Pro Tools Avid® Unity ISIS™

Version 1.4

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contents

chapter 1

Introduction

This guide explains how to connect and configure a Pro Tools or Media Station|PT workstation as an ISIS client within an Avid Unity ISIS system, as well how to exchange audio and video media sequences between Pro Tools, Media Station|PT, and Avid application clients attached to an ISIS system.

This guide is written for Unity ISIS administrators, Pro Tools users, and Avid users.

Avid Unity ISIS Capabilities

Avid Unity ISIS is an Ethernet-based shared storage system that lets users of Pro Tools and Avid applications share the same media as follows:

- Stream audio and video media in real time.
- Configure up to nine users on the same ISIS system.
- Share AAF, OMF, and MXF audio and video sequences and media (DigiTranslator required).
- Share AAF, OMF, and MXF sequences using the Avid Interplay asset management system (Avid Interplay system required).

DigiTranslator 2.0

Use DigiTranslator 2.0 to convert AAF sequences into Pro Tools session files. You can also use it to export audio material from Pro Tools sessions to AAF sequences and files for import into other systems.

For more information, refer to the DigiTranslator 2.0 Guide.

Avid Interplay

Avid Interplay with the Pro Tools Avid Interplay option lets users of Pro Tools, Media Station|PT, and Avid applications work within the same asset management system.

Refer to the Pro Tools Avid Interplay Guide for detailed information.

Overview of an ISIS System

This guide describes how to configure and work with a Pro Tools or Media Station|PT client within an Avid ISIS system. The ISIS installations addressed in this guide typically comprise the following components:

ISIS System Entire set of components within an individual ISIS installation.

ISS/Ethernet Switch Each ISIS crate has two built-in Ethernet connections known as ISS switches. You can also add external switches that connect to the built-in switches.

Avid Unity Transfer Engine (Optional) Server that lets Avid editing applications package elements of an Avid sequence and transfer them to other locations. You can add this as an additional client, connected either directly or through a switch.

System Director One or more servers (including a backup server) that functions as the heart of the Unity ISIS file system, by maintaining location information for media stored on drives.

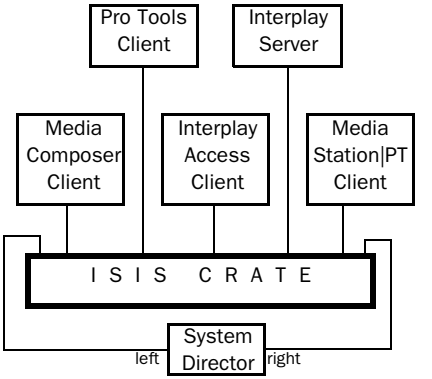
ISIS Crate Chassis that contains the drives that store the actual data.

Avid Interplay Transcode and/or Avid DMS ProEncode (Optional) Engine that distributes processor-intensive tasks to network servers in order to allow ISIS clients (such as Avid and Pro Tools workstations) to proceed without interruption.

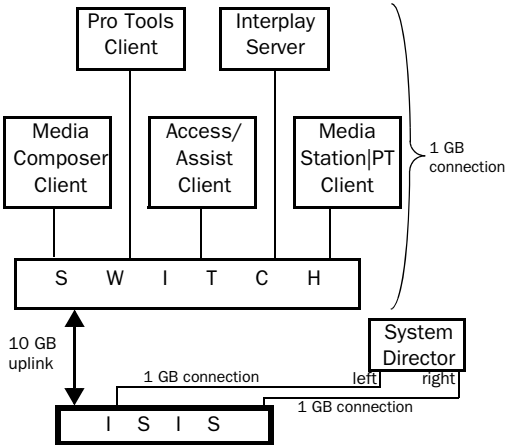
Avid Interplay Access/Assist (Optional) Media asset management client application that enables facility-wide searching, sorting, cataloging, management, and retrieval of media.

Avid Interplay Engine (Optional) Server that manages the metadata stored on the System Director server.

Clients One or more Avid, Pro Tools, or Media Station|PT workstations configured to be able to exchange data with other clients attached to the ISIS system.



Avid Unity ISIS (Zone 1 system), with solid lines represent physical connections, while dotted lines represent connections through the switch



Avid Unity ISIS (Zone 2 system), with solid lines represent physical connections, while dotted lines represent connections through the switch

AAF, OMF, and MXF Basics

AAF and OMF files are mechanisms for storing and retrieving media data and metadata so that projects can be freely exchanged between different applications and platforms (such as between Pro Tools and Avid video editing applications).

Media data and metadata enable an application that receives AAF and OMF sequence files to automatically and quickly reassemble the composition. A simple metaphor for this approach is that media data files are the pieces of a puzzle and metadata is the set of instructions for assembling the puzzle.

In the simplest case, only an AAF or OMF sequence is exchanged. If this sequence points to existing media files, the size of the sequence file is relatively small and the export/import process is relatively fast.

AAF and OMF sequences can also have media data embedded in them. This creates a single, larger file that is slower to export and import, but which may be easier to manage than thousands of files stored on different volumes.

Pro Tools supports AAF and OMF sequences that contain embedded audio media.

Pro Tools with DigiTranslator does not support AAF or OMF sequences containing embedded video media, except if you are importing such sequences into a video satellite track. In such cases, video metadata is imported into the track.

For the purposes of this user guide, AAF sequences are emphasized and referenced over the older OMF sequence standard.

MXF

MXF is a media file format. There are MXF video files and MXF audio files, but there are no "MXF sequences." An AAF sequence may refer to or include MXF media files, but OMF sequences cannot refer to or include MXF files.

Avid Application Support for MXF Media

Media Station|PT supports MXF media as follows:

- Create MXF media when capturing, transcoding, rendering, or using other methods to create media.
- Import of MXF media files created in other Avid applications
- Export of MXF audio and video files

Pro Tools Support for MXF Media

Pro Tools supports MXF media as follows:

- Import of MXF video and audio media
- Export of MXF audio media

Pro Tools cannot export video files of any type.

Video files digitized in Pro Tools are technically of the MXF format, but are intended only for use in Pro Tools and are not tested for compatibility with other applications.

AAF

AAF sequences are the best way to exchange projects and maintain valuable metadata. An AAF sequence can refer to OMF and/or MXF media files, or have OMF and MXF media files embedded within them. There is no such thing as an AAF audio or video media file.

Avid Application Support for AAF Sequences

Media Station|PT supports AAF sequences as follows:

- Import and export of AAF sequences with embedded video files (MXF or OMF) and/or audio files (MXF, WAV, or AIFF).
- Import and export of AAF sequences that refer to external (linked) video files (MXF or OMF) and/or audio files (MXF, WAV, or AIFF)

Pro Tools Support for AAF Sequences

With DigiTranslator 2.0, Pro Tools supports AAF sequences as follows:

- Import and export of AAF sequences that contain embedded or refer to external (linked) MXF, WAV, or AIFF audio files
- Import of AAF sequences that refer to external (linked) MXF or OMF video files
- Video satellite systems only: Import of AAF sequences containing embedded video to a satellite track, in which case Pro Tools imports only the metadata (cuts and clip names) and not the video

Pro Tools does not export video files, tracks or metadata as part of AAF sequences.

OMF

OMF is both a media file and sequence format. OMF media files can be audio or video.

Avid Application Support for OMF Media and Sequences

Media Station|PT supports OMF media and sequences as follows:

- Import and export of OMF sequences with embedded OMF video files and WAV or AIFF audio files
- Import and export of OMF sequences that refer to external (linked) OMF video files and WAV or AIFF audio files

Pro Tools Support for OMF Media and Sequences

With DigiTranslator 2.0, Pro Tools supports OMF media and sequences as follows:

- Import of OMF video files created by Media Station|PT or other Avid applications
- Export of OMF audio files
- Import and playback of OMF sequences that refer to external (linked) audio files or contain embedded audio files
- Import and playback of OMF sequences that refer to external (linked) OMF video files
- Export of OMF sequences that refer to external (linked) audio files or contain embedded audio files
- Video satellite systems only: Import of OMF sequences containing embedded video to a satellite track, in which case Pro Tools imports only the metadata (cuts and clip names) and not the video
- Pro Tools does not export video files, tracks or metadata as part of OMF sequences.

Embedded Media

Exporting to OMF or AAF with embedded media results in one large OMF or AAF file containing both the metadata and all associated media files. However, it is important to note that file size is limited to 2 GB.

Media Data (Media Files)

Media data represents raw audio or video material and is stored in individual media files. Every time you record a piece of video or audio material into an application, you are creating a media file containing media data. Audio media data is stored as samples (such as 44,100 or 48,000 samples per second of recording) while video media is typically stored as frames (24, 25, or 30 frames per second of recording).

The size of each media file depends on how much audio or video material it contains. For example, if you record ten minutes of continuous video material at a high resolution, you might end up with a video media file that is 1.8 GB in size, whereas a one minute recording at the same resolution might result in a 180 MB file. Media files tend to be large, since high quality audio and video signals are data intensive. Video data generally requires considerably more storage than audio data.

MXF Media Data Locations On the volumes you have designated for media storage, Media Station|PT stores all MXF media:

- When stored locally, MXF media is placed in the *Avid MediaFiles/MXF/1* folder. Media Station|PT can also read MXF media located at Avid MediaFiles/MXF/2, Avid MediaFiles/MXF/3, and so on.
- When stored in a shared environment, MXF media is placed in a folder called *Avid MediaFiles/MXF/client.1* (where *client* represents the name of the client computer).

This guide refers to the root folder name (*Avid MediaFiles*) whenever referencing this folder.

OMF Media Data Locations On the volumes you have designated, Media Station|PT stores all OMF media in the *OMFI MediaFiles* folder.

Metadata

Metadata is used to describe:

- Information about each media file. This may include sample rate, bit depth, region names, the name of the videotape from which the media file was captured, and even time code values that specify where a file was used in a Pro Tools session.
- Information about Pro Tools sessions or other sequences, including what files are used, where they appear in a Timeline, and automation.
- For AAF or OMF sequences, metadata also includes information about unrendered AudioSuite effects (such as real-time EQ) on Avid workstations. Pro Tools skips unrendered effects on import. Rendered effects are media files, that can be imported or skipped on import into Pro Tools.
- For AAF or OMF sequences, information about automation (clip-based gain or keyframe gain).

Embedded Media and Linked Media

There are two ways to handle media files when exporting AAF or OMF files:

- Embedded media (in which the media files are embedded in an AAF or OMF sequence)
- Linked media (in which media files are referenced by an AAF or OMF sequence)

Pro Tools with DigiTranslator 2.0 lets you import AAF or OMF sequences containing embedded audio files. You can also import AAF or OMF sequences containing embedded video files, but only if you are importing them to a video satellite track. In such a case, only the video metadata is imported.

Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing

Avid applications edit with frame accuracy. This means that in a 30-fps project, you can edit at 30 different locations for every one second of video. Pro Tools edits with sample rate accuracy. In a 48-kHz session, there are potentially 48000 locations to edit for every second of audio.

When Pro Tools exports an AAF composition destined for an Avid application, it must ensure that the audio files line up on frame boundaries. To do this, it might have to split an existing audio region into three separate regions. For example, the following illustration shows a 5-frame video clip and a corresponding audio region. In Pro Tools, the audio regions might not line up on video frame boundaries.

In order to export frame accurate audio regions, Pro Tools splits the audio media on frame boundaries and fills any gaps with silence. The following illustration shows the resulting audio regions that are exported to Avid.

When you use Export Selected Tracks as OMF/AFF to export tracks from Pro Tools with Enforce Avid Compatibility enabled, a number of additional media files labeled Sample Accurate Edit appear in the Avid bins. These are the additional media files that Pro Tools creates to ensure that the Avid editing application receives frame-accurate audio. You also see the sample-accurate edit media files if you zoom in on the imported audio in the Timeline.

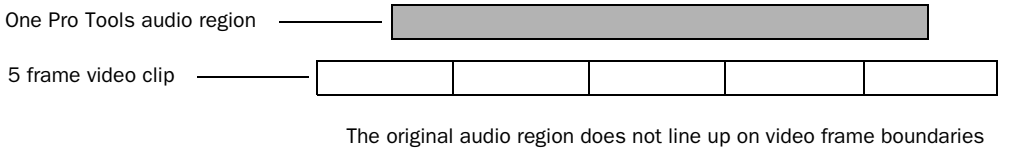


Figure 1. Original audio region

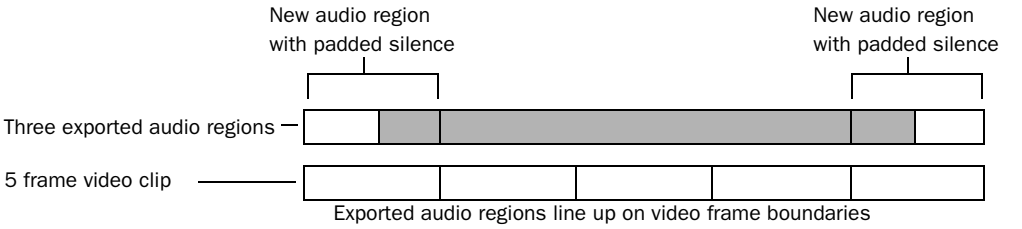


Figure 2. Exported audio region

System Requirements

Using Pro Tools or Media Station|PT within a Unity ISIS system requires the following;

- Windows XP or Mac OS X (Mac OS X supported only by Media Station|PT)
- Pro Tools HD
- An available expansion slot for a Gigabit Ethernet (Gig-E) based host bus adapter (HBA), and Gig-E Ethernet-based connectivity to the Avid Unity ISIS server
- ISIS client installation software

For complete system requirements, visit the Digidesign website (www.digidesign.com) and the Avid website (www.avid.com).

Compatibility Information

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

For a list of Digidesign-qualified computers, operating systems, hard drives, and third-party devices, visit the Digidesign website (www.digidesign.com).

For a list of Avid-qualified computers, operating systems, hard drives, and third-party devices, visit the Avid website (www.avid.com).

About Avid Unity ISIS Guides

PDF versions of Avid Read Mes are installed automatically with Avid Unity ISIS software. Also, searchable online help files containing the same information are accessible from the Help menus in the Interplay Access and Interplay Administrator applications.

You can use any of the following guides as supplementary information for this guide:

- The *Avid Unity ISIS System Setup Guide* describes how to connect cables between components that create a basic system and then how to connect more than one basic system together to create a larger, redundant system.
- The *Avid Unity ISIS Client Manager User's Guide* provides information for the setup and installation of the ISIS Client Manager software and related hardware components.
- The *Avid Unity ISIS Site Preparation Guide* contains information that helps you prepare your site for installing ISIS system hardware.
- The *Avid Unity ISIS Administration Guide* is intended for system administrators responsible for the setup and day-to-day management of an Avid Unity ISIS media network, as well as for users who need to access workspaces on the network.

These guides and other ISIS guides are available on the Avid ISIS Online Library DVD and on the Avid Knowledge Base, located at this link: http://www.avid.com/onlinesupport. To view or print PDF guides, you can use Adobe Reader.

About the Pro Tools Avid Interplay Guide

The *Pro Tools Avid Interplay Guide* describes how to set up Pro Tools as a client within an Avid Interplay system, as well as use Pro Tools and Interplay to exchange sequences between Avid and Pro Tools users.

Support for Avid Unity ISIS

For support on Avid Unity ISIS, visit Avid's online Knowledge Base (located at this link: www.avid.com/onlinesupport). Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

For support on Pro Tools HD, see "About www.digidesign.com" on page 9.

Conventions Used in This Guide

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

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

The following symbols are used to highlight important information:

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

Important Notices include information that could affect your Pro Tools session data or the performance of your Pro Tools system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide or other Pro Tools Guides.

About www.digidesign.com

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

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

Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Pro Tools training center.

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

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

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

chapter 2

Configuring a Workstation as an ISIS Client

This chapter describes how to install and configure an individual Pro Tools or Media Station|PT workstation as a client of an Avid Unity ISIS system.

Installation Overview

Installing the hardware and software involves the following process:

1 Make sure the software (Media Station|PT or Pro Tools) is installed on the workstation.

2 Install the ISIS client hardware.

3 Configure the Windows XP Firewall.

4 Install the ISIS client software for Zone 1 or Zone 2 clients.

Workstation Configuration Requirements

Before configuring a workstation as a client of an ISIS system, obtain from your Unity administrator (and make a note of) the following parameters for the ISIS system to which you are connecting your clients:

- IP address
- Subnet Mask
- Default Gateway

Installing Media Station|PT or Pro Tools

If you are configuring a Media Station|PT workstation as an ISIS client, ensure that Media Station|PT and any optional hardware (such as Avid video peripherals) have been properly installed. For detailed information, see the *Media Station|PT Guide*.

If you are configuring a Pro Tools workstation as an ISIS client, ensure that Pro Tools hardware and software are properly installed. For detailed information, see the *Pro Tools HD Getting Started Guide*.

Avid Unity ISIS Client and Zone Descriptions

All clients in the system are classified by zones, depending on how they connect to the network. The following list defines the clients in each network layer by its zone classification:

Zone 1 Client Connected to ISIS VLANs via an ISS 1 Gb port (direct connection)

Zone 2 Client Connected to ISIS VLANs via a 1 Gb port on an Avid qualified layer-3 switch (non-routed)

Clients can run in any lower-numbered zone. For example, a Zone 2 client can also run in as a Zone 1 client.

Installing the ISIS Client Hardware

The Intel PRO/1000 MT Ethernet card is required for Pro Tools and Media Station|PT connections to an Avid Unity ISIS system. For the latest supported version for your system, search the online Knowledge Base at the following link: www.avid.com/onlinesupport.

Installing the hardware and software for the Intel PRO/1000 MT Ethernet card requires the following steps:

1 Insert the Intel PRO/1000 MT card into your workstation and connect it to an ISS switch.

2 Install the Intel PRO/1000 MT driver.

Inserting the Intel PRO/1000 MT Ethernet Card into a Workstation

The Avid Unity ISIS client hardware consists of one Ethernet cable (rated CAT 5e or higher) and a single qualified Ethernet HBA (Host Bus Adapter), such as the Gig-E Intel PRO/1000 MT.

You must purchase Ethernet cables separately.

For a complete list of qualified host bus adapters please consult Avid support.

To insert the HBA Ethernet card into a Pro Tools or Media Station|PT workstation:

1 Shut down and power off your computer and expansion chassis (if one is present).

2 Open your computer according to the instructions included with it.

3 Release any static electricity by touching the power supply, or another grounded item.

4 Remove the Ethernet card from the antistatic bag, being careful to handle it only by the edges.

5 Determine the correct PCI/PCIe card slot order (see Appendix A, "PCI and PCIe Slot Configurations for Pro Tools and Media Station|PT with Avid Unity ISIS Systems").

6 Line up the Ethernet card with the installation slot, and slide the card into place gently so the PCI/PCIe connector is aligned with the correct PCI/PCIe slot.

