can arise while actually recording. That, and sometimes we all just forget to hit the Transport master Record button!

To help you never miss a keeper take, Pro Tools captures everything you play into a record enabled Instrument or MIDI track while the transport is running, even when not actually recording, using *Retrospective Record*.

Here is a quick example of using Retrospective Record while recording a VI keyboard part.

To use Retrospective Record:

1. Create a new Instrument track, then insert the Mini Grand instrument plugin on the new track. (See Add a Virtual Instrument for MIDI Drums for the basic steps.)

2. For now, leave Mini Grand at its ‹factory default› patch.

3. Do the following to enable the track for Retrospective Record:
   • Click the new track's name to select (highlight) it, then play your controller. If you can hear the virtual instrument, proceed to step 4.
   • Click the track's Record Enable button so it flashes red.

4. Press the Spacebar or click Play in the Transport to begin playback, and start playing your controller.

5. Stop playback.

6. Choose **Events › Retrospective Record**.

Pro Tools places your MIDI performance in the record-enabled track matching the time of the original performance on the Timeline.

> 💡 **TIP:** Configure the Default Thru Instrument as suggested in Pro Tools Settings for Music to be able to use Retrospective Record without having to record enable the track.

NEW PIANO IDEA AFTER USING RETROSPECTIVE RECORD

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MIDI EDITING BASICS

MIDI notes and other data can be edited in the Edit window using Track Views and lanes, or in a MIDI Editor window, including start and end points, duration, pitch, and velocity.

The tools and view options in the MIDI Editor window make it an intuitive way to develop parts and performances.

This example introduces you to using the MIDI Editor window for some basic MIDI editing on a piano part (a part we added in MIDI: Retrospective Record (Never Miss a Take)).

VIDEO TIPS:
• Opening the MIDI Editor
• Opening the Docked MIDI Editor
• MIDI Note Selection

To open a clip in a MIDI Editor window:

• Use the Grabber tool (hand) to double-click the desired MIDI clip. (Or in the Edit window, Right-click a MIDI clip on the track and choose **Open In MIDI Editor**.
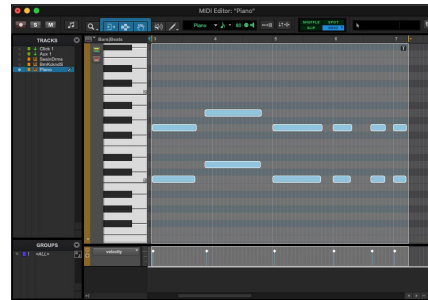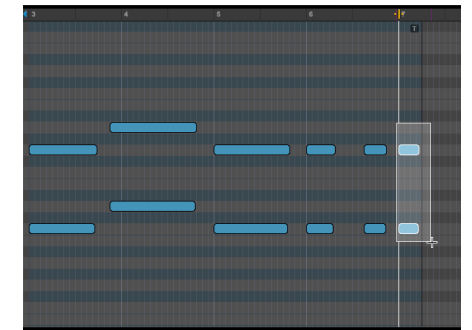

To open a track in a "docked" MIDI Editor window:

• Right-click on the track name and choose Open in MIDI Editor.
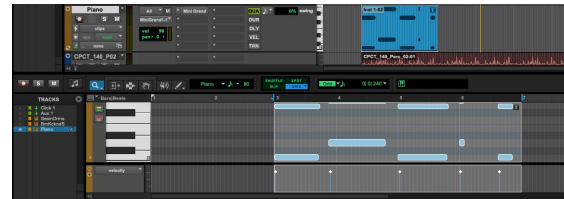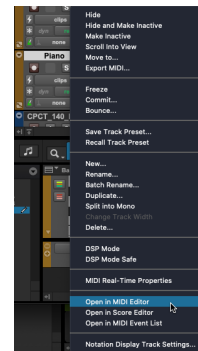
In the example piano part, the last 2 notes need to be deleted, and we want to change one chord.

To select and delete notes:

• Click in empty space near the notes then drag to lasso the last 2 notes, then press the Delete key on your computer keyboard.

Selecting notes

SHORTCUT: To go to the next or previous MIDI note use the right or left Arrow keys on your computer keyboard.

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USING LOOPS: GETTING STARTED

Any audio or MIDI file or clip can be used as a *loop*. Loops are a simple yet powerful resource for composing and arranging.

- Add instruments and sounds that you could not record or create yourself.
- Hear a song in your head, find the tempo, browse to a good starting drum beat and drop it in your session to immediately have a demo groove to start from.
- You and other performers may prefer recording to drums or a light percussion track with shakers and claps instead of just a click pulse.
- Great source of ambience! (Sound effects such as weather sounds, machinery, or other found sounds.)

Pro Tools comes with thousands of free loops for you to start using right away; download the loop content (such as Loopmasters) provided in your Avid account, and check out the [SonicDrops](#) for more content. The following example shows how to quickly find, import, and arrange loops to add some percussion to a song.

Finding Loops

Soundbase is a browser built right into Pro Tools that makes finding just the right sounds fast and simple. Here's an example of how to find, audition, and select a loop in Soundbase.

To get started:

1. Press the Spacebar to begin playback (so you can listen to loop candidates in tempo).
2. Choose **Window › New Workspace › Soundbase**.
3. Click the Workspace Browser menu and **choose Audio Files Conform to Session Tempo**. This lets you play back the session and simultaneously preview selected files in time with the session. (This feature only works when a session is open.)
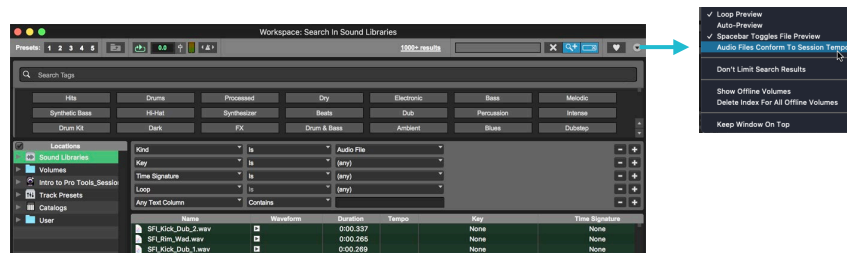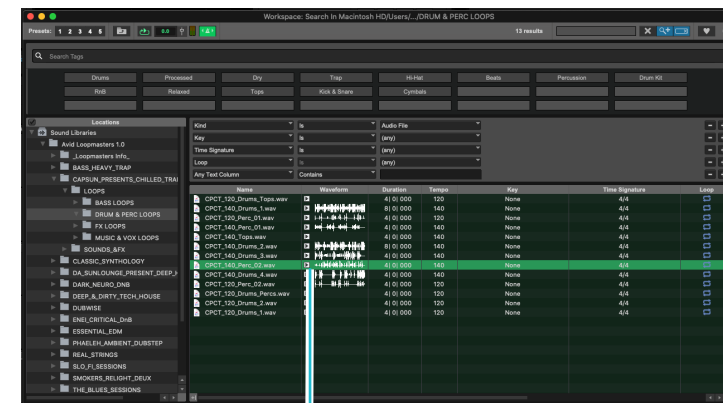

Soundbase

4. Use the Search tools to search for loops by name or other criteria, or to browse folders.
   (Soundbase provides Favorites and many cataloging features for organizing and managing content, and you can learn about them in Pro Tools Help (Help › Pro Tools Help).

Auditioning Loops

1. In the **Locations** column, click to select **Sound Libraries**, then navigate the sub-folders to a desired collection of clips. For this example, a percussion clip is selected.
2. To audition the selected clip, click its Play icon. Click again to stop.

Click the Play icon or press the Spacebar to audition

VIDEO TIPS:
- [Opening Soundbase](#)
- [Searching and Auditioning Loops](#)

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USING LOOPS: IMPORTING

Importing Loops

You can add loops and clips from Soundbase and Workspace browsers using drag-and-drop.

To import a loop using drag and drop:

1. Select a loop in Soundbase and drag/drop it into Pro Tools.

- Drop into empty space in the Edit window to create a new track for the loop and place it at the drop location.

- Drop into the Tracks list to create a new track with the clip at session start.

