Avid Xpress® DV

Getting Started Guide

Release 1.0

for the Windows NT® Operating System

Avid

tools for storytellers™

Avid Xpress DV Getting Started Guide for the Windows NT Operating System • Part 0130-04379-01 Rev. A • February 2000

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CHAPTER 1

Setting Up Your Avid Xpress DV System

This chapter describes how to set up your Avid Xpress DV system. It consists of the following sections:

- **Check List for Setting Up Your System**
- **Turning On Your Equipment**
- **Preparing Your Drives**
- **Installing Avid Xpress DV Software**
- **Installing AvidNet Transfer Tool Software**
- **Installing EDL Manager**
- **Creating an Emergency Repair Disk**
- **Installing the Avid Xpress DV Tutorial Files**
- **Turning Off Your Equipment**

Check List for Setting Up Your System

The check list in **Table 1-1** lists the tasks you need to complete before you can use your Avid Xpress DV system.

Table 1-1 Check List for Setting Up Your System

To	See
Set up your computer hardware: computer, monitor, mouse, keyboard, and speakers	Instructions shipped with the computer
Connect your optional external drives	**Appendix A**
Install the application key and printer	**Appendix A**
Connect your camera or video deck (you can connect these after you install the software if you prefer)	**Appendix A**
Turn on your equipment	**"Turning On Your Equipment" on page 15**
Prepare your drives	**"Preparing Your Drives" on page 16**
Install Avid Xpress DV software	**"Installing Avid Xpress DV Software" on page 24**
Create an emergency repair disk	**"Creating an Emergency Repair Disk" on page 34**
Install Avid Xpress DV tutorial files (optional)	**"Installing the Avid Xpress DV Tutorial Files" on page 35**

Turning On Your Equipment

After you have connected your equipment, turn on the various components. If you have connected external drives, you need to shut down and restart your computer before the computer can detect and use the external drives.

If any part of your system fails to turn on, make sure its electrical cord is plugged snugly into an appropriate electrical outlet or power strip. For more information, see the instructions for setting up your computer hardware.

If you fail to follow the proper sequence for starting your system, you could damage your computer or storage drives.

Turn on the components in the following order:

1. **External media drives:** Your system might include one or more external media drives. Turn on the drive or drives before starting the computer. Allow 10 to 15 seconds for the drives to spin up to speed before starting your computer.
2. **Other peripheral hardware:** Turn on all other peripheral units, such as monitor and speakers. If you have connected a camera, transcoder, or deck, turn them on now.
3. **Computer:**
   a. Turn on your computer.

      The computer goes through a self-check routine, and the Windows NT startup screen appears.

   b. Press Ctrl+Alt+Delete and log on.

      The Windows NT desktop appears.

For information on your Windows NT features, such as the desktop and icons, see your Windows NT documentation.

To avoid system damage, do not disconnect or turn off the external media drives while the computer is on.

Preparing Your Drives

To use Avid Xpress DV software on a Windows NT system, you need to partition and format the drives properly. *Partitioning* divides a drive into sections, and *formatting* places a file system on each partition.

Your computer contains two internal disk drives. One drive is already partially partitioned and formatted (see **"Checking Your Internal Drives" on page 18**). This partition contains the Windows NT operating system. That's why the Windows NT operating system appears automatically when you turn on the computer.

This section includes the following information:

- **Overview of Partitioning**
- **Supported File Systems**
- **Checking Your Internal Drives**

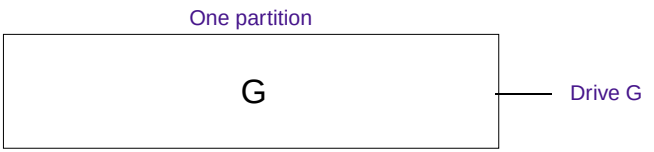
- **Creating Primary Partitions**
- **Formatting Partitions**
- **Creating a Disk Configuration Floppy Disk**
- **Testing Drives on Windows NT Systems**

Overview of Partitioning

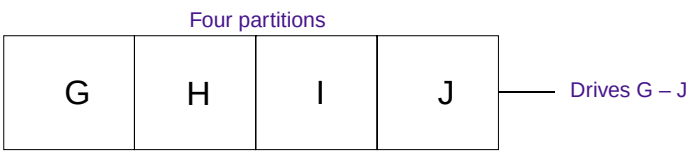
Windows NT allows you to create multiple partitions on a single physical drive as a way to manage projects and files. The following are two ways you can partition your drives.

The letters G through J used are examples only.

- You can partition your drive as one primary partition, having the partition represented by a drive letter.



- You can have up to four primary partitions per drive. Each partition is assigned a drive letter and cannot be further subdivided.



For specific recommendations for partitioning your drives, see **"Creating Primary Partitions" on page 20**.

You can also create a partition across more than one drive, which is called striping drives. You do not need to stripe drives when you use Avid Xpress DV. See the Windows NT documentation for striping information.

Supported File Systems

Windows NT supports two file systems: the File Allocation Table (FAT) and the New Technology File System (NTFS). FAT is primarily used when backward compatibility is needed on operating systems such as MS-DOS® or Windows NT. In general, FAT file systems should be limited to a 2-GB partition size to maintain this backward compatibility. NTFS affords the user security, compression, and other file recovery features. Drives employing NTFS support partitions of any size. Avid recommends that you choose NTFS when you partition your disk drives.

One of your internal disk drives has a partition (designated drive C) that contains the Windows NT operating system stored on a FAT file system. You should not reformat this partition unless you need to rebuild your system disk drive.

Checking Your Internal Drives

Your computer contains two internal disk drives. The first drive has a 2-GB partition that is formatted with a FAT file system. This partition is your *system* or *boot* drive, which is designated drive C in the factory default configuration. The remaining portion of this drive needs to be partitioned and formatted before you install Avid Xpress DV software.

The second drive is intended to be used as a media drive (see **"Media Files" on page 40**). You need to partition and format this drive also.

To check if you need to partition and format these drives:

1. Start Windows NT 4.0 and log in to an account with administrative privileges.
2. Click the Start button, point to Programs, point to Administrative Tools, and select Disk Administrator. The Disk Administrator window opens.
3. Look at Disk 0 and Disk 1.

   Your Disk 0 should look similar to Disk 0 in **Figure 1-1**. The figure shows Partition C on Disk 0, with a stripe across the top, with IBM® Preload and a FAT file system.

You should not partition and format the partition that contains the Windows NT operating system. In the factory default configuration, this partition is designated drive C, as shown in Figure 1-1.

Any remaining portion of Disk 0 or Disk 1 that shows Free Space (as shown in **Figure 1-1**) needs to be partitioned and formatted.

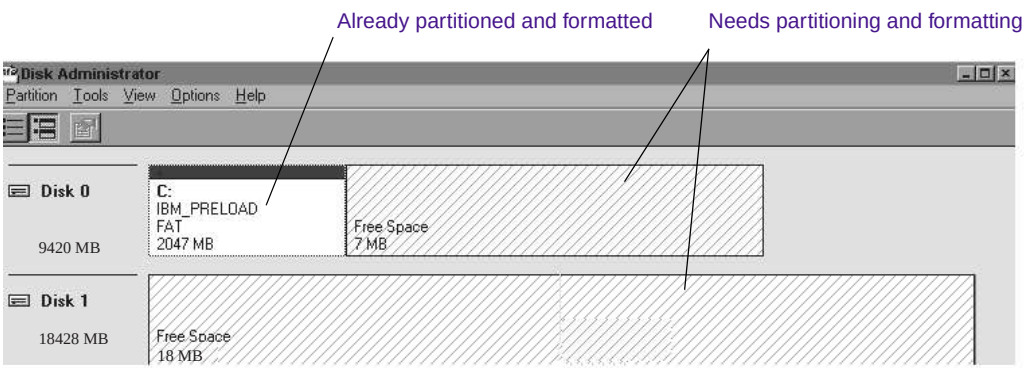


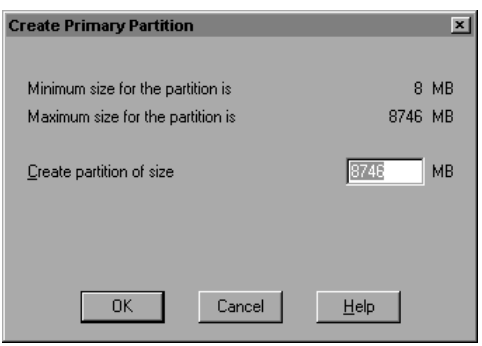
Figure 1-1 Example of Local Disks

Creating Primary Partitions

To create a primary partition:

1. Start Windows NT 4.0 and log in to an account with administrative privileges. If you do not have administrative privileges, see your system administrator to get privileges.
2. Click the Start button, point to Programs, point to Administrative Tools, and select Disk Administrator. The first Disk Administrator window opens.
3. From the Windows NT Disk Administrator, use the pointer to select the portion of the disk on which you are going to create one or more primary partitions.
4. From the Partition menu, choose Create.

   The Create Primary Partition dialog box appears.



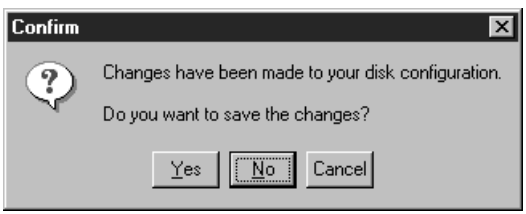
5. Choose the size of the primary partition by typing a number or by clicking the up or down arrow.

   Avid recommends creating a second partition on the first internal drive (Disk 0), using all the remaining space. Avid also recommends creating one large partition on the second internal drive (Disk 1). In both cases, use the maximum size for the partition.

If you want to create multiple partitions, you can divide the maximum size of the partition by the number of partitions (up to 4). Type that number in the Create partition of size text box.

6. Click OK to create the primary partition.
7. If you are formatting multiple partitions, repeat steps 3 through 6 to create up to four primary partitions.
8. From the Partition menu, choose Commit Changes Now.

   The first Confirm dialog box appears.



9. Click Yes.

   The following Disk Administrator dialog box appears.

10. Click OK.

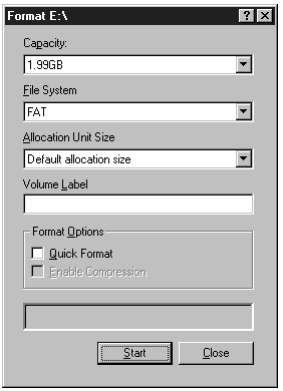
Formatting Partitions

To format the primary partitions you created:

1. From the Windows NT Disk Administrator, use the pointer to select the primary partition that you are going to format.

2. From the Tools menu, choose Format.

   The Format window opens.



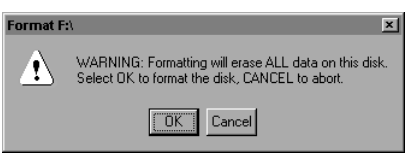
3. Choose NTFS File System.

4. Type a Volume Label Name that helps you define that partition.

   You can enter up to 14 characters.

5. Select Quick Format.
6. Click Start to begin formatting.

   The Format warning dialog box appears.



This warning refers only to the new partition, not previously formatted partitions.

7. Click OK.

   The Format Complete dialog box appears after formatting and tells you the total disk space and the total disk space available on the volume.

8. Click OK.
9. Repeat steps 1 through 8 until you have formatted all of the primary partitions you created.

Creating a Disk Configuration Floppy Disk

You should now save the new disk configuration on a floppy disk.

To create a configuration floppy disk:

1. Start Windows NT 4.0 and log in to an account with administrative privileges. If you do not have administrative privileges, see your system administrator to get privileges.
2. Click the Start button, point to Programs, point to Administrative Tools, and select Disk Administrator. The first Disk Administrator window opens.
3. Choose Configuration from the Partition menu and select Save.
4. A dialog box appears asking you to insert a floppy disk into the floppy drive.
5. Click Yes.

Store the configuration floppy disk in a safe, dry, static-free location.

Whenever you change your disk configuration, create a new configuration floppy disk.

Testing Drives on Windows NT Systems

The Windows NT operating system contains a disk-checking feature in the Properties section of each drive and a program named CHKDSK. For information about how to use this feature and program, see the Windows NT documentation.

Installing Avid Xpress DV Software

This section describes how to install the Avid Xpress DV application and its related components from the installation CD-ROM.

In order to install or remove the application software, you need to use an account with administrative privileges.

The following third-party software applications have been modified to work properly with Avid software: RealProducer G2, LSX-MPEG, ASF NetShow™, and QuickTime®. Downloading newer versions of these applications before they are supported by Avid might cause problems. Avid recommends not updating any of these applications until they are officially supported by Avid. Check the Customer Service section of the Avid Web site at www.avid.com.

Installing Avid Xpress DV Software and All Components

To install the Avid Xpress DV software and all related components:

1. Quit all Windows NT applications.
2. Insert the Avid Xpress DV application CD-ROM into the CD-ROM drive.

If the installation program doesn't start automatically:

a. Double-click the My Computer icon.

b. Double-click your CD-ROM drive icon.

c. Double-click the Launch icon.

The opening window of the installer opens.

3. In the opening window, click Installers.
4. Click Install Avid Xpress DV.

If you have not partitioned and formatted the second internal disk drive (in addition to drive C) or additional external drives, a message appears. This message informs you that you need at least two partitions to run Avid Xpress DV. One partition is the boot drive (drive C), and the other partition is used to store media. For instructions on partitioning and formatting drives, see ***"Preparing Your Drives" on page 16****.*

If you have previously installed Avid Xpress DV, the Welcome window for the Setup Maintenance program opens. Follow the steps in **"Modifying, Repairing, or Removing Avid Xpress DV" on page 29**

5. In the Welcome window, click Next.
6. In the License Agreement window, read the agreement, and then click Yes to accept the terms of the agreement.
7. In the Choose Destination Location window, accept the default path for the application folder (on drive C) by clicking Next. The default path is:

   C:\Program Files\Avid\Avid Xpress DV

8. In the Setup Type window, select an option:

   - Select Typical to install all components. This is the recommended installation.
   - Select Custom to select the components you want to install. See **"Performing a Custom Installation" on page 28**.

9. After you have selected an option, click Next.

   The AVX_Plug-In Location window opens and displays the default destination as:

   C:\Program Files\Avid\AVX_Plug-ins

10. Click Next to accept the default path.
11. In the Application Data Location window, indicate a location for the application files (project folders and user folders).

Avid recommends that you install these files on a drive or partition other than drive C.

   To change the default path:

   a. Click the Browse button.
   b. In the Path text box, type:

      ***drive*:\Avid\Avid Xpress DV**

   c. Click OK.

      A message asks if you want to create the folder.

   d. Click Yes.

12. Click Next.

    The installation begins. During the installation, you see installation programs for a series of components. For RealProducer G2, a Welcome window opens.

    a. Click Next
    b. In the License Agreement window, click Yes.
    c. In the RealProducer G2 Setup Complete window, click Finish.

    When the Avid Xpress DV installation is complete, another Setup Complete window opens and asks if you want to restart the system.

13. Click Yes, and then click Finish.

Installing Selected Components

You can install some Avid Xpress DV components separately. These components, which create movies for Internet distribution, include:

- RealProducer G2
- LSX-MPEG
- ASF NetShow
- QuickTime

To install a selected component:

1. Quit all Windows NT applications.
2. Insert the Avid Xpress DV Installation CD-ROM into the CD-ROM drive.

   If the installation program doesn't start automatically:

   a. Double-click the My Computer icon.

   b. Double-click your CD-ROM drive icon.

   c. Double-click the Launch icon.

   The opening window of the installer opens.
3. In the opening window, click Component Installers.
4. Select the component you want to install and follow the on-screen instructions.

Performing a Custom Installation

You can perform a custom installation to install particular files from the installation CD-ROM. **Table 1-2** lists the components available when you use the Custom option of the Avid Application Installer.

Table 1-2 Custom Installation Components

Component	Description
Avid Xpress DV	Installs the application and all the necessary supporting files, except the Help files.
Help files	Installs the appropriate Help files.

To perform a custom installation:

1. Follow steps 1 through 7 in the procedure **"Installing Avid Xpress DV Software and All Components" on page 24**.
2. In the Setup Type window, click Custom and then click Next.
3. In the Select Components window, click the check boxes next to the components you want to install. A check mark indicates the component is selected.
4. After you have selected the components to install, click Next.
5. In the Application Data Location window, indicate a location for the application files (project folders and user folders).

Avid recommends that you install these files on a drive or partition other than drive C.

To change the default path:

a. Click the Browse button.

b. In the Path text box, type:

***drive*:\Avid\Avid Xpress DV**

c. Click OK.

A message asks if you want to create the folder.

d. Click Yes.

6. Click Next.

The installation begins. When the installation is complete, a message asks if you want to restart the system.

7. Click Yes, and then click Finish.

Modifying, Repairing, or Removing Avid Xpress DV

If you have installed Avid Xpress DV and need to reinstall or remove it, you use the Setup Maintenance program.

To modify, repair, or remove Avid Xpress DV:

1. Quit all Windows NT applications.
2. Insert the Avid Xpress DV application CD-ROM into the CD-ROM drive.

If the installation program doesn't start automatically:

a. Double-click the My Computer icon.

b. Double-click your CD-ROM drive icon.

c. Double-click the Launch icon.

The opening window of the installer opens.

3. In the opening window, click Installers.
4. Click Install Avid Xpress DV.

The Welcome window for the Setup Maintenance program opens. It presents three options:

- Modify: Select this option to add new program components or remove currently installed components.

If you choose to remove currently installed components, this option does not remove registry entries or icons in the Start menu. To fully uninstall Avid Xpress DV, select the Remove option.

If you want to remove Avid AVI Codec, RealProducer G2, LSX-MPEG (Ligos), ASF NetShow, or QuickTime, use the Add/Remove Programs dialog box. To access Add/Remove programs, click the Start menu, point to Settings, click Control Panel, and double-click the Add/Remove Programs icon.

- Repair: Select this option to reinstall the components that you previously installed.
- Remove: Select this option to completely uninstall all components of Avid Xpress DV.

5. Select one of the three options and click Next.
   - If you selected Modify, the Select Components window opens. Components that are already installed are selected. Select the new components you want to install. The installation proceeds, as described in steps 12 and 13 in **"Installing Avid Xpress DV Software" on page 24**.

If you deselect an installed component, the installation program will remove the component from the Avid Xpress DV system.

   - If you selected Repair, the installation proceeds, as described in steps 12 and 13 in **"Installing Avid Xpress DV Software" on page 24**.
   - If you selected Remove, a message box asks you to confirm that you want to delete the files. Click OK. When the Maintenance Complete window opens, click Finish. Click Exit to quit the installation program.

Installing AvidNet Transfer Tool Software

The AvidNet™ Transfer Tool is an application that allows you to transfer media and files over a network. For information on using the AvidNet Transfer Tool, see the *AvidNet Transfer Tool User's Guide*, available on the *Avid Xpress DV Online Publications* CD-ROM, and the *Avid Xpress DV Release Notes*.

Before installing the AvidNet Transfer Tool, you should first install Avid Xpress DV. The installer can find media drives already configured on the system only if you install the AvidNet Transfer Tool after you install Avid Xpress DV.

To install the AvidNet Transfer Tool software:

1. Quit all Windows NT applications.
2. Insert the Avid Xpress DV application CD-ROM into the CD-ROM drive.
3. If the installation program doesn't start automatically:
   a. Double-click the My Computer icon.
   b. Double-click your CD-ROM drive icon.
   c. Double-click the Launch icon.

   The opening window of the installer opens.
4. In the opening window, click Installers.
5. Click Install AvidNet.
6. In the Welcome window, click Next.
7. In the License Agreement window, read the agreement, and then click Yes to accept the terms of the agreement.
8. In the Choose Destination Location window, accept the default path for the application folder (on drive C) by clicking Next. The default path is:

   C:\Program Files\Avid\AvidNet

If you have installed the AvidNet Transfer Tool previously, a dialog box asks you if you want to uninstall files. Click Yes, and then follow the on-screen instructions.

9. Select a media drive for Incoming Media Files and click Next.
10. Select a destination location for Incoming Files and click Next.

    If you select a location on drive C, a message tells you that you need to select an NTFS drive for compatibility with Macintosh files. For compatibility, click No, select a drive other than drive C, and click Next.
11. Select a destination location for Incoming Compositions and click Next.
12. Select a directory in which to place the AvidNet log file and click Next.
13. In the Enter Information window, leave the selection as No BWM Server and click Next.
14. In the Start Copying Files window, review the current settings. If you agree with those settings, click Next to copy the files.
15. Click Yes to view the ReadMe file when prompted in the Question window, or click No to complete the setup.
16. In the Setup Complete window, click Yes to restart the computer, and then click Finish.

Installing EDL Manager

EDL Manager is an application that allows you to generate EDLs (edit decision lists) from sequences exported from any Avid video-based editing product. For information on using EDL Manager, see the *Avid EDL Manager User's Guide*, available on the *Avid Xpress DV Online Publications* CD-ROM.

You can install EDL Manager on another computer. For example, you might want to install EDL Manager on a portable computer that you can take with you to an online suite, or on a computer located at the online suite.

To install EDL Manager:

1. Quit all Windows NT applications.
2. Insert the Avid Xpress DV application CD-ROM into the CD-ROM drive.
3. If the installation program doesn't start automatically:
   a. Double-click the My Computer icon.
   b. Double-click your CD-ROM drive icon.
   c. Double-click the Launch icon.

   The opening window of the installer opens.
4. In the opening window, click Installers.
5. Click Install EDL Manager.

   If you have previously installed EDL Manager, the Setup Maintenance Program window opens. Follow the steps in **"Modifying, Repairing, or Removing Avid Xpress DV" on page 29**.
6. In the Welcome window, click Next.

7. In the License Agreement window, read the agreement, and then click Yes to accept the terms of the agreement.
8. In the Choose Destination Location window, accept the default path for the application folder (on drive C) by clicking Next. The default path is:

   C:\Program Files\Avid\EDL Manager
9. In the Setup Type window, select Typical and click Next.

   The installation proceeds and the Setup Complete window opens.
10. Do one of the following:
    - To quit the installation procedure and start EDL Manager, select Launch EDL Manager Now, and click Finish.
    - To quit the installation procedure without starting EDL Manager, deselect Launch EDL Manager Now, and click Finish.

Creating an Emergency Repair Disk

Avid recommends that you update the emergency repair disk (ERD) each time you add or change hardware or software to your system. The ERD is a floppy disk that contains the latest information about your system configuration. It is needed in case your system is damaged and you need to rebuild your system from scratch. If you have a problem, search for Emergency Repair Disk in the Windows NT Help.

To create a repair disk:

1. Start Windows NT 4.0 and log in to an account with administrative privileges. If you do not have administrative privileges, see your system administrator to get privileges.
2. Click the Start button and select Run. The Run window opens.
3. Type **rdisk /s** and press the Enter key.
4. Follow the instructions to create a repair disk.

Store the emergency repair disk in a safe, dry, static-free location.

Installing the Avid Xpress DV Tutorial Files

The Avid Xpress DV Tutorial CD-ROMs contain all the files you need for the tutorial chapters of this guide, including DV media that is ready for you to use. The tutorial files are shipped on two CD-ROMs, in either NTSC or PAL format.

You will need approximately 1 GB of free space available on a media drive. It takes approximately 10 minutes to complete the installation program.

To install the tutorial files:

1. Quit all Windows NT applications.
2. Insert Avid Xpress DV Tutorial CD 1 into the CD-ROM drive.

   If the installer doesn't start automatically after you insert the application CD-ROM, do the following:

   a. Double-click the My Computer icon.

   b. Double-click the CD-ROM to open it.

   c. Double-click the Launch icon to start the installer.

   The opening window of the installer opens.

3. In the opening window, click Installers.
4. Click Install Tutorial.
5. In the Welcome window, click Next.
6. In the Choose Destination Location window, accept the default path and click Next.

   This path should add the Avid Projects folder to the path you selected for application data when you installed Avid Xpress DV. See **"Installing Avid Xpress DV Software" on page 24**.
7. In the Select a Drive window, select a drive for the tutorial media and click Next.

   The installation begins. When the installation is finished for CD 1, a message asks you to insert Avid Xpress DV Tutorial CD 2 into the CD-ROM drive.
8. Insert CD 2 into the CD-ROM drive and click OK.
9. When the installation is complete, the Setup Complete window opens. Click Finish.
10. Click Exit to quit the installation program.

The installation program copies the following folders to your system:

- **Introducing Avid folder:** This folder contains the project and bins you need for the tutorial and is copied into the Avid Projects folder on your hard drive.
- **OMFI MediaFiles folder:** This folder contains the media files you need for the tutorial and is copied to a media drive.

Turning Off Your Equipment

When you are finished using your system and want to turn it off completely, follow these steps to avoid damaging your computer or media storage drives. Make sure to quit Avid Xpress DV before turning off your equipment. See **"Closing the Project and Quitting the Application" on page 68**.

To turn off your equipment:

1. Choose Shut Down from the Start menu.The Shut Down Windows dialog box appears.
2. Select the Shut down the computer option and click Yes.
3. When the system displays a message telling you it is safe to turn off your computer, press the Power button on the computer.
4. Turn off your speakers and monitors.
5. Turn off each external media drive.
6. Turn off all other hardware.

Never remove external media drives from your Avid Xpress DV system when it is turned on. Shut down the computer before you move drives.

CHAPTER 2

About Avid Xpress DV

This chapter explains the basic concepts and terminology that you need to be familiar with to edit video with Avid Xpress DV. These concepts include:

- **About DV**
- **Nonlinear Editing with Avid Xpress DV**
- **Avid Xpress DV Terms and Concepts**
- **The Avid Xpress DV File System**
- **Project Workflow**

About DV

The initials DV in the product name Avid Xpress DV stand for *digital video*. More specifically, they refer to digital video that is transferred through equipment conforming to IEEE Standard 1394. This equipment (cameras, video and audio decks, cables, connectors, and processing boards) is sometimes referred to as FireWire® or I-Link™. DV connections let you transfer digital data (both video and audio) directly from a DV camera to a digital, nonlinear editing system with no conversion losses. DV technology simplifies the process of bringing footage from your camera into your Avid Xpress DV system, and gives you high-quality video at low cost.

Nonlinear Editing with Avid Xpress DV

In traditional video editing, you electronically copy (dub) video and audio footage from a source tape to a master tape. This process is tedious, however, and it is difficult to make changes to your work.

By contrast, when you edit with Avid Xpress DV, you don't have to dub footage onto a master tape. Instead, you manipulate Avid Xpress DV *clips*, which are segments of the media that contain pointers to your digital audio and video files. Avid Xpress DV allows you to experiment with every edit you make. You can trim, move, delete, duplicate, or modify individual frames or entire segments, and immediately see the results. This type of editing is called *nonlinear* because you are not limited by the traditional video editing need to dub one shot after another.

Avid Xpress DV Terms and Concepts

This section explains the following terms and concepts to help you understand the Avid Xpress DV editing process:

- **Media Files**
- **Clips**
- **Subclips**
- **Sequences**
- **Bins**
- **Projects**
- **The Attic Folder**
- **Programs**

Media Files

Media files store source material.

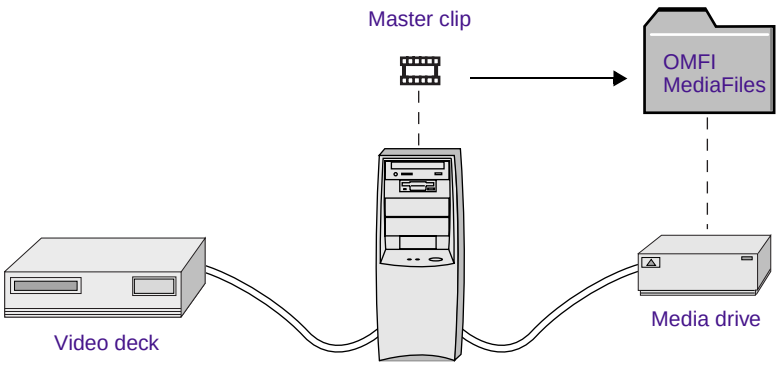
When you record source material from a camera or deck, or when you import computer graphic files into your Avid Xpress DV project, the material is saved in *media files* on your system's media drive or drives. One media file is created for each track of video or audio. For a video with a stereo sound track, three media files are created: one track of video and two tracks of audio. Media files are stored in the OMFI MediaFiles folder; and each media drive has its own OMFI MediaFiles folder.

Even though your media files contain the actual source material for the program, you never manipulate the media files directly. Instead, you move, copy, and edit clips, subclips, and sequences, which are pointers to the media files.

Clips

Clips point to media files.

When you record media, Avid Xpress DV creates another file, called a *master clip*, on your system's internal drive. The master clip is simply a pointer to its corresponding media file, which is located in the OMFI MediaFiles folder on a media drive. A media drive can be inside the computer (an *internal media drive*) or outside the computer (an *external media drive*).



While editing your video, you create other clips, such as graphic clips and effects clips. You make your edits by modifying clips, and the corresponding media files remain unchanged. This feature allows you to easily create and undo edits without destroying your original material.

Because you work with clips instead of media files, you can create virtually unlimited versions of a program without creating multiple copies of the source material, which is stored in extremely large files.

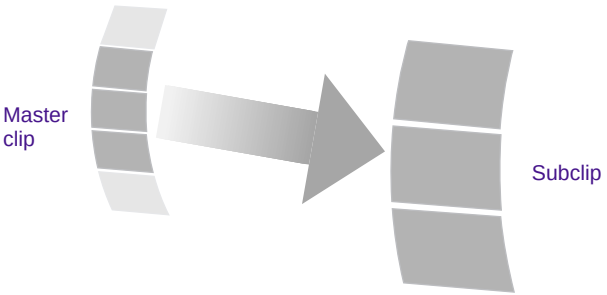
Subclips

Subclips are sections that you mark within clips.

Subclips are sections of clips that you want to use in your program. You create a subclip by marking IN (start) and OUT (end) points in a clip,

pressing and holding the Alt key, and dragging the clip to the bin. The subclip is composed of the material between the IN and OUT points.

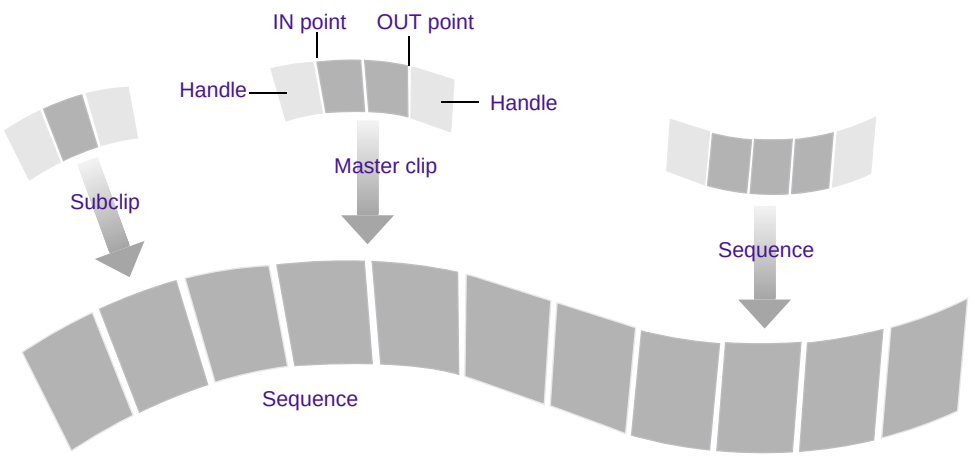
A subclip points to a media file's master clip. You must not delete the master clip from which a subclip was created. If you delete the master clip, you will lose the information in the subclip.



Sequences

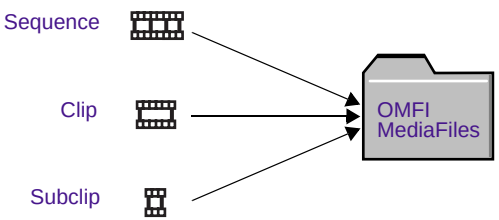
A sequence is a program created from one or more clips and subclips.

You can join different clips and subclips to create a *sequence*. A sequence can include edited material from master clips and subclips, new clips created when you add effects during the editing process, and material from other sequences.