7 Press down firmly on the card with even pressure. The connector should click into place in the PCI/PCIe slot.

8 To attach the card bracket to the computer mounting bracket, fasten the card in place using a screw or latch down the securing bracket if one is built in.

To connect an installed Intel PRO/1000 MT card to the ISS (ISIS switch):

1 Plug one end of an Ethernet cable into the Intel PRO/1000 MT card's Ethernet port.

2 Connect the other end of the Ethernet cable to the ISS (ISIS Switch).

For more information, see the Avid Unity ISIS Client Setup and Installation Guide.

Installing the Intel PRO/1000 MT Driver

Once the Intel PRO/1000 MT Ethernet card is physically installed in your computer, you must install the appropriate driver.

If your system has a DVD drive, you can install it directly from the Avid Unity ISIS DVD. If you do not have a DVD drive, you need to use another means (such as a network connection) to transfer the necessary driver from the Avid Unity ISIS DVD to your system.

To install the Intel PRO/1000 MT driver:

1 If you did not restart the system after installing Intel PRO/1000 MT Ethernet card, do so now.

After you restart your system, the following message appears: "Looking for the Intel PRO/1000 MT driver."

2 Cancel the message.

3 Insert the DVD into the DVD drive.

4 On the DVD, navigate to the following folder: Tools_and_Thirdparty_Software/ Drivers_and_Firmware.

5 In the Drivers_and_Firmware folder, copy the Intel_MT_Server_NIC folder to the desktop of your system.

6 Navigate to the Intel_MT_Server_NIC folder on your desktop, and go to Driver/Intel NIC 10.0 Avid.

7 Double click the Auto-run.exe file.

An Installer window opens.

8 Click Install Drivers.

A message window appears stating that the drivers and other files that are needed are being installed. This may take some time to complete. When the message window closes, the installation is complete.

Setting the IP Address of the Intel PRO/1000 MT Card

After installing the Intel PRO/1000 MT Ethernet card and connecting it to the appropriate ISIS switch, you must set the IP address, subnet mask, and default gateway of the Ethernet card. These settings match those of the ISS (ISIS Switch) to which the card is connected.

Before adding these settings, obtain the following information regarding the ISS Switch to which you connected the Ethernet card:

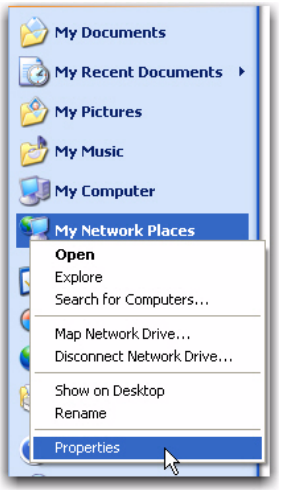
- IP Address
- Subnet Mask
- Default Gateway

See your ISIS administrator for details.

To set the IP address of the Intel PRO/1000 MT card:

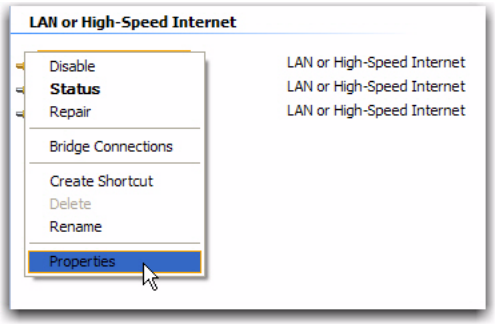
1 Click the Start menu.

2 Right-click My Network Places, and choose Properties.



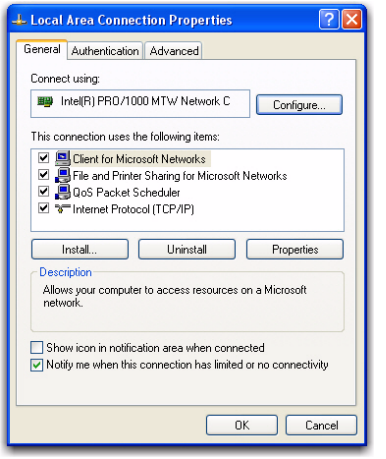
Choosing Properties from My Network Places

3 In the Network Connections window, right-click the item that represents the Ethernet port that is physically connected to the Ethernet cable, and choose Properties.



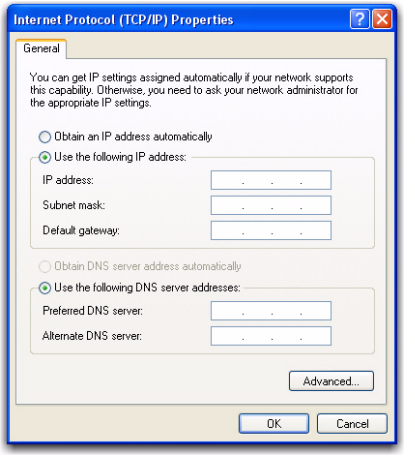
Choosing Properties from Network Connections

4 In the Connections Properties dialog, select the Internet Protocol (TCP/IP) option (you may have to scroll down), and click Properties.



Connection Properties dialog

5 In the Internet Protocol (TCP/IP) Properties dialog, select Use the Following IP Address.



Connection Properties dialog

6 Type the following information:

- IP Address
- Subnet Mask
- Default Gateway

7 Click OK.

8 In the Connections Properties dialog, click OK.

9 Close the Network Connections window.

Connecting an Intel PRO/1000 MT Ethernet Card to an Avid Unity ISIS System

The Intel PRO/1000 MT Ethernet card is a dual port card that allows you to use dual-attached redundancy for the client. (You can also configure your network as a single-connect system.)

Figure 3 shows a sample system connected in Zone 1 and Zone 2 configurations and the onboard Ethernet connection that is physically connected to the corporate network.

⚠ *Pro Tools and Media Station|PT clients are not supported in a Zone 3 environment.*

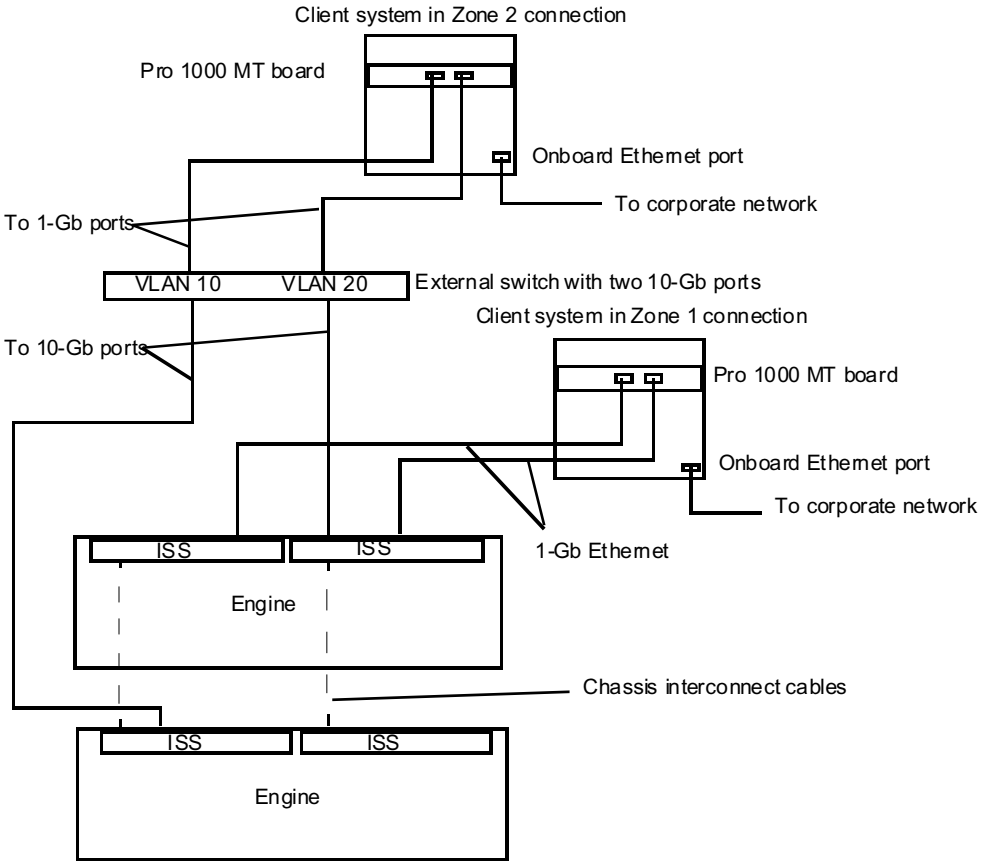


Figure 3. Connecting an Intel PRO/1000 MT Ethernet card to an Avid Unity ISIS system

Configuring the Windows XP Firewall

If you install Service Pack 2 on your Windows XP system, the Windows Firewall is set by default. The Windows Firewall is part of the Security Center located in the Windows XP Control Panel, but it is possible to have errors if the firewall is enabled and the Don't Allow Exceptions option is selected on the General tab of the Windows Firewall dialog box.

To make sure that the settings are correct when the firewall is enabled:

1 Choose Start > All Programs > Accessories > System Tools > Security Center.

The Windows Security Center window opens.

2 Click Windows Firewall.

3 In the Windows Firewall dialog, click the General tab, and select On (recommended). You can select Off (not recommended) if you do not want to enable the firewall.

4 Deselect the Don't Allow Exceptions option.

5 Click OK.

6 In the Windows Security Center window, click Automatic Updates.

7 In the Automatic Updates dialog box, select the Turn off Automatic Updates option.

8 Click OK.

9 Close the Windows Security Center window.

Installing Client Software for Zone 1 and Zone 2 Clients

Installing client software on a client allows the client interact with the ISIS system.

You can install the client software from the following sources:

Browser Use a web browser to reach the Administration Tool and install it from the System Director because it was installed during the previous installation of the Client Installers. This is the easiest and recommended option.

DVD Install the software on each individual client from the DVD installer disc.

Network Store the client software somewhere on a network and allow everyone who needs the software to gain access to it and install it.

When connecting Avid Unity ISIS clients, keep the following points in mind:

- When installing Avid Unity ISIS client software on Windows systems, make sure you are up-to-date with your Windows critical updates.
- Zone 1 clients must use 1 Gb connections to the ISS. The ISS does not negotiate at any rate below 1 Gb. If 100 BASE-T connections are needed, connect the clients or server to external switches that are configured for Zone 2.

Installing the ISIS Client Software Using a Browser

Before installing ISIS client software using a browser, make sure you have the IP address of the ISIS System Director (available from your ISIS administrator).

To install the client software using a browser:

1 Start your browser application.

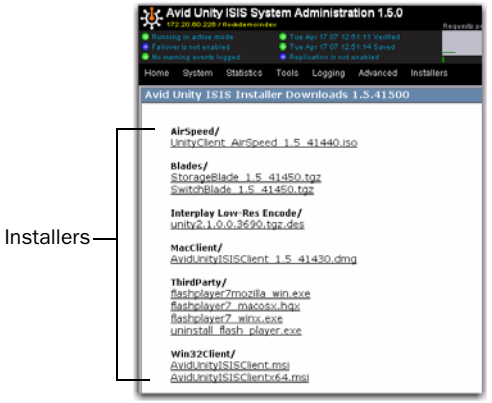
2 Launch Windows Update and accept all "High-priority Updates."

3 In the browser, navigate to the following URL: https://*[System Director IP address (or virtual name)]*:5015.

4 In the System Administration Tool, type your Administrator's password.

5 Click Administration.

An Installer Downloads screen opens.



ISIS software installer downloads page

6 Click the appropriate Flash executable.

7 Click Win32Client.

During the client software installation, a dialog box appears asking if you need the Compatibility drive loaded.

8 Do one of the following:

- If the version of the Avid editing application you are using is listed, select Yes.
- If you are installing on a Pro Tools client or your Avid editing version is not listed, select No.

The installer begins installing the software.

9 When the installer asks who the software is for, select the Everyone option.

10 When prompted, restart the computer.

The client software is installed.

chapter 3

Using a Client in an ISIS System

This chapter describes setup instructions and configuration parameters for each workstation you add as an ISIS client.

About Avid Unity ISIS Client Manager

Avid Unity ISIS Client Manager allows your client to connect to the Avid Unity ISIS system. Once installed, the Client Manager runs in the background so you can mount and access your workspaces at any time, as well as manage your workspaces and bandwidth reservations.

Client Manager displays an icon in the Windows Taskbar. When logged in, the Client Manager displays all available System Directors and all available workspaces.

The Client Manager allows users with the necessary account privileges to resize workspaces, to protect and unprotect workspaces, and to specify client bandwidth reservations, if any.

Connecting to the Avid Unity ISIS System

The Client Manager automatically checks for all System Directors available in the Avid Unity ISIS system. You can use the Client Manager to connect to the network and optionally reconnect automatically when you reboot your system.

Opening the Client Manager

To connect to the Avid Unity ISIS network via the Client Manager:

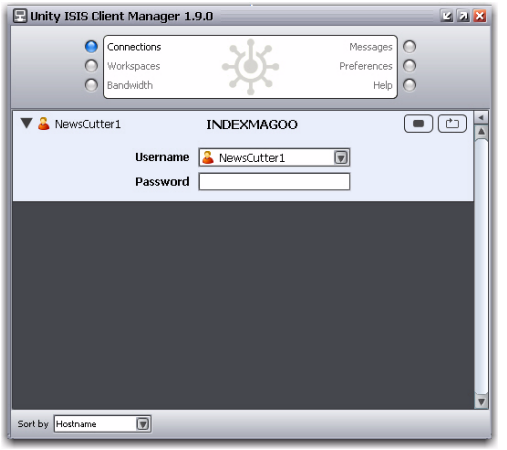
1 Do one of the following:

- If the Client Manager icon is not available in the Windows Taskbar, choose Start > All Programs > Avid Unity ISIS > Client Manager.
- Click the Client Manager icon in the Windows Taskbar.

Client Manager icon and pop-up menu

- Right-click the Client Manager icon and select Unity ISIS Client Manager.

2 In the Avid Unity ISIS Client Manager, click Connections.



Client Manager window

The Connections list displays all available System Directors.

3 Select the System Director you want to connect to from the Connections list.

You can sort the Connections list by clicking the Sort menu and selecting Hostname or Connection Status.

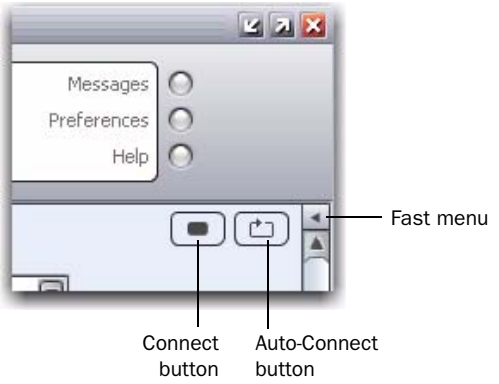
4 Select the System Director you want to connect to from the Connections list.

5 If you want to connect to the ISIS system with a username and password different from those for your client system, do the following:

- Click the Username menu, and select Other.
- Type your Avid Unity ISIS account name in the Username field.
- Type your password in the Password field.

6 Do one of the following:

- Click the Connect button.
- Click the Fast menu, and select Connect.



Client Manager

The Connect button changes to green when the connection is complete.

7 If you use the same username and password for your client system and your Avid Unity account, and you want to connect to the network automatically every time you start your system, click the Auto Connect button. The Auto Connect button changes to blue.

Changing Your Password

You can use the Client Manager to change the password you use to log on to your Avid Unity ISIS user account.

⚠ *If your username and password are different for your client system and your Avid Unity account, your system cannot automatically reconnect to the ISIS system when you restart your system.*

To change your Avid Unity ISIS account password:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 In the Menu panel, click Connections.

3 In the Connections list, select a user.

4 Click the Fast menu, and select Change User Password.

5 In the Changing Password dialog, do the following:

- Type your existing password in the Old Password field.
- Type your new password in the New Password field.
- Type the new password a second time in the Confirm New Password field.

Change Password dialog

6 Click OK.

Accessing Client Manager Help

The Client Manager Help provides background information for tasks, windows, and dialog boxes. The Help system is HTML-based and operates in your default Web browser.

To open the Client Manager help:

- In the Menu panel, click Help.

Mounting and Unmounting Workspaces

If your system is connected to an Avid Unity ISIS system, use the Client Manager to mount a workspace before you begin your work session.

⚠ *Your Avid Unity user account must have access to at least one workspace. For information on workspace access, see "Creating Client Accounts for Users" in the Avid Unity ISIS Administration Guide.*

When one or more workspaces are mounted and the connection to the System Director is subsequently lost, a message in the Taskbar indicates the workspace is unavailable.

The Client Manager then automatically attempts to reestablish the connection with the System Director. When the connection is successfully reestablished, a message in the Taskbar informs you of the connection state.

To mount Avid Unity ISIS workspaces on your system:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 In the Menu panel, click Workspaces.

The Workspaces list opens. The Mount button appears green for workspaces that are already mounted.

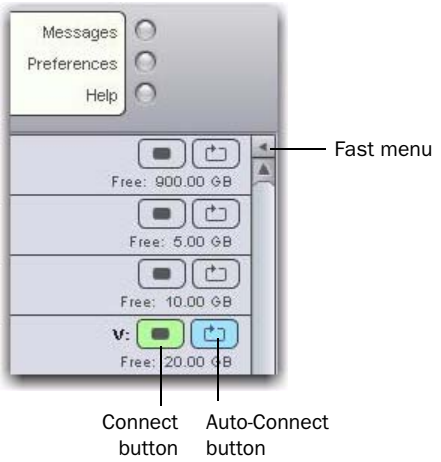
Client Manager (displaying Workspaces)

💡 *You can sort the Workspaces list by clicking the Sort menu and selecting the appropriate name, capacity, or status. You can also filter the list by Workspace or System Director name. For more information, see "Sorting and Filtering the Display" on page 26.*

3 In the Workspaces list, select the workspace you want to mount.

4 Do one of the following:

- Click the Mount button.
- Click the Fast menu, and select Mount.



Client Manager (displaying Workspaces)

The Client Manager mounts the selected workspace on your client and the Mount button changes to green. The Workspaces list displays the drive the workspace is mounted to. If you use letterless drive mappings, the Workspaces list displays "UNC" next to the workspace.

5 If you want the selected workspaces remounted the next time you log in, do one of the following:

- Click the Auto Mount button.
- Click the Fast menu, and select Auto Mount On.

The Auto Mount button changes to blue.

To unmount Avid Unity ISIS workspaces on your system:

1 Make sure that neither Pro Tools or Media Station|PT is running.

2 In the Workspaces list, select the workspace you want to unmount.

3 Do one of the following:

- Click the Mount button to deselect it.
- Click the Fast menu, and select Unmount.

The Client Manager unmounts the workspace from your client, and the Mount button changes to gray.

