

What's New in Pro Tools 5.3

Digidesign

2001 Junipero Serra Boulevard
Daly City, CA 94014-3886 USA
tel: 650-731-6300
fax: 650-731-6399

Technical Support (USA)

650-731-6100
650-856-4275

Product Information (USA)

650-731-6102
800-333-2137

International Offices

Visit the Digidesign Web site
for contact information

Web Site

www.digidesign.com



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What's New in Pro Tools 5.3

This document is an overview of some of the new features of Pro Tools 5.3 for Macintosh. This version of Pro Tools software is designed specifically for use with Digidesign's new Pro Tools|HD systems, audio interfaces, and synchronization peripherals.

For more details on each feature, refer to the *Pro Tools Reference Guide*. Features can be located by name in its index and table of contents.

Support for Pro Tools|HD Hardware

Pro Tools 5.3 adds support for Digidesign's new Pro Tools|HD cards and interfaces, which feature high definition audio with higher sampling rates, increased track count, more DSP, and enhanced TDM II mixing capabilities.

Pro Tools|HD hardware comes in three configurations:

Pro Tools|HD 1 Includes a single HD Core card.

Pro Tools|HD 2 Includes an HD Core card, an HD Process card, and a TDM FlexCable for connecting the HD Core to the HD Process card.

Pro Tools|HD 3 Includes an HD Core card, two HD Process cards, and a TDM FlexCable.

The HD Core Card

The HD Core card provides up to 96 tracks of direct-to-disk recording and playback, and 32 channels of I/O to your Pro Tools HD-series system, as well as DSP power for processing and mixing. The HD Core card supports up to 24-bit and up to 192 kHz sessions.

The HD Process Card

The HD Process card provides DSP power for mixing, processing, and DSP software such as the DigiRack plug-ins included with Pro Tools. It also provides a DigiLink port for connecting up to 32 channels of I/O. The HD Core card supports up to 24-bit and up to 192 kHz sessions.

High Definition Audio

Pro Tools 5.3 supports high definition, 24-bit audio with sample rates up to 192 kHz when used with a 192 I/O audio interface or up to 96 kHz when used with a 96 I/O audio interface. Supported sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz.

▲ *With Pro Tools 5.3, the default audio file format has changed from Sound Designer II to .WAV. In addition, Sound Designer II format audio files are not supported at session sample rates above 48 kHz.*

Increased Voice and Track Count

Pro Tools 5.3 provides up to 96 simultaneous voices of audio at 44.1 or 48 kHz from a single HD Core card, with a maximum of 112 voiceable tracks (previously known as virtual voicing).

Pro Tools|HD 2 and Pro Tools|HD 3 systems provide up to:

- 128 tracks at 44.1 or 48 kHz
- 64 tracks at 88.2 or 96 kHz
- 24 tracks at 176.4 or 192 kHz

New TDM II Mixing Architecture

Pro Tools 5.3 supports TDM II, a new mixing architecture designed for Pro Tools|HD hardware. At a minimum, TDM II provides twice as many time slots (512 at 44.1/48 kHz) as Pro Tools|24 and Pro Tools|24 MIX systems, and hence a greater potential number of connections for routing, processing and mixing audio signals within Pro Tools. This allows for extremely large mixing configurations, which are particularly useful in surround mixing projects.

Support for 192 I/O and 96 I/O

Pro Tools 5.3 adds support for Digidesign's new high-resolution 192 I/O and 96 I/O audio interfaces.

192 I/O

The 192 I/O provides 16 simultaneous channels of high-resolution, 24-bit audio input and output at sample rates of up to 192 kHz, and has an I/O expansion bay for adding more analog inputs, analog outputs, or digital I/O.

