

PostConform User's Guide

Version 2.0

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Introduction to PostConform

About PostConform

PostConform is an EDL import/autoconform software package for Pro Tools™. With PostConform, your Pro Tools digital audio workstation becomes a complete solution for automatically capturing and assembling sound elements to picture.

Your complete PostConform package includes:

- PostConform Install CD-ROM
- PostConform Authorizer floppy disk
- PostConform User's Guide
- Customer Service Registration Materials
- One RS-422 cable (Macintosh 8pin-mini-DIN serial-to-Sony™ 9-pin)

PostConform can import industry standard CMX 340, 3400 and 3600 format EDLs, and provides machine control support for the following protocols: Sony 9-pin, V-LAN, and Lynx I & II (VPR-3). PostConform is fully compatible with the Digidesign Universal Slave Driver (USD), and with OMS and standard MIDI Time Code-compatible interfaces including the MIDI Time Piece™ and MIDI Time Piece AV™ (MTPAV) from Mark of the Unicorn Opcode's Studio line of MIDI interfaces, and others.

System Requirements

Computer Requirements

- A Digidesign-qualified Power Macintosh
- Mac OS 8.6 or 9.0
- 64 MB RAM

Digidesign System Requirements

- Pro Tools 24 MIX, Pro Tools 24, or Pro Tool III hardware
- 888|24 I/O, 882|20, 888 I/O, or 882
- DAE 5.0P (supplied), or DAE 5.0.1

Hardware Requirements for Machine Control

- A device that supports Sony 9-pin or V-LAN protocol, or a TimeLine Lynx I or Lynx II transport synchronizer
- A Universal Slave Driver (USD) or an LTC-to-MTC converter or interface

PostConform Functions

PostConform allows importing of industry-standard CMX 3400 and 3600 format EDLs, manipulation of the list, automatic capture of source elements (through machine control) and assembly of the recorded elements into a Pro Tools session. Captured elements can be flexibly sorted and edited, and can be conformed again to reflect editorial changes. With PostConform, the time-consuming process of loading and conforming field audio and post-production elements can be accomplished automatically and seamlessly.

Main Features of PostConform

Easy Integration with Pro Tools

PostConform is a stand-alone application that imports EDLs, then conforms these elements, creating a new Pro Tools session.

Comprehensive Machine Control Support

PostConform supports Sony 9-pin, V-LAN and Lynx I and Lynx II protocols for machine control.

Supports Industry Standard EDLs

PostConform imports industry-standard CMX 340, 3400 and 3600 format EDLs.

Flexible Manipulation of EDL Events and Autoconform Preferences

PostConform allows a great deal of flexibility when dealing with the autoconform process with features such as:

- Recording of up to eight tracks.
- Flexible sorting of EDL elements.
- User selectable handles for conformed elements.
- User-definable “checkerboard” of elements allows avoidance of overlapping events, and clean organization of Pro Tools tracks.
- Automatic track mapping of source elements.
- Automatic virtual source creation.
- Elements can be conformed or re-conformed (to reflect EDL changes) after capture.

chapter 2

PostConform Installation and Setup

Installation requires the following steps:

- Install PostConform software
- Authorize PostConform software
- Make hardware connections for machine control (optional)
- Configure PostConform for your computer and Digidesign system

Installing PostConform Software

To install the PostConform software on your computer:

- 1** Insert the PostConform Installer CD-ROM into your CD-ROM drive.
- 2** Double-click the PostConform Installer.
- 3** Follow the install instructions. When prompted for an install location, select your system drive.
- 4** Follow the on-screen instructions to complete the installation.

Authorizing Your Copy of PostConform

PostConform is copy-protected with a key diskette authorization system. The Authorizer diskette allows you to authorize one

hard disk to run PostConform. Before you authorize PostConform check to make sure that the PostConform Authorizer disk is not write-protected.

▲ Reformatting or reinitializing your hard disk may delete the PostConform authorization from your hard disk. Before performing any hard disk maintenance, Digidesign recommends temporarily returning the authorization key to the Installer disk (for detailed instructions, see “Deauthorizing Your Copy of PostConform” on page 4).

To authorize your copy of PostConform:

- 1** Make sure that your audio interface and external hard drives are powered on.
- 2** Double-click the PostConform icon to launch the application. You will be prompted to insert the Authorizer disk.
- 3** Insert the PostConform Authorizer disk. In the dialog that appears, click Authorize.
- 4** When prompted, select the hard disk to be authorized.
- 5** Click OK. You'll see a couple of status dialogs as the Installer authorizes your hard disk.

6 When authorization is finished, a dialog appears confirming that your hard disk is now authorized to run PostConform. This dialog also tells you how many more authorizations your disk has left.

7 Click OK. You'll return to the "Authorize/Deauthorize/Quit" dialog. Click Quit to exit the authorization program.

Deauthorizing Your Copy of PostConform

On an Authorized hard disk, you can start up, use, and even move PostConform to different locations on your hard disk without ever being prompted for your Authorizer disk. After you have authorized your hard disk, no additional authorizations can occur until you reclaim the authorization by using the Deauthorization feature of the PostConform Installer.

To deauthorize a copy of PostConform:

- 1** Insert the PostConform Authorizer disk. Make sure that the hard disk that you want to deauthorize is connected to the computer and is mounted.
- 2** Double-click the PostConform DeAuthorizer icon on the Authorize disk to launch the Installer.
- 3** In the dialog that appears, click Setup.
- 4** Click Deauthorize in the next dialog.
- 5** Make sure the appropriate hard disk is selected and click OK.

A status dialog will appear briefly while deauthorization takes place. After this, a dialog appears confirming that you have replaced one authorization:

6 Click OK. When the Authorize/Deauthorize dialog appears, click Quit to return to the Finder.

Deauthorization is now complete. If you now try to launch PostConform (assuming you left a copy on your hard disk) you will be warned that PostConform is not authorized, and prompted to authorize the application.

▲ Do not lose or alter your PostConform Authorizer disk. You will not be able to install or run PostConform without it.

* Be sure to register PostConform, to receive a back-up authorizer diskette.

Installing OMS

If you are using PostConform with a LTC-to-MTC converter, you must install Opcode's OMS (Open Music System) to enable PostConform to recognize and use your device.

This section provides basic instructions for installing and configuring OMS.

Using a MOTU FreeMIDI Device

If you are using a Mark of the Unicorn (MOTU) device such as the MIDI TimePiece (MTP) or MIDI TimePiece AV (MTPAV) you must first install MOTU's FreeMIDI, then install OMS. Instructions for setting up your MOTU device for use with Digidesign software are included in your MOTU documentation.

About OMS

OMS acts as a central MIDI driver for Post-Conform and other audio/MIDI applications and devices. PostConform uses OMS to communicate with MIDI-based synchronization peripherals. OMS also provides a central location for defining and storing a detailed description of your MIDI studio.

OMS Setup

The OMS Setup application is used to create a Studio Setup document, where you store a detailed description of the MIDI devices in your studio—including their names, their MIDI channels, and how they are all physically connected.

All OMS-compatible applications reference this Studio Setup document. So, if you change your studio in any way, you need only modify your Studio Setup document and all OMS-compatible applications are immediately aware of the change.

OMS handles all your computer's internal MIDI timing. This allows you to run multiple OMS-compatible applications simultaneously and in perfect synchronization.

Installing OMS

The OMS Installer is located on your Post-Conform Installer CD-ROM.

To install OMS:

- 1 Insert the PostConform Installer CD in your CD-ROM drive.
- 2 Open the "OMS Installer" folder and double-click the OMS installer.

- 3 At the Install Screen, select the Easy Install option, and set the Install Location to your Startup hard drive. Click Install.

- 4 Follow the on-screen installation instructions.

- 5 When the installation is complete, restart your Macintosh.

If you are updating from an older version of OMS, your previous Studio Setup documents will be read by the new OMS Setup application.

Configuring OMS

The OMS Setup application is used to create a Studio Setup document, where a detailed description of the MIDI devices in your studio is stored. This description includes device names, their MIDI channels, and how they are connected.

To configure OMS:

- 1 Make sure your MIDI devices and MIDI interface are connected properly and turned on.

- 2 Double-click the OMS Setup application.

- 3 Select the serial ports you want to use for transferring MIDI data between your MIDI interface and Pro Tools, then click Search.

- 4 Follow the on-screen instructions.

- 5 After OMS has scanned your MIDI setup and configured your MIDI interface and connected MIDI devices, enter a name for your Studio Setup document and click Save.

Disabling Serial DMA

PostConform requires that you deselect the “Use Apple Serial DMA Driver When Available” option in OMS Setup. If you do not disable this option, problems will occur with MIDI and synchronization functions within Pro Tools.

To disable Serial DMA in OMS:

- 1 Double-click the OMS Setup application.
- 2 Choose Edit > Preferences.
- 3 Deselect “Use Apple Serial DMA Driver When Available” and click OK.
- 4 Quit OMS Setup.

Hardware Connections for Sync and Machine Control

If you are already using Pro Tools with a Sony 9-pin or V-LAN deck, PostConform should require no additional hardware connections. You will still need to configure PostConform’s Peripherals and Hardware Setup for your particular setup. See “Configuring PostConform” on page 7.

For synchronization, PostConform requires a USD or MTC synchronizer connection. For optional machine control, PostConform requires a 9-pin or V-LAN machine control connection.

To connect your PostConform system for synchronization and machine control:

- 1 Connect your synchronization peripheral to your computer, and install and configure the peripheral for use with PostConform.
- 2 Using the 9-pin cable included with PostConform, connect your computer to the 9-pin In port of your VTR/ATR, or a Lynx I or II or VLAN machine.
- 3 Connect your SMPTE or MIDI Time Code source to your synchronization peripheral.

☞ You can find detailed hardware connection diagrams and suggestions in your *Pro Tools TDM Hardware Install Guide*.

PostConform and Virtual Memory

PostConform will not launch if Virtual Memory is active. To disable it, open the Memory Control Panel, disable Virtual Memory and reboot the Macintosh.

PostConform Quick Start

Once you’ve installed and authorized PostConform you can launch it by double-clicking its icon in the Finder. To make sure you start the program correctly, take a moment to look at the steps listed in this section.

To launch PostConform:

- 1 Turn on your external hardware, including connected synchronization peripherals, and your Digidesign audio interface.
- 2 Locate the PostConform application on your system drive (usually in Digidesign: PostConform).
- 3 Double-click the PostConform icon.

Learning PostConform

If you are an experienced post editor, chances are you can get up and running in just a few minutes. Read “Configuring PostConform” on page 7 to learn how to set up your peripherals for use with PostConform, and hardware setup options for your particular system.

If you are new to autoconform in general, you might want to take a few minutes to read *Chapter 3: Basic PostConform Concepts* before continuing. After that you can proceed to *Chapter 4: Using PostConform* and start putting PostConform to work.

Configuring PostConform

After you’ve installed PostConform and launched it you’ll want to configure it for your system and for your work style. Follow the instructions in this section to set up PostConform for your hardware and peripherals.

Hardware Setup

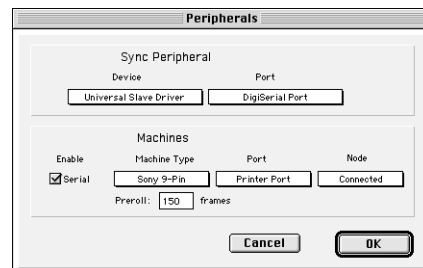
The first time you launch PostConform the Hardware Setup dialog appears (you can also access this dialog by choosing Setups >

Hardware). The Hardware Setup dialog allows you to configure PostConform for the specific Digidesign hardware installed in your system. The Hardware Setup dialog also provides controls for selecting analog or digital input. Configure your inputs and sample rate to match the sources you will be working with. Since PostConform is a utility application for Pro Tools, you should configure the Hardware Setup dialog according to the instructions found in your *TDM Hardware Install Guide*.

Peripherals

PostConform has its own Peripherals setup dialog to allow you to tell the application what devices are connected to your system, and what port each device is on.

Before you attempt to configure PostConform from the Peripherals dialog, you must connect your peripheral devices, including a USD or an MTC-capable sync peripheral, and any machine you wish to control. Refer to your device’s documentation for proper connection and installation procedures.