Using the Workspace Display

The Workspaces list provides basic information about each mounted workspace, including the following:

- All available workspaces
- System Director name
- Workspace name
- Drive letter for the mounted workspace
- Connection status (connected, unconnected, or automounted)
- Used space (as a percentage of available capacity)
- User privileges for the workspace (read, read/write)
- Free space (in gigabytes)
- Protection status (protected when the Protection icon is present; unprotected when the Protection icon is not present)
- Workspace capacity (in gigabytes)
- System capacity (in terabytes)

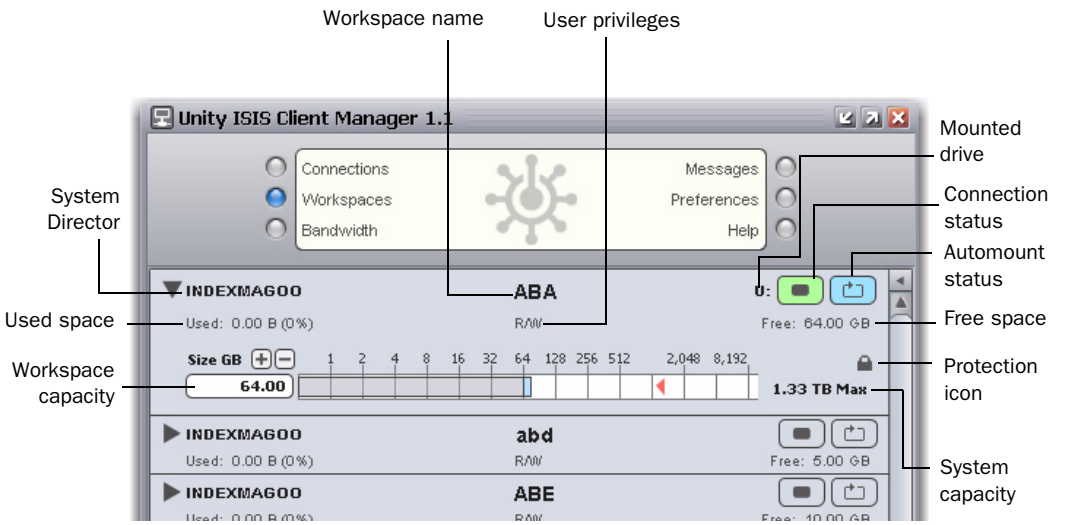


Figure 4. Client Manager (Workspace display)

Sorting and Filtering the Display

If the Workspaces list contains a large number of workspaces, you might want to sort or filter the items in the list for easier managing.

To sort the Workspaces list:

- Click the Sort menu and select one of the following:
  - System Director Name
  - Workspace Name
  - Mount Status
  - Automount Status
  - User access
  - Protect Status
  - Used Space
  - Free Space

The Workspaces list updates to reflect the sorting parameter.

Configuring Workspace Drive Letter Assignments

The Client Manager allows you to configure the drive letter used when mounting Avid Unity ISIS workspaces. This allows you to prevent workspaces from being assigned drive letters you want reserved for other uses.

⚠ *The Client Manager skips fixed drives and drive letters that are already in use.*

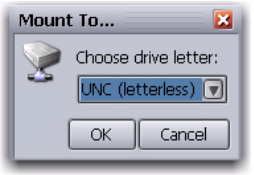
If your system requires using Universal Naming Convention (UNC) paths for all mounted workspaces rather than drive letters, you can use Client Manager to set this as the default mapping for workspaces.

To configure the drive letter for mounting workspaces:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 In the Menu panel, click Workspaces.

3 Click the Fast menu, and select Mount To.



Mount To dialog

4 In the Mount To dialog, click the Choose drive letter menu, and select the drive letter you want to use for mounting workspaces.

If you are using Media Station|PT and want to use a Universal Naming Convention path for the workspace instead of a drive letter, select UNC (letterless). (Pro Tools does not support UNC paths for access to media files.)

5 Click OK.

Testing Your Avid Unity ISIS Connection

Before you begin using the Avid Unity ISIS system, you should test the connection to your workspace to make sure communication between your client system and the ISIS system is sufficient for the functionality needed by your system. You can use the Avid PathDiag tool, which installs with your client software, to test the read/write throughput (the rate that read and write operations are conducted between your client system and a mounted workspace).

Starting the Avid PathDiag Tool

The Avid PathDiag tool is a diagnostic utility that allows you to validate your Avid Unity ISIS connection by quantifying the throughput of Windows editing applications accessing Avid Unity ISIS workspaces.

For detailed information on the PathDiag tool, see the Avid Unity ISIS Client Manager User's Guide.

To start Avid PathDiag tool:

- Choose Start > All Programs > Avid Unity ISIS > PathDiag.

PathDiag tool

Setting Up a Test

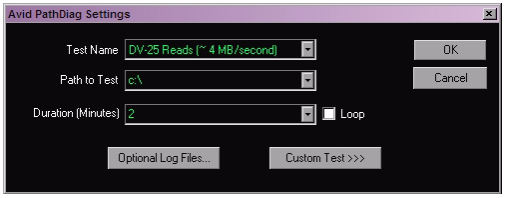
To test the general status of your connection to the ISIS system, you need to configure a custom test.

To access the custom test settings options:

1 Start the PathDiag tool (see "Starting the Avid PathDiag Tool" on page 25).

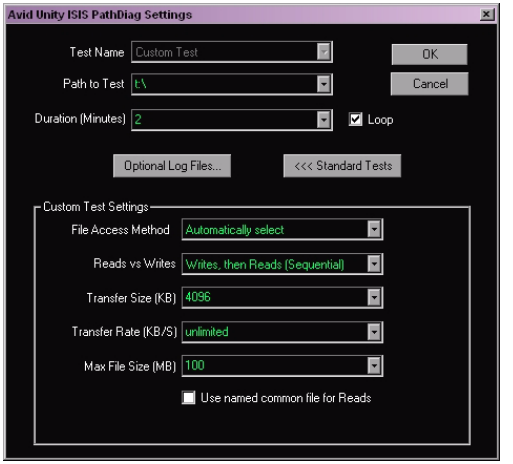
2 Click the Setup button.

3 In the PathDiag tool Settings dialog, click Custom Test.



PathDiag tool Settings dialog

The dialog box expands to display the Custom Test Settings area.



PathDiag tool Settings dialog (Custom Area)

4 In the Custom Test Settings area, adjust the custom test parameters as follows:

Path to Test Select a drive with a mapped Avid Unity ISIS workspace

Duration (Minutes) Select 2.

Loop Select this option if you want the test to repeat the test indefinitely after its duration is complete.

File Access Method Select Automatically select.

Reads vs. Writes Select Writes, then Reads (Sequential).

Transfer Size (KB) Select 4096 for an Avid editing application (such as Avid Media Composer or Media Station|PT) or Pro Tools using video. Select 1024 for other Avid applications or Pro Tools using audio only.

Transfer Rate (KB/S) Select Unlimited.

Max File Size (MB) Select 100.

5 Click OK.

Running the Test

You can start and stop the currently configured test using the Start and Stop buttons.

To start the currently configured test:

- Click Start in the PathDiag tool main window.

The test runs for the specified duration and then stops automatically. The elapsed time a test has been running and the remaining time are displayed in the Control area.

The following list indicate the results that reflect an optimal connection for an Avid Media Station|PT client on the ISIS system:

- Average Read: 60–70 MB/seconds
- Average Write: 70–80 MB/seconds
- Peak Read: less than 5 MS/100
- Peak Write: less than 5 MS/100

These results primarily reflect video performance verification for Media Station|PT, and not Pro Tools.

In addition, results should plot along a smooth, stable line in the Test Results graph, and they should not have peaks or spikes that indicate variable performance within the ISIS system.

In Figure 5, which shows a healthy read/write test, the test loops so that the Read results and Write results fall to zero as the test alternates between Reads and Writes. However, Reads and Writes plot consistently in the Test Results graph and appear level over the course of the test.

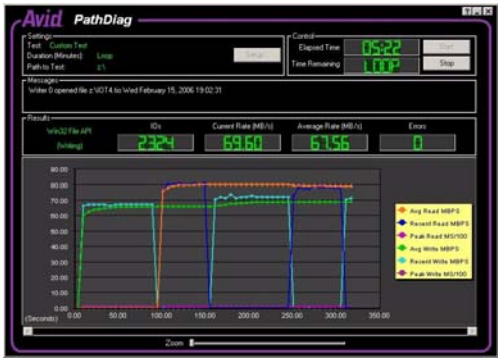


Figure 5. PathDiag tool Settings dialog (Healthy read/write test)

In Figure 6, which shows problems in the connection to the workspace, the average Read level and Recent Read level display fluctuations. The Peak Read should be lower and plot along a flat line in the graph. Also, the average Read level is higher than the average Write level, which might indicate that the workspace is unmirrored (that is, it is not a protected workspace).

Figure 6. PathDiag tool Settings dialog (Healthy read/write test)

These results represent guidelines for Avid-qualified systems; performance on your system might vary. If your Read/Write results differ from those listed here by more than 5–10 MB/s, see your Avid Unity ISIS administrator.

Adjusting Workspace Size

You can use the Client Manager to resize workspaces if your user account on the Avid Unity ISIS system has the necessary privileges.

⚠ *Do not adjust workspaces while clients are writing files to them.*

To adjust the size of a workspace:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 In the Menu panel, click Workspaces.

3 In the Workspaces list, expand the display for a selected workspace.

4 Click the handle of the Workspaces Size graph, and drag it to resize the graphical display. The workspace size listed in the Capacity text box and the Free space size update as you drag the handle.

⚠ *You cannot reduce workspace size below the storage space listed as the Used space size above the Capacity text box, which indicates the amount already allocated to files. (For empty workspaces, the minimum workspace size is 1 GB.) You also cannot increase workspace size above the storage space listed as the maximum size.*

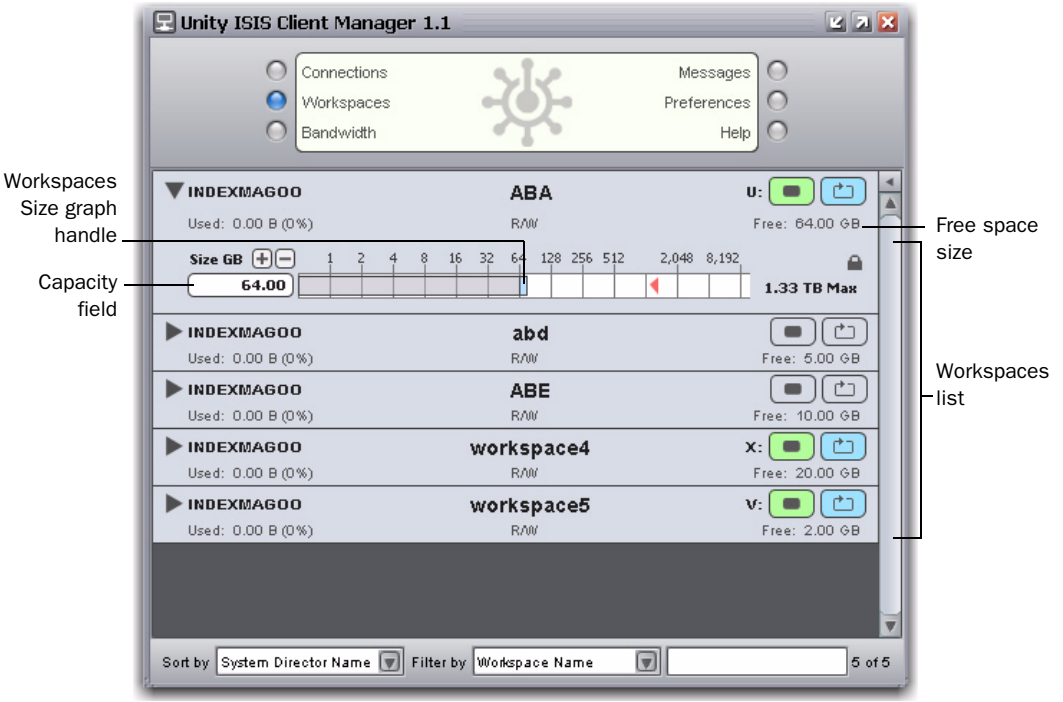


Figure 7. Client Manager (Workspace size adjustments)

Protecting and Unprotecting Workspaces

You can use the Client Manager to enable or disable workspace protection if your user account on the Avid Unity ISIS system has the necessary privileges.

⚠ *When you modify the protection status of a workspace, the ISIS system performs a redistribution of any data on the storage elements in the workspace.*

To enable or disable workspace protection:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 In the Menu panel, click Workspaces.

3 In the Workspaces list, expand the display for a selected workspace.

Figure 8. Client Manager

4 Click the Fast menu, and select Enable Protection or Disable Protection.

The Protection icon is present when the workspace is protected and is not present when it is not protected.

Setting Bandwidth Reservations

You can use the Client Manager to obtain a default bandwidth reservation; however, the reservation cannot exceed your system's device limit or your client bandwidth limit, whichever is lower. The Avid Unity ISIS system enforces an effective bandwidth limit based on either the client type specified by the Client Manager or the reserved bandwidth value set in the Administration tool. Your Avid Unity ISIS administrator sets the bandwidth limits, and the bandwidth limit is listed in the Workspaces list.

⚠ *Setting a bandwidth limit on editing clients can adversely affect playback performance. Avid recommends that you do not set bandwidth limits for Media Station|PT users (other than Avid AirSpeed® clients). However, your administrator might need to set a bandwidth limit for other devices, such as an Avid Unity TransferManager, in the event the device is consuming more bandwidth than expected.*

To set a bandwidth reservation:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 Click Bandwidth.

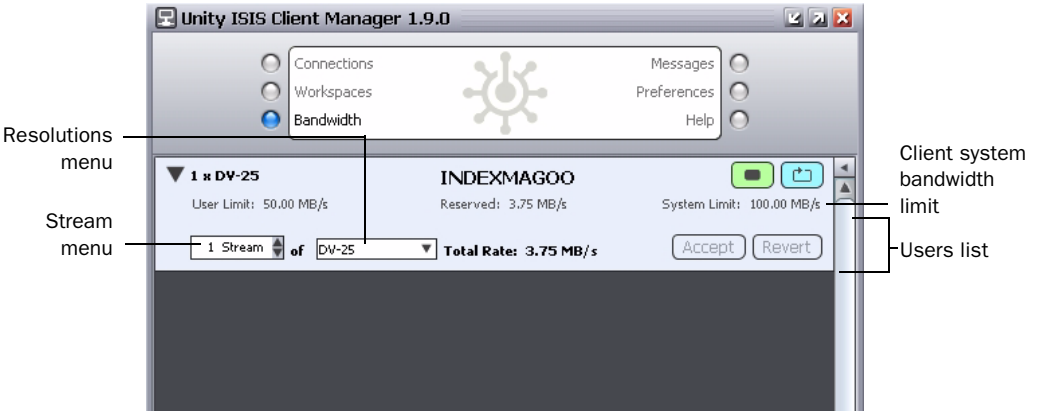


Figure 9. Client Manager (setting bandwidth resolutions)

3 In the Users list, expand the display for a selected user.

4 Select the number of media streams for which you want to reserve bandwidth from the Streams menu.

5 Click the Resolution menu, and select a reservation for your project.

6 Click Accept.

7 Click the Reserve button.

8 If you want to reserve bandwidth automatically each time you log on to the ISIS system, do one of the following:

- Click the Reconnect button.
- Click the Fast menu, and select Auto Reserve On.

Performing Administrative Tasks

You can use the Preferences dialog box and the Messages dialog box to manage the following administrative tasks:

- Set display properties
- Clear cached information
- View, save, and clear logged error messages

Setting Display Properties in the Client Manager

Display properties in the Client Manager control how the application displays information on your local system.

To set Client Manager display properties:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 Click Preferences.

3 In the Preferences dialog, click General.

Client Manager Preferences dialog

4 In the General area, select the appropriate options:

Start Client Manager Hidden Select this option to allow the Client Manager to run hidden and accessible from the Client Manager icon in the Taskbar. Deselect this option to open the Client Manager each time you start your system.

Use UNC (Letterless) Drive Mappings Select this option to use UNC paths to map workspaces instead of drive letters.

Pro Tools does not support UNC paths for access to media files.

Enable Bandwidth Dialog Select this option to enable the "Display Bandwidth in Bits Per Second" option as well as the bandwidth displays in Client Manager tool.

Display Bandwidth in Bits Per Second Select this option to display bandwidth in bits per second. Deselect this option to display bandwidth in bytes per second.

Measure Free Space In You can choose to display the amount of available space in your workspace either in gigabytes (GB) or in the total length of stored media (*hours:minutes:seconds*) at a selected resolution.

5 Click Apply.

6 Click Close.

Clearing Cached Data

The Client Manager maintains information on site settings in cache files, and the tool appends data each time you open the Client Manager. You can clear the cached information—for example, to remove settings for users no longer working on a specific system—by deleting the cache files.

To clear cached data:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 Click Preferences.

Client Manager Preferences dialog

3 In the Preferences dialog, click Advanced.

4 Do one of the following:

- Click the Clear button for each cache file you want to clear.
- Click the Clear All button to clear all cached data.

5 Click Apply.

6 Click Close.

Using Logs and Messages

The Client Manager keeps an log of events, information, and error messages. You can view the current log in the Messages dialog box. You can also save a copy of the log, and you can clear the log maintained for the current work session.

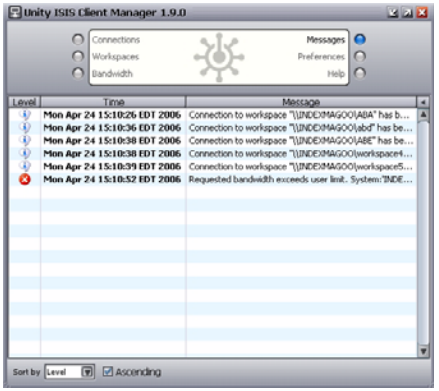
The Client Manager clears all logs when you exit the application.

To view Client Manager event logs:

1 Open the Client Manager (see "Connecting to the Avid Unity ISIS System" on page 19).

2 Click Messages.

The Messages dialog box opens and displays all event messages. You can sort the Messages list by clicking the Sort menu and selecting Level, Time, or Message.



Client Manager Preferences dialog

To save a copy of the event log:

1 Click the Fast menu, and select Export.

The Export dialog box opens.

2 Navigate to the folder where you want to save your log.

3 Type a name for the log in the File Name text box.

4 Click Save.

The Client Manager saves the event messages as a log file (*filename*.log).

To clear all event logs:

- Click the Fast menu, and select Clear.

