

Ulead[®] VIDEO STUDIO[™]

Version 3.0

*User Guide
Ulead Systems, Inc.
October 1998*

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Sample files

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The big picture

Just a few years ago, digital video was something that was out of reach for the average consumer. Powerful computers were too expensive and difficult to use. Recently, PC prices have plummeted while processing speeds have skyrocketed. Now, just about any new computer can do a decent job with home movies. And with software programs like Ulead VideoStudio 3.0, you don't need to be a rocket scientist to figure it all out.



An introduction to digital video

Tens of millions of camcorders have been sold around the world and computers have become standard fare in the home. It hasn't taken long for video capture cards to make the connection between the two. So what's the big deal with digital video?

Besides being really fun, digital video on a PC is also quite revolutionary. Editing your video on your computer offers you the ease of mouse clicks, drag and drop operations, and cut and paste editing. What's more, with

VideoStudio, you have access to nearly a hundred transition effects, professional titling capabilities and simple soundtrack creation tools. Learn in seconds, create in minutes.

How it works

The software follows a step-by-step paradigm. By working on one step at a time, editing tasks remain uncomplicated throughout the entire process, from start to finish. The two distinct program modules, **Video Wizard** and the main program, **Ulead VideoStudio**, both utilize this concept.

Video Wizard is a complete digital video editing program. It is primarily a quick start application that simplifies the creation of movies. **Ulead VideoStudio** itself is also amazingly easy to use and offers advanced editing controls and a fantastic array of tools and effects.



The Video Wizard



Ulead VideoStudio



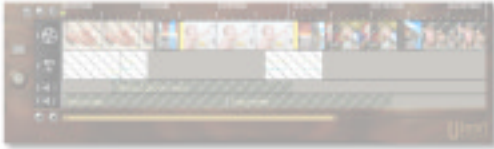
Getting video off of your camera and onto your PC's hard drive is the first step in creating digital video. This process is known as **capturing** video. You will also need a capture card so your computer can receive and interpret the video data from your camera. To make sure that everything works properly, follow your capture card's installation instructions.

A short section of video captured to your computer is known as a **video clip**. You can scroll through your movie as easily as you do a Web page in a browser. With little effort, you can edit frame by frame, as well as change the order of scenes using the drag and drop method.



Putting a **transition effect** in between clips is as easy as select and apply. Adding **titles** and credits is just like using a word processor. Type in your text and choose a style. And with a few more clicks, you can animate your titles to scroll or fade.

Ulead VideoStudio breaks your movie up into separate **tracks**, which gives you broad creative freedom. While your video probably already has a sound track, adding a **voiceover narration** brings clarity to your personal videos. Better still, add **background music** off of your favorite music CDs to set the mood in your movie. These tracks are independent, so changes to one track don't affect the other.



All of the tracks in your movie are organized into a video **project file**. This project contains all of the information about how your movie is put together, but it is not your actual movie. All of the edits you make in your project do not affect the original clips themselves. This means that you can trim and edit without fear of making permanent changes to your original clips. When it is all ready to go, your computer collects all of the information together to create your final video file. This process is called **rendering**.



So follow along in Ulead VideoStudio's step-by-step path and you'll find that your friends are amazed at the professional quality of your home movies. The only question you'll hear more often than "How'd you do that?" is "When's the sequel?"

Installation

Ulead VideoStudio is pre-installed on your Packard Bell computer.

If you wish to re-install VideoStudio, please refer to the instructions found in the 'Packard Bell Recovery Program' section of your User's Guide.

The Video Wizard

The **Video Wizard** is the fastest and easiest way to get video onto your PC, arrange the various scenes, and create a finished movie. It is a great tool for setting up projects for editing in Ulead VideoStudio.



Starting Ulead Video Wizard.



In the **Start** step, you'll be able to quickly check your computer's setup and get your first project going. Begin by creating a **Project**. Just like a professional production, a movie is composed of many separate elements. In Ulead VideoStudio, these elements are conveniently organized into a single project file, or *.VSP.

Getting started

1. Enter a **Project name**.
2. Click the **Browse** button to specifically select a location for your project file (optional).
3. Click the **Get Video** button to go to the next step and start capturing new scenes for your project.

Note: Depending on the video source device (digital camera, camcorder, VCR, etc.) that is currently connected to your computer, the output is displayed in the Preview Window. To check your video source device's settings, click the Video Source button.



Ulead Video Wizard ready to capture video.



In the **Get Video** step, you will be able to capture, or record, all the scenes that you want to use in your movie. When capturing, watch the capture information below the Preview window.

Capturing video

1. Turn on your video source device and check all the connections to your computer.
2. Watch the **Preview window** for the output of your video source device (e.g. For recorded tapes, start playing the tape. For cameras, adjust the focus and point to the desired location.). When you see the part that you want to start capturing, click the **Begin** button.
3. To pause or end the capturing process, click the **Stop** button.
4. Repeat steps 2-3 to capture several video clips.

Note: Don't worry about recording too much video. You can always go back to the clips later to trim them. For more on trimming clips, see page 11. You can remove any unwanted clips from the project in the next step, **Arrange**.



In the **Arrange** step, a thumbnail representation of each video clip in your project is visible in the main window. They are placed in the order in which each clip is going to be played in your movie.

Arranging your movie

1. Click on the clip that you want to move from the sequence of clips. Selected clips are highlighted in blue.
2. Drag the clip to a new location. This will automatically change the order of the other clips.
3. Click the **Add Effect** button to define how the transition from one clip to another takes place. In that section, you can also add music and titles to your movie.



Arranging video clips. Selected clips are highlighted in blue.

Now that you have arranged your clips in the correct sequence, you may want to cut (trim or edit) unnecessary portions out of a clip. See the next page to learn more about trimming clips.

Notes:

- To delete a clip from a project, simply click the thumbnail representing that clip to select it and then click the **Remove** button.
- To add movie files that are already saved on your computer into your project, click the **Add Video** button.

Capturing video to your computer with frame by frame accuracy is not easy. Fortunately, precise editing is really not a problem with Video Wizard.

Trimming a clip

1. Select a clip and click the **Trim** button.
2. In the Trim Video dialog box, slide the **Handle** to the right until you see the exact point that you want to use as the starting point of the clip.
3. Click the **Start Trim** button to mark it as the first frame of the trimmed clip.
4. Slide the **Handle** further to the right until you find the point where you want the clip to end.
5. Click the **Stop Trim** button to mark it as the last frame of the trimmed clip.
6. Click the **Play trimmed clip** button to see your edits.
7. Click the **Return** button to go back to Video Wizard.



Note: There are other helpful buttons in the Trim Video dialog box that you can use to scroll through the frames of a clip. Watch the Status bar at the bottom of the window for information about the **Mark in** and **Mark out** points, which you can use for more accurate trimming.



Adding effects to your movie in step four.



This step really completes three major parts of your project. Transitions between scenes, background music, and opening credits are all taken care of here. The interface is simple and gives you a chance to quickly spice up your production.

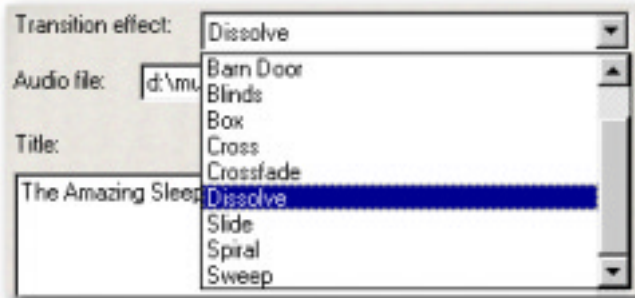
The most useful tool for your home movies is the **Transition effect**. A transition is what occurs when one scene ends and another starts. By adding effects, you can take separate clips and smoothly blend them into a complete movie.

Just below the Transition effect item is the **Audio file** entry box. Adding music to your movie makes it more interesting to watch and helps to set the mood. You can use any Windows audio file (e.g. *.WAV) or try the samples that are included on your Ulead VideoStudio CD.

The final section allows you to add a **Title** to your movie. As with the other two parts, the Wizard's incredibly simple method gets a quick working title into your movie. You can enhance these effects later in the main program, Ulead VideoStudio.

Notes:

- The Video Wizard applies the same transition between all of the clips at this point (unless you select Random).
- Ulead VideoStudio uses animated samples and instant previews to help you choose the perfect effect.



Selecting a transition effect.

Adding a transition effect

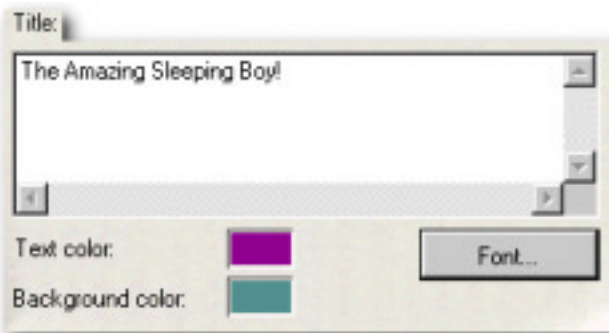
1. Click the **Transition effect** drop down menu.
2. From the drop down list, select the method of transition to use between your clips.



Browsing for a music file.

Adding an audio file

In the **Audio file** entry box, specify the path and name of the audio file (*.WAV) that you want to use in your movie. You can click the **Browse** button to find the file yourself.



Adding an opening credit.

Creating opening credits

1. Click in the **Text entry box**.
2. Enter your title.
3. Click the **Text color box** to select the colors for your message.
4. Click the **Background color box** to set that color.



Ulead Video Wizard ready to render a movie.



In the **Create** step, you will be able to make the actual movie file. How long it will take depends on the number of clips included in the project, the duration of each clip, any effects you have added, and your hardware's capabilities.

So far, you have only been collecting the parts of your movie. The information about these parts has been stored in a **Project file (*.VSP)**. The project file contains all of the information necessary to make your movie, *but it is not the movie itself*.

Creating video...



Creating a movie file

Click the **Create Video File** button. Video Wizard will start rendering, or creating, the actual movie file. Watch the progress clock to estimate the length of time it will take to make the movie. When it's done, the program will automatically switch to the **Play** step where you can watch your newly created movie.

Note: If you want to use more powerful editing tools at this point, you can open your project in the main program, Ulead VideoStudio. When you click the **Open In VideoStudio** button, the Video Wizard closes and your project file opens in the Ulead VideoStudio workspace.



Playing a movie file with Video Wizard.

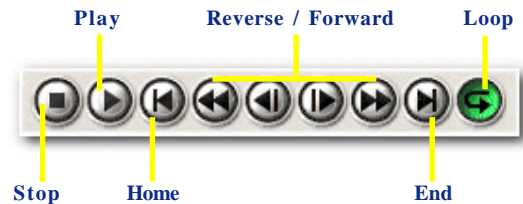


Now that you have a finished movie, the **Play** step is where you can watch the entire picture. The movie you have created is now a video file and is a completely finished product. So, sit back and relax while you play back your movie.

