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Welcome

Thank you for using Womble MPEG Video Wizard DVD.

The Womble **MPEG Video Wizard DVD** is the latest MPEG editor with DVD authoring and full AC-3 encoder support, and it includes all the features and functionality of its predecessor --- the MPEG Video Wizard. Whether you are a video professional or a new video enthusiast, we are confident that MVW-DVD will meet all of your needs of MPEG editing and DVD authoring.

We recommend that new users look through the entire help system (using the "next" button) to learn many tips and features that are not intuitively obvious from just "browsing" the user interface.

Features

The following is a list of some of the key features of MPEG Video Wizard DVD.

Frame accurate editing: step forward and backward through your video, frame-by-frame, to find exactly the scene you want, or to cut out the ones you don't.

Fastest scrubbing of any MPEG editor: Scroll through your entire movie as fast as your mouse can drag the slider. Quickly find the scenes you want to keep, or the ones you want to cut.

Fastest frame stepping of any MPEG Editor. Move through your video frame-by-frame at the click of your mouse, or the press of a key. Makes it super easy to zero-in on exactly the desired frame to be edited.

No re-encoding when editing DVD-compliant MPEG captures from the latest USB/DVD capture boxes. When using these sources to create a movie for DVD burning, you will not have to wait for many hours while your movie is re-encoded. Instead, your edited video will be written back to disk as fast as any disk-to-disk copy operation.

Full AC-3 audio encoder support and DVD authoring with simple DVD menu creation.

MPEG-2 to MPEG-4 conversion to export files for both iPod and PSP.

Very intuitive and easy-to-use User Interface (UI), with a flexible yet powerful multi-track timeline based editing.

Flexible title editor for both text and graphics generation. You can create attractive titles directly with MVW.
An extensive transition library with simple controls. Most common transitions can be added using only the mouse.

Multiple editing windows, with flexible window configuration and layout, and many more features.

**Software Update**

Periodically, we will release new update version to the editor with bug fixes and new feature additions. When a new update version becomes available, we will announce it on our home page at


In the following, we briefly describe several ways to update the editor.

**Automatic update by connecting to the Womble web server.**

By the default selection for the option

"Check the Web for software updates automatically"

the editor will try to connect the Womble web server to check for software update, every time when the editor is started. Since the connection to the Womble web server is processed as a background job, it should not introduce any noticeable delay for starting the editor. However, if this automatic connection is undesirable, you can turn it OFF by clearing the checkbox for the option.

**Manual update by connecting to the Womble web server.**

Select the Help menu from the main taskbar, and click on "Check for Updates..."
This brings up the web update dialog window

![Dialog window](image)

The editor will start connecting the Womble web server to check for software update, and a list of changes will be displayed when a new update is found. Now, you may proceed to download the update files, and restart the editor to install the new update.

**Manual update via a complete installation.**

Go to Womble's download page at [http://www.womble.com/download/](http://www.womble.com/download/) to download a full installation file, and proceed with a new installation.

**Note:**

If the update fails, please check all of the following:

- your computer is **connected** to the internet, and your connection settings are correct;
- you are a Windows user with an account type as **Computer Administrator**, so that you will be allowed to change the computer system settings such as software (updates) installation;
- you have the **write-access** to the disk partition on which the MPEG editor is installed; and
- your firewall program is **not blocking** the access to Womble web sites by MPEG Video Wizard DVD.
1 Getting Started

1.1 System Requirements

Minimum:

- Windows 2000 or newer
- 500 MHz Processor
- 128 MB RAM
- Video Card with 1024 x 768 Resolution
- Sound Card and Speakers
- 2 Button Mouse
- DVD Burner
- 30 MB Hard Disk Space (for program)

Recommended:

- Windows XP or newer
- 1,000 MHz or faster
- 512 MB RAM or more
- Video Card with hardware video overlay acceleration
- Sound Card with 5.1 sound support
- 2 Button Mouse with a Scroll Wheel
- DVD-RW Burner
- 100 Gb Hard Disk Space (for video data)

1.2 The Editor Toolbar

The master control of the editor is the Editor Toolbar. This Toolbar gives you access to all of the major components of MVW-DVD: the Project Manager, Input Monitor, Output Monitor, Timeline, Title Editor, Export (MPEG Writer), DVD Maker, MPEG Tools, Layout, and the Help system.

Use the Toolbar to open and close the Project Manager, Timeline, Input Monitor, Output Monitor, Export, Title Editor, and DVD Maker windows.

Click on the arrow at the corner of the Tools, Component Layout and Help buttons to pull down individual menus.

Use Tools to select an MPEG tool or to set Options.

Component Layout allows you to choose the arrangement of the Toolbar windows. For how to open and close individual component windows, please read the sections on Layout.
To close MPEG Video Wizard DVD, click on the **Exit** button, or click on the **X** on the upper left corner of the Toolbar, or select "Close" from the Toolbar menu.

**The Editor Toolbar Menu**

You can use the Toolbar's context menu for additional controls by a right mouse click on the Toolbar display.