192 I/O Features

- 16 discrete channels of input and output, with 4-segment LED Meters to monitor input and output on each channel. Input and Output channels can include:
 - Eight channels of 24-bit D/A and A/D converters for superior analog input and output at sampling rates of 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, and 192 kHz
 - Ten channels of 24-bit-supported AES/EBU I/O, eight channels of which support sampling rates of up to 192 kHz
 - Sixteen channels of Optical I/O, through two pairs of Lightpipe (ADAT) connectors; one pair of optical ports can be switched to two channels of optical S/PDIF I/O
 - Two 24-bit-capable S/PDIF I/O supporting sample rates of up to 96 kHz
- Real-time sample rate conversion on inputs of eight channels of either AES/EBU, Optical, or TDIF.
- Word Clock input and output for synchronizing 192 I/O with external Word Clock or 256x (Slave Clock) devices
- Simultaneous use of up to eight 192 I/O units is supported, for a maximum of 96 channels of I/O at 96 kHz
- Legacy Port for Digidesign MIX-series audio interfaces

96 I/O

The 96 I/O provides 16 simultaneous channels of high-resolution, 24-bit audio input and output at sample rates of up to 96 kHz.

96 I/O Features

- 16 discrete channels of input and output, with 4-segment LED Meters on each channel. Input and Output channels can include:
 - Eight channels of 24-bit D/A and A/D converters for superior analog input and output at sampling rates of 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz.
 - S/PDIF, AES/EBU, and Optical (ADAT) digital inputs and outputs.
- Word Clock input and output for synchronizing 96 I/O with external Word Clock or 256x (Slave Clock) devices.
- Simultaneous use of up to six 96 I/O units is supported, for a maximum of 96 channels of I/O at 48 kHz.
- Legacy port for Digidesign MIX-series audio interfaces.
- Interface with digital mixing consoles and other peripherals equipped with ADAT Lightpipe connections (using the ADAT Optical standard at up to 24-bit resolution).

Optional Legacy I/O Audio Interfaces

For additional input and output channels, older Digidesign audio interfaces (referred to as “Legacy” I/Os) can be connected to the 192 I/O or 96 I/O. Legacy interfaces can only be used with 44.1 or 48 kHz sessions. Additionally, Legacy interfaces such are not automatically sensed in the Hardware Setup dialog and must be manually identified.

Legacy interfaces include:

- 888|24 I/O
- 882|20 I/O
- 1622 I/O
- Digidesign 24-bit ADAT Bridge I/O and original ADAT Bridge I/O

Support for SYNC I/O

Pro Tools 5.3 adds support for Digidesign’s new SYNC I/O, a multi-purpose synchronization peripheral that provides most all of the functions and connections needed to achieve synchronization to a variety of devices.

SYNC I/O lets you synchronize Pro Tools to LTC, VITC, and Bi-Phase/Tach, or internal for positional reference (time code), and supports all major clock references.

SYNC I/O offers extremely fast lockup, near sample-accurate synchronization, and an exceptionally low-jitter clock. These features provide professional performance and maximum audio fidelity under a wide range of synchronization conditions.

Support for DigiLink Connections

New DigiLink proprietary I/O interconnect cables make the vital connection between HD Core or HD Process cards and HD I/Os. These cables support 32 channels of I/O per card and up to 96 total channels of I/O between multiple HD I/Os.

Software Enhancements

Pro Tools 5.3 features a variety of software enhancements for configuring Pro Tools|HD hardware and managing sessions.

Hardware Setup

A new Hardware Setup dialog provides comprehensive controls for configuring all connected audio interfaces and peripherals, as well as global settings such as the Clock Source for the peripherals connected to the system.

Connected 192 I/O and 96 I/O audio interfaces and the cards they are attached to are automatically sensed and identified by Pro Tools 5.3 software, eliminating the need to manually define these connections.

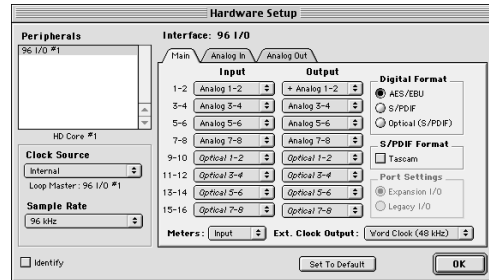
Legacy audio interfaces such as the 888|24 I/O and 882|20 I/O are not automatically sensed and must be manually identified within this dialog.