Playing back a video file

Click the **Play** button to run the movie you have just created in the Preview window.

While in the **Play** step, you can also play back other movies (e.g. *.AVI), which are saved in your computer. Simply click the **Load Video** button and locate the file you want to watch.

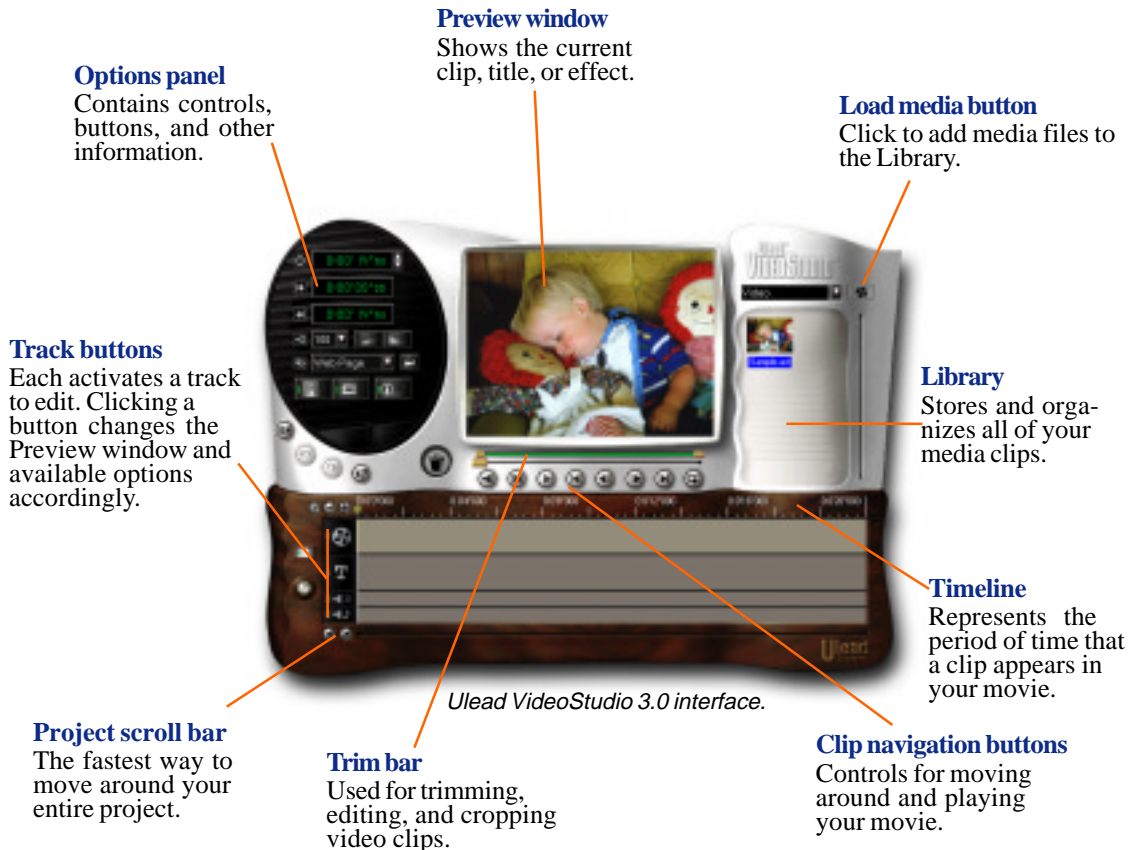


Go ahead and play it again. By using Video Wizard, you have an excellent first draft of your movie. The completed project is ready for further creative editing in Ulead VideoStudio.

While Video Wizard is not a required part of making a video project or creating a movie, you may find it convenient to use in setting up all of your new projects. Later, you can use the main program to fine tune and perfect your movie. That's what the rest of this manual is about.

Map of Ulead VideoStudio

The Ulead VideoStudio interface has been designed to make the sometimes complicated task of editing movies on your PC intuitive and enjoyable. The illustration on this page shows an overview of the entire program, while the next few pages detail more specific features. Note especially the Options panel, which is highly context sensitive (meaning that it changes depending on the program's mode) and contains a ton of information.



The Workspace

Tool Tips

By holding your mouse cursor over a button or object, a balloon pops up with the name of the item.



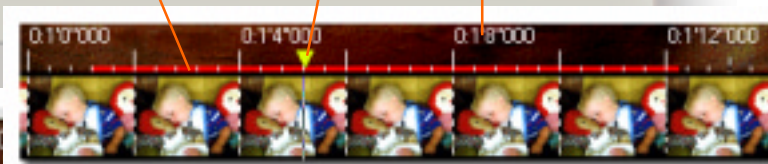
Trim handle

Click and drag to trim a clip.



Selected range

These color bars represent the trimmed or selected part of a clip or project.



Clip navigator

Click and drag these controls to scroll through a clip. The position is shown in the Preview window's contents.

Time units

Represents the timing of clips in hours : minutes ' seconds " milliseconds

Switch mode

Changes the view from Storyboard to Timeline view. (see page 24)



Add media

Displays a menu allowing you to place video, audio or image clips directly on the Timeline.

Zoom controls

Change the view to zoom in/out or fit the entire project on the screen.

Project scroll controls

Use the left and right buttons or grab the scroll bar to move around your project.

Continued...



Volume control

Controls loudness of the music output. Drag the slider to adjust the volume of your speakers.

Clip navigation buttons

These can be used to move around a selected clip. The button highlighted in yellow plays the clip while the green one means playing continuously.

Context sensitive help

This button activates the Context sensitive help feature. After you click on it, your cursor changes to look like the cursor pictured at left. Move your cursor over an object in the program and click it.

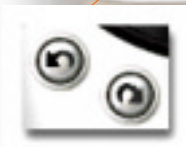


Play project

Click this button to render (create) your project. This can take some time, but is an important feature: see **page 27**.

Undo and Redo

Any changes you make that you don't like can be instantly fixed or undone by clicking the left button. And if you change your mind, just click Redo.



Trash can

Drag and drop clips here to delete them. You can also select a clip and press **Delete** on your keyboard.



Global commands button

This button accesses a menu that contains many useful tools to give you a hand when using Ulead VideoStudio. One example is the item, **Ulead VideoStudio 3.0 Help**.

Important program attributes can be found under the **Preferences** item and you can create and organize your templates by clicking the **Templates** item.



The Library

The library is a storage depot for everything you need to create a movie: video clips, audio clips, still images, transition effects, music files, titles and color clips. These are collectively known as media clips. You can think of the Library as a general manager for all of the pieces of your project.

Adding media clips to the Library

1. Click the **Load clip** button to open a dialog box for locating the media clip to insert in the Library.
2. Select the desired file.
3. Click **Open** when you are finished.



Load clip buttons

These allow you to locate the clip you want to add to the Library. A media clip can be a video, color, image, or audio clip.

The type of clip that can be inserted depends on which step you are working on (e.g. Title or Music). The most convenient way of working with clips is using your mouse. If you want to add clips to, or use clips from the Library, first select the desired clip, then drag and drop it to its destination. You can even drag and drop files right from Windows Explorer into the Library panel.



Trash can.

Deleting media clips from the Library

1. Select the clip that you want to remove from the **Library**.
2. Drag the selected clip to the **Trash can** or press the **Delete** key.
3. When prompted, also verify whether you want to delete the source file from your hard disk or still keep it for future use.

Note: Deleting source files from your hard disk permanently removes them from your computer. You may not be able to recover them again. Please make sure that those source files you are about to delete are unnecessary.

Step by step

Step by step

The Video Wizard quickly creates finished movies and is an excellent way to start any project. Ulead VideoStudio itself is similarly laid out in a step-by-step format, following the items in the menu bar at the top of the program, from left to right. It's not necessary to work through every step every time, but the steps can serve as a guide to creating a complete movie. The steps don't necessarily need to be followed in the order that they are presented, either. Once a project has been created and you have some media files to work with, jumping around is not only allowed, but encouraged.

Start & Capture



The **Start** step is for creating new project files or opening existing ones. Once a project is opened in the program, new video can be recorded onto your computer's hard drive in the **Capture** step. **See page 22.**

Storyboard

The **Storyboard** step and the Storyboard section of the program under the Preview window are the heart of Ulead VideoStudio. This is where you arrange, edit, and trim your masterpiece. **See page 24.**



Effects



Transition effects between scenes are fun and easy. Thumbnail animations and drag-and-drop operations put dozens of cool effects at your fingertips. **See page 34.**

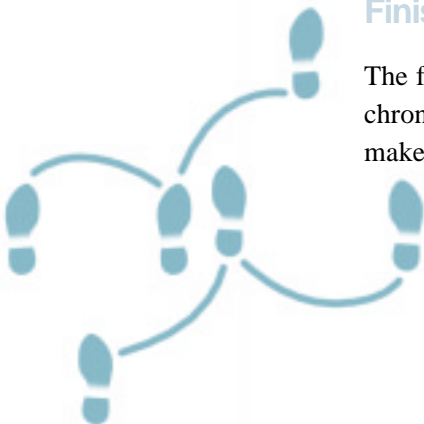
Title

No movie would be complete without opening and closing **titles**. Ulead VideoStudio lets you use any Windows True Type font on your computer, of any color and size, and gives you the power to animate them just like the pros. **See page 36.**



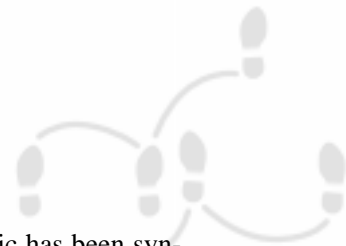
Voice & Music

Background music is probably one of the most important factors determining the mood or feel of your movie. Add ambiance with tunes off of your favorite CDs or record a **voiceover** narration to effectively clarify important parts of your video. **See page 40.**



Finish

The final cuts have been made and the music has been synchronized with care. Now it's time to put it all together and make a **master copy** of your newest movie. **See page 46.**



Start & Capture

Start

The **Start** step is where you create a new **project file** (*.VSP) or open an existing project. A **project file** is a small file used by Ulead VideoStudio to store all of the information about your movie: clips used, trimming information, duration of movie, size of frames, and type of movie to make. A project file is not the finished movie and can only be opened in Ulead VideoStudio. The actual process of creating a movie from a project file is called **rendering**.

Creating a new project

1. Click the **New project** button.
2. In the dialog box that opens, enter a **Project name**.
3. Select a **Template** that most closely matches the type of movie you want to create.
4. Click **OK**.

New project Open project



Detail from the Options panel.