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimize</td>
<td>Clear all components and reset all selections of <strong>Options</strong> to the default values, like a new start just after the installation.</td>
</tr>
<tr>
<td>Clear All</td>
<td>Put the toolbar back to its default location (on the upper right corner).</td>
</tr>
</tbody>
</table>

**Clear All:**

Reset Taskbar

---

**1.3 The Editor Windows**

The main editor windows are the four editor component windows: **Project Manager**, **Input Monitor**, **Output Monitor**, and **Timeline Editor**. They are shown below in the default layout.

---

**1.4 An Example**

Let's start with a simple 5-step example, as illustrated below.
Step 1.
Press the button on the upper left corner of the Timeline to start a new editing project. This will clear all tracks of the timeline.

Step 2.
In the simplest case, you can drag clips directly from the Windows Explorer and drop into the timeline.

Step 3.
Simple editing can be done with the mouse by dragging the ends of the clips directly in the timeline.
Step 4.

To preview a clip on the timeline, double click on the clip with the left mouse button, and the Input monitor will start playing the clip.

To preview the combinations of clips and tracks on the timeline, use the control buttons on the Output monitor.

Step 5.

To export the project on the Timeline to a new MPEG movie, press the button in the Timeline's Toolbox. Enter a file name, and select "Automatic" from the list of the export templates to ensure minimum video re-encoding.
2 About MVW Projects

2.1 Starting a New Project

In MPEG Video Wizard DVD, an editor project is always associated with an editor project file which is identified by the ".wbp" file name extension.

An editor project file is a text file created by the editor to save your edited work. It stores file names, starting points, and lengths of all the clips that you put in the Timeline. It also includes properties such as transitions between clips, video speed, audio volume, audio channels, and more.

A simple project may contain just one clip, which is usually a selected segment of an original movie. A complicated project may involve hundreds of video, audio, title, and image clips.

To start a new project:

1. Open the Timeline by clicking the button on the Toolbar.

2. Select to create a new project.

Note: is a toggle button. Click the button to open the Timeline; click it again to close it.

2.2 Opening a Project

To open a project:

1. Click the button in the Timeline.
2. Select a project file (*.wbp) and then click Open.

![Open window with a list of project files]

The opened file will appear on the Timeline with the exact settings present when it was last saved.

As we have noted before, a project file stores only file names and locations of clips. If you move, rename, or delete a clip file after importing it into a project, MVW will not be able to find it the next time you open the project. In this case, the missing clip will be identified by a red cross sign on the **Timeline**.

**Shortcut**: Drag and drop a project file directly onto the Timeline.

### 2.3 Saving a Project

**To save a project:**

1. Click the button in the **Timeline**.

2. In the standard **Save As** dialogue window, specify a location and file name, then click Save.
To update a project:
Click the \[\text{Save}\] button. This will save all changes made to the project file.

You should save (update) often to protect your current working project from any accidental loss.
3 Managing Projects and Clips

3.1 About the Project Manager

The Project Manager administers and stores all projects and clips. It consists of four main pages.

The **Project** page lists the project files.

The **Files** page manages media clips, which are divided into four sub pages of Video, Image, Audio, and Title.

The **Effect** page maintains a list of the predefined video transition effect operators.

The **Clips** page serves as a clipboard to facilitate sharing of video and audio clips among projects.

Use the buttons on the top of the Project Manager window to import files, to remove items from a list, and to change the way items are viewed on a page.

Click the right mouse button to access a menu with controls for each page.

For a media item in the various list pages of the Project Manager, you can select (or load) it into the corresponding window by double clicking (the left mouse button) on the item.

For example, by double clicking on a project item, the editor will load the project into the Timeline. Similarly, it will load a video clip in the Input monitor, a title clip in the Title editor, and a transition effect in the transition effect manager.

**Hint: How to preview a video clip as a segment of a complete movie file?**

The default preview for a video clip is to display only the clip. If this video clip is a segment of a video file, it is
sometimes desirable to preview the complete movie file in the Input monitor with the clip as the marked segment between the MarkIn and MarkOut, and this can be done by double clicking on the item while holding down the Control key.

### 3.2 Types of Clips

MPEG Video Wizard DVD works with four types of media clips:
- Video clips include MPEG and AVI video files. The following are some of the most frequently used video file name extensions: "mpg", "mpv", "dat", "vob", "vro", "mp2", "m2t", "ts", "avi", "rec", "asf", "rmvb", "wmv", "mp4", and "mov".
- Image clips include JPEG, BMP, GIF, and other image formats.
- Audio clips include MPEG, MP3, AC-3, AVI, Wave audio, and RM.
- Title clips are created by the [Title Editor](#).

Please note that several video file formats (e.g., AVI and MPEG-2 Transport) do not specify or limit what codec should be used to compress video and audio, but simply define how to combine a video stream and one or several audio streams into a single file. Thus, beware the difference between a file format and a video codec.

### 3.3 Types of Files

MPEG Video Wizard DVD works with a number of file types, some of which are internal to the editor, and some of which are files that the editor supports.

Please note that the file types list below are used not only by the Project Manager, but also by other editor components.