- Drop into the Clip list to add the loop to the session without creating a new track or placing the loop.

In our example, the loop appears in a new track. Because the track is set to Ticks with Elastic Audio Enabled, the loop automatically conforms to the session tempo and occupies an even number of bars and beats (in this example, 4 bars).
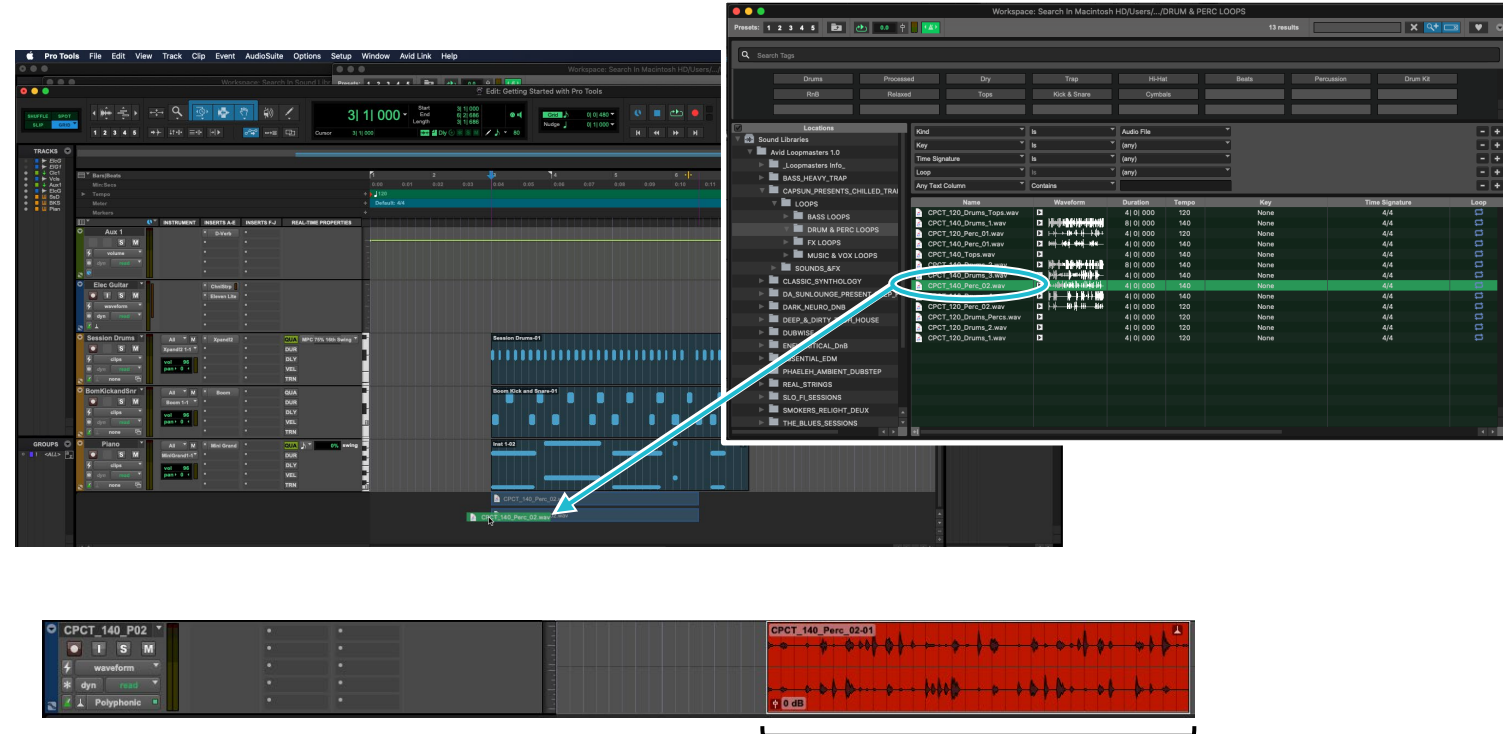
Loop imported into a new track

VIDEO TIP: Drag and Drop from Soundbase

TIP: 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. Learn more by choosing **Help > Pro Tools Help**.

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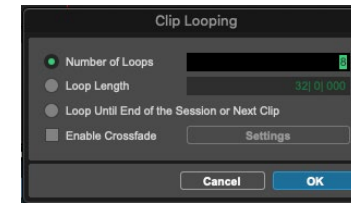
USING LOOPS: ARRANGING

Arranging Loops

Typically, loops are short clips that are repeated throughout one or more sections of a song such as the intro, verses, the chorus, or the bridge. Pro Tools provides several ways to quickly arrange loops, including Clip Loop, Duplicate, and Clip Groups. This example shows how to use Loop Clip to quickly make a single clip repeat as many times as desired.
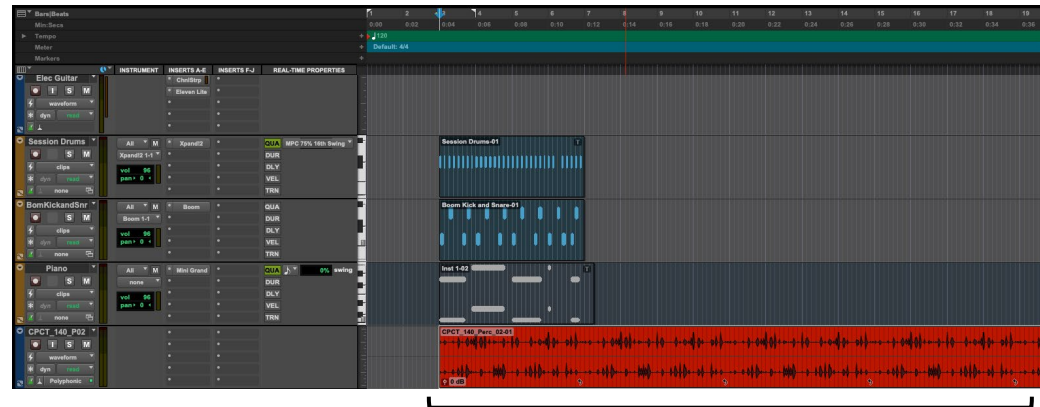
VIDEO TIP: Clip Looping

To arrange a loop:

1. In the Edit window, click the Horizontal Zoom Out two or three times to zoom out.

2. With the Grabber tool, click the loop to select it.

3. Choose **Clip › Loop Clip**. The Clip Looping dialog opens.

4. For now leave the settings at their defaults (Number of Loops = 8) then click OK.

5. The selected 4 bar loop is repeated a total of 8 times, giving you 32 bars of percussion.

HORIZONTAL ZOOM OUT

Clip Looping dialog

32 bars of percussion loop

TIP: For more clip arranging tools, see Clip Groups.

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USING DYNAMIC TRANSPORT MODE

Dynamic Transport mode lets you decouple the *playback location* from the *Timeline selection.* In other words, you can start playback from anywhere on the Timeline without losing your Timeline or Edit selections. For example, you can use Dynamic Transport mode in conjunction with Loop Playback mode to quickly audition loop transitions or MIDI data. When Dynamic Transport mode is enabled, the Play Start Marker determines where playback starts when the Transport is engaged. You can position the Play Start Marker independently of the Timeline Selection.

In other words,

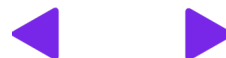**To enable or disable Dynamic Transport mode, do one of the following:**

- Select or deselect Options › Dynamic Transport.
- Right-click the Play button in the Transport window and select Dynamic Transport from the pop-up menu.
- Press Command+Control+P (Mac) or Control+Start+P (Windows) to toggle Dynamic Transport mode on or off.

PRE-ROLL FLAG   TIMELINE SELECTION IN POINT   PLAY START MARKER   TIMELINE SELECTION OUT POINT   POST-ROLL FLAG

EDIT SELECTION IN POINT (BEHIND TIMELINE IN POINT)   EDIT SELECTION OUT POINT

▶ **VIDEO TIP:** Dynamic Transport

NOTE: Pre-roll is unavailable while in Dynamic Transport mode.

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EDITING AND ARRANGING

Tighten up tracks, get as detailed as you want, and always keep an ear on the big picture.