Peripherals dialog

Configuring a Sync Peripheral

You can use a Digidesign USD, or an LTC-to-MTC converter, to synchronize Post-Conform to your source decks.

To configure a PostConform sync peripheral:

- 1 Launch PostConform, using the procedure “To launch PostConform:” on page 7.
- 2 Choose Setups > Peripherals.
- 3 Under Sync Peripheral Device, select either *Universal Slave Driver (USD)* or *Generic MTC Reader* from the pop-up menu.
- 4 Under Sync Peripheral Port, select the port your sync peripheral is attached to from the pop-up menu. For example, with a Pro Tools MIX system and a USD, the USD should be connected to the DigiSerial Port.
- 5 When you finish configuring the sync peripheral, click OK.

* Note that in the pop-up menu, ports that are already in use are grayed out, with an explanation of the port’s current assignment.

Configuring a Machine for Machine Control

To configure a machine for machine control:

- 1 Launch PostConform, using the procedure “To launch PostConform:” on page 7.
- 2 Choose Setups > Peripherals.
- 3 Select Enable Serial.
- 4 From the pop-up menu, select the type of machine (Sony 9-pin, Lynx [VPR-3], or VLAN).

5 From the Port pop-up menu, select the port the machine is attached to.

6 From the Node pop-up menu, select the Node the machine is attached to:

- (VLAN) Click and hold the Node pop-up to select the machine on the network you want to control.
- (9-pin) Click and hold the Node pop-up until “Connected” is highlighted.

7 Enter a pre-roll amount, in frames.

8 Click OK when you are done.

Handles, Machine Pre-Roll, and Discontinuous Time Code (Warning!)

Be careful with handle settings, machine pre-roll, and tapes with discontinuous time code. If your handle size is 150 frames, and your machine pre-roll is 150 frames, you need to have 10 seconds (at 30 FPS) of continuous time code recorded on tape before the event you are attempting to capture. Since this is not always the case with production sound, you may have to adjust handle and machine pre-roll settings according to your project’s parameters.

Other Configuration Options

In addition to Hardware and Peripherals setup, PostConform has a Preferences command that lets you set your preferences for loading, conforming, and EDL display. See “Preferences” on page 31 for more information.

Basic PostConform Concepts

Features and Uses of PostConform

PostConform is auto-assembly software. It helps to automate much of the process when loading audio into Pro Tools and spotting audio to a Pro Tools session for video, film, or multimedia post production.

To understand how PostConform works compared to a traditional “manual” approach, look at the following scenarios for loading source material into a digital audio session.

Manual Loading and Spotting of Audio Events with an EDL and a DAW

The following procedure is a typical example of what an audio post-production engineer goes through to add audio tracks manually to a production using a DAW:

- 1** A printed cue sheet or EDL, along with a video worktape, is provided by the video or film editor to the audio post-production engineer or production sound editor. This EDL usually indicates which audio events (also called edits or takes) need to be loaded into the workstation, to match the worktape’s audio guide track and visuals.
- 2** The EDL also usually indicates the numbers or names of the various audio and video tapes (called source tapes, or *reels*) where the desired takes can be found. The engineer loads the first audio or video tapes onto the source deck (this could be a time code DAT machine, a professional video deck, or a time code-capable open-reel analog deck), and cues it manually to the *Source In* (start) time code point for the first audio event, as shown on the EDL. (The engineer might record audio starting a little before the Source In time for editing flexibility; this is called a *handle*.)
- 3** The DAW is put into record, and the source deck is started.
- 4** Once the tape gets to the edit’s Source Out (stop) time, recording is stopped on the DAW, and the source deck playback is stopped. (The engineer might also leave a handle at the end of the audio.)

5 Each newly recorded event is saved to hard disk as an audio file.

6 This process is repeated for all the needed events on the first source reel. Once all events for that source reel have been transferred, the engineer off-loads the reel, and if needed, puts on another reel. Steps 2 through 5 are repeated for all necessary events and reels.

7 Once all the events from all the source reels have been captured to disk, the engineer usually records the audio guidetrack off of the video worktape onto disk. This guidetrack can be very useful.

8 Referring to both the printed EDL and the guide track, the engineer manually “spots” each file to a track and a Record In (also called destination in, or record start) time code point. Since it is assumed to be in sync with the video, the guide track is used in two ways. First, processed dialogue and other elements can be matched up visually, comparing the waveforms of the guide track with that of the new regions. Second, new regions can be compared audibly with the guide track; this way, particularly with dialogue, it is possible to hear “phasing” mismatches when the sync isn’t right. Even with the help of a guide track and a printed EDL, however, this process of manually “conforming” regions to EDL times can be time-consuming.

9 If audio takes overlap in time, the engineer often places them on adjacent tracks. This is called *checkerboarding*.

10 Once all the events are in place for the session, the engineer can synchronize the workstation to the worktape of the scene to see how well the audio matches the visuals. Any additional edits, or digital signal processing, including level, and EQ, can also be performed now, and sound effects or other additional audio elements can be added.

This is the manual process of conforming audio. As you can see, it is time-consuming, labor-intensive, and there are opportunities for error.

Auto-Assembly of Audio Events Using PostConform

Here’s an overview of how you can accomplish the same tasks as in the previous scenario, using PostConform software with Pro Tools:

1 The video or film editor gives the audio post-production engineer an electronic EDL on a diskette. Typically, the post-production engineer also gets a video worktape with an audio guidetrack. The EDL contains information that describes the addresses of dialogue and other audio events that the picture editor has incorporated on the worktape. It also tells which source reels contain the desired audio takes. Using PostConform, the engineer imports the EDL from the diskette, and reads which source reels will be needed for this particular scene.

2 The audio engineer loads the first source reel onto the source deck, and defines which input channels will map to which destination tracks. Next, that reel's desired events are selected from the EDL, and PostConform is to load them from the source reel automatically. Alternatively, all the source events can be selected, and PostConform can prompt the engineer to change reels as events are recorded in.

3 Using its built-in machine control capabilities, PostConform advances the source reel to the first take's Source In time, as indicated in the EDL.

4 PostConform puts the DAW into record mode and starts the source reel. When the reel reaches the event's Source Out time, as also indicated in the EDL, recording is automatically stopped, and the file is saved to the system's hard disk. If desired, PostConform can record user-specified amounts of handle before and after the source event.

5 PostConform then advances the source reel to successive events, and repeats step 4, until all the desired events for that reel are transferred to the hard disk.

6 If necessary, the engineer loads additional source reels, and asks PostConform to repeat these same steps until all the desired takes from all the desired source reels are captured to the disk. Or, if all the events on multiple reels were selected earlier, the engineer is prompted to insert the next reel.

7 PostConform can then export a Pro Tools session, but the engineer may want to set up the layout of that session first. From within PostConform the track layout for checkerboarding is selected, or separate tracks are selected for dialog, ambience and effects. The frame rate and start frame of the Pro Tools session are also set.

8 PostConform automatically exports each event as a region into a new Pro Tools session. At the same time, each region is automatically spotted, or conformed, to its Record In time, as indicated in the EDL.

9 Once regions are in place, it's a good idea to make sure they match the visuals. Dialogue, for instance, can be checked visually and audibly against the worktape's guide track (this is one way to make sure that EDL times are correct). To check the placement of other elements, it's a good idea to synchronize Pro Tools to the video worktape. This step will let you check to make sure that the audio events match the visuals. Finally, if you like, you can add effects, additional edits, or other audio elements.

Note that PostConform doesn't necessarily reduce the actual number of steps that need to take place. However, it can save a tremendous amount of operator time and energy, since many steps, such as audio recording and spotting, are automated.

A Summarized Overview of PostConform

In short, PostConform adds auto-assembly capabilities to Pro Tools. These capabilities include three primary functions:

EDL importing PostConform imports and lets you read edit decision lists created by external video or audio editing systems.

Auto-Loading Using its built-in machine control capabilities, PostConform automatically loads audio events off source reels from external audio or video decks (or DAWs) onto your Pro Tools system's hard disks. Some audio post engineers may know this feature as *auto-editing*, or *auto-acquisition*.

Autoconform PostConform automatically matches, or conforms, auto-loaded events with predetermined destination, or record, times, as described by the EDL. Conformed events are then exported as audio regions into a new Pro Tools session, where they are also automatically spotted to their correct times.

EDLs in Video, Film, and Multimedia Editing Systems

There are two main types of video editing systems that produce electronic EDLs. Conventional videotape editing systems typically control one, two, or more source video tape recorders (VTRs), plus a master VTR. Some of the best-known videotape editing systems are made by CMX, Sony, Ampex, and Grass Valley.

Nonlinear digital video editing systems, such as Avid Media Composer and Symphony, also produce EDLs. These systems capture, compress, and store video information to hard disks, so that scenes and edits can be performed entirely within the digital domain. We'll describe the relationship between these systems and EDLs in "EDLs in Video, Film, and Multimedia Editing Systems" on page 12.

Basics of Electronic EDLs

Edit decision lists have been part of videotape editing for years. Most videotape editing systems use SMPTE or EBU time code edit points (also called addresses) to describe where specific video and audio events start and end. To create a finished production, events from the source (original) video and audio tapes are recorded onto a master tape, or master reel. The list of events that is used to assemble the master tape is called an edit decision list.

An EDL can be as simple as a handwritten log of event addresses and circled takes. Professional video editing systems, however, use electronic EDLs to keep track of what events are to be assembled. Electronic EDLs also help these systems to automate the process of transferring video off source tapes and onto the master tape, similar to PostConform auto-assembly.

An EDL usually lists two pairs of addresses for each event: the *Source In* and *Source Out* times, which describe where the event begins and ends on the source reel, and the destination or *Record In* and *Record Out* times for each event, which describe the times on the assembled master reel where the event begins and ends.

Electronic EDLs usually contain more information than addresses. For instance, they usually indicate the event number, the names (or numbers) of the source tapes for each event, and whether a particular event is an audio or video event (or both). Most EDLs also have a comment field for each event, where the operator might choose to give the event a name, or add a special note about the audio level, where the source reel is stored, and so forth.

Online and Offline Videotape Editing

The ability to store an EDL to internal memory or to diskettes is vital for professional videotape production. Here's an example.

Most video production companies have both offline and online editing suites. Offline videotape editing uses dubbed copies of the original source tapes (work tapes) to create a "mock-up" master tape. Once an offline edit has been performed to everyone's satisfaction, the offline editing system can store the session's EDL onto a diskette that can then be carried over to the online system. There, once the EDL is read from the diskette, the original source tapes can be shuttled directly to their events' Source In times, to be transferred over to the actual master tape or hard disks.

By performing basic edit decisions offline, wear-and-tear on the source tapes is minimized. Also, the online suite usually has better-quality switchers, video decks, character and special effects generators, and more—and accordingly, costs more per hour to run than the offline system.

* Don't confuse online and offline editing with Pro Tools' online/offline settings, which determine whether or not the system is set to slave to external time code; these are two entirely separate concepts.

Online or offline EDLs are stored internally or saved to diskettes at the end of each editing session. This way, someone else can come in, load their own EDL, do their work, and leave, and any video editor can pick up a session later by simply reloading an EDL, without having to re-input all the events. As you might guess, storing different versions of edits is as simple as storing different EDLs, like storing different versions of similar Pro Tools sessions.

PostConform allows your Pro Tools system to be included in this editing model, by sharing EDL data generated on a video editing system.

Nonlinear Digital Editing Systems and EDLs for Film Production

Avid Media Composer and Symphony and other nonlinear editors are increasingly used for offline and online editing. For the experienced video editor, these systems offer unmatched speed and flexibility.

For feature film editors, on the other hand, editing has historically been a manual process. Instead of an electronic editing system, they wind and splice together by hand sprocketed film and "mag" stock. Instead of an EDL, they compile each splice's scene and take the number (read from special codes printed on the film) onto a handwritten list called a chronolog. Consequently,

audio-for-film people have rarely had the need or opportunity to work with electronic EDLs.

Today, this is changing, as more feature film editors turn to digital video editing systems, such as the film-oriented Avid FilmComposer. With these systems, each reel of film is transferred onto a video worktape that in turn is captured onto a shared or dedicated hard disk storage system to allow random-access editing of the visuals.