- .wbp --- editor project file internal to MVW.
- .wbt --- text or graphic title file internal to MVW.
- .wpl --- list of editor projects used by Project Manager.
- .wbl --- list of video/audio/title clips used by Project Manager.
- .wml --- list of user selected video effects used by Project Manager.
- .mls --- list of video bookmarks used by Input Monitor.
- .wpk --- a special file that packs a complete editor project to make it portable across different computers, which is especially helpful for debugging and testing, used by the Editor Project Package tool.
- .mbs --- a list of segment files each of which saves a starting file offset and an ending file offset.
- File types that are internal for DVD Maker:
  - .wbd --- DVD editor project file.
  - .wlt --- list of DVD editor projects.
  - .mlt --- list of user-defined menu templates.

### 3.4 Importing Projects and Clips

Importing transfers files saved on the computer into the Project Manager, where they can be easily accessed.

**To import projects:**

1. Select the **project** page.
2. Click the button.
3. Select one or more project files, and then click Open.

To import media clips:

1. Select the Files page.
2. Select one of the four media tabs, e.g., Video.
3. Click the button.
4. Select files and click Open.

You can also drag the selected file icons from a Windows Explorer file folder directly onto the selected page of the Project Manager.
Video and audio pages also accept a drag-and-drop clip from the Input monitor and vice versa.

You can import files by accessing the context menu with a right mouse click.

3.5 Changing the View

You can view the list on each page in three ways.

1. Click \(\text{large icons} \) button to display the listed items as large icons.

2. Click \(\text{small icons} \) button to display the listed items as small icons.

3. Click \(\text{rows of detailed information} \) button to display the listed items as rows of detailed information.

Alternatively, you can select the view from the context menu by clicking the right mouse button.
Note:
1. To display the details about a clip, right-click on the clip, and then select Clip Information from the menu.
2. You can rearrange the clips as listed in the Project page by dragging their corresponding large icons. Please note that this rearrangement is only available for the large icon view.

3.6 Renaming a Project or a Clip

To change the name of a project or clip in the Project Manager.

1. Select a project or clip.
2. Click on the name under its icon.
3. Type in the new name and press the Enter to finish.

Note: When in Details view, click on the name field in Step 2.

3.7 Removing Projects or Clips

To remove a single project or clip:
1. Select the project or clip.
2. Click the button; or press the Delete key; or click the right mouse button and select Delete Selected Items from the menu.

To remove multiple projects or clips:
1. While holding down the Ctrl key, click on the projects or clips you want to remove.
2. Click the button; or press the Delete key; or click the right mouse button and select Delete Selected Items from the menu.

To find a displaced project file or clip:

If a project file or a clip file has been renamed, deleted, or moved to another folder, a red "X" will appear on the project or clip to indicate the change.

If the file has not been deleted, or a copy of the file exists, you may locate the file by selecting "Find the File..." from the context (right mouse) menu.
Note: When a project or clip is removed from the list page, the file is still on the computer.

### 3.8 Managing Lists of Projects and Clips

You can save the list in a Project Manager page as a text file; and conversely, you can load the list back from the text file.

**To save a list:**
1. Open the context menu by clicking the right mouse button in the selected page.
2. Select "Save List..." from the menu.
3. Specify a location and a name for the new file, and click Save.
To load a list:
1. Open the context menu by clicking the right mouse button in the selected page.
2. Select "Load List..." from the menu.
3. Find the file from the open file window, and click Open.

To clear a list:
1. Open the context menu by clicking the right mouse button in the selected page.
2. Select "Clear List..." from the menu.
3. All clips will be removed from the page.
4 Using the Monitors

4.1 About the Monitors

MPEG Video Wizard DVD uses two windows, with similar looks and controls, for previewing clips and edited content. We call them Monitors. The Monitor for previewing source clips is called the Input Monitor, and the Monitor for previewing edited content on the Timeline is called the Output Monitor.

The Input Monitor:

The Output Monitor:
The common set of functions for the two Monitors is:

**Control Buttons:** A row of buttons for the standard playback controls, in addition to **Mark In** and **Mark Out** for selecting a segment.

**Time code:** Displays the current position in hours, minutes, seconds and frames.

**Length:** Displays the entire length of the clip or the Timeline in hours, minutes, and seconds.

**Mute:** Click this icon to mute the current clip. Click it again to unmute.

**Volume:** Drag the stripe forward and backward to adjust the sound volume.

**Special controls only in the Input Monitor:**

**Speed Button:** This is a three-state toggle button that switches among three play speeds. The three speeds are, as indicated by the three letters shown on the button image, 'N' for Normal speed, play all frames; 'M' for play only the I- and P-frames; and 'F' for play only the I-frames. For most MPEG movies, 'M' is about 3 times faster than the normal speed; and 'F' is about 12 or 15 times faster than the normal speed.

**Trim Buttons:** The three trim buttons depict a scissor to indicate their operations. A Trim Cut cuts all frames between and include the **Mark In** and the **Mark Out** frames. A Trim Left cuts all the frames from the first frame till the frame immediately before the **Mark In** frame. A Trim Right cuts all frames from the frame immediately after the **Mark Out** till the last frame.