A sequence is composed of marked material from clips, subclips, and other sequences. The material outside the IN and OUT points remains in the media file's master clip. These segments of material are called *handles.* Handles are important; you need them to trim cuts and create transition effects between segments. For more information about trimming cuts, see **"Trimming" on page 127**. For more information about transition effects, see **"Effects Editing" on page 137**.

Like clips and subclips, a sequence contains pointers to media files, which are stored in the OMFI MediaFiles folder. If you delete a clip used to create a sequence, the sequence still displays the media, because the sequence contains its own pointers to the media files.



Bins

You organize your footage in bins.

Clips, subclips, and sequences are organized and stored in *bins*. Traditionally, a bin is a place where film editors store reels of film. In Avid Xpress DV, bins represent a database for organizing the material for a project.

Projects

A project consists of one or more bins.You edit within a project.

You gather the material you need to create a program in a *project*. Each project contains information about bins, clips, subclips, sequences, and the program in the Timeline. You might have several projects on your system, but you can work on only one project at a time.

The Attic Folder

For a complete description of retrieving bins from the Attic folder, see the *Avid Xpress DV User's Guide* or Help.

Avid Xpress DV saves copies of your current project and its bins at regular intervals and whenever you save or close a project or bin. These auto-save files are stored in the *Attic folder* at the top level of the internal hard drive. If you lose work due to a power outage or system error, open the Attic folder and look for a project or bin of the same name with the file name extension.bak*xx*, where *xx* is the version number. For example, the first backup file for the bin Rough Cut would be named Rough Cut.bak01. Later versions would be named Rough Cut.bak02, Rough Cut.bak03, and so on.

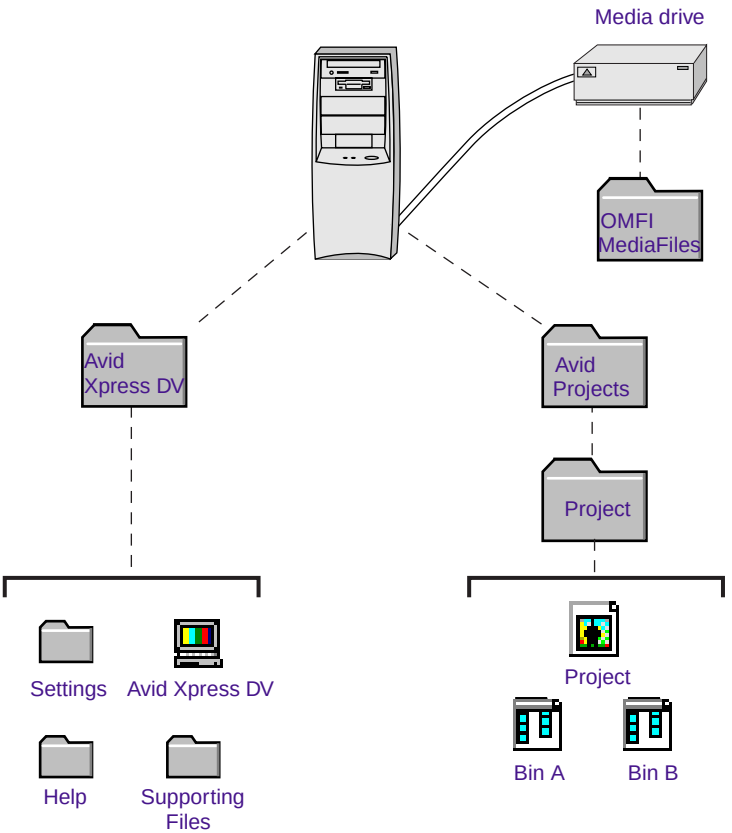
Programs

A *program* consists of one or more sequences. You can use clips, subclips, and sequences to build a program. A program is your final creation; you can output your program to tape, CD-ROM, or the Web when you are finished.

The Avid Xpress DV File System

The following illustration shows the different kinds of Avid Xpress DV files and where they are stored. The Avid Xpress DV application folder is stored on your computer's internal hard drive. The Avid Projects folder is also stored on an internal drive; the location varies, depending on your installation. An OMFI MediaFiles folder is stored on each media drive. Media files must be stored on a separate, Avid-approved media drive that is guaranteed to be fast enough to support video playback.

For complete information about folders and files, see the *Avid Xpress DV User's Guide* or Help.



Project Workflow

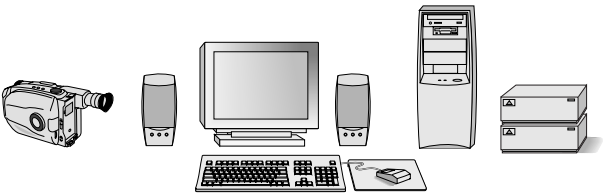
The following sections illustrate the four stages of a typical Avid Xpress DV project: starting a project, preparing to edit, editing a sequence, and generating output.

Complete procedures for each stage are included in the printed manuals, online books, and Help.

Starting a Project

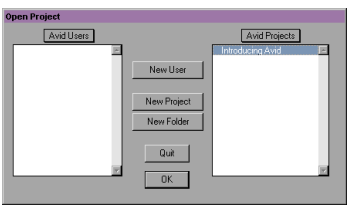
Starting a project involves the following steps:

1. Turn on your equipment in the correct order and start the software. (Speakers and external media drives are optional.)



1. Turn on and start your Avid system.

2. Select or create a new *user* and *project*: the job that will result in one or more finished *sequences*.



2. Select or create a user and project.

3. Create and organize *bins*.

3. Create and organize bins.

4. *Back up* your project on a regular basis.

4. Back up the project.

Preparing to Edit

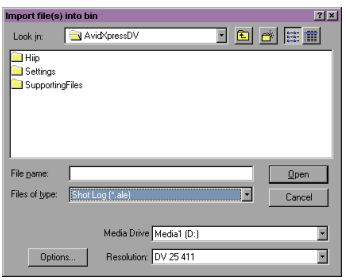
Preparing to edit involves the following steps:

1. (Optional) Import your log files into the bins, or log the material manually.

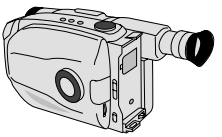
2. Record your DV footage, creating *media files* and *master clips*.

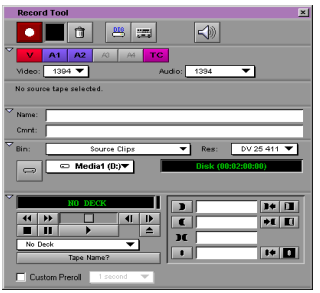
3. Work with bins and clips to organize your source material for easy access during editing.

4. (Optional) Build a *storyboard* to begin previsualizing your final cut before editing.

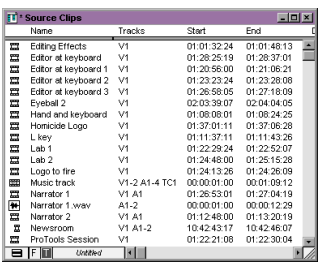


1. (Option) Import shot logs into the bin.





2. Record footage, creating master clips and media files.



3. Sort and organize clips in the bins.

4. Previsualize with storyboards.

Editing a Sequence

Editing a sequence involves the following steps:

1. View your clips in advance and mark *IN points* and *OUT points*, or create *subclips* based on selected portions of your master clips.

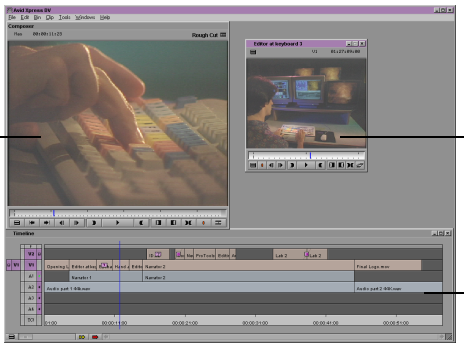
2. Build your sequence using editing controls with the Timeline, Source pop-up monitors, and the Composer monitor.

3. Fine-tune your edits and effects by using functions of the various edit modes, such as Segment mode, Trim mode, and Effect mode.

4. Adjust and mix multiple audio tracks and prepare for final playback or output, using the *Audio tool* and *Audio Mix tool*.

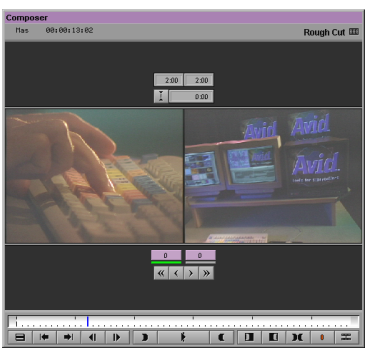
5. Return to editing if further adjustments are required.

1. Screen, mark, and subcatalog footage.

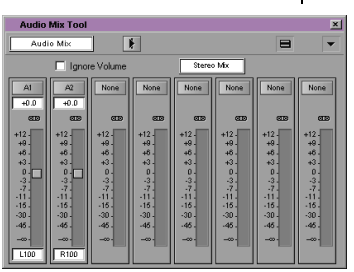


5. Screen and continue editing as necessary.

2. Edit with Timeline and monitors.



3. Fine-tune edits and effects.

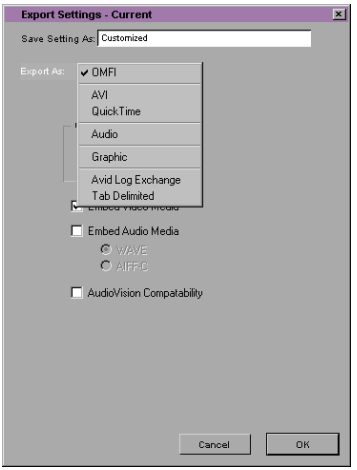


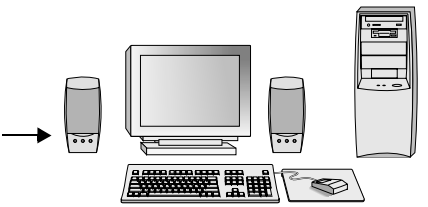
4. Fine-tune audio pan, volume, and EQ.

Generating Output

Generating various forms of output based on your sequence involves selecting among several options:

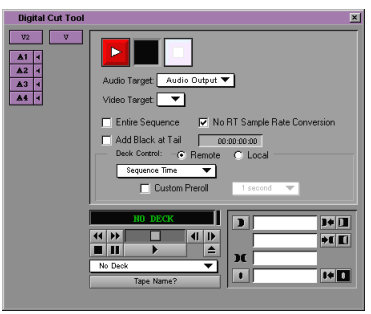
Export material for audio sweetening or graphics enhancement in a third-party application, for incorporating into a multimedia project, or for publishing on the Internet.

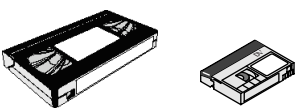




Export material for additional processing, for incorporating into a multimedia project, or for publishing on the Internet.

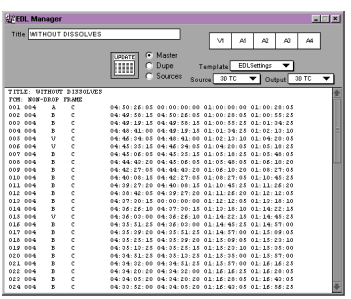
Record the final sequence to tape as a digital cut.





Record a digital cut directly to tape.

Generate an EDL for online videotape editing.



Generate an EDL for online videotape editing.

CHAPTER 3

Learning How to Use Avid Xpress DV

This chapter explains the different resources that can help you learn how to use your Avid Xpress DV system. This chapter contains the following sections:

Using the Tutorial

The self-paced tutorial chapters in this guide are designed as guided Avid editing sessions, using the basic features of the Avid system. In this tutorial, you're going to edit a 1-minute sequence about Avid Technology, Inc. This sequence is typical of a short piece you might create for your own organization. You can publish the sequence on tape or CD-ROM, or stream it across the Internet.

The footage for the sequence is supplied on the Avid Xpress DV Tutorial CD-ROMs that came with your system. This footage is DV media that has already been recorded and is ready for you to use. Footage is supplied in either NTSC or PAL format, which is indicated on the CD-ROMs.

This tutorial does not cover the process of recording video and audio from a camera or video deck. You can find instructions for recording in the *Avid Xpress DV User's Guide* and Help.

Before you begin, make sure you have installed the tutorial media and project files (see **"Installing the Avid Xpress DV Tutorial Files" on page 35**).

Depending on your level of expertise in editing on Avid systems, you can choose to work through the tutorial in either of two ways.

- If you have no experience with Avid Xpress DV or other Avid systems, you should go through the entire tutorial.
- If you have used other Avid systems, you might want to read certain chapters to understand the specific features of Avid Xpress DV and complete the tutorial tasks in that chapter. For most chapters, you can load a sequence that includes the work done up to that point.

You can create a short sequence in 5 minutes (see **"Creating a Simple Sequence" on page 62**). Completing the entire tutorial can take from 3 to 4 hours.

Using Help

Avid Xpress DV has a comprehensive Help system that includes all information contained in the *Avid Xpress DV User's Guide*, and most of the information contained in the *Avid Xpress DV Effects Guide*. In addition, you can get information on windows, dialog boxes, and screen objects by pressing the F1 key or clicking the right mouse button.

Opening and Closing the Help System

The Help system is also included on the *Avid Xpress DV Online Publications* CD-ROM.

To open the Help system, choose Avid Xpress DV Help from the Help menu. The Help Topics dialog box appears. Use the Contents, Index, and Find tabs to access the information you need.

These tabs work the same way as most Windows Help systems. For more information, see the section "Using Help" in the Help system or click the Question Mark button in the title bar of the Help Topics dialog box.

To close the Help system, click the Close button in each Help window. The Help system automatically closes when you close the last open Help window.

Getting Help for Windows and Dialog Boxes

The Help system provides you with context-sensitive Help for windows and dialog boxes, such as tools and settings.

To get Help for windows and dialog boxes:

1. Make sure the Avid application is active.
2. Position the mouse pointer in the window or dialog box for which you want Help.
3. Press the F1 key on the keyboard.

If there is no information about a window or dialog box, the Help Topics dialog box appears.

Getting Help for Screen Objects

You can use What's This? Help to find out about buttons and other screen objects.

To get Help for screen objects:

1. Using the right mouse button, click on the screen object (for example, a button).

   A pop-up menu appears.

2. Choose What's This? from the menu.

   A pop-up window opens with an explanation of how you use the item.

If you press the F1 key when the mouse pointer is on a button or other screen object, you get Help for the window or dialog box, not for the button or other screen object.

Printing Help Topics

You can print a single Help topic or a group of topics listed in the Contents.

To print a Help topic:

1. Open or click the topic to make it active.
2. Click the Print button in the topic window.
3. Select the print options.
4. Click OK.

To print a Help topic from the Contents tab:

1. Select the topic you want to print.
2. Click the Print button at the bottom of the tab.

To print a book of related topics from the Contents tab:

1. Select the book you want to print.
2. Click the Print button.

If you select a book, all topics within that book, and all topics in other books contained in that book, will be printed. The system sends each topic as a separate print job to the printer; therefore, printing can take a long time. You can more easily print large sections of user information from the *Avid Xpress DV Online Publications* CD-ROM.

You can print a pop-up window by clicking the right mouse button and selecting Print.

Using Online Documentation

The *Avid Xpress DV Online Publications* CD-ROM includes:

- *Avid Xpress DV User's Guide*
- *Avid Xpress DV Effects Guide*
- *Avid Xpress DV Getting Started Guide* (this book)
- Avid Xpress DV Help

The books are PDF files. You can view them with the Adobe Acrobat Reader, which you can install from the CD-ROM.

These online books enable you to:

- Navigate by using bookmarks and hyperlinks.
- Speed up information retrieval by performing keyword searches.
- Annotate the books with your own notes.
- Zoom in on a page, enabling closer review of text and images.
- Print any or all pages.
- View the books with full-color graphics.
- View movies that illustrate Avid Xpress DV effects.

Avid gives you permission to print up to three complete copies of each book.

Tips and Other Resources

The following are a few tips for taking full advantage of the Avid Xpress DV documentation and other resources:

- Complete the tutorial chapters in this guide before starting a project.
- Begin learning about basic procedures by using the default settings. As your confidence increases, explore additional procedures and settings.
- Instead of using the standard menus to find the command you need in a window, try using shortcut menus. Using the right mouse button, click on a window to open a shortcut menu that shows the most frequently used commands for that window.
- Keep the *Avid Xpress DV Quick Reference* available during editing sessions.
- Read Avid's newsletters, mailings, and other trade publications.

- Make use of additional training resources provided by Avid whenever possible, such as classes and instructional videotapes. For more information, contact Avid at 800-867-2843.
- Check the following Avid Web site for listings of courses, schedules, and locations:

  www.avid.com/services/training/training.html

CHAPTER 4

Starting a Project and Creating a Simple Sequence

This chapter begins the tutorial section of this guide. In this chapter you'll practice the following tasks:

- **Starting Avid Xpress DV**
- **Using the Open Project Dialog Box**
- **Creating a Simple Sequence**
- **Closing the Project and Quitting the Application**

Before starting this chapter, make sure you have installed the tutorial files (see **"Installing the Avid Xpress DV Tutorial Files" on page 35**).

Starting Avid Xpress DV

You can create a shortcut on the desktop and start the application by double-clicking the icon. See your Windows NT documentation.

You start the Avid Xpress DV application the same way you start most Windows applications.

1. Click the Start button.
2. Point to Programs, point to Avid, and select Avid Xpress DV.

   The first few times you start Avid Xpress DV, a window opens that contains the License Agreement.
3. To accept your Avid Xpress DV product license electronically:

   a. Read the License Agreement, and then click the Accept button or the Decline button at the bottom of the screen.

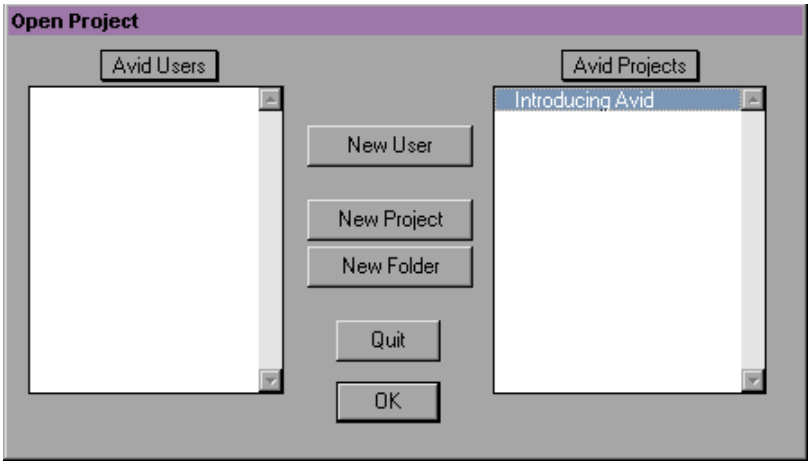
      The agreement appears the first several times you start Avid Xpress DV. After several starts, a new button appears at the bottom of the screen labeled Accept and Don't Show Again.

   b. If you don't want to see the License Agreement again, click the Accept and Don't Show Again button.

      A dialog box appears.

   c. Enter the name of your organization in the dialog box, and click OK.

   After you accept the License Agreement, the Open Project dialog box appears. If you are the *first* user on the system, the Open Project dialog box appears as shown in the following illustration.



For this tutorial, you will use the project called either Introducing Avid (NTSC) or Introducing Avid (PAL).

Using the Open Project Dialog Box

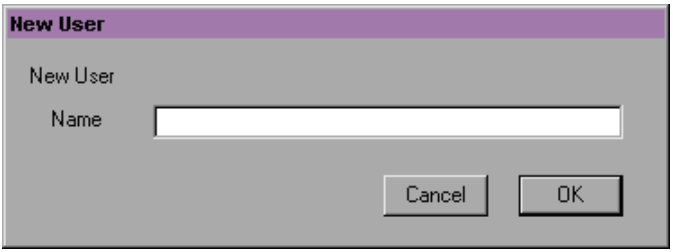
To open a project, you select a user and a project from the Open Project dialog box. You also use this dialog box to create a new user or a new project.

Creating a User

For this tutorial, create a new user.

1. Click the New User button in the Open Project dialog box.

   The New User dialog box appears.



By default, the Windows NT login name appears.

2. Delete the default name, type your name, and click OK.

   The Open Project dialog box reappears with your name highlighted in the list of Avid Users.

Selecting and Opening a Project

For this tutorial, we've already created a project for you.

1. Select Introducing Avid (NTSC) or Introducing Avid (PAL) from the Avid Projects list.
2. Click OK.

   The Project window opens.

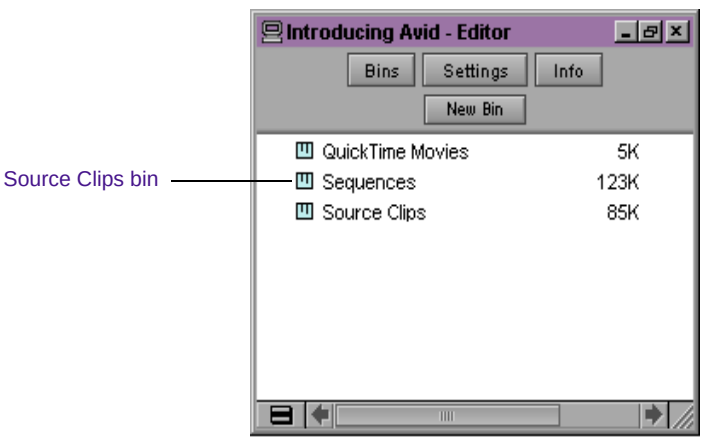
Look at the title bar of the window. It contains the name of the project and the name of the user. In this example, the user is named Editor. Your project window will contain your user name.

Two other windows appear: the Composer window and the Timeline window. You'll learn about these windows in **Chapter 6**.

Creating a Simple Sequence

Before continuing further in the tutorial, you can create a simple sequence right away. A *sequence* is a program made up of one or more clips (see **"Sequences" on page 42**). These steps will get you started quickly; you'll find more thorough instructions and explanations later in the tutorial.

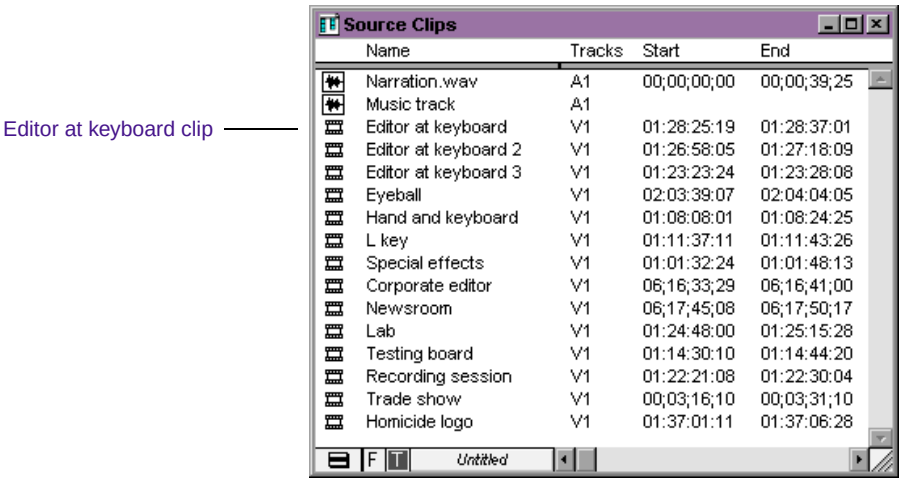
The sequence uses footage from the Introducing Avid project that you just opened. The following illustration shows the Project window.



Follow these steps to create a sequence:

1. In the Project window, open the **Source Clips** bin by double-clicking the bin icon.

   The **Source Clips** Bin window opens and displays a list of clips.

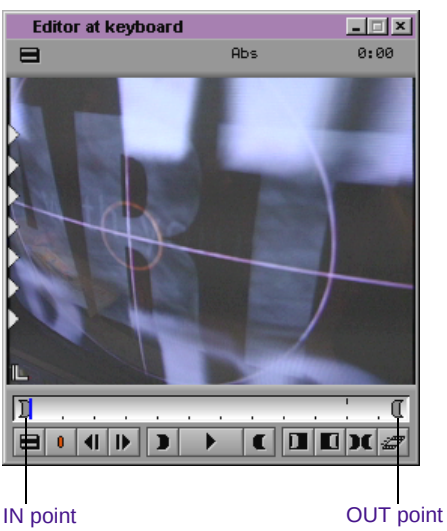


2. From the list of clips, double-click the icon for the **Editor at keyboard** clip.

   The **Editor at keyboard** clip opens in a window. This window is known as a *Source pop-up monitor*.

3. Click the Mark Clip button, which is located at the bottom of the Source pop-up monitor.

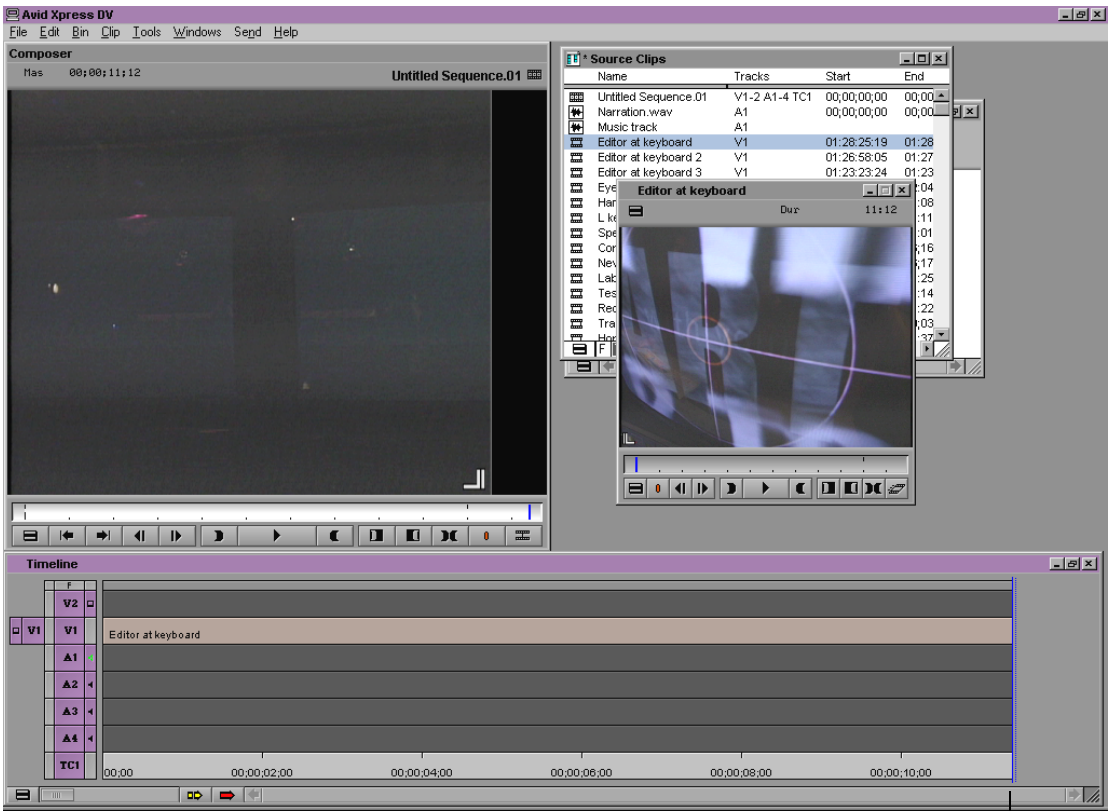
   IN and OUT points appear at the beginning and end of the clip, which indicate that the entire clip will be edited into the sequence.



4. Click the image area of the Source pop-up monitor and drag it anywhere in the Timeline window.

If you have more than one bin open, a dialog box appears and asks you to select a bin in which to store the sequence. Select Source Clips.

Congratulations! You've just created your first sequence. The clip appears in the Timeline and in the Composer monitor.



Notice the vertical blue line at the end of the Timeline.This line is called the *position indicator*. The position indicator is parked on the

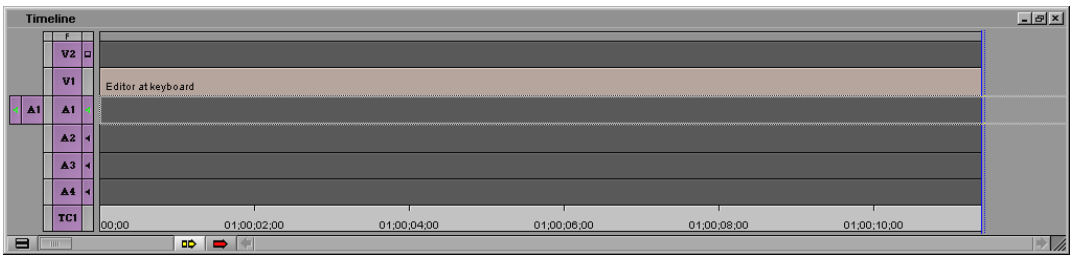
last frame of the sequence, so this frame is the one displayed in the Composer monitor.

5. Now add some music to the sequence.

   a. In the **Source Clips** bin, double-click the icon for the **Music track** clip.

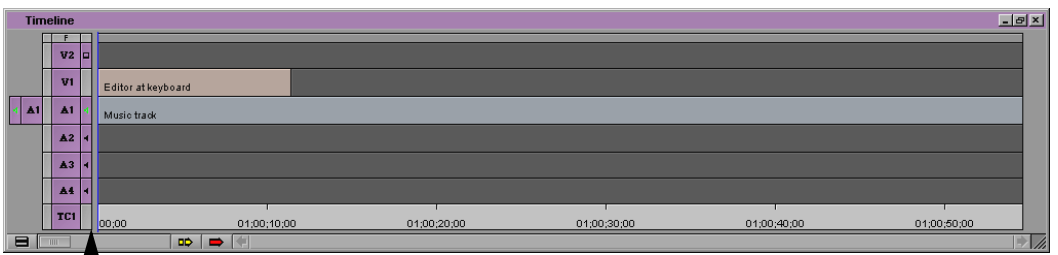
      The clip opens in a Source pop-up monitor. There is no image because the clip has only audio.

   b. Click the image area and drag the clip to audio track A1 in the Timeline. Drag the clip so that the A1 track is outlined, as shown in the following illustration, and then release the mouse button.



If you make a mistake, choose Undo from the Edit menu to undo your last action.

6. In the Timeline, make sure the position indicator is at the beginning of the sequence. If not, drag the position indicator as far as you can to the left.

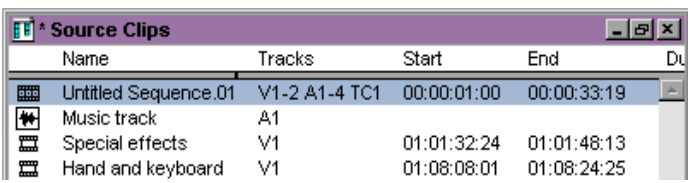


7. Click the Play button below the Composer monitor to review your sequence.

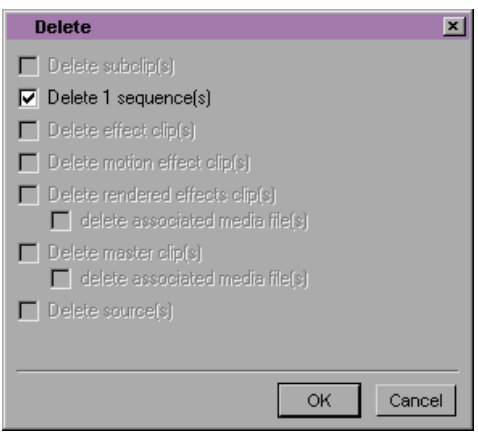
Press the Play button again to stop playing the sequence at any time.

Now look in the **Source Clips** bin. The sequence is saved in the bin with the name **Untitled Sequence.01**. Delete the sequence. You'll create a new one in **Chapter 6**.

8. In the **Source Clips** bin, click the **Untitled Sequence.01** icon and press the Delete key on the keyboard.



The Delete dialog box appears.



9. Click OK.

   You've deleted the sequence, but not the source footage.


Close button

10. Close the **Source Clips** bin by clicking the Close button in the upper right corner of the window.

Next Steps

You've finished this chapter of the tutorial. You can either:

- Close the project and application and continue the tutorial at a later time.
- Continue on to the next chapter.