Similar to a videotape editing system, digital video editing systems use EDLs to assemble events, which can be shared with PostConform. When editing digitally for film production, there's usually one EDL for each 10-minute reel. For a video production, there could be a separate EDL for each scene or section, or just one EDL for the entire production. Technically speaking, a "reel" is an actual reel of film; however, almost all film post-production work, is split up into master sections called reels.

EDLs and Professional Multimedia Production

Audio post production for multimedia is increasingly important. Here too, PostConform can be of assistance.

Many professional multimedia productions are created using authoring/editing software, such as Macromedia Director or Adobe Premiere. The same high-end nonlinear digital video editing systems, however, that are being used in video and film production, are also being employed to create multimedia productions. Using EDLs to assemble finished projects from a variety of

digital or video tape sources, these systems also generate industry-standard EDLs—which means that they too can be used with PostConform.

EDLs are a Common Language Between Audio and Video Editors

As we've described in the preceding pages, EDLs can be a common language for visual and audio editors to share. Here are some more detailed examples of this.

In many video productions, as different cuts are being created by the visuals editors, video worktapes and EDLs are passed along to the audio editors, who use them to assemble dialogue and other audio events, either manually, or using an autoconform process. As certain portions of audio are assembled, they're often sent back to the film or video editors as work-in-progress, on time code DAT or analog tape.

With a digital video editing system, the director and others view the production in progress at the system, or they might view generated worktapes. As the production progresses, EDLs and video worktapes (or increasingly, digital video on disk) are passed to the audio post-production engineers. Audio-in-progress may be sent back up the line to the visuals editors.

For nonlinear film post-production, as the director signs off on portions of the visual production, the film editor gets a printout of something similar to an EDL, called a negative cut list; this gives one all the instructions needed to cut the film (literally) from the source reels onto a master reel.

Once the visuals are cut, and the audio post-production is complete, final audio tracks are mixed to the film's optical tracks.

Special Advantages of PostConform and Nonlinear Digital Video

As we've been discussing, most audio post-production uses video worktapes. However, digital video technologies with Pro Tools, like QuickTime movies, AVoption or AVoption XL, can be used to view picture and spot audio accurately.

If your picture editor can export a QuickTime movie, you can easily import this movie into Pro Tools, then view near-frame accurate video with your audio session to check sync and complete post-production.

You can also use Pro Tools with AVoption or AVoption XL, to import and view Avid-format video in your Pro Tools session. Since picture editing is often performed on an Avid system, this can be an invaluable method of checking sync and completing post-production.

☞ For more information on using QuickTime video in Pro Tools, refer to the *Pro Tools Reference Guide*. For information on AVoption or AVoption XL, refer to the Digidesign Web site.

How to Read a Typical EDL

In an ideal world, you'll always be given nicely formatted EDLs, without any extraneous or unrelated information. However, EDLs share a specific language and syntax.

Here's an example of a portion of an EDL, as it might look on-screen at a video or nonlinear editing station, or as it might look on the Macintosh, when opened up as a text file:

TITLE: ALL SPOTS				Title			
FCM: NON DROP FRAME				FCM			
001	2POP	A	C	00:58:45:10	00:58:45:11	00:59:58:00	00:59:58:01
002	VO	A	C	03:00:30:22	03:00:33:12	01:00:02:27	01:00:05:17
003	VO	A	C	03:01:29:21	03:01:31:19	01:00:07:09	01:00:09:07
004	VO	A	C	03:00:56:15	03:00:59:01	01:00:09:19	01:00:12:05
005	DIA	AA	C	01:09:12:01	01:09:14:01	01:00:13:20	01:00:15:20
006	VO	A	C	03:02:02:12	03:02:04:23	01:00:19:02	01:00:21:13
007	VO	A	C	03:02:51:06	03:02:53:00	01:00:23:06	01:00:25:00
008	2POP	A	C	00:58:45:10	00:58:45:11	01:00:58:00	01:00:58:01
009	VO	A	C	03:03:17:23	03:03:22:05	01:01:09:24	01:01:14:06
010	VO	A	C	03:04:10:24	03:04:12:15	01:01:17:17	01:01:19:07
011	VO	A	C	03:03:44:14	03:03:48:06	01:01:19:12	01:01:27:21
012	VO	A	C	03:02:23:24	03:02:24:24	01:01:26:21	01:01:27:21
Event number	Reel name	Channel	Effect	Source start	Source end	Destination (record) start	Destination (record) stop

* Keep in mind this is what a typical EDL looks like coming directly from a video or nonlinear editing system. Once it's imported into PostConform, certain columns may be ignored and other information is added.

To help us learn how to read this and other EDLs, let's start at the very top, and then move onto each vertical column.

Title and FCM

The top of the EDL is reserved for general information, including the EDL's title. FCM stands for Frame Code Mode (25 FPS, drop frame, or non-drop), and it's here that you'll find the general time code format for the destination, or master tape. Separate elements on the EDL can have different source frame rates, but the destination (master) tape must have continuous, consistent time code.

Standard EDL Statements

Event

As you can see, this sample EDL has successively numbered events listed horizontally, with columns for event number, reel name, channel, effect, start and end times for the source reel, and a start and end time for the session. Each event represents a video or audio edit that has been assembled by the editor for this particular portion of the master tape. In this case, the EDL has been sorted by event numbers and Record In times.

Reel

This is the identifying name of the source reel for each event. Smaller films and video productions typically have anywhere from one or two source reels to several dozen, while feature-length productions can have hundreds.

Channel

This tells what type of information the event is, and from which audio or video channel the information is loaded. Here's a legend for reading channel codes:

V: Video only

A: Audio channel 1 only

A2: Audio channel 2 only

B: Audio channel 1 & video

A2/V: Audio channel 2 & video

AA: Audio channels 1 & 2

AA/V: Audio channels 1 & 2, & video

NONE: Audio channel 3, or 4, or both 3&4*.

CMX 3600 format EDLs allow for up to four channels of audio. These are described by "AUD" statements that are found immediately underneath an event's ordinary channel codes of V, A, A2, and so forth. If, however, the event has only audio channel 3 or 4, or both—and nothing from audio channels 1 or 2, nor any video—then the first statement of the channel column for that event will say NONE, followed by an "AUD" statement. Here, then, are the three AUD codes:

AUD 3: Specified channels or NONE + audio channel 3

AUD 4: Specified channels or NONE + audio channel 4

AUD 3 & 4: Specified channels or NONE + audio channels 3 & 4

Also, please note that to avoid confusion, we refer to source tracks as "channels," even though many video editing systems

may call them “tracks.” We do this because PostConform uses the term “track” to describe the destination track(s) for each audio event. In fact, once an EDL is imported into PostConform, each audio event will indicate both “channel” and “track.”

Effect

This describes the edit transition. Usually this is simply a “butt-splice” cut (C), where once scene abruptly cuts to another, though a dissolve (D) is also very common. This column is ignored when EDLs are imported into PostConform. All edits are given butt splice-type edits.

Duration (not shown)

If the edit transition is anything other than a cut, this tells us the duration of the effect. This column is also ignored when EDLs are imported into PostConform (and when Pro Tools sessions are exported).

Source In

The playback start time for each event, as found on the original source reel.

Source Out

The playback end time for each event, as found on the original source reel.

Record In

The “destination” start time where an event is recorded onto the master tape.

Record Out

The “destination” end time on the master tape where an event stops recording.

Other Types of EDL Statements

Comments

The CMX standard allows for Note statements that occupy their own individual line in the EDL. Since Comments refer to the previous event, PostConform displays them in the farthest right-hand column. Editors often use Comments to name events, and to provide pertinent information about the event for themselves and other post-production people. PostConform is able to display the Comments column and use its contents as the region name in Pro Tools.

The CMX specification does not include Comments on the same line; Comments must be in their own line. They are, however displayed in their own column (farthest right-hand) in PostConform, and can be viewed and edited from the Statement Info dialog. They are optionally shown in their own line when elected to be shown, in the preferences page.

GPI

Video EDLs often include general purpose interface (GPI) events, or GPI triggers. Video editing systems have electronic switches that can be triggered to deliver a momentary contact. This way, some external event can be triggered by the editing system. It’s quite common, for instance, to have such triggers connected to character generators (to insert a title); digital video effects units (to move a graphic onto the screen); an audio cart machine; or even a digital audio sampler (to trigger a sound effect).

Audio post engineers, for the most part, choose to ignore such events; you can ask PostConform to ignore them when it imports an EDL. However, in some circumstances this information can be useful. For instance, if you're trying to match a sound effect or pace a dialogue to a title's entrance on-screen, it may be very useful to know the start time for its associated GPI trigger event.

Sort Modes

* "C" Mode is the default mode that PostConform uses to load audio, as it makes the most efficient use of the source reels. To load video in any other order, you must manually select the events in the order you wish to load them.

There are three primary ways to sort the order of an EDL's events:

"A" Mode

The same as shown in the above EDL. Events are sorted and numbered according to their respective Record In times. Video editors use this mode when they need to assemble the master tape in a linear fashion, from start to finish. It does, however, require extra time for transferring the source events, since they are ordered at varying Source In times and on varying source reels.

"B" Mode

Events are sorted by source reel first, then the Record In time for each event (i.e., "show" order); consequently, event numbers are almost always out of sequence. In this process, the master tape is assembled

in a nonlinear fashion. "B" Mode EDLs are used when the editor prefers to use source reels one at a time, without having to off-load and reload the reels. Also, shuttling of the master tape during each reel is minimized.

"C" Mode

Events are sorted by source reel first, then the Source In time for each event (i.e., "source" order). Similarly to a "B" Mode EDL, the master tape is assembled out-of-order. Event numbers in the EDL will also be out of sequence. With "C" Mode EDLs, source shuttling time is minimized, since events are loaded off the source reel in order of Source In time. However, it does result in more master tape shuttling.

Occasionally, video editors use "D," "E," and other mode EDLs. D Mode lists are similar to A Mode lists, and E Mode lists are similar to C Mode lists. The main differences between them are that D and E Mode lists place all dissolves and other special transitions at the end of the list.

EDL Formats and Other Variables

An electronic EDL is similar to an ASCII text-only file that you might find on a personal computer. Unfortunately, different editing systems use different text and diskette formats to store and read EDLs. In other words, not all EDLs are created equal. Aside from the various Modes discussed above, there are several other important variables that you'll need to consider when importing EDLs into PostConform.

EDL Formats

The first variable is the EDL format. In general, the universal language for EDL formats is CMX. But CMX has several distinct EDL formats. Two of its most popular are CMX 3600 format (4 channels of audio) and the older CMX 3400 format (2 channels of audio).

CMX 3600 and 3400 are the only two EDL formats that PostConform can import directly. Practically every current video or high-end nonlinear editing system is able to save lists in one or both of these CMX EDL formats. Don't assume, however, that you'll always be given a 3600 or 3400 EDL: It's vital that you communicate what you expect to receive to the colleague who will be sending you the diskette.

Diskette Format

If you are using PostConform in conjunction with a nonlinear editing system, such as Avid Media Composer, Symphony, or FilmComposer, your problems are minimized, since your Macintosh can read files from any of these systems, including DOS diskettes, easily.

This may be more problematic if the system outputs an older diskette format called RT-11. Some of the older editing systems generate 5-1/4" or even 8" diskettes—in which case your best bet is to enlist the help of a well-equipped and knowledgeable video post house, to convert the disks to 3-1/2" DOS or Macintosh format.

Unusual EDLs

What if your EDL is filled with irrelevant information? What if you've received a non-CMX-format EDL? What if someone has sent an RT-11 diskette your way? These problems can be remedied.

To understand what we really want, let's consider the perfect PostConform-ready diskette. It will, naturally, be a Macintosh diskette with a CMX 3600- or 3400-format EDL. What this means is that it's a diskette that can be mounted on the Macintosh desktop, with a text-only file that PostConform can understand. By "understand," we mean that PostConform is going to expect to see a very particular sort of text file, with the character spacing, layout, columns, and terminology associated with 3600 or 3400 EDLs. And being a text file, we could open with TeachText, SimpleText, or any word processor, to view or even modify the EDL before you import it into PostConform.