▶ **EDITING**
Clean up clips and tracks.

▶ **ELASTIC AUDIO BASICS**
Use Elastic Audio to fix timing.

▶ **MEMORY LOCATIONS**
Store and recall location markers, views, window configurations, and more.

▶ **CLIP GROUPS**
Group clips together for simplified editing and arranging.

▶ **ARRANGING**
Duplicate and move clips and Clip Groups to enhance the form of your song.

▶ **FOLDER TRACKS**
Let Pro Tools help you never miss a keeper take.

▶ **SETTING UP A MASTER OUTPUT BUS**
Route and process your entire mix.

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EDITING CLIPS

Here are examples of a few arranging tools and techniques to develop your original inspiration into the song you want to create, and to keep things organized as you go.

VIDEO TIP: Smart Tool

Editing with the Smart Tool

Let's start by using the Smart Tool to trim a clip to make it only 4 bars long. We'll use the kick and snare MIDI clip we recorded earlier. Even though we saw how to remove a few unwanted notes, the clip itself is still longer than 4 bars so let's use the Smart Tool to quickly trim it.

Here is the clip after we deleted and transposed some notes. Notice how the clip is longer than the others.
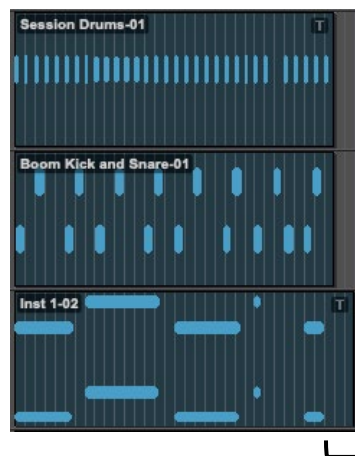
Unwanted

Not all clips have to be the same length but looping and arranging is much simpler when clips start and end on Bars grid lines.

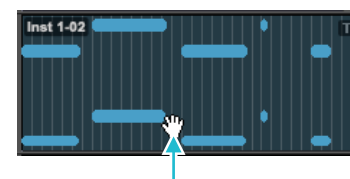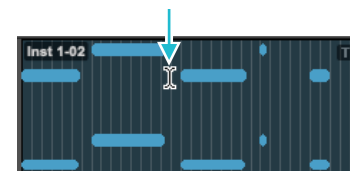To fix this we'll use the Smart Tool.

With the Smart Tool selected, hover the mouse over the clip. Depending on where you hover, the cursor changes to a different tool:

• For the Trim tool hover near the end (tail) of the clip:
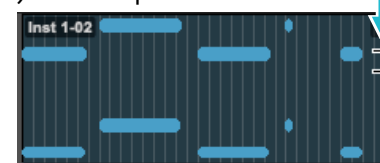
• For the Selector (I-beam) hover in the upper part of the clip:

• For the Grabber (hand) hover in the lower part of the clip:

To use the Trim tool, click and drag to the desired end point in the clip then release the mouse. The clip is "trimmed" to the new length.

Clip after trimming the tail

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ELASTIC AUDIO BASICS: FIX TIMING

Elastic Audio lets your loops and other audio material follow the session's Tempo. This means their length can be stretched or compressed to align with bars and beats.

If you followed the instruction in Pro Tools Settings for Music, all new tracks you create are automatically set to Ticks timebase and have Elastic Audio enabled.

You can change the track timebase and enable or disable Elastic Audio at any time. Here's how to manually set these on a track.

VIDEO TIPS
 Quick Tip: Elastic Audio
Elastic Audio In Focus

1 To set a track to Ticks, click the track timebase selector and choose Ticks.

TIMEBASE SELECTOR (SHOWING SAMPLES)

TIMEBASE SELECTOR (TICKS)
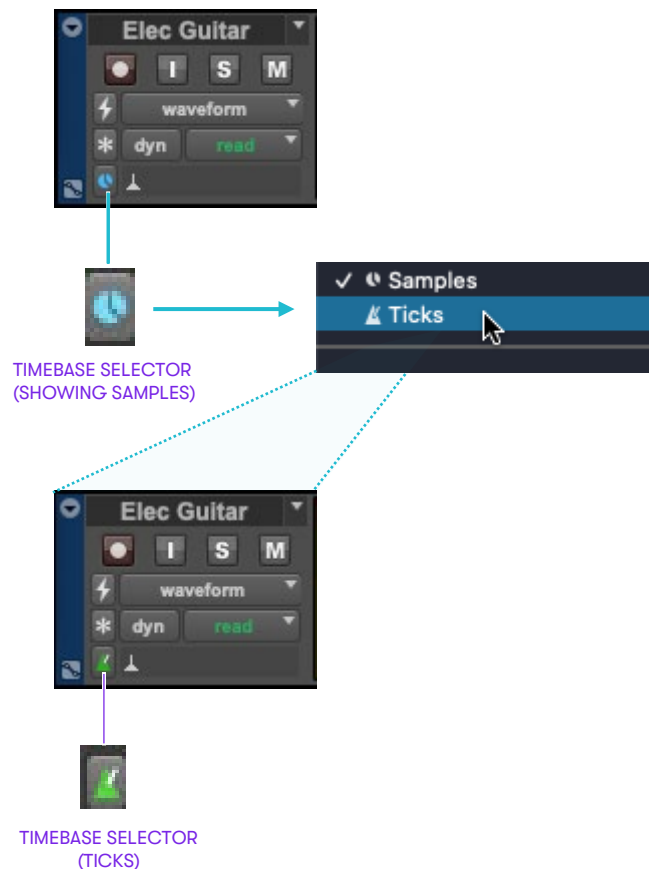
2 To enable Elastic Audio on a track, click the Elastic Audio selector and choose an Elastic Audio plugin. For now just choose Polyphonic, which is general, all-purpose algorithm that is effective with a wide range of material.
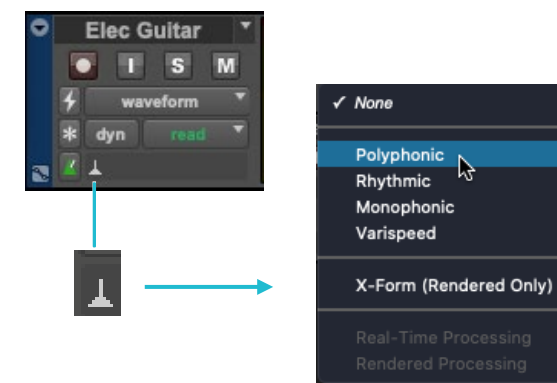
TIP: To set all tracks to Ticks, Option-click (Mac) or Alt-click (Windows) the track timebase selector and choose **Ticks**. The Option/Alt modifier keys apply the "Do to All" shortcut.

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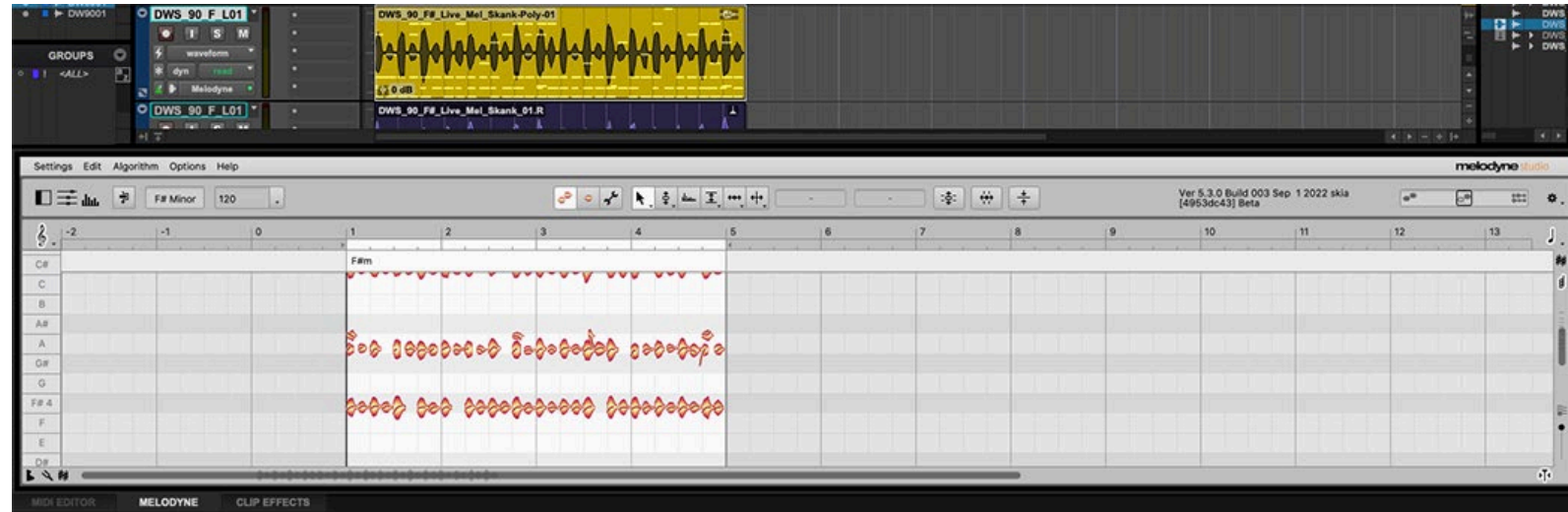
MELODYNE EDITING IN PRO TOOLS: FIX PITCH AND TIMING