Templates save many complicated settings for capturing video and for creating your movie in the Finish step. They are an extremely important part of your project and should not be overlooked. More information about template options can be found starting on **page 50**.

Creating a new template

1. Click the **Global commands** button.
2. Select **Template** from the menu.
3. Click **New** and enter a name for your template, then click **OK**.
4. Set up the details of the template and click **OK**.

Global Commands button.

Notes:

- Use the **Open project** button and the **Recent file list** to open previously created projects.
- Press **Ctrl+ S** to quickly **save** your project.

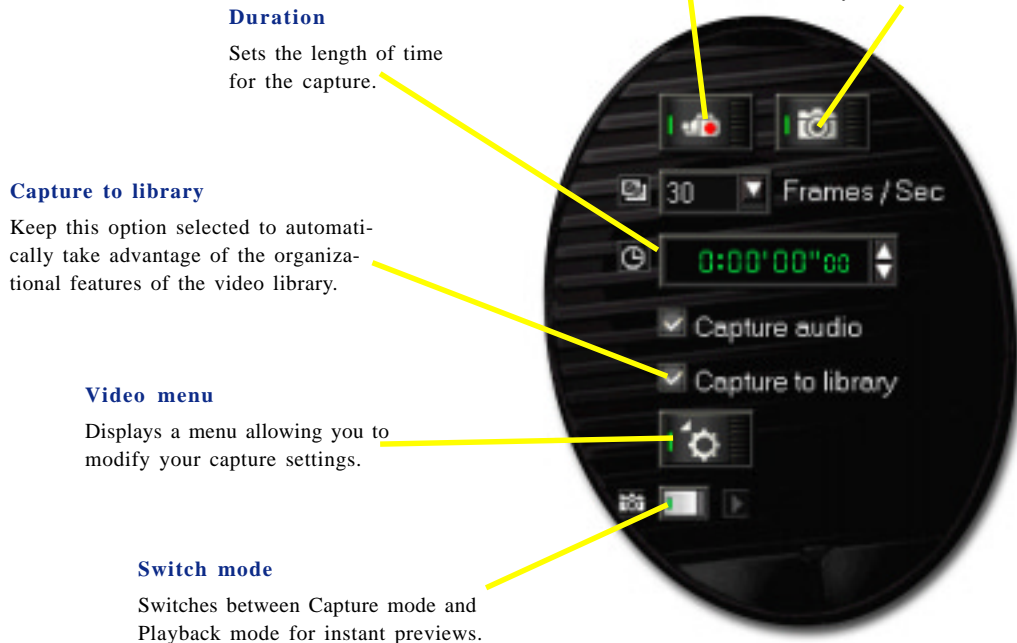
Capture

The process of recording video to your computer is called **capturing**. When everything is ready to go, the video feed from your source device should be visible in the Preview window. If your card supports a television monitor, you should also be able to watch your video there.

Capturing video

1. Hook up your video source device to your capture card. On some cards, you also have to connect the audio cables to your sound card.
2. Use your device's controls to move around and find what you want to capture.
3. Click the **Capture video** button to begin recording.
4. When you have recorded what you want, click the **Capture video** button again or press the **Esc** key to stop capturing.

Note: If the Capture menu item is grayed out or unavailable, your video capture hardware may not be correctly installed. Please follow your hardware manual's instructions carefully.



Storyboard

A **storyboard** is an outline for a movie. It contains sketches and drawings, in chronological order, of the events that occur in your story. The bottom half of the Ulead VideoStudio interface is simply an electronic storyboard.

Storyboard mode presents an overview of the entire project's video track.



Timeline mode allows frame accurate editing of individual clips.

Click the Switch mode button to change between the two display modes.

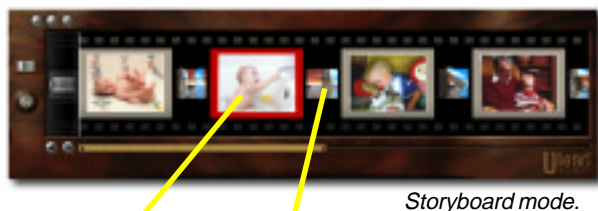
The **Storyboard** can be viewed in two distinct modes by clicking the **Switch mode** button. Which mode you use depends entirely on personal preference, but most people find both modes to be useful at different times. For example, the **Storyboard mode** is the fastest and simplest way to add clips to your movie. Clips can be moved around by simply dragging them. After arranging your scenes in Storyboard mode, some people prefer to switch to **Timeline mode** to fine tune their effects and perform frame accurate trimming and editing of individual clips.

Switching to the **Timeline mode**, Ulead VideoStudio show exactly when and where events in your story occur and you can see at a glance the contents of various media clips. A **clip** can be a video file, an audio file, a transition, a colored background or a title. If you've used the Video Wizard to create your project, a rough storyboard was automatically created. If you're starting from scratch, you can drag clips from the Library and simply drop them on the Timeline.

Storyboard mode

You may find that starting out in **Storyboard** mode is the easiest way to get your project rolling. After starting a new project, switch to the **Storyboard** step and take a look at your project. Each picture represents an event in your movie, an event being a video clip or a transition. The thumbnails reveal at a glance the chronological order of events in your project, but do not tell you much about the clips themselves.

You can drag and drop clips to arrange them, and transition effects can be inserted between clips. Selected clips can be trimmed in the preview window. See **page 28** for more information on trimming.

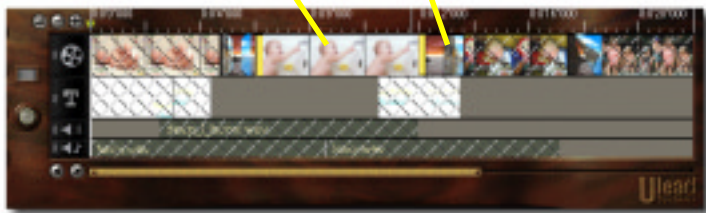


Storyboard mode.

Selected clip. Transition effect.

Timeline mode

When Ulead VideoStudio is in **Timeline** mode, clips are placed on the workspace as short sequences. The length of these clips accurately represents the duration of the clip in your project. The **ruler units** can be adjusted for your convenience. Setting the ruler units to fractions of a second gives you precise control over trimming and editing, while longer ruler units allow you to view more of your project. You can control ruler units by using the **Zoom control** buttons. Click the **Fit project in window** button if you want to see the entire project displayed on one screen. If you have a mouse with a scroll button, the scroll button can be used to zoom.



Timeline mode.



Zoom control buttons.



Fit project in window button.

The Tracks

The Timeline is divided horizontally into four different tracks. The **Video and Transition Effects**, **Title**, **Voice**, and **Music** tracks all correspond to the Ulead VideoStudio steps of the same name.

Switching to different tracks

There are three ways to do this:

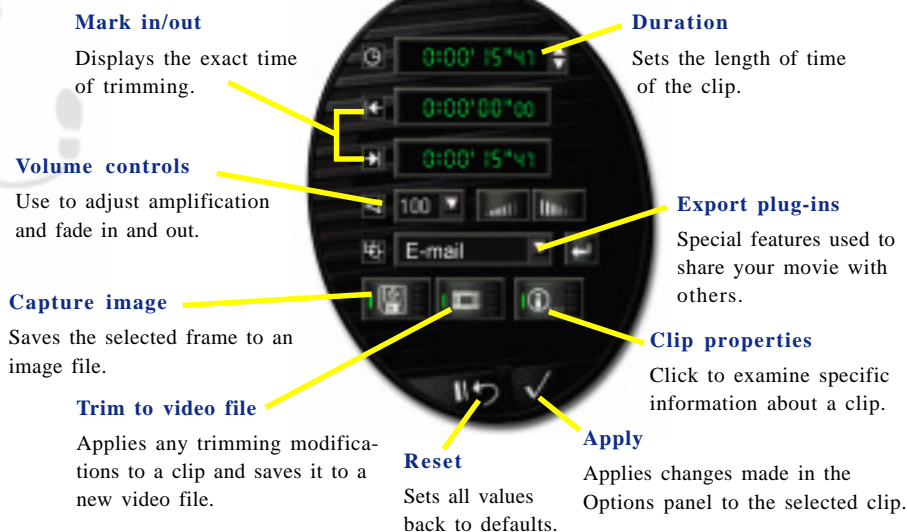
- Click on the **Step** menu item corresponding to the track.
- Double-click on the **track** or clip you want to work on.
- Click on the **icon** located left of each track you want to work on.



The four tracks, each with a clip inserted. The Video track is active.

The Options panel

Ulead VideoStudio offers different controls in the **Options panel** depending on the step or track you are working on. This way the workspace is kept simple and uncluttered. Just remember that if you can't find a control that you are sure you have seen before, try switching to the type of editing you want to do first.



Any changes that you have made in the Options panel are applied to the clip when you click the **Apply** button. All of the settings can be restored to their original values by clicking the **Reset** button. As with any changes you make in Ulead VideoStudio, you can always undo them by clicking the **Undo** button or by pressing **Ctrl+Z**.

The Play project button

While you are editing, there are many times that you will want to preview your work to see how your project is progressing. The row of buttons below the Preview window are used to navigate around your project, play clips, and create previews of your entire project.

A Ulead VideoStudio project (*.VSP), cannot be played until it has been **rendered**, or created. Click the **Play project** button to begin the process of rendering your project for previewing.



Clip navigation buttons, with the Play project button circled in yellow.

Rendering is easy, but it can take some time. Fortunately, Ulead **SmartRender** technology optimizes the rendering process by not re-rendering the parts of the project that have not changed. Ulead VideoStudio performs this magic with heavy use of temporary files. These files are stored in a location that you can set in the **Preferences: Preview tab**, found on the **Global commands** button menu. By efficiently allocating disk space for temporary files, you don't need to worry about "Out of Memory" error messages.

The **Preview Files Manager**, also on the Global commands button menu, can be used for specific manipulation of individual project preview files.

So the best advice we can offer is that you edit for a while and then when you need a break, hit the Play project button and let Ulead VideoStudio render your project. By doing this fairly often, render times should be very reasonable.