### 4.2 The Playback Control Buttons

Both Monitors have the following playback control buttons.

- **Forward:** Start or pause forward playback.
- **Reverse:** Start or pause reverse playback.
- **Next:** Step forward one or more frames depending on the speed.
- **Previous:** Step backward one or more frames depending on the speed.
- **Mark In:** Set the starting point of a segment.
- **Mark Out:** Set the ending point of a segment.
- **Segment:** Play the segment between Mark In and Mark Out.

In addition, the Input monitor has a speed button to switch among the **normal speed**, the **P-only** fast speed, and the **I-only** fast speed.
The video player in the editor is capable of exact speed control over a range of values from 1/5 to 16, which are accessed from the monitor's context menu.

However, the most efficient fast speed play is to take advantage of the image sequence structure embedded in the MPEG video encoding. That is, the GOP (group of picture) structure, which usually runs with the following pattern,

\[ I B P B B I P B B I B P B B I B P B B \ldots \]

where

- 'I' denotes an intra coded picture, since it can be decoded all by itself like an JPEG image;
- 'P' denotes a predicted picture, which uses the preceding I or P picture for decoding; and
- 'B' denotes a bi-directionally predicted picture, which requires two adjacent I or P pictures to be decoded correctly.

In terms of computation complexity, the order of the three kinds of pictures is B, P, and I, with I the simplest to decode.

As the name indicates clearly, for the fast I-only speed, the player will only decode and display the I pictures; while for the P-only play, only the I and P pictures.

Since the audio is ignored for the two fast speed plays, the I-only fast play can easily run at a speed that is 15 times or more of the normal speed, depending also on the CPU speed, the disk I/O speed of the computer, the video graphics hardware YUV rendering support, and the image resolution of the coded video.

Please note that there are MPEG files which do not follow the normal GOP structure, such as an I-only video sequence. For such files, the I-only and the P-only will have a smaller speed up.

The Input monitor also has three trim buttons that let you quickly remove unwanted segments. Please note that all three trim operations are relative to the Mark In and the Mark Out frames.

A Trim Cut cuts all frames between and include the Mark In and the Mark Out frames. Unlike the other two trims, the deletion of a Trim Cut is inclusive: it will remove all frames starting from the Mark In frame and ending at the Mark Out frame.

A Trim Left cuts all the frames from the first frame till the frame immediately before the Mark In frame. This equals to a Trim Cut from the first frame till the frame immediately before the Mark In frame.

A Trim Right cuts all frames from the frame immediately after the Mark Out till the last frame. This equals to a Trim Cut from the frame immediately after the Mark Out frame till the last frame.

### 4.3 The Control Menus

With a right mouse click, you can use a Monitor Control menu to access more functions than those of the control buttons.

The Input monitor menu.
<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open...</td>
<td>Ctrl+O</td>
</tr>
<tr>
<td>Close</td>
<td>Ctrl+X</td>
</tr>
<tr>
<td>Recently Loaded Files</td>
<td></td>
</tr>
<tr>
<td>Trim...</td>
<td>Ctrl+S</td>
</tr>
<tr>
<td>Trim Manager/Add...</td>
<td>Ctrl+T</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl+E</td>
</tr>
<tr>
<td>Add to Timeline</td>
<td>G</td>
</tr>
<tr>
<td>Forward/Pause</td>
<td>D/Space</td>
</tr>
<tr>
<td>Reverse/Pause</td>
<td>A/Space</td>
</tr>
<tr>
<td>Home</td>
<td>Home</td>
</tr>
<tr>
<td>Jump to Mark In</td>
<td>{</td>
</tr>
<tr>
<td>Jump to Mark Out</td>
<td>}</td>
</tr>
<tr>
<td>Clear Mark</td>
<td>C</td>
</tr>
<tr>
<td>Full Screen</td>
<td>Alt+Enter</td>
</tr>
<tr>
<td>Zoom</td>
<td></td>
</tr>
<tr>
<td>Display Mode</td>
<td></td>
</tr>
<tr>
<td>Play Mode</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td></td>
</tr>
<tr>
<td>Find Next Blank Fade</td>
<td>Ctrl+F</td>
</tr>
<tr>
<td>Bookmark Add</td>
<td>F2</td>
</tr>
<tr>
<td>Bookmark Browser...</td>
<td>F3</td>
</tr>
<tr>
<td>Save Image As...</td>
<td>F4</td>
</tr>
<tr>
<td>Snapshot</td>
<td>F5</td>
</tr>
<tr>
<td>Undo</td>
<td>U</td>
</tr>
<tr>
<td>Redo</td>
<td>R</td>
</tr>
<tr>
<td>Properties</td>
<td>Ctrl+Z</td>
</tr>
</tbody>
</table>