Pro Tools lets you edit audio with Melodyne™ by Celemony from within the Edit window. Pro Tools provides a docked Melodyne editor at the bottom of the Edit window along with the docked MIDI Editor and Clip Effects, each organized in tabs. You can analyze and edit whole audio tracks or single audio clips using Melodyne.

Melodyne Essentials is installed with all tiers of Pro Tools, and a Melodyne Essentials license is included with all versions except Pro Tools Intro.

To learn more about Melodyne integration and ARA (Audio Random Access™) by Celemony, choose **Help › Pro Tools Help**.

Docked Melodyne editor

VIDEO TIP: In Focus: ARA 2 Melodyne support in Pro Tools

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MEMORY LOCATIONS (MARKERS)

Memory Locations (also known as Markers) are like bookmarks for your session. They store locations (or selections, window configurations, and more) and can then be recalled to quickly jump to different places in a session. You can create Memory Locations to identify the beginning of each verse, chorus, or other section of a song. Other Markers can be "selections" that, when recalled, select an entire verse, chorus, or bridge. You can also add Track markers to individual tracks.

There are even more uses for Markers, but for this example we will show how to create and recall a simple "location" marker in the Markers ruler. (You can see many more examples in the Demo Session.)
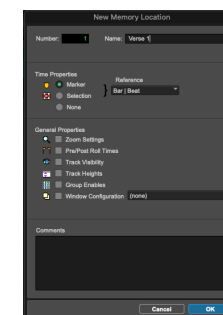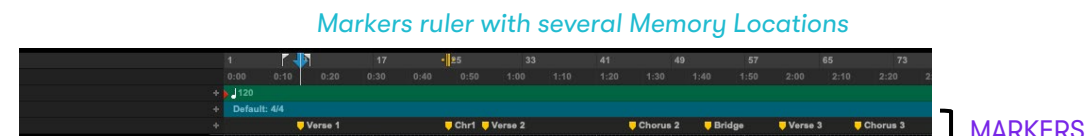
> ▶ **VIDEO TIP:** Memory Locations

To create a Memory Location:

1. With the Selector tool (I-beam) click in the Bars & Beats Ruler at the desired location, such as the beginning of the first verse.

2. Click the + icon in the Markers ruler (or press the Enter key, if available on your computer keyboard). The New Memory Locations window opens.

3. Enter a name for the Memory Location, such as "Verse 1" and click OK.

4. A new marker appears in the Markers ruler.

Here is an example of the Markers ruler after a handful of Memory Locations have been defined.

To recall (go to) a Memory Location using the Memory Locations window:

- Choose **Window › Memory Locations** and click the desired Memory Location.

- On the numeric keypad of your computer keyboard, press Period (.), the Memory Location number, and Period (.) again.

- Click the Marker you want. (If you need to show the Markers ruler, select **View › Rulers › Markers**).

Markers ruler with several Memory Locations

] MARKERS

New Memory Locations dialog

MEMORY LOCATION NUMBER

Memory Locations window

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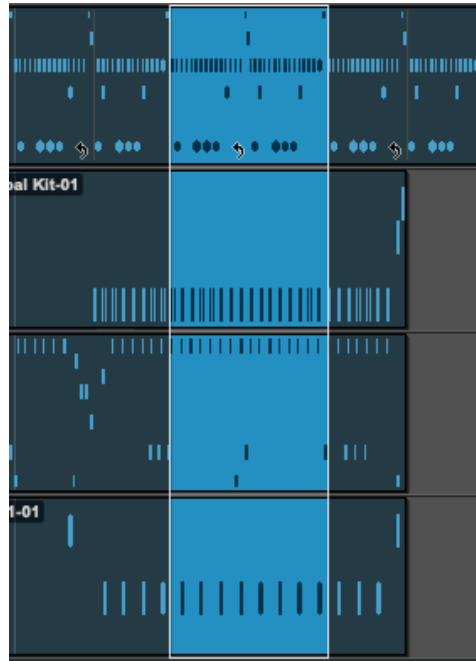
CLIP GROUPS

A *clip group* is a collection of any combination of audio and MIDI clips that looks and acts like a single clip. When working on song arrangements, Clip Groups make it easy to try out different forms. For example, create a Clip Group of all clips in the Chorus so you quickly hear what the chorus might sound like twice as long, or half as long. Repeating or trimming a Clip Group applies the action to all clips within the group, regardless of their start and end locations.
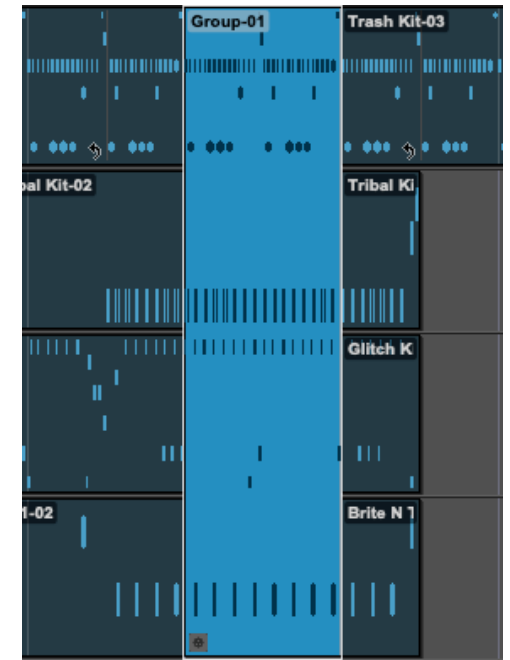
> **VIDEO TIP:** Clip Groups

To create a Clip Group:

1 Select multiple clips by doing either of the following:

- With the Selector (I-beam) click and drag to make a time selection in a track, then Shift + click in other tracks above or below to include them in the selection.

- With the Grabber (hand) click to select multiple clips in the same track, or in multiple adjacent tracks.

A selection of clips across 4 tracks

2 Choose **Clip › Group**.

The selected material displays as a single clip block across all included tracks.