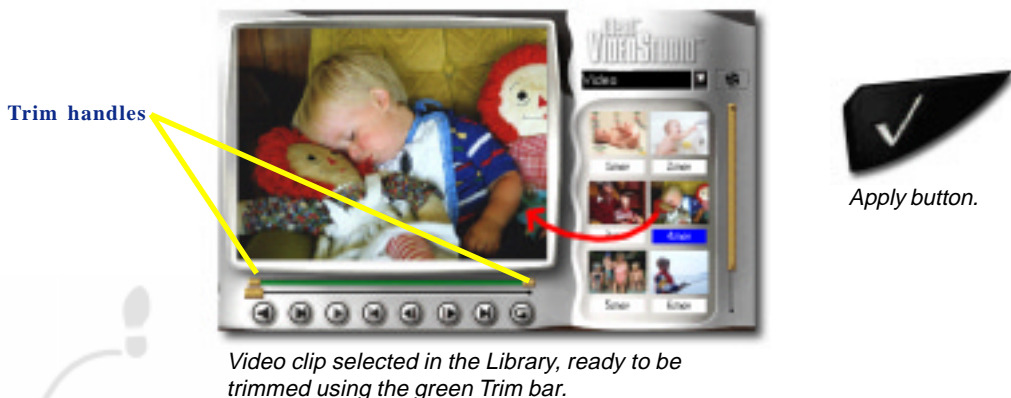
Rendering a portion of your project, instead of the whole thing, can save you time and give you a quick preview of an important section. This is especially useful for rendering across transitions, title sequences, or to check the timing of audio clips in relation to the associated video. If you only want to render the part of your project, hold the **Shift** key on your keyboard while clicking the **Play project** button. For more information about partial rendering, see **page 47**.

Working with clips

The best part of editing your movie on your computer is the ease with which you can snip and trim with frame by frame accuracy.

Trimming a clip using the Trim bar

1. Select a clip by clicking on it in the **Library**.
2. Click and drag a **Trim handle** to set the trim position.
3. When you have selected the area you want to trim, click the **Apply** button.
4. You can selectively play only the trimmed portion of the clip by holding the **Shift key** and clicking the **Play button**.



Notes:

- The green bar beneath the **Preview window** represents the selected portion of the clip. If the clip has not been trimmed, the green bar extends for the entire length.
- Watch the **Mark in/out** displays on the Options panel to monitor your trimming. The Mark in/out points can also be set by pressing **F3** and **F4**, respectively.
- For precise control, click on a Trim handle, hold it, and use the **Arrow keys** on your keyboard to trim one frame at a time.

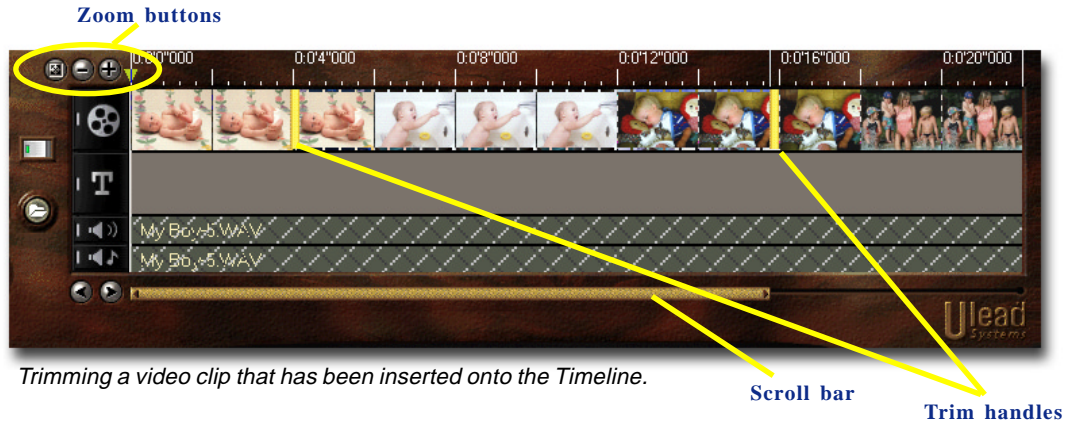


Insert media files button.

Inserting a video clip onto the Timeline

- From the **Library**, drag and drop the clip to the **Timeline**.
- To insert a clip directly to the Timeline, click the **Insert media files** button, located to the left of the **Timeline**.

The key to making highly accurate cuts and edits is controlling the ruler scale in the Timeline. When each unit represents one second, you can get pretty close in estimating your edits.



Trimming a clip from the Timeline

1. Select a clip by clicking it on the Timeline.
2. The yellow **Trim handles** on either side of the clip can be dragged to change the length of a clip.
3. The Preview window reflects the position of the Trim handle in the clip.
4. Watch the **Mark in /out** displays on the Options panel to numerically monitor your trimming.
5. Other clips in your project automatically reposition themselves according to your edits.

While trimming and editing, you may sometimes need to adjust the view of the clips on the Timeline. Use the **Zoom controls** to control the view. The **Scroll bar** makes navigating through your project quicker and easier. The wheel on a scrolling mouse (e.g. Microsoft Intellimouse) can be used to scroll, and you can zoom by holding the Ctrl key while using the wheel.

Don't forget that you can always undo just about any changes you've made in your project by pressing **Ctrl+Z**. You can set up to 99 levels of undo by pressing **F6** to open the Preferences dialog box.

Duration

Sets the length of time of the clip.

Spin buttons

Use these to fine tune your trimming.

Mark in/out

Displays the points in the original clip where the trimming takes place.

Apply button

Click to apply changes made in the Options panel to the selected clip.



Trimming a clip with the Options panel

1. Select a clip on the Timeline or in the Library.
2. Click the time in the **Duration** box. For example, click on the **seconds** ("). The numbers begin blinking.
3. Enter a length of time for the clip. The **Mark in** shows where the clip begins and the **Mark out** point displays the end of the trimmed clip.
4. Click the **Apply** button.

The Library can store multiple versions or copies of a single video clip. This means that you can break large clips up into a number of smaller clips using the trim tools and save these clips to the Library as separate entries. The source video file itself is not physically altered, nor are actual copies made of the original file. This is very useful since it allows you to manage your production very creatively but does not take up any more disk space since you still only have one video file saved on your hard disk.

Creating multiple versions of a single clip

1. Select a clip from the Library.
2. Grab and drag a Trim handle to set the trim position.
3. Click the **Apply** button.
4. Re-insert the original clip into the Library by clicking the **Load video** button.



Load video button.

The method of trimming illustrated here allows you to use your original video file as the source for a number of different clips in the Library. This type of editing does not affect the source file anyway.



This clip is a trimmed version of the original video file saved on the hard disk. You can see at a glance that it has indeed been trimmed by selecting the clip and looking at the Options panel or the Trim bar. Rename each thumbnail by double-clicking on the name to make distinction.



This Library contains four versions of the same clip. Selected clips are highlighted in blue.



When the original clip is re-inserted into the Library, the Mark in point is zero and the Mark out point is the last frame. The duration is the entire clip. The Trim bar clearly shows that the clip has not been trimmed.

Many times, when you make an edit, you may wish to make a permanent change to the clip and save the edited file. Again, Ulead VideoStudio gives you a margin of safety in that it saves the trimmed video to a new file and does not alter the original. You can go ahead and delete the original to recover disk space when you are sure of your changes (press the **Delete** key or drag the clip to the **Trash can**).



Trash can.

Breaking a clip into multiple files

1. Select a clip from the **Library** or **Timeline**.
2. Grab and drag a **Trim handle** to set the trim position.
3. Click the **Trim to video file** button.
4. You now have two different physical video files on your hard disk, the original file (SOURCE.AVI), and a trimmed copy (SOURCE-1.AVI) .



Trim to video file button.

Using image clips

While Ulead VideoStudio by definition is primarily used to put together motion pictures, you shouldn't underestimate the value of still pictures in your video productions. You can use images or pictures from any source, and even use individual frames from a video file.



Load image button.
This button changes depending on the Library folder.

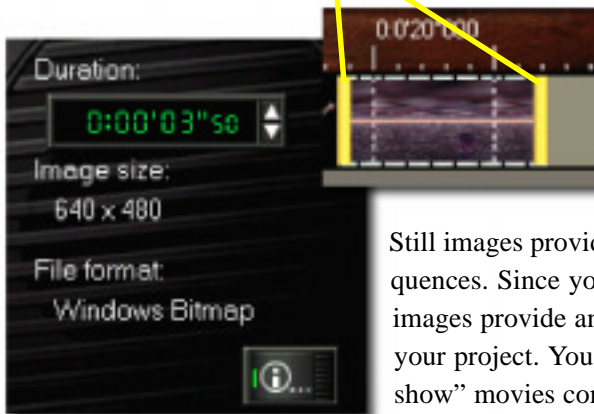


Library selection menu.

Inserting an image clip

1. Switch to the Image Library by clicking the drop down list and selecting **Image**.
2. Click the **Load image** button and browse for the picture you want to store in the Library.
3. Drag and drop the image onto the Timeline just like any other clip.

Trim handles



Information about an image clip.

Once an image is on the Timeline, you can set it to any time span you like by dragging its **Trim handles** or by directly entering a **Duration** in the Options panel.

Still images provide excellent backgrounds for title sequences. Since you can precisely control the duration, images provide an easy way to control the total length of your project. You can even create very effective "slide show" movies composed entirely of still image clips. Images that are the same size as your video frames work best. You can resize your pictures in an image editor or have Ulead VideoStudio do it for you when your movie is created.

Using color clips

Color clips are simply solid colored backgrounds that are useful for titles and transitions. For example, black clips can be used for an effective fade to black transition. They are added to a project by selecting the Color Library, inserting a specific color clip into the Library and dragging and dropping the clip into your project. The duration of a color clip can be controlled just like an image clip.



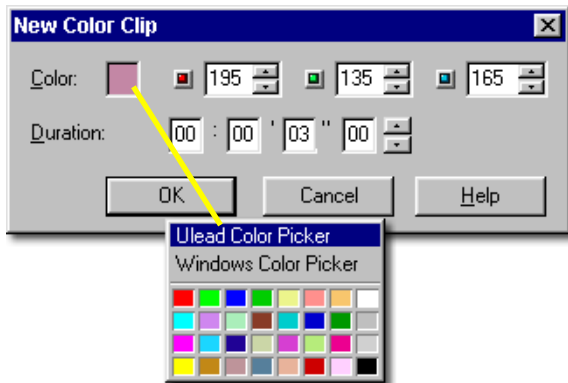
Load color button.

Inserting a color clip

1. Switch to the Color Library by clicking the drop down list and selecting **Color**.
2. Click the **Load color** button.
3. Choose a color. Click the color box and select **Ulead Color Picker** to visually select a color.
4. Set a **Duration** and click **OK**.



Titles set against solid backgrounds are often easier to see than if set against an image, especially a moving one.



At left, the New Color Clip dialog box. You can enter the red, green, and blue values for your clip, or click the color box to pick the color visually.

Once a clip has been inserted into the Library, you can drag it to the Timeline to put it into your movie project. Color clips are great for beginning a movie. Place your opening credits over the top of the color clip and then use a cross fade effect to create smooth transition into your movie.