Open...  To open and play a new movie file.
Close   Close the movie in the Input monitor.
Recent Files...  A list of the most recently opened file names. The maximum number of files listed is set on the General page of the Options.
Trim   Save the selected segment (between Mark In and Mark Out) to a new file. Please note that the selected segment may include a cut list with multiple segments.
Trim Manager/Add...  Open the Trim Manager window, or add the segment to the Trim Batch List when the Manager window is open.
Add to Clips  Save the segment to the Clip list in the Project Manager.
Add to Timeline  Add the segment to the timeline. For video input, it will be the last clip on the video track, and for audio input, the last clip on the 1st audio track.
Forward/Pause  Start or pause a forward playback.
Reverse/Pause  Start or pause a reverse playback.
Home    Jump to the beginning of the movie.
Jump to Mark In  Jump to the Mark In frame.
Jump to Mark Out  Jump to the Mark Out frame.
Clear Mark    Clear the selected segment.
Full Screen  Display the video in full screen.
Zoom    Select different image size for the monitor display.
Display Mode  Select an image display mode from a sub-menu.
Play Mode    Select additional playback controls from a sub-menu.
Audio  Set sound volume and channel control from a sub-menu.
Speed  Select a playback speed from a list.
Find Next Blank  Search for a short video segment with consecutive blank images and very low (or muted) sound.
Fade  Add the current frame as a new video index to the bookmark list.
Bookmark  Open or close the Bookmark manager window.
Browser...  Manually save the current image to a file.
Undo  Restore the monitor to the state before the last trim operation, which could be Trim Cut, Trim Left, Trim Right, or Cut unchecked bookmark segments from the bookmark manager.
Redo  Restore the monitor to the state before the last UNDO. A REDO is available for all previous consecutive UNDO commands.
Snapshot  Automatically save the current image to a file.
Properties  Display the file properties and encoding parameters.

The Output monitor menu has the same but fewer entries than the Input Monitor menu.

| Forward/Pause   | D/Space          |
| Reverse/Pause  | A/Space          |
| Home           | Home             |
| Jump to Mark In| { }              |
| Jump to Mark Out|                |
| Full Screen    | Alt+Enter        |
| Zoom           |                   |
| Display Mode   |                   |
| Play Mode      |                   |
| Audio          |                   |
| Speed          |                   |
| Save Image As  | F4                |
| Snapshot       | F5                |

There are five sub-menus under the Monitor control menu.

1. Zoom

<table>
<thead>
<tr>
<th>Layout size</th>
<th>Key combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>Alt+1</td>
</tr>
<tr>
<td>100%</td>
<td>Alt+2</td>
</tr>
<tr>
<td>200%</td>
<td>Alt+3</td>
</tr>
<tr>
<td>25%</td>
<td>Alt+4</td>
</tr>
</tbody>
</table>

Layout Size  Restore the window to its layout size.
50%  Display the image in half size.
100%  Display the image in full size.
200%  Display the image twice its full size.
25%  Display the image in quarter size.
2. Display Mode

<table>
<thead>
<tr>
<th>Display Mode</th>
<th>PAR 16:9</th>
<th>4:3</th>
<th>Fit to window</th>
<th>Deinterlace Image</th>
</tr>
</thead>
</table>

**PAR** Display the image with the default **Pixel Aspect Ratio**.

**16:9** Display the image in the 16:9 pixel aspect ratio.

**4:3** Display the image in the 4:3 pixel aspect ratio.

**Fit to window** Display the image to fill the window size.

**Deinterlace Image** Remove the interlace effect by repeating one of the two fields.

3. Play Mode

<table>
<thead>
<tr>
<th>Play Mode</th>
<th>Looping</th>
<th>Segment</th>
<th>Single click Style</th>
</tr>
</thead>
</table>

**Looping** Continue play and start over when it reaches the end.

**Segment** Play only the selected segment between Mark In and Mark Out.

**Single click Style** Start or stop a playback with a single mouse click in the image window.

4. Audio

<table>
<thead>
<tr>
<th>Audio</th>
<th>Mute</th>
<th>Ctrl+M</th>
</tr>
</thead>
</table>

**Mute** Silence the audio.

**Default** Play the audio using both channels.

**Mute Left** Silence the left channel.

**Mute Right** Silence the right channel.

**Duplicate Left** Replace the right channel with the left channel sound.

**Duplicate Right** Replace the left channel with the right channel sound.

**Combine Left** Combine the two channel sound to replace the left channel and silence the right channel.

**Combine Right** Combine the two channel sound to replace the right channel and silence the left channel.

**Swap channels** Replace the left channel with the right channel, and the right with the left.
5. Speed

<table>
<thead>
<tr>
<th>Mode</th>
<th>Key Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Ctrl+1 (Shift+1)</td>
</tr>
<tr>
<td>P-Only</td>
<td>Ctrl+2 (Shift+2)</td>
</tr>
<tr>
<td>I-Only</td>
<td>Ctrl+3 (Shift+3)</td>
</tr>
</tbody>
</table>

1/5  Ctrl+4 (Shift+4)  
1/2  Ctrl+5 (Shift+5)  
2    Ctrl+6 (Shift+6)  
4    Ctrl+7 (Shift+7)  
8    Ctrl+8 (Shift+8)  
16   Ctrl+9 (Shift+9)  
2/3  
3/4  
5/4  
4/3  
3/2  

Note that the **Ctrl+1-9** combination keys are for forward play, and the **Shift+1-9** ones for reverse play.