Clip Group

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ARRANGING IN SHUFFLE MODE

Pro Tools makes it easy to try out different arrangements of a song form. Here is a quick example of how to double a chorus (make it twice as long) using *Shuffle* mode.
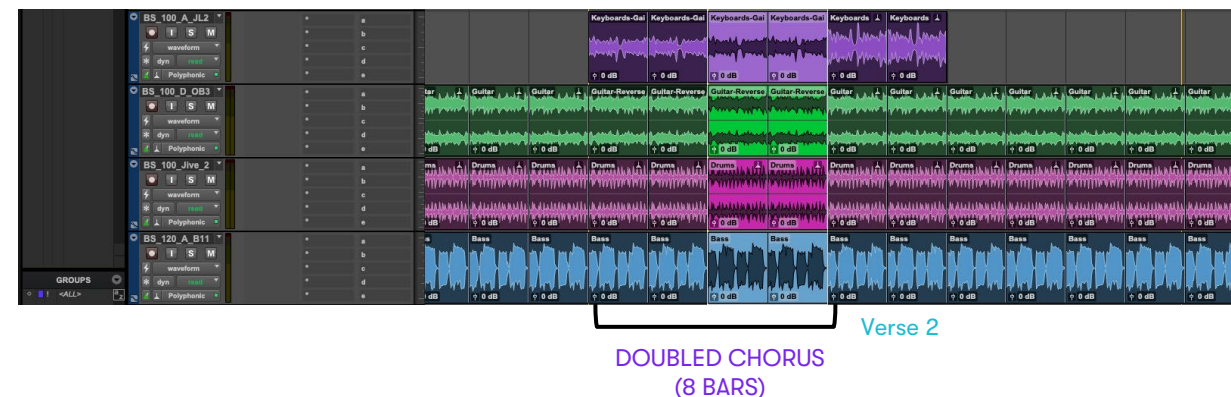
VIDEO TIP:
- [Duplicate and Repeat Clips](#)
- [Edit Modes](#)

To double the chorus:

1. In the Edit window Toolbar, click the **Link Timeline and Edit Selection** icon so it becomes enabled and lit.

2. With the Grabber tool, click in the Markers ruler on the Memory Location at the start of the chorus, then Shift-click the Memory Location at the end of the chorus. This selects all track material and Memory Locations between those two points in the timeline.

3. In the Edit Modes section of the Toolbar, click to enable Shuffle mode.

4. Press Command + D (Mac) or Control + D (Windows) to duplicate the selection.
   - Because you enabled Shuffle mode, all later clips move down later in time and the new (duplicated) clips are inserted immediately after their original location.
   - Because you clicked Memory Location markers to define the selection, the Markers ruler also "shuffles" and remains aligned with the right track material in the new, later locations.

5. If you don't like the edit, press Command + Z (Mac) or Control + Z (Windows) to Undo.

For another organizational tool, see [Folder Tracks](#).

Link Timeline and Edit Selection

Shuffle mode enabled

ORIGINAL CHORUS SELECTED (4 BARS)   Verse 2

DOUBLED CHORUS (8 BARS)   Verse 2

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FOLDER TRACKS

Pro Tools provides *Folder tracks* to help you organize both track layout and signal routing. A Folder track can be closed to hide all the tracks it contains, or opened to show all contained tracks (member tracks). Folder tracks essentially function as containers for other tracks of any type, and are especially useful in large sessions with many tracks.

Use Folder tracks to organize tracks (by stems, instruments, and so on) so that you can more easily navigate complex sessions from a high level overview. For example, if you have sixteen drum tracks in a session, you can add them to a Folder track which you can then close to free up screen space so you can view other tracks in the Edit and Mix windows without scrolling.

There are two types of Folder tracks: *Basic* and *Routing*.

Basic Folder Tracks

Let you organize and manage tracks in your sessions, but without any of the special routing capabilities that Routing Folder tracks provide. Use Basic Folder tracks for miscellaneous instrument tracks, to organize other Folder tracks, or for any combination of tracks that do not need an additional layer of routing or processing capability.

Routing Folder Tracks

Let you organize and manage tracks in your sessions, and they also provide audio routing and processing. You can route audio from member tracks through its input, apply plugins, use sends, assign track automation, and output audio much like an Auxiliary Input track, with all the same display benefits of Basic Folder tracks.
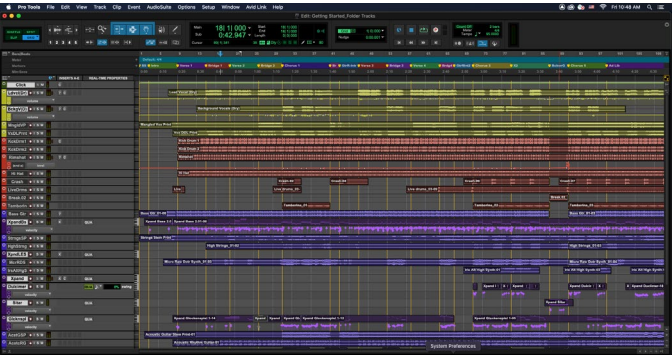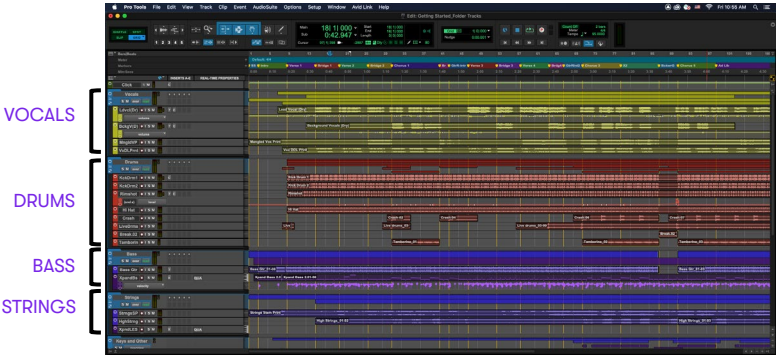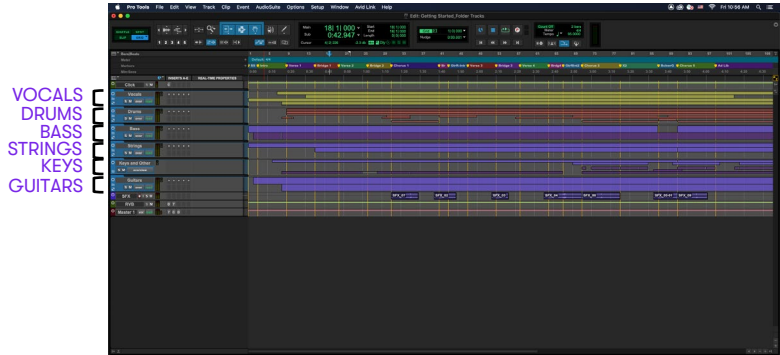
VIDEO TIPS:
- Basic Folders
- Routing Folders

Here are three views of the Edit window that illustrate some of the visual and organizational benefits of Folder tracks.

No Folder Tracks

VOCALS
DRUMS
BASS
STRINGS

Folder Tracks, opened

VOCALS
DRUMS
BASS
STRINGS
KEYS
GUITARS

Folder Tracks, closed

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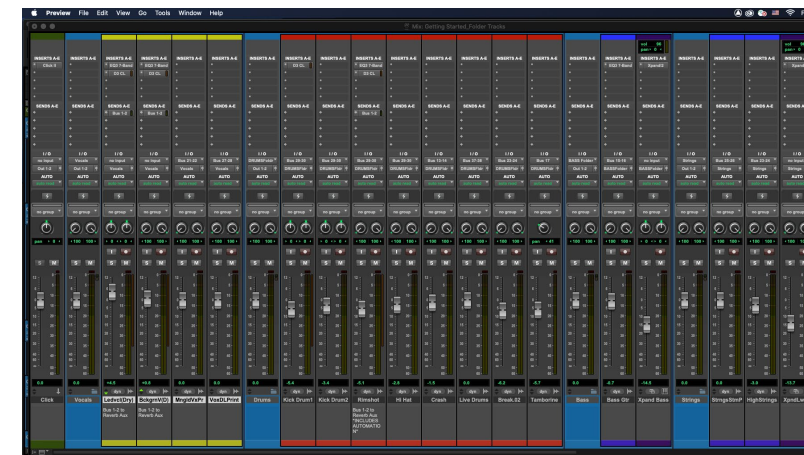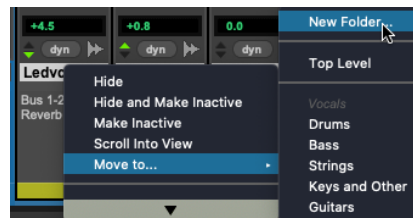
FOLDER TRACKS

Here is how you can quickly organize existing tracks into Folders. (Of course, Folder tracks can also be added to sessions just like with other track types using the **Track › New** Track command, using Track Presets, and similar.)