Closing the Project and Quitting the Application

To close the project and quit the application immediately, choose Exit from the File menu or click the Close button in the Avid Xpress DV title bar.

If you want to close the project and quit the application:

1. Click the Project window to activate it, and then click the Close button.

   The system saves and closes the project. The Open Project dialog box appears.

2. Click Quit.

   A dialog box appears and asks if you want to quit the application.

3. Click Leave.

The application quits and you see the Windows NT desktop.

The next time you open the project, choose your user name and project name, and resume the tutorial with the next section.

CHAPTER 5

Playing and Marking Clips

In **Chapter 4** you learned how to start a project. In this chapter you'll practice the following tasks:

- **Exploring the Project Window**
- **Opening a Bin**
- **Viewing Clips**
- **Playing Clips in a Source Pop-up Monitor**
- **Marking IN and OUT Points**
- **Playing a Sequence in a Source Pop-up Monitor**
- **Using Timecode to Find a Frame**
- **Creating Subclips**
- **Clearing IN Points and OUT Points**
- **Saving Your Work**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK.

Exploring the Project Window

Click in the Project window and press the F1 key to open Help for the Project window.

The Project window must remain open whenever you are working in Avid Xpress DV. Depending on the button you click, the Project window displays a list of bins, a list of settings, or information about your system.

If the Project window becomes hidden by other windows, bring it forward by choosing Project from the Tools menu.

The Bins Display

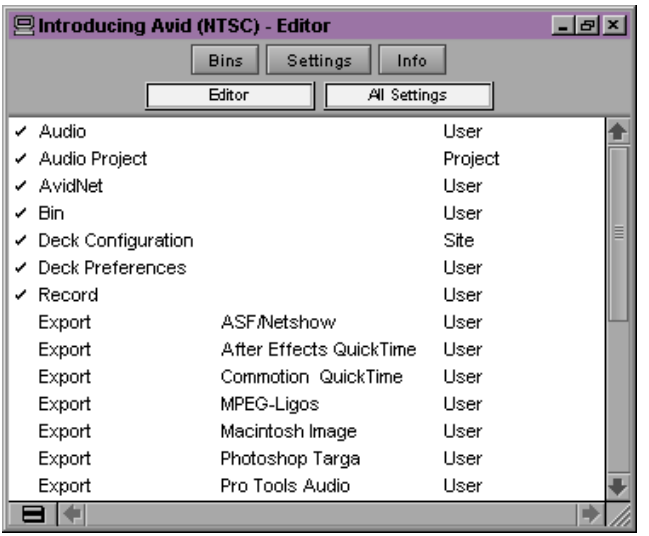
The Bins display lists the bins, or storage areas, created to hold your clips and sequences (you'll learn more about bins later in this chapter). For the Introducing Avid project, we've supplied you with three bins:

- QuickTime Movies
- Sequences
- Source Clips

The Settings Display

Click the Settings button at the top of the Project window. A list of settings appears. This list is called the Settings scroll list. Settings are groups of options you can select, depending on your needs and preferences.

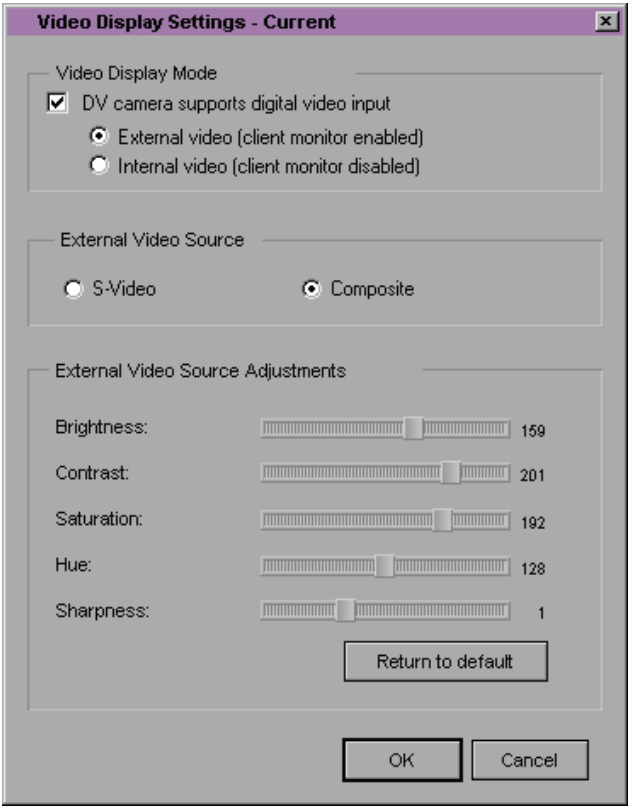
The right column displays the type of setting. User settings are associated with the current user, and Project settings are associated with the project. For more information, see the *Avid Xpress DV User's Guide* or press F1 for Help.



Especially important for Avid Xpress DV are the Video Display settings. Check the settings now.

1. Scroll down the list of settings and double-click Video Display.

   The Video Display Settings dialog box appears.



For information on connecting a camera and Client monitor, see **Appendix A**.

The top part of the dialog box gives you a choice for how to display video on your desktop.

2. If you have a Client monitor (a separate monitor that displays NTSC or PAL video) and camera attached to your system, select the following options:

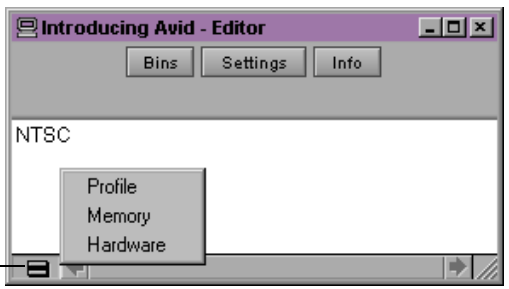
   - DV camera supports digital video input
   - External video (client monitor enabled)
   - External Video Source (S-Video or Composite, depending on the connection between your camera and the capture board.

To learn more about these options, see the *Avid Xpress DV User's Guide* or press the F1 key for Help. All Settings dialog boxes have context-sensitive Help.

3. Click OK to close the Video Display Settings dialog box.

The Info Display

Click the Info button at the top of the Project window. You see the format of the project (NTSC or PAL). You can get information about your system by clicking the Fast Menu button in the lower left corner of the screen, and then choosing Profile, Memory, or Hardware from the pop-up menu.



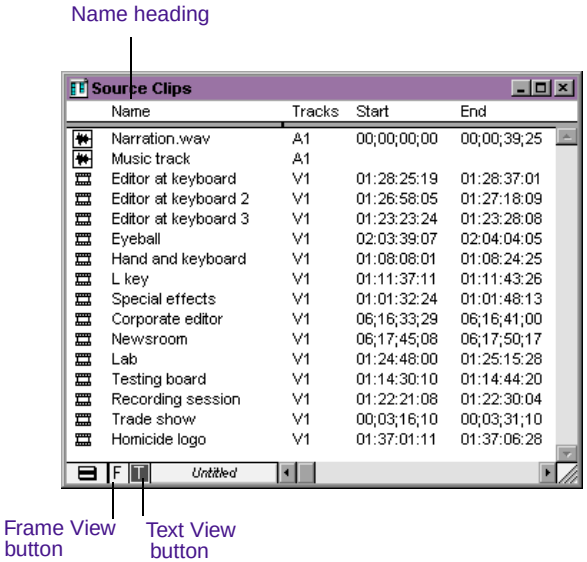
Click the Bins button to return to the Bins display.

Opening a Bin

The term *bin* comes from film editing and refers to a container for holding film clips (see **"Bins" on page 43**).

Let's open a bin now. In the list of bins in the Project window, double-click the **Source Clips** icon. The **Source Clips** bin opens.

Most of the clips you'll use in your sequence are displayed in this bin.



Viewing Clips

You can view the information in a bin in two different ways:

- *Text view* displays columns of information about your clips.
- *Frame view* displays each clip as a single representative image.

Using Text View

Let's look at Text view.

1. Click the Text View button (T) in the lower left corner of the bin.

   If the button is highlighted, you are already in Text view.

   The bin displays columns of information about each clip. For explanations of these columns, see the *Avid Xpress DV User's Guide* or press the F1 key for Help.

You can rearrange the clips in the bin by sorting on a particular column. Let's sort alphabetically by clip name.

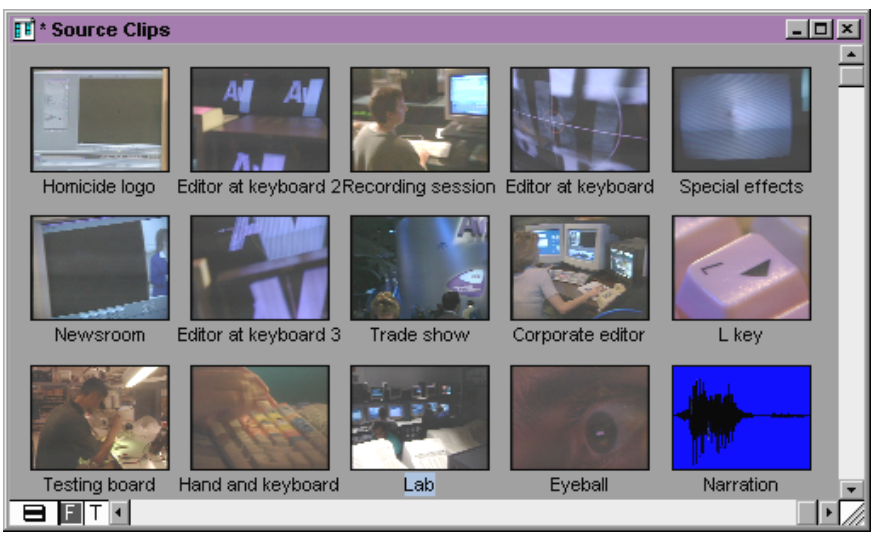
2. Click the Name heading in the bin.
3. Choose Sort from the Bin menu.

   The clip names are rearranged in alphabetical order.

Using Frame View

Now let's look at Frame view.

1. Click the Frame View button (F) in the lower left corner to see a picture-frame representation of each clip in the bin.



The order of clips is different from the order in Text view. You can rearrange clips in either view independently of the other.

You can change the size of the frames if you want.

2. Choose Reduce Frame or Enlarge Frame from the Edit menu.

To change frame size at the keyboard, you can also press Ctrl+K (Reduce Frame) and Ctrl+L (Enlarge Frame).

3. Choose Fill Window from the Bin menu.

   The clips are arranged in neat rows and columns in the bin.

4. If some clips are now off the screen, click and drag the window corner in the lower right corner of the **Source Clips** bin.

Switching Between Views

It's easy to switch between views: click the T button for Text view and the F button for Frame view. For this tutorial, you can use whichever view you prefer, except when performing a storyboard edit (see **"Storyboard Editing the Clips" on page 117**).

Playing Clips in a Source Pop-up Monitor

A Source pop-up monitor is a window in which you play the clips for your project. You can play clips in three different ways:

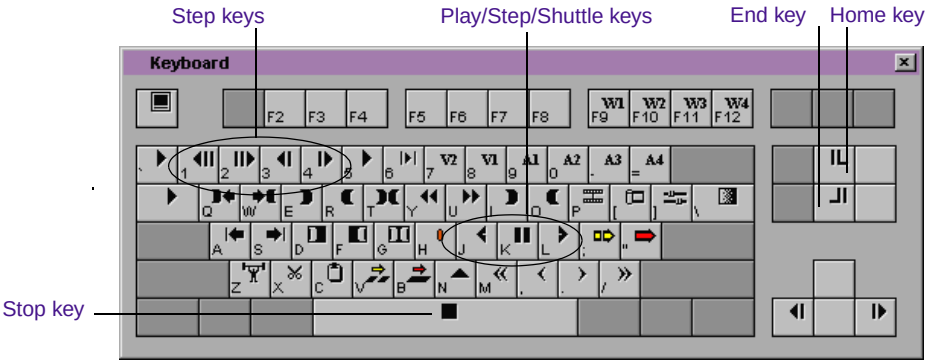
- Using the keyboard
- Using the buttons on the screen, below the Source pop-up monitor
- Using the blue position indicator (the "blue bar")

In this section you'll try different ways to play clips. As you edit, use the ones you prefer.

Using the Keyboard to Play Clips

Your system is shipped with a set of labels that you can place on the keys of your keyboard.

The keyboard for your Avid system includes many special control keys, as shown in the following illustration.



This illustration shows the U.S. English keyboard. For layouts of other keyboards, choose Keyboard from the Settings scroll list.

In this section you'll experiment with different ways to play clips.

1. In the **Source Clips** bin, open the clip named **Editor at keyboard** by double-clicking the icon (in Text view) or anywhere in the image (in Frame view).

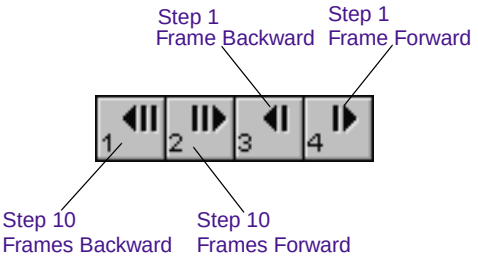
   The **Editor at keyboard** clip appears in a Source pop-up monitor.

2. Press the Home key (between the main keyboard and the numeric keypad) to move the position indicator to the start of the clip.
3. Press the End key, just below the Home key, to go to the end of the clip. The blue position indicator moves to match your directions.
4. Press the Home key again to go to the start of the clip.
5. Press the L key (Play) on the keyboard to play the clip forward at normal speed.

   There is no audio for the **Editor at keyboard** clip.

The small size of the Source pop-up monitor might cause the footage to look jerky. The footage will look smoother in the Composer monitor and the Client monitor.

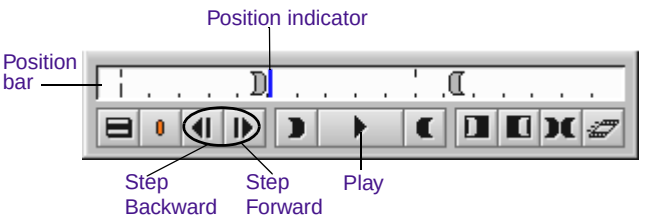
6. Press the space bar on the keyboard to stop playback at any point.
7. Press the L key again to play the clip forward at normal speed. Press the key repeatedly to play the clip forward at 60, 90, 150, and 240 frames per second (NTSC) or 50, 75, 125, and 200 frames per second (PAL).
8. Press the J key (Reverse Play) on the keyboard to play the clip backward at normal speed. Press the key repeatedly to play the clip backward at 60, 90, 150, and 240 frames per second (NTSC) or 50, 75, 125, and 200 frames per second (PAL).
9. Press the K key (Pause) on the keyboard to pause playback.
10. To move forward or backward at slow speed, press and hold the K key while you press and hold the L or J keys.
11. Use the 1, 2, 3, and 4 keys to step through the footage forward or backward in 1-frame or 10-frame increments.



Using Buttons and the Position Indicator to Play Clips

Two additional ways to play clips are:

- Clicking buttons that appear under a Source pop-up monitor
- Dragging the blue position indicator through the *position bar* to scroll through a clip



Now play through the **Editor at keyboard** clip by using buttons and the position indicator.

1. Click the Play button under the Source pop-up monitor.
2. Click the Play button again to stop playback at any point.

To step forward or backward 10 frames, hold the Alt key while you click the Step Forward or Step Backward button.

3. Step through the footage forward or backward in 1-frame increments by using the Step Forward and Step Backward buttons under the Source pop-up monitor.
4. Locate the blue position indicator in the position bar in the Source pop-up monitor.

To step several frames forward, click just to the right of the position indicator.

5. Click to the left of the position indicator to step several frames back in the clip.
6. Step through the clip by clicking different spots in the position bar.
7. Drag the position indicator to the left, then to the right, to scroll through the clip.

Marking IN and OUT Points

Before you start to create your sequence, you need to mark the segments of the clips you want to use. In this section you'll mark *IN* and *OUT points* for some clips you'll use later to build your sequence. You'll also learn how to use timecode and frame offset to locate IN and OUT points.

The instructions in this section use the keyboard to mark IN and OUT points, but you can also click the equivalent buttons below the Source pop-up monitor.

Marking the First Clip

Let's mark IN and OUT points for the **Editor at keyboard** clip.

1. Go to the head (start) of the clip by pressing the Home key. Then use the Step Forward and Step Backward (3 and 4) keys to locate the frame where the letter A begins to appear on the monitor screen.

Your clip might already have IN and OUT points. Your new edit points will overwrite the old edit points.

2. Mark an IN point by pressing the Mark IN (I) key.

   A white sawtooth pattern appears on the left edge of the frame.

3. Drag the position indicator toward the end of the clip, where the explosion appears on two monitors, and before it fades away.

4. Mark an OUT point by pressing the Mark OUT (O) key.

   A white sawtooth pattern appears on the right edge of the frame.

   The system saves your IN and OUT points until you change them.

5. Close the **Editor at keyboard** clip by clicking the Close button.

   The system automatically saves your IN and OUT points.

Marking Another Clip

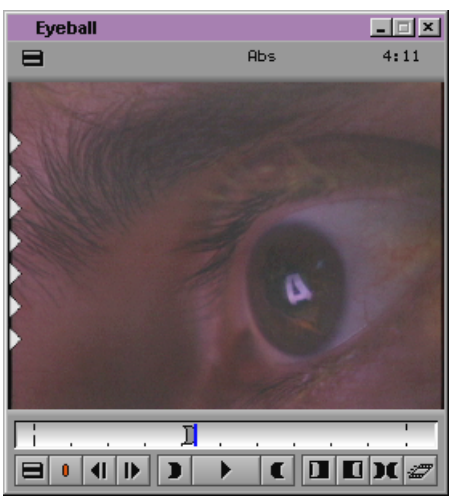
Now mark the IN and OUT points for the **Eyeball** clip. This time, instead of using the Step keys, use the J-K-L keys to play the clip.

1. Open the **Eyeball** clip.

In this tutorial, "open a clip" means to double-click its icon in a bin, so that it opens in a Source pop-up monitor.

2. Locate the frame where the letter A of the word Avid appears in the pupil of the eyeball (after the second blink). Press and hold the K key and press the L key to go forward or the J key to go backward in slow motion.

   Use the 3 and 4 keys to locate the precise frame.



3. Mark an IN point by pressing the I key.
4. Step forward a few frames after the D appears.

5. Mark an OUT point by pressing the O key.
6. Close the **Eyeball** clip.

Playing a Sequence in a Source Pop-up Monitor

So far you have played clips in Source pop-up monitors. You can also play a sequence (a program made up of one or more clips) in a Source pop-up monitor.

You might be curious to see what your final sequence will look like. We have supplied a finished sequence for you. To play it:

1. Click the Project window to display and activate it.

   The Project window might be hidden behind the **Source Clips** bin. You can choose Project from the Tools menu to bring the window forward.

2. Open the **Sequences** bin.
3. Open the **Introducing Avid** sequence.

4. Press the Home key to go to the beginning of the sequence. Play the sequence in the Source pop-up monitor, using the keyboard or buttons, or a combination of both.
5. Close the **Introducing Avid** sequence.
6. Close the **Sequences** bin.

Using Timecode to Find a Frame

Your Avid Xpress DV system uses *timecode* to identify each frame of a clip.

About Timecode

Timecode is an electronic indexing method that denotes hours, minutes, seconds, and frames that have elapsed on a videotape. For example, a timecode of 01:03:30:10 denotes a frame that is marked at 1 hour, 3 minutes, 30 seconds, and 10 frames.

NTSC video (the video format used mainly in the United States) uses one of two formats: *drop-frame timecode* and *non-drop-frame timecode.*

Drop-frame timecode is designed to match the NTSC scan rate of 29.97 frames per second (fps). Two frames of timecode are dropped every minute except for the tenth minute. No video frames are actually dropped. Drop-frame timecode is indicated by semicolons between the digits; for example, 01;00;00;00. DV cameras that use the NTSC format use drop-frame timecode.

Non-drop-frame timecode tracks NTSC video at a rate of 30 fps and is indicated by colons between the digits; for example, 01:00:00:00. Non-drop-frame timecode can be easier to work with, but does not provide accurate timing for NTSC broadcast.

PAL video (the video format used in many countries other than the United States) uses a scan rate of 25 fps. Timecode is indicated by colons. There is no need for drop-frame timecode in PAL video.

You can change the starting timecode of a sequence or, for NTSC projects, the type of timecode. See **"Changing the Timecode of the Sequence" on page 180** and the *Avid Xpress DV User's Guide*.

Using Timecode to Mark IN and OUT Points

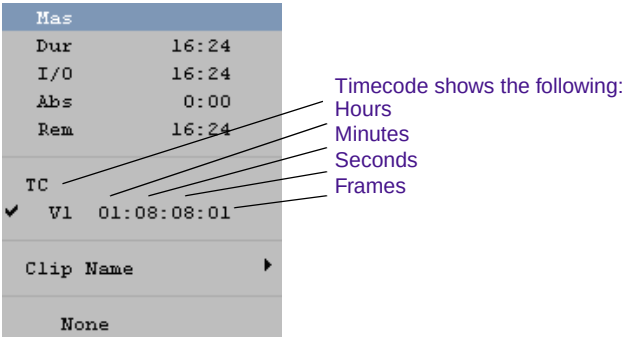
You can mark IN and OUT points by using timecode as your reference point. If you know the timecode for the frame you want to mark, you can go to that frame instantly by typing it on the numeric keypad.

In this section, you'll use timecode to reach a specific location. First, you need to display the appropriate timecode information in the Tracking Information display.

1. Open the **Hand and keyboard** clip.
2. Place the pointer in the gray title bar area over the Tracking Information display, until the pointer changes to a downward arrow.

3. When the pointer changes to a downward arrow, click to display the Tracking Information pop-up menu, and then choose TC, V1 (timecode for track Video 1) from the menu. A check mark means it is selected.

For information about the other choices in the Tracking Information menu, see the *Avid Xpress DV User's Guide* or place the pointer over the Tracking Information display, click the right mouse button, and choose What's This?



The timecode refers to the frame displayed in the Source pop-up monitor.

After you change the display for one Source pop-up monitor, all subsequent Source pop-up monitors you open use the same display.

4. Use the Play and Step buttons to locate the frame with the timecode 01:08:14:18 (NTSC) or 00:01:42:23 (PAL). Look for the number in the Tracking Information display.
5. Click the Mark IN button.
6. Let's use 2 seconds of this clip. You can determine the OUT point by adding 2 seconds to the timecode of the IN point, as shown in the following examples:

```
 01:08:14:18 (NTSC)
+        2:00
 01:08:16:18
```

or

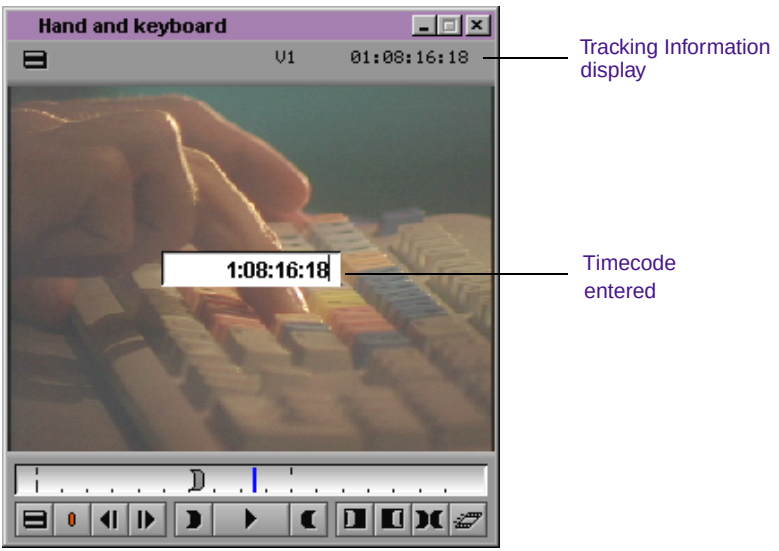
```
 00:01:42:23 (PAL)
+        2:00
 00:01:44:23
```

Because Avid Xpress DV counts the frame it is parked on, you will actually mark one frame more than 2 seconds.

7. Type **01:08:16:18** (NTSC) or **00:01:44:23** (PAL) on the numeric keypad.

You don't need to type zeros that start the timecode. In addition, the system inserts the colons for you. So you only need to type **1081618** *(NTSC) or* **14423** *(PAL). This guide provides the complete timecode, but you can use these shortcuts to type the numbers.*

As you start typing, a window opens in the middle of the Source pop-up monitor, showing the numbers you type.



8. Press the Enter key on the numeric keypad. The position indicator locates the specified frame.

   The Timecode window displays the current number.

To locate frames by using timecode and the numeric keypad, you must show timecode in the Tracking Information display. For example, the display must show track V1 to go to a specific frame on the V1 track.

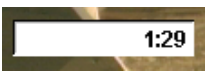
9. Click the Mark OUT button.
10. Close the **Hand and keyboard** clip.

Using Frame Offset

Whenever you use the numeric keypad, you must press the Enter key on the numeric keypad after typing the number.

You can also use the numeric keypad to move the position indicator forward or backward a specified number of frames. This technique is called *frame offset*. Let's mark an IN point for the **Editor at keyboard 3** clip and then use frame offset to locate the OUT point.

1. Open the **Editor at keyboard 3** clip.
2. Use the numeric keypad to type **`01:23:24:02`** (NTSC) or **`00:03:07:15`** (PAL), and then press the Enter key.
3. Click the Mark IN button.



4. Advance 29 frames (NTSC) or 24 frames (PAL) by typing **`+29`** or **`+24`** on the numeric keypad and pressing the Enter key.

   Advancing 29 or 24 frames is the equivalent of advancing 1 second, because Avid Xpress DV counts the frame it is parked on.
5. Advance 2 more seconds by typing **`+129`** (NTSC) or **`+124`** (PAL) and pressing Enter. The system inserts the colons for you.

If you want to move back a certain number of frames, type a minus sign (**–**) instead of a plus sign (**+**) in front of the number.

6. Mark that frame as the OUT point by clicking the Mark OUT button.
7. Close the **Editor at keyboard 3** clip.

Creating Subclips

Now you'll copy portions of one clip into shorter clips, called *subclips* (see **"Subclips" on page 41**). Subclipping is a great way to organize your footage into manageable units.

1. Open the **Lab** clip.
2. Go to the start of the clip.

3. Review the clip by clicking the Play button or by dragging the blue position indicator. There are two parts of the clip that you'll copy into separate subclips.
4. Use the numeric keypad to type **`01:24:53:19`** (NTSC) or **`00:04:10:22`** (PAL), and then press the Enter key.
5. Mark an IN point.
6. Type **`01:24:57:16`** (NTSC) or **`00:04:14:20`** (PAL).
7. Mark an OUT point.
8. Press and hold the Alt key, click the image area of the clip, and drag it from the Source pop-up monitor to the **Source Clips** bin.

   As you begin dragging, the pointer changes to a hand attached to a small box.

   A new item called **Lab.Sub.01** appears in the **Source Clips** bin. The name is highlighted.

The subclip has the name of the original clip, followed by **Sub.n**, where **n** is the number of times the master clip has been cataloged to that bin.

9. Delete the name **Lab.Sub.01** and rename the subclip **`Lab 1A`**.

Clearing IN Points and OUT Points

Now you'll clear previous IN and OUT points, mark new IN and OUT points, and create a new subclip.

1. Bring the **Lab** clip forward by choosing Lab from the Windows menu.
2. Press the Clear IN key (D) and Clear OUT key (F).

   You can also click the corresponding buttons beneath the monitor.
3. Mark an IN point at 01:25:00:11 (NTSC) or 00:04:17:03 (PAL).
4. Mark an OUT point at 01:25:07:16 (NTSC) or 00:04:25:12 (PAL).

5. Press and hold the Alt key, click the image area of the clip, and drag it from the Source pop-up monitor to the **Source Clips** bin.

   The clip name is highlighted in the **Source Clips** bin.

6. Delete the name **Lab.Sub.02** and rename the subclip **Lab 1B**.
7. Close the **Lab** clip.
8. Close the **Source Clips** bin.

Saving Your Work

By default, Avid Xpress DV includes an Auto-save function set at 15 minutes. You can view or change this setting in the Bin settings box, which you access from the Settings scroll list in the Project window.

You've done a lot of work marking clips. Saving your bins and other project information would be a good idea.

1. Click the Project window to activate it.
2. Choose Save All from the File menu.

Next Steps

You've prepared some clips that you'll use in your sequence. In the next chapter you'll start to edit your sequence. You can continue to the next chapter, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**). The next time you open the project, the windows will be in the same position.

CHAPTER 6

Creating a Sequence

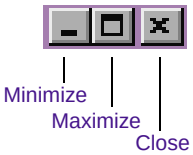
In this chapter, you begin editing the **Introducing Avid** sequence by completing the following tasks:

- **Working in the Avid Xpress DV Window**
- **Making the First Edit**
- **Opening a Sequence**
- **Opening and Using the Tool Palette**
- **Splicing in an Audio Clip**
- **Exploring the Timeline**
- **Splicing in a Video Clip**
- **Splicing a Clip into the Middle of a Sequence**
- **Undoing an Edit**
- **Splicing in a Music Track**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK.

Working in the Avid Xpress DV Window



You've been working in a single large window, labeled Avid Xpress DV. Like other Windows NT windows, you can minimize it, maximize it, and close it by using the buttons on the right side of the title bar.

Within the Avid Xpress DV window, you can manage the Timeline, bins, and Source pop-up monitors in the same way. The difference is that, when you reduce or resize these windows, they remain within the Avid Xpress DV window, rather than appearing on the Windows desktop.

You cannot minimize the Composer window.

Minimizing Avid Xpress DV Windows

To get more space below the Timeline, right-click the Windows toolbar, choose Properties from the pop-up menu, and deselect the Always on Top check box.

Try minimizing some windows now.

1. Open the **Source Clips** bin.
2. Click the Minimize button on the **Source Clips** window and the Timeline. The windows shrink to small title bars at the bottom of the Avid Xpress DV window.

3. Close the **Source Clips** bin by clicking the Close button.
4. Return the Timeline to full size by clicking the Restore button.

Managing your Avid Xpress DV windows will become more important as your projects become larger.

Default Locations for the Avid Xpress DV Windows

The Composer, Timeline, and Project windows have default sizes and locations to maximize the available space on your desktop, as shown in **"Dragging a Video Clip and Creating a Sequence" on page 95**.

If you want to return these windows to the default locations, click the window and choose Home from the Windows menu.

Making the First Edit

In this section, you'll make your first edit and create a sequence by completing the following tasks:

- **Playing a Video Clip**
- **Dragging a Video Clip and Creating a Sequence**
- **Moving and Renaming the Sequence**

Playing a Video Clip

Let's start by playing the clip that will begin the sequence.

1. In the Project window, open the **QuickTime Movies** bin.
2. Double-click the **Opening logo.mov** clip to display it in a Source pop-up monitor. Play the clip through.

   Notice the .mov file name extension. This indicates that the clip is a QuickTime movie that was created by using a special effects program. You can import a QuickTime movie into Avid Xpress DV, which changes the QuickTime movie to a DV clip. We've already imported the movie for you.

Dragging a Video Clip and Creating a Sequence

Now edit the clip to create a sequence.

1. Make sure the Timeline is open and visible. If it is not, choose Timeline from the Tools menu.
2. Click the Source pop-up monitor that contains the **Opening logo.mov** clip. If the monitor is not visible, open it from the **QuickTime Movies** bin.