Please also note that there will be no audio for a reverse play and for a forward play with a speed slower than 1/2 or faster than 2.

### 4.4 Previewing Clips

**To preview a clip in the Input Monitor**

Do any one of the following:

1. Open a clip file from the Input monitor's context menu "Open... (Ctrl+O)" entry.
2. Drag a clip file from a Windows Explorer file folder to the Input monitor.
3. Drag a clip from the Project Manager to the Input monitor.
4. Double-click a clip in the Project Manager.
5. Double-click a clip in the TimeLine.

**Hint:** double-click a clip while holding down the Control key to preview the complete file in the Input Monitor with the clip as the segment between the MarkIn and MarkOut.

**Useful keyboard shortcuts**

- 'A' - start or stop a reverse play.
- 'D' - start or stop a forward play.
- 'S' - switch play speed among Normal, P-only, and I-only.
- 'Left Arrow' - step backward.
- 'Right Arrow' - step forward.
- 'Up Arrow' - jump backward a predefined amount (5% of the total).
- 'Down Arrow' - jump forward a predefined amount (5% of the total).
- 'Page Up' - jump backward a predefined amount (10% of the total).
- 'Page Down' - jump forward a predefined amount (10% of the total).
- 'Home' - jump to the beginning of the clip.
- 'End' - jump to the end of the clip.
- 'I' - set the Mark In frame.
- 'O' - set the Mark Out frame.
- 'I' - jump to the Mark In frame.
- 'O' - jump to the Mark Out frame.

Please read the [Keyboard Shortcuts](#) for a complete listing of the keyboard mappings.
Quick steps to edit an MPEG recording for removing commercials
1. Open the MPEG file in the Input monitor;
2. Set the input monitor to full screen display mode;
3. Use the keyboard shortcut keys 'A', 'S', 'D', and 'Space bar' to start/stop backward/forward play and to change play speed;
4. Use the mouse scroll wheel to find the exact frame;
5. Set the Mark In and the Mark Out frames to select a segment;
6. Select the "Add to Clips" from the context menu (right mouse click) to save the segment to the video clip board in the project manager;
7. Repeat the steps above for all the segments to be saved;
8. Restore the input monitor to its layout size;
9. Select all the clips in the "Clips->Video" page in the project manager;
10. Drag and drop them on to the Timeline to save the segments to a single file, or drag and drop them on to the Batch of the Trim Manager to save the clips to separate files.

4.5 Trimming Video Clips

Trimming is the most basic and frequently used editing operation. The simplest form of trimming is selecting a clip segment and removing all parts outside of the segment, without changing any of the original content and compression parameters. This form of trimming can be done quite easily in the Input Monitor.

The trim process described below physically shortens the video clip and saves the shortened MPEG file to your disk. This is not necessary if you just want to select a segment of a given clip to place in your finished movie -- for this purpose, just set the Mark-In and Mark-Out points in the Input Monitor, and drag the clip to the Timeline.

To trim a video clip in the Input Monitor:

1. Input a clip into the Input Monitor.
2. Use Mark In and Mark Out to select your segment.
3. To save it as a new MPEG file, select Trim... (Ctrl+S) from the menu using the right mouse button.
4. You may delay the file creation by selecting Trim Manager/Add (Ctrl+T) and then Trim Add to add it to the batch list.
5. You can also add the trimmed clip to the Clip List in the Project Manager by selecting Add to Clips.
Note:
1. For fast selection of multiple trims, use the combination of (a) the "Full Screen" display mode; (b) the keyboard shortcut keys 'A', 'S' and 'D'; (c) the mouse scroll wheel; and (d) the "Add to Clips" menu selection.

2. You may turn on the "GOP Trim" option to make the trim operation more robust and fast but at the lost of frame-accuracy.

To trim save a cut list:
A cut list is created in the Input monitor as soon as you have performed any one of the 3 cut operations on an MPEG video file.
You can visually examine the cut list from the Properties display via the context menu entry. An example of a cut list as the result of 3 cut operations is shown below.

For a cut list, the default Trim save as described above will automatically save the all segments into one MPEG file.

However, sometimes, you may want to save the segments in a cut list as separate files, one file per segment. And here's how to do it.

Click the left mouse button in the video display area of the Input monitor, hold down the mouse while moving the mouse over into the Trim list window, and then release the mouse button (drop). As many trim items as the number of the segments in the cut list will be automatically created using the default "trim file name" selection in the Export Options.

In the example shown below, the 1st trim item is the cut list with 2 segments, and the 2nd and the 3rd trim items are the corresponding separate segment items.
3. The trim save is only valid for those MPEG files for which the editor has an internal codec implementation; and for all other files, the trim save stops operational. A closely related indication of whether the trim save can be applied to a video file is whether the video file can be exported without video re-encoding, exported with full stream copy.

4.6 Video Snapshot

Capture any frame displayed in a Monitor and save it to a 24-bit bitmap file.