Modify, we say? Even if you've received the correct EDL and diskette formats, your EDL may still need some "cleaning." Here are some examples of problems that need to be cleaned:

- There may be numerous events that you know you won't be needing. So rather than import some huge long list into PostConform, you may prefer to "weed out" the unwanted events, perhaps using a printed list with circled takes as your guide.
- You could be warned of, or come across, mistyped reel numbers, comments, or other information erroneous entries.

- You could even, if you know what you're doing, modify the spacing, layout, or other features of a non-CMX-format EDL, and save it as something that looks just like a 3600-format EDL.

To accomplish these and other feats, there's a Macintosh software utility on the market called EDL™ Pro, from a company called ALBA™ Editorial (www.albaedit.com). This program not only lets you view and modify almost any EDL, but it also converts almost any EDL format to another, including CMX 3600 or 3400. Furthermore, EDL Pro can mount an RT-11-format diskette. In other words, EDL Pro will let you receive otherwise incompatible EDLs and convert them to be Post-Conform-compatible.

It is also possible for you to edit, clean, and modify an EDL within SimpleText or another text utility, rather than buy EDL Pro. If you attempt this, we strongly recommend you work on a backup copy of the file, and if possible, that you engage the assistance of someone who has had direct applicable experience.

PostConform uses a space (or Tab) delineated method of separating fields. It expects to see first the Event Number, then a Reel Name, then a Channel Set, then an Edit Type, then, if it's a dissolve or some kind of wipe, either a duration or a wipe code (these are ignored by PostConform), then the four most important time code addresses in order: Source In, Source Out, Record In and Record Out. The delimiter for these time code addresses can be something other than a colon (as in

01:00:00:00) such as a semicolon (sometimes used to denote Drop Frame, as in 01;00;00;00).

Possible Sources of Time Code Trouble

In theory, once PostConform has auto-assembled your audio events, the newly imported and conformed audio regions should match the visuals perfectly. In the world of audio post, however, there may be times when these regions may be off by 1 or 2 frames, or even more.

There are several possible reasons for this sort of problem. The following issues illustrate common circumstances where you might run into sync problems:

Improper FCM Code When PostConform autoloads events, it looks to the top "FCM" code on the EDL. That code will determine the time code format for the entire session. Then, if it reaches one or more events with a different FCM code, it will automatically record those events with the different (and correct) time code format. However, if an FCM code has been improperly logged in the EDL—say, if drop frame time code is indicated when a source tape is actually non-drop frame—then you might find audio regions that don't match the visuals. The degree to which these elements are out of sync would be 108 frames (3 seconds, 18 frames) per hour. If your event is at 02:00:00:00 on a drop-frame tape labeled as non-drop that starts at 00:00:00:00, then it will be off by 216 frames (approximately 7 seconds).

Address Typo If a time code address has been mistyped during the creation or editing of the EDL, you could wind up with a sync error.

Dubbing Errors If you're working on a video production, it's unlikely that time code errors will be introduced when your video worktape is created. However, if you're working on a film production, your video worktape may have been dubbed from another tape, which could have been dubbed from film dailies, which were printed off the film stock.

Keep in mind that when film is transferred to videotape, 24 frames per second of film must be converted to 29.97 frames of video in NTSC format, or 25 frames in PAL/SECAM format. Even if the proper Pull Down transfer techniques have been employed to overcome this quandary, it's still possible for dubbing to introduce a minor error—and several dubs could accumulate a one or two frame discrepancy between your worktape and the EDL time code addresses.

For these, and other reasons, we strongly suggest that you perform step 9, as described in "Auto-Assembly of Audio Events Using PostConform" on page 10. Only in this way can you be sure that your audio events are at their proper addresses.

* Synchro Arts makes a product called TITAN that includes an application called FixSync for the purpose of automatically comparing the guide track to auto-spotted regions, and making any necessary adjustments to the auto-spotted regions. For more information, see their web site at www.synchroarts.com.

Machine Control Basics

PostConform is able to perform the important task of auto-loading from source decks because of its built-in machine control features. Using this feature, PostConform can control basic transport functions of many different types of video and audio decks.

PostConform supports three formats for machine control: Sony 9-pin, V-LAN, and Lynx I/II. Via one of these three formats, PostConform is able to establish direct, frame-accurate control of almost any professional and current VTR or ATR.

Sony 9-Pin

Within the video editing suite, CMX may dominate the world of EDL formats, but Sony dominates the world of transport control formats. Sony 9-Pin (also known as P-2) refers to the industry-standard DB-9 multi-pin connector it employs. Importantly, it also refers to the transport control protocol that's "understood" by Sony professional VTRs and ATRs, and compatible machines made by other manufacturers.

With the Sony 9-pin format, Sony's BVE-series of video editing systems have been able to control most of these decks directly, without third-party transport synchronizers. Due to Sony 9-Pin's domination of the video suite, and the format's relative simplicity, many other companies now make Sony 9-pin-compatible VTRs, DAT decks and multitrack ATRs.

In its basic set-up, PostConform performs auto-loading with the help of a cable from a Macintosh serial port to the slave deck's 9-Pin control port. If you're working with a

Sony 9-Pin compatible VTR or ATR, this form of direct 9-Pin control is the simplest approach. If you're already integrating either V-LAN or a Lynx synchronizer into your system, however, you may choose to control your deck through one of these two options.

Videomedia V-LAN

V-LAN, made by Videomedia, is a standard for machine control that makes all transports "look the same" to PostConform.

V-LAN's basic concept is simple:

1. A V-LAN transmitter is connected to the Macintosh's serial port.
2. A V-LAN receiver is connected to the remote control port of each V-LAN-compatible VTR or ATR (almost all current professional decks).

This way, PostConform doesn't care if you're working with ATRs or VTRs with wildly different control standards: PostConform thinks it's seeing one type of generic "V-LAN" transport, and V-LAN does the translation. The V-LAN system knows the ballistics and protocol for each of the connected transports, and each receiver is fitted with the appropriate transport control cable.

TimeLine Lynx I and Lynx II

The TimeLine Lynx-series of external transport synchronizers are extremely popular. Unlike V-LAN, they are stand-alone systems that can synchronize decks without a computer. They can, however, be controlled by a computer, as with PostConform.

PostConform is compatible with the original Lynx I and the second-generation Lynx II. This means that anything connected to a Lynx-series synchronizer can be controlled by PostConform, to serve as a source deck. Lynx modules come pre-programmed to control a number of ATRs and VTRs. Optionally, they can also be connected to other DAWs; the Lynx II can even be connected to specialized film transports.

In an ordinary Lynx I or Lynx II setup—say, with a VTR master and an ATR slave—each deck requires its own Lynx module. The Lynx II system allows you to connect up to 32 decks, using just one Lynx module per deck (and, of course, cabling between each module and its respective deck). Using front-panel controls, any single deck can be configured as the master.

With PostConform, only one Lynx I or Lynx II module is needed for each source deck. A cable is connected from the Macintosh's serial port to the Lynx's RS-422 port. Then, with the Lynx in slave mode ("on line"), PostConform assumes direct control of whatever deck is connected to that module.

System Synchronization

Note that when channels 1 and 2 of your audio interface are set to Digital Sync mode, your whole system will resolve to the digital clock coming in on those inputs. This means that your USD or LTC-to-MTC converter will still be used by PostConform for positional information, but not for the clock reference.

Using PostConform

A Typical PostConform Session

PostConform is flexible enough to accommodate many different job requirements and work styles, but its basic operation is going to be the same in most situations. Here's how a typical PostConform session progresses:

- 1 Import the EDL
- 2 Load all Source Audio material.
- 3 Export Pro Tools session.

Along the way there are many options available for tailoring PostConform to the needs of your particular project, including the ability to set up the Pro Tools session by editing PostConform's "destination tracks" and other parameters. All of these are explained in this chapter. Before getting to the details of using the program, however, it's worthwhile to take a few minutes to look at the main windows and work environments in PostConform. The next section, Guided Tour of PostConform will help you become familiar with the tools you now have at your disposal.

Guided Tour of PostConform

In this section you'll find a "map" of the PostConform application and its main windows.

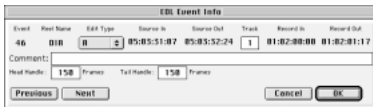
The EDL Display Window

When PostConform first launches it will open to the EDL Display window, shown below with an EDL already imported:

Event	Start	End	Class	Source In	Source Out	Trk	Record In	Record Out	Comment
21	00:58:45:10	00:58:45:11	A	00:58:58:00	00:58:58:01				
22	00:58:50:22	00:58:51:12	A	00:00:02:27	00:00:05:17				
23	00:58:51:29	00:58:51:19	A	00:00:07:09	00:00:09:07				
24	00:58:58:15	00:58:59:01	A	00:00:09:19	00:00:12:05				
25	00:58:58:23	00:04:00:18	A	00:00:13:20	00:00:15:14				
26	00:58:02:12	00:02:04:25	A	00:00:19:02	00:00:21:13				
27	00:58:51:06	00:02:53:00	A	00:00:23:56	00:00:25:00				
28	00:58:45:10	00:58:45:11	A	00:00:58:00	00:00:58:01				
29	00:58:17:22	00:05:22:05	A	00:01:09:24	00:01:14:06				
30	00:58:10:24	00:04:12:15	A	00:01:11:17	00:01:19:07				
31	00:58:44:14	00:03:48:06	A	00:01:19:12	00:01:27:21				
32	00:58:23:24	00:02:24:24	A	00:01:28:21	00:01:27:21				
33	00:58:45:10	00:58:45:11	A	00:01:58:00	00:01:58:01				
34	00:58:54:14	00:00:59:19	A	00:02:15:02	00:02:20:07				
35	00:58:23:15	00:04:25:29	A	00:02:27:12	00:02:29:26				
36	00:58:59:26	00:03:11:07	A	00:02:58:00	00:03:29:11				
37	00:58:45:10	00:58:45:11	A	00:00:58:00	00:00:58:01				
38	00:58:45:23	00:01:43:12	A	00:01:00:23	00:01:04:12				

EDL Display window (with EDL imported)

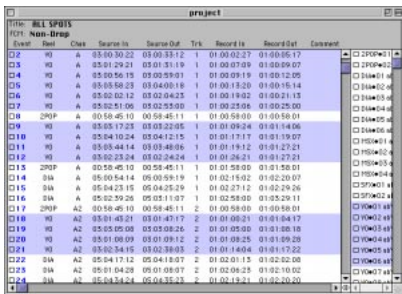
The EDL Display shows you the data in the imported EDL. You can double-click on a statement to view the EDL Event Info window (or, select a statement and choose EDL > EDL Event Info). The EDL Event info dialog opens.



EDL Event Info dialog

* The EDL cannot be edited from within Post-Conform.

The individual event's handle times may be edited, but they only affect the times of the Source element created from the event. Therefore, you must change these values before creating sources. The Track field sets the starting track number in the exported Pro Tools session (in the example above, the starting track will be track number 1). The Comments field can be used as the region name by turning on the Conforming Preference "Use Comments as Region Names." See "Conforming Preferences" on page 31 for more information.



Selecting Events in the EDL Display Window

Statements can be selected individually or in combination from within the EDL Display window.

To select EDL statements:

- Click on a statement line to select a single statement. The selected event is highlighted, and the Source for the selected event is highlighted.
- Click on a Source to select all the events associated with it.
- Select multiple contiguous events by holding down the Shift key and clicking on different events. Select discontinuous events by Command-clicking on individual statement lines.

To display the EDL Event Info window for multiple statements, use the Previous and Next buttons of the EDL Event Info window to display each event's info.

When more than one event is selected, the Previous and Next buttons move through the selected events only.



Use the Previous/Next button to move between event info for multiple events

Sources

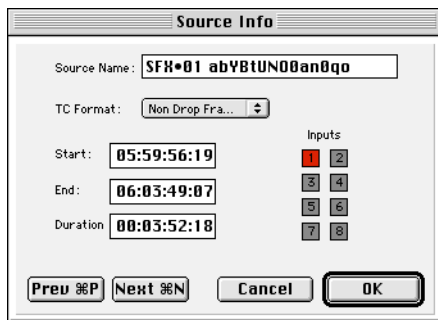
PostConform looks at the events on a given source tape, compares Source In / Source Out times, looks at preferences (like Combine if shorter than) and track assignments and distills these events into the fewest necessary sound files for the session. These are called Sources. These sources represent the sound files which, when captured, can be cut up to create all the events.