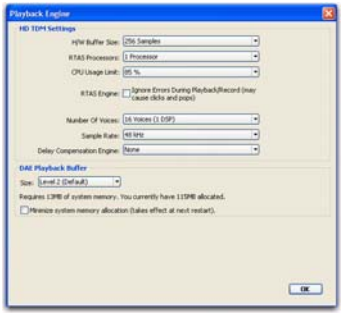
Configuring the Pro Tools|HD Playback Engine

Pro Tools|HD workstations have multiple playback modes at different sample rates. For optimum performance in an ISIS system, it is recommended that you use the least number of voices per DSP.

To configure the Playback Engine:

1 Launch Pro Tools.

2 Choose Setups > Playback Engine.



Playback Engine dialog for Pro Tools|HD

3 From the Number of Voices pop-up menu, select the lowest number of voices per DSP for the Playback Engine.

You can use the other Playback Engine settings if your session's audio media files are on local storage.

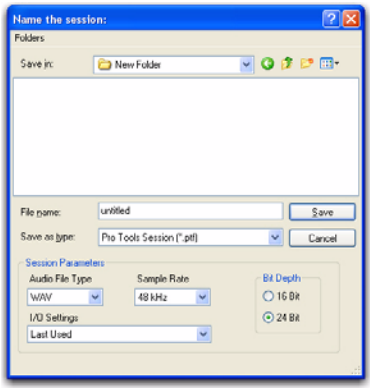
4 Click OK.

Configuring Pro Tools Session Settings for a New Session

The following describes the recommended session settings for creating a new Pro Tools session when working in an ISIS system.

To create a new Pro Tools session for Avid Unity ISIS:

1 In Pro Tools, choose File > New Session.



New Session dialog

2 In the New Session dialog, select an Audio File Type for the session that is compatible across all workstations.

3 Select a Sample Rate for the session that is compatible across all workstations.

4 Select a Bit Depth for the session that is compatible across all workstations.

5 Name the session and save it to an Avid Unity ISIS workspace.

Audio File Type

Pro Tools supports AIFF and BWF (.WAV) audio files natively.

All Sound Designer II files must be converted to a Windows-compatible format for use in an ISIS system.

For the best media compatibility between Pro Tools workstations and Avid workstations, you should choose to work with Broadcast WAV media files. Make sure the Audio File Type pop-up menu in the New Session dialog box is set to WAV when you are creating a new session.

The WAV file format is required when working with audio files containing field recorder metadata.

Sample Rate

Pro Tools HD supports sample rates up to 192 kHz, but other Pro Tools and Avid workstations only support lower sample rates. Therefore, when working on an Avid ISIS network, it is vital to use sample rates for shared media that are supported on all workstations.

It is preferable for all participants in the system to agree on a standard, universal sample rate for the sake of compatibility and to avoid media conversion. Many facilities choose 48 kHz, which is the industry standard for post production and broadcast applications.

Bit Depth

Some older Avid workstations support only 16-bit audio. Make sure you consider the following when you are starting a new audio session:

- For maximum compatibility when using a Pro Tools workstation to share audio files and sequences with older Avid workstations in an ISIS system, set the bit depth to 16-bit in the New Session dialog box when you are creating new session files.
- When using a Pro Tools workstation to share audio files and sequences with either Pro Tools workstations or current Avid workstations in an ISIS system, set the bit depth to either 16-bit or 24-bit (depending on your project requirements) in the New Session dialog box when you are creating new session files.

For the most current compatibility information on supported Pro Tools systems and Avid Unity ISIS, refer to the Avid website (www.avid.com) and the Digidesign website (www.digidesign.com).

ISIS Client Performance and Guidelines

Avid and Digidesign have tested Pro Tools and Media Station|PT client performance in an ISIS environment using a single ISIS engine containing 16 storage blades grouped as a single storage group. Additional configurations have not been tested at this time.

An individual ISIS engine containing 16 storage blades organized as one storage group can serve the following clients simultaneously:

- Up to nine Pro Tools workstations, each of which contains:
  - Up to forty-eight audio tracks with 48 kHz 24-bit audio
  - One DV25 or DV50 video stream

  – and –
- Up to two Media Station|PT workstations, each of which contains up to two DV25 or DV50 video streams

Compatibility and Performance

Actual performance depends on specific configuration and program material. More configurations will be announced as they are tested. For the latest information, see the Avid Unity ISIS compatibility pages on the Digidesign website (www.digidesign.com).

Determining Total Throughput

Each ISIS engine within an ISIS environment comprises sixteen ISIS storage blades which, when organized into a single storage group, can produce upwards of 240 or 300 MB/second of aggregate bandwidth throughput.

The total bandwidth throughput within an ISIS environment is based on the number of ISIS engines connected to your system. Each client you attach to the ISIS engine uses a certain amount of that bandwidth depending on the type of media being played back.

Total ISIS Engine Bandwidth Throughput

The following table shows the amount of available throughput offered by a single ISIS engine grouped as one storage group.

ISIS engine bandwidth throughput

Number of ISIS Engines	DV25/50 & IMX 30/50 Throughput	DXxHD 145/120 Throughput
1	300 MB/s	240 MB/s

While it is possible to create multiple storage groups by grouping four or more storage blades, the total throughput is lowered depending on the number of storage blades in that storage group.

Estimated Client Bandwidth Usage

The following table shows the estimated amount of bandwidth usage based on the type of media streaming from a single ISIS engine grouped as one storage group.

Estimated ISIS engine bandwidth usage

Type of Media	Bandwidth Usage
DV25 video	4 MB/sec
DV50 video	8 MB/sec
DNxHD 145 video	18 MB/sec
DNxHD 120 video	16 MB/sec
48 tracks of 48 kHz 24-bit audio	10 MB/sec
48 tracks of 48 kHz 16-bit audio	8 MB/sec

Media Station|PT Client Performance

The following resolutions for Media Station|PT have been tested and are supported on Avid Unity ISIS media networks in both NTSC and PAL. As enhancements to Avid Unity ISIS software occur the number of resolutions will increase:

- 2:1
- 3:1
- 15:1
- 20:1
- MPEG–2 Proxy for InterPlay
- HDV, DV50, and DV25
- IMX50 and IMX 30
- DNxHD145/120 (see note)

⚠ *At this time, the editor is qualified with the capability of using 2 streams of video and up to 8 tracks of audio. This level of functionality allows for better scalability of the ISIS environment while still allowing an adequate degree of client performance and functionality. Attempting to increase the clients stream playback may result in unexpected results for the client but should not impact the ISIS system.*

⚠ *DNxHD might result in skipped video frames during a heavy system load. To prevent this, you should use 2 streams of video and 4 tracks of audio.*

Performance Characteristics

You should experience no functional difference between working with Pro Tools or Media Station|PT attached to an ISIS system or working with Pro Tools attached to local storage. However, due to the architectural differences between ISIS and local storage, some subtle differences may be noticeable.

User Interface and Graphics

The Pro Tools workstation is tasked in a completely different manner when Pro Tools is recording or playing from ISIS storage. For this reason, the update speed of the display and the responsiveness of the Pro Tools user interface might differ somewhat when compared to using local storage. When using ISIS storage, the Pro Tools workstation might periodically be interrupted by sporadic bursts of communication with the System Director. This can cause the display to not refresh smoothly. These periodic, brief interruptions in display updating are most prevalent during long recording sessions or while playing back large sessions. These interruptions do not necessarily indicate that a problem exists and do not affect audio playback. Except for these interruptions or when tasks are in progress, display and user interface performance should be comparable to using local storage. For example:

- Counters, meters, scrolling, and other animated user interface elements are visually smooth in operation.
- Faders and panners move smoothly when automated.
- Mouse control of faders and panners is immediate and responsive. This includes TDM plug-ins. RTAS and AudioSuite plug-ins, because of their host-based implementation, might provide less-than-smooth operation under certain circumstances.
- Scrubbing and auditioning (in the Regions List and Import Audio dialog) is immediate when you press the mouse button.
- Editing during playback is smooth. Mouse control of editing tools is immediate and responsive.

Opening Files

Pro Tools periodically opens and closes files (for example, to buffer them for playback). When using ISIS storage, the file open process is somewhat slower than with local storage. This is most noticeable when first opening an existing session. It can also result in sluggish Pro Tools performance with very large sessions.

Sharing Files

Sharing Session Files

To avoid machine conflicts among multiple users and avoid general performance problems, no two Pro Tools clients should open the same session at the same time. Only one Pro Tools client should have a particular session open at any given time.

Sharing Video Files

Pro Tools clients with Avid video peripherals (such as Avid Mojo, Avid Mojo SDI, and AVoption|V10) can share JFIF and MXF video files with other ISIS clients. Pro Tools cannot destructively modify video files.

Sharing Audio Files

Pro Tools clients can share audio files in an allocation group with other ISIS clients. When working with shared audio files, it is recommended that you use the Duplicate command to make a copies before applying any destructive edits.

MacDrive 6.0 Damages Avid Unity Volumes

⚠ *If you have a Windows XP client attached to Avid Unity volumes, do not install MacDrive 6.0. This application will prompt to update the Unity volumes whenever they are mounted. Allowing MacDrive 6.0 to update them will result in complete data loss for the Unity volumes, and they will need to be rebuilt.*

MacDrive 6.0.6 and the Pro Tools Mac HFS+ Disk Support Option both support recognition of Avid Unity systems and do not cause the issues mentioned above.

Destructive Editing

The following Pro Tools features can destructively modify audio files:

- Pencil Tool
- "Destructive" AudioSuite
- Destructive Record
- Compact Selected
- DestructivePunch Record
- DigiBase metadata entry/editing

When working with shared audio files, it is recommended that you use the Duplicate command to substitute copies before applying any destructive edits. This avoids the problem of modifying a file referenced by another session.

To substitute a copy of a shared file:

1 In Pro Tools, select the region you want to copy in the Edit window.

2 Choose Edit > Duplicate.

MXF and OMF Files

Pro Tools treats all MXF and OMF media that are both created by Avid and stored on Unity shared storage as read-only. Consequently, destructive editing tools cannot be used to modify MXF and OMF media files. However, you can delete or overwrite MXF and OMF files.

Because Pro Tools creates both MXF/OMF and non-MXF/OMF media files, these destructive editing tools can be used on non-MXF/OMF media created by Pro Tools. When you are working in an ISIS system, you should always create a copy of an audio file before applying a destructive change.

Use the Duplicate or Consolidate commands in Pro Tools to make non-OMF or non-MXF copies of audio files for destructive editing.

chapter 4

Avid Unity ISIS Workflows for Pro Tools

This chapter covers workflows for using an Avid editing application (such as Media Composer or Media Station|PT) and Pro Tools to exchange AAF sequences using ISIS shared storage, as follows:

- Exporting audio and video from Media Composer 2.5 and higher
- Exporting audio and video using a version of Media Composer prior to 2.5
- Importing audio and video into Pro Tools
- Exporting audio from Pro Tools for Avid editing applications
- Importing audio into an Avid application from Pro Tools
- Synchronizing audio with an Avid sequence

Exporting Audio and Video from Media Composer 2.5 and Higher

To export sequences from Avid applications 2.5 and higher for import into Pro Tools, you can choose from the following methods:

- Using the Send To templates to export an AAF sequence
- Manually exporting an AAF sequence
- Exporting an AAF sequence directly to an Interplay server (Media Composer 2.6 or higher and Avid Interplay system required)
- Checking a sequence into Avid Interplay for Pro Tools (Media Composer 2.6 or higher and Avid Interplay system required)

Using the Send To Templates to Export an AAF Sequence from Media Composer 2.5 and Higher

The Send To Templates option lets you create one AAF sequence that references audio and video files used in the sequence, and save it to the volume selected in your Avid Preferences.

To use the Send To Digidesign Pro Tools templates:

1 Select a sequence in a bin.

2 Choose File > Send To > Digidesign Pro Tools on Unity, then choose one of the following options:

Link to Audio and Video Creates an AAF sequence that links to existing audio and video wherever possible and only creates new media files for effects that have not been rendered. This is the fastest and most storage-efficient way to export a sequence.

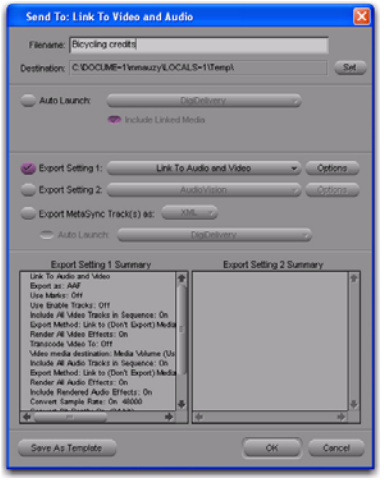
Choose this option for a scenario in which Pro Tools will link to the same media files as the current Avid sequence. Use this setting if the media files are currently stored on volumes that are suitable for Pro Tools media playback.

QuickTime–Link to Audio Creates an AAF sequence that links to existing audio, and creates a new QuickTime movie.

Choose this option when exporting a sequence for a Pro Tools system that does not have an Avid video peripheral attached.

VIdeo Mixdown–Link to Audio Creates an AAF sequence that links to existing audio and includes editing metadata as well as a video mixdown in the video format defined by Media Creation settings. When imported into Pro Tools, the video mixdown and metadata are displayed in two separate video tracks on the Timeline.

Choose this option for any scenario in which Pro Tools will link to the same media files as the current Avid sequence.



Send To dialog (LInk to Audio and Video options shown)

3 If you want to view or change export settings, click the Options button, and then make any changes. If you make any changes, you can use the Save As Template button to create a new template.

This workflow assumes that you use the default values. This means that you are exporting using the Project sample rate, audio file format, and sample bit depth.

4 Click Set.

5 Navigate to the location where you want the AAF sequence to reside.

6 Click OK.

The Avid application exports the files to the destination volume. If the Avid application has to transcode video files to a new resolution, render effects or perform audio file conversions, a new sequence appears in the bin with the name *filename*.Export.01, and a new master clip appears in the bin with the name *filename*.new.01.

Manually Exporting an AAF Sequence from Media Composer 2.5 and Higher

Manually exporting an AAF sequence from an Avid editing application involves more steps than using the Send To templates, but it provides more flexibility.

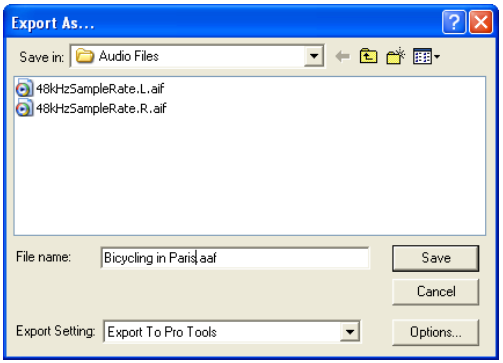
⚠ *You will need to render all video effects before manually exporting the sequence.*

Once all effects have been rendered, export the sequence as an AAF sequence.

To manually export an AAF sequence:

1 Select the sequence in the bin.

2 Select File > Export.



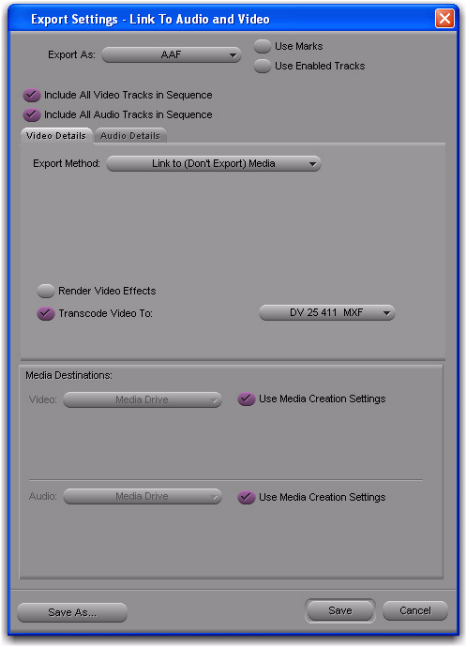
Export As dialog

3 Type a name and select a location for the exported sequence.

4 Select Export to Pro Tools from the Export Settings menu at the bottom of the Export As dialog.

5 Click the Options button to open the Export to Pro Tools Settings dialog. Verify the settings:

- For Export As, select AAF.
- Select the Include All Video Tracks in Sequence option. When the sequence is imported into Pro Tools. All of the video tracks will be "flattened" so that the imported sequence shows only a single video stream.



Export Settings – Export To Pro Tools dialog, Video Details tab

6 In the Video Details tab, select one of the following from the Export Method pop-up menu:

Link to (Don't Export) Media The Pro Tools session will link to the same video files as the current Avid sequence. Use this setting if the video files are currently stored on a volume suitable for Pro Tools video playback.

Copy All Media New complete video files will be created on the designated volume.

Consolidate Media Similar to Copy All Media, but only the parts of the video clips which are actually used in the Timeline are copied. Use this setting to copy the video files to a volume suitable for Pro Tools video playback.

Video Mixdown The exported AAF sequence will reference a video mixdown. This setting lets you have a choice of whether to export the video mixdown alone or the video mixdown along with additional video track edits. The choice depends largely on the version of Pro Tools to which you are exporting. Pro Tools 7.2 and higher can show the video mixdown alongside video edits; in this case, you should select both the video mixdown and the video edits. For versions of Pro Tools prior to 7.2, you should export the video mixdown by itself.

The following settings may also appear under the Video Details tab, depending on the selected export method:

Media Destinations Choose where to store copied video files.

Handle Length Extends the beginning and end of the consolidated file by the specified number of frames. This lets you trim edits later, though the sequence would need to be re-edited in the Avid application.

Render Video Effects Always select Render Video Effects. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered manually before exporting the sequence.

Transcode Video To Use this only if you need to change the video resolution. Pro Tools supports most SD resolutions supported by Avid, and even supports mixed resolutions in the Pro Tools Timeline, so in most cases there is no need to spend extra time transcoding the video. However, if you have video of a resolution which is not currently supported by Pro Tools, use this setting to transcode it to a supported resolution.

If your Pro Tools system is running on a slower computer, you may be able to reduce some of the CPU load in Pro Tools by transcoding the video to 1:1 on export. 1:1 video is uncompressed, and consequently it does not need to be decompressed before playing back. However, 1:1 video requires significant amounts of storage space.

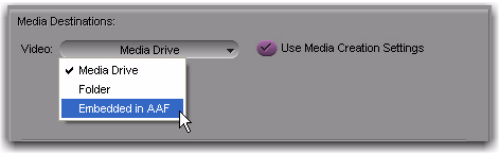
While new video files are typically stored in the OMFI MediaFiles folder (for OMF media) or the Avid MediaFiles folder (for MXF media), some workflows let you choose a different target destination for video in the Media Destination section of the Video Details tab, as follows:

Media Drive This option exports media to the OMFI MediaFiles folder or Avid MediaFiles folder on a connected storage drive. Select the Use Media Creation Settings option to use the default settings, or deselect that option to choose a media drive from the pop-up menu.