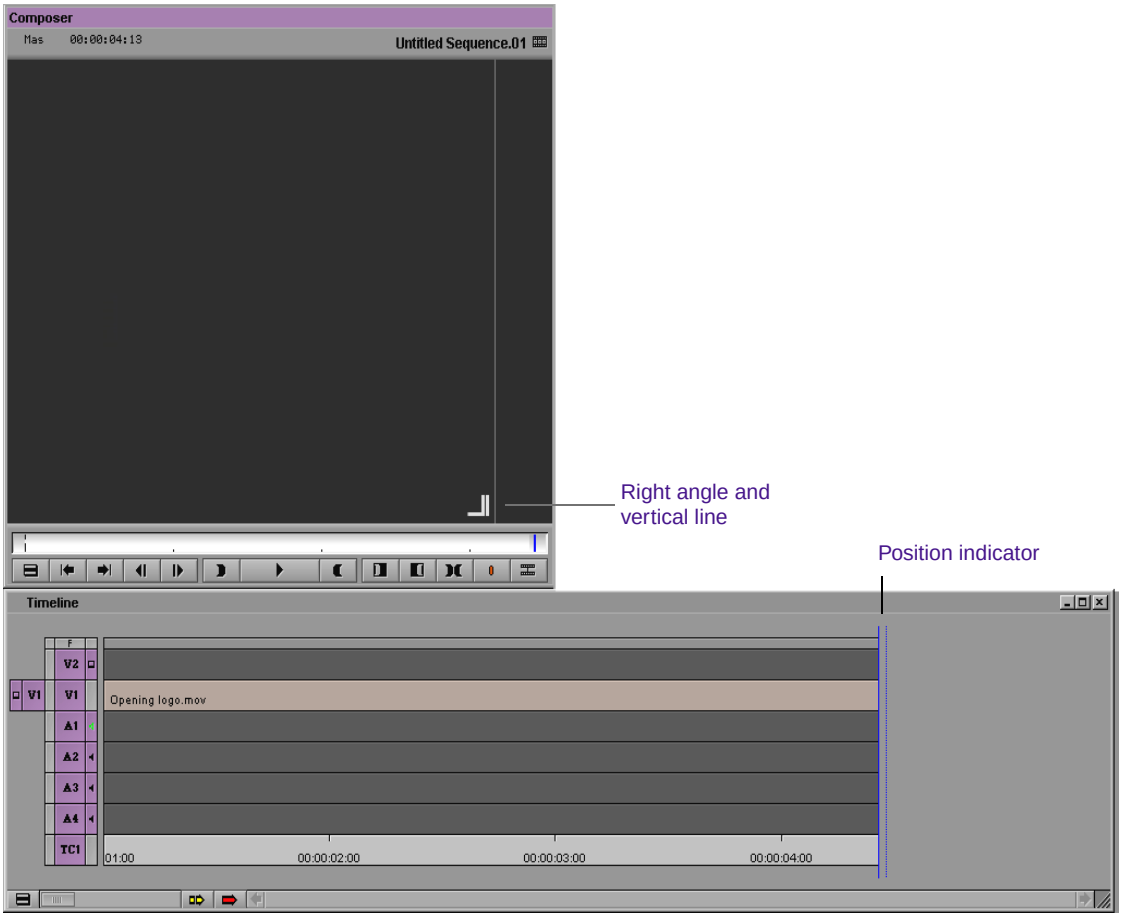
3. Click the Mark Clip button on the Source pop-up monitor.

   The Mark Clip button marks IN and OUT points at the beginning and end of the clip, so that the entire clip is edited into the sequence.
4. Click the image area of the clip and drag it to the Timeline window.

   You've just created a sequence.

If you have more than one bin open, a dialog box appears and asks you to select a bin in which to store the sequence. Select QuickTime Movies.

Look at the Timeline. You should see the **Opening logo.mov** clip in track V1. The first frame is the IN point you marked in the clip; the last frame is the OUT point you marked. The position indicator rests on the last frame of the clip, as shown in the following illustration.



The sequence also appears in the Composer monitor. The image is black because the last frame of the clip is black. Notice the right angle and vertical line in the lower right corner of the Composer monitor. The right angle indicates the end of a cut and the vertical line indicates the end of the sequence.

When you want to bring an open bin or monitor to the foreground, you can click anywhere in it or choose its name from the Windows menu.

5. Click anywhere in the Composer monitor to activate it.
6. Press the Home key to move to the head of the sequence.
7. Click the Play button at the bottom of the Composer monitor to play the clip in the sequence.
8. Close the **Opening logo.mov** clip.

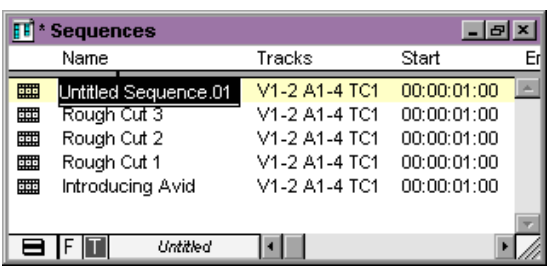
Moving and Renaming the Sequence

You can create a new sequence by choosing New Sequence from the Clip menu.

Because the **QuickTime Movies** bin was the only bin open, the sequence appears in that bin. By default, Avid Xpress DV names the sequence **Untitled Sequence.01**. Now let's move the sequence to the **Sequences** bin and change its name.

1. In the Project window, click the Bins button.
2. Open the **Sequences** bin.
3. In the **QuickTime Movies** bin, click the icon in front of the name **Untitled Sequence.01 and drag it to the Sequences** bin.
4. Click the name **Untitled Sequence.01** to select it.

   The name is highlighted.



5. Type **Rough Cut** and press the Enter key.

   This is the sequence you'll be working with for this tutorial. The sequences **Rough Cut 1**, **Rough Cut 2**, and **Rough Cut 3** are supplied for those who prefer not to build their own sequence (see the notes at the beginning of each chapter).

6. Close the **QuickTime Movies** bin.
7. Close the **Sequences** bin.

   By closing the **Sequences** bin, you also close the sequence.

Opening a Sequence

In **Chapter 5** you opened a sequence in a Source pop-up monitor (see **"Playing a Sequence in a Source Pop-up Monitor" on page 84**). To open a sequence for editing, you need to drag it into the Composer monitor or the Timeline.

1. Open the **Sequences** bin.
2. Drag your **Rough Cut** sequence to the Composer monitor.

   The sequence appears in the Composer monitor and the Timeline.

You need to keep the **Sequences** bin open to continue working on your sequence. You can minimize the bin to save workspace on your desktop.

Opening and Using the Tool Palette

Before you continue with your editing, familiarize yourself with the Tool palette. So far you have been using buttons that appear below the Source pop-up monitor or keyboard equivalents. The Tool palette provides you with additional buttons for navigating and editing.

Opening and Tearing Off the Tool Palette

You can also open the Tool palette from the Fast Menu button on a Source pop-up monitor.

Open the Tool palette by clicking the Fast Menu button under the Composer monitor.

To use a button on the Tool palette, just click it. You can also "tear off" the palette and drag it to a different location.

1. If the Tool palette is not open, click the Fast Menu button.
2. Drag the pointer over the buttons and then outside the border of the Tool palette. You should see a dotted line outline. Drag the outline to another location. You see the complete Tool palette, with a title bar and Close button.

You can drag the Tool palette to a different location; just click and hold anywhere on the Tool palette and drag it wherever you want. You can also resize it to a square or a single row, to suit the way you want to work.

All buttons in Avid Xpress DV have ToolTips.

To view the name of each button, slowly drag the pointer across each button. You should see a small yellow window pop up with the name of each tool. You've probably seen these pop-ups in other Windows applications; they're called *ToolTips*.

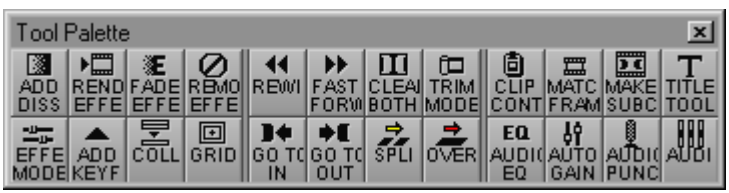
Displaying Button Names

You can display a shortened name on the button itself by selecting an option in the Interface Settings dialog box.

1. In the Project window, click the Settings button.
2. From the Settings scroll list, double-click Interface.

   The User Interface Settings dialog box appears.
3. Select the option Show Labels in Tool palette.
4. Click OK.

   You see names on the first row of buttons.
5. Click the border of the Tool palette and drag it until you see the second row of buttons.



   You can keep these names or remove them by deselecting the Show Labels in Tool palette option in the User Interface Settings dialog box. For this tutorial, you might want to keep the labels visible.
6. Close the Tool palette by clicking the Close button.

Splicing in an Audio Clip

The next clip, **Narration**, provides the voice of an off-camera narrator, or *voice-over*. This clip includes only audio.

To edit this clip into the sequence, you'll use the Splice-in button on the Tool palette. *Splicing* is a film term that refers to joining together two pieces of film.

Now that you've had some experience marking and playing clips, the instructions will be less specific about which keys to press or buttons to click.

1. In the Project window click the Bins button.
2. Open the **Source Clips** bin.
3. Open the **Narration** clip.
4. Go to the head of the clip.
5. Play some or all of the clip.

   The clip appears black because it's audio only.

Using Digital Audio Scrub to Locate a Specific Frame of Audio

The term audio scrub originated in the film industry. It describes the process of "scrubbing" a magnetic audiotape across the playback heads to monitor a portion of sound. This process helps isolate portions of audio to accurately mark edit points.

Your Avid Xpress DV system uses a digital version of audio scrub to locate a specific frame of audio. Use it now to locate the first frame of audio in the clip.

1. Go to the head (start) of the **Narration** clip.
2. Press the Caps Lock key to activate digital audio scrub.
3. Play the clip again. Stop at the approximate place where the voice begins.
4. Use the Step keys to locate the first frame of the voice.

   When you use the Step keys, a frame of audio sounds scratchy or buzzlike. You might need to increase the volume of your speakers to hear the first frame of audio.

5. After you have located the first frame of audio, step back one frame and mark an IN point.
6. Go to the tail (end) of the clip.
7. Step back to find the last frame of audio, and then step forward one frame.
8. Mark that frame as the OUT point.

Press the Caps Lock key again to deactivate digital audio scrub.

Playing IN to OUT

Now you can play only the marked portion of the clip to make sure you have marked IN and OUT points correctly.

Press the Play IN to OUT (6) key on the keyboard.

The clip plays from the IN point to the OUT point. If the audio sounds cut off, redo your IN and OUT points.

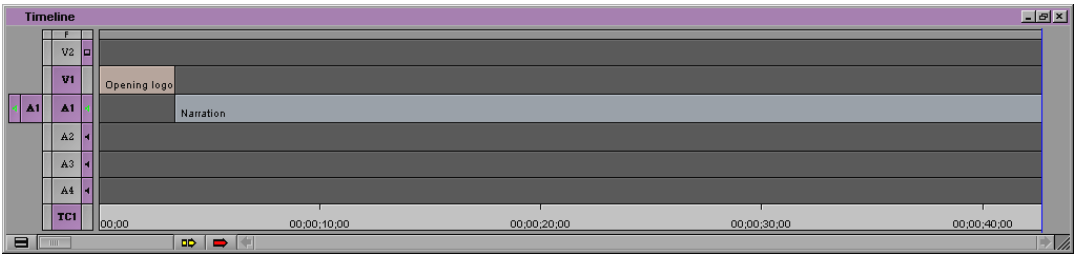
Splicing in the Clip

Now you're ready to make the edit.

1. In the Timeline, make sure the position indicator is at the end of the **Opening logo.mov** clip.
2. Click the Fast Menu button on the Composer monitor to open the Tool palette.

3. Click the Splice-in button (the button with the yellow arrow) on the Tool palette.

   The second clip is now edited into the sequence. Your Timeline should look like the one in the following illustration.



4. Close the **Narration** clip.

Reviewing Your Edits

Review what you've done so far.

1. Click the Composer monitor and go to the head of the sequence.
2. Play the sequence.

You should see the opening logo without sound, followed by the narration without video. You'll be adding more clips later.

If you try to play a sequence, and the outline of the Composer monitor flashes, another window is covering the Composer monitor. Click the Composer monitor to bring it forward or move the window that is covering it.

Exploring the Timeline

You can get context-sensitive Help by pressing F1 or clicking the right mouse button and choosing What's This?

Before you edit in the next clip, take a few minutes to explore the Timeline window. The Timeline is the graphical representation of the clips, effects, and other elements that make up your sequence.

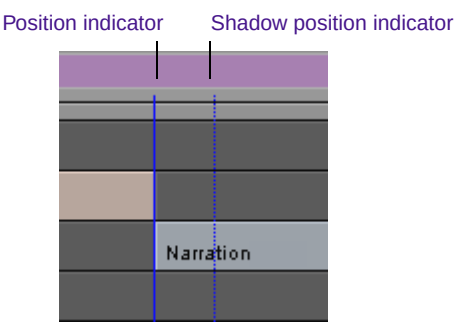
Displaying More or Less Detail in the Timeline

The *scale box* on the *scale bar*, below the Timeline on the left side of the window, expands and contracts the area centered around the blue position bar. The scale box allows you to zoom in to focus on a specific area of your sequence or to zoom out to see the whole sequence. Scaling the Timeline is especially useful when you have a lengthy sequence with many edits.

The Timeline always expands or contracts proportionally on both sides of the position indicator.

1. In the Timeline, click the *transition point* between the first two clips. A transition point or transition is where one clip ends and another clip begins.
2. Click the scale box and drag it to the right.

   As the Timeline expands, a second "shadow" position indicator appears next to the blue position indicator showing the end of a single frame, and the two continue to move apart as you expand the Timeline.



The position indicator and its shadow mark the beginning and end of each frame.

3. Click the scale box and drag it to the left to contract the expanded Timeline. You see less detail but more of the sequence.

Navigating in the Timeline

Two ways to navigate in the Timeline are by using the position indicator and the scroll bar.

Using the Position Indicator

You have already used the position indicator — the vertical blue line that marks your place in the sequence. You can drag it through your sequence to play the sequence, or you can click on a particular location, and the position indicator will jump there. Try it now.

The position indicator also determines how some of your commands are interpreted. For example, when you perform an edit, the system uses the location of the position indicator as the IN point, unless you have marked a different IN point.

When you move the position indicator in the Timeline, the smaller position indicator within the Composer monitor's position bar also moves. Drag the position indicator again. This time watch the position bar of the Composer monitor.

Using the Scroll Bar

The scroll bar functions like any standard scroll bar.

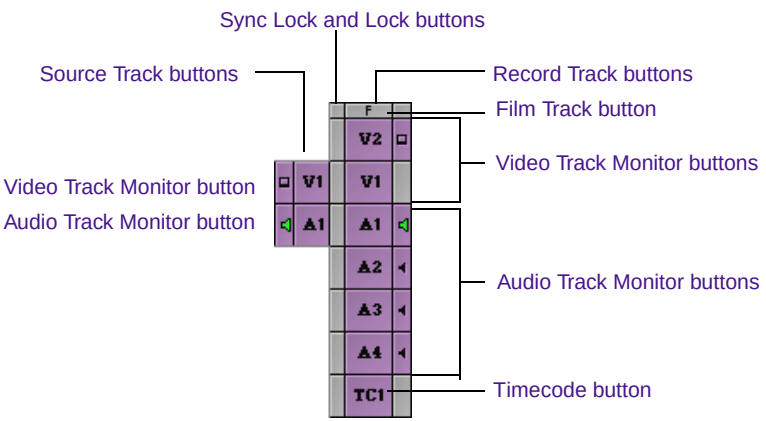
If your Timeline is contracted and fits the window, you won't be able to scroll, and the controls in the scroll bar will be dimmed. If your Timeline is expanded, you'll need to use it.

Use the Scale box to expand the Timeline, scroll through it, and then contract the Timeline.

Using the Track Selector Panel

The *Track Selector panel*, to the left of the Timeline, provides controls for working with multiple tracks. With this one panel, you can select, delete, monitor, enlarge, reduce, lock, patch, and move any video or audio track.

The following illustration shows a sample Track Selector panel. The panel might look different, depending on the source material or the work under way in the sequence.



The source side (left side) of the panel displays only those tracks available for the clip currently loaded and displayed in the Source pop-up monitor. In this example, the clip has video on track V1 and audio on track A1.

The record side (right side) of the panel displays, by default, two tracks of video and four tracks of audio. You can add two additional video tracks and four additional audio tracks.

Selecting Tracks

There are also keyboard equivalents for selecting tracks. Check the Keyboard settings in the Project window Settings scroll list.

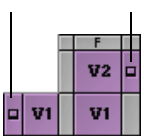
When you edit a clip into a sequence, you must make sure that you have selected the correct tracks to accomplish the edit you want. You select tracks by clicking the track buttons in the Track Selector panel. Selected tracks are colored (purple, by default), and deselected tracks are gray (dimmed).

For example, if you want to edit only the audio from a clip, select only track A1 on both the source and record sides and deselect the other tracks. If you want to edit only the video, select only track V1 on both sides.

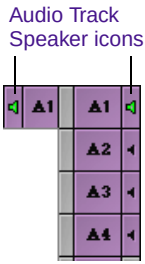
Monitoring Tracks

By default, you monitor (view and hear) all tracks in your sequence. For this tutorial, you shouldn't need to change the monitoring. However, you can change the monitoring by clicking a Track Monitor button on either the source side or record side of the Track Selector panel.

Video Track Monitor icons



The Video Track Monitor buttons determine whether you see video during playback. A Monitor icon indicates the top track that is monitored for playback and output. When there are multiple video tracks, all tracks below the monitored track are also monitored.



The Audio Track Monitor buttons determine whether you hear audio during playback. A Speaker icon (either solid or green) indicates that the tracks are monitored for playback and output. However, only the track with the green icon is monitored for audio scrubbing.

Be sure to activate the topmost video track and all audio tracks to view, render, or record all the tracks together. Unmonitored tracks are not included in playback.

Splicing in a Video Clip

You've already marked IN and OUT points for the **Editor at keyboard** clip. Now let's add it to the sequence. Start by reviewing the clip.

1. In the **Source Clips** bin, open the **Editor at keyboard** clip.

   Look for IN and OUT points. If there are no points, see **"Marking the First Clip" on page 80**.

2. Play the marked portion of the clip by pressing the Play IN to OUT (6) key.

Adding Additional Frames

Now extend the clip by adding a few more frames.

1. Snap the position indicator to the OUT point by clicking the Go to OUT button on the Source pop-up Tool palette.

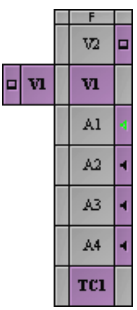
Whenever you use the numeric keypad, you must press the Enter key on the numeric keypad after typing the number.

2. Type **+6** on the numeric keypad and press the Enter key to add 6 frames to the clip.
3. Mark that frame as the OUT point.

   The OUT point automatically moves to the new position.

You can press and hold the Alt key and click the Mark OUT button, or press the O key, to go to the OUT point.

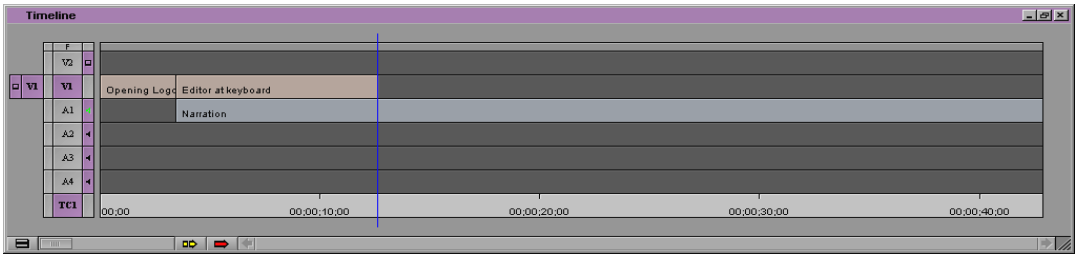
Splicing in the Clip



Now make the edit.

1. Select the tracks you want to edit:
   a. On the source side of the Track Selector panel, make sure track V1 is selected. The button should be highlighted in purple, not dimmed (gray). If the button is gray, click it.
   b. On the record side of the Track Selector panel, select record track V1 and deselect all other video and audio tracks. Keep the timecode track TC1 selected.
2. In the Timeline, move the position indicator to the first frame of black after the **Opening logo.mov** clip. Look for the small white right angle in the lower left corner of the Composer monitor.
3. Click the Source pop-up monitor for the **Editor at keyboard** clip.
4. Click the Splice-in button on the Tool palette or press the Splice-in (V) key on the keyboard to splice the clip into the Timeline as the third clip.

   The Timeline should look like the one in the following illustration.



5. Play some or all of the sequence to review it.

Splicing a Clip into the Middle of a Sequence

With nonlinear editing, you can splice a clip anywhere in your sequence. Let's try inserting a clip between the **Opening Logo.mov** and **Editor at keyboard** clips.

1. Open the **Eyeball** clip.

   You've already marked IN and OUT points for this clip. If an IN or OUT point is missing, see **"Marking Another Clip" on page 83**.

2. Select the tracks you want to edit:

   a. On the source side of the Track Selector panel, make sure track V1 is selected.

   b. On the record side of the Track Selector panel, make sure track V1 is selected and all other video and audio tracks are deselected.

Moving to the Head of a Clip

You want to insert the edit between the **Opening logo.mov** and **Editor at keyboard** clips. To move to the first frame of the **Editor at keyboard** clip:

You can also use this technique for snapping to the last frame of a clip. Click between the position indicator and the end of the clip.

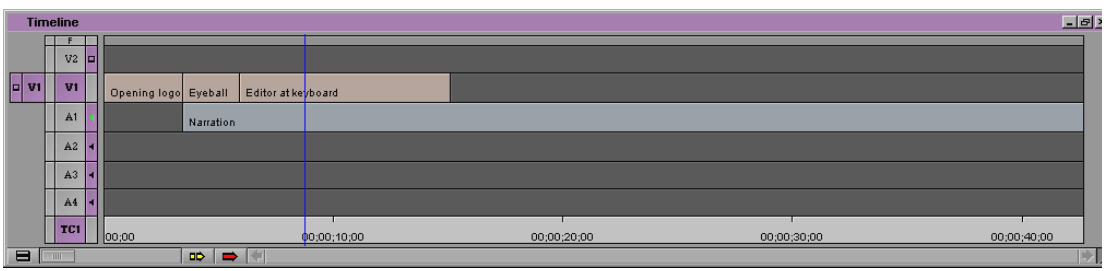
1. In the Timeline, click in the middle of the **Editor at keyboard** clip.
2. Press and hold the Ctrl key and click between the position indicator and the beginning of the clip. The position indicator snaps to the first frame of the **Editor at keyboard** clip.

Splicing in the Clip

Now splice the clip into the sequence.

1. Click the Splice-in button on the Tool palette or press the V key on the keyboard.

   Whenever you splice a clip into the middle of a sequence, the rest of the sequence is extended. Your Timeline should look like the one in the following illustration.



2. In the Timeline, press the Home key and play the sequence to review the new edit.
3. Close the **Eyeball** clip.

Undoing an Edit

The **Eyeball** clip doesn't seem to fit here. You can easily undo the edit by choosing Undo from the Edit menu or by pressing Ctrl+Z. Try it now.

You can also redo up to 32 previous edits.

The Undo feature is very useful. You can undo up to 32 previous actions listed in the Edit menu.

Splicing in a Music Track

In this section, you lay down an audio clip that contains the music for the sequence. The music has already been edited to approximately 1 minute, which is the length of the final sequence.

Opening and Marking the Clip

Open and mark the clip.

1. Open the **Music track** clip.
2. In the Source pop-up monitor, play some or all of the clip.
3. Click the Mark Clip button on the Source pop-up monitor.

Patching Tracks

Before you make the edit, look at the Track Selector panel.

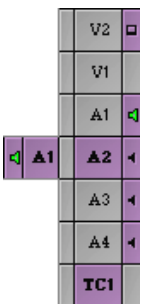
Because the **Music track** clip has one audio track, the A1 button appears on the source side, directly across from the A1 button on the record side. If you make the edit now, the music will overwrite the narration.

You need to tell the system to edit track A1 from the source clip to track A2 of the sequence. You do this by *patching* one track to another. The term patching comes from the electronics field, where it refers to temporarily connecting two components.

To patch the tracks, drag the pointer from the A1 button on the source side to the A2 button on the record side.

While you are patching, you see a white arrow connecting the two tracks. After the patch, you see that the button for source track A1 is next to the button for record track A2.

Selecting the Tracks to Edit



Look at the Track Selector panel again. You need to deselect all record tracks except A2.

1. On the source side of the Track Selector panel, make sure track A1 is selected (purple, not gray).
2. On the record side of the Track Selector panel, make sure track A2 is selected, and deselect all other video and audio tracks.

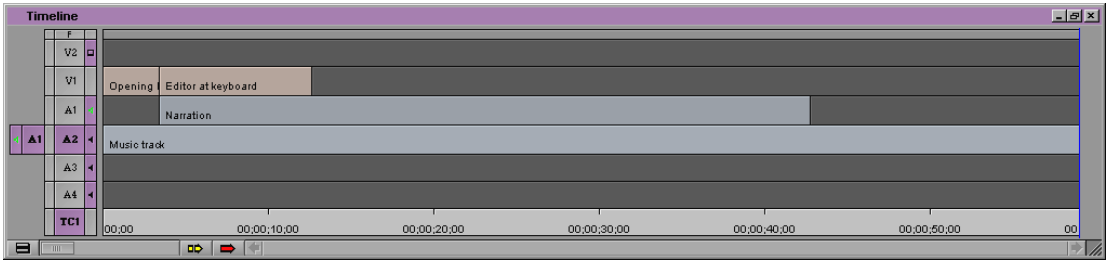
Splicing in the Clip

Now you're ready to make the edit.

1. In the Timeline, go to the head of the sequence.

2. Click the yellow Splice-in button on the Tool palette.

   The music track should now appear on track A2. Your sequence now has one video track and two audio tracks.



Reviewing Your Edits

Review what you've done.

1. Now that you have two tracks of audio, make sure that all tracks are being monitored. Make sure the Speaker icons for tracks A1 and A2 are visible (see **"Monitoring Tracks" on page 107**).
2. Go to the head of the sequence and play through the sequence.

The music sounds a little loud for the narration. You'll adjust audio in **"Working with Audio" on page 133**.

Confirming the Duration

The next steps explain how to confirm the duration by displaying the *master timecode*, which is the timecode of your sequence.

1. Look at the top left of the Composer window. If the master timecode (Mas) is not displayed, click and open the Tracking Information pop-up menu from the gray area above the Composer monitor and select Mas timecode.

   The master timecode displays the location of the position indicator in your sequence.
2. Click the position indicator in the Timeline and drag it to the last frame of the sequence.

The master timecode should read 00;00;59;00 (NTSC) or 00:00:59:00 (PAL), which indicates that the sequence is 59 seconds long.

3. Drag the position indicator through the sequence and watch the master timecode change.

Now is a good time to close any open pop-up monitors. Close all bins too, except for the **Sequences** bin.

Next Steps

You've started your rough cut. You'll adjust the audio in the next chapter. You'll also add some clips to fill in the video gap and to illustrate what the narrator is talking about.

You can continue to the next chapter, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**). The next time you open the project, the windows will be in the same position.

CHAPTER 7

Building a Sequence

You've started creating your rough cut. Now you can complete the rough cut, trim your edits, and adjust the audio levels. In this chapter you'll practice the following tasks:

- **Storyboard Editing the Clips**
- **Overwriting Clips into a Sequence**
- **Backtiming an Edit**
- **Rearranging Clips**
- **Trimming**
- **Adding the Final Clip**
- **Working with Audio**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK. If necessary, open the **Sequences** bin, and then drag the **Rough Cut** sequence into the Composer monitor.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK. Open the **Sequences** bin, and then drag the **Rough Cut 1** sequence into the Composer monitor. Make sure you are familiar with marking IN and OUT points and performing splice-in edits.

Storyboard Editing the Clips

Storyboarding allows you to set up a group of clips in a sequence of events, and then load them into the Composer monitor all at once.

Marking IN and OUT Points

The first step in storyboarding is to mark IN and OUT points for each of the clips you are going to use. We've already marked IN and OUT points for you. If you need to reset them, refer to the following table.

Clip Name[a]	IN Point (NTSC)	OUT Point (NTSC)	IN Point (PAL)	OUT Point (PAL)
Homicide logo	01:37:03:06	01:37:04:28	00:05:10:15	00:05:12:12
Newsroom	06;17;48;03	06;17;50;09	00:06:25:16	00:06:27:12
Editor at keyboard 2	01:26:59:00	01:27:01:04	00:02:37:18	00:02:39:23
Recording session	01:22:23:17	01:22:25:00	00:05:26:06	00:05:27:17
Special effects	01:01:40:20	01:01:42:21	00:03:28:15	00:03:30:15
Lab 1A	01:24:53:19	01:24:57:16	00:04:10:22	00:04:14:20
Lab 1B	01:25:00:11	01:25:07:16	00:04:17:03	00:04:25:12
Trade show	00;03;21;16	00;03;25;17	00:05:45:22	00:05:50:00

a. The NTSC version of these clips use either drop-frame timecode or non-drop-frame timecode, depending on how the original footage was shot. See **"About Timecode" on page 85**.

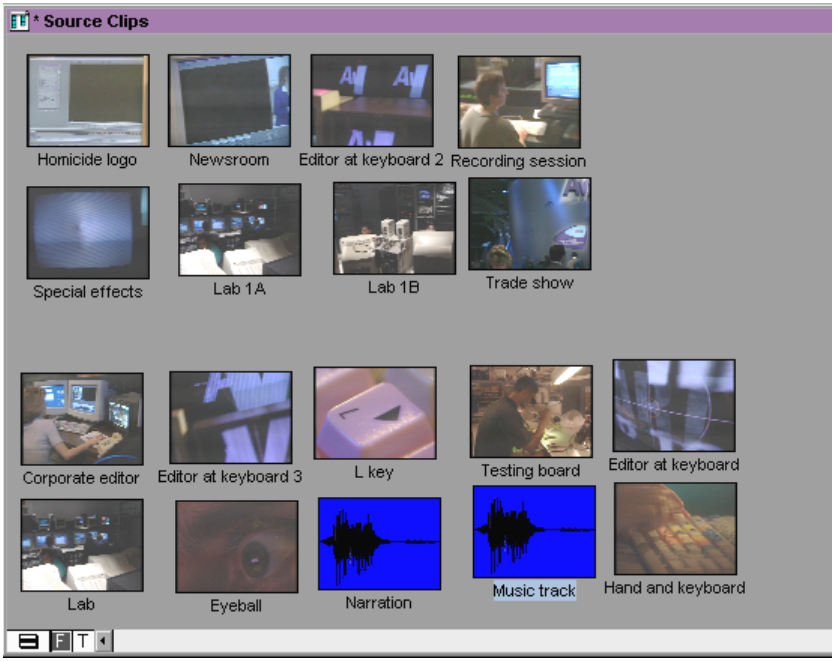
Creating the Storyboard

Next you need to arrange the clips as a storyboard.

1. In the **Source Clips** bin, click the Frame View button.
2. If you need more space to view the clips, click the lower right corner of the bin and drag it to enlarge the window.
3. Choose Fill Window from the Bin menu to arrange the clips in the bin.
4. Arrange the following clips in two rows, from left to right, and top to bottom, to form the storyboard. You arrange the clips by clicking and dragging each clip. Make sure you maintain the order of clips as listed below and shown in the following illustration.

   - Homicide logo
   - Newsroom
   - Editor at keyboard 2
   - Recording session
   - Special effects
   - Lab 1A
   - Lab 1B
   - Trade show

   Arranging the clips in this way makes it easier to select the clips you want to use in the storyboard. Separate the remaining clips, as shown in the following illustration.



Editing the Clips into the Sequence

Now you're ready to edit the marked clips into the sequence.

1. Click the Composer monitor, make sure Mas is displayed in the Tracking Information display, type **17;25** (NTSC) or **18:00** (PAL), and press Enter on the numeric keypad.
2. Mark an IN point.
3. Select record track V1 and deselect all other video and audio tracks.