⚠ *Legacy interfaces cannot be used in sessions with sample rates above 48 kHz.*

The Main page of the Hardware Setup dialog is used to define what physical ports are routed to Pro Tools input and output ports. Each connected 192 I/O and 96 I/O has its own Main page that allows you to define the format, on a pair-by-pair basis, of the 16 channels of I/O that are usable by Pro Tools

The Main page also provides controls for system Sample Rate, Sync settings, and defining whether Expansion Port or Legacy Port peripherals are active.

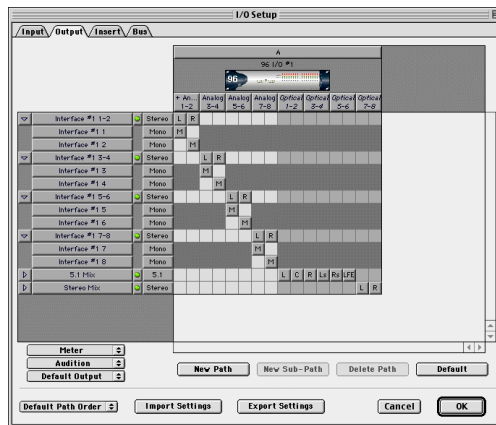
Additional pages configure other parameters on each I/O, such as setting operating levels. For more information, refer to the *Getting Started with HD Guide* and the guide for your specific interface.



Hardware Setup dialog

I/O Setup

The I/O Setup dialog supports the new Pro Tools|HD hardware and provides comprehensive controls for configuring the signal paths of all connected interfaces.

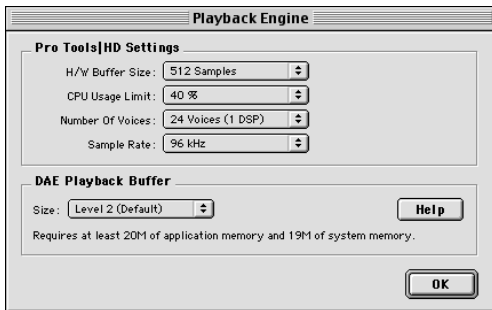


I/O Setup dialog

Playback Engine

The Playback Engine dialog has been streamlined. It can now be opened without requiring that the current session be closed. In addition, the Playback Engine dialog now has controls for setting the DAE Playback Buffer Size, a control previously found in the DAE application.

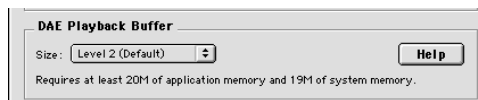
A new Number of Voices pop-up menu allows you to choose the number of voices in a session and the number of DSP chips used to provide those voices (and thus the number of voices per DSP) and the number of DSP chips assigned as Playback Engine chips. Depending on the current session sample rate, and the number of HD Core and Process cards in your system, you will have different choices available. Changing the number of voices or session sample rate affects DSP usage and your system performance. Up to four DSP chips can be used as Playback Engine chips.



Playback Engine dialog

DAE Integrated Into Pro Tools Software

Previously a separate application, DAE is now part of the Pro Tools software and DAE Buffer Size can be set using the Playback Engine dialog.



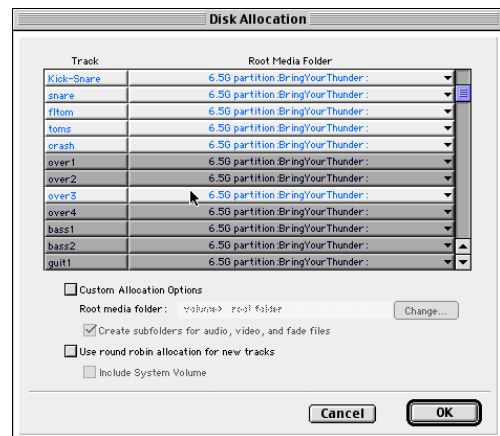
DAE Playback Buffer in Playback Engine dialog

In addition, directly changing DAE's memory allocation (to accommodate additional plug-ins) is no longer possible. Instead, allocate more memory to the Pro Tools application.