Folder This option exports video media to a specific folder. Select the Use Same Folder as AAF File option to export the video media into the same folder you designated for exporting the AAF sequence, or deselect this option to select a specific folder location for the media.

Embedded in AAF This option embeds the video media in the AAF sequence that is exported from the Avid application.

⚠ *Pro Tools cannot play video that is embedded in an AAF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*



Media Destination section of the Video Details tab

7 Click the Audio Details tab, and select one of the following from the Export Method pop-up menu:

Link to (Don't Export) Media The Pro Tools session will link to the same audio files as the current Avid sequence. Use this setting if the audio files are currently stored on a volume suitable for Pro Tools audio playback.

Copy Media New complete audio files will be created on the designated volume.

Consolidate Media Similar to Copy All Media, but only the parts of the audio which are actually used in the Timeline are copied. Use this setting to copy the audio files to a volume suitable for Pro Tools audio playback.

The following settings may also appear under the Audio Details tab, depending on the selected export method:

Render All Audio Effects Select the Render All Audio Effects option so that all audio effects are rendered before export. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered before exporting the sequence.

Include Rendered Audio Effects Select the Include Rendered Audio Effects option. Otherwise, the exported sequence will include the original audio files without any AudioSuite effects from the original sequence—even if those effects were previously rendered.

Convert Audio Sample Rate/Bit Depth/File Format Select Project for any of these, and the current Audio Project Setting will be used.

While new audio files are typically stored in the OMFI MediaFiles folder (for OMF media) or the Avid MediaFiles folder (for MXF media), some workflows let you choose a different target destination for audio in the Media Destination section of the Audio Details tab, as follows:

Media Drive This option exports audio media to the OMFI or Avid MediaFiles folder on connected storage. Select the Use Media Creation Settings option to use the default settings, or deselect that option to choose a media drive from the pop-up menu.

Folder This option exports audio media to a specific folder. Select the Use Same Folder as AAF File option to export the media into the same folder you designated for exporting the AAF sequence, or deselect this option to select a specific folder location for the media.

Embedded in AAF This option embeds the audio media in the AAF sequence that is exported from the Avid application. Unlike embedded video, Pro Tools can import and play audio which is embedded in an AAF sequence. Embedding audio within the AAF sequence makes file management much simpler because there is only one file to move—the sequence. There is a limit of 2 GB for embedded AAF.

⚠ *Pro Tools cannot play video that is embedded in an AAF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*

8 Click Save or Save As in the Export Settings dialog:

- Click Save to use the specified settings whenever Export to Pro Tools is selected from the Export Settings menu. These settings will also be used when choosing any of the options located at File > Send To > Digidesign Pro Tools to Unity.
- Click Save As to save these settings as a preset with a different name. These settings can then be recalled in the Export dialog. If you click Save As instead of Save, the Export to Pro Tools settings will not be changed.

9 Click Save in the Export As dialog. (The Export Settings cannot be saved until you have selected a target drive for both audio and video.)

When the export is complete, you are ready to import the file into Pro Tools.

For more information on opening and importing AAF sequences in Pro Tools, see "Importing Audio and Video into Pro Tools" on page 55. For more information on the Import Session dialog, see the Pro Tools Reference Guide.

To export only part of a sequence:

1 Choose Clip > New Sequence to create a new sequence.

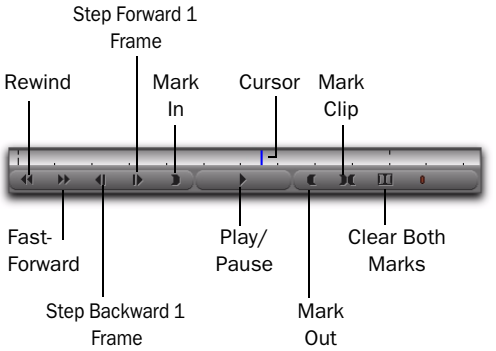
2 In the bin, name the sequence and drag it to the Record Monitor.

Avid Media Composer main window

3 Drag your original sequence to the Source Monitor.

4 Use the controls underneath the Source Monitor to locate the first frame of the portion of the clip that you want to edit into the sequence:

- To begin playing the clip, click Play (or press the Spacebar). Click Play or press the Spacebar again to Pause.
- To move to the beginning of the clip, click Rewind (or press the Home key).
- To move to the end of the clip, click Fast-Forward (or press the End key).
- To nudge by frame, click Step Forward 1 Frame or Step Backward 1 Frame (or press the Left/Right Arrow keys).
- To scrub, click and drag the cursor beneath the Source Monitor. (Enable the Caps Lock to hear audio while scrubbing.)



Source Monitor controls

5 Click Mark In to mark the *In point* (the first frame of the selected portion of the clip) at the current position of the cursor.

6 Using the same controls, locate the last frame of the portion of the clip that you want to edit into the sequence.

7 Click Mark Out to mark the *Out point* (the last frame of the selected portion of the clip) at the current position of the cursor.

You can also select the entire clip by clicking Mark Clip.

8 Click the Record Monitor to select the empty sequence, then press the Home key to move the cursor to the beginning of the sequence.

9 Click the Overwrite or Splice-In button. The selected portion of old sequence is edited into the empty sequence in the Record Monitor.

Overwrite and Splice-In buttons

10 Follow the preceding steps for exporting the new sequence (see "Manually Exporting an AAF Sequence from Media Composer 2.5 and Higher" on page 41).

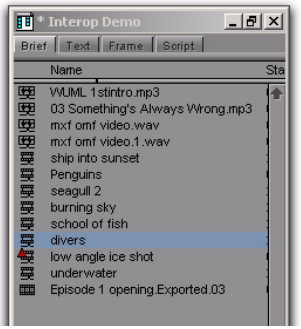
Checking In a Sequence to Interplay for Pro Tools

(Media Composer 2.6 or Higher with Avid Interplay System Only)

This section describes how to use an Avid application (such as Media Composer 2.6 or higher) to check in a sequence to Interplay for Pro Tools.

To check in a sequence to Interplay for Pro Tools:

1 In the Avid application, navigate to the bin containing the sequence you want to export.



Bin containing the sequence to export

2 Do one of the following:

- Select the sequence, and choose File > Check In to Interplay for Pro Tools.

– or –

- Right-click the sequence, and choose Check In to Interplay for Pro Tools.

If you have previously set the Editor Export Settings for Pro Tools for the folder, the Pro Tools Video Mixdown dialog appears.

Video Mix dialog

See the Pro Tools Avid Interplay Guide for detailed information.

3 Select one of the following options:

New Video Mixdown Includes a video mixdown in the exported sequence using the resolution set in the Project Type pop-up menu of the project window's Format tab. Select this option if you are working on an HD project. No video effects will be rendered in the project.

Link to Existing Video Media Use this option when effects have either been rendered or are unnecessary for working in Pro Tools. (Ensure that linked video can be played from the Pro Tools system.) With this option, the Avid application:

- Does not render any effects.
- Determines whether the current resolution matches the Transcode resolution in the Editor Export Settings for Pro Tools plug-in in the Interplay Administrator. Depending on whether the settings match, one of the following occurs:
  - If the settings either match or have not been created for the check-in folder, the system creates a sequence that links to the existing media and does not create a video mixdown or render any video effects.
  - If the settings do not match, the system transcodes the sequence according to the setting in the Export Settings for Pro Tools plug-in and links the sequence to this new media. The system also renders (or re-renders) all video effects to match the transcode resolution. The application overrides the "Link To" option in order to guarantee that you have access to a resolution supported by Pro Tools.

4 Click OK to check in the sequence to Interplay for Pro Tools.

After Checking In a Sequence to Interplay for Pro Tools

The system exports the sequence from the Avid application, and then checks in the sequence to Interplay.

If the Interplay folder containing the exported sequence has been configured with video and audio settings defined in the Editor Export Settings for Pro Tools plug-in, those settings are applied to the sequence. (These settings can apply to either the entire database or to one or more folders, depending on how they are configured.)

When you use an Avid application to check in a sequence to Interplay for Pro Tools, the system chooses a destination folder in the Interplay database based on the current Interplay view settings, with the default destination folder as follows:

Projects*project_name**bin_name*

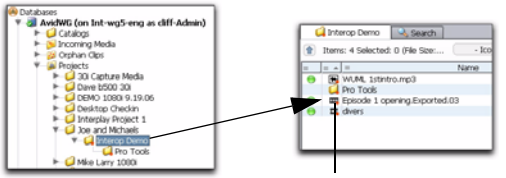
If your check-in destination folder is a folder for which settings have not been defined, the system displays the Pro Tools Export Settings dialog so you can specify the settings.

Pro Tools Export Settings dialog

Exported Files in Interplay

If this is the first time the you have checked in a sequence to Interplay for Pro Tools for this project, the system performs the following operations:

- Checks in the Avid sequence to the *bin_name* folder.
- Creates a Pro Tools folder within the *bin_name* folder.
- Checks in the files for the Pro Tools editor to the Pro Tools folder.
- Checks in a Pro Tools sequence to the Pro Tools folder.

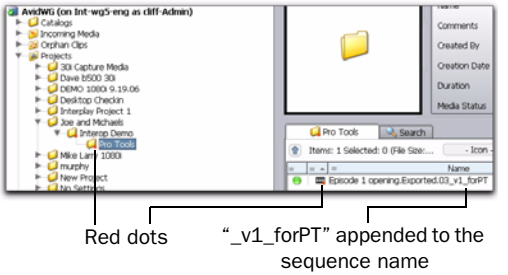


The name matches the name in the Avid application bin

Location of the Avid sequence and its associated Pro Tools folder

The first time the sequence is exported, the system appends the text "_v1_forPT" to the sequence name in the Pro Tools folder. Each subsequent time the sequence is exported, it uses the text "_v2_forPT," "_v3_forPT," and so on.

The following illustration shows the contents of the Pro Tools folder after the first export.



Contents of Pro Tools folder (left pane) and sequence listed in that directory (right pane)

The red dots in the illustration indicate that the system has placed a reservation on the files to prevent unauthorized deletion for a fixed period of time. For more information, see the Avid Interplay Access User's Guide.

Exporting Audio and Video using a Version of Media Composer Prior to 2.5

To export sequences from versions of Avid applications (such as Media Composer) prior to 2.5 for import into Pro Tools, you can choose from the following methods:

- Using the Send To templates to export an AAF sequence
- Manually exporting an AAF sequence
- Creating a video mixdown

For details on exporting audio and video using Media Composer 2.5 and higher, see "Exporting Audio and Video from Media Composer 2.5 and Higher" on page 39.

Using the Send To Templates to Export an AAF Using Versions of Media Composer Prior to 2.5

The Send To Templates option lets you create one metadata AAF sequence that references audio and video files used in the sequence, and save it to the volume selected in your Avid Preferences.

To use the Send To Digidesign Pro Tools templates:

1 Select a sequence in a bin.

AAF exports ignore in and out marks, but QuickTime exports do not. The default templates that create QuickTime movies automatically deselect the "Use in and out marks" option.

2 Choose File > Send To > Digidesign Pro Tools, then choose one of the following options:

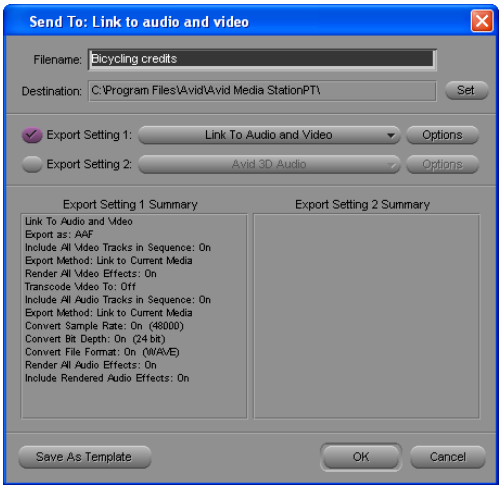
Link to Audio and Video Creates a sequence which links to existing audio and video wherever possible and only creates new media files for effects that have not been rendered.

Choose this option for a single-user scenario in which Pro Tools will link to the same media files as the current Avid sequence. Use this setting if the media files are currently stored on volumes that are suitable for Pro Tools media playback and recording.

Consolidate-Link Audio and Video Exports only the portion of the audio and video files that are actually used in the edited sequence. One sequence file is created, along with a new file for each clip in the timeline. This is similar to the Consolidate command in Pro Tools. New files are created in the formats specified in the Media Creation and Audio Project Settings dialogs.

Consolidating media will place new files on drives specified in those dialogs. New video files will be stored in the OMFI MediaFiles folder (for OMF media) or the Avid MediaFiles folder (for MXF media). You should be certain that the drives to which you are exporting currently have no media in those folders.

Choose this option for a multi-user scenario in which the Pro Tools editor only needs access to the material in the sequence and is likely working on a different computer or volume.



Send To Link to Audio and Video dialog

3 If you want to view or change export settings, click the Options button, and then make any changes (such as switching from the default AAF to the OMF format). If you make any changes, you can use the Save As Template button to create a new template.

This workflow assumes that you use the default values. This means that you are exporting using the Project sample rate, audio file format, and sample bit depth.

4 Click Set.

5 Navigate to the location where you want the AAF sequence to reside.

6 Click OK.

The Avid application exports the files to the destination folder. If the Avid application has to transcode video files to a new resolution, render effects or perform audio file conversions, a new sequence appears in the bin with the name *filename*.Export.01, and a new audio master clip appears in the bin with the name *filename*.new.01.

Manually Exporting an AAF Sequence Using Versions of Media Composer Prior to 2.5

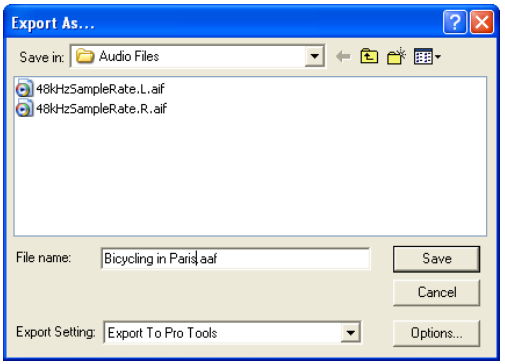
Once all effects have been rendered, export the sequence as an AAF sequence.

You will need to render all video effects before manually exporting the sequence.

To manually export an AAF sequence:

1 Select the sequence in the bin.

2 Select File > Export.



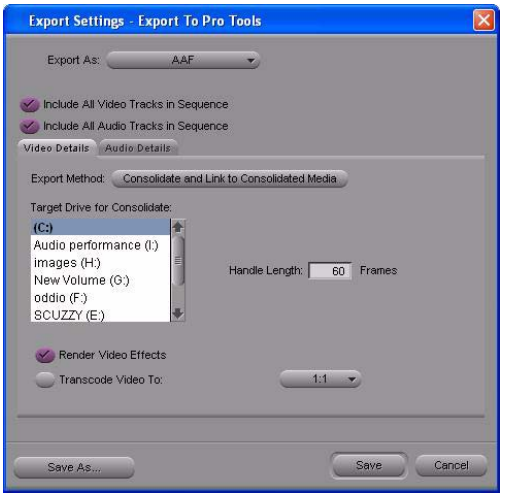
Export As dialog

3 Type a name and select a location for the exported sequence.

4 Select Export to Pro Tools from the Export Settings menu at the bottom of the Export As dialog.

5 Click the Options button to open the Export to Pro Tools Settings dialog. Verify the settings:

- For Export As, select AAF.
- Select the Include All Video Tracks in Sequence option. When the sequence is imported into Pro Tools. All of the video tracks will be "flattened" so that the imported sequence shows only a single video stream.
- Deselect the Include All Audio Tracks in Sequence option if you do not want to export any audio.



Export Settings – Export To Pro Tools dialog, Video Details tab

6 In the Video Details tab, select one of the following from the Export Method pop-up menu:

Link to Current Media The Pro Tools session will link to the same video files as the current Avid sequence.

Choose this setting in a single-user scenario in which the video files are currently stored on a volume suitable for Pro Tools video playback (such as an ISIS volume).

Copy Media and Link to Copied Media New complete video files will be created on the designated volume.

Choose this option in a multi-user scenario in which the Pro Tools user is receiving the sequence for the first time and will copy the media to their respective Workspace.

Consolidate and Link to Consolidated Media Similar to Copy Media, but only the parts of the video clips which are actually used in the Timeline are copied.

Choose this setting in a multi-user scenario in which the Pro Tools user may already be working on media from the sequence, and will copy the changed material to their respective Workspace.

⚠ *Do not use either Embed Media or Consolidate and Embed Media for video files. Pro Tools does not support embedded video files in AAF sequences.*

The following settings may also appear under the Video Details tab, depending on the selected export method:

Destination Folder Choose where to store copied video files.

Target Drive for Consolidate Choose the target drive for consolidated video. New video files will be stored on that drive in the OMFI MediaFiles folder (for OMF media) or the Avid MediaFiles folder (for MXF media). You should be certain that the drives to which you are exporting cur-

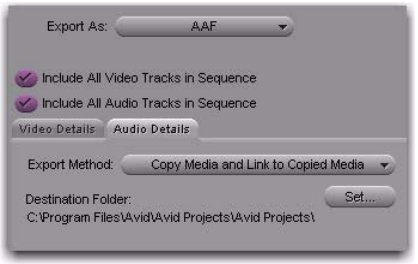
rently have no media in those folders. You cannot save these export settings until you have highlighted a target volume. Striped drives appear in bold type.

Handle Length Extends the beginning and end of the consolidated file by the specified number of frames. This lets you trim edits later, though the sequence would need to be re-edited in the Avid application.

Render Video Effects Always select Render Video Effects. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered manually before exporting the sequence.

Transcode Video To Use this only if you need to change the video resolution. Pro Tools with an Avid video peripheral supports all resolutions supported by Avid applications, so in most cases this will not be necessary.

If your Pro Tools system is running on a slower computer, you may be able to reduce some of the CPU load in Pro Tools by transcoding the video to 1:1 on export. 1:1 video is uncompressed, and consequently it does not need to be decompressed before playing back. However, 1:1 video requires significant amounts of storage space.



Export Settings dialog, Audio Details tab

7 Click the Audio Details tab, and select one of the following from the Export Method pop-up menu:

Link to Current Media The Pro Tools session will link to the same audio files as the current Avid sequence. Choose this setting in a single-user scenario in which the audio files are currently stored on a volume suitable for Pro Tools audio playback (such as an ISIS volume).

Copy Media and Link to Copied Media New complete audio files will be created on the designated volume.

Choose this option in a multi-user scenario in which the Pro Tools user is receiving the sequence for the first time and will copy the media to their respective Workspace.

Consolidate and Link to Consolidated Media Similar to Copy Media, but only the parts of the audio files which are actually used in the Timeline are copied.

Choose this setting in a multi-user scenario in which the Pro Tools user may already be working on media from the sequence, and will copy the changed material to their respective Workspace.