To save a frame or take a snapshot:
1. In the monitor window, display the frame you want to capture.
2. Click the right mouse button to bring up the monitor menu.
3. Select Save Image As..., and then specify a file and location name.
4. The Snapshot is the same as Save Image As..., except that the file name will be automatically generated. The way these file names are generated can be determined in the Preview Options page.
4.7 Scan MPEG File for Multiple Segments

When a single MPEG file contains one of the three changes list below, we refer it as a Multiple Bit Stream (MBS) MPEG file.

1. **timebase change**, such as a time code restart;
2. **video encoder settings change**, such as image size, frame rate, and bit rate; and
3. **audio encoder settings change**, such as sampling frequency, bit rate, and number of sound channels.

As defined in MPEG standards, an MPEG movie stream should have a continuous time code to assist a decoder to synchronize its video and audio presentations. Also, an MPEG movie stream should not change, in the middle of the stream, its video encoder settings, or its audio encoder settings.

When an MPEG file contains one or all of the changes listed above, the editor will not be able to handle it correctly.

Typical examples of such files are MPEG files created by a digital camcorder with an internal MPEG recorder.

For a digital camcorder, one common usage is to take a sequence of shots and stops. And between shots, the camera settings may be changed, such as switching from an "SP" mode to an "LP" mode, which is essentially changing the video resolution and bit rate. For some camcorder, it also restarts the time code after a stop.

When a single MPEG file contains those changes within the file, we refer it as a Multiple Bit Stream (MBS) MPEG file.
Since an MPEG editor cannot correctly decode the second or the following segments of the same MPEG file without some additional information, and since it's hard to design a flexible MPEG player that can dynamically switch MPEG codec, the next best solution and perhaps the simplest solution to this problem is to divide the file into multiple segments, and treat each segment as an individual MPEG file, but without physically creating such segment files. This is what the **MBS Scanner** does.

By scanning the MPEG file for any restart of its timecode and any change of MPEG encoder settings, it creates a list of segment files each of which saves a starting file offset and an ending file offset.

The segment file can be recognized by the MPEG editor by its file name extension of ".mbs", and be loaded properly as one complete MPEG stream.

Common examples of MBS files are VRO (".vro") files, DVD-R/W (".rec") files created by a DVD-R/W video recorder, and even some standard DVD (".vob") files.

The following is an example of multi-segment MPEG file,

D:\DVD recorder\PBC_ch9.vro

which contains two segments of MPEG recorded with a 720x480 resolution for the first segment and a 352x480 resolution for the second segment.

Two ".mbs" files will be created by the scanning process, and listed below.

(1) **D:\DVD recorder\PBC_ch9.vro_1.mbs**

[MBSFile]
NumFile= 1
File= D:\DVD recorder\PBC_ch9.vro
Segment= 0 93235200

(2) **D:\DVD recorder\PBC_ch9.vro_2.mbs**

[MBSFile]
NumFile= 1
File= D:\DVD recorder\PBC_ch9.vro
Segment= 93235200 147796772

In this example, the total file size is 147,796,772 bytes, with the first segment for the 720x480 video consisting of the beginning 93,235,200 bytes and the second segment for the 352x480 video the ending 54,561,572 bytes.

**Combine Multiple Segment Files Into One Continuous Stream**

Another usage of this **MBS** file format is to combine a set of MPEG files which are really segments of one continuous MPEG stream, but cut into small pieces in order to satisfy the limitation of a file system, for example.

One typical example is the set of VOB files for one DVD program, such as the following list.

VTS_01_1.vob
The corresponding ".mbs" file for this example is the following.

```
[MBSFile]
NumFile= 4
File= D:\VIDEO_TS\VTS_01_1.vob
File= D:\VIDEO_TS\VTS_01_2.vob
File= D:\VIDEO_TS\VTS_01_3.vob
File= D:\VIDEO_TS\VTS_01_4.vob
```

This is the reverse of a multi-segment file as explained previously.

Again, the MPEG editor will load this ".mbs" file and treat it as one continuous MPEG stream.

### 4.8 Audio Shift

**Audio Shift** allows you to synchronize the audio and video components of a clip. For example, a slight delay in sound occurs from when you see a character move his mouth to when his words reach your ears. This function will fix that problem.

Access **Audio Shift** from the audio sub menu (right mouse button) in the Input Monitor.

<table>
<thead>
<tr>
<th>Audio</th>
<th>Mute</th>
<th>Ctrl+M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Ctrl+I</td>
<td></td>
</tr>
<tr>
<td>Mute Left</td>
<td>Ctrl+L</td>
<td></td>
</tr>
<tr>
<td>Mute Right</td>
<td>Ctrl+R</td>
<td></td>
</tr>
<tr>
<td>Duplicate Left</td>
<td>Ctrl+Y</td>
<td></td>
</tr>
<tr>
<td>Duplicate Right</td>
<td>Ctrl+U</td>
<td></td>
</tr>
<tr>
<td>Combine Left</td>
<td>Ctrl+J</td>
<td></td>
</tr>
<tr>
<td>Combine Right</td>
<td>Ctrl+K</td>
<td></td>
</tr>
</tbody>
</table>

| Swap Channels | Shift .. | Ctrl+H |

The following images demonstrate how to adjust the audio shift value.