Disk Allocation Dialog Shortcuts

Two new key shortcuts make it easier to allocate a specific destination hard drive to multiple tracks simultaneously:

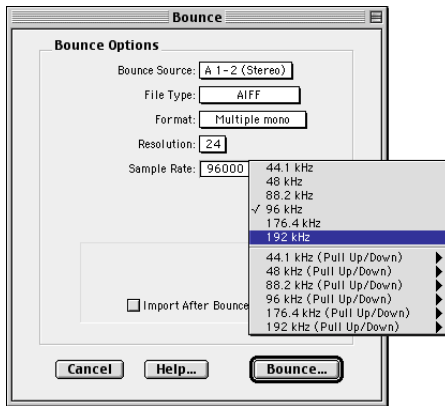
- To make a continuous selection, Shift-click a track name (in the Track column) to extend the selection to include already-selected tracks and all tracks in between.
- To make a discontinuous selection, Command-click (Macintosh) or Control-click (Windows) a track name in the Track column to extend the selection to include already-selected tracks without including tracks in between.



Disk Allocation dialog

Bounce to Disk

Bounce to Disk now supports bouncing at high definition sample rates. Supported destination sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz. Pull Up/Pull Down variants for all supported standard sample rates are also provided.

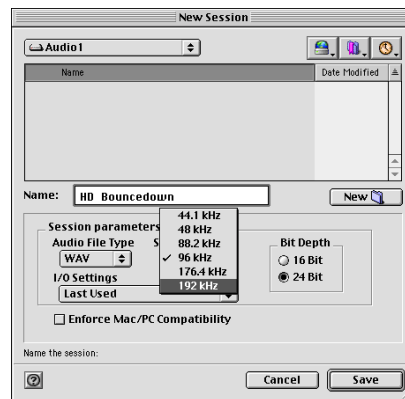


Bounce to Disk dialog

New Session

The New Session dialog now supports Pro Tools|HD's high definition sample rates. Supported sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz. The session sample rate is defined in the New Session dialog when a session is first created.

⚠ *With Pro Tools 5.3, the default audio file format has changed from Sound Designer II to .WAV. In addition, Sound Designer II format audio files are not supported at session sample rates above 48 kHz.*



New Session dialog

Save Session Copy In

The Save Session Copy In dialog allows saving a copy of the current session in the following formats:

- Latest (Pro Tools 5.1 or later)
- Pro Tools 5 Session
- Pro Tools 4, 16-Bit Session
- Pro Tools 4, 24-Bit Session
- Pro Tools 3.2 Session

Choose Latest if you are working with Pro Tools software version 5.1 or higher.

A *When a Pro Tools 5.3 session is saved to an earlier version, multichannel tracks and multi-mono plug-ins are lost. To preserve these, separate the tracks and plug-ins to individual mono tracks before saving a copy of the session.*

Opening 5.2 or 5.1.3 Sessions with Pro Tools 5.3

Using Pro Tools 5.3 to open sessions created with versions 5.2 or 5.1.3 of Pro Tools software will cause the unique features of those versions to be lost. Specifically:

- ◆ If you open a Pro Tools 5.2 session in Pro Tools 5.3, you will not be able to use Digi-Studio Internet collaboration capabilities, and you will lose information on Local Online track associations.
- ◆ If you open a Pro Tools 5.1.3 session in Pro Tools 5.3, you will not be able to use Digi-Translator 2.0, Unity MediaNet Shared Storage Systems, AVoption or AVoption|XL. You will also be unable to play audio imbedded in an OMF sequence file, and pull-downs will only be allowed at the standard frame rates.

A *Sessions created in Pro Tools 5.1.1 or earlier will open in version 5.3 without any loss of data or features.*

Opening 5.3 Sessions Using Earlier Versions of Pro Tools

If you want to use an earlier version of Pro Tools to open a 5.3 session containing audio files with sample rates above 48 kHz, choose the “Save Session Copy In” command and resave the session and its audio files to either a 44.1 or 48 kHz sample rate.

New TDM Mixer Plug-Ins

Pro Tools 5.3 provides four different Mixer plug-ins to support high definition audio on Pro Tools|HD systems. These new Mixer versions are: Stereo, Surround, Stereo Dithered, and Surround Dithered.

The Stereo and Surround Mixer plug-ins are installed by default. When you run the Pro Tools Installer, a copy of the Stereo Dithered and Surround Dithered mixers are placed in the folder “Plug-Ins (Unused)” inside the DAE folder.