Effects

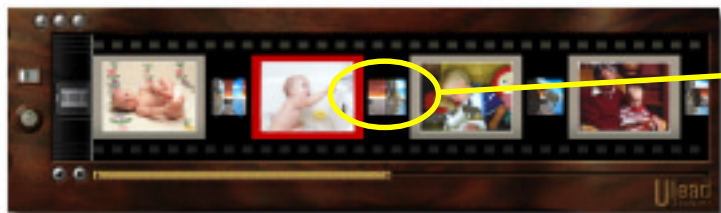
Transitions give your home movies a truly professional touch. Fortunately, they are also the easiest part of Ulead VideoStudio. For your first few videos, feel free to go a little crazy and try out every transition in the Library. Once you've gotten used to using transition, you can express your artistic side by modifying the preset transitions to your own liking. In any case, you're guaranteed to have fun in this section.

Simple jump cuts used to be all you could do with your home videos. This is when one scene stops and the next scene starts immediately. Ulead VideoStudio, on the other hand, has tons of styles of transitions you can use, from cross fades to explosions. We'll deal with the details of these effects later, but for now you just need a project with two video clips in it.

Adding a transition

1. From the **Effects** step, use the drop down list in the Library to select a category of effects.
2. Scroll through the **effects thumbnails** in the **Library** panel and find one that you like to use.
3. Click and drag the effect to the **Timeline**, roughly between two video clips.
4. Drop your effect and it will snap into place.

Note: You may find it easier to work on transition effects when you're in the Storyboard mode.



Drag and drop transition effects right onto the Storyboard.



Your clips appear adjacent to each other on the Storyboard. You'll recall that the Storyboard has two different modes, Storyboard and Timeline, but transitions work the same way in both modes. The illustrations on the previous page shows VideoStudio in Storyboard mode. The mode can be switched by clicking the **Switch mode** button.



Switch mode button.

Transition magic

If you've tried a few simple transitions as outlined on the previous page, you really have mastered all you need to know. Ulead VideoStudio pretty much takes care of all the details to make your transitions smooth and professional. That doesn't mean the program has taken control of your movie for you, however. After you have added a transition to your project, take a look at the **Options panel**. Below is an example of one of the transitions, from the **Slide** effects, specifically the **Barn door**. In this effect's settings, displayed in the Options panel, you can change many parameters that will allow you to control exactly how the effect is going to be used in your movie.

Duration

Sets the length of time for the transition. You can also modify the duration by using the yellow Trim handles on the Timeline.

Border

Select a size for the border (in pixels) on the left and choose a color by clicking on the color box.

Soft edge

The soft edge applies to the border of the effect. This blends the two clips together more smoothly. If you don't have a border set on the clip, these buttons are unavailable.

Title motion buttons

These buttons control the direction of motion in the transition effect. In this transition, the two doors can move in eight different ways.

Add/Apply

Click to add the new transition to the Timeline. When you are modifying a transition that has already been inserted, this button has a check mark on it. Click to apply your changes to the selected clip.



Title

While a picture may be worth a thousand words, there is no doubt that clarifying text here and there throughout your movie adds to its comprehensibility. And what movie would be complete without opening and closing credits? If you can type, even with just two fingers, you can create professional credits in minutes.

Adding text

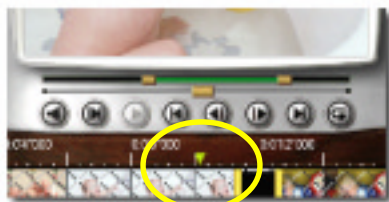


Title track button.

1. From the **Title** step, use the **Clip navigation** button on the Trim bar to scroll through your movie.
2. When you see the frame where you would like your title to appear, click the **Title** button or click on the Preview window. Remember that you cannot create a new title over an existing title clip.
3. Type in your title in the Preview window.
4. When you are finished, simply move on to the next step or move to a different location to enter a new title.



Title button on the Options panel.



The yellow triangle represents the position of the title clip in the Timeline.

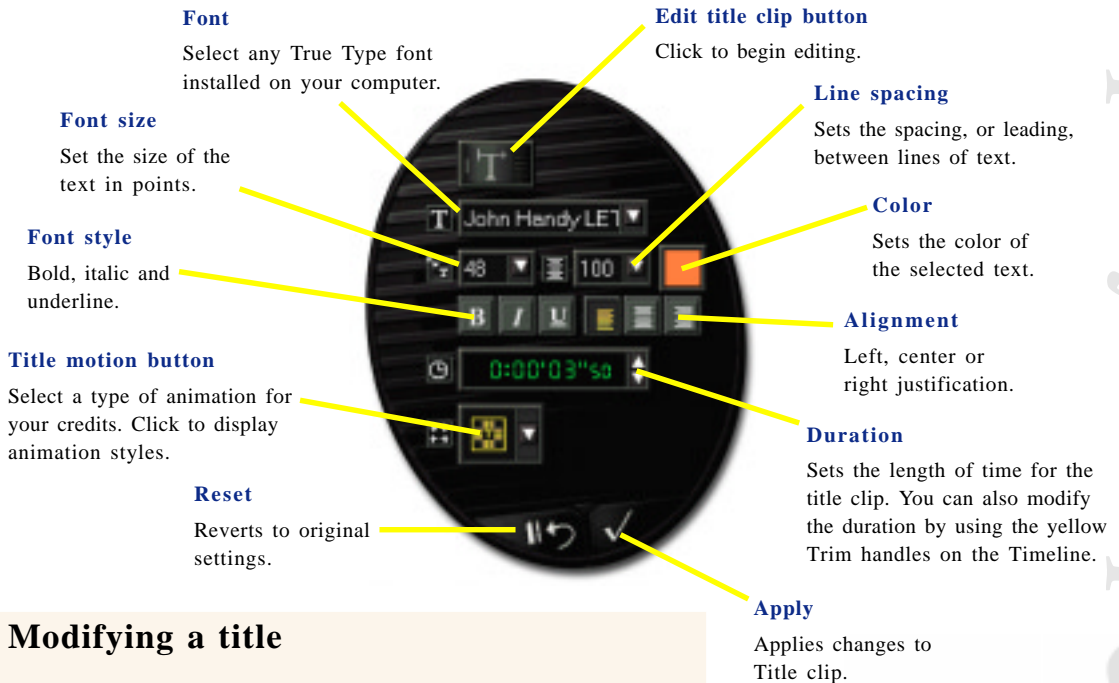
When entering a title, a faint rectangle is visible in the Preview window. This represents the **Title safe area**, and it is the recommended maximum size for your text. Along with the rectangle, you should see a blinking cursor.

The titler works like a very simple word processor. Type your text, press **Backspace** to correct your mistakes and press **Enter** to start a new line. You can move around the text with the arrow keys. If you want to change the attributes of text that has already been entered, you need to highlight the text by selecting it with your mouse.



A centered title being edited. Note the Title safe area around the center of the window.

The **Options panel**, as with the other features, allows you to modify the settings of the tool that you are currently using. Use this to design the look and feel of your text with just about any style that is available in a standard word processing program.



Modifying a title

1. Click on a title on the Timeline. The selected clip will be surrounded by a broken line and two yellow handles.
2. With the pre-existing text in the Preview window, use the **Style** buttons to change your text.
3. Again, you can simply move to another step to finish, or click the **Apply** button. You can also use the **Reset** button make your text go back to its original state.

Once the title clip has been inserted onto the Storyboard, you can adjust its duration by clicking and dragging on the handles, and you can see what your title looks like in the Preview window using the Preview bar handles. The Library can also be used to store your title clips. To add a title clip to the Library, just drag and drop from the Timeline.

As with other Ulead VideoStudio features, if you've already tried out this function, you know all you need to know. But of course there's more...

Rolling & scrolling

One of the most common and effective techniques for presenting closing credits is the rolling or scrolling credits. With Ulead VideoStudio, this is simply a matter of specifying a direction and a duration for your text. After you have entered some text and inserted it onto the Timeline, click the title clip you have created and look at the Options panel.

Animating titles

1. Select a title on the Timeline or create a new one.
2. Click on the yellow **Title motion** button.
3. Select an **Animation style** from one of the preset choices.
4. Click the **Apply** button on the Options panel.



Apply button.



Title motion button



Animation styles

Possible title animation effects available on the Options panel.

Most of the **Animation style** buttons, the last twelve in fact, represent scrolling animations. It is a little difficult to explain in words, but not hard to understand.

- A.**  For example, the button at left (**A.**) has a box with three arrows pointing down. This represents a title that starts off of the top of the screen, scrolls downward across the screen, and scrolls off the bottom.
- B.**  The other button at left (**B.**) has two arrows, symbolizing motion that starts off screen on top, scrolls down, and ends in the middle of the screen. If you hold your mouse over a Title motion icon, a short pop up message briefly describing the motion appears.

But the best way to figure out what these really do is to select the effect and use the Preview window to see the results. As usual, you can see the results of your changes by grabbing and dragging the Preview handle beneath the Preview window.

The speed of scrolling is directly determined by the length of the clip: very slow title animations take longer to play. So if you need a scrolling title that lasts for less than a second, the speed of scrolling is going to necessarily be quite rapid.

Fading in & out

Another incredibly useful, easy, and effective method of displaying your titles is to fade your text in from invisible to crisp and clear and then back to invisible again. This works especially well for opening credits with a slow fade, or as captions with a quicker fade.



Cross fade title animation options.

Fading titles

1. Start by creating a new Title or click on an existing one.
2. Click on the yellow **Title motion** button.
3. Select the last button, the **Cross fade** button.

The default duration of a title clip is about three seconds, but you can adjust this to make it longer or shorter by dragging the handles on the title clip on the Timeline, or by entering a value in the Options panel.

Putting it all together

To create a long list of credits in a production, it is necessary to insert a series of title clips into the Timeline.

Extended credits

1. Start by creating one clip with multiple lines of text.
2. Drag a copy of the Title clip from the **Timeline** to the **Library**. This is easiest way to maintain consistency on the each title's attributes.
3. Drag title copies from the Library back to the Timeline to create new titles.
4. Modify the text in the copied title.
5. Now repeat this procedure until you have credited the whole gang.

You'll end up with a number of separate, sequential title clips on the Timeline. Try adding a small space between clips for a brief pause. Anyway you do it, test your titles to insure that they are readable in the final version of your movie (see **page 47** for information about pre-viewing parts of a movie).

Voice & Music

The importance of music in a video production cannot be overstated, and a running narration can be just as critical. Ulead VideoStudio has the tools to make sure your audio is top notch.

Like the other parts of VideoStudio, the audio tracks are activated by clicking on their respective **Step** on the menu at the top of the program interface, by clicking on the icons to the left of the track, or by double-clicking on the track itself. The upper audio track is the **Voice track**. This can be used to create a running narration of your movie. The lower audio track is the **Music track**, and can be used for background music. You can even use music from your favorites CDs.



Detail of the Timeline showing the two audio tracks with WAV file clips.



Add media button.