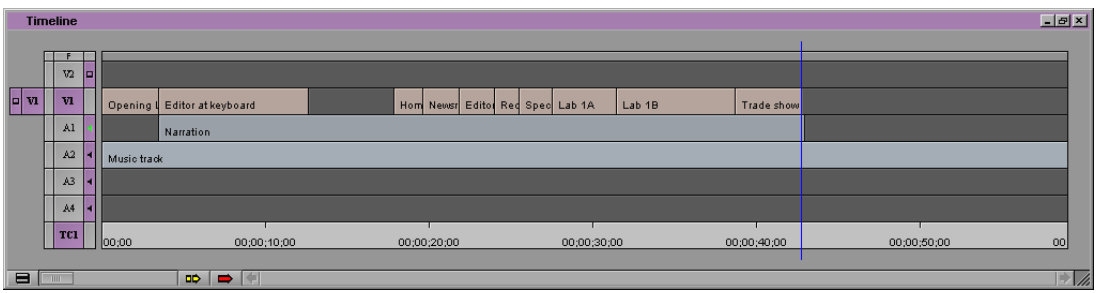
4. Select the storyboarded clips all at once.

    a. Position the pointer in the **Source Clips** bin in the blank area above and to the left of the **Homicide logo** clip.

    b. Lasso the clips by clicking and dragging the pointer to the right and down, making sure to select all of the storyboarded clips, and then release the mouse button. After you select the clips, all the names are highlighted in blue.

5. Click on one of the clips (on the image, not the name), and drag the group into the Timeline. Release the mouse button when a yellow arrow appears in the Timeline.

    The clips are spliced into the sequence in the order you specified.



6. Play the sequence to review it.

Overwriting Clips into a Sequence

In the previous chapter, you spliced clips into a sequence. In this section you'll learn how to overwrite clips into a sequence. An *overwrite edit* replaces a section of a sequence with other source footage. An overwrite edit is especially useful when you want to replace footage but you don't want to affect the clips that follow in the sequence.

The **Editor at keyboard** clip is a little too long. Let's edit the next clip over the last part of the **Editor at keyboard** clip.

1. Make sure the Composer monitor is active.
2. Make sure the Mas timecode is displayed in the Composer monitor (see **"Confirming the Duration" on page 114**).
3. Mark an IN point at 00;00;07;08 (NTSC) or 00:00:07:06 (PAL).
4. Open the **Source Clips** bin.
5. Open the **Eyeball** clip.
6. Check the IN point and OUT points. If there are no points, see **"Marking Another Clip" on page 83**.

When you open a clip, source tracks are selected automatically.

7. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.

8. Click the red Overwrite button on the Tool palette or press the B key on the keyboard.

   The clip overwrites part of the **Editor at keyboard** clip.

9. Close the **Eyeball** clip.

Add two more short clips following the **Editor at keyboard** clip. Using the following clips and edit points, which you marked in **Chapter 5**, follow steps 5 to 9 in the previous procedure. Make sure the position indicator is parked on the last frame of the clip you just added.

Clip Name	IN Point (NTSC)	OUT Point (NTSC)	IN Point (PAL)	OUT Point (PAL)
Hand and keyboard	01:08:14:18	01:08:16:18	00:01:42:23	00:01:44:23
Editor at keyboard 3	01:23:24:02	01:23:27:00	00:03:07:15	00:03:10:13

Backtiming an Edit

Backtiming an edit is effectively the reverse of the process you normally use for marking footage; instead of marking from the IN points forward, you mark from an OUT point backward.

In the sequence, there is a gap between the **Editor at keyboard 3** clip and the **Homicide logo** clip. Let's fill this gap.

1. Go to the last frame of black before the **Homicide logo** clip and mark an OUT point.
2. Go to the first frame of black after the **Editor at keyboard 3** clip and mark an IN point.

   The gap changes to purple.
3. Open the **QuickTime Movies** bin.
4. Open the **Globe.mov** clip.
5. Mark an OUT point at 00;00;04;17 (NTSC) or 00:01:09:10 (PAL).
6. Click the red Overwrite button on the Tool palette or press the B key on the keyboard.

   The gap is now filled.
7. Close the **Globe.mov** clip and the **QuickTime Movies** bin.

Rearranging Clips

You can rearrange clips by overwriting material, switching placement of material, lifting material, or removing material. Overwriting and switching material doesn't change the length of the sequence. Lifting material leaves a gap (also known as *filler*) and doesn't affect the length of the sequence. Removing material shortens the length of the sequence.

Overwriting with a Three-Point Edit

A *three-point edit* is an easy way to replace a clip in a sequence. Use the Mark Clip button to select the clip in the sequence (or mark an IN and OUT point for a segment that's more than a single clip), and mark either the IN or OUT point in the source clip. The system calculates the exact duration of the source clip to insert.

Let's replace the **Editor at keyboard 3** clip near the beginning of the sequence with the **L key clip.**

1. To enlarge this area, in the Timeline:

   a. Press the Home key.

   b. Click the scale box and drag it to the right until you can read the label Editor at keyboard 3.

2. Place the position indicator anywhere in the **Editor at keyboard 3** clip.

3. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.

4. 

   Click the Mark Clip button in the row of buttons below the Composer monitor, or press the T key on the keyboard.

   The IN and OUT points appear at the head and tail of the clip in the TC1 track of the Timeline. The marked segment changes to purple.

   The IN and OUT points also appear in the Composer monitor's position bar.

5. In the **Source Clips** bin, open the **L key** clip.

6. Mark an OUT point at 01:11:40:15 (NTSC) or 00:02:03:04 (PAL). Do not mark an IN point.

   Make sure the V1 timecode is showing in the Tracking Information display.

7. Click the red Overwrite button on the Tool palette (or press the B key on the keyboard) to make the three-point edit.

   The **L key** clip replaces the **Editor at keyboard 3** clip.

8. Click the scale box and drag it to the left to contract the Timeline.
9. Close the **L key** clip.

Using Segment Mode

Segment mode provides editing controls for moving, deleting, marking, and editing entire segments in the Timeline. A *segment* is a portion of the sequence that consists of one or more clips. There are two buttons for editing segments or adding clips: Extract/Splice-in (indicated by a yellow arrow) and Lift/Overwrite (indicated by a red arrow). These buttons are located at the bottom of the Timeline window.

Unlike traditional editing, Segment mode allows you to reposition entire segments instantly by using visual controls as though you were physically “dragging” portions of your sequence around on a tape. You can move clips separately or together, and on one track or across tracks.

Changing the Order of Clips in a Sequence

Let’s see what it looks like if we reverse the position of two clips in the sequence. To move entire clips, use Segment mode.

1. Make sure the position indicator is parked in the **L key** clip (the one you just edited into the sequence).

2. Click the Segment Mode (Extract/Splice-in) button, which is the button with the yellow arrow under the Timeline.

   When the button is activated, its background changes to light gray.

Don't confuse the Extract/Splice-in and Splice-in buttons. The Extract/Splice-in button is located under the Timeline; the Splice-in button is located on the keyboard (the V key) and on the Tool palette.

3. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.
4. Click the **L key** clip, drag it to the left (so it is over the preceding clip), and release the mouse button.

   The L key clip should now follow the **Eyeball** clip.
5. Click the Extract/Splice-in button again to deselect it.
6. Click the Timeline anywhere in the **Eyeball** clip and review the clips you just moved.

Let's go back to the original order. Choose Undo from the Edit menu.

Removing Footage from a Sequence

You can remove footage from your sequence, and either close or retain the gap that results. The Delete key closes the gap, and the Lift key retains the gap.

Removing Footage and Closing the Resulting Gap

The **Editor at keyboard 2** clip that was part of the storyboard is too similar to the clips at the beginning of the sequence. Let's remove it from the sequence and close the gap that results.

1. Use the scale bar and scroll bar to locate the **Editor at keyboard 2** clip.

2. Click the yellow Segment Mode (Extract/Splice-in) button under the Timeline.

To eliminate footage that does not start and end at a transition, use IN and OUT points to mark the segment that you want to extract.

3. Click anywhere in the **Editor at keyboard 2** clip on track V1.

   The clip is highlighted.

4. Press the Delete key on the keyboard.

   The selected clip is eliminated and the surrounding clips close the gap.

5. Deselect the Extract/Splice-in button by clicking it.

6. Click the Timeline in front of the **Recording session** clip and play the next few clips.

   The video no longer matches the narration. You need to retain rather than close the gap.

7. Choose Undo from the Edit menu to undo the edit and restore the clip.

Removing Footage and Retaining the Resulting Gap

The Lift key retains the gap after lifting footage from the sequence. Use the Lift key if you want to maintain the rhythm of a sequence or the synchronization of the video and audio tracks.

Try the edit again, but this time use the Lift key, and replace the clip.

1. Click anywhere in the **Editor at keyboard 2** clip.
2. Click the Mark Clip button below the Composer monitor to mark IN and OUT points.
3. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.

4. Press the Lift key on the keyboard to remove the segment.

   The letter equivalent of the Lift key depends on the version of your keyboard. For the location of the Lift key, choose Keyboard from the Settings scroll list.

   The selected segment lifts out and leaves filler in its place.

Replacing a Clip

Now fill the gap with a different clip.

1. Open the **Corporate editor** clip.
2. Mark an IN point for the clip at timecode 06;16;34;13 (NTSC) or 00:06:08:07 (PAL).
3. In the sequence, make sure the filler has IN and OUT points. If not, click the Mark Clip button.
4. Click the red Overwrite button on the Tool palette or press the B key on the keyboard.

   The filler has been replaced by the new clip.
5. Close the **Corporate editor** clip and the **Source Clips** bin.
6. Move the scale bar all the way to the left to compress the Timeline, which lets you see the entire sequence.

Trimming

Trimming allows you to adjust incoming and outgoing frames of your clip. There are two types of trims: dual-roller and single-roller. When you trim, you are working in Trim mode. In Trim mode the Composer monitor changes and new editing buttons appear.

To trim a transition, at least one of the clips needs media in addition to the media displayed in the Timeline (see **"Sequences" on page 42**).

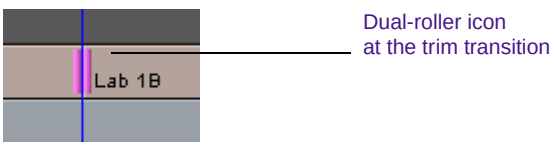
Adjusting Both Sides of a Transition (Dual-Roller Trimming)

Use a *dual-roller trim* to adjust both sides of a transition at the same time, adding frames to one clip while subtracting frames from the adjacent clip. The total duration of the sequence does not change.

Let's tighten the **Lab 1A**/**Lab 1B** transition. (You'll smooth the transition with a dissolve effect in the next chapter).

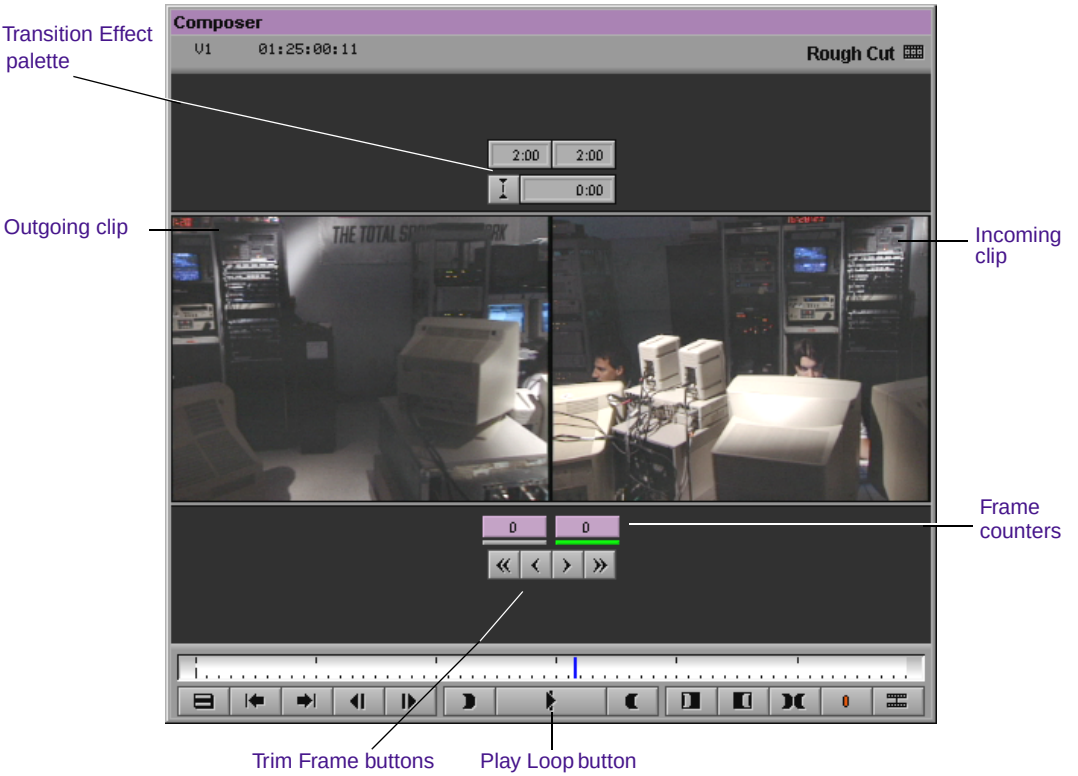
1. Place the position indicator near the **Lab 1A**/**Lab 1B** transition, and click the Trim Mode button on the Tool palette.

   The position indicator snaps to the transition, and an icon representing two rollers appears.



   The Composer monitor shows the last (tail) frame of the **Lab 1A** clip on the left, and the first (head) frame of the **Lab 1B** clip on the right.

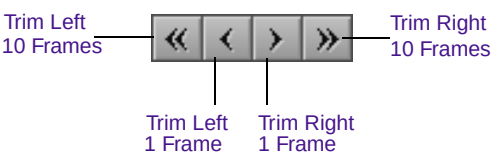
   New buttons appear below the trim windows. During a dual-roller trim, both frame counters are purple.



2. Play the transition by clicking the Play Loop button.

   The transition plays repeatedly.

3. To stop the playback loop, click the Play Loop button again.
4. Click the Trim Left 10 Frames button three times.



You can also trim by dragging the Dual-Roller icon.

This action adds 30 frames to the head of the incoming clip and removes 30 frames from the tail of the outgoing clip. The duration of the video track remains unchanged.

5. Play the transition again by clicking the Play Loop button.
6. Do one of the following to exit Trim mode:

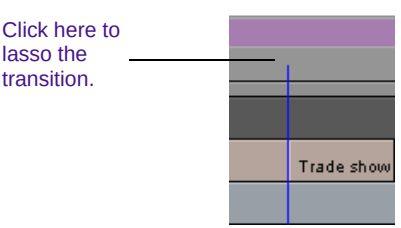
- Click the Trim Mode button on the Tool palette.
- Press the Left Arrow key on the keyboard.

Single-Roller Trimming

In the previous trim, you trimmed both the head and the tail clips an equal number of frames, adding to one side and subtracting from the other. Now let's trim the tail of one clip without affecting the head of the next clip. This is a *single-roller tri*m. You'll also use a different way of entering Trim mode.

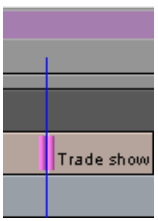
The **Trade show** clip begins a little too quickly for the narration. Let's extend the **Lab 1B** clip while keeping the same start of the **Trade show** clip.

1. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.
2. Move the position indicator to the **Lab 1B/Trade show** transition.
3. Enter Trim mode by lassoing the Timeline tracks.
   a. Click the pointer above all the Timeline tracks, just to the left of the transition, but below the title bar. In this example, click above and to the left of the position indicator.



b. Drag the pointer down and to the right to surround the transition, and release the mouse button.

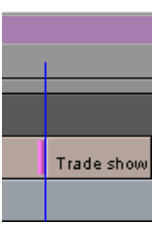
The trim rollers appear.



Left frame counter

4. In the Composer window, click the left frame counter (A-Side Trim counter).

   Your trim will only affect the outgoing clip, which is in the left Trim monitor. The left frame counter remains purple, while the right one is deselected. A single roller appears in the Timeline.



5. On the numeric keypad, type **+40** and press Enter.

   This moves the transition 40 frames to the right.

6. Play the transition by clicking the Play Loop button.
7. Exit Trim mode by pressing the Left Arrow key on the keyboard or by clicking the Trim Mode button on the Tool palette.

Adding the Final Clip

We have supplied you with another QuickTime movie, titled **Closing logo.mov**. This clip needs to be edited to sync with the music, so use timecode to set the IN point in the sequence.

1. Open the **QuickTime Movies** bin.
2. Open the **Closing logo.mov** clip.
3. Click the Mark Clip button to mark the entire clip for editing.
4. Click the Composer monitor.
5. Mark an IN point at 00;00;44;02 (NTSC) or 00:00:44:02 (PAL).

   Use the Mas setting in the Tracking Information display.
6. In the Track Selector panel, make sure record track V1 is selected, and all other video and audio tracks are deselected.
7. Click the Overwrite button or press the B key to make the edit.
8. Close the **Closing logo.mov** clip and the **QuickTime Movies** bin.
9. Play your sequence to review your work.

There might be a small gap between the end of the **Trade show** clip and the beginning of the **Closing logo.mov** clip.

Perform a dual-roller trim to close the gap.

1. Place the position indicator on the first frame of black after the **Trade show** clip and click the Trim Mode button on the Tool palette.

   You should see two rollers appear at the transition.

2. Drag the rollers until they reach the beginning of the **Closing logo.mov** clip.

   The rollers will stop when they reach the beginning of the next clip.

3. Click the Left Arrow key to exit Trim mode.

4. Play the last two clips of the sequence.

Working with Audio

In this section, you work with the Audio Mix tool to adjust the balance and volume of the sequence.

Adjusting Audio Pan (Balance)

The narration for the sequence plays out of one speaker and the music plays out of another. You can adjust the audio pan (balance) so the sound plays equally from both speakers.

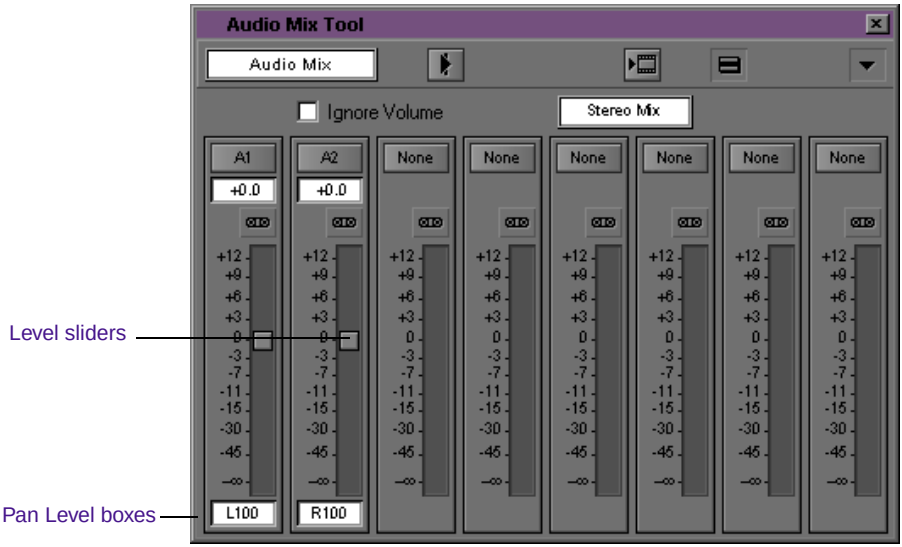
1. Clear any IN or OUT points from the sequence by pressing the G key on the keyboard.

2. Select record tracks A1 and A2.

3. Move the Timeline position indicator to any point in the Timeline that includes both A1 and A2.

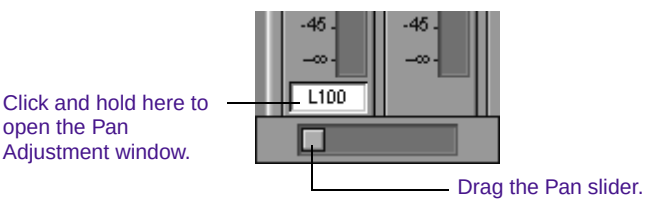
4. Choose Audio Mix from the Tools menu.

   The Audio Mix tool appears.



5. Click and hold the Pan Level box for track A1 to open the Pan Adjustment window.

   The Pan slider appears.



To snap the slider to MID, press and hold the Alt key and click the Pan Level box.

6. Drag the Pan slider to the middle of the scale until it reads MID, and then release the mouse button.
7. Open the Pan Adjustment window for track A2 and drag the Pan slider until it reads MID. Release the mouse button.

You can change the pan settings for an entire project in the Audio Settings dialog box.

8. Play a portion of the sequence to check the speaker balance.

Adjusting Audio Level

The music is a little loud for the narration. Let's raise the volume of the narration by using the Audio Mix tool.

1. The Audio Mix tool should already be open. If not, choose Audio Mix from the Tools menu.
2. Place the position indicator anywhere within the **Narration** clip.
3. In the A1 area of the Audio Mix tool, move the A1 Audio Level slider to level +5.0 by doing one of the following:
   - Drag the slider to level +5.0.
   - Click the slider and type **+5**.
   - Click the slider and press the Up Arrow or Down Arrow key on the keyboard to reach level +5.0.
4. Play a portion of the sequence.

   Adjust the audio level further, depending on your preference.
5. Click the Close button to close the Audio Mix tool.

You can make further adjustments to the narration or music track by using the Audio Gain Automation tool. See the *Avid Xpress DV User's Guide* or Help.

Next Steps

You've completed and refined your rough cut. You can continue to the next chapter to add effects, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**). The next time you open the project, the windows will be in the same position.

CHAPTER 8

Adding Effects

Adding an effect to a clip enhances your sequence by fading in or out of a scene, or adding video or a graphic on top of a clip. In this chapter, you'll add dissolves and other effects. This chapter covers the following topics:

- **Effects Editing**
- **Dissolving Between Clips**
- **Adding a Picture-in-Picture Effect**
- **Adding a Flop Effect**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK. If necessary, open the **Sequences** bin, and then drag the **Rough Cut** sequence into the Composer monitor.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK. Open the **Sequences** bin, and then drag the **Rough Cut 2** sequence into the Composer monitor.

Effects Editing

The Avid Xpress DV system offers many effects that you can apply to your sequences. This chapter explains how to apply effects to transitions or segments (clips) in your sequence. After you have selected the effect and have applied it to a transition or segment, you can adjust the effect parameters to meet your requirements.

Effects need to be rendered before you play them in the finished sequence. *Rendering* an effect creates a media file that plays with the sequence. You can preview effects before rendering by "stepping through" the sequence using the Step keys.

Some effects can be applied only to transitions, other effects can be applied only to segments, and some effects can be applied to both transitions and segments. In addition, some effects can be applied to a single video layer, and others to multiple video layers.

For complete explanations of effects and how to use them, see the *Avid Xpress DV Effects Guide*.

Transition Effects

A transition is the point where two clips meet. You apply a *transition effect* to the cut point between two clips on the same video track. After you apply a transition effect, you can adjust its relative position and duration. Depending on the specific effect, other effect parameters might apply.

Segment Effects

You apply a segment effect to an entire clip or a group of clips. There are two types of segment effects:

- A *single-layer segment effect*, such as a mask or a flop, is applied to a segment on one video track.
- A *multilayer segment effect*, such as a Picture-in-Picture effect, is applied to the top layer of segments that contain two or more video tracks that will be played simultaneously.

You'll add both types of effects in this chapter.

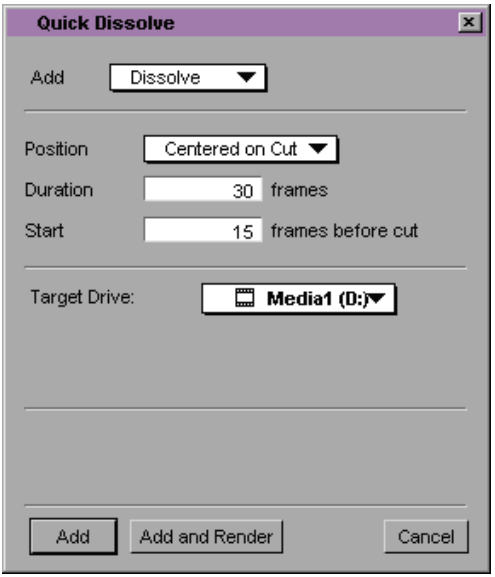
Dissolving Between Clips

Let's start by adding a dissolve between two clips of the sequence. A *dissolve* is a video or audio transition in which an image from one source gradually becomes less distinct as an image from a second source replaces it.

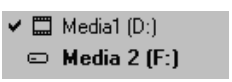
1. Clear IN or OUT points if they are marked on the sequence.
2. Select record track V1 and deselect all other video and audio tracks.
3. Click the transition between the **Editor at keyboard** clip and the **Eyeball** clip.
4. 

Click the Add Dissolve button on the Tool palette.

   The Quick Dissolve dialog box appears.



5. Let's make the dissolve a little shorter than the default duration.
   a. Choose Dissolve from the Add pop-up menu.
   b. Choose Centered on Cut from the Position pop-up menu.
   c. Type **20** (NTSC) or **16** (PAL) in the Duration text box. The number 10 or 8 automatically appears in the Start text box.
6. Choose the drive on which the effect media file should be stored from the Target Drive pop-up menu.



   Boldface indicates the drive with the most space. The Film Clip icon indicates the drive that holds the media for the outgoing clip in the transition. For this tutorial, select the drive that holds the media.
7. Click the Add and Render button to render the effect.

Rendered effect icon

A message box appears while the system creates a media file for the effect. A progress indicator displays the percentage of the rendering that has been completed. After the effect is created, a rendered effect icon appears in the Timeline where you added the effect.

8. Play the effect. Press the space bar to stop playback.

Creating a Series of Dissolves

After you create one dissolve, you can quickly add it to other transitions in a sequence. Add the same dissolve you created in the previous section to smooth the other three transitions in the opening part of the sequence.

1. In the sequence, mark an IN point in the **Eyeball** clip, before the transition to the **Hand and keyboard** clip.
2. Mark an OUT point in the **Globe.mov** clip, after the transition. The IN and OUT points should include three transitions.
3. Click the Add Dissolve button.

   The dialog box contains the same parameters you used to create your dissolve.
4. Select the option Apply To All Transitions (In -> Out).
5. Click Add.

Blue dots

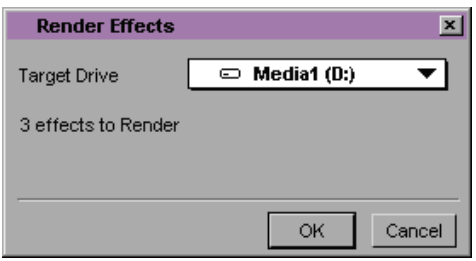
The system adds the effects, but does not render them. The blue dots on the effect icons indicate that you need to render the effects. You can save time by adding effects and rendering them later.

Rendering a Series of Effects

Now render the three dissolves you just created.

1. Make sure the sequence contains the IN and OUT points you marked in the previous procedure.
2. Choose Render In/Out from the Clip menu.

   The Render Effects dialog box appears.



3. For the Target Drive, choose the same drive that you selected in **"Dissolving Between Clips" on page 138**. This drive will remain the default target drive until you choose another.
4. Click OK.

   The message box with a progress indicator appears. To see the progress of rendering, press the T key.

   After the effects are rendered, the blue dots no longer appear on the effect icons.
5. Play the first part of the sequence to review your work.

Adding Additional Dissolves

Now add two more dissolves.

1. In the sequence, mark an IN point in the **Lab 1A** subclip, before the transition to the **Lab 1B** subclip.
2. Mark an OUT point in the **Trade show** clip, just after the transition from the **Lab 1B** subclip.
3. Click the Add Dissolve button.
4. Select the option Apply To All Transitions (In -> Out).
5. Click Add and Render.

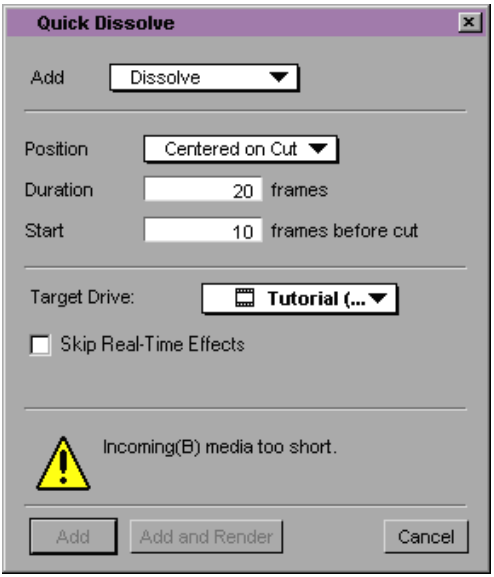
The system adds and renders the effects.

Changing the Position of a Dissolve

When Avid Xpress DV creates a dissolve between two clips, it needs media in addition to the media displayed in the Timeline. This additional source media (or handles) must be part of the master clip (see **"Sequences" on page 42**). Let's create a dissolve when one clip doesn't have enough extra source media.

1. Click the transition between the **Trade show** and **Closing logo.mov** clips.
2. Click the Add Dissolve button.

   The Quick Dissolve dialog box appears with a message that tells you that the incoming clip, in this case **Closing logo.mov**, doesn't have enough additional media to create a dissolve that is centered on the cut.



3. Choose Starting at Cut from the Position menu.

   The message disappears, because in this case the system will use additional media from the **Trade show** clip to create the dissolve.

4. Click Add and Render.

5. Play the transition.

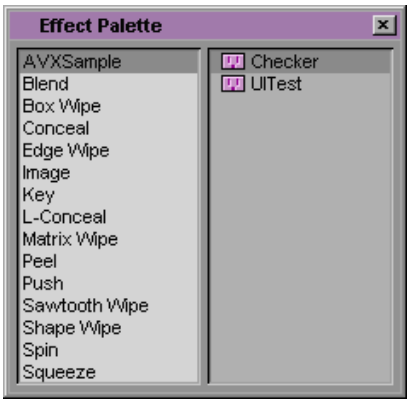
   The system created an acceptable dissolve.

Adding a Picture-in-Picture Effect

Let's add an effect that illustrates the narration. Using a Picture-in-Picture effect, you'll show footage of a test engineer over the **Lab 1A/ Lab 1B** transition.

Displaying the Effect Palette

Before you add your next effect, choose Effect Palette from the Tools menu. The Effect Palette appears.



The Effect Palette contains most of the effects in the Avid Xpress DV system. The exceptions are motion effects that you access from the Fast menu on a Source pop-up monitor, the Freeze Frame effect that you access from the Clip menu, and titles that you create with the Title tool.

You'll be choosing Picture-in-Picture from the Effect Palette.

Using the Second Video Track

A Picture-in-Picture effect takes up two video tracks: in this sequence, V1 for the lab footage and V2 for the test engineer. First, you have to edit the **Testing board** clip onto track V2.

1. Select record track V2 and deselect all other video and audio tracks.
2. Press the G key to clear IN and OUT points from the sequence.

3. Mark an IN point at 00;00;00;30 (NTSC) or 00:00:00:30 (PAL). Check the Mas timecode display in the Composer monitor to help you mark the IN point.
4. Open the **Source Clips** bin and open the **Testing board** clip.
5. Mark an IN point at 01:14:36:00 (NTSC) or 00:04:49:01 (PAL) and an OUT point at 01:14:39:18 (NTSC) or 00:04:52:19 (PAL).
6. Patch the V1 source track to the V2 record track by clicking the V1 Source Track button and dragging it to the V2 Record Track button (see **"Patching Tracks" on page 112**).
7. Click the Overwrite button.

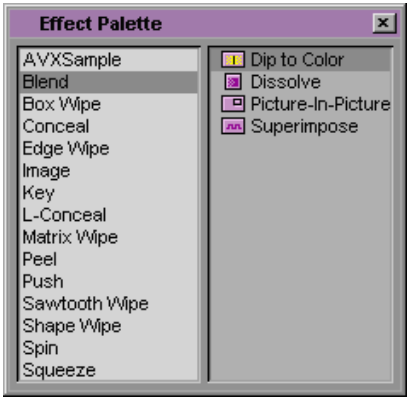
   The clip is edited onto track V2.
8. Close the **Testing board** clip and the **Source Clips** bin.
9. Play the edited section of the sequence from a location before the **Testing board** clip.

Creating the Picture-in-Picture Effect

Let's place the new clip in a window by using the Picture-in-Picture effect.

1. Make sure record track V2 and the record track V2 monitor are selected.
2. Click the Effect Palette or choose it from the Tools menu.
3. Select Blend from the list of effect categories on the left side of the Effect Palette.

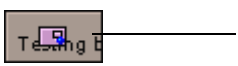
   The blend effects, including the Picture-in-Picture effect, are displayed on the right side of the Effect Palette.