Standard Surround and Stereo Mixers

Both the Surround and Stereo Mixer plug-ins provide the following:

- ◆ 24-bit digital output, from an audio interface output or the Bounce to Disk function. Mix level scaling stores 48-bit results, using a 56-bit accumulator for maximum precision.
- ◆ 48 dB of mix headroom
- ◆ Output clip indication
- ◆ Multichannel mixing formats for surround (available with the Surround Mixer)

Surround Dithered and Stereo Dithered Mixers

Both the Surround Dithered and Stereo Dithered Mixer plug-ins provide the following:

- The same features as the standard Stereo and Surround mixers, with the addition of non-correlated dither to any output or bus send.

Switching TDM Mixer Plug-Ins

In most cases, the Mixer plug-in that was automatically installed with your system is the best one for all around use. However, you can switch Mixer plug-ins, if necessary.

To Switch TDM mixer plug-ins:

- 1 Quit Pro Tools.
- 2 Open the DAE Folder. The DAE folder is installed at the root level of the System Folder.
- 3 Open the “Plug-Ins (Unused)” folder, locate the Mixer plug-in that you want to use, and drag it to the Plug-Ins folder.
- 4 Open the Plug-Ins folder, locate the mixer plug-in version that you no longer wish to use, and drag it to the “Plug-Ins (Unused)” folder.
- 5 Launch Pro Tools.

Plug-In and Processing Features

Pro Tools 5.3 adds several new plug-in and DSP-processing related enhancements.

New DigiRack Plug-Ins

Pro Tools 5.3 for Macintosh includes new DigiRack Plug-Ins with the following enhancements:

- A new Mod Delay II plug-in with Tempo, Meter, and note-based entry of delay time
- An RTAS version of POW-r Dither
- TDM and RTAS versions of Digidesign’s D-Verb plug-in
- Three separate TimeAdjuster plug-ins (Short, Medium, Long) for a wider variety of sample delay times

All DigiRack Plug-Ins support up to 192 kHz session sample rates.

Mod Delay II Plug-In

Mod Delay II for Pro Tools 5.3 adds controls for Tempo, Meter, Duration, and Groove.

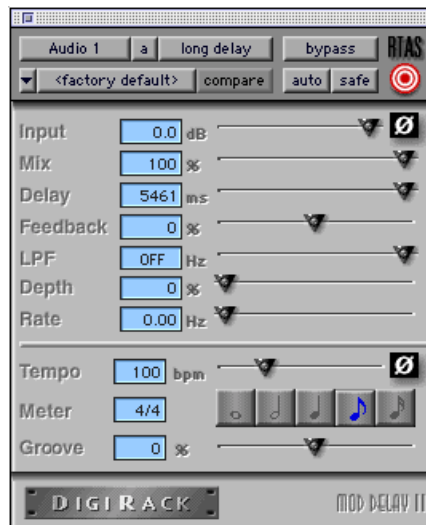
Tempo Sets the desired tempo in beats per minute (bpm).

Meter Allows you to enter simple or compound time signatures.

Duration Allows you to specify a delay according to a note value (whole, half, quarter, eighth, or sixteenth note).

Groove Provides fine adjustment of the delay in percentages of a 1:4 subdivision of the beat.

This new version of Mod Delay II is provided in TDM, RTAS, and AudioSuite formats.



Mod Delay II plug-in

TimeAdjuster Plug-In

TimeAdjuster for Pro Tools 5.3 provides a choice of three plug-ins:

Short Provides a maximum delay of 256 samples at all sample rates.

Medium Provides a maximum delay of 2048 samples at all sample rates.

Long Provides a maximum delay of 8192 samples at all sample rates.

New HTDM Plug-In Format

Pro Tools 5.3 supports Digidesign's new HTDM (host TDM processing) plug-in format.

HTDM plug-ins combine the flexibility of TDM plug-ins with the power of RTAS plug-ins by using the processing power of your host computer, while allowing plug-in insertion on all track types, including disk tracks, auxiliary inputs, and master faders. This allows you to use a greater number of plug-ins in a session without restricting their usage on specific track types.