If you already have some audio files ready to be used in your movie, it is just a matter of clicking the **Add media** button and inserting the clip onto the Timeline. The Library can also be used to store your audio clips and dragging and dropping to and from the Timeline is effortless. Click the **Load audio** button at the top right of the Library panel to add audio clips.



Load audio button.

Incidentally, the Ulead VideoStudio CD also comes with nearly one thousand audio clips ready for you to use. These clips are mostly short sound effects clips and can be very humorous when used in your movies, or can be used to create additional ambience.

Voiceover narration

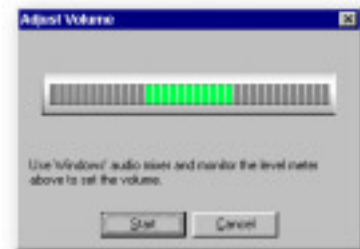
Explaining exactly what is going on in your movie can really help your viewers understand and enjoy it better. This technique is often used in television documentaries and news stories.

Narrating a movie

1. Use the Preview bar to move to the section of the video you want to narrate. Remember that you cannot record over an existing clip, so make sure none is selected by clicking on a blank section of the Voice track.
2. Select the **Record with preview** option and then click the **Record** button. A small lever meter appears.
3. When you speak into your microphone, the meter should light up. Use the Windows audio mixer to adjust the level of the microphone.
4. Click the **Start** button and begin speaking. Watch your video play in the **Preview window** to synchronize the narration with the action.
5. Click the **Stop** button (or press **Esc**) when you are finished recording.



Detail of Voiceover Options panel.



Adjust Volume level meter.



Stop button.

Note: Windows audio mixer can take any number of forms depending on your sound card. In general, it can be found by going to the Start menu in Windows 95, clicking the Program menu item, Accessories: Multimedia: Volume control. In Windows 98, substitute "Entertainment" for "Multimedia". If a speaker icon is visible on your Windows taskbar, you can right-click on it and select Open audio controls.

The easiest method of recording a narration for a video is to record in short ten or fifteen second sessions. This allows you to prepare what you are going to say more easily and to quickly fix mistakes. When you have mispoken and recorded a bad clip, just select the clip on the Timeline and delete it. Some people are comfortable doing impromptu narrations, some people prefer just an outline, and others like to have the complete text of what they want to say written out beforehand. Don't worry, this is still only the project and not the actual movie, so you still have a lot of room to experiment.

Background music

The mood of your movie is determined as much by your video as it is by the background music you use. Whether you choose Classical, Country, or Chinese folk music, the decision is entirely up to you. The source of this music can be any CD in your collection.

When you listen to a CD on your PC's CD-ROM drive, your computer is not actually processing the audio in any way. Instead, the CD-ROM drive sends a signal to your sound card, which then plays the CD through your computer's speakers. In short, this means that the audio signal from your CD player is not ready to be used in your movie project. To use the audio from a CD in your movie, you first have to record the music you want with your computer. This creates a digital audio file.

Recording music from a CD

1. Insert the CD in your CD-ROM.
2. On the Options panel, select a **Music track**.
3. Select the track (song number) on the CD that you want to play.
Important: Many computers automatically play CDs when they are inserted. You must close all other CD players for this step to work properly.
4. Click the **Play** button to listen to the CD to find the section of the song that you want to record. Remember that you cannot record over a WAV file on the Music track, so click on a blank portion of the track if the CD controls are unavailable.
5. Click the **Record** button when you are ready.
6. Click the **Stop** button (or press **Esc**) to insert the recorded clip onto the Timeline.



Detail from Options panel showing CD track information, the Record button and the Play button.



The Play button changes to the Stop button when playing a CD.



The Record button turns red when recording.

After you have recorded a clip, the controls on the Options panel have changed somewhat. The top numbers now represent the total **Duration** of the inserted clip. As with other types of media clips, you can now trim the inserted music file to better fit your movie.



WAV file trim information.

Working with background music

You can drag and drop audio clips to move them or add them to the Library. From the Timeline, a selected audio clip has two yellow handles that can be used for trimming. Again, just grab a handle and drag it to shorten a clip, either from the beginning or end.



Selected WAV file with Trim handles.

Duration

Displays and lets you change the duration of the WAV file.

Volume control

Sets the volume for the entire clip.

Mark in/out

Shows trimming information about the clip.

Fade in/out

Gradually fades the beginning and/or ending volume of a clip.

Info

Click to display detail information about the clip.

Apply

Click to apply trimming and volume changes to the selected clip.



Trim handles beneath the Preview window.

Trimming an audio clip

1. Select a clip by clicking on it in the **Library** or the **Timeline**.
2. Click and drag a **Trim handle** to set the trim position.
3. When you have selected the area you want to trim, click the **Apply** button.
4. You can selectively play only the trimmed portion of the clip by holding the **Shift key** and clicking the **Play** button.



Play button.

Mixing it up

VideoStudio has two explicit sound tracks, one for voice and one for music. If you captured your video with sound, then in reality, you also have a third sound track that is included with the video file. This really gives you a lot of creative freedom. Vacation shots, scenery and nature videos, and movies of parties all lend themselves very well to music video style productions. Or you can combine this format with a voiceover. And when someone talks to the camera, you may want to eliminate the music all together for a short period of time. The key to making this all work smoothly is to control the volume of the various clips. This is done with the Options panel.

The control of your audio tracks is found on the Options panel. The panel shown below is actually from a video clip, but you will notice that it is the same as to the audio clip Options panel. The first control is the volume control, expressed as a percentage of the original. Click



Audio controls for a video clip.

the control to select from a range of audio amplification options: 0 to 500% (where 100% is no change and 0% will completely silence the clip). If you want a completely silent part, it is probably easiest to just delete the clip from one of the audio tracks. This however, is not the best way to eliminate the audio part of a video clip on the Video track. Any changes made with this control apply to the entire clip.



Volume amplification control.

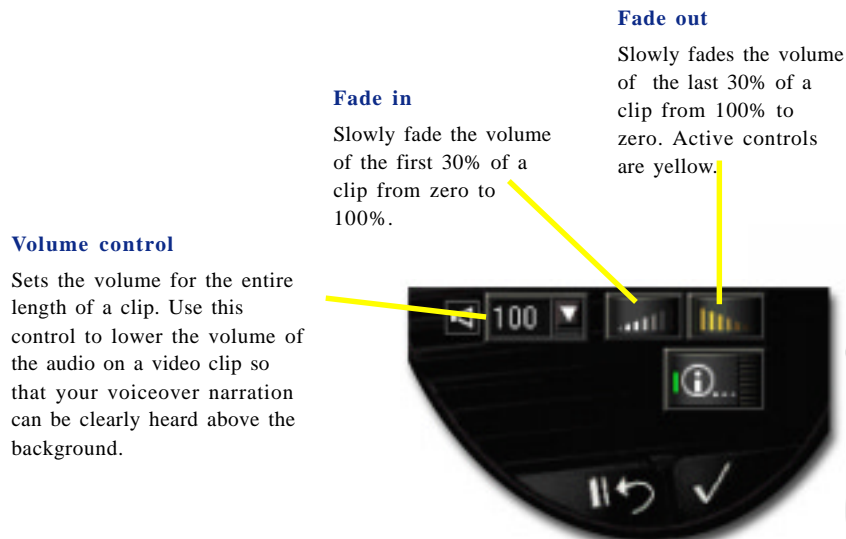
Ulead VideoStudio splits the audio into Voice and Music tracks for convenience as well as simple mixing, but you shouldn't feel limited by this. You may have noticed that you can insert any sort of Windows audio file onto either track, regardless of the content. Music clips can go on the Voice track and vice versa.

Moving audio clips between tracks

1. To move an audio clip from the **Music track** to the **Voice track**, you first need to drag the clip to the Library.
2. Delete the clip you have just copied from the Music track.
3. Switch to the Voice track by double-clicking on it.
4. Drag the clip from the Library to the Voice track.

Fade away

Background music that starts and stops suddenly can be distracting. If you record an entire song, this is probably not a problem since most songs have a beginning and ending. But, smooth transitions are a different matter if you only want to use a portion of a song. Ulead VideoStudio provides the tools necessary to seamlessly blend your music into the background.



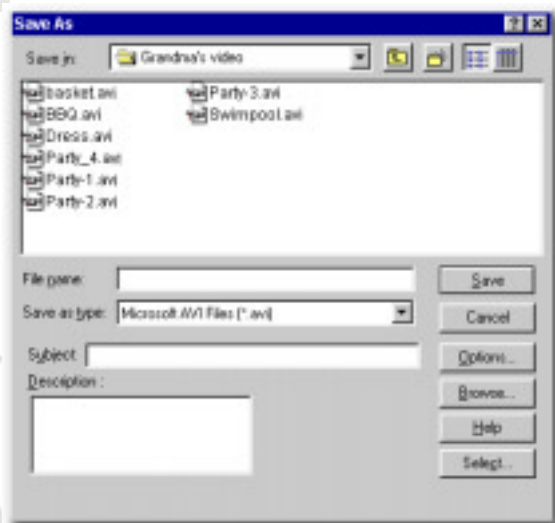
Detail from the audio clip Options panel.

Finish

Currently, there is no single standard format for video on a PC. This is not an uncommon issue in the early days of any new technology. There are dozens of choices you need to make about the format of your final movie. Fortunately, in the case of digital video, choosing the wrong format costs you nothing. In this sometimes complicated section, we're going to walk you through the universal procedure you need to follow to make a movie, talk about the various options you need to consider, and discuss the actual formats' strengths and weaknesses.



Make movie button.



Save As dialog box for making movies.

Rendering a movie

1. Click the **Finish** step to display the Options panel for making your actual movie file.
2. On the Options panel, click the **Make movie** button. The Save As dialog box appears.
3. Enter a **File name** for your movie and select a file format in from the **Save as type** list.
4. Select a format that is the same as your captured clips' format (*.AVI or *.MPG).
5. To start the rendering process, click the **Save** button.

The speed at which your computer renders, or creates, a movie can vary greatly depending on how complicated your project is, but it can take some time. Be patient and let your computer do its thing. You may even want to let your computer render really big projects overnight or while you're at work.

If you've gone through the process of creating a movie already, you know that rendering may take quite a while. Sometimes, it is hard to know how your project is going to work until it is actually rendered. Fortunately, Ulead VideoStudio lets you select a portion or range of your project to render as a preview video for just this reason.



Video clip with selected preview area in red.

Partial Rendering

1. Make sure that no clips are selected (a selected clip has a broken line around it). You can unselect a clip by clicking on the ruler at the top of the Timeline.
2. The green bar and **Trim handles** now act on the entire project. Use the handles to select a **Preview range**. You can tell that the Preview range is working on the entire project because a red line appears on the Timeline. This represents the range selected quite clearly.
3. Click the **Make movie** button on the Options panel.
4. In the resulting Save As dialog box, enter a file name and then click the **Options** button. On the first tab, Ulead VideoStudio, select **Preview range** instead of Entire project. (For more info on Video Save Options dialog box and recommendations, see **page 50**.)
5. Click **OK** to return to the Save As dialog box and then click the Save button.