For example, if the same sound effect is used three times in an EDL, although there are three events listed, PostConform can determine that only one source needs to be created. This source represents the recording of one sound effect off tape to one disk file that can be played back three different times.

The Source Reels bin lists all the sources associated with the current session, including loaded and unloaded sources. Sources that haven't been loaded are listed in italics.

Source Info

Double-click on a Source in the bin to display the Source Info dialog (or, select a source and choose Source Audio > Source Info).



Source Reel Info dialog

The Source Info dialog lets you view and edit the name of the Source and designate input channels. The Start Time, End Time and Duration fields are display-only. You can select multiple sources in the bin by Shift-clicking on successive sources, or by Command-clicking to select discontinuous sources. When multiple sources are selected you can Command-click on any of

them to display the Source Info dialog, then use the Next button to display the Source Info dialog for each source. You can also simply double-click on a source, regardless of your selection, then use the Prev and Next buttons to view Source Info for the previous or next events.

You may arm additional tracks for any Source as long as it has not been loaded already. In this way, you can effectively change the number of channels used for any given edit in the EDL.

Recording Status Window

The Recording Status window provides information about the status of recording (i.e., source loading).

To display the Recording Status window:

- 1 Choose Windows > Record Status. The Record Status window appears.



Recording Status window

The top-most field displays the current time code location, and this display can be toggled to display SMPTE Time Code (with a USD), MIDI Time Code (with a LTC-to-MTC converter), or 9-pin time code via the toggle button to the right of the time code display. In the example above, the display shows 2;41;29;01, in drop-frame format.

Above the time code toggle button is a small field that displays the time code format. The Loading field displays the name of the source being loaded and the Status field displays the step of the process currently underway—searching, pre-roll, recording, etc.

The buttons below the Loading and Status fields include the following:

Pause Lets you pause the loading of the current Event.

Abort Lets you completely stop the loading of the current Source and begin loading the next one (if one is waiting to be loaded). You can also abort loading by typing Command+(period).

Abort All Lets you completely stop all the loading processes entirely, returning you to the EDL Display window.

If you are displaying the Transport Controls, the Record Status window will also contain a set of transport buttons.

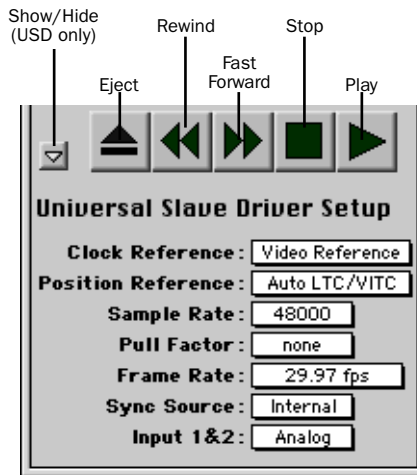
Transport Controls

You can display PostConform's Transport window, which provides machine transport control. If you have a USD, this window also shows USD setup information.

* Note that when you Show Transport Controls, the Transport Controls are displayed at the bottom of the Record Status window.

To show the Transport controls:

- Choose Options > Show Transport Controls (Command + G).



Transport Controls (with USD)

The functions of the transport buttons are:

Show/Hide USD Setup (USD Only) (Shows the USD Setup info, and allows you to make changes to it, when the arrow is pointing downward.)

Eject Ejects the tape from the machine

Rewind Puts the machine in rewind until you click Stop or Play

Fast Forward Puts the machine in fast forward until you click Stop or Play

Stop Stops the tape

Play Puts the machine in play mode

▲ Pressing a transport control while loading aborts all loading. You must first pause or abort the current process in order to use any of the transport functions.

Keyboard Transport Controls

You have limited control over the machine transport from your keyboard:

- Use the Spacebar to Play or Stop the transport.
- Use the > key to Fast Forward.
- Use the < key to Rewind.

Input Monitor

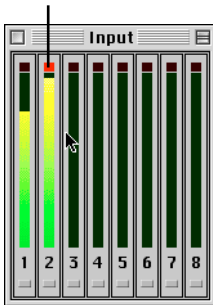
The Input Monitor window displays the input meters during loading. A record-enable LED will light below a track that is record-enabled. The meters indicate clipping with a red light at the top of the meter.

You can clear a clipped meter by clicking on it. Option-click to clear all clipped meters.

To display the Input Monitor window:

- Choose Input Monitor from the Window menu. The Input Monitor window appears:

clipped input
(clear by clicking)



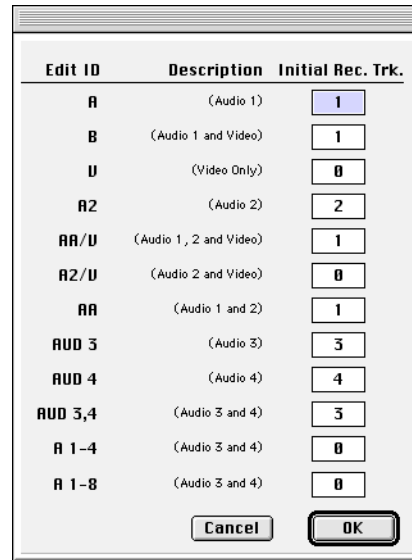
Input Monitor

Track Mapping

The Track Mapping dialog is where you set up the destination input on your audio interface for each channel of source audio. Individual events may have their destination set in the EDL Event Info dialog described earlier.

To display the Track Mapping dialog:

- Choose Options > Track Mapping.



Track Mapping dialog

The abbreviations for source tracks are consistent in all the supported EDL formats, and they are as follows:

Abbreviations for Source Tracks

Abbreviation	Track
V	Video only
A:	Audio 1 only
A2:	Audio 2 only
B	Audio 1 and Video
A2/V	Audio 2 and Video
AA	Audio 1 and 2
AA/V	Audio 1, 2 and Video
[none]	some combination of audio 3 and 4, as described by the succeeding AUD statement.

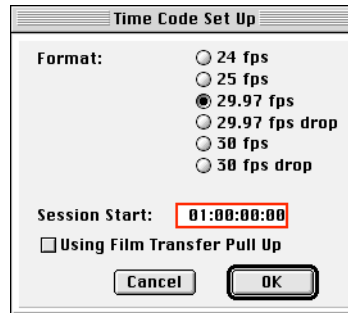
Use the Track Mapping dialog to make sure each source audio channel is routed to an appropriate Pro Tools audio interface input by entering the input number next to the source audio channel abbreviation.

Time Code Setup

The Time Code Setup command is used to pre-configure the frame rate and session start time for the Pro Tools session that PostConform will create. Normally, the frame rate will be imported from the EDL's FCM statement. You can use this dialog to correct the frame rate if it was wrong in the EDL, or to set the frame rate if the EDL lacked an FCM statement.

To configure Time Code Setup:

1 Choose **Setups > Time Code**. The following dialog appears:



Time Code Setup dialog

2 Select the appropriate frame rate. You will be warned of the possible implications in changing the time code format once an EDL has been imported. In the example above, the Pro Tools session will be created with 29.97 non-drop FPS time code.

3 Enter a session start time. This will pre-configure the Pro Tools session to start at the desired SMPTE start time. To enter time values into the Pro Tools Session Start field simply begin typing the desired value. The field will fill from right to left with your entry for hours, minutes, seconds and frames. You should type a “leading zero” before single-digit values (i.e., one hour should be entered as 01). PostConform will insert the colon or semi-colon between each pair of digits.

4 If you are using Pull Up or Pull Down, select this option.

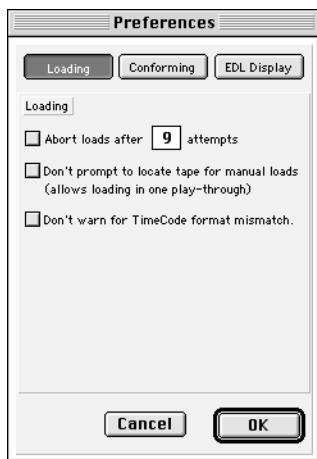
5 Click OK.

Preferences

The Preferences dialog lets you set a number of defaults for PostConform.

To display the Preferences dialog:

- Choose Options > Preferences. The Preferences dialog will appear. This dialog has three pages that allow you to configure Loading, Conforming, and EDL Display preferences separately.



Preferences dialog (Loading page)

The values you set in the Preferences dialog will be applied automatically to each new PostConform session you create.

Loading Preferences

Abort loads after _ attempts

This setting tells PostConform how many “retries” it should attempt before giving up on loading a Source and proceeding to the next one. Select this Preference, then enter a value in the box to define how many retries to attempt.

Don't prompt to locate tape for manual loads

This preference tells PostConform to simply wait for the time code value to come up for the next source element, rather than asking the user to locate the tape and waiting for them to do so. It allows you to leave the room and let a tape just play through.

Don't warn for time code format mismatch

This setting prevents a warning dialog from being posted if there is a time code format mismatch between the EDL and the source tapes. If a time code is mismatched, and you continue loading, you may end up with incorrect results.

Conforming Preferences

Handle Size

This preference tells PostConform to record extra audio, specified by number of frames, at the head and tail of each event, starting before the Start Time by the Head Handle length, and ending after the End Time by the Tail Handle length.

Adding handles allows flexibility when working with the regions later in Pro Tools, as regions can be “trimmed out” beyond their beginning and end boundaries.

Individual Handle sizes may be set for each event in the EDL Event Info dialog explained earlier in this chapter. The default value for both is 150 frames (5 seconds @ 30 FPS).

Handles, Machine Pre-Roll, and Discontinuous Time Code (Warning!)

Be careful with handle settings, machine pre-roll, and tapes with discontinuous time code. If your handle size is 150 frames, and your machine pre-roll is 150 frames, you need to have 10 seconds (at 30 FPS) of continuous time code recorded on tape before the event you are attempting to capture. Since this is not always the case with production sound, you may have to adjust handle and machine pre-roll settings according to your project's parameters.

Load Spacing

This preference can increase the efficiency of the loading process. In essence, it tells PostConform to refer to the entered amount of Load Spacing when determining whether two events should be incorporated into the same Source, and therefore recorded to separate soundfiles or captured as a single sound file to disk (note that this will not affect regions that are created from the sound file).

With a 30 second Load Spacing setting, two events will be recorded to separate soundfiles if there is larger than a 30 second gap between the End time of the first event and the Start time of the next event. If the gap between these two points is less than 30 seconds, PostConform will incorporate both events into the same Source and therefore record both events to a single sound file.

Delimiter Character for Tracks

This preference lets you set a character delimiter to distinguish the sound file names of successive regions in each Track.

Delimiter Character for Sources

Similar to the Track Delimiter option, Delimiter Character for Sources lets you specify a character delimiter to distinguish each Source element within/from the same Source reel.

Use Comments as Region Names

This option lets you control how Pro Tools names regions in the session. With this option checked, Region name will be the contents of the Comments field, appended with the track number. With this option unchecked, a Region will be named according to its Event Number, with the track number and a unique identifier appended to it.

Open Session in Pro Tools on Export

With this option checked, Pro Tools will automatically launch and open the current exported Pro Tools session when the Export Pro Tools Session command is chosen from PostConform's File menu.

Create Sources Automatically on Import

This setting instructs PostConform to interpret the information in the EDL when it is imported and automatically create appropriate Sources. (Turning this Preference On before importing an EDL has the same result as selecting all EDL events and choosing Create Sources menu command.)

EDL Display Preferences

Strip from Comments

This instructs PostConform to strip the text you specify from the EDL Display.

Do Not Display these Statement Types

The options under this heading are provided to let you customize the EDL Display window. By checking any of these options, you can choose to avoid displaying the following EDL elements:

Video Only Edits

Based on the information in the EDL's Channel column, if an event is a Video-only edit it will not be displayed in PostConform's EDL window when this option is checked.

Zero Length Edits

If the duration of an Event is 0, it will not be displayed when this option is checked.

Using PostConform

PostConform is flexible enough to accommodate many different job requirements and work styles, and provides two basic modes of operation, one for when you have both the EDL and all source audio/tapes ready before you begin, and one mode for those times when you want to pre-load the source tapes while waiting for the EDL.