> **TIP:** You can also open and close folders using the free Avid Control app for iOS and Android.

To organize tracks into Folders:

1. Click the track names of the desired tracks (such as all the vocal tracks) to select them.

2. Do any of the following:
   - Choose **Track › Move To New Folder**.
   - Press Command+Option+Shift+N (Mac) or Control+Alt+Shift+N (Windows).
   - Right-click the Track name of a selected track and choose **Move To › New Folder**.

3. In the resulting Move To New Folder dialog, |do the following:
   - Select **Basic Folder** or **Routing Folder** for the Type selector.
   - If you selected Routing Folder, select **Route Tracks to New Folder,** then select the Format and Time Base, if desired.
   - Name the new Folder track.
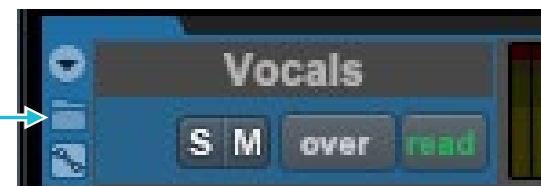   - Click **Create**.

Example of the Mix window in a session that has been organized into Folder tracks.
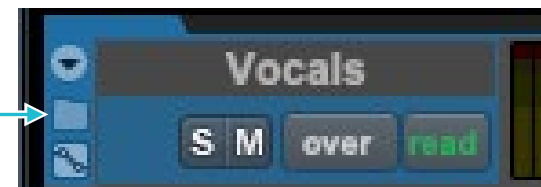
To open and close a Folder track do one of the following:
- Select the track then press Shift + F.
- Click the Open/Close Folder track icon on the track in either the Edit or Mix window.
- Click the reveal triangle in the Tracks List.
- Right-click the Folder track name in the Tracks List, or in the Edit or Mix window, and choose Open (or Close).

OPEN/CLOSE ICON (OPEN)

OPEN/CLOSE ICON (CLOSED)

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SETTING UP A MASTER OUTPUT BUS

One way to optimize the sound of your songs and recordings is to set up a *master output bus*, so you can sculpt, shape, and polish the overall sound of your songs with processing applied to the entire mix (as opposed to only using plugins to process individual tracks or submixes/stems).

Let's set up the signal routing needed to create a master output bus (or "mix bus"). For this example, we will route all tracks to a stereo bus path, then input that same bus path into a new Aux Input track to create our master output bus.

To set up a master output bus:

1. Opt-click (Mac)/Alt-click (Windows) on any Track Output selector and choose **new track...**.

    The New Track dialog appears, pre-configured to create a stereo Aux Input
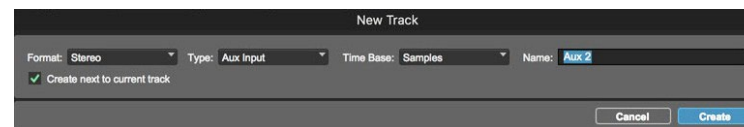
    New Track dialog

2. Do either of the following:

    • Enter a name for the new Aux, such as "Main Out."

    • Or choose a Track Preset (from the Track Type selector, choose **Track Presets > Avid > Mixing**, then choose a preset such as **Mastering Plugin Chain**).

2. Click **Create**. Pro Tools adds a stereo Aux Input, creates a new bus path, and automatically sets the required signal routing.

    • Because you held down Option (Mac)/Alt (Windows), all track outputs are assigned to the new bus path.*

    • Input for the Aux Input track is assigned to the same new bus path.

    • If you chose a Track Preset, the new Aux has plug-ins already inserted.

> **NOTE:** You could also use a Master Fader track for your master output bus, but an Aux Input offers more routing and processing capabilities than the specialized Master Fader track type.

* Do to All, and Do to Selected

If you only learn two Pro Tools shortcuts, you will want to learn the following:

• **Do to All** Hold down the Option key (Mac) or Alt key (Windows) when executing an action or command to apply it to *all* tracks (when supported).

• **Do to Selected** Hold down Option + Shift (Mac) or Alt + Shift (Windows) to apply an action or command to all *selected* tracks.

VIDEO TIPS:
• Do to All
• Do to Selected

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MIXING & MASTERING

Use plugins and automation to create an album-quality mix, then share it with the world.

▶ **PLUGINS** | How to use plugins.

▶ **CLIP GAIN** | Optimize levels and gain staging using Clip Gain.

▶ **MIX AUTOMATION** | Learn about mix automation and see how to do a fade-out.

▶ **PLUGINS FOR MASTERING** | Get some ideas on how to process your "2-bus" with plugins.

▶ **EXPORT & SHARE** | How to "bounce" your final mix and share it with the world!

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PLUGINS

Pro Tools comes with a suite of audio effects *processing* and *effects* plugins that you can use to change the sounds you've recorded. Processing plugins are things like EQ and compression, and are typically inserted directly on the tracks you want to process. Effects plugins include delay, reverb, and modulation; they are most often used in send-and-return configurations.

This section shows two examples of how to use plugins to *process* your sound.

Equalization and Compression

Two of the most common types of audio processing are *equalization* and *dynamics* processing, which are often used on individual tracks, groups of tracks ("submixes" or "stems), and the final mix output ("mix bus" or master) to get your audio to sound just right. Pro Tools includes many EQ, dynamics, and other plugins, and many more are available from our Development Partners and other manufacturers.

VIDEO TIPS:
- EQ Plugins
- Dynamics Plugins
- Effects Plugins

Equalization (EQ)

Lets you shape the frequency spectrum of the sound. A simple example of equalization are the bass and treble controls on many stereo systems. You can use these controls to *boost* (make louder) or *attenuate* (make quieter) the low and high frequencies of the audio. You can use EQ to sharpen drums, emphasize vocals, and even to cut out unwanted noise.
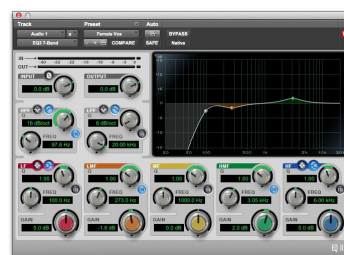
EQ3 7-band

EQ3 1-band

*ChannelStrip
(EQ and Dyn)*

NOTE: For detailed information about the plugins included with Pro Tools, see the Audio Plug-Ins Guide (Help › Audio Plug-Ins Guide). In Pro Tools, choose **Avid Link › Marketplace** to explore available plugins, services, and other resources.

Dynamics (Compression, Limiting, Expansion, Gating, and other)

Lets you smooth the dynamics of your audio to control output levels. *Compression* can keep loud parts from getting too loud, 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.

*Dyn3 Comp/Lim,
Exp/Gate, De-Esser*

BF-76

Maxim

Other

Other plugin provide delay, reverb, modulation, and other types of *effects* processing.

Mod Delay III

Sci-Fi

SansAmp

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PLUGINS AND INSERT PROCESSING

EQ and Dynamics plugins are often inserted directly on the track you want to process.
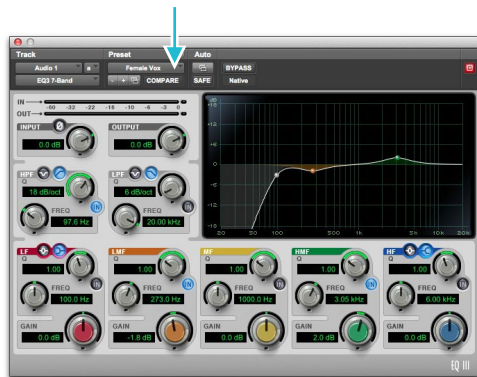
To apply EQ to a track:

1. Choose Window › Mix.

2. In the top part of a track, click an Insert selector and choose **EQ3 7-Band** from the EQ submenu.

   Start playback to hear the effect

   Use the plugin presets as a starting point for exploring how different EQ settings affect the sound.