Make movie button.

Rendering quick previews of parts of your project is invaluable in fine tuning effects, titles, and synchronizing audio in your projects. In the image above, you can see that the Preview range covers a bit before and after a transition effect. The resulting video file will accurately show how the transition will look in the final movie.

Putting a movie on the Web

After you have created a movie that is suitable for posting to the Internet, Ulead VideoStudio can assist you with the actual task of coding an HTML document.

Creating a Web page

1. Select a video clip. Make sure you have already rendered your movie file if you want to use a project.
2. Select **Web Page** from the drop down list on the Options panel.
3. Click the **Export video clip** button.
4. Choose whether you want to use an **ActiveMovie** control (See below for more information.).
5. Enter a name and location for the new HTML file.
6. Click **OK** when you are finished.



Detail from Options panel.

Your default browser now opens, showing you how your page looks. You can of course enhance this page by using your favorite HTML editor, or even Windows NotePad. When you upload this page to your Web server, you need to change one line of code to reflect the relative links to the associated movie file:

```
<PARAM NAME="FileName" VALUE="C:\My Project\my_movie.avi">
```

In this example of an ActiveMovie object, this line points to a local hard drive, so you need to point it to its location on your Web site. You'll also need to change the link if you don't use the ActiveMovie control. ActiveMovie is a small plug-in for your Internet browser (standard with IE4.0), and your viewers will also need to have it installed. If you choose **No**, the page will be set up with a simple link to the movie.

Sending a movie by E-mail

When you select **E-mail**, Ulead VideoStudio automatically opens your default e-mail client and inserts the selected video clip into a new message as an attachment. As with regular e-mail, enter a recipient, a subject and a message and then send your message.

If you have problems getting this to work, get an error message about your e-mail not being set up correctly, or get a MAPI error, see the Ulead VideoStudio help file for assistance.

Electronic greeting cards

Multimedia greeting cards are an attractive way of sharing your video to friends. Instead of sending your video as a simple attachment in an e-mail, Ulead VideoStudio automatically packages the movie into an executable (*.exe) file that automatically plays the video when the user runs it. In addition, the video is displayed in an appealing frame complete with a message. This procedure only works on finished, or rendered movies, and not on projects. You can select individual clips or render your movie to include the whole thing in a card.

Creating a Greeting Card

1. Select a video clip by clicking on it.
2. Select **Greeting Card** from the drop down menu.
3. Your video appears in a white box in the Multimedia Greeting Card dialog box. Select an image from the **Background template** panel.
4. Adjust the position and size of your video.
5. Enter a name for the card in the **Greeting card file name** box.
6. Click **OK** to create the card.



Export video clip drop down menu.



Multimedia Greeting Card dialog box.

The templates that are provided with Ulead VideoStudio are JPG image files. If you are artistically inclined, you can create your own templates in any graphics editor, or even use still frames captured from your movies. Search for images with the top **Browse** button in the Multimedia Greeting Card dialog box, and use the bottom one to select a location to save your card.

Video Save Options and recommendations

If you click the **Options** button in a Save As dialog box, you'll find a whole host of choices. Ulead VideoStudio uses default values based on your **Project template**. These settings may have been perfect for you, but it is still important to understand these variables.

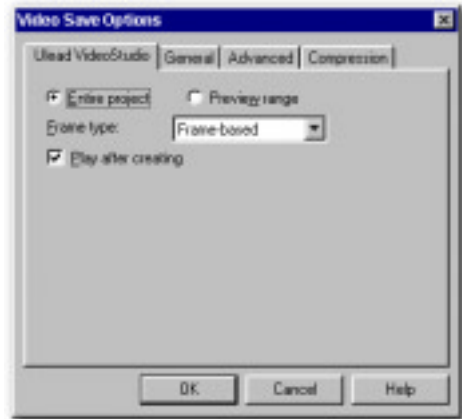
Ulead VideoStudio

If you only want to render a small portion of your movie, go back to the Storyboard step and create a Preview area (see **page 47**), then come back here and select **Preview range**. Otherwise, **Entire project** is selected by default.

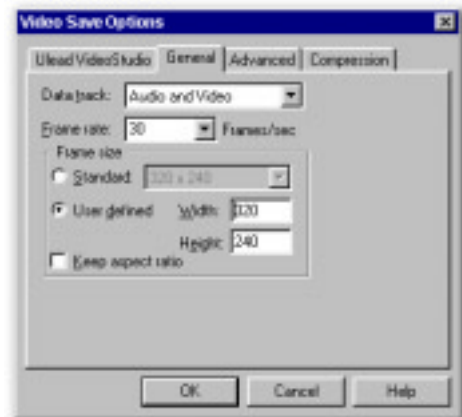
For computer video, a **Frame-based frame type** is always fine. If you want to watch your movie right after rendering your project, select **Play project after creating**. You can, of course, play your movie with Windows media player at any time after rendering.

General

If you have a sound track in your project, select **Audio and Video** for the **Data track**. **Frame rates** can be set anywhere between 15 and 30 frames per second. Higher frame rates mean high quality, but larger file sizes. Check your capture card manual for possible frame rate recommendation. For example, it is common to use 29.97fps for NTSC video going back out to a VCR in North America. As with Frame rate, a larger **Frame size** yields a larger file size. It's best to try to render your video with the same frame rate and frame size as you captured. This results in the highest quality video and the quickest rendering times. In the Storyboard mode, select a clip and click the **Info** button to find these settings.



Video Save Options: Ulead VideoStudio.



Video Save Options: General.

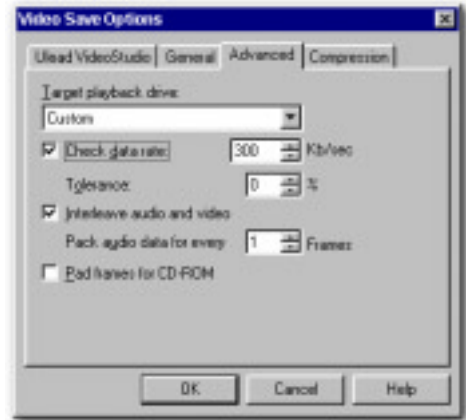
Advanced

In this tab, you can specify the data rate of your video file by targeting a specific medium for playback. **Data rate** is calculated in kilobytes per second (Kb/Sec) of data that needs to move from your source (disk drive, CD-ROM, modem, etc.) through your computer. If you have a **Target playback device** in mind right now, select it from the list. You can set the **Tolerance** to let the data vary a little, otherwise Ulead VideoStudio will stop and warn you if the data rate is too high. It may well be impossible to compress 640x480 30fps video down to a data rate of 150Kb/Sec, but this depends on your video (e.g. whether it has a lot of action) and how much quality you feel you can sacrifice.

Compression

This is where you choose the **codec**, or type of compression software, you'll use to create your video. All digital video is compressed in some way, and the video clips you captured to your computer are already using some kind of codec. To maintain the highest possible quality and keep render times to a minimum, it is best to use the same codec to capture your video and to create your final movie. This information can be found by clicking the Storyboard step, selecting a captured clip, and clicking the **Info** button. Some video capture cards record “uncompressed” video, in which case you should select **None** as the compression type (this, however, will create a very large file).

Many codecs allow you to select the **Quality** of the output as a percentage. In some, you can set the **Keyframe for every X frames**; for now the default for the codec should be adequate, but lower numbers mean longer render times and higher quality. The **Data type** is usually set



Video Save Options: Advanced.



Video Save Options: Compression.

by default, and again, should match your captured clips. **Audio** compression can also be set, independent of the video compression. Data rates are listed, so you can easily see the impact on your completed movie. There is no point in choosing a higher quality audio setting than your original source audio files. And, like video, selecting the same audio compression as used in your highest quality audio clip (usually music) is your best option.

Compression and video format are complicated issues that could easily fill an entire book. The above-mentioned explanations are the briefest outline of some general concepts. In summary, you should change as little as possible between your captured video and your final output. Spending a little time setting up and understanding a Project template (see **page 22**) will save you a lot of time and trouble.

Advice on compression

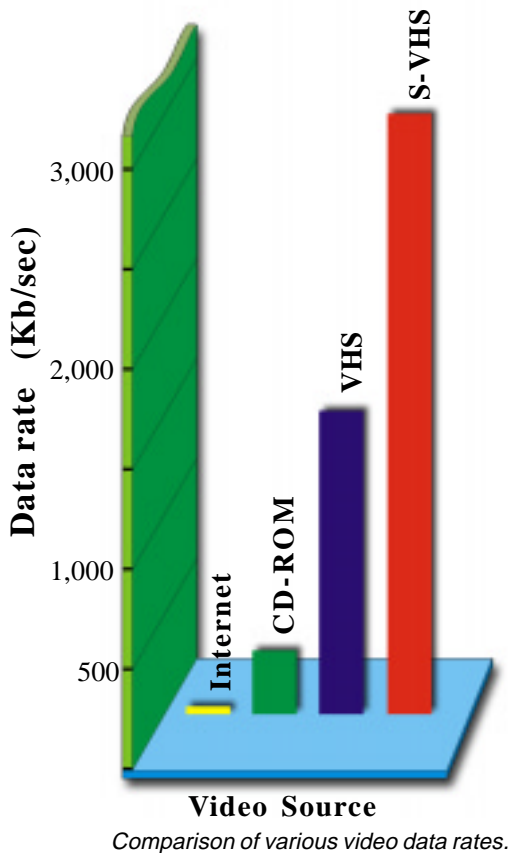
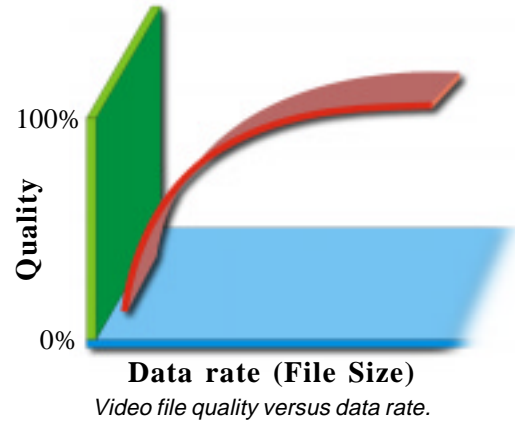
Codec	Quality	Recommended for:				Streaming
		PC	Internet	CD-ROM	TV or VCR	
Uncompressed	best				*	
MJPEG	very good				*	
MPEG I (MPG)	good	*	*	*		
Cinepak (AVI)	fair	*	*	*		
Indeo (AVI)	fair	*	*	*		
RealVideo (RM)	fair		*			*
ASF	fair		*			*

Video file codecs and suitability to task.