In the first mode (referred to as normal mode conforming) the imported EDL drives the whole operation, creating source definitions in PostConform, prompting you to insert each source tape as needed, locating the external machines to the appropriate source in/out addresses, arming the appropriate Pro Tools tracks and recording all source audio to disk. Again, this mode is primarily for post facilities who are fortunate enough to get the EDL and all source tapes simultaneously. It does require, however, that each individual tape be loaded as necessary (i.e., as needed by the EDL). It speeds up the process by only loading the audio material needed for the finished show (plus handles).

When this is not the case, PostConform provides ways for you to pre-load source audio. This second mode (referred to as pre-loading) lets you have all your source audio loaded to hard disk and ready to be conformed to the EDL. Once the EDL is imported, all sources are linked to the EDL events. After you Export a Pro Tools session the conform process is complete.

Here's how a typical PostConform session progresses in each of these modes.

Method 1 — Normal Mode Conforming

To conform in Normal Mode:

- 1 Receive the EDL and tapes before beginning.
- 2 Create a new PostConform session
- 3 Import the EDL into PostConform.
- 4 Make new Sources in PostConform automatically via the “Create Sources on Import” Preference, or manually using the Create Sources command. If you set PostConform to automatically create sources on import, then your events will automatically be “linked” to the appropriate sources.
- 5 If necessary, change source input assignments, configure checkerboarding, and configure other loading settings.
- 6 Load Sources (Command + L) and let PostConform begin loading audio from the source reels onto hard disk.
- 7 Once you’ve loaded source audio you can set destination tracks for the soon-to-be-created Pro Tools session, if necessary.
- 8 Export the PostConform session to Pro Tools using the Export Pro Tools Session command. Once this is completed, open the Pro Tools session and check sync.
- 9 If necessary, go back to PostConform to load additional events. Conform any additional events by spotting them to the existing Pro Tools session using the Spot to Pro Tools command.

Method 2 — Pre-Loading Sources Prior to Receiving EDL

This method lets you create source definitions in PostConform without importing an EDL first. These source definitions then drive the loading process, prompting you to insert each source reel as needed. Once the sources and source audio have been loaded, the EDL can be imported and the EDL events must be linked to their appropriate source reels.

Many production sound recordists now record sound to disk, often as SDII files, with devices such as the DEVA. These takes are often delivered directly to the sound editor on CD-ROM. If all the time-stamped takes are delivered to you on disk, all you have to do is point PostConform to these files, by linking events, and you're done.

To pre-load sources:

- 1 In PostConform, create new Sources (via the New Source command).
- 2 Load Sources (Command + L) to load audio from the tapes to disk.
- 3 Import the EDL (Command + H).
- 4 Link Events to Sources (Command + K).
- 5 Export Pro Tools session

▲ This method usually requires a lot more disk space than normal mode conforming, due to the fact that entire reels are recorded, which is usually more audio than the EDL requires.

Loading Paradigms

When loading source audio into PostConform there are several Preference settings that control how “automated” the loading process itself will proceed. If you are loading your source audio from a machine-controllable deck, you can configure PostConform to run in fully-automated or semi-automated mode.

The difference between the two modes is whether or not PostConform halts loading at time code mismatch or “skips” sources that it can not locate and proceeds to the next one until it’s finished. If your source audio is not on a machine-controllable deck, you can load sources manually in either semi-automated mode or fully manual mode. Semi-automated loading will prompt you for each source reel and then automatically punch in and out as necessary until all statements are loaded from that source. In fully manual mode, PostConform prompts you to cue the source deck.

Machine Controlled Loading

Fully Automated This mode could also be called “unsupervised” mode. When configured for fully automated machine controlled loading, PostConform does not halt the loading process when it encounters an unloadable statement. Instead, it retries a user-definable number of times, after which it “gives up” and moves on to the next statement. To set up PostConform for this mode, configure the Preference option Abort after X tries and set X to the number of retries you want.

Semi-Automated In this mode, if PostConform has a problem attempting to load a source element it will halt all loading and post a warning dialog.

No loading can take place until you either fix the problem and click Retry to tell PostConform try to load the statement again, or click Abort to tell PostConform to skip that event. If you wish to completely stop the entire loading process click Abort All. To configure PostConform for this mode, turn off the Preference Abort Load after _ Attempts.

Manual Loading

Manual loading refers to situations when you can not rely on machine control to cue up your source deck. Here’s two different ways to work in manual loading mode:

Semi-Automated In this mode, PostConform does everything but fast-forward the deck to the next statement automatically. To configure PostConform for this mode, turn on the Preferences for “Don’t prompt to locate tape for manual loads” and “Abort loads after _ attempts,” and enter 0 for the number of retries. Turning on the “Don’t prompt to locate tape for manual loads” Preference tells PostConform that you’re going to load the source tape(s) and let them run from start to finish, letting PostConform punch in and out of record for each source element as they are encountered. The only disadvantage to this method is that it can take considerably longer for each source to be loaded as PostConform can not fast-forward without machine control. “Abort After 0 Retries” makes sure that PostConform will not stop during the tape loading process—since

there is no machine control available in this scenario, PostConform has no way of rewinding the source deck to attempt a re-try.

Fully Manual In this mode, you manually cue your machine(s) to the appropriate time code location and then let PostConform punch in and out once there. To configure PostConform for this mode, simply turn off the Preference “Don’t prompt to locate tape for manual loads.” This method, while requiring you to shuttle tapes to their appropriate Source In locations, can reduce the overall amount of loading time required in non-machine controlled situations.

Normal Mode Conforming

The first mode we’ll look at is normal mode conforming. In this mode, PostConform is used in the most automated way possible. This mode begins by importing an EDL.

Importing EDLs

Importing the EDL is the first step in the autoconform process. Assuming you have a CMX format EDL on your Macintosh, on a DOS or Macintosh format floppy disk, or on a CD-ROM, you can go ahead and import the EDL into PostConform.

To import an EDL:

- 1** If you have not already done so, launch PostConform and create a new PostConform session by choosing File > New. Select the bit depth for the session (16 or 24), then click OK. Make sure you have configured PostConform’s Peripherals, Machine Control and Hardware Setup dialogs as described in *Chapter 2: PostConform Installation and Setup*.
- 2** Choose File > Import EDL.
- 3** Locate and open the EDL that you want to import into PostConform.
- 4** The EDL Display Window displays the EDL and all the events (audio and video clips) in it. At this point, you have a number of options for sorting the elements to help organize the task of creating sources and laying out the Pro Tools session.

Creating Sources on Import

PostConform can create source reel definitions automatically while importing an EDL. This not only derives the source definition from the EDL but also links events to sources automatically. Linking events to sources is also automatic when you utilize the Create Sources command on events, which you do if you accidentally imported an EDL with the Create Sources On Import Preference turned off. See “Creating Sources after Importing the EDL” on page 37.

To have PostConform create sources on import:

- 1** Choose Preferences from the Options menu. The Preferences dialog appears.
- 2** Select the Preference “Create Sources on Import.”
- 3** Click OK when you are done.
- 4** Use the Import EDL command (Command + H) to import the desired EDL. PostConform will use the information in the various EDL statements to create source reel definitions that are associated with each EDL event based on the Load Spacing setting in the Preferences dialog. These sources will appear in the Source Bin when the import is completed.

* If you import an EDL but forgot to turn on the preference “Create Sources On Import,” use the Select All Events and Create Sources commands to achieve the same results. This process is explained in the next section.

Creating Sources after Importing the EDL

If you selected the preference “Create Sources Automatically on Import” before importing the EDL, then PostConform will already have created and linked the necessary sources, which will be listed in the Source bin. If you do not have this option checked in the Preferences dialog, you’ll need to use the Create Sources command to create sources for the events in the EDL.

To create sources for events:

- 1** Configure the Load Spacing and Handle Size Preferences as necessary.
- 2** Highlight all the events in the EDL Display window by choosing EDL > Select All Events (or press Command + A). Or, use any of the various selection options of the EDL menu to select certain types of events (Select Unloaded Events, Select Unlinked Events, or Select All Events).
- 3** Choose EDL > Create Sources (Command + Y) to make PostConform create sources from the information in the EDL statements.

Because the links are created automatically when you use the Create Sources command, these new sources will show up in the Source bin in non-italicized text.

All events that do not have a source will be listed in italics in the EDL Display window. All events and sources that are not loaded will have an empty checkbox next to them. As they are loaded, this box is filled in.

Before you start loading sources you may want to sort the EDL to facilitate a more efficient loading process. The next section explains PostConform’s EDL sorting options.

Sorting the EDL

PostConform lets you sort an EDL in any of three different ways. Use the Sort options to organize the order in that sources are loaded.

Here’s a brief example of when the sort modes are useful. There may be a situation where you want to conform only the first scene of a show found on reels 1 and 2. You

could sort the EDL based on Reel name and Show Order (B mode), and then select only the Scene 1 events from Reels 1 and 2 and only create sources from those events.

The sorting options, described below, can be selected from the Options menu:

A Mode Sort: A Mode shows the elements in the order in that they were imported.

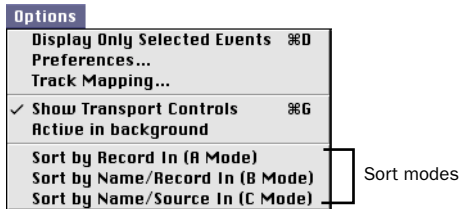
B Mode Sort: B Mode sorts the EDL by Source Name and Show Order (Record In time).

C Mode Sort: C Mode sorts the EDL by Source Name and Source Order (Source In time).

* EDLs are sometimes already sorted when an audio editor gets them, therefore the “original” order could be B or C mode sorted. A mode is Show order, or the order that the program will run.

To sort the EDL:

■ Choose Options > (preferred sort mode). The statements will be re-ordered in the EDL Display window appropriately.



Sort Modes on the Options menu

Once the EDL is imported and sorted to your liking, you're ready to create sources (if necessary) and load sources.

Loading Sources

With sources created from EDL Events, you're ready to start loading audio from the source reels onto disk. (Make sure you have all the necessary reels before proceeding.)

To load source audio:

1 Check the Options menu to make sure that Machine Enabled has a checkmark next to it, indicating that machine control is enabled.

2 Check to make sure Active in Background has a checkmark next to it so that PostConform will be able to load audio in the background.

▲ If Pro Tools is also running, do NOT set PostConform to Active in Background mode.

3 Select all the sources that you want to load in the Source bin by single-clicking them. All the Events associated with the selected source(s) will be highlighted in the EDL display window.

4 Choose Source Audio > Load Sources (Command + L). PostConform will begin prompting you to insert each source tape as they are needed.



Insert Tape dialog

If Machine Enabled is not checked, the Insert Tape dialog will also prompt you to cue up the tape and start it playing.

5 Locate and insert the requested reel and click OK. If you insert the wrong reel (more specifically, a reel with “wrong” time values) PostConform will post a warning dialog box because it won’t be able to find the start time it is looking for.

There are two possible situations where you will not be warned.

- ◆ If you’ve configured your Preferences to not display warnings (by turning off the Abort loading after _ attempts option) you will NOT see a warning dialog box.
- ◆ If you’ve inserted the wrong reel but it has the same time code range as the requested reel. In other words, you have different source tapes with non-unique time code values. To avoid this situation, most facilities start each reel at a new SMPTE hour, i.e., reel 1 will start at 01:00:00:00, reel 2 at 02:00:00:00 etc. If this is not the case (say for example all reels start at 01:00:00:00) you can end up with completely wrong audio in your Pro Tools session.

After you initiate loading, PostConform will locate the source reel to the first source’s Start Time (minus the pre-roll amount) and record the take. Handles are applied while creating source elements from EDL events. When the reel reaches the source’s End Time (plus post-roll amount) it stops recording and saves the file to hard disk. You may enter many Sources into the load list. When PostConform finishes with a reel, it will prompt you for the next one until all pending Sources are loaded.

Once you’ve loaded all your source material you’re ready to start the conforming process. The next section will explain this aspect of PostConform.

Conforming

After PostConform has loaded all the source audio you simply export a Pro Tools session from the PostConform session.

Before doing this final step, however, you should first set up the “layout” of the Pro Tools session.