Insert selector for a track in the Mix window

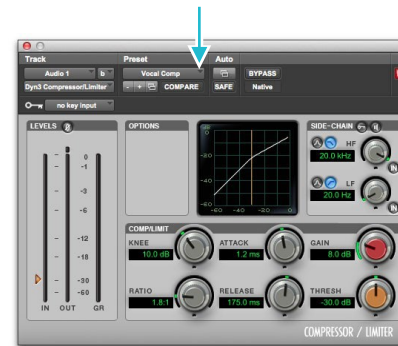*EQ3 Plugin window, Plugin Preset selector*

EQ Parameters

- Each Band of EQ affects a frequency range (Lo, Lo-Mid, Mid, and so on)
- Different Bands offer different types of EQ, such as Hi-/Low Shelf, and Hi-/Low-Pass
- Frequency "aims" or "centers" the band
- Q/Shape "shapes" the band
- Gain raises or lowers the band

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 Dyn3 Compressor/Limiter from the Dynamics submenu. Pro Tools inserts the Dynamics III Compressor/Limiter plugin on your track and opens its plugin window.

Start playback to hear the effect. You can use the plugin presets as a starting point for exploring how different dynamics settings affect the sound.

Dyn3 Plugin window, Plugin Preset selector

Compressor Parameters

- Threshold sets the "trigger" level; signals above the Threshold trigger compression, signals below do not.
- Ratio sets the intensity of the compression.
- Attack sets how fast the compressor reacts once it has been triggered.
- Other parameters further shape the response of the dynamics processing.

> **TIP:** Reverb, delay, and other effects are often inserted on Auxiliary Input tracks to process one or more tracks using Sends. Similarly, EQ and dynamics are often inserted on an Aux and configured in a send-and-return to provide parallel processing for drums. To learn how, see Create a Send & Return for Reverb.

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CLIP GAIN

Pro Tools provides clip-based gain for quick and easy gain staging for inserted plugins, for gain matching of clips, and for any situation where you want to make an individual clip louder or softer without having to employ potentially complex fader automation.

Clip-based gain is applied pre-mixer (pre-fader and before any plugin processing). The clip gain settings stay with the clip, which means you can move, and copy and paste clips with their corresponding clip gain settings.

To use Clip Gain you must first show Clip Gain Info. You can then adjust Clip Gain using your computer keyboard.

To show the Clip Gain Line in clips, do one of the following:

- Select or deselect **View > Clip > Clip Gain Info.** (To see the actual Clip Gain line as shown on this page, choose **View > Clip > Clip Gain Line.**)
- Press Control+Shift+"-" (Hyphen) (Mac) or Start+Shift+"-" (Hyphen) (Windows).
- Right-click the Clip Gain Fader icon on any clip and choose **Show Clip Gain Line.**

The Clip Gain Line is shown in all clips.

Use your computer keyboard to increase or decrease Clip Gain by the current **Clip Gain Nudge Value** preference.

CLIP GAIN LINE

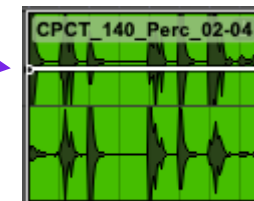**To nudge the selected clip gain up:**

- Press Control+Shift+Up Arrow (Mac) or Start+Shift+Up Arrow (Windows).

To nudge the selected clip gain down:

- Press Control+Shift+Down Arrow (Mac) or Start+Shift+Down Arrow (Windows).

The Clip Gain Line raises or lower, and the audio waveforms increase or decrease in size as you nudge.

CLIP GAIN, RAISED

To set the Clip Gain Nudge Value:

1. Choose Setup > Preferences.
2. Click the Editing tab.
3. Enter a value for the Clip Gain Nudge Value setting.
4. Click OK.

You can also use the Clip Gain Fader to apply a single gain setting to the entire clip, add Clip Gain "breakpoints" to vary Clip Gain throughout the clip, nudge Clip Gain breakpoints earlier or later, and more. To learn how, go to **Help > Pro Tools Help.**

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MIX AUTOMATION

Pro Tools features dynamic *automation* of mixing controls on each of the track types. You can perform or draw automation moves, view them in real time during playback, and edit automation data with many of the same techniques as audio and MIDI data.

Writing Automation

You can write automation for all write-enabled controls by moving those controls during playback. Use the on-screen faders, knobs, and buttons, or use a compatible control surface such as an Avid Dock, S1, S3, or S4/S6. For this example we are going to automate a simple fade-out on a track.

VIDEO TIPS:
- [Automation Modes](#)
- [Viewing Automation](#)

To write automation on tracks:

1. Choose **Window › Automation**, and make sure the desired automation type ("VOL" for this example) is write-enabled (lit red). Close the Automation window after confirming Volume is enabled.

2. On the track, click the Automation Mode selector and choose **Latch**.

3. Start playback to begin writing automation.

4. Move the controls you want to automate (such as lowering the Volume fader of the Aux we created for our master bus).

5. When you have finished, stop playback.

6. Play back the automation you just wrote.

   - In the Mix window you can watch the track fader read the recorded fade-out automation.

   - In the Edit window you can set the Track View to Volume view to see the automation displayed in *breakpoints*.

7. When you are happy with your fade, switch the track Automation mode back to **Read**.
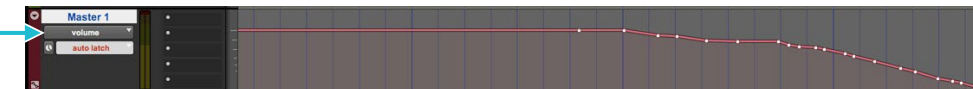
1

Automation window
(Window › Automation) with
VOL and other types enabled.

2

Automation
Mode
selector

TRACK VIEW
SELECTOR

Automation breakpoint display of a fade-out

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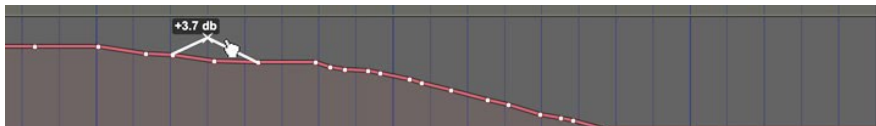
MIX AUTOMATION
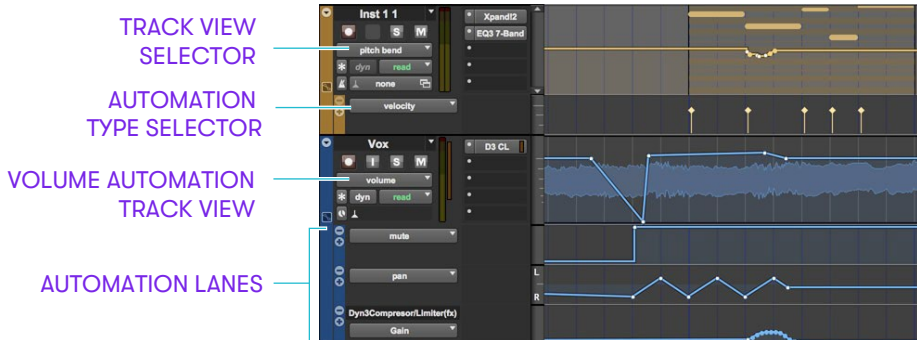
Manually Editing Automation

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. You can click and drag breakpoints up and down to raise and lower them, move them left or right to change their time location, and use the Pencil and other tools for specific and special effects (such as drawing in Triangle mode to auto-pan in time with the song tempo).

Manually editing automation

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, Pan, Mute, MIDI controller data, and even plugin automation. Multiple lanes can be displayed at the same time.

TRACK VIEW SELECTOR
AUTOMATION TYPE SELECTOR
VOLUME AUTOMATION TRACK VIEW
AUTOMATION LANES

Examples of Track View and Automation lanes

Here are some quick tips for manually adjusting automation using the different Edit tools.

Using the Grabber Tool The Grabber tool lets 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 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.
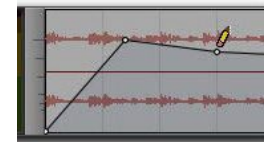
Using the Trim Tools The Trim tools let you adjust all selected breakpoints up or down by dragging anywhere within that selection.
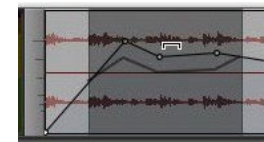
VIDEO TIP: Editing Automation

TIP: Pro Tools provides extensive automation capabilities. Be sure to learn about the different track automation modes (such as Touch and Latch) from Pro Tools Help (choose Help › Pro Tools Help).