The table above should serve as a general guide to a few of the many codecs available. The capture card you are using is also an important factor in choosing a codec. If your capture card has recommendations on the use of a specific codec, it would be best to follow that advice. As computers get more powerful, the Internet gets faster, and new codecs are developed, all of this advice will change.

The most important factor in understanding compression is the relationship between quality, file size and data rate.

As you can see, the better the quality, the higher the data rate and the larger the file size. For outputting video to television, file size may not be important, but it is vital to post the smallest possible files to the Internet. Data rate is a related concept.



Where's the theater?

The most important factor in determining the type of movie to create is where you intend to watch it. The final destination of your movie should be considered when specifying data rate, which in turn is determined by your choice of codec and compression options. As the chart at left clearly shows, there is a huge range in the data rates possible, and some common formats can have even higher rates. In addition, your computer's video subsystem may not be able to handle the higher data rates. The following sections offer some advice on creating movies for different destinations.



PC hard disk

Assuming everything went well during the installation of your capture card, your PC is already correctly configured to play Windows AVI files created with Ulead VideoStudio. If you had no trouble capturing video, and there were no errors or dropped frames, playback should work just fine. When saving your movie as a single AVI, use these same settings. In order to maintain the highest quality for your video, it is also important to use the same codec for creating your video as you used for capturing your clips.

For making a movie on your PC, a safe size is 320X240, but newer PCs should be able to play video full screen. You should use the same codec that you used to capture your video if you are only going to play the movie from your own computer. If you want to play it on a different computer, that computer needs to have the same codec installed on it. Often, this means that you should pick a more universal codec, like MPEG-I, Cinepak, or Indeo for playback on a different PC.



CD-ROM

Currently, CD-ROM drives are considerably slower than hard disks. Since the ability of your computer to play a video file is largely dependent upon the speed of the device it is played from, creating movies for a CD is a bit trickier than for a hard disk. You have to carefully balance compression against quality. High compression ratios yield smaller files, but quality is sacrificed in the process. In the case of a CD-ROM, the best way to monitor this balance is by adjusting the data rate of your movie.

Data rate is a measure of the number of bytes per second that are transferred as the movie plays, and is determined by simply dividing the total number of bytes in a video by its length in seconds. So a three minute AVI with a size of about 60MB has a data rate of roughly 333 bytes/second. Many CD-ROMs can handle this rate, some cannot.

The next step is to set up your compression options. On the **Advanced tab** in the **Save As** dialog box, select **Check data rate** and enter the rate. The different parts of your video have different data rates depending on motion, complexity, audio and other factors, so set the tolerance to an acceptable level (5%).

When you are finished, test the movie first to make sure it is perfect. We also recommend that you render a fairly typical project with several different settings and write them all to a test CD

and see which ones work best with your target CD-ROM. When you have found the best settings, write them down. You should also use the Template feature (**page 22**) to save these settings for future projects. A little work at this stage will save you from burning up bad CDs later.

Two final words of advice. First, manufacturers of hard disks and CD-ROMs often put data rate estimates on their marketing materials. These numbers often represent the fastest rates possible, and are many times not useful measures of data rates for digital video. The key in digital video is the **sustained data rate**, which is the data rate that a device can play continuously over a long period of time. This number is not easy to find. 32X CD-ROM drives do not play at top speed over the entire disk (the outside has a higher data rate than the inside) and cannot play data continuously at this rate. This means that your video may play well for a while, but then “skip” or “hiccup”. Second, as faster and faster playback devices hit the market, the actual video subsystem (video card) can be overwhelmed. So even if you are lucky enough to own a fast drive, your video card (not your capture card) may not be able to handle full screen 30fps video.



The Internet

The Internet is becoming an exciting new place to share your movies, but there are a few things you need to watch out for. A short three minute vacation video can easily run 60MB and take many, many hours to download. But if you are reasonable, you can put your movies on the Net just as easily as you place an image on a Web page. Effective use of video on the Internet requires that you understand that you necessarily must use very high compression ratios that result in very low quality movies. This means your movie should use a small window (320X240 or preferably smaller), low frame rate (15fps), and radio quality mono audio (8bit). Videos with a lot of motion or action are not well suited to this medium.

When you are ready to create your movie, the procedure is the same as any other method. Click the Finish step, click the Make Movie button, and then select the Options button. On the Compression options tab, select a codec. **Cinepak** and **Indeo** are good choices. Again, you have to consider that these videos are going to be played on someone else's computer, so you need to use a popular codec found on many computers.

MPEG-1 (Moving Picture Coding Experts Group) is becoming the de-facto format for video and audio on the Web. It is currently used in millions of commercial Video CDs around the

world and provides high compression ratios without loss of quality. This is an excellent choice not only for the Internet, but for all movies that you plan to play on your computer.

Streaming video is an exciting new method of displaying video on the Internet. This means that your video begins playing while your movie is still downloading. Some methods of streaming require special software, a special Internet server and can be expensive, but there are a number of alternatives appearing. Ulead VideoStudio allows you to compress your files using RealNetwork's **RealVideo** file format (*.RM), Microsoft's **Advanced Streaming format** (*.ASF) or Apple's **QuickTime** format (*.QT). These formats also require your viewer to install the appropriate player, but all are widely available for download on the Internet. Excellent results can be achieved with any of these codecs.



VCR and Television

Many video capture cards now have the ability to output finished movies back to a VCR or television. This is obviously a great place to watch your movies, but the quality of your video must be very high. This places extraordinary demands on your computer's hard drives, both in speed of data transfer and raw space used.

The final output file cannot be of a higher quality than the clips you use to make it. If you are capturing video at 320X240 15fps 8bit audio, it is a waste of time to render these at full screen, 30fps, 48bit stereo audio. So it is necessary that you start with the highest quality clips possible when you capture. The ideal situation is one where you have captured using your capture card's proprietary codec and that you will use exactly the same settings and codec to create your movie.

To create an AVI for output to television, follow the same basic procedure as for any other destination. Surprisingly, even though your AVI is of the highest quality, you may find render times to be very fast. This is because it is not hard for Ulead VideoStudio to make an AVI using the same codec and settings as the original video. The hard part is getting this beautiful AVI off of your computer and onto your VCR. You need to carefully follow your capture card's instructions for this process.

Tips, tricks, and techniques

Shortcuts

Ctrl + S instantly saves your projects.

Ctrl + Z undoes the previous command.

Ctrl + Y redoes previously undone command .

Click and hold Trim handle + keyboard arrow keys for frame by frame editing.

Double click clips in the Timeline to immediately switch to that step.

Shift + mouse click on Play button plays preview area (see **page 47**).

Del deletes the selected clip.

“+” and “-” zooms in and out on a project.

Ctrl + Home moves to the beginning of a project.

Ctrl + End moves to the end of a project.

F1 calls up Ulead VideoStudio Help. This command is context sensitive.

F3/F4 automatically jumps to the Mark in/out points in your clip.

F6 displays the program’s Preferences dialog box.



Play project button.

Take a break and Play (project)

It is easy to get engrossed in the pleasure of creating spectacular movies with Ulead VideoStudio, and some of your projects could become quite complex. Give yourself a break from your computer every now and then to relax. Your computer, on the other hand, doesn’t need a break, so keep it working. Before you get up to stretch your legs, hit the **Play project button**. This will help you get a feel for how your project is coming along when you come back. Not only that, this is one way to optimize your use of Ulead VideoStudio’s **SmartRender** feature, and will dramatically reduce your overall render times. See **pages 27 and 46** for more information on rendering video files.

Glossary

Analog

A signal that is not digital. Most VCRs, televisions and stereos are analog. Computers are digital, dealing in ones and zeros. Information from an analog source must be digitized to be used on a computer.

Capture

The recording of video or images to a computer hard disk.

Clip

A short section or part of a movie. A clip can be audio, video, still images or a title.

Codec

COmpress and DECompress. All video on a computer uses a special algorithm or program to process video. This program is called a codec.

Color Clip

A simple background color used in a movie. It is often used for titles and credits since they stand out clearly against the solid color.

Compression

Making a file smaller by removing redundant data. Nearly all digital video is compressed in some way or another. Compression is achieved through a codec.

Data Rate

The amount of data per second that is transferred from one part of your computer to another. In digital video, the data rate of your source is very important: CD-ROMs have lower data rates than hard disks. The data rate of the Internet is very low.

Digital

Computer data consisting of ones and zeros. Contrast digital information with analog.

Effect

In Ulead VideoStudio, an effect is a special computer generated transition between two video clips.

Frame

A single image in a movie.

Frame Rate

The number of frames per second in a video. NTSC video is commonly 29.97 frames per second (fps), but smaller video files can be created on the computer by using lower frame rates, like 15fps.

Library (Ulead VideoStudio)

The Library is the repository for all of your media clips. You can store video, audio, titles, or color clips in the Library and instantly retrieve them for use in a project.

Mark In/Out

Points in a clip that have been marked for editing and trimming purposes. A section can be selected from a longer clip by setting its beginning (Mark in) and ending (Mark out).

NLE

Non Linear Editing. Conventional editing on a VCR is necessarily linear because you must access clips on a video tape in order. Computer editing can be done in any order that is convenient.

NTSC/PAL

NTSC is the video standard in North America and some other places. Its frame rate is 29.97fps. PAL is common in Europe and Asia and has a frame rate of 30fps. There are other differences.

Plug-ins

Plug-ins are small utilities in a program that add special functions or effects. In Ulead Video Studio, there are a few output functions that let you send videos by e-mail, create Web pages or send multimedia greeting cards.

Render

Rendering is the process of making a finished movie from the source files in a project.

Source

The source or origin of your media, usually a camcorder or VCR. Audio CDs are great sources for music clips.

Storyboard

A storyboard is a visual representation of your movie. Individual clips are represented as image thumbnails on the timeline.

Streaming

This is a relatively new Internet technology that allows large files to be played as they are being downloaded. Streaming is commonly used for large video and audio files.

Timecode

The timecode of a video file is a numerical way of representing the position in a video. Timecodes can be used to make very accurate edits.

Timeline

The timeline is a graphic representation of your movie in chronological order. The relative size of clips on the timeline gives you an accurate idea of the length of your media clips.

Title

A title can be a movie title, a caption or credit. Any text overlays in your movie can be referred to as titles.

Transition effect

A transition is a method of sequencing between two video clips, like fading from one into another. In Ulead VideoStudio, there are a large variety of special transitions available, and they are called Effects.

Trim

The process of editing or cropping a movie clip. Computer video can be trimmed frame by frame.

Voiceover

The narration of a video or movie is commonly called the voiceover. This is most notable in documentaries, especially nature shows.

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