To set up the layout of the Pro Tools session:

- 1 Select an event or events in the EDL Display window.
- 2 Choose Set Destination Tracks from the EDL menu. The Set Destination Tracks dialog appears:



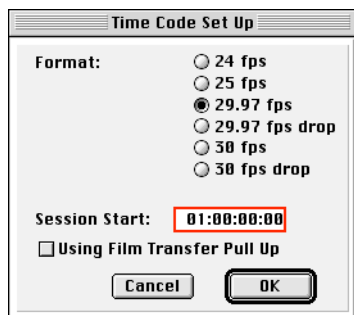
Set Destination Tracks dialog

- 3 Enter the track number for the First and Last record destination tracks that a given event will be recorded to.
- 4 Check the option for Checkerboard to alternate over the range of tracks.

▲ Checkerboarding happens automatically over the range of tracks you select. However, it is still possible for events to overlap on a track if you do not specify enough tracks, and there are many overlapping events in the list.

To configure the time code format and start frame:

1 Choose Setups > Time Code. The following dialog appears



Time Code Setup dialog

2 Enter a Session Start. This will preconfigure the Pro Tools session to start at the desired SMPTE start time. To enter a value in the Session Start field, begin typing the start time value with your keypad. Enter your time values with leading zeroes (in other words, enter 1 hour as 01, 5 minutes as 05, etc.). PostConform automatically fills in the delimiter characters.

3 Click OK.

To conform your session:

1 Choose File > Export Pro Tools Session. A dialog will appear asking you to name the Pro Tools session and indicate where you want it saved.

2 If you turned On the Preference Open Session in Pro Tools on Export, PostConform will automatically launch Pro Tools and have it open the new session. If not, you can quit out of PostConform and then open the new Pro Tools session in Pro Tools.

3 If you check sync in the new Pro Tools session and find problematic regions, you may delete them, return to PostConform, re-load the questionable material and then use Spot to Pro Tools.

Pre-Loading Mode

As mentioned earlier, PostConform lets you pre-load source tapes first and then import and conform the audio to an EDL later.

This method involves creating source definitions in PostConform and letting those sources “drive” the loading of audio. After the audio is recorded to disk you then import the EDL into PostConform, link the EDL and Sources to the sound files on disk and then export a Pro Tools session.

Here’s how this method would progress...

To load sources before you have received an EDL:

- 1 Collect the Source Tapes you’ll be conforming.
- 2 Create a new PostConform document.
- 3 Choose Source Audio > New Source (Command + T) to define each of the sources (or takes) on each source reel.
- 4 Use the Load Sources command to record the audio from each source reel to disk. PostConform will prompt you to insert the reel for each Source you created, then cue up the machine and record the source to disk based on the Start/End times and duration you entered. PostConform will alert you if the time code definitions of the source reels do not match those of the sound files. You can tell PostConform to not display warnings via the Preferences di-

alog. In addition, you can tell PostConform how many times you want it to retry loading an event before warning you or moving on to the next event. Refer to the section Loading Paradigms earlier in this chapter for more information on how to configure these options.

5 When you receive the EDL, import it into the same PostConform document (make sure that the Preference to create sources on import is turned off).

6 Next, associate the EDL events to the appropriate source item or element. To do this, begin by sorting (if necessary) and then selecting all the events from one reel, then select that source in the Source bin and choose Link Events to Sources from the Source Audio menu. This will link the events in the EDL to the appropriate sources in the bin that are already linked to the soundfiles recorded to disk.

7 Choose File > Export Pro Tools Session to create the conformed session.

Recording Source Audio in Pro Tools First

Although not the most practical way to work, it is possible to record source audio into Pro Tools first and time stamp the sound files so that they can be linked and conformed by PostConform. If you wanted to use this method to manually load source audio, you would do the following:

1 Launch Pro Tools and create a new session. Create as many audio tracks as necessary.

2 Put Pro Tools online.

3 Record all your source audio directly into Pro Tools.

4 After you've recorded all your sources to disk, select all files in Pro Tools' Region Bin and choose Export Selected from the Region List menu. This ensures that the time stamp information is written into the sound files and will be available to PostConform.

Assuming you recorded into Pro Tools while online, you must first select your source sound files in Pro Tools and choose the Export Selected command in order for each sound file's time stamp information to be readable by PostConform. If you did not record on-line the sound files will not yet have any time stamp information, in which case you will need to select all sound files and select the Time Stamp Selected command, then use the Export Selected command.

5 Launch PostConform and create a new document. If you have already received the EDL, you should configure PostConform to create sources on import (Preferences dialog) and import the EDL. If you have already imported the EDL but did not have this Preference turned on, select all the Events in the EDL Display and choose EDL > Create Sources (Command + Y).

6 If you do not yet have the EDL you can create sources manually by choosing Source Audio > New Source (Command + T).

7 You should now have the EDL imported into your PostConform document, with source reels defined in the source bin and the audio already recording to hard disk. Now you must select each reel's sources in the bin and choose Source Audio > Link Sources to Files (Command + F) to link the sources to the sound files. You can, of course, use any sound file you have on your hard disk but the time stamp values must match up between the sound file and the sources.

8 Once all the sources are linked to sound files, choose File > Export Pro Tools Session and PostConform begins autoconforming your session.

▲ Do to use Pro Tools and PostConform simultaneously while either one is set for "Active in Background." This mode of operation is not supported. Switching out of one application to the other in this scenario can cause DAE errors.

Reconforming

Another common situation is when you are required to "reconform" a session to a new, updated EDL.

To reconform a session:

- 1** Create a new PostConform session.
- 2** Import the new EDL.
- 3** Use Link Sources to Soundfiles to utilize the previously loaded audio.
- 4** Load in any new audio that may be necessary.
- 5** Export a new Pro Tools session.

Spotting Manually from PostConform to Pro Tools

You can run Pro Tools and PostConform at the same time, and manually spot Events from PostConform to Pro Tools.

To spot manually to Pro Tools from PostConform, with both applications running:

- 1** Launch Pro Tools and Open a session or create a new session.
- 2** Make sure Operations > Active in Background is not selected (checked).
- 3** Launch PostConform.
- 4** Make sure Options > Active in Background is not selected (checked).
- 5** Open a PostConform session.
- 6** Select Events in PostConform that you want to spot to the Pro Tools session.
- 7** Choose EDL > Spot to Pro Tools.

Events are spotted to the open Pro Tools session.

Troubleshooting PostConform

This section lists several potential problems you may encounter with PostConform.

Problems Getting the Machine to Respond

If you use the Transport controls and the machine does not respond, then it may not be in remote mode, or the synchronizer may not be Online. Check these settings on your devices and try again.

Problems with Synchronization

If you open up the Pro Tools session after loading some sources and exporting a session, and the regions do not seem to synchronize to the edited master, there are several possible issues:

- ◆ Is the region in the right place according to the EDL? Check this by selecting it in the region bin, and showing the start and end times. Do these match the EDL? If not then some of the likely causes for this are:
 - ◆ Does there seem to be a problem with the session offset? You may be able to correct this by slipping all the regions in the session by adjusting the Time Code Setup Session Start Time. Make sure to select the “Maintain Relative Timing” option at the prompt. This will slip all regions against the master time base.
 - ◆ Could there be a problem with the session time code format? Make sure that the time code format of the Pro Tools session matches the time frame format in the EDL. The EDL gives the Show Time, or Master Frame Format in the first FCM statement right after the Title statement. It should say either:

- ◆ FCM: Non-Drop Frame, or
- FCM: Drop Frame

If there’s no FCM statement after the title, the time code format is assumed to be PAL (25 FPS). Use a text editor to open the EDL and check or modify these statements as necessary.

- ◆ If the region is in the right place, then is the audio for the region correct? This will be obvious when you try to sync to the master. A likely cause for this problem here is Source Frame format mismatching.

Again, the FCM statement defines the time code format for the Sources, but if the time code format does not match the rest of the sources, then a special FCM statement will precede the events whose sources have the different format. The time code format must be switched back again after those statements, so there will be another FCM afterwards. In PostConform, Drop Frame time code values are shown with semi-colons, rather than colons between the Hours;Minutes;Seconds;Frames fields.

- ◆ The time code format may be wrong. In this case, there’s not much you can do, unless you can generate an EDL that matches the source audio tapes. PostConform will not do this.

Most time code synchronizable DAT decks (the Sony 7030, the Otari DTC 90, and the Tascam DA-60) can display and generate a different time code than is printed on the tape. Consult the documentation for your deck to make sure the time code that is read matches the time code recorded on tape.

appendix a

Glossary of Terms

A/B Roll Editing Involves two source decks and one master. This allows for simultaneous edits such as dissolves. Compare with cuts-only editing.

Address An event-specific time code reference, such as a source in time, or record out time.

ADR Automated Dialog Replacement; used to replace or provide dialog for visual scenes that have already been shot. Talent (actors) typically watch a screen and overdub their lines, attempting to match the new audio takes with the existing visuals as closely as possible.

ATR Audio Tape Recorder, of any format, including a Digital Audio Tape (DAT) deck.

AUD A code in a CMX 3600-format EDL that refers to the presence of audio channel 3 and/or audio channel 4.

Audio Post Production The process of adding dialog, music, sound effects, and other audio to video or film. The “post” reference comes from the fact that these elements are added once the film or video has already been shot.

Auto-Assembly In audio post production, auto-assembly is the integration of EDL importing, autoconform, and autoloading via machine control. With it, an operator can

(theoretically) load up source reels of tape, and then sit back while the events are automatically recorded from source reels onto the DAW’s hard drive. Once recorded as the audio files, the files are autoconformed to the record in and out times on the EDL, to become regions within an audio session.

Autoconform An automated process of conforming source events, that have been loaded onto a DAW’s hard drives, to the record in and out times of an imported EDL. Autoconform, technically speaking, is the process of conforming audio regions to EDL times, and doesn’t necessarily refer to anything regarding machine control.

Autoloading One step in the process of auto-assembly. Autoloading refers to the physical process of loading source material into a DAW while the source machine(s) is machine controlled by the DAW. In its proper implementation, as implemented by PostConform, autoloading includes full control of the source machine, and automatic arming of DAW tracks.

BVE Prefix for the popular Sony BVE-series of video editors.

BVU Prefix for the popular Sony BVU-series of VTRs.

Center-Track Time Code Refers to a variation of a 2-track, open-reel analog tape format, which inserts a small track for time code information between the left and right channels. Used only with the “half-track” tape format, in which the left and right channels each take up approximately half the tape’s width. Still common in audio post production for video and film.

Channel In PostConform, this refers to the source audio or video channel, as associated with most EDL events. Some EDLs refer to these as tracks; with PostConform, however, we call them channels, so as not to confuse ourselves with defined destination tracks, for use with Pro Tools or PostView.

Checkerboarding With PostConform and other auto-assembly capable DAWs, this refers to the ability to allocate overlapping audio events to alternating Pro Tools or PostView tracks. In video post production, checkerboarding can also refer to the process of assembling a video master tape in a random fashion—where the edits are assembled to the master tape out of order, for maximum efficiency.

Circled Takes Events on a cue sheet or printed EDL that have been circled by a director or editor, to indicate events are desired.

Conforming The process of matching audio events with events on a cue list or EDL. This can be done manually, where the operator types in times from an EDL, or automatically by the DAW.

CMX A now-defunct company that innovated in several aspects of electronic video. Several CMX EDL formats have become de

facto standards in audio post production, in particular, the CMX 3600 and 3400 formats.

Cuts-Only Editing The simplest form of video editing, which requires only one source deck, plus a master deck. Refers to the fact that “butt-splice” cuts are the only type of edit possible; for dissolves or other effects that require overlapping source material, an A/B roll editing system is required.

DAW A digital audio workstation, such as Pro Tools.

Destination In and Out See *record in and out*.

Drop-Frame Refers to a variance of SMPTE time code that omits two frames every minute except for every tenth minute. Serves to compensate for the fact that 29.97 frame-rate time code runs “slow” by 3.6 seconds every hour compared to a 30 frame-per-second timing reference; that is, “one hour” of 29.97 non-drop time code is equal to one hour and 3.6 seconds of real time, due to the fact that the slower frame rate does not match “wall clock.” Dropping, or skipping, frame addresses allows this format to “jump ahead,” in order to maintain a true relationship between the time code and “real time,” so that one hour of 29.97 drop-frame lasts exactly one hour of real time.

Duration The length, in seconds, of an event’s effect (such as a dissolve), as indicated on an EDL.