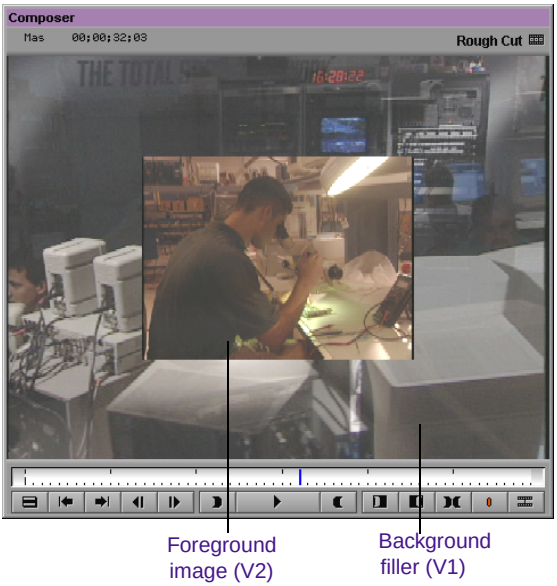
4. Place the position indicator anywhere in the **Testing board** clip on track V2.

5. Click the Picture-in-Picture icon from the Effect Palette and drag it to the **Testing board** clip.

   The Picture-in-Picture icon appears in the Timeline.



   The **Testing board** clip appears in a box in the middle of the Composer monitor.



If the foreground image does not appear midscreen, make sure to choose Render On-The-Fly from the Clip menu. A check mark should appear in front of the menu choice.

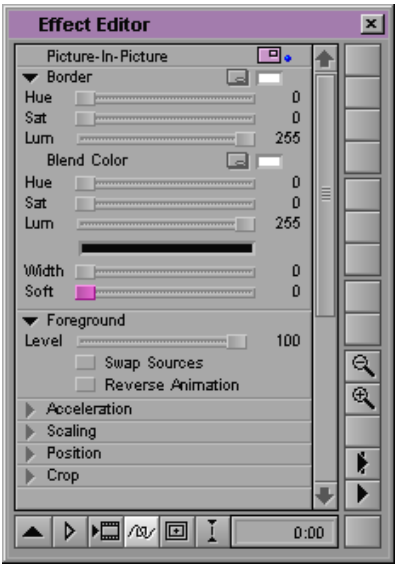
6. Close the Effect Palette.

Resizing the Image

Now let's enter Effect mode and enlarge the image slightly.

1. In the Timeline, make sure the position indicator is directly over the Picture-in-Picture icon.
2. Click the Effect Mode button on the Tool palette to enter Effect mode.

   The Effect Editor appears, with parameters for the Picture-in-Picture effect.



In Effect mode, the Composer monitor changes to include only the duration of the effect, with keyframe markers (pink triangles) at the beginning and end of the clip. For more information about using keyframes, see the *Avid Xpress DV Effects Guide* or Help.

3. In the Effect Editor, click the arrow next to the word Scaling to open the scaling pane.

4. Click the Fixed Aspect button to keep the image at the same proportions. Make sure the button changes to pink.
5. Click either the Wid (Width) or Hgt (Height) slider so that the slider changes to pink.

You can also drag the slider.

6. Press the Right Arrow key on the keyboard 10 times. Both the height and width change.

Previewing the Effect

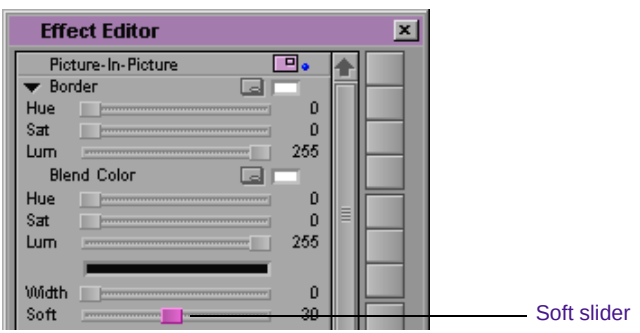
You can preview the effect before you render it by clicking the Play Loop button on the right side of the Effect Editor. The clip with the effect plays from beginning to end until you click the button again.

If you are in Effect mode, you can also click the Play button to preview the effect. Outside of Effect mode, you need to render the effect before you can view it.

Adjusting the Border

You can add to the effect by softening the border.

1. Click the Soft slider in the Effect Editor.



You can also drag the slider or use the arrow keys.

If you can't see the Effect Editor, click the Effect Mode button on the Tool palette.

2. Type **10** on the numeric keypad.

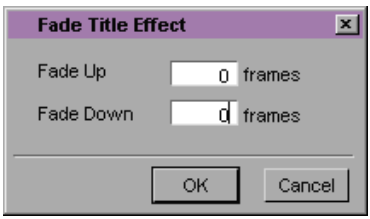
You can see the borders soften.

Fading In and Out

The Picture-in-Picture appears and disappears suddenly. There's a special button you can use to fade the effect in and out.

1. On the Tool palette, click the Fade Effect button.

   The Fade Title Effect dialog box appears.



2. Click in the Fade Up text box and type **10**. Do the same for the Fade Down text box.
3. Click OK.

You won't see the fade until you render the effect.

Rendering the Effect

Now it's time to render the effect.

1. On the Tool palette, click the Render Effect button.

   The Render Effect dialog box appears.

2. Accept the default target drive and click OK.

   A message box with a progress indicator appears. Because this effect is more complex than a dissolve, it will take a little longer to render (approximately 1 minute).To check the time elapsed and time remaining, press the T key.

3. When the rendering is complete, close the Effect Editor to exit Effect mode.
4. Play the part of the sequence that includes the Picture-in-Picture effect.

Adding a Flop Effect

In the **Eyeball** clip, the letters of the word Avid are reversed, as if reflected in a mirror. You can use the Flop effect to display the letters in the normal way.

1. Open the Effect Palette.
2. In the left column, click Image.
3. In the right column, click Flop and drag the icon to the **Eyeball** clip in the Timeline.
4. Close the Effect Palette.
5. Click anywhere in the **Eyeball** clip.

   The image is now reversed, or flopped.

   This effect, and the dissolves on either side, have blue dots and need to be rendered. Even though you rendered the dissolves earlier, placing another effect on top of them requires you to render all three effects.
6. Select record track V1 and deselect all other video and audio tracks.
7. In the sequence, mark IN and OUT points that include all three effects.
8. Choose Render In/Out from the Clip menu.

   The Render Effects dialog box appears.

9. Click OK.
10. Play the part of the sequence that includes the effects you just rendered.

Next Steps

You've finished adding effects to the sequence. If you want, you can take time to play with other effects, such as adding more dissolves, changing the border of the picture-in-picture, or experimenting with transition effects like edge wipes. In the next chapter you'll add a title. You can continue to the next chapter, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**).

CHAPTER 9

Creating Titles

The Title tool lets you create text and graphics that you can edit into a sequence. In this chapter you'll add titles to your sequence by completing the following tasks:

- **Creating a New Title**
- **Saving a Title**
- **Editing the Title into the Sequence**
- **Fading a Title**
- **Editing a Saved Title**
- **Renaming Your Sequence**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK. If necessary, open the **Sequences** bin, and then drag the **Rough Cut** sequence into the Composer monitor.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK. Open the **Sequences** bin, and then drag the **Rough Cut 3** sequence into the Composer monitor.

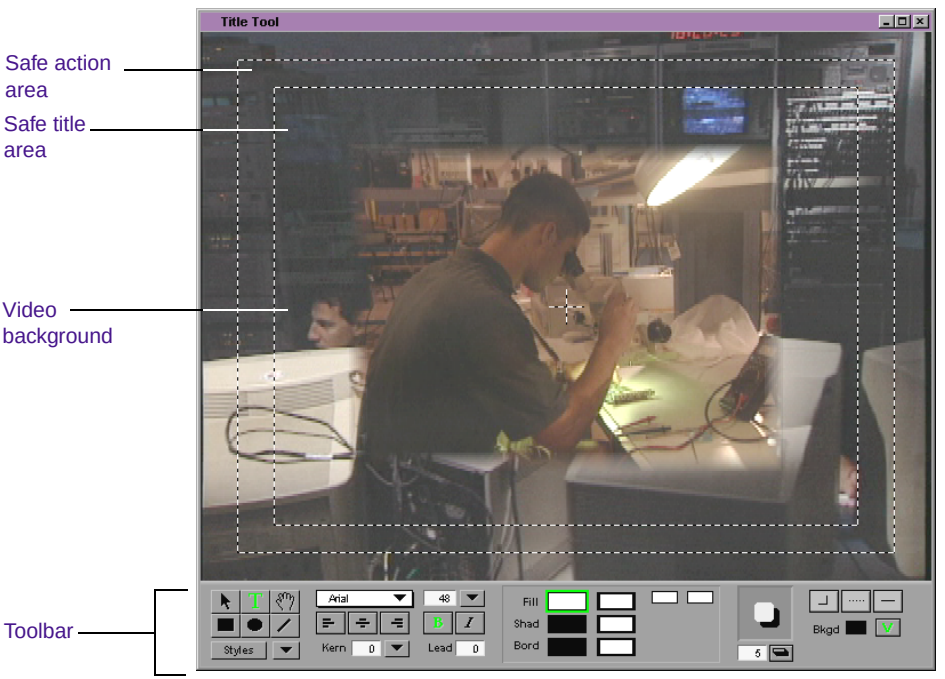
Creating a New Title

For complete information on creating and editing titles, see the *Avid Xpress DV Effects Guide* or Help.

Let's create a title that illustrates part of the narration.

1. In the Timeline, place the blue position indicator in the middle of the **Testing board** clip.
2. Choose New Title from the Clip menu.

   The Title Tool window opens on top of the Composer and Timeline windows.



To get information on items in the toolbar, position the pointer on an object, click the right mouse button, and choose What's This? from the pop-up menu.

The Title tool includes the following features:

- Two grids that indicate areas of the image that are safe for broadcast. The outside grid outlines the safe action area and the inside grid outlines the safe title area. The safe title and safe action areas do not apply if you are creating a video for a CD-ROM or the Internet.
- Video background for the title, based on the location of the position indicator when you open the Title tool.
- A toolbar that includes many controls for creating, adjusting, and saving your titles.

3. Click the Text Tool button. If it is already selected on the toolbar, the pointer changes to an I-beam when you click in the Title Tool window.
4. Click in the left side of the safe title area, below the picture-in-picture.

   A blinking insertion point appears.
5. Type **`product innovation`**.
6. The following values might already be selected. If not:

   a. Click the Selection Tool button on the toolbar, then click the title text.

      Object selection handles surround the title.

   b. Choose 48 from the Font Point Size pop-up menu.

   c. Choose Arial from the Font Selection pop-up menu.

   d. Click the B button for **bold** and click the I button for *italics*.

Adding a Shadow

Adding a shadow to the title text will make it easier to read. Type a **5** in the Shadow Depth Selection text box and press the Enter key.

By default, the Title tool uses a shadow that falls below and to the right of the text. For more information about changing the type of shadow and how it falls, see the *Avid Xpress DV Effects Guide*.

Positioning and Aligning Text

You might need to move the text so that it aligns with the edge of the safe title grid.

1. Select the first line of text.
2. Choose Align to Frame Left from the Alignment menu.

Your title should look similar to the one in the following illustration.

There are many adjustments you can make in the Title tool. For now, let's save the title.

Saving a Title

Now save your title.

1. Open the **Source Clips** bin. You'll be storing the title here.
2. Click in the Title Tool window.
3. Choose Save Title from the File menu.

   The Save Title dialog box appears.
4. Type **`product innovation`** in the Title Name text box.
5. Choose **Source Clips** from the Bin pop-up menu.
6. Accept the default drive and resolution.
7. Click Save.

   The title appears in the **Source Clips** bin.
8. Click the Close button to close the Title tool.

Editing the Title into the Sequence

Now add the title to your sequence.

1. Double-click the **product innovation** title clip.

   The title opens in a Source pop-up monitor.
2. Add a new video track (V3) by choosing New Video Track from the Clip menu.

3. Patch source track V1 to record track V3 by clicking the V1 Source Track button and dragging it to the V3 Record Track button (see **"Patching Tracks" on page 112**).
4. Make sure source track V1 and record track V3 are selected, and all other video and audio tracks are deselected.
5. In the Source pop-up monitor, set an IN point at the beginning of the clip.
6. In the Timeline, set an IN point at 00;00;31;22 (NTSC) or 00:00:31:22 (PAL) which is approximately where the narrator begins to say "product innovation."
7. Set an OUT point at 00;00;33;19 (NTSC) or 00:00:33:19 (PAL) to sync with the end of the **Testing board** clip.

8. Click the red Overwrite button on the Tool palette.

   This adds the title to the V3 video track. Now you have to render the title, in the same way as you would render an effect.
9. In the Timeline, place the position indicator on the Title Effect icon.
10. On the Tool palette, click the Render Effect button and click OK.

    The Avid Xpress DV system renders the effect and creates a file for the title.
11. Close the **product innovation** title clip.
12. Play the part of the sequence that includes your title.

Fading a Title

You can have the title fade in and out:

1. Place the position indicator on the Title Effect icon.
2. Click the Fade Effect button on the Tool palette.
3. Type **10** frames in each of the text boxes.

4. Click OK.

   The effect now has a blue dot. You need to render the effect again.

5. Click the Render Effect button and click OK.
6. Play your sequence from just before the **Testing board** clip.

Editing a Saved Title

You can edit a saved title to change the content, font, and so on. You can create a new title by editing a saved title and saving it with a new name.

1. In the **Source Clips** bin, Ctrl+double-click the **product innovation** title.

   The title opens in the Title Tool window.

2. Make sure the Text Tool button is selected.
3. In the Title Tool window, click the beginning of the existing title and drag the cursor to select the text.
4. Replace the text with the words **`a path to the future`**. Keep the same settings as the previous title.
5. Click the Selection tool and then drag the title to the upper right.
6. Choose Align to Frame Right from the Alignment menu.

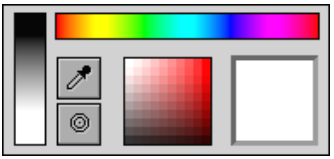
Changing Color

By default, the text is white. Let's change the color of the new title.

1. Click the Selection tool and then click the title text.
2. Click and hold the Fill box.

   The Title Tool Color Picker appears.

You can “tear off” the Title Tool Color Picker window by dragging it to another location.



3. Drag the mouse pointer over the band of colors at the top of the Title Tool Color Picker. When you find a color you want to use, release the mouse button

   The color is applied to the title.

Saving the Title

Next, save the title with a different name.

1. Choose Save Title As from the File menu.
2. In the Title Name text box, type **`a path to the future`**.
3. Click Save.
4. Close the Title tool.

Editing the Title

Now edit the title into the sequence in the same way that you edited the previous title.

1. Open the **a path to the future** clip.
2. Click the Timeline and mark an IN point at 00;00;35;19 (NTSC) or 00:00:35:19 (PAL), approximately where the narrator begins to say “a path to the future.”
3. Mark an OUT point at 00;00;37;15.
4. Patch source track V1 to record track V3.
5. Click the red Overwrite button on the Tool palette.
6. Click the Fade Effect button.

7. Render the title.
8. Play the sequence from the beginning to review your work.

Renaming Your Sequence

If you're satisfied with your sequence, change the name from **Rough Cut** to a name of your choice.

1. In the **Sequences** bin, click the name **Rough Cut**.
2. Type a new name, such as **Final Sequence**.

Next Steps

You've finished editing your sequence. There are probably changes and refinements you'd like to make. If you have time, try making these changes. Consult the *Avid Xpress DV User's Guide*, *Avid Xpress DV Effects Guide*, and the Help for information on all the features of the product and how to use them.

The next chapter describes how to output your sequence. You can continue to the next chapter, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**).

CHAPTER 10

Generating Output

You've finished your sequence. Now you're ready to create an output format and distribute it. Avid Xpress DV lets you output your sequence in many different formats. This chapter covers three kinds of output:

- **Creating a Movie for the Internet**
- **Exporting a QuickTime Movie**
- **Outputting a Digital Cut to Tape**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK. If necessary, open the **Sequences** bin, and then drag your final sequence into the Composer monitor.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK. Open the **Sequences** bin, and then drag the **Introducing Avid** sequence into the Composer monitor.

Creating a Movie for the Internet

Avid Xpress DV includes software that is especially designed for creating video that is formatted for distribution over the Internet. These formats include:

- RealMedia™ G2
- MPEG - Ligos
- Microsoft® ASF
- QuickTime

This section describes how to use the RealProducer G2 application to output a RealMedia movie. For information about other formats, see the *Avid Xpress DV User's Guide* and Help.

Software for these applications is installed when you install Avid Xpress DV software. You can also install the applications separately. See ***"Installing Avid Xpress DV Software" on page 24****.*

About RealMedia

RealMedia, developed by RealNetworks, Inc., is a *streaming* format. Streaming is a technology in which viewers can watch a video clip or movie over the Internet while it is being copied to their computer, rather than forcing them to wait until the entire file is downloaded.

Avid Xpress DV and RealProducer G2 convert your sequence to a streaming movie for viewing over a network or the Internet. To view a RealMedia movie, you need RealPlayer® software, which is installed with Avid Xpress DV. You can also download RealPlayer from the RealNetworks Web site at www.real.com.

Preparing the Sequence

Before you export your sequence, check the sequence to make sure you have selected and monitored the tracks you want to use.

1. Start Avid Xpress DV and open your final sequence (or you can use the prepared sequence titled **Introducing Avid**).

2. Make sure the Track Selector panel has the following record tracks selected and monitored:
   - V3
   - V2
   - V1
   - A1
   - A2

   Track selector buttons for these tracks should be purple. Track Monitor buttons should show a Monitor icon for track V3 and Speaker icons on tracks A1 and A2.
3. Clear any IN or OUT points in the sequence.
4. If you want, play some or all of the sequence to make sure it is the version you want to output.

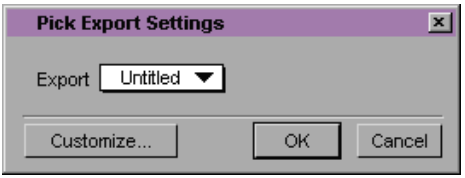
Creating a RealMedia Movie

Now you're ready to create the RealMedia movie.

For complete information about exporting, see the *Avid Xpress DV User's Guide* or Help.

1. In the **Sequences** bin, select your final sequence.
2. Choose Export from the File menu.

   The Pick Export Settings dialog box appears.



The Export pop-up menu shows the Export settings that are in the Settings scroll list. In this example, Untitled is the name of the default setting.

The Settings scroll list includes export templates that make the export process easier. In this example, you'll use one of these templates.

3. Choose RealMedia G2 from the Export pop-up menu.
4. Click OK.

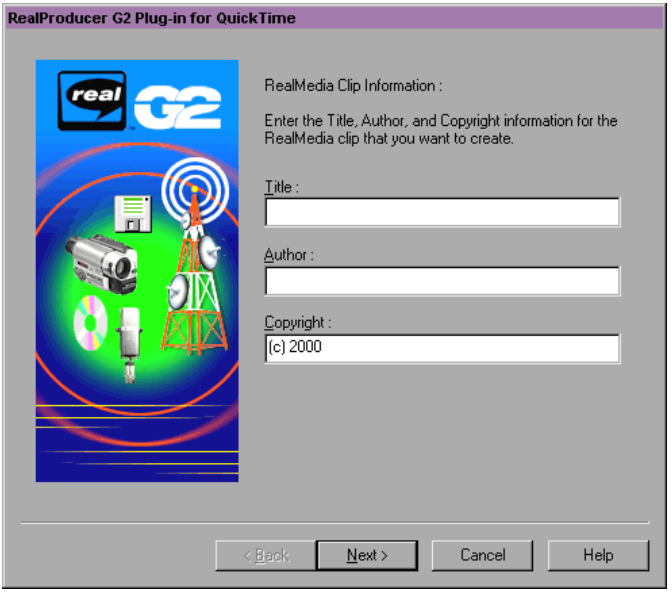
   The Export As dialog box appears.
5. Select a location for the RealMedia movie.

   For this tutorial, the RealMedia movie requires approximately 2.2 MB of disk space.
6. Click Save.

   The Avid Xpress DV system creates an intermediate movie. When the processing is complete (for this tutorial, it takes approximately 1 minute), the first dialog box for RealProducer G2 appears.

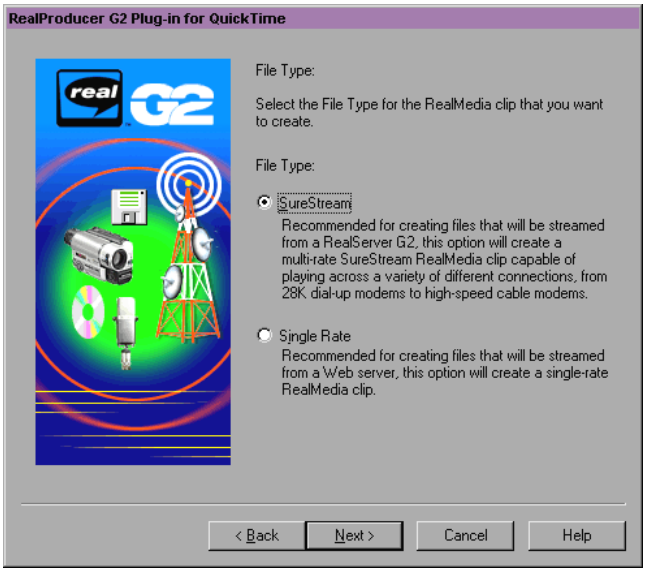
Avid Xpress DV saves the intermediate movie in a temporary folder. Make sure the temporary folder is on a drive with sufficient space, typically a drive other than drive C. You can view and change the location in the General Settings dialog box, which you access from the Settings scroll list.

For complete information on using RealProducer G2, click the Help button.



7. Enter information about your RealMedia clip in the text boxes. This information is optional. If you include the information, it will appear in the RealPlayer when your movie is playing.

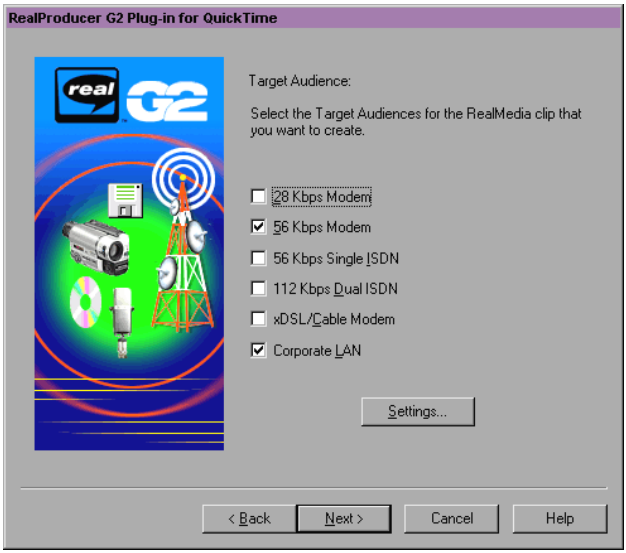
   Click Next. The File Type dialog box appears.



8. Select the type of RealMedia file that you will create. For this tutorial, select SureStream.

   SureStream allows you to create a single RealMedia clip that can play across a variety of different connections. To take advantage of SureStream technology, you must broadcast the clip using RealServer G2.

   Click Next. The Target Audience dialog box appears.

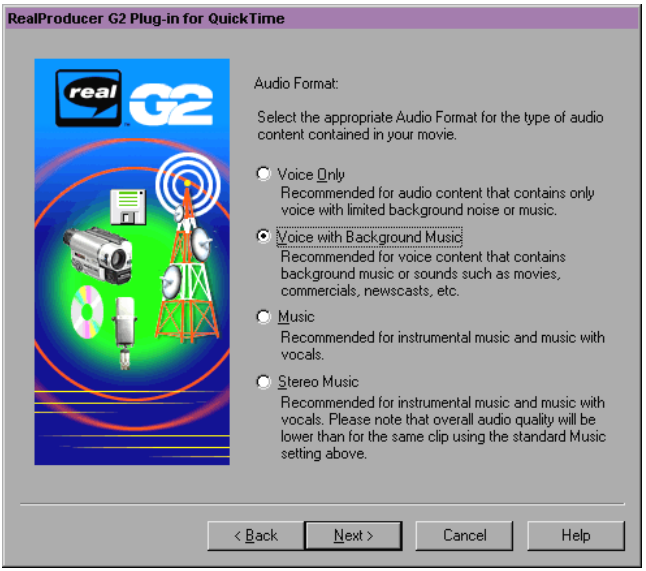


9. Select the modem or connection speed of the target audience. For this tutorial, select 56 Kbps Modem and Corporate LAN. The more options you select, the larger your file becomes. RealNetworks, Inc. recommends that you select only three or four options.

   The maximum size of your output video image depends on the target audience you select. For information about maximum output sizes, click the Help button.

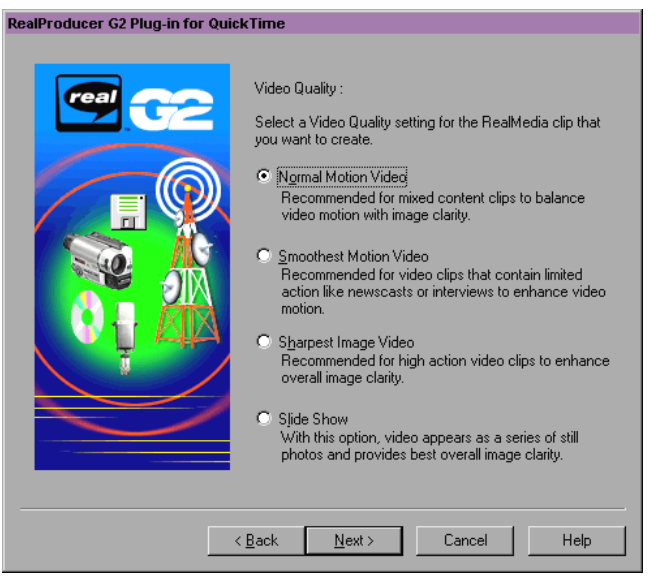
   You can customize the target audience settings by clicking the Settings button. For this tutorial, accept the default settings.

   When you have selected your options, click Next. The Audio Format dialog box appears.



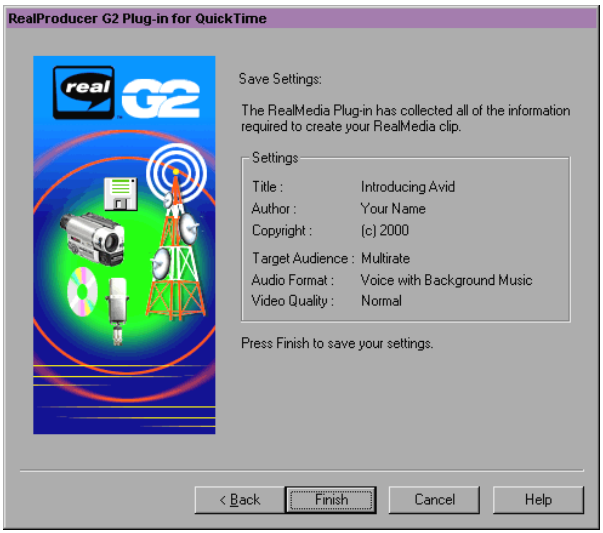
10. Select Voice with Background Music and click Next.

    The Video Quality dialog box appears.



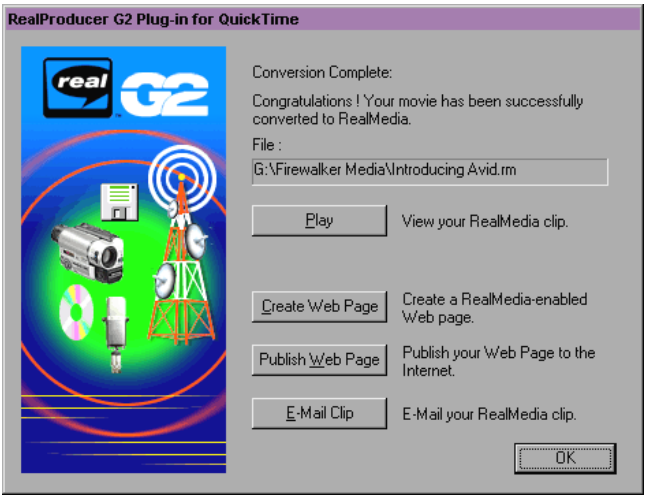
11. Select Normal Motion Video and click Next.

    The Save Settings dialog box appears.



12. Review the options you have selected. If you are satisfied, click Finish.

    Your sequence is exported as a RealMedia file. For this tutorial sequence, the process takes approximately 6 minutes. When the export is finished, the Conversion Complete dialog box appears.



13. Click the Play button to view your RealMedia movie.

    The movie appears in the RealPlayer.

    You might need to minimize the Avid Xpress DV window to view the RealPlayer.

For complete information about using the RealPlayer, choose an option from the RealPlayer Help menu.

For information about creating and publishing a Web page, see the RealProducer G2 Help.

Exporting a QuickTime Movie

Avid Xpress DV provides you with many options for outputting (publishing) your sequence in formats suitable for digital distribution. In this section, you'll create a QuickTime movie, which is a format you can use for distribution on CD-ROM or over the World Wide Web. For information about using other formats, see **"Creating a Movie for the Internet" on page 164**, the *Avid Xpress DV User's Guide*, or Help.

Using the QuickTime DV Codec

To create the QuickTime movie, you'll be using the DV codec that is built into the QuickTime software. A *codec* is software or hardware that compresses and decompresses digital media (the word *codec* is a combination of the words *co*mpressor and *dec*ompressor). The QuickTime DV codec creates media files that are readable within QuickTime applications. In the following procedure, the codec uses the size, resolution, and other parameters of the Avid Xpress DV sequence, which makes the export very fast.

When you select the Same as Source option, the QuickTime DV codec maintains the dimensions of the media (720 x 480 pixels for NTSC, 720 x 576 pixels for PAL), which might not be appropriate for some uses. For example, if the destination of your exported media is a multimedia title, you can change the screen dimensions or use another codec, such as Cinepak. Alternatively, you can use the QuickTime DV codec to create a QuickTime file for further processing in another application.

QuickTime software is installed when you install Avid Xpress DV software. You can also install it separately. See ***"Installing Avid Xpress DV Software" on page 24***.

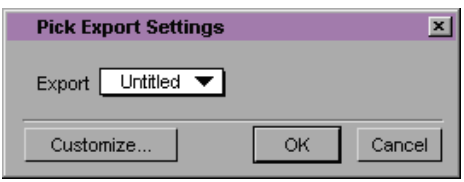
Exporting the Sequence

For complete information about exporting, see the *Avid Xpress DV User's Guide* or Help.

To create a QuickTime or other digital movie, you need to export the sequence.

1. Prepare your final sequence as described in **"Preparing the Sequence" on page 165**.
2. In the **Sequences** bin, select your final sequence.
3. Choose Export from the File menu.

   The Pick Export Settings dialog box appears.

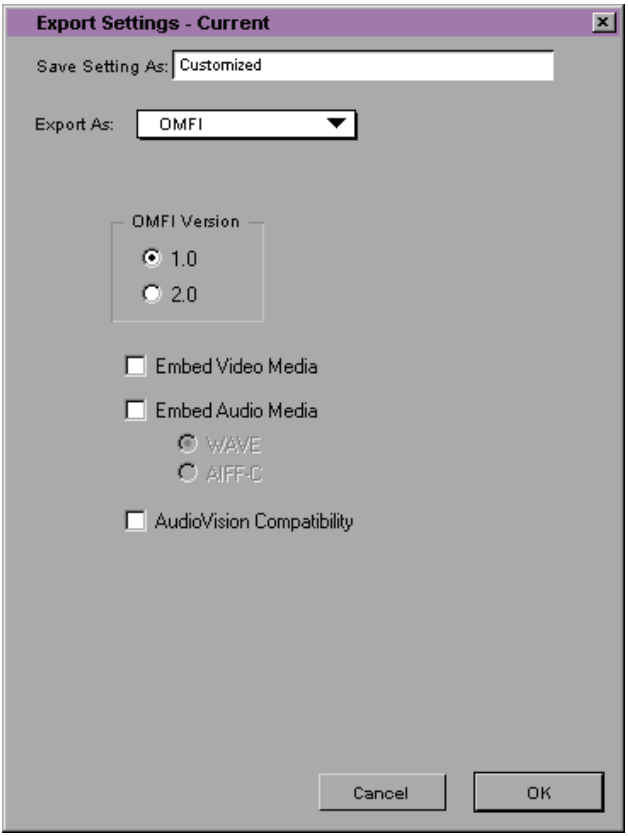


   The Export pop-up menu shows the Export settings that are in the Settings scroll list. In this example, Untitled is the name of the default setting.