Do not use either Embed Media or Consolidate and Embed Media for video media. Pro Tools does not import the video from AAF sequences containing embedded video.

The following settings may also appear under the Audio Details tab, depending on the selected export method:

Render All Audio Effects Select the Render All Audio Effects option so that all audio effects are rendered before export. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered manually before exporting the sequence.

Include Rendered Audio Effects Select the Include Rendered Audio Effects option. Otherwise, the exported sequence will include the original audio files without any AudioSuite effects from the original sequence—even if those effects were previously rendered.

Convert Audio Sample Rate/Bit Depth/File Format Select Project for any of these, and the current Audio Project Setting will be used.

8 Click Save or Save As in the Export Settings dialog:

- Click Save to use the specified settings whenever Export to Pro Tools is selected from the Export Settings menu. These settings will also be used when choosing File > Send To > Digidesign Pro Tools.
- Click Save As to save these settings as a preset with a different name. These settings can then be recalled in the Export dialog. If you click Save As instead of Save, the Export to Pro Tools settings will not be changed.

9 Click Save in the Export As dialog. (The Export Settings cannot be saved until you have selected a target drive for both audio and video.)

When the export is complete, you are ready to import the file into Pro Tools.

For more information on opening and importing AAF sequences in Pro Tools, see "Importing Audio and Video into Pro Tools" on page 55. For more information on the Import Session dialog, see the Pro Tools Reference Guide.

To export only part of a sequence:

1 Choose Clip > New Sequence to create a new sequence.

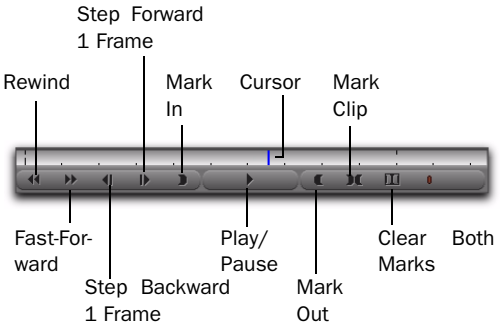
2 In the bin, name the sequence and drag it to the Record Monitor.

Avid Media Composer main window

3 Drag your original sequence to the Source Monitor.

4 Use the controls underneath the Source Monitor to locate the first frame of the portion of the clip that you want to edit into the sequence:

- To begin playing the clip, click Play (or press the Spacebar). Click Play or press the Spacebar again to Pause.
- To move to the beginning of the clip, click Rewind (or press the Home key).
- To move to the end of the clip, click Fast-Forward (or press the End key).
- To nudge by frame, click Step Forward 1 Frame or Step Backward 1 Frame (or press the Left/Right Arrow keys).
- To scrub, click and drag the cursor beneath the Source Monitor. (Enable the Caps Lock to hear audio while scrubbing.)



Source Monitor controls

5 Click Mark In to mark the *In point* (the first frame of the selected portion of the clip) at the current position of the cursor.

6 Using the same controls, locate the last frame of the portion of the clip that you want to edit into the sequence.

7 Click Mark Out to mark the *Out point* (the last frame of the selected portion of the clip) at the current position of the cursor.

You can also select the entire clip by clicking Mark Clip.

8 Click the Record Monitor to select the empty sequence, then press the Home key to move the cursor to the beginning of the sequence.

9 Click the Overwrite or Splice-In button. The selected portion of old sequence is edited into the empty sequence in the Record Monitor.

Overwrite and Splice-In buttons

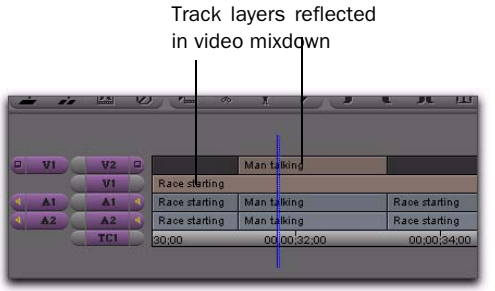
Follow the preceding steps for exporting the new sequence.

Creating a Video Mixdown Using Versions of Media Composer Prior to 2.5

Video mixdown combines a sequence (or portion of a sequence) into one video file that reflects all edits and effects processing. Creating a video mixdown is a manual process prior to Media Composer 2.5 and higher. With Media Composer 2.5 and higher, an option exists in AAF export to create a video mixdown automatically.

You can mix down multiple video tracks or a single track. For mixdowns of multiple tracks, the selected track and all tracks under it are combined into one file that always reflects the topmost visible track.

Creating a video mixdown is analogous to bouncing to disk in Pro Tools, except that the video mixdown creates only video and no audio.



Layered video tracks in a video mixdown

To create a video mixdown:

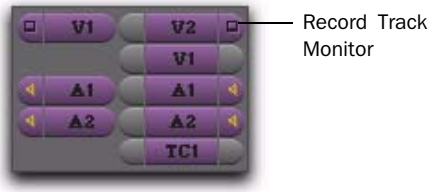
1 Open the bin containing the sequence you want to mix down.

2 Drag the sequence to the Record Monitor. The tracks comprising the sequence display in the Timeline.

Record and Source Monitors

3 Do one of the following:

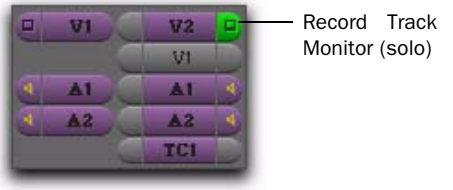
- To combine multiple video tracks into the mixdown, select a video track, then click the Record Track Monitor button next to the track. Video tracks above the selected track will not be included in the mixdown.



Record Track monitor

– or –

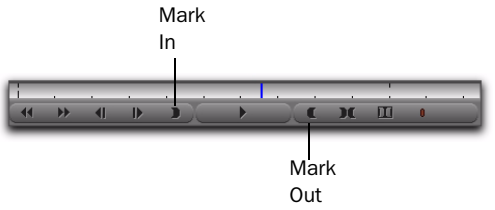
- To select only one video track for mixdown, Control-click (Windows) or Command-click (Macintosh) the Record Track Monitor button. The button will turn green.



Record Track monitor

4 On the Timeline or in the Record Monitor, drag the cursor to the position in the sequence at which you wish the mixdown to start. (Press the Home key to move the cursor to the beginning of the Timeline.)

5 Under the Record Monitor, click the Mark In button to mark the In point at the beginning of the sequence.



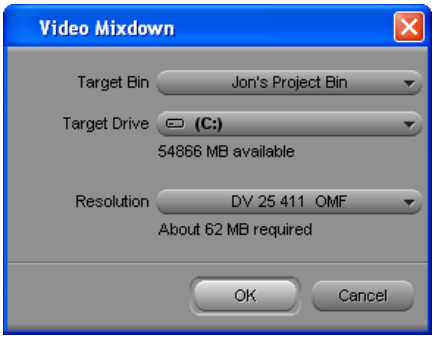
Record Monitor controls

6 Drag the cursor to the position at which you want the sequence to end. (Press the End key to move the cursor to the end of the sequence.)

7 Click Mark Out button to set the Out point.

The portion of the sequence you have selected will be mixed down.

8 Choose Special > Video Mixdown.



Video Mixdown dialog

9 From the Target bin pop-up menu, choose the bin where you wish to store the master clip of the video mixdown.

10 From the Target Drive pop-up menu, choose the volume where you wish to save the video mixdown. On the volume you select, MXF files are stored in the Avid MediaFiles folder, and OMF files are stored in the OMFI MediaFiles folder.

11 Choose a file resolution for the video mixdown from the Resolution pop-up menu.

12 Click OK.

A progress bar displays as the Avid application saves the video mix to the location and resolutions you have specified.

Importing Audio and Video into Pro Tools

To import sequences exported from Avid applications into Pro Tools, you can choose from the following methods:

- Importing an AAF sequence as a Pro Tools session
- Importing an AAF sequence into an existing Pro Tools session
- Importing a video mixdown into Pro Tools
- Importing an AAF sequence into Pro Tools from Interplay (Pro Tools Avid Interplay Option and an Avid Interplay system required)

Importing an AAF Sequence as a Pro Tools Session

The easiest way of using Pro Tools to edit a sequence exported from an Avid application is to open it as a new session.

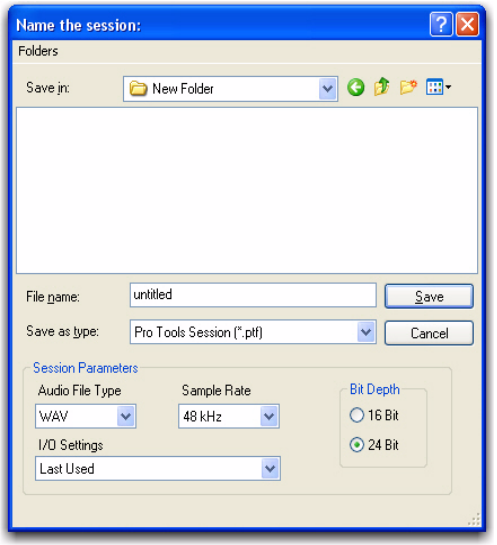
To open an AAF sequence as a Pro Tools session:

1 Launch Pro Tools.

2 Choose File > Open Session.

3 In the Open Session dialog, navigate to the AAF sequence you want to import.

4 Click Open.



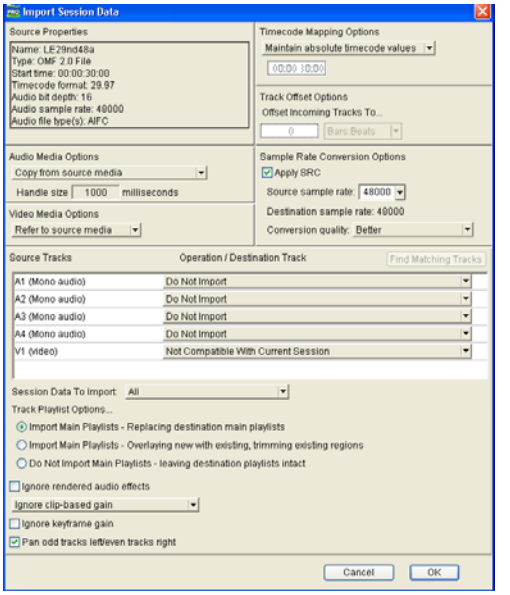
Pro Tools New Session dialog

5 Name your session in the File Name field.

6 Select the I/O Settings to use for the session. Several pre-configured I/O Settings are included with your system, or you can select a custom I/O Setting that you have created.

7 Click Save.

The Import Session Data dialog appears.



Import Session Data dialog

Pro Tools lets you open and import AAF sequences that reference audio files with mixed sample rates and/or bit depths. Audio files will be converted to the highest sample rate and bit depth of the files being imported (for new sessions) or to the current sample rate and/or bit depth (for existing sessions).

8 From the Audio Media Options pop-up menu, choose how you want to import audio files into Pro Tools:

- If the audio files reside on a volume from which Pro Tools can play back audio, select Link to Source Media (Where Possible).
- If the audio files reside on a volume from which Pro Tools cannot play back audio, select Copy from Source Media to copy all audio to the Pro Tools audio storage or Consolidate from Source Media to copy only the portions of the audio used in the Pro Tools Timeline to the Pro Tools audio storage.

9 From the Video Media Options pop-up menu, choose how you want to import video files into Pro Tools:

- If the video files reside on a volume from which Pro Tools can play back video, select Link to Source Media.
- If the video files reside on a volume from which Pro Tools cannot play back video, select Copy from Source Media to copy all video to the Pro Tools video storage.

10 Change other parameters as desired. For more information, see "Exporting Audio from Pro Tools for Avid Editing Applications" on page 63.

11 Click OK.

Pro Tools will create a new Audio Files folder, a Fade Files folder, a Video Files folder, a cache.wfm file, and a session file at the designated locations. This session will match the audio file type, sample rate, and bit depth of the audio in the AAF sequence you selected.

Importing an AAF Sequence into an Existing Session

You can import an AAF sequence containing audio and video media into an existing Pro Tools session.

⚠ *Any video imported into Pro Tools must be the same frame rate as video already placed in the Timeline.*

To open and import audio and/or video tracks from an AAF sequence:

1 Open an existing Pro Tools session.

2 Choose File > Import > Session Data, and choose the AAF sequence that you wish to import.

⚠ *Pro Tools cannot play video that is embedded in an AAF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*

💡 *You can also open an AAF sequence by dragging it from any location on your computer or the DigiBase browser to the Pro Tools Timeline.*

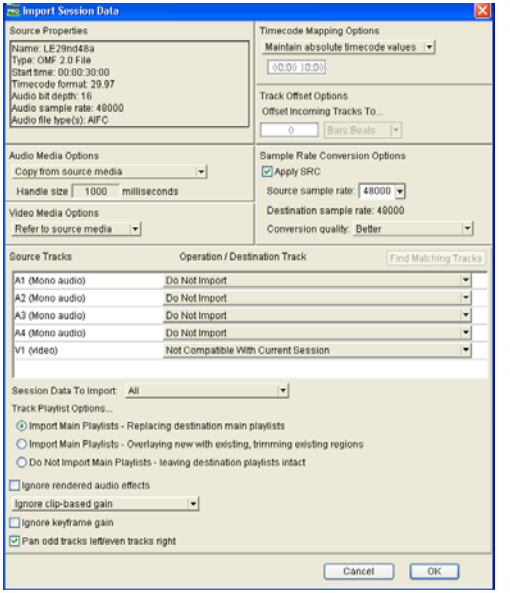
3 From the Audio Media Options pop-up menu, choose how you want to import audio files into Pro Tools:

- If the audio files reside on a volume from which Pro Tools can play back audio, select Link to Source Media (Where Possible).
- If the audio files reside on a volume from which Pro Tools cannot play back audio, select Copy from Source Media to copy all audio to the Pro Tools audio storage or Consolidate from Source Media to copy only the audio used in the session to the Pro Tools audio storage.

4 From the Video Media Options pop-up menu, choose how you want to import video files into Pro Tools:

- If the video files reside on a volume from which Pro Tools can play back video, select Link to Source Media.
- If the video files reside on a volume from which Pro Tools cannot play back video, select Copy from Source Media to copy all video to the Pro Tools video storage.

5 In the Import Session Data dialog, deselect any source tracks that you do *not* want to be imported. (If you are importing Session Data from AAF sequences, all tracks are selected by default. If you are importing tracks from a Pro Tools session, no tracks are selected by default.)



Import Session Data dialog

6 Click OK.

> ⚠ *If there are any errors or region name truncations, a dialog will appear asking you if you want a detailed report of the changes. Click Yes and choose where you want to save the log.*

7 If your audio or video source media is on a volume that is not suitable for playback (shown as a Transfer volume in the Workspace browser) or if your ISIS workspace privileges are read-only, Pro Tools displays a dialog that guides you to copy the media to a volume designated for Playback or Record. (Click Yes.)

Pro Tools imports the audio and video media to the Timeline. Audio tracks with mixed sample rates and/or bit depth are automatically converted to the same sample rate and bit depth as the session.

Now you are ready to edit the audio files in Pro Tools.

Drive Selection When Importing Session Data

When using the Import Session Data dialog to import audio files with Copy or Consolidate Source selected in the Audio Media Options pop-up menu, all new audio files are stored on the volumes designated for their respective target tracks in the Disk Allocation dialog.

Selecting a Unity Workspace When Importing Session Data

When using the Import Session Data dialog to import audio files with Copy or Consolidate Source selected in the Audio Media Options pop-up menu, all new audio files are stored on the volumes designated for their respective target tracks in the Disk Allocation dialog.

When importing video files (such as from a CD), the video files are copied by default to the same volume that holds the session file. To have the files copied to another volume, open the Workspace browser, and select T in the volume designation column for all volumes except the volume where you want the video to be stored. To ensure that the files are not copied to the root level of the volume, create a folder with the session name on the desired Unity workspace, then create a folder within that session folder named Video Files.

Importing an Avid Video Mixdown into Pro Tools

(Versions of Media Composer Prior to 2.5 Only)

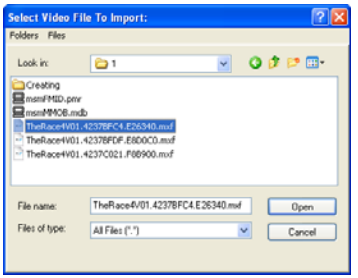
You can import an OMF or MXF video file into Pro Tools. You might do this, for example, to import a video mixdown created in the Avid application.

To import Avid video into Pro Tools:

1 Create a new Pro Tools session or open an existing session.

2 Choose File > Import > Video.

3 In the Select Video File to Import dialog, locate the video file in the Avid MediaFiles folder (for MXF media) or OMFI MediaFiles folder (for OMF media) stored on your video storage.



Select Video Files to Import dialog

4 Click Open.

Pro Tools imports the video file into the Video track.

Importing a Sequence into Pro Tools from Interplay

(Avid Interplay System Only)

This section describes how to locate a sequence that has been exported to the Interplay database from the Avid application and import it into Pro Tools. This section assumes that you have already configured the Pro Tools Import settings in the Interplay Administration tool.

For more information, see the Pro Tools Avid Interplay Guide.

If you do not establish Pro Tools Import Settings before importing the sequence into Pro Tools, you can select the appropriate values in the Import Session Data dialog during the import process.

When importing a sequence from Interplay into Pro Tools, you can import into a new or existing session.

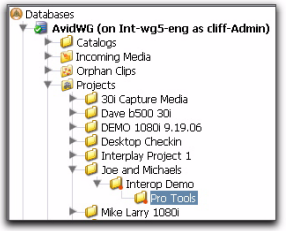
Importing a Sequence into Pro Tools from within Interplay

To check out the sequence and import it into Pro Tools from within Avid Interplay Access:

1 If you want to import the sequence into an existing session in Pro Tools, launch Pro Tools and open that session.

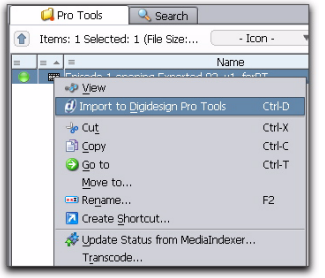
2 Start Avid Interplay Access.

3 Navigate to the Pro Tools folder containing the sequence you want to import.



Navigating to the sequence

4 Right-click the sequence, and choose Import to Digidesign Pro Tools.



Importing a sequence into Pro Tools from within Access

Importing a Sequence from Interplay from within Pro Tools

This section describes how to use Pro Tools to import a sequence from Interplay. If you have not yet opened Interplay Access and specified a server to connect to, you must do that before performing this procedure.

See "Importing a Sequence into Pro Tools from within Interplay" on page 60 for detailed information.

To check out the sequence and import it into Pro Tools from within Pro Tools:

1 Start Pro Tools.

2 If you want to import the sequence into an existing session, open that session.

3 Choose File > Import > Sequence from Avid Interplay.

The Interplay Engine Browser appears.