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PLUGINS FOR MASTERING

One way to optimize the sound of your songs and recordings is to use plugins on a master output bus, so you can sculpt, shape, and polish the overall sound of your songs.

Here is the example master output bus created earlier. It is an Auxiliary Input track with the Impact plugin inserted, through which all tracks routed. Try inserting Impact on your "mix bus" and check lots of presets to find the best one for your project, whether music, a podcast, sound for picture, or other.

Dynamics

Adding a limiter such as Impact on your master output bus helps prevent any sound or passage from being too loud.

Plugins such as Avid ChannelStrip provide both dynamics and EQ processing.

Metering

Plugins such as Impact, Pro Limiter, and others also provide a detailed view of volume and balance. Good mix bus metering as found in these plugins can help you gauge how loud one song is compared to another song by providing an objective measure of "loudness" unaffected by listening volume.

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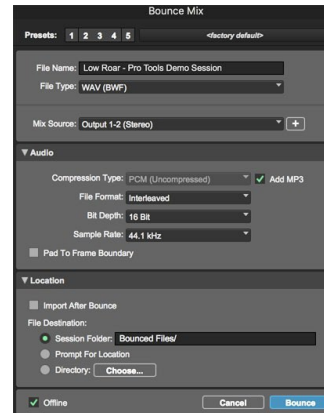
EXPORTING AND SHARING YOUR MIX

After you've finished recording, editing, and mixing tracks in a Pro Tools session, you're ready to *mix down* your session to share your work. Use the **File > Bounce Mix** command to export your entire mix, selected tracks, or combinations of both in one step.
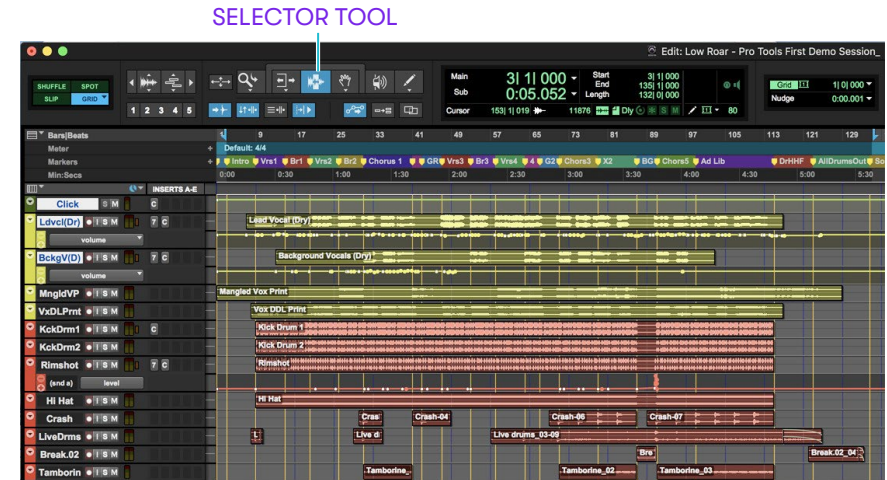
To export the mix from your session as a stereo audio file:

1. Use the Selector to select the length of the session in the Timeline or on a track.
2. Choose **File > Bounce Mix**.
3. In the Bounce Mix dialog, do the following:
   - Enter a name in the **File Name** field.
   - Select the **File Type** (for example, WAV).
   - Select the **Mix Source**. This is often set to the main output path for your mix (such as Output 1–2), but can also be set to any bus or output path to bounce a "sub-mix" or stem.
   - To bounce multiple Mix Sources simultaneously, click the + button and select the desired additional Mix Source.
   - In the **Audio** section, configure other settings as desired (such as enabling MP3 to also create an MP3 version of the bounced files, select Interleaved for the File Format, and so on).
   - For faster than real-time Bounce, select the **Offline** option.

4. Click **Bounce.**
5. In the Save dialog, type the name for the audio file you are bouncing, and select the location where you want it saved. If you enabled MP3, configure those settings when prompted.
6. Click **Save.** Pro Tools begins the bounce.

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.)

Bounce Mix dialog

SELECTOR TOOL

TIMELINE SELECTION

SESSION AUDIO SELECTED AND READY TO BOUNCE

Making a Timeline selection to Bounce Mix

VIDEO TIP: Bouncing Your Mix

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EXPORTING AND SHARING YOUR MIX

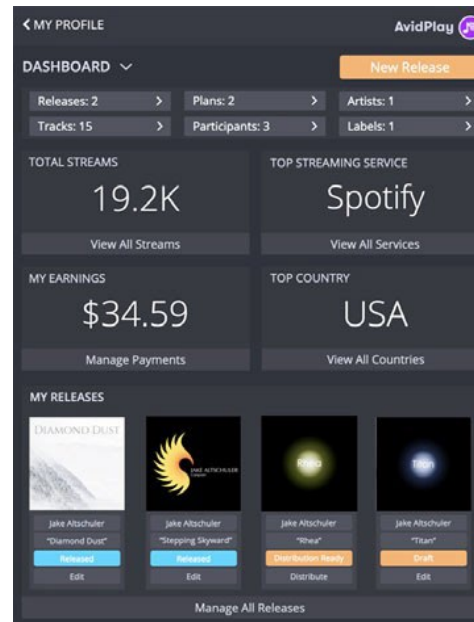## Other Options for Sharing and Collaboration

When collaborating with other artists you might be asked to provide only the tracks that you have created or edited, rather than a mix of the entire song. This might be requested so that someone else can import everyone's contributions and create the final mix, or so that a fellow collaborator can use the MIDI from the drum track you programmed but try out sounds from one of their drum sample libraries.

Here are few additional Pro Tools features that can be useful in these and other production situations:

- To bounce an audio mix of only certain tracks, enable Solo on only the tracks you want included in the bounce. (This is an alternative to configuring signal routing to be able to use the Mix Source feature in the Bounce Mix dialog, described earlier.)
- To export only the MIDI data from your session, choose File › Export › MIDI.
- To save a new Pro Tools session file that only includes some, but not all tracks, click the track Name for each track you want to include in the new session and then choose File › Export › Selected Tracks as New Session.

AvidPlay

AvidPlay lets you stream and sell your music worldwide to audiences directly, on social media, and in print. Simply choose a single or album you'd like to share, and AvidPlay takes care of the rest—from file distribution and code generation for marketing, to tracking song performance and payments. You can even use AvidPlay to distribute your Dolby Atmos® Music to TIDAL HiFi, Amazon Music HD, and future services to give your fans a whole new listening experience.

TIP: To learn more about AvidPlay visit our website: AvidPlay Music Distribution.

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NEED HELP?

Pro Tools Support Resources

For software installation and activation questions, start here: Pro Tools Installation

For video tutorials and other support resources, visit Pro Tools Learn & Support

Search our online Knowledge Base

Community

Participate in the Pro Tools community discussions in our User Conference to learn, share, or ask for help.
Avid Pro Audio Community

You can also find Pro Tools and Avid discussion groups on Facebook, Twitter, and other social platforms.
Pro Tools Facebook User Group

Avid Link

Meet others, get or give advice, help, or feedback by visiting the Lounges and other resources available in Avid Link. The desktop version is installed with Pro Tools, a mobile version is available for iOS, it is available online using any browser, and it is also integrated within Pro Tools using the Avid Link menu.
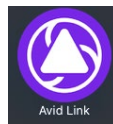
You can also use Avid Link to get notifications from Avid and our Development Partners, to update your software and plug-ins, and more!

Avid Customer Support

To contact Avid Customer Success (technical support), visit Contact Audio & Music Support

Before You Contact Avid

If you need to contact Avid Customer Support have the following information ready:

- The System ID of your product, as shown in your Avid account (My Products and Subscriptions)
- Avid product and version number, if applicable (such as Pro Tools Artist 2022.4, Avid S1, or other)
- Computer make, model, and operating system version