   The Settings scroll list includes export templates that make the export process easier. In this example, you'll create your own template.

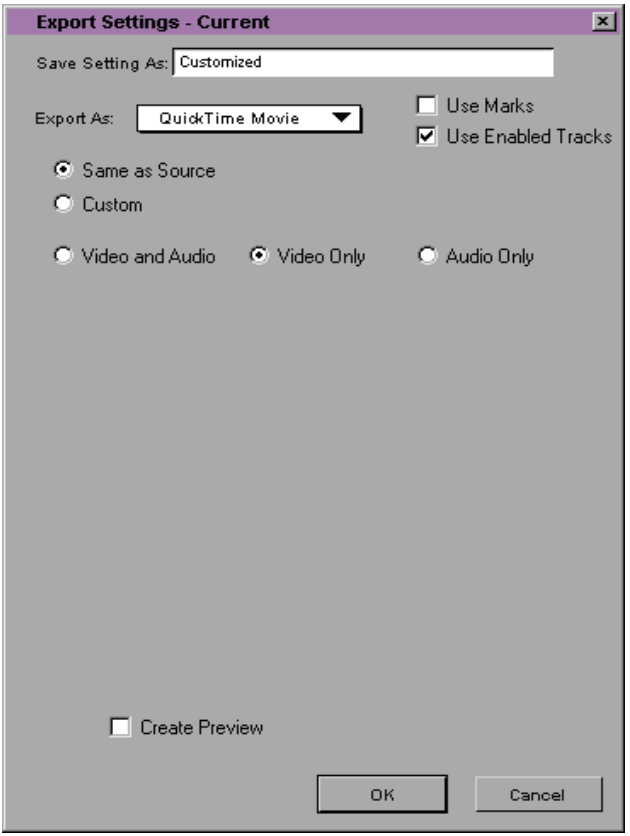
4. Click the Customize button.

   The Export Settings dialog box appears.



5. Choose QuickTime Movie from the Export As pop-up menu.

   The dialog box changes to show options for exporting QuickTime.



For more information about these options, press the F1 key.

6. In the Save Setting As text box, change the name to QuickTime.

   This setting will be saved in the Settings scroll list, and you can reuse it later.

7. Select the following options:

   - Use Enabled Tracks
   - Same as Source
   - Video and Audio

   The Same as Source option maintains the size and resolution of the sequence. This option also informs the system to use the

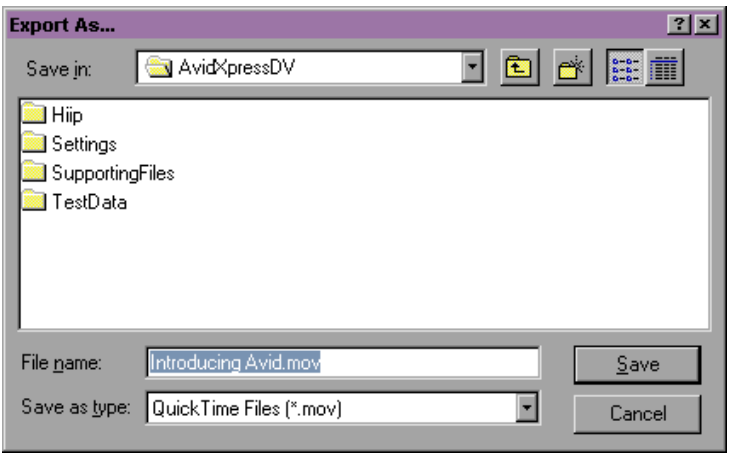
QuickTime DV codec to create the QuickTime movie (see **"Using the QuickTime DV Codec" on page 174**).

8. Click OK to return to the Pick Export Settings dialog box.

   The Export pop-up menu now shows QuickTime.

9. Click OK.

   The Export As dialog box appears. This dialog box is similar to other Windows Save As dialog boxes.



10. Select a different location for the QuickTime movie. For this tutorial, the QuickTime movie requires approximately 220 MB of disk space, so pick a drive that has sufficient space. In most cases you should pick a drive other than drive C.

11. Click Save.

    The Avid Xpress DV system creates the QuickTime movie. For this tutorial sequence, the processing takes about 1 minute.

12. Minimize the Avid Xpress DV window, double-click My Computer, and locate the exported QuickTime movie.

13. Play your movie using the QuickTime player. If QuickTime is properly installed, you can play the movie by double-clicking its icon.

    Using the default screen dimensions and DV codec creates a large QuickTime movie that is best suited for further processing in another multimedia development application. To change the screen size and other options, select Custom in the Export Settings dialog box. For more information, see the *Avid Xpress DV User's Guide* or Help.

Outputting a Digital Cut to Tape

For information about connecting a camera or video deck, see **Appendix A**.

Avid Xpress DV provides you with options for outputting your sequence to tape. This output is referred to as a *digital cut*. You can output to your DV camera or video deck, or, if you have a transcoder connected to the system, to a Betacam, VHS, or other analog video deck. You can also output to an audio deck.

About Remote and Local Deck Control

The Digital Cut tool provides you with two options for controlling your deck:

- **Remote:** Allows you to control the deck by using the deck controller in the Digital Cut tool. This option provides frame-accurate control when you record a sequence to tape. To use Remote deck control, you need a tape that includes timecode information (a prerecorded or blacked tape). For information on creating a prerecorded or blacked tape, see the instructions for your camera or deck.
- **Local**: Allows you to manually control the deck by using the controls on the deck. This option is useful when you need to use non-Avid-controlled decks, such as consumer-grade VHS or Hi8, or if you do not have a tape with timecode.

Changing the Timecode of the Sequence

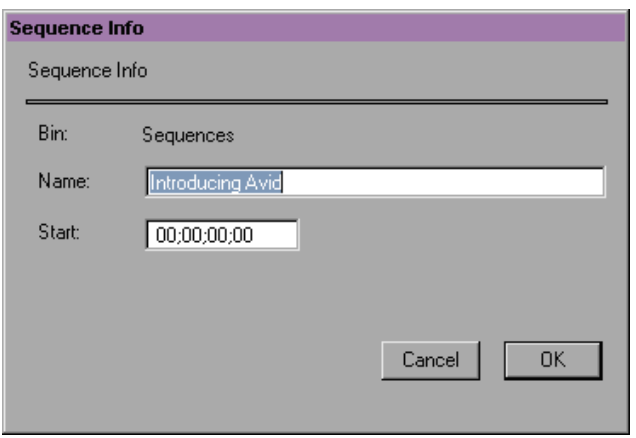
Your sequence uses timecode that starts with 00;00;00;00 (NTSC drop-frame timecode) or 00:00:00:00 (PAL timecode).

To record a digital cut to an NTSC DV camera or video deck, you need to use drop-frame timecode in your sequence. For information about timecode, see ***"About Timecode" on page 85****.*

You can change the timecode for the start of the sequence. This change prevents problems if you try to record a digital cut starting at or near the very beginning of a tape (00;00;00;00). For this tutorial, you'll change the timecode so that the sequence begins to record 30 seconds after the start of the tape.

1. Make sure a sequence is loaded in the Composer monitor.
2. Click the Composer monitor.
3. Choose Get Sequence Info from the File menu.

   The Sequence Info dialog box appears.



You can change the default starting timecode in the General Settings dialog box.

4. In the Start text box, edit the timecode so that it reads 00;00;30;00 (NTSC) or 00:00:30:00 (PAL).
5. Click OK.

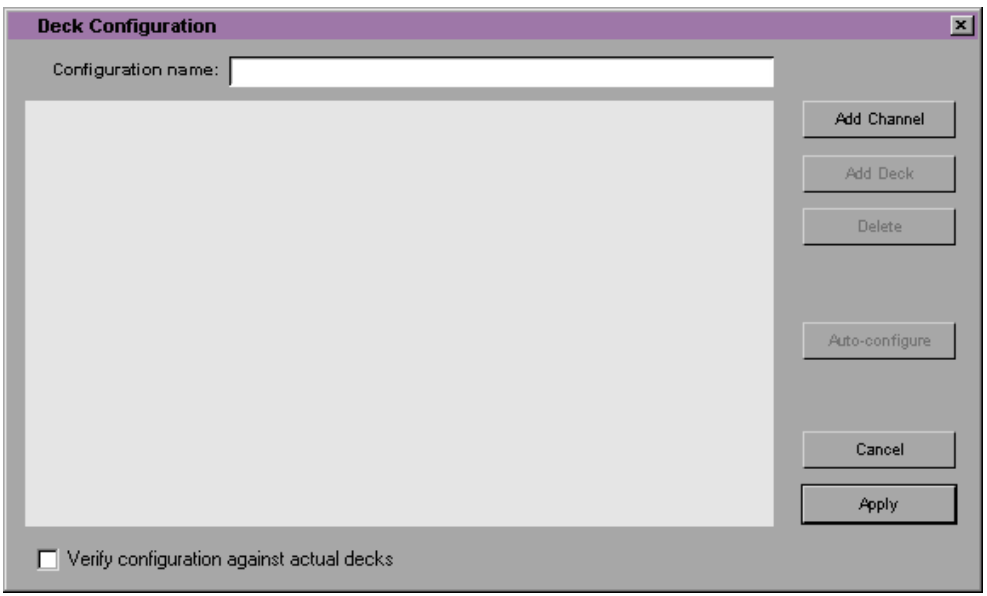
   The timecode displayed in the Timeline changes to match the new starting timecode.

Configuring Your Camera or Video Deck

Before you record your digital cut, you need to select the camera or video deck you are using so you can control the camera or video deck through the Digital Cut tool.

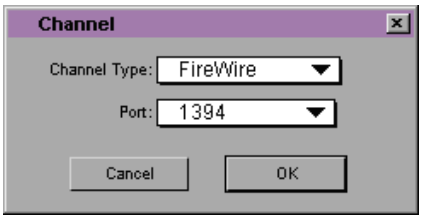
1. In the Project window, choose Deck Configuration from the Settings scroll list.

   The Deck Configuration dialog box appears.



2. Click the Add Channel button.

   The Channel dialog box appears.



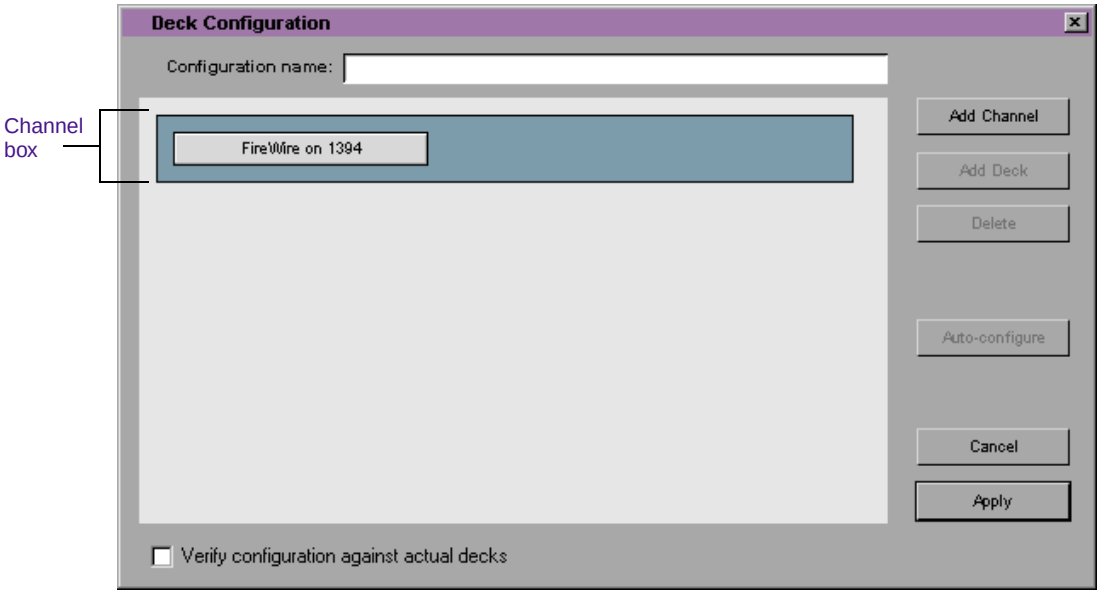
   Channel refers to the signal path for deck control. If you have connected a DV camera or video deck that supports IEEE 1394, choose FireWire as the Channel Type and 1394 as the Port from the pop-up menus.

3. Click OK.

   A message box asks if you want to automatically configure the channel.

4. Click No.

   The Deck Configuration dialog box now includes a channel.

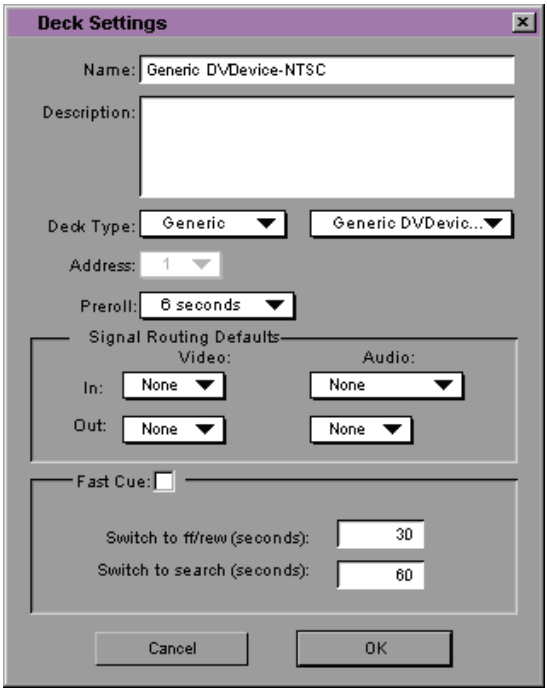


5. Click the channel box to select the channel.

   A red outline indicates that the channel box is selected.

6. Click the Add Deck button.

   The Deck Settings dialog box appears.



For information about all Deck Settings options, see the *Avid Xpress DV User's Guide* or press F1 for Help.

7. Choose the manufacturer and model of your camera or video deck from the Deck Type pop-up menus. If you do not see the manufacturer or model, choose Generic from the first pop-up menu.
8. Click OK.

   The Deck Configuration dialog box now shows the channel and the connected camera or video deck.
9. In the Deck Configuration dialog box, make sure the channel box is selected (outlined in red) and click the Apply button.

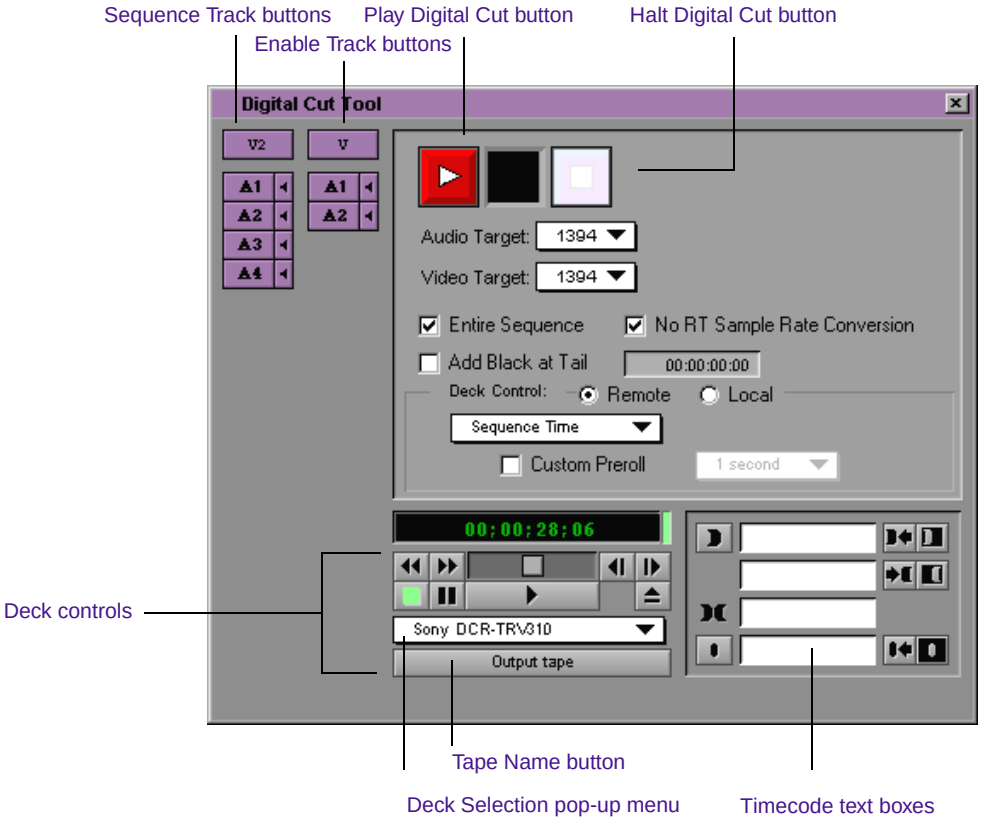
   Your camera or video deck is now ready for recording.

Recording a Digital Cut

Now you're ready to record your sequence on tape.

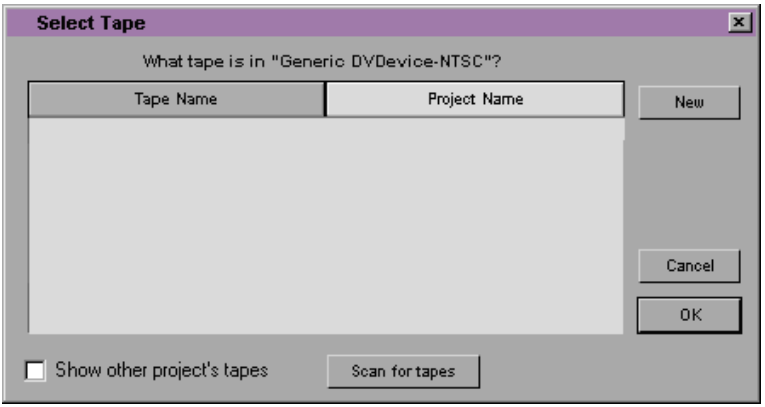
1. Make sure your camera or video deck is properly connected (see **Appendix A**) and turned on to the VTR setting.
2. Insert a tape that contains timecode (see **"About Remote and Local Deck Control" on page 179**).
3. Prepare your sequence by making sure you have selected and monitored the tracks you want to use (see **"Preparing the Sequence" on page 165**).
4. Choose Digital Cut from the Clip menu.

   The Digital Cut tool opens.



5. Select the tape as follows:

    a. If the Select Tape dialog box does not appear automatically, click the Tape Name button in the Digital Cut tool.



b. Click the New button.

   The name New Tape appears in the dialog box.

c. Type a name for your tape and press the Enter key on the main keyboard.

d. Select the new tape name and click OK.

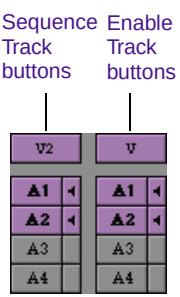
To get Help for the Digital Cut tool, press F1 or position the pointer on an object, click the right mouse button, and choose What This? from the pop-up menu.

6. Use the following settings in the Digital Cut tool:

   a. Select the Entire Sequence option.

   b. Select the Remote option to control the camera or video deck.

   c. Choose Sequence Time from the pop-up menu to start the recording at a timecode existing on tape that matches the start timecode of the sequence.



7. Select the video and audio tracks you want represented in the digital cut by using the Sequence Track buttons. The selected buttons should match the tracks that you selected in your sequence. The Video Sequence Track button shows V2, which is the top video track selected.

8. Select the video and audio tracks to record on the tape by using the Enable Track buttons. They should match the selected Sequence Track buttons.

9. Click the Play Digital Cut button.

   A message box asks you to mount the destination tape in the video deck. If you have already inserted a tape, click OK.

   The system cues the video deck to the starting timecode of the sequence, and then plays and records the digital cut. The playback appears in the Client monitor (if one is connected).

   To stop the recording at any time, press the space bar. When the sequence finishes playing, a message box informs you that the digital cut is complete.

10. Click OK.
11. Close the Digital Cut tool.

Next Steps

You've generated your final output. The next chapter describes how to back up your project. You can continue to the next chapter, or quit this session (see **"Closing the Project and Quitting the Application" on page 68**).

CHAPTER 11

Backing Up and Deleting a Project

Now that you've completed your sequence and created output, you might want to save your work. You can then delete the project to save space on your media drive or drives. In this chapter you'll practice the following tasks:

- **Backing Up Project Information**
- **Backing Up Media Files**
- **Deleting a Project Folder and Media Files**

If you have worked on the previous chapters but have quit Avid Xpress DV — Start the application, choose your user name and the Introducing Avid project, and then click OK. If necessary, open the **Sequences** bin, and then drag your final sequence into the Composer monitor.

If you have not worked on the previous chapters — Start the application, create a new user, choose the Introducing Avid project, and then click OK. Open the **Sequences** bin, and then drag the **Introducing Avid** sequence into the Composer monitor.

Backing Up Project Information

Project information and User settings are contained in folders. You can save these folders on a floppy disk or any kind of drive, including a network drive.

The project folder does not include the media. It does include information about the sequences, bins, master clips, subclips, effects, and other components of the project.

The Introducing Avid project is a small one, so you can copy the information onto a floppy disk.

1. Insert a formatted floppy disk into your floppy drive.
2. Minimize the Avid Xpress DV window to view the Windows NT desktop.
3. Double-click the My Computer icon and locate the Avid Projects folder.

   The exact location of this folder depends on your installation. In most cases it is located in the Avid\Avid Xpress DV folder on an internal hard drive other than drive C.
4. Double-click the Avid Projects folder.
5. Select the folder for your project. The folder has the same name that you see in the Open Project window, in this case Introducing Avid.
6. Copy the folder to the floppy disk using any Windows NT technique. For example:
   a. Select the project folder.
   b. Choose Copy from the Edit menu.
   c. Double-click the My Computer icon and double-click the floppy disk.
   d. Choose Paste from the Edit menu.

7. After the folder is copied, label the floppy disk and store it in a safe place.

Backing Up Media Files

The OMFI MediaFiles folders on your media drives contain the individual media files created when you recorded source material. Unlike the smaller Avid Projects and Avid Users folders, these folders are too large to back up onto floppy disks.

The media files for the tutorial are stored on the tutorial CD-ROM that came with your system, so you don't need to back them up. For other projects, the following are options for backing up media files:

- You can use the Consolidate feature to make copies of selected media files on a target hard drive connected to the system. For information on consolidating, see the *Avid Xpress DV User's Guide* or Help.
- You can back up smaller projects to a removable storage device, such as a hard drive.
- You can archive larger media files and folders to a network storage device.

Deleting a Project Folder and Media Files

If you are finished with the tutorial and you want to create free space on your drives, you can delete the project folder and media files. The project folder consists of information about the clips and sequences, but does not include the media. Media files consist of the recorded video and audio data, and are stored on your media drive or drives.

Deleting a Project Folder

You can't delete project information from within the Avid Xpress DV application. You need to quit the application and delete the project from your Windows NT desktop.

If you are finished with your project, delete the project information by following these steps:

1. Quit the Avid Xpress DV application.
2. Double-click the My Computer icon and locate the Avid Projects folder.

   The exact location of this folder depends on your installation. In most cases it is located in the Avid\Avid Xpress DV folder on an internal hard drive other than drive C.
3. Double-click the Avid Projects folder.
4. Select the folder for your project, in this case Introducing Avid.
5. Press the Delete key or drag the folder to the Recycle Bin.

   The Confirm Folder Delete dialog box appears and asks if you are sure you want to delete the folder.
6. Click Yes.
7. Empty the Recycle Bin to remove the files from the system.

Deleting Media Files

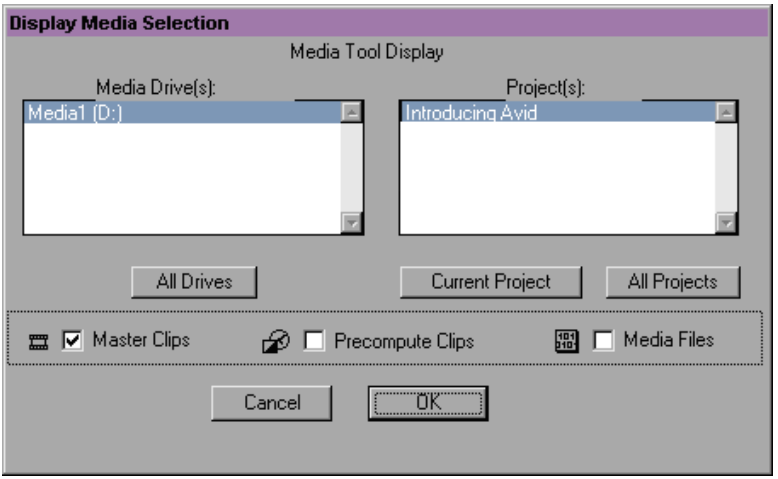
The most efficient way to delete all media files for a project is by using the Media tool. The Media tool is your window to the recorded video and audio data files stored on your media drives.

If you are finished with the tutorial, delete the project's media files by following these steps:

1. Start the Avid Xpress DV application and open the project.

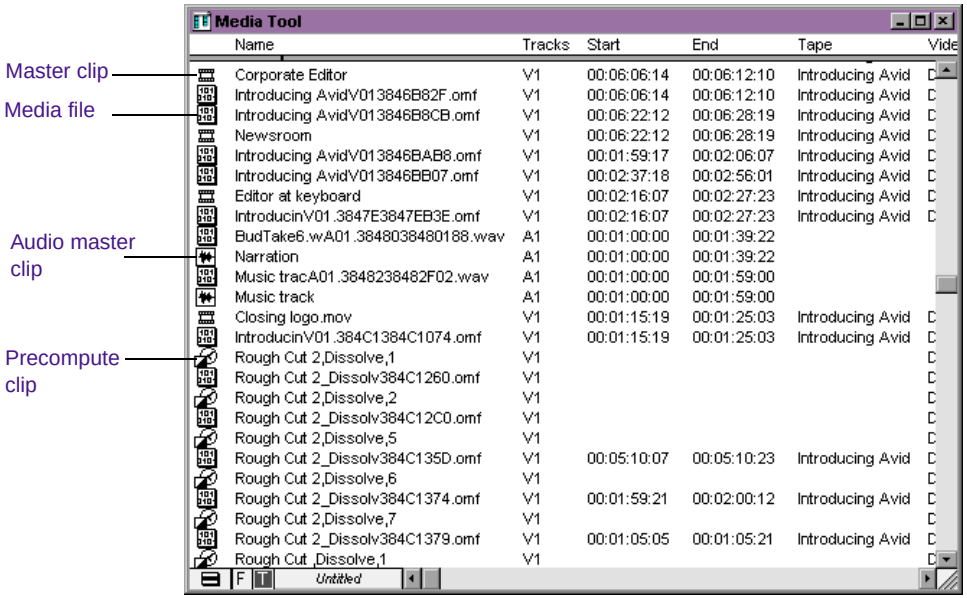
2. Choose Media Tool from the Tools menu.

   The Display Media Selection dialog box appears.



3. Select the media drive for your media. To make sure the Media tool displays all your media, click the All Drives button.
4. Select the Introducing Avid project.
5. Select all three types of files:
   - Master Clips
   - Precompute Clips (which are rendered effects)
   - Media Files
6. Click OK.

   The Media tool opens. Specific icons indicate the types of media files.

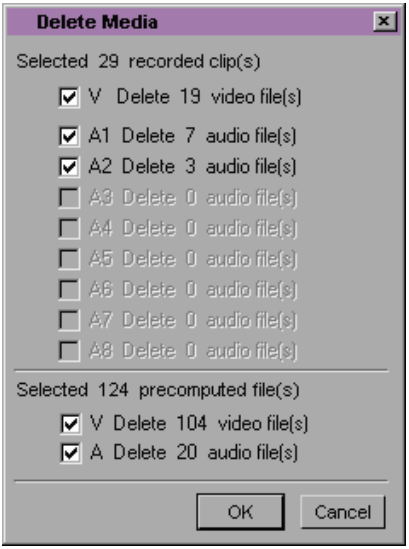


7. Choose Select All from the Edit menu.

   All files are highlighted.

8. Press the Delete key.

   The Delete Media dialog box appears. The check boxes in the dialog box indicate that you have selected all files for deletion.



9. Click OK.

   A dialog box appears and asks if you want to delete the media files.

10. Click Delete.

    The selected media files are deleted.

11. Quit the application.

Next Steps

Congratulations on completing the Avid Xpress Tutorial! We hope you've enjoyed this introduction to the Avid editing process. After mastering these skills, you can proceed to learn more advanced techniques, as described in the *Avid Xpress DV User's Guide*, *Avid Xpress DV Effects Guide*, and Help.

APPENDIX A

Connecting Your Editing Equipment

This appendix describes how to connect editing equipment to the computer on which the Avid Xpress DV software will run. This appendix contains the following topics:

- **Connecting the Application Key**
- **Connecting the External SCSI Drives**
- **Connecting the Editing Equipment**

Connecting the Application Key

The application key, commonly referred to as a *dongle*, allows Avid Xpress DV software to run on your computer. You *must* connect the application key to the printer port at the rear of the computer. The computer system sees the application key when booting. If you connect the application key *after* you boot the system, you must reboot the system. You can connect a printer to the port by connecting the printer to the female portion of the application key. **Figure A-1** shows how to connect the application key.

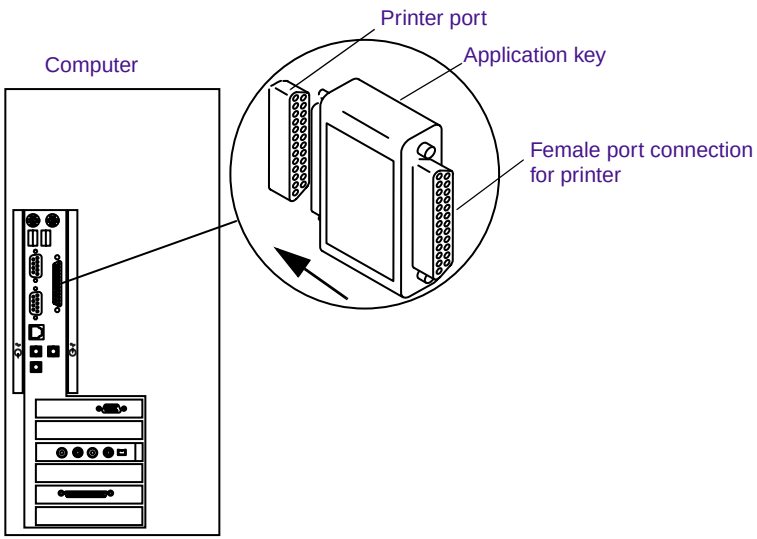


Figure A-1 Application Key Connection

Be careful that you do not lose the application key. Your Avid Xpress DV software does not function without it. If you lose your application key, you must purchase another key from Avid at the full market cost of your Avid Xpress DV software.

Connecting the External SCSI Drives

This section explains how to connect external SCSI drives to your Ultra2 LVD/SE SCSI board located at the rear of your computer. Because the Ultra2 LVD/SE SCSI board has a 68-pin, high-density connector, illustrations of SCSI drives show 68-pin, high-density connectors.

If you purchased drives other than the illustrated ones, use the instructions that came with your drives.

This section contains:

Installation Overview

Installing external SCSI drives is not very difficult; however, you *must* consider the following:

- Place the drives near your computer to save space, and position the drives so they can't fall over.
- Cable the drives from your computer to the last drive in the chain, and terminate the last drive.
- Determine the SCSI IDs before you physically set them on the drive.
- Set the SCSI IDs so the system software and the Avid Xpress DV software can access them.