Interplay Engine Browser

4 In the Interplay Engine Browser, expand the Interplay database by clicking the plus sign (+) next to it.

5 Expand the root folder of the database—usually titled *AvidWG* or a variation thereof—by clicking the plus sign (+) next to its name.

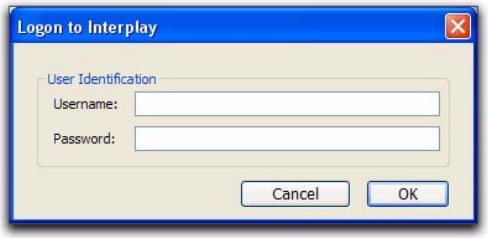
The folder structure matches the structure in Interplay Access.

6 Expand the Projects folder.

7 Expand the project containing the sequence you want to check out and import to Pro Tools.

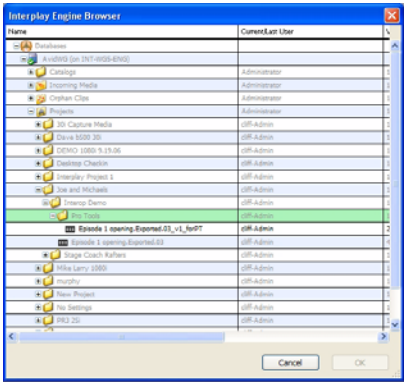
The Logon to Interplay dialog appears.

8 Enter your username and password, and click OK.



Logon to Interplay dialog

9 In the Interplay Engine Browser, locate and select the sequence that you want to import.

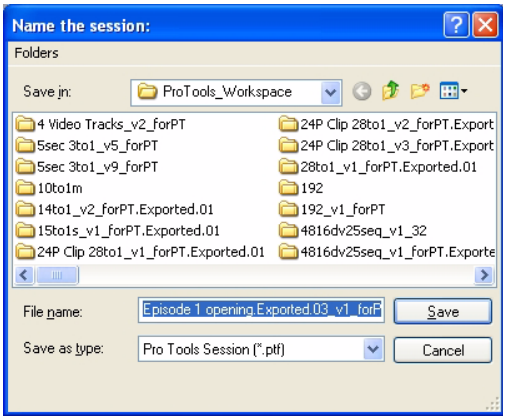


Interplay Engine Browser (folder structure displayed)

Files that appear in greyed out text out are not available for import into Pro Tools.

10 Click OK.

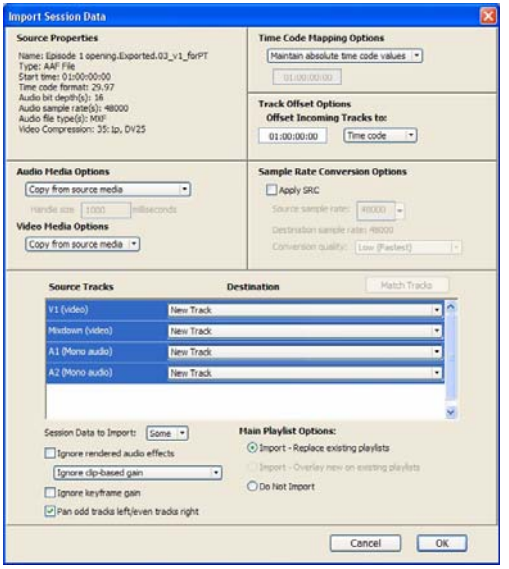
11 If the Name the Session dialog appears, navigate to the appropriate location either on local storage or on a dedicated Unity workspace, and click Save.



Name the Session dialog

This dialog does not appear if you are importing a sequence into an existing session.

12 If the Pro Tools Import Session Data dialog appears, select the appropriate options and click OK.



Import Session Data dialog

This dialog does not appear if you configured the Pro Tools Import Settings in the Avid Interplay Administrator. Pro Tools automatically uses those settings to import the sequence. (See the Pro Tools Avid Interplay Guide for detailed information on configuring Pro Tools Import Settings, and the DigiTranslator Guide for detailed information on setting options in this dialog.)

Pro Tools imports the sequence, copies any media (if the settings require copying), and displays the imported sequence within the Pro Tools session.

If the sequence was linked to media files on unmounted volumes, the system provides a warning and asks you to mount those volumes before you proceed with copying or linking to media.

Sequence imported from Interplay into the Timeline

Editing Audio in Pro Tools

Audio files created in the Avid application are either OMF or MXF files, which Pro Tools cannot edit destructively.

When you use Pro Tools to perform a destructive edit (such as using AudioSuite processing to replace the original sound), it creates a new copy of the file and leaves the original untouched.

See the Pro Tools Reference Guide for detailed information on editing audio files in Pro Tools.

Exporting Audio from Pro Tools for Avid Editing Applications

In Pro Tools, you can export audio tracks for use in the Avid application using any of the following commands:

- Exporting selected tracks as an AAF sequence
- Bouncing to disk
- Exporting selected regions as files
- Exporting edited audio tracks to Interplay from Pro Tools (Avid Interplay system required)

For other export methods, see the *Pro Tools Reference Guide*.

Exporting Tracks as an AAF Sequences

Use Export Selected Tracks as OMF/AAF to export individual tracks or an entire Pro Tools session in AAF format.

Tracks are exported in their entirety and time selections are ignored.

Volume and pan automation is not retained on export if Quantize Edits to Frame Boundaries is enabled (Avid Compatibility Mode).

The Movie track cannot be exported to AAF or OMF from Pro Tools.

To export selected audio tracks from Pro Tools as an AAF sequence:

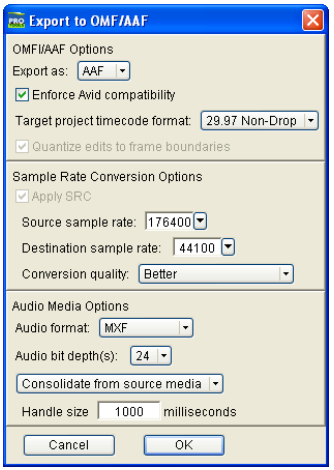
1 In Pro Tools, select the tracks you want to export in the Pro Tools session by Shift-clicking the names of each track.

2 Choose File > Export > Selected Tracks as OMF/AAF.

3 Under OMF/AAF Options, choose AAF (or OMF) from the Export As pop-up menu.

4 Select Enforce Avid Compatibility.

Enforce Avid Compatibility creates frame-accurate edits, wraps the files as OMFI (unless you choose MXF), and limits the sample rate options to 44.1 or 48 kHz. Dithering without noise shaping will be applied to files being exported from 24-bit to 16-bit.



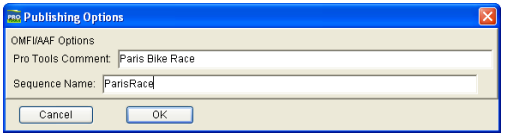
Pro Tools Export to OMF/AAF dialog

An OMF sequence cannot reference MXF media files. In the Export Selected Tracks as OMF/AAF dialog, MXF is only available when AAF is selected in the Export As pop-up menu

5 Ensure that the Target Project Time Code Format pop-up menu displays the correct frame rate for the Avid project.

6 Click OK.

7 In the Publishing Options dialog, type the Pro Tools Comment and Sequence Name.

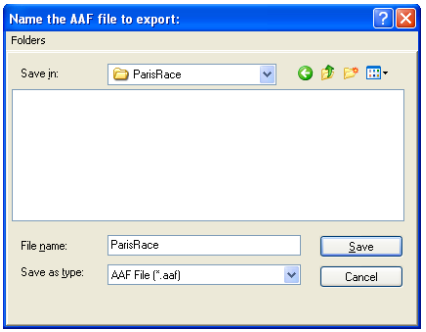


Pro Tools Publishing Options dialog

8 Click OK.

Pro Tools will create a sequence with the name you supply. (The Pro Tools comment appears in the Avid bin in a Pro Tools Comment column.)

9 In the Name the AAF/OMF File to Export dialog, navigate to a folder where you can easily locate the Pro Tools composition when it is time to import it into the Avid application.



Pro Tools Name the AAF File to Export dialog (OMF dialog not shown)

Do not save the sequence to either the OMFI Media Files folder or the Avid Media Files folder.

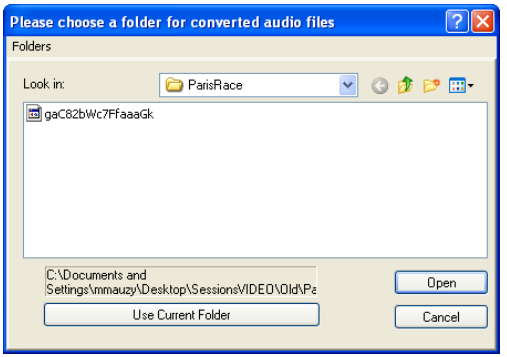
10 Click Save.

11 In the Please Choose a Folder for Converted Audio Files dialog, do one of the following:

- If you are exporting to the same storage that Avid application will be accessing, navigate to the OMFI MediaFiles folder (AIFF or WAV files) or the Avid MediaFiles folder (MXF files).

– or –

- If you are exporting to a location that is not directly accessible to the Avid application, navigate to a location where you can easily find the audio files when you need to copy them over to the Avid computer.



Navigating to the OMFI MediaFiles folder (OMF media) or Avid MediaFiles folder (AAF media)

12 Click Use Current Folder (Windows) or Choose (Macintosh).

Pro Tools exports the following files:

- The AAF sequence is saved to the folder you designated.
- If you exported audio files directly to the Avid application video storage, related media is saved to the appropriate volume and folder (OMFI MediaFiles or Avid MediaFiles) accessible to the Avid application.

13 Do one of the following:

- If you are using the Avid application on the same computer as Pro Tools and are ready to use it to import the files you just exported from the Avid application, exit Pro Tools.
- If you were unable to save the audio portion of the AAF sequence directly to storage that is accessible from the Avid application, copy the audio files from their saved location to the OMFI MediaFiles folder (for AIFF or WAV media) or Avid MediaFiles folder (for MXF media) on a drive connected to your Avid system.

Exporting Audio Files Using Bounce to Disk

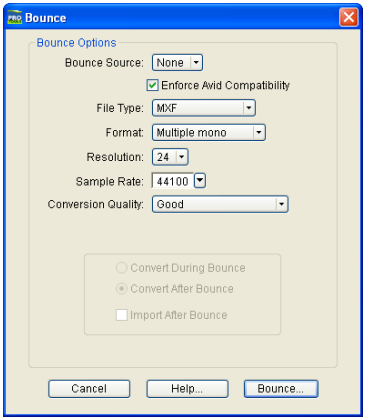
Use the Bounce to Disk command to create premixed files of the current Pro Tools session. This does not export all of the individual files on the Timeline, but it does guarantee that the mix you hear in the Avid application will be identical to the mix you hear in Pro Tools, including all panning, effects and automation.

To export audio files using Bounce to Disk:

1 In Pro Tools, finalize the mix.

2 Select the time range of the session that you want to export. (All audible tracks in that time range will be included in the bounce, whether they are selected or not.)

3 Choose File > Bounce to > Disk.



Bounce to Disk dialog

4 Select the Enforce Avid Compatibility option.

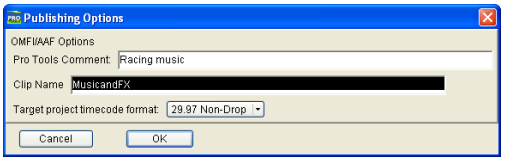
Enforce Avid Compatibility creates frame-accurate edits, wraps the files as OMFI (unless you choose MXF), and limits the sample rate options to 44.1 or 48 kHz. Dithering without noise shaping will be applied to files being bounced from 24-bit to 16-bit.

5 Choose a file type from the File Type pop-up menu.

6 Click Bounce.

7 In the Publishing Options dialog, type the Pro Tools Comment and Clip Name.

If you selected more than one region for export, the Clip Name field will not be available and the names of the regions will be used for the exported files.



Publishing Options dialog

8 Choose the Target Project Time Code Format.

9 Click OK.

10 In the Save Bounce As dialog, navigate to the volume you will use for audio playback in the Avid application.

- For MXF audio files, ensure the file is saved to the Avid MediaFiles folder.
- For all other audio files, ensure the file is saved to the OMFI MediaFiles folder.

11 Click Save.

All audible audio in the selection will be exported to two multi-mono audio files.

Exporting Edited Audio Tracks to Interplay from Pro Tools

(Media Composer 2.6 or Higher and Avid Interplay Systems Only)

After you edit the audio material from the sequence, you can export the audio tracks back into the sequence in Interplay.

⚠ *It is recommended that you provide completed audio stems rather than audio tracks with edits.*

To export audio tracks from Pro Tools, and then check in audio tracks to Interplay:

1 In Pro Tools, select the tracks that you want to export into the Pro Tools sequence on Interplay.

2 Select File > Export > Selected Tracks to Sequence in Avid Interplay.

3 In the Export Comment dialog, type a comment and click OK.

Export Comment dialog

4 In the Replace or Add Selected Tracks dialog, select a method for laying back edited audio material into the Pro Tools sequence residing on the Interplay server:

Replace with Selected Tracks Replaces the old audio tracks in the Pro Tools sequence with the edited audio tracks. Select this option if you do not want to preserve the original audio in the sequence.

Add Selected Tracks Adds the edited audio tracks to the Pro Tools sequence on the Interplay database. Select this option if you want to preserve the original audio in the sequence.

⚠ *When adding selected tracks, ensure that the total number of tracks in the sequence residing on the Interplay server does not exceed the total allowed number of tracks for an Avid application—24 audio and 24 video tracks.*

Replace or Add Selected Tracks dialog

5 Click OK.

A confirmation message box appears.

6 Click OK.

The sequence in the Avid Interplay database is now ready to be checked out and imported by the Avid application.

Importing Audio into an Avid Application from Pro Tools

Once you have exported audio files or sequences from Pro Tools, you may import them into a bin in the Avid application.

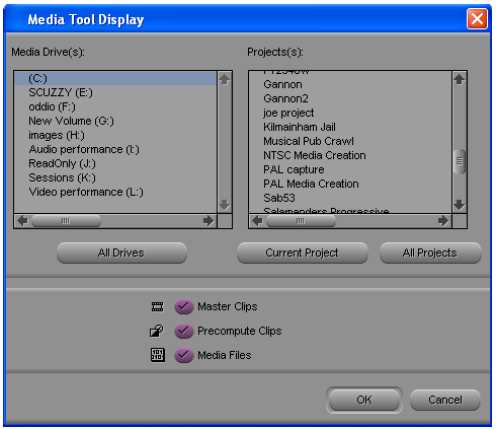
Importing Audio Files into a Bin

To import audio files into the Avid application:

1 Launch the Avid application, and open the desired project.

2 Open the bin into which you wish to import the audio files from Pro Tools.

3 Choose Tools > Media Tool.



Media Tool Display

The Media Tool Display lets you scan all media files in both the OMFI MediaFiles and Avid MediaFiles folders.

4 Select the Master Clips and the Media Clip options.

5 Under the Media Drives list, do one of the following:

- Select the drives that contain media files for your project.

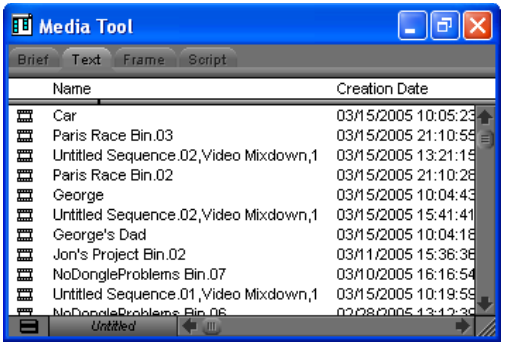
– or –

- Click All Drives to select all applicable drives for scanning.

6 Under the Projects list, click All Projects to scan all available media files.

7 Click OK.

The Media Tool window appears, displaying the media you selected.



Media Tool

8 To sort the files in the bin by a specific column (such as Name or Creation Date), right-click the column and select "Sort on Column, Ascending" or "Sort on Column, Descending."

9 In the Media Tool window, select the Stereo (or multi-mono) master clip exported from Pro Tools.

10 Drag the master clip to the bin.

11 Close the Media Tool.

12 To preview the contents of the imported audio clip, double-click the audio clip in the bin. The audio clip will open in a pop-up monitor.

Importing an AAF Audio Sequence into a Bin

To import an AAF sequence into the Avid application:

1 Launch the Avid application, and open the desired project.

2 Select the bin where you would like to import the sequence.

3 Choose File > Import.

4 In the Select Files to Import dialog, navigate to the sequence you wish to import, and ensure the correct drive is selected for audio.

5 Click Open. The new audio sequence appears in the selected bin, along with all related audio clips.

One of the following occurs:

- If you imported an AAF sequence containing embedded audio, the Avid application automatically copies the embedded audio to either the Avid MediaFiles folder or the OMFI MediaFiles folder.
- If you imported an AAF sequence that references audio—and the Avid editing application does not have direct access to the audio—you must copy the audio files from the Pro Tools audio storage to either the Avid Media Files folder or the OMFI MediaFiles folder.

6 To hear the contents of the imported audio sequence, double-click the audio sequence in the bin. The audio sequence opens in a pop-up monitor or in the Timeline (depending on your Bin settings). Press the Spacebar to play.

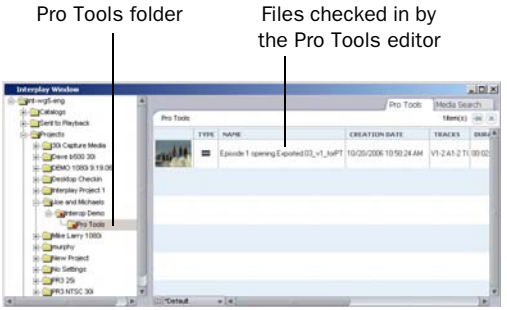
Importing Pro Tools Audio Files Back into the Avid Editing Application

(Media Composer 2.6 or Higher and Avid Interplay Systems Only)

After you have checked out the completed audio stems to the Pro Tools sequence on the Interplay server, you must import the sequence back into the Avid application.

To import the sequence back into the Avid editing application:

1 In the Avid application, open the Interplay Window and navigate to the location of the checked in Pro Tools sequence.

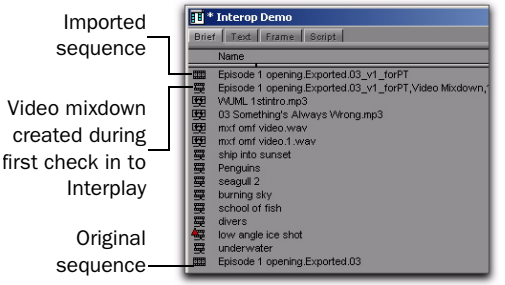


Interplay browser

Depending on edits made in Pro Tools, you might see several audio files with names containing the prefix "Sample accurate edit." For more information, see "Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing" on page 70.