Edit Decision List (EDL) An Edit Decision List is a list of edits, or events, described by source in and out times, source reel number, and record in and out times. It can be as simple as a piece of paper or a text file on

a disk. The most common electronic EDL formats are by CMX. Alternate formats are from Grass Valley, Sony, Ampex, and other manufacturers. Most editing systems can export EDLs to a floppy disk; post-savvy DAWs are then able to read, or import the data on the floppy. Depending upon the system, EDLs can be on a DOS, Mac, or other format diskette.

EDL Export The method by which DAWs and video editing systems output EDLs, typically to a floppy disk. Many editing systems are able to export an EDL in CMX EDL format.

EDL Import The method by which DAWs and video editing systems read and “understand” an electronic EDL, typically from a floppy disk. Depending upon the EDL format and the CPU being used to read the disk, and whatever optional EDL importing programs may be in use, the disk can either be read directly, can be read as a text file, or can be converted from one format to another—such as from DOS to Macintosh.

Emulator This is a stand-alone device that is programmed with a particular machine’s transport protocol and ballistics. Typically, emulators make various audio and video transports look like an industry standard video deck (such as the Sony BVU-800-series), to a video editing system, a transport synchronizer, or a machine controller (such as a DAW). In this way, the DAW or synchronizer need be programmed only to operate one type of external transport, with the emulators making the translation.

Event From the lingo of video post production, an event is an individual edit, GPI trigger, or other time code-specific occurrence. EDLs describe events line-by-line.

Frame Code Mode (FCM) An EDL indication of whether the time code is drop-frame or non-drop-frame. This can also indicate if the EDL is at 25 FPS.

GPI/GPI Trigger Stands for General Purpose Interface. Professional video editing systems, offer contact-closure-style switches (in addition to machine control), which can be custom-wired to start and stop devices such as video character generators, digital effects generators, audio cart machines, slide projectors, etc. During EDL importing, most audio post operators will choose to delete GPI and video edit information from the EDL, though this information can be sometimes useful.

Guide Track The guide track typically contains “raw” and unprocessed audio elements that the picture editor wants to include, such as dialogue that was recorded on location. Since it is assumed to be in sync with the video, the guide track is used in two ways. First of all, processed dialogue and other elements can be matched up visually, comparing the waveforms of the guide track with that of the new regions. Secondly, new regions can be compared audibly with the guide track; this way, particularly for dialogue, it is possible to hear “phasing” mismatches when the sync is not quite right.

Handle A user-definable amount of time that precedes or follows a source’s actual source in or source out times. Audio post-production engineers often like to have this additional information for a variety of reasons, but the main reason is to fix up bad edits. For example, a line of up-cut dialogue (that is clipped short) can be trimmed outward to fix the problem.

PostConform allows the user to define a preset amount of handle time, or select none at all, for PostConform's autoloading of source sounds.

LTC Longitudinal Time Code. Resides on linear tracks, such as an audio track or the control track of a video tape. Is recorded and played back much like an audio track. Cannot be read off of tape while the tape is "crawling" at a very slow speed, or is paused or stopped. Also requires a wide-band time code reader if sync is required in fast-winds or slower speed.

Lynx (Lynx-I, Lynx II) TimeLine's popular series of external transport synchronizers. Normally, one Lynx-series module is needed for each master and each slave. PostConform, however, can directly control any machine that's connected to a single Lynx module.

Machine Control With a DAW such as a Pro Tools system, machine control is the ability to control an external transport, typically a VTR or ATR. Implicit in machine control is full transport synchronization, where the DAW (as master) can control all functions of an external slave. Basic machine control requires that the master machine simply put out a standardized command set, such as Sony 9-pin. More elaborate machine control usually requires the master machine to be programmed with individual transport protocol and ballistics—that is, what commands may be required to yield specific responses (such as going into fast-forward, or play), and how quickly the transports wind, brake, sync up, and so forth. Alternately, machine control re-

quires a third-party device between the master and the slaves, such as Videomedia V-LAN device or TimeLine Lynx II

Master (Master Tape/Reel) A videotape or film reel that is assembled from edited source material.

Master (Master Transport/Deck) The "lead" machine or DAW in a synchronized machine arrangement. Slaves follow masters. There can only be only master at any given time.

Mode (EDL Mode) An EDL's mode refers to how an EDL's events are ordered. The most common modes are "A," "B," and "C."

MTC MIDI Time Code. An industry standard for transmitting the MIDI equivalent of SMPTE time code between devices. While not the same as SMPTE time code (it's a digital, rather than analog signal, for one), a SMPTE-to-MTC converter can be used to bridge the gap. MTC can follow all the frame-per-second rates of SMPTE time code.

Negative Cut List A printed list that a film editor uses to (literally) cut film from source reels onto a master reel.

Nonlinear Digital Video Editing System A video equivalent of a DAW. Most such systems are Mac- or PC-based, and record compressed digital video information to hard disks or optical disks, for completely random-access editing of both visuals and audio information. Final sessions are usually transferred to video, or, if the system is used offline, an EDL can be passed on floppy disk from the digital video editing system to an online video editing system. (For film production, these systems can

also be used to create the negative cut list.) PostConform can be used to import CMX-compatible EDLs from these systems.

Non-Drop-Frame Time code in which frames haven't been "dropped." The standard format outside of color video production or post production is typically 30 FPS non-drop.

Offline Editing In video editing, this is an editing process that typically uses dubbed worktapes to create a mocked-up master tape. EDLs from an offline editing system are usually transferred by floppy disk to an online system, to create a final master tape. An offline editing system saves wear-and-tear on original source material, and is often equipped with less expensive gear than an online editing system.

Online Editing In video editing, this process typically uses original source tapes to assemble final master tapes, ready for broadcast, duplication, or other distribution. Online systems often operate using EDLs created with an offline system.

Offset A programmable differential in time between two audio or video devices. A necessary feature for any machine control or synchronization.

Pre-Roll Used with machine control or synchronization. Pre-roll allows the user to program a period of time that precedes a desired "sync time." Serves two purposes. One is to allow a slower-locking machine (like an old ATR)—or a slow-responding synchronizer—to get up to speed before sync needs to be established. (I.e.: if a transport requires 10 seconds just to get up to operating speed, then 10 seconds of pre-roll will cause both master and slave to lo-

cate to a point 10 seconds before the actual desired location point.) The other purpose is in ADR or music production applications, where the talent may need some listening time to anticipate a punch-in or overdub.

Post-Roll The "back-end" version of pre-roll. Used to program the amount of time that passes after a desired "exit" time. A 10-second post-roll programmed on top of 20-second loop would functionally deliver a 30-second long loop; that is, the slave would continue to play for a period of 10 seconds after the end of the specified time period.

QuickTime Apple's system extension for control of time-based events, such as digitized video "movies" and digitized sound. Pro Tools can import QuickTime movies, which can be used for frame-accurate sync when spotting audio.

Record In and Record Out In video post production, these indicate where a given video or audio event should begin and end on the master tape. With PostConform, these are the time code addresses, as usually indicated on an EDL, to which auto-loaded source material is autoconformed.

Reel A term from the film world. Literally it refers to a reel of film; film editors usually work with one 10-minute reel at a time. Some audio post-production engineers divide their audio session into 10-minute "reels" of audio, even if the audio stays entirely on disk.

Rippling The process by which an edit change causes all elements to shift backward or forward in time by "x" amount.

RT-11 An older EDL floppy disk format. Utilities, such as ALBA Editorial's EDL Pro, can convert RT-11 format disks to DOS or Mac format.

Slave The machines that “follow” the master in a synchronized machine arrangement. There can be multiple slaves—typically between one and five slaves—during the average video post-production session. Using its machine control capabilities.

SMPTE/EBU Time Code The standard time code of Society of Motion Picture and Television Engineers/European Broadcasters' Union. Divides time into hours:minutes:seconds:frame:subframes. Typical frame-per-second rates include 24 (film), 25 (PAL video), 29.97 (NTSC color video), and 30 (NTSC Black and White video). 29.97 fps and 30 fps formats can be in drop-frame or non-drop-frame formats.

Sony 9-Pin (P-2) An industry standard for basic machine control of Sony-style video and audio transports. Refers to the D-B9 9-pin physical external control connector found on Sony BVU and virtually all other video tape recorders.

Source Deck/Machine/Transport An ATR, VTR, or DAW from which source material is played back. Using its machine control capabilities, PostConform can autoloading source audio from a source deck.

Source In and Source Out In video post production, these indicate where a given video or audio event is located on its respective source tape. With PostConform, source tapes are shuttled to the source in time. Then, the source deck is put into play, PostConform is put into record, and the source material is autoloading to the hard disk.

Once the source tape comes to the event's source out time, the deck is stopped, and PostConform drops out of record mode.

Source Tape/Reel/Material The video, film, or audio reels or tapes—or even disks or CD sample libraries—in which original video or audio material is located. With PostConform, these are the source(s) for audio events that get autoloading during the auto-assembly process.

Synchronization The process of having two or more audio, video, or other devices run together at exactly the same speed (usually during playback, though sync during record, fast-wind, and “crawls” is possible). Requires the use of an external or plug-in transport synchronizer, which can compare the relative SMPTE/MIDI time code positions of two or more devices, and can compensate for any variances on the part of the slaves to help align the master and its slave(s). Aside from an outboard box or plug-in card, synchronization can be obtained via built-in machine control (found in some DAWs), or via a software-only solution, such as MIDI Time Code, say, between a DAW and an external sequencer, drum machine, etc.

Take In film and video production, a take is a scene or portion of a scene filmed or recorded in one pass. In post production, an EDL consists of desired takes, or portions of desired takes, the sum of which will be used to make the master reel or tape. Once a take is part of an EDL, it is synonymous with an event or an edit.

Time Code See *SMPTE/EBU Time Code*.

Time Code DAT A means of recording and playing back SMPTE/EBU time code information on a DAT machine, while leaving its two audio tracks free for audio. Time code DAT decks are also able to be synchronized, using a transport synchronizer, a V-LAN system, or in some cases, Sony 9-Pin format. Many also have built-in chase synchronizers.

Time Compression/Expansion The process of lengthening or shortening a specific region of audio or video, typically while maintaining the original audio pitch or apparent video speed.

Transport Synchronizer Usually a stand-alone or plug-in device, capable of “locking” two or more transports together. At the very least, a synchronizer must be able to read and compare time code from a master and slave, and control the slave’s transport to follow the master when the master is in play. More advanced synchronizers, such as TimeLine’s MicroLynx, are able to control the master device, and to have the slaves “chase lock” to the master whenever it leaves play and goes into a fast-wind mode.

Universal Slave Driver (USD) Digidesign’s flagship synchronization peripheral. Locks to all major industry standard clock formats and positional reference types. Supported by PostConform for near-sample-accurate lock to external decks.

Video Editor/Video Editing System A system that typically controls at least three video transports (two source slaves and one master), to compile and edit a finished master tape. The most common systems are made by CMX, Sony, Ampex, Grass Valley, Abekas, and others.

VITC Vertical Interval Time Code. Unlike LTC, which is analogous to an audio signal, VITC is stored within the “vertical blanking interval” of the video tape, embedded as part of the video signal. Provides true frame-accurate time code relative to the video. Can also be read while a video tape is paused or stopped, because the video heads continue to spin relative to the tape. Requires a more specialized form of time code reader than LTC. Pronounced vit-see.

V-LAN Videomedia’s machine control standard. V-LAN is a network of programmable transmitters and receivers that allows control/connection with a simple BNC connector. Stands for Videomedia Local Area Network. Via a V-LAN transmitter, both PostConform and PostView offer direct control of any ATR or VTR connected to a V-LAN receiver.

VPR-3 A machine control standard, developed by Ampex. An alternative standard to Sony 9-Pin; this is the protocol by which a Lynx I or Lynx II is controlled by PostConform.

VTR Video Tape Recorder. Refers to both open reel and cassette decks.

Worktape A video tape, usually 3/4" or 1/2", made from a rough-cut or final-cut of a film or video. Audio post engineers typically assemble their audio elements while using a worktape. This prevents wear and tear on the original film or video, and it also allows the post-production house to use video instead of film as the visual reference (handy since synchronizing film projectors can be expensive, slow, inconvenient, and difficult).

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