Placing the Drives

Placing the external drives is an important part of the installation. When you place the external drives, consider the following:

- Place the drives close to the computer. There is a maximum cable-length restriction of 20 feet when you use wide-type drives.
- Do not place the drives on the floor. They can pick up dust and dirt from the floor or carpet.
- When you have more than one external drive, you can stack the drives so they take up a minimal amount of desk space. If you use more than four drives, consider creating two drive stacks (see **Figure A-2**).

You should not stack more than four external SCSI drives.

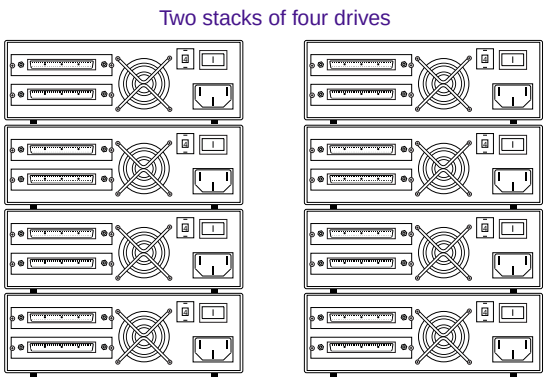


Figure A-2 Placing the External SCSI Drives

Cabling the Drives

Now cable the SCSI drives to the Ultra2 LVD/SE SCSI board. **Figure A-3** shows a chain of four SCSI drives.

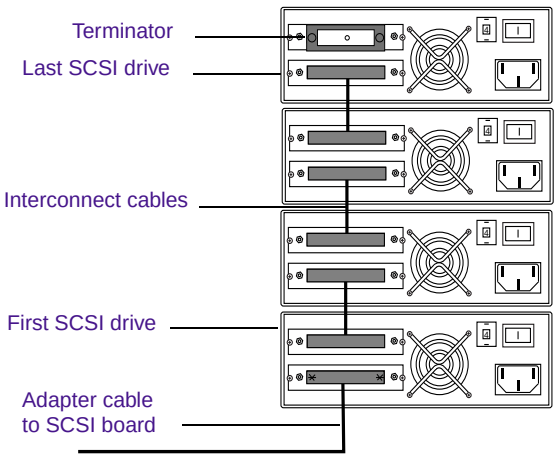


Figure A-3 Example of a Chain of SCSI Drives

You will need the following to cable a chain of SCSI drives to the 68-pin, high-density connector on the SCSI board:

- **Adapter cable** — placed between the SCSI board and the first SCSI drive. Where you have placed the computer and where you are going to place the first SCSI drive determines the length of the adapter cable.
- **Interconnect cable** — placed between each SCSI drive in the SCSI chain. This cable is the same type of cable as the adapter cable, but is usually 15 inches in length.

You might need a longer interconnect cable if you are connecting the top drive in a stack of four drives to the bottom drive in another stack.

- **LVD terminator** — always placed on the *last* SCSI drive in the chain to ensure reliable communication on the SCSI bus.

Figure A-4 shows an example of an adapter cable and an LVD terminator. The cables that ship with the SCSI drives you purchased should look similar.

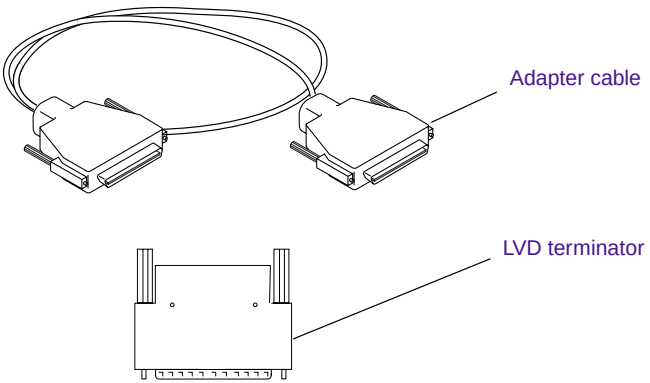


Figure A-4 Cable and Terminator

To cable a chain of SCSI drives to the SCSI board:

1. Locate the adapter cable that goes between the SCSI board and the first SCSI drive.
2. Connect one end of the adapter cable to the 68-pin, high-density connector on the SCSI board at the rear of the computer (see **Figure A-5**).

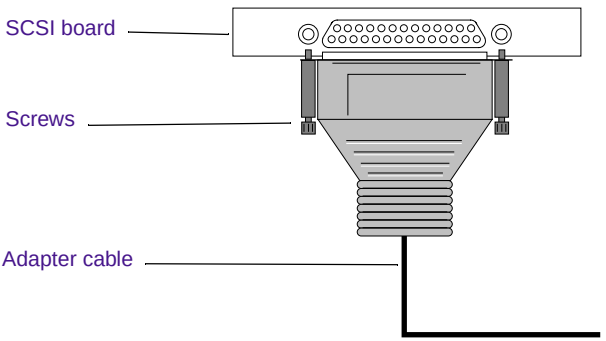


Figure A-5 Connecting the Adapter Cable to the SCSI Board

3. Secure the adapter cable to the SCSI board by using the screws in the cable.
4. Connect the other end of the adapter cable to one of the 68-pin connectors of the first SCSI drive (see **Figure A-6**).

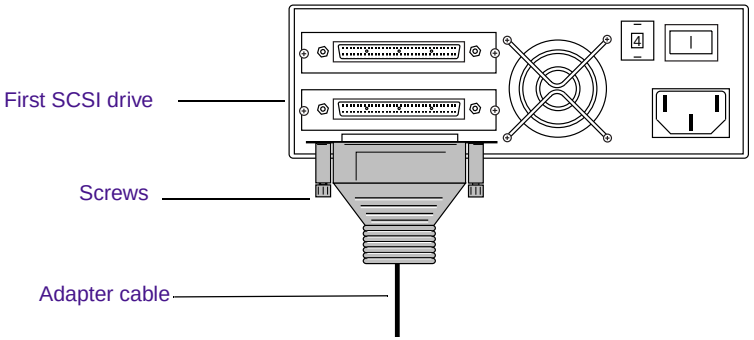


Figure A-6 Connecting the Adapter Cable to the First SCSI Drive

5. Secure the adapter cable to the first SCSI drive by using the screws in the cable.
6. Locate the interconnect cable that goes between the first and second SCSI drives.
7. Connect one end of the 68-pin, high-density cable to the 68-pin connector of the first SCSI drive (see **Figure A-7**).

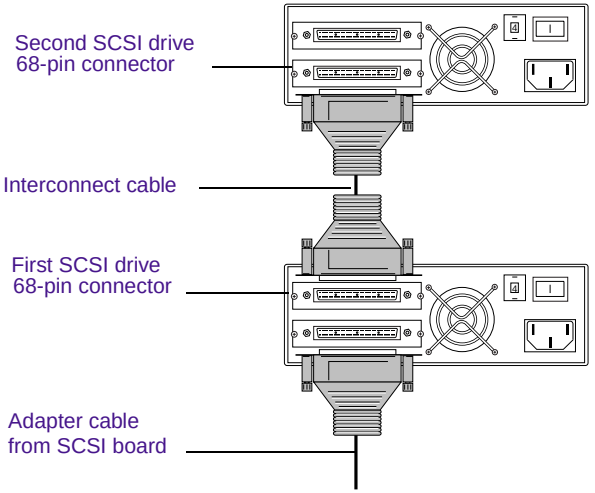


Figure A-7 Connecting the Interconnect Cable Between SCSI Drives

8. Connect the other end of the 68-pin, high-density cable to the 68-pin connector of the second SCSI drive.
9. Secure both ends of the cable to the drives by using the screws in the cable.
10. Repeat step 6 to step 9 for the remaining SCSI drives (up to a maximum of 13 drives).

11. Locate the LVD terminator for the SCSI chain.
12. Connect the terminator to the 68-pin connector on the last SCSI drive in the SCSI chain (see **Figure A-8**).

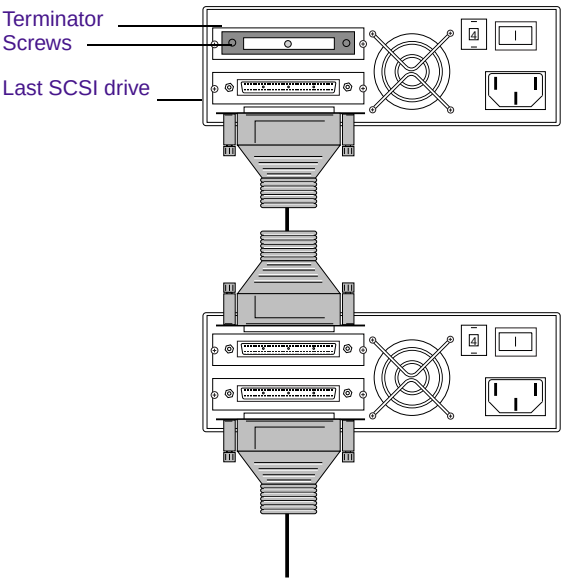


Figure A-8 Connecting the LVD Terminator

13. Secure the terminator to the SCSI drive by using the screws on the terminator.

You should now determine the SCSI IDs for the SCSI drives that you have connected to the SCSI board.

Determining the SCSI IDs

For each SCSI drive you connect to the computer, you must assign a SCSI ID so the Avid Xpress DV software can find and access the drive. When you are setting the SCSI IDs, remember the following:

- Each PCI-based SCSI bus has its own set of unique SCSI IDs from 0 through 6 and 8 through 15.
- SCSI IDs 0 and 1 are not available for use by external drives. The two internal SCSI drives use those IDs (an internal drive can also use SCSI ID 2).
- SCSI ID 7 cannot be used by external drives. SCSI ID 7 is used by the SCSI accelerator board.
- You cannot have two SCSI drives with the same SCSI ID on the same SCSI bus.

Avid recommends that you set the SCSI IDs for the devices on each SCSI bus in sequential order; that is, starting with the device attached closest to the computer and assigning it ID 3 (see **Figure A-9**).

If your internal SCSI drives have SCSI IDs of 0 and 1, you can set the starting SCSI ID of your external drives at 2.

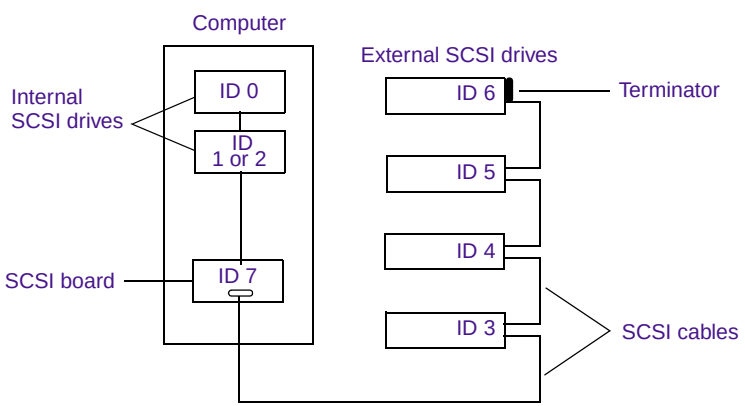


Figure A-9 Setting the SCSI IDs

Setting the SCSI IDs

The following illustrations show how to set a SCSI ID by using a wide-type SCSI drive with switches and connections at the rear of the drives. If the drives you purchased do not look like the drives shown in the illustrations, use the installation instructions that came with the drives you purchased.

If you are using the SCSI installation instructions that came with your drives, you still need to use the information in **"Determining the SCSI IDs" on page 206***.*

To set a SCSI ID:

1. Locate the SCSI ID switch on the rear of the SCSI drive (see **Figure A-10**).

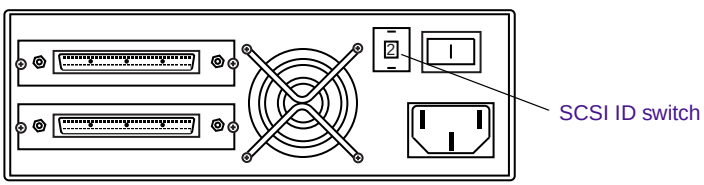


Figure A-10 SCSI ID Switch Location

Be sure the drive power is off when changing the SCSI ID switch. When the drive is turned on, it will read the new SCSI ID.

2. Set the SCSI ID to an available SCSI ID on the SCSI bus by using the SCSI ID switch (see **Figure A-11**). The current SCSI ID number appears in the window in the middle of the switch.
   - Press the top button to decrement the SCSI ID.
   - Press the bottom button to increment the SCSI ID.

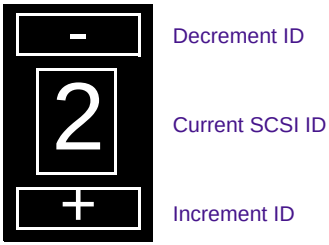


Figure A-11 SCSI ID Switch

There are two SCSI ID switch versions used with the SCSI drives. One version uses the numbers 0 through 15, and the other version uses the numbers 0 through 9 and the letters A through F. Use **Table A-1** to associate the letters A through F with a SCSI ID number.

Table A-1 Numbers Associated with SCSI Switch Letters

Switch Letter	SCSI ID Number
A	10
B	11
C	12
D	13
E	14
F	15

Connecting the Editing Equipment

Make sure that you have completed the setup information provided with your computer. This information provides instructions for setting up your computer, and attaching the monitor, keyboard, and mouse.

Make sure that your computer is turned off before you connect the rest of the equipment.

Your editing equipment might be a camera, a digital video deck, or an analog video deck connected to a transcoder. This section provides illustrations and instructions to help you connect the cables between the editing equipment and the computer.

The cameras, video decks, and transcoders in the illustrations represent the type of equipment supported by Avid Xpress DV. Therefore, the illustrations show cables that came with the camera, transcoder, video deck, or capture board. You can also purchase other cables from a local audio or video store.

This section is divided into five parts:

- **Overview of the Hardware Connections**
- **Cables Needed to Connect the Equipment**
- **Connecting a Digital Video Deck or Camera to the Computer**
- **Connecting an Analog Video Deck to the Computer**
- **Controlling an Analog Video Deck**

For a list of supported cameras, transcoders, and video decks, check the Customer Service section of the Avid Web site at www.avid.com.

Overview of the Hardware Connections

The type of data (digital or analog) you transfer between the editing equipment and the computer is used for different purposes by Avid Xpress DV. You should think of the data being transferred in terms of how it is being used.

- **Digital video and digital audio (DV)** — used for editing purposes. These signals come from either a digital video deck, a digital camera, or a transcoder connected to an analog video deck using a 4-pin to 4-pin IEEE 1394 cable (see **Figure A-12**) attached to the capture board plugged into your computer. As an output, the DV signals can be recorded and used to control a digital video deck or camera.
- **Analog video** — not used for editing purposes. These signals come from a digital video deck, camera, or transcoder to the capture board. The capture board then loops the analog video to an optional Client monitor. This process allows you to monitor the video as you record the data or output the data. There are two forms of analog data (see **Figure A-12**):
  - Composite video using RCA® connectors
  - S-Video using S-Video connectors

The analog connection is also used when your camera or transcoder is connected to the computer and you play a clip from the Avid Xpress DV software. See **Table A-2**, *step 2 for more information.*

- **Analog audio** — not used for editing purposes. The analog audio output of a digital video deck, camera, or a transcoder connects to the audio input at the rear of the computer. You can hear the analog audio through the speakers during the record process or when you play back the clips using the software.

Cables Needed to Connect the Equipment

You need cables to connect the computer to the camera, digital video deck, or transcoder used with an analog video deck. You receive some or all of these cables when you purchase most digital video decks, digital cameras, or transcoders. Because Avid Xpress DV supports many digital cameras, the number and type of cables you receive cannot be determined. Given this fact, this section describes:

- Cables that ship with the Avid Xpress DV software and computer, and how to connect them to either a camera or transcoder
- Other cables, and what they are used for, in case you buy an optional transcoder, Client monitor, or analog video deck

Most of the cables have different colors that define what the cable is used for. Normally, you plug the cable into the same color connector on your camera, digital video deck, or transcoder. The colors and their uses are listed below:

- Yellow — used for video
- White — used for audio as one channel of a stereo pair or for mono audio
- Red — used for audio as one channel of a stereo pair

The cameras, video decks, and transcoders in the illustrations represent the type of equipment supported by Avid Xpress DV. Therefore, the illustrations show cables that came with the camera, transcoder, video deck, or capture board. You can also purchase other cables from a local audio or video store.

Cables Shipped with the Computer

Figure A-12 shows the cables shipped with the computer and their functions.

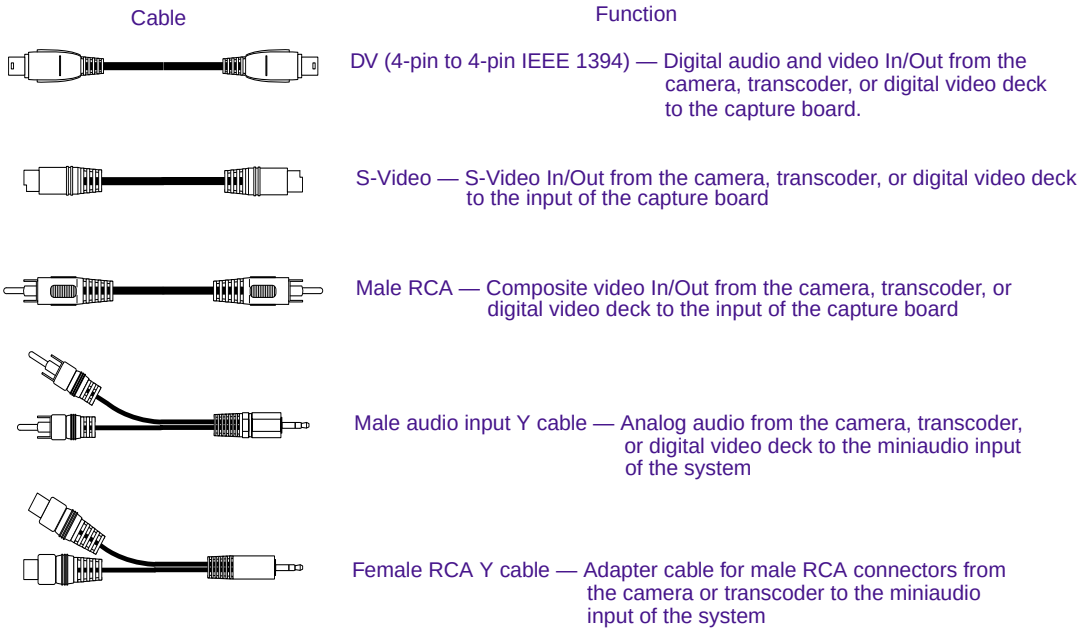


Figure A-12 Computer Cables

Optional Cables

Depending on the options you purchased, you might need to buy the following cables separately:

- RS-232 to RS-422 cable from an RS-232 serial port on the computer to the RS-422 remote port of an analog video deck. You might need an RS-232 to RS-422 adapter and two serial cables to perform this remote control function (see **"Controlling an Analog Video Deck" on page 219**).
- Composite RCA cable or S-Video cable from the capture board to the Client monitor (if not provided with your camera).
- Various cables to connect the analog video deck to the transcoder.

The manuals provided with the transcoder, Client monitor, and video deck explain how to connect cables to these components.

Connecting a Digital Video Deck or Camera to the Computer

To connect the digital video deck or camera to the computer, you need to have the cables from your digital video deck or camera and the capture board available. Then, follow the steps that are shown in **Figure A-13** and explained in **Table A-2**. Make sure to connect both the DV and analog cables.

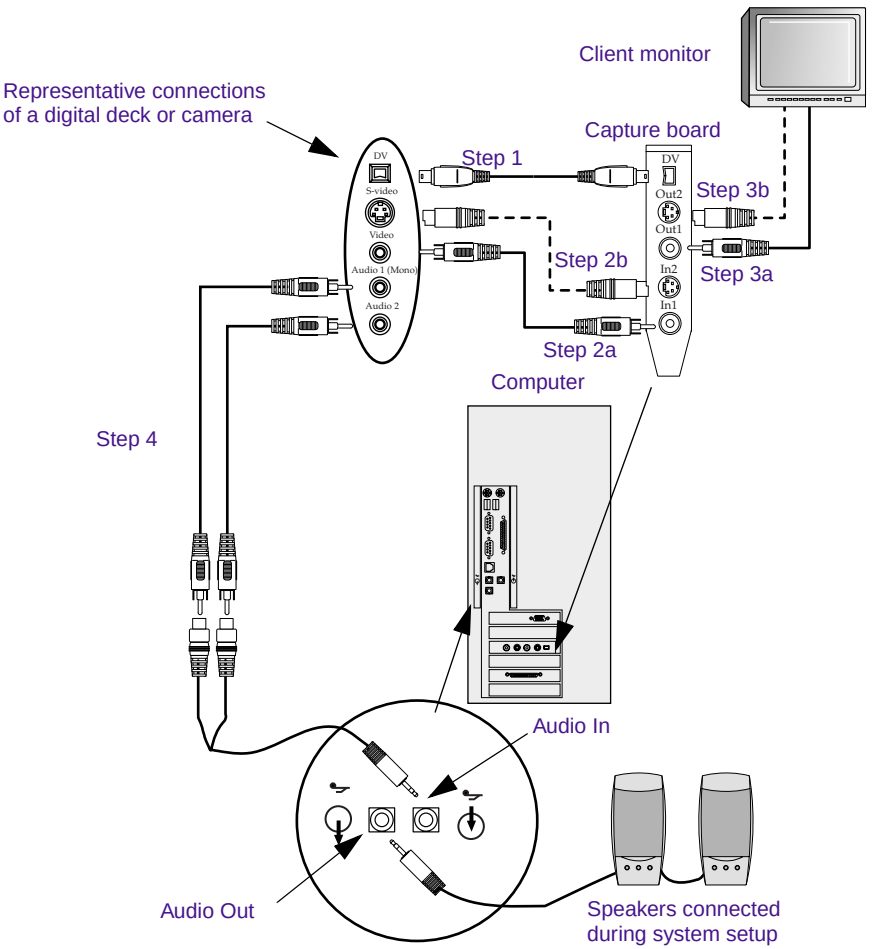


Figure A-13 Connecting the Digital Video Deck or Camera

Table A-2 Connecting the Digital Video Deck or Camera

Step		Description
1	**Connect the DV cable from the digital deck or camera to the capture board**.	Connect a 4-pin to 4-pin DV-to-DV cable from the digital deck or camera to the DV port on the capture board. This provides DV video and audio to and from the capture board. This cable must remain connected to use the hardware codec (*co*mpressor/*dec*ompressor) in the camera for display during editing.
2	**Connect the analog video from the digital deck or camera to the capture board**.	Connect the analog signal with either an RCA cable (step 2a) *or* an S-Video cable (step 2b). Perform step 2a *or* step 2b, not both.
2a	**Connect an RCA-to-RCA cable from the camera to the In1 port on the capture board**.	Provides a composite analog signal from the hardware codec of the camera to the In1 port on the capture board. The signal is looped to the Out1 port and used as a composite output of the capture board to the Client monitor. The composite signal from the camera is also used when you play a clip in the Source pop-up monitor or Composer monitor. The data from the clip is sent as output through the DV cable to the camera. The camera's hardware codec sends the signal as composite video through the RCA cable to the In1 port of the capture board. This signal is then sent to the monitors.
2b	**Connect an S-Video to S-Video cable from the camera to the In2 port on the capture board**.	Same as step 2a except the signal uses the In2 and Out2 ports.
3	**Connect the capture board to the optional Client monitor.** *The Client monitor and its cables do not ship with the computer and must be purchased separately.*	Connect the Client monitor with either an RCA cable (step 3a) *or* S-Video cable (step 3b). Perform step 3a if you used an RCA cable in step 2 *or* perform step 3b if you used an S-Video cable in step 2.

Table A-2 Connecting the Digital Video Deck or Camera (Continued)

Step		Description
3a	**Connect an RCA cable to the Out1 port on the capture board**. **Attach the other end of the cable to the Client monitor (this end of the cable needs a connector to match the input of the Client monitor).**	Provides composite analog video from the Out1 port, looped from the In1 port connection, to the Client monitor. You can see the incoming video during the record process and when you play a clip, as explained in step 2a.
3b	**Connect a cable with an S-Video connector to the Out2 port on the capture board.** **Attach the other end of the cable to the Client monitor (this end of the cable needs a connector to match the input of the Client monitor).**	Same as step 3a except the signal uses the In2 and Out2 ports.
4	**Connect the Audio Out of your camera or deck to the Audio In at the rear of the computer.** *Depending on the digital deck or camera you have purchased, your cables might be different than those shown in* **Figure A-13**. *The example shown in* **Figure A-13** *uses two male RCA to male RCA cables attached to a female RCA Y cable connected to the Audio In at the rear of the computer.*	Provides audio output to the speakers during the record process or when you are playing a clip. You should have already connected the optional speakers during the initial setup of the computer.

Connecting an Analog Video Deck to the Computer

An analog video deck connects to a transcoder, and the transcoder connects to the computer. You need the cables from your camera and the capture board available, and then follow the steps that are shown in **Figure A-14** and explained in **Table A-3**.

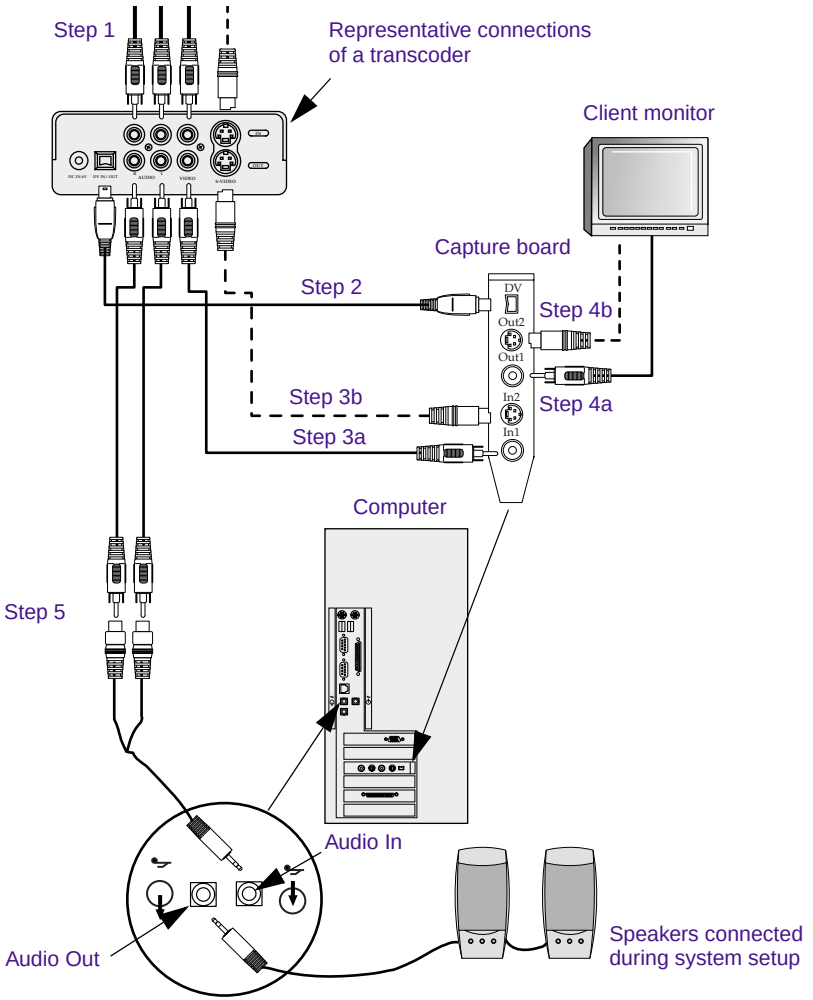


Figure A-14 Connecting an Analog Video Deck

Table A-3 Connecting an Analog Video Deck

Step		Description
1	**Connect the video and audio cables from an analog video deck to the input of the transcoder.**	Provides an analog signal to be recorded and used as DV data. It also allows the composite video signal and analog audio signal to be sent from the transcoder back to the deck when you output the edited file.
2	**Connect the DV cable from the transcoder to the capture board**.	Connect a 4-pin to 4-pin DV-to-DV cable from the transcoder to the DV port on the capture board. This provides DV video and audio to and from the capture board. This cable must remain connected to use the hardware codec (compressor/decompressor) in the transcoder for display during editing.  *If your transcoder has a 6-pin output, you need a 6-pin to 4-pin cable.*
3	**Connect the analog video from the transcoder to the capture board**.	Connect the analog signal with either an RCA cable (step 3a) *or* an S-Video cable (step 3b). Perform step 3a *or* step 3b, not both.
3a	Connect an RCA-to-RCA cable from the transcoder to the In1 port on the capture board.	Provides a composite analog signal from the hardware codec of the transcoder to the In1 port on the capture board. The signal is looped to the Out1 port and used as a composite output of the capture board to the Client monitor. The composite signal from the transcoder is also used when you play a clip in the Source pop-up monitor or Composer monitor. The data from the clip is sent as output through the DV cable to the transcoder. The transcoder's hardware codec sends the signal as composite video through the RCA cable to the In1 port of the capture board. This signal is then sent to the monitors as a VGA overlay.

Table A-3 Connecting an Analog Video Deck (Continued)

Step		Description
3b	**Connect an S-Video to S-Video cable from the transcoder to the In2 port on the capture board**.	Same as step 3a except the signal uses the In2 and Out2 ports.
4	**Connect the Client monitor to the capture board**. *The Client monitor and its cables do not ship with the computer and must be purchased separately.*	Connect the Client monitor with either an RCA cable (step 4a) *or* S-Video cable (step 4b). Perform step 4a if you used an RCA cable in step 3 *or* perform step 4b if you used an S-Video cable in step 3.
4a	**Connect a cable with an RCA connector to the Out1 port on the capture board**. **Attach the other end of the cable to the Client monitor (this end of the cable needs a connector to match the input of the Client monitor).**	Provides composite analog video from the Out1 port, looped from the In1 port connection, to the Client monitor. You can see the incoming video during the record process and when you play a clip, as explained in step 3a.
4b	**Connect a cable with an S-Video connector to the Out2 port on the capture board.** **Attach the other end of the cable to the Client monitor (this end of the cable needs a connector to match the input of the Client monitor).**	Same as step 4a except the signal uses the In2 and Out2 ports. You should have already connected the optional speakers during the initial setup of the computer.

Table A-3 Connecting an Analog Video Deck (Continued)

Step		Description
5	**Connect the Audio Out of your transcoder to Audio In at the rear of the computer. You can use the cables that came with your transcoder.** *Depending on the transcoder you have purchased, your cables might be different than those shown in* **Figure A-14**. *The example shown in* **Figure A-14** *uses two male RCA to male RCA cables attached to a female RCA Y cable connected to the Audio In at the rear of the computer.*	Provides audio output to the speakers during the record process or when you are playing a clip.

Controlling an Analog Video Deck

Your Avid Xpress DV software provides analog video deck control through a remote serial control connector, which is available on most analog video decks. You can control a single analog video deck using an optional RS-232 to RS-422 serial cable or an adapter kit. Although an adapter kit must be purchased separately, the following procedure explains how to connect a sample adapter kit between your computer and an analog video deck using the following:

- An RS-232 to RS-422 serial adapter
- Two serial cables with 9-pin male connectors at both ends

To connect a single deck to your computer:

1. Purchase an adapter kit.
2. Attach one end of the first 9-pin cable to the end of the serial adapter labeled RS-232 (see **Figure A-15**).
3. Attach the other end of the first 9-pin cable to the serial port of the computer.

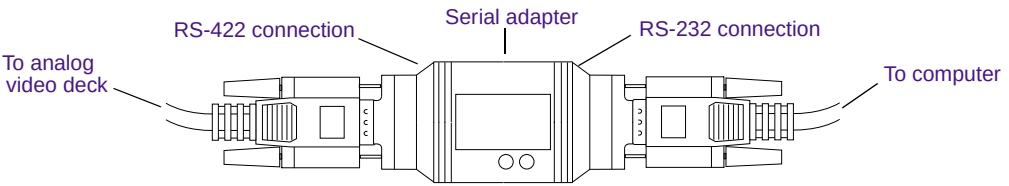


Figure A-15 Analog Video Deck Control Cabling

4. Attach one end of the second 9-pin cable to the end of the serial adapter labeled RS-422.
5. Attach the other end of the second 9-pin cable to the remote serial port of the analog video deck.

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