2 Drag the sequence into the bin.

The Avid application checks out the sequence and imports it and its related files into the bin.



Bin after import

3 You can now do one of the following:

- Add the new audio tracks into the original sequence.

– or –

- Work with the imported sequence.

In this example, the Pro Tools audio tracks are added into the original sequence.

If you plan to check in the sequence to Interplay for Pro Tools again, it is simpler to import the audio into the original sequence. Every time you export a sequence for Pro Tools, the system appends the text "_vx_forPT," where x is the number of times the sequence has been exported. It can become confusing if several similar text strings are appended to the name.

4 Load the imported sequence into the Source monitor.

5 Add the audio into the original sequence using standard editing techniques.

For more information, see the documentation (PDF or Help file) for your Avid editing application.

The following illustration shows the audio tracks cut into the original sequence. In this example, the original tracks are overwritten.

Sequence in the Avid Timeline after overwrite

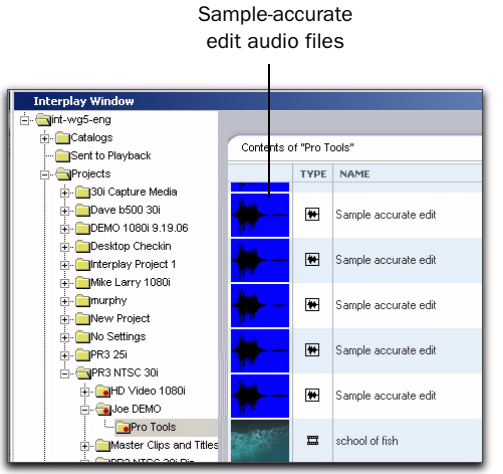
6 Now you can use the Avid application to make any adjustments to the sequence and do the following:

- Create a digital cut.
- Perform a Send to Playout operation.
- Check in the sequence to Interplay for Pro Tools if the Pro Tools editor needs to work on the sequence again.

Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing

After a sequence has been exported back to Interplay from Pro Tools, a number of additional media files appear in the Interplay Window and in the bin. Some have names containing the prefix *Sample accurate edit*. These are the additional media files that Pro Tools creates to make sure that the Avid application receives frame-accurate audio. Sample-accurate edit media files are visible if you zoom in on portions of the imported audio in the Timeline.

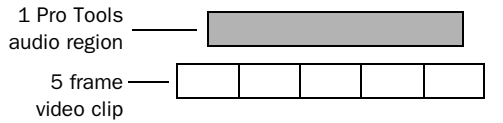
The following illustration shows Sample accurate edit files in the Interplay Window.



Sample-accurate edits in the Interplay window

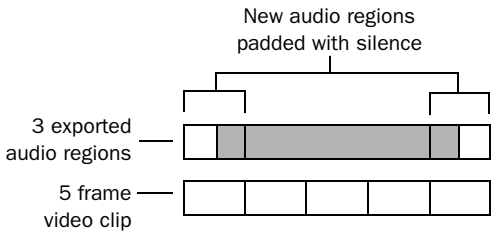
Avid video editing applications edit with frame accuracy. This means that when using an Avid application to work on a 30-fps project, you can edit at 30 different locations for every one second of video. Pro Tools edits with sample rate accuracy. In a 48 kHz session, there are potentially 48,000 locations to edit for every second of audio.

When Pro Tools exports a sequence, it must ensure that the audio media files line up on frame boundaries. To do this, it might have to split an existing audio region into three regions. For example, the following illustration shows a 5-frame video clip and a corresponding audio region. In Pro Tools, the audio regions might not line up on video frame boundaries.



The original audio clip does not line up on video frame boundaries

In order to export frame accurate audio regions, Pro Tools splits the audio media on frame boundaries and fills any gaps with silence. The following illustration shows the resulting audio regions that are exported to the Avid application.



Exported audio regions line up on video frame boundaries

To cut down on the number of sample accurate edit files, the Pro Tools editor can perform a Bounce to disk for each track (or a bus-record to an audio track) rather than exporting tracks that contain all of the audio edits.

Synchronizing Audio with an Avid Sequence

Once you have imported an audio file or sequence from Pro Tools into a bin in the Avid application, you can synchronize it with video. This is especially useful for verifying sync with the original video sequence, then laying audio and video back to tape or creating a digital movie with your final mix.

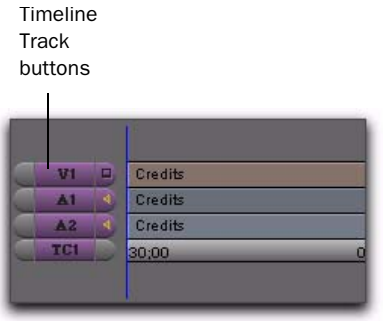
To synchronize an edited audio file or sequence with the original video sequence:

1 Ensure that the audio exported from Pro Tools is now residing in a bin within your current project.

2 Drag the original sequence to the Record Monitor to see all elements in the Timeline.

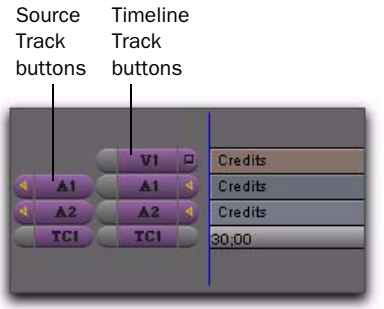
Record and Source Monitors

The original sequence displays in the Timeline.



Original sequence displays in Timeline

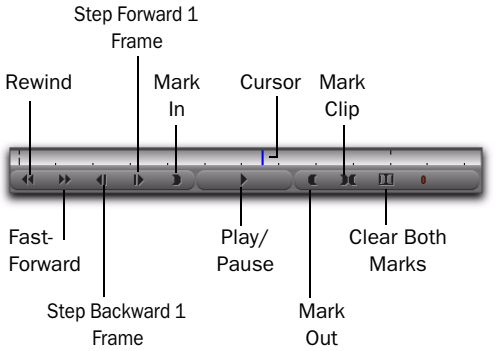
3 Drag the imported audio clip or sequence from the bin to the Source Monitor. New Source Track buttons for the source appear to the left of the Track buttons for the Timeline.



New track buttons

4 Use the controls underneath the Source Monitor to locate the first frame of the portion of the clip that you want to edit into the sequence:

- To begin playing the clip, click Play (or press the Spacebar). Click Play or press the Spacebar again to Pause.
- To move to the beginning of the clip, click Rewind (or press the Home key).
- To move to the end of the clip, click Fast-Forward (or press the End key).
- To nudge by frame, click Step Forward 1 Frame or Step Backward 1 Frame (or press the Left/Right Arrow keys).
- To scrub, click and drag the cursor beneath the Source Monitor. (Enable the Caps Lock to hear audio while scrubbing.)



Source Monitor controls

Enable the Caps Lock to hear audio while scrubbing.

5 Click Mark In to mark the *In point* (the first frame of the selected portion) at the current position of the cursor.

6 Using the same controls, locate the last frame of the portion of the source that you want to edit into the sequence.

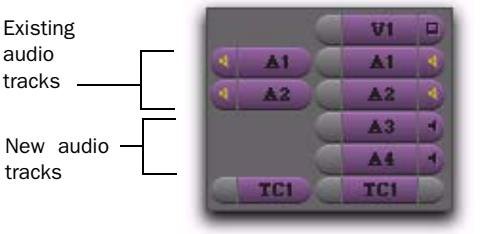
7 Click Mark Out to mark the *Out point* (the last frame of the selected portion) at the current position of the cursor.

You can also select the entire source clip or sequence by clicking Mark Clip.

The portion of the audio source between the In point and the Out point is now selected for editing into the sequence.

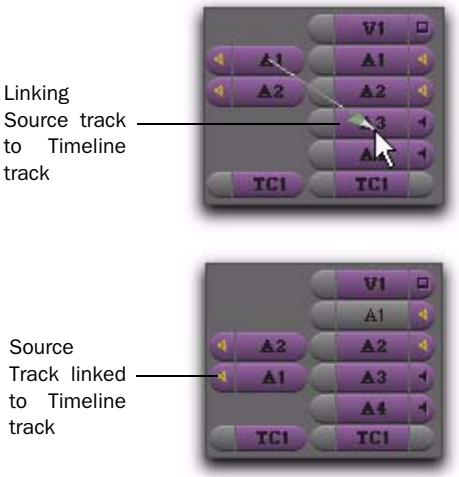
You can also click the Clear Both Marks button to clear the In and Out points.

8 Choose Clip > New Audio Track to add audio tracks to the sequence. (This leaves any original audio tracks in place to compare synchronization.) Add a new track for each channel of audio you want to add.



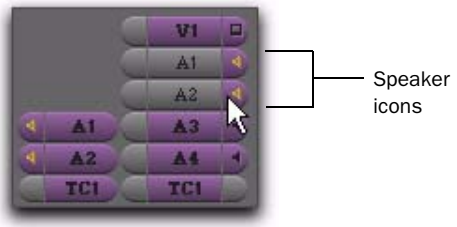
Audio tracks in the Timeline

9 If necessary, click on the Source track buttons and drag to the desired new Timeline track buttons so that the new media will be placed on the correct tracks in the Timeline.



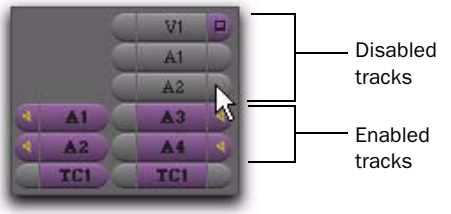
Aligning Source audio tracks with Timeline audio tracks

10 If the original audio tracks still display yellow speaker icons, click the speaker icons in the Track Enable button to mute them. The speaker icons for the original tracks will disappear, and the speaker icons should appear yellow in the new tracks, indicating that they will be heard.



Clicking the speaker icons to disable Source tracks

11 If the video track and the original audio tracks are enabled (gray), disable them and enable the new audio tracks (purple), by clicking the correct audio track buttons (A1–A24). This will ensure that only the new tracks will be affected by any editing commands.

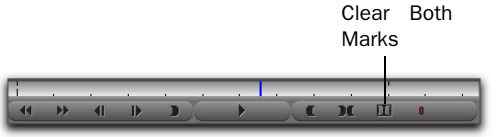


New audio tracks in Timeline

12 In the Timeline, place the cursor at the position where you want to lay the new audio into the Timeline. (Press Home to move to the beginning of the sequence.)

Timeline containing two empty audio tracks

13 Under the Record Monitor, click the Clear Both Marks button to remove any In and Out points (if present).



Record Monitor controls

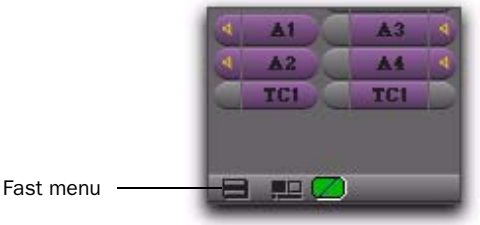
14 Click the Overwrite button to lay the audio into the Timeline.

Overwrite and Splice-In buttons

The audio selected between the In and Out points in the Source Monitor is laid into the Timeline at the position of the cursor.

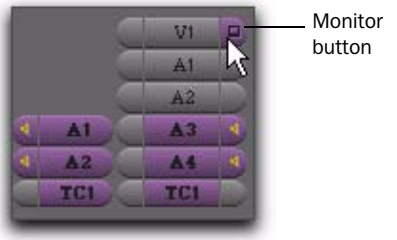
Timeline with new audio sequence

15 If you want to display audio waveforms in the Timeline, click the Fast Menu (located on the lower left hand corner of the Timeline), and choose Audio Data > Energy Plot. Ensure that the new audio tracks appear synchronized with the originals.



Fast menu

16 If necessary, make sure the video track's Monitor button is enabled (purple). This will allow you to view the video portion of the sequence in the Record Monitor (or client monitor).



Enabling the Video track

17 Press the Home key to move the cursor to the beginning of the sequence and press the Spacebar to play the sequence. The new audio should be synchronized with the video.

After verifying the new audio sequence is correctly synchronized, you can do either of the following:

- Lay audio and video back to tape using Digital Cut
- Export your sequence as a QuickTime, MPEG, or other format digital movie.

appendix a

PCI and PCIe Slot Configurations for Pro Tools and Media Station|PT with Avid Unity ISIS Systems

This appendix covers PCI and PCIe slot configurations for Pro Tools|HD systems with Avid video peripherals on Windows. These slot configurations have been qualified and recommended by Digidesign.

Summary of Recommended Windows PCI and PCIe Slot Configurations

This section summarizes qualified and recommended PCI and PCIe slot configurations for the following Windows machines with or without expansion chassis, for both local and shared storage:

- HP xw8400
- HP xw9300

HP xw8400

HP xw8400 with host cards (shared storage)

- Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS

See "Shared Storage Slot Configuration for HP xw8400 with Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS" on page 76.

HP xw8400 with expansion chassis (shared storage)

- Digidesign Expansion|HD PCI Chassis with PCI host card, using Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS
- Digidesign Expansion|HD PCI Chassis with PCIe host card, using Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS

See "Shared Storage Configurations for HP xw8400 with Expansion Chassis" on page 77.

HP xw9300

HP xw9300 with host cards (shared storage)

- Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS

See “Shared Storage Slot Configurations for HP xw9300 with Host Cards Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS” on page 79.

HP xw9300 with expansion chassis (shared storage)

- Digidesign Expansion|HD PCI Chassis, using Intel Pro/1000 MT Dual Port Server Adapter PCI card to 4 GB Unity MediaNetwork

See “Shared Storage Slot Configurations for HP xw9300 and Digidesign Expansion|HD Chassis with Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS” on page 80.

HP xw8400 PCI and PCIe Slot Configurations

This section describes qualified and recommended PCI and PCIe slot configurations for HP xw8400.

Shared Storage Slot Configuration for HP xw8400 with Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS

The following table describes qualified and recommended PCI and PCIe slot configurations for an HP xw8400 system connected to shared storage via the Intel Pro/1000 MT Dual Port Server Adapter PCI host card:

Slot	Card
CPU Slot 1 (32-bit)	Do not use
CPU Slot 2 (PCIe)	Monitor card
CPU Slot 3 (PCIe)	Untested
CPU Slot 4 (PCIe)	Untested
CPU Slot 5 (133MHz PCI 64-bit)	HD Core card
CPU Slot 6 (100MHz PCI 64-bit)	Optional: HD Accel or HD Process card
CPU Slot 7 (100MHz PCI 64-bit)	Intel Pro/1000 MT Dual Port Server Adapter PCI card

Shared Storage Configurations for HP xw8400 with Expansion Chassis

This section describes qualified and recommended PCI and PCIe slot configurations for HP xw8400 systems, with the following expansion chassis and host cards connected to shared storage:

- Digidesign Expansion|HD PCI Chassis with PCI host card, using Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS
- Digidesign Expansion|HD PCI Chassis with PCIe host card, using Intel Pro/1000 MT Dual Port Server Adapter PCI host card to Unity ISIS

HP xw8400 and Digidesign Expansion|HD PCI Chassis with PCI Host Card: Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS

Slot orders in the chassis run from left (closest to the power supply) to right.

Slot	Card
CPU Slot 1 (32-bit)	Do not use
CPU Slot 2 (PCIe)	Monitor card
CPU Slot 3 (PCIe)	Untested
CPU Slot 4 (PCIe)	ATTO Celerity FC-41ES PCIe card
CPU Slot 5 (133MHz PCI 64-bit)	Digidesign Expansion|HD Host PCI card
CPU Slot 6 (100MHz PCI 64-bit)	Untested
CPU Slot 7 (100MHz PCI 64-bit)	Intel Pro/1000 MT Dual Port Server Adapter PCI card
Chassis Slot 1 (closest to power supply)	HD Core card
Chassis Slots 2–7	Optional: HD Accel or HD Process cards (6 maximum)

HP xw8400 and Digidesign Expansion|HD PCI Chassis with PCIe Host Card: Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS

Slot orders in the chassis run from left (closest to the power supply) to right.

Slot	Card
CPU Slot 1 (32-bit)	Do not use
CPU Slot 2 (PCIe)	Monitor card
CPU Slot 3 (PCIe)	Digidesign Expansion|HD Host PCIe card
CPU Slot 4 (PCIe)	Untested
CPU Slot 5 (133MHz PCI 64-bit)	Untested
CPU Slot 6 (100MHz PCI 64-bit)	Untested
CPU Slot 7 (100MHz PCI 64-bit)	Intel Pro/1000 MT Dual Port Server Adapter PCI card
Chassis Slot 1 (closest to power supply)	HD Core card
Chassis Slots 2–7	Optional: HD Accel or HD Process cards (6 maximum)

HP xw9300 PCI and PCIe Slot Configurations

This section describes qualified and recommended PCI and PCIe slot configurations for HP xw9300 computers for use with Avid Unity ISIS systems.

Shared Storage Slot Configurations for HP xw9300 with Host Cards Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS

This section describes the qualified and recommended PCI and PCIe slot configuration for an HP xw9300 system connected to shared storage via the Intel Pro/1000 MT Dual Port Server Adapter PCI host card.

Slot	Card
CPU Slot 1 (PCIe x16)	Untested
CPU Slot 2 (PCIe)	Monitor card
CPU Slot 3 (PCIe x16)	Untested
CPU Slot 4 (100MHz PCI 64-bit)	Intel Pro/1000 MT Dual Port Server Adapter PCI card
CPU Slot 5 (100MHz PCI 64-bit)	Optional: HD Accel or HD Process card
CPU Slot 6 (133MHz PCI 64-bit)	HD Core card

Shared Storage Slot Configurations for HP xw9300 and Digidesign Expansion|HD Chassis with Intel Pro/1000 MT Dual Port Server Adapter PCI Host Card to Unity ISIS

This section describes qualified and recommended PCI and PCIe slot configurations for HP xw9300 systems and the Digidesign Expansion|HD PCI Chassis, with the Intel Pro/1000 MT Dual Port Server Adapter PCI host card connected to shared storage.

Slot orders in the chassis run from left (closest to the power supply) to right.

Slot	Card
CPU Slot 1 (PCIe x16)	Untested
CPU Slot 2 (PCIe)	Monitor card
CPU Slot 3 (PCIe x16)	Untested
CPU Slot 4 (100MHz PCI 64-bit)	Intel Pro/1000 MT Dual Port Server Adapter PCI card
CPU Slot 5 (100MHz PCI 64-bit)	Untested
CPU Slot 6 (133MHz PCI 64-bit)	Expansion|HD Host PCI Card
Chassis Slot 1 (closest to power supply)	HD Core card
Chassis Slots 2–7	Optional: HD Accel or HD Process cards (6 maximum)

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