![Adjusting Audio Shift](image)

If the audio occurs too early, as shown by the bar graphic, use the audio slider to delay it by a matching amount.
If the audio occurs too late, as shown by the bar graphic, use the audio slider to make the audio play earlier by a matching amount.

Select a shift value:

Aside from directly dragging the slider, you can also select a finer shift value with the following controls.

| Mouse Wheel scroll up and down | increment of 10 |
| Arrow Right and Arrow Left      | increment of 100 |
| Arrow Up and Arrow Down         | increment of 200 |

Additional keyboard controls include the **Delete** key to clear the shift value, and the **Home** / **End** keys to jump to the two ends of the shift value.

### 4.9 Keyboard Shortcuts

<table>
<thead>
<tr>
<th>Help</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Ctrl + O</td>
</tr>
<tr>
<td>Close</td>
<td>Ctrl + X</td>
</tr>
<tr>
<td>Trim</td>
<td>Ctrl + S</td>
</tr>
<tr>
<td>Trim Manager</td>
<td>Ctrl + T</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl + E</td>
</tr>
<tr>
<td>Add to Timeline</td>
<td>G</td>
</tr>
<tr>
<td>Set Mark In</td>
<td>I</td>
</tr>
<tr>
<td>Action</td>
<td>Key Combination</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Set Mark Out</td>
<td>O</td>
</tr>
<tr>
<td>Trim Cut</td>
<td>X</td>
</tr>
<tr>
<td>Trim Left</td>
<td>N</td>
</tr>
<tr>
<td>Trim Right</td>
<td>M</td>
</tr>
<tr>
<td>Cut single frame</td>
<td>Del</td>
</tr>
<tr>
<td>Forward Play / Pause</td>
<td>D / Space</td>
</tr>
<tr>
<td>Reverse Play / Pause</td>
<td>A / Space</td>
</tr>
<tr>
<td>I-only, P-only, and normal speed toggle</td>
<td>S</td>
</tr>
<tr>
<td>normal speed (reverse)</td>
<td>[Ctrl +] 1 (shift + 1)  *</td>
</tr>
<tr>
<td>P-only fast speed (reverse)</td>
<td>[Ctrl +] 2 (Shift + 2)</td>
</tr>
<tr>
<td>I-only fast speed (reverse)</td>
<td>[Ctrl +] 3 (Shift + 3)</td>
</tr>
<tr>
<td>one fifth (1/5) of the normal speed (reverse)</td>
<td>[Ctrl +] 4 (Shift + 4)</td>
</tr>
<tr>
<td>one half (1/2) of the normal speed (reverse)</td>
<td>[Ctrl +] 5 (Shift + 5)</td>
</tr>
<tr>
<td>twice (2) of the normal speed (reverse)</td>
<td>[Ctrl +] 6 (Shift + 6)</td>
</tr>
<tr>
<td>four times (4) of the normal speed (reverse)</td>
<td>[Ctrl +] 7 (Shift + 7)</td>
</tr>
<tr>
<td>eight times (8) of the normal speed (reverse)</td>
<td>[Ctrl +] 8 (Shift + 8)</td>
</tr>
<tr>
<td>sixteen times (16) of the normal speed (reverse)</td>
<td>[Ctrl +] 9 (Shift + 9)</td>
</tr>
<tr>
<td>Step Forward</td>
<td>-&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Step Backward</td>
<td>&lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Next P-frame</td>
<td>Shift + -&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Previous P-frame</td>
<td>Shift + &lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Next I-frame</td>
<td>Ctrl + -&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Previous I-frame</td>
<td>Ctrl + &lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Jump Forward a predefined amount (5%)</td>
<td>Down Arrow</td>
</tr>
<tr>
<td>Jump Backward a predefined amount (5%)</td>
<td>Up Arrow</td>
</tr>
<tr>
<td>Jump Forward a predefined amount (10%)</td>
<td>Page Down</td>
</tr>
<tr>
<td>Jump Backward a predefined amount (10%)</td>
<td>Page Up</td>
</tr>
<tr>
<td>Jump to Home</td>
<td>Home</td>
</tr>
<tr>
<td>Jump to End</td>
<td>End</td>
</tr>
<tr>
<td>Jump to Mark In</td>
<td>[</td>
</tr>
<tr>
<td>Jump to Mark Out</td>
<td>]</td>
</tr>
<tr>
<td>Clear Mark</td>
<td>C</td>
</tr>
<tr>
<td>Zoom Full Screen</td>
<td>Alt + Enter</td>
</tr>
<tr>
<td>Layout Size</td>
<td>Alt + 4</td>
</tr>
<tr>
<td>Zoom 50%</td>
<td>Alt + 1</td>
</tr>
<tr>
<td>Zoom 100%</td>
<td>Alt + 2</td>
</tr>
<tr>
<td>Zoom 200%</td>
<td>Alt + 3</td>
</tr>
</tbody>
</table>
4.10 How to Edit Out Commercials

One of the most frequent operations for editing an MPEG movie is to edit out all commercials in a TV show recording.

The following are steps to do this quickly using the **Input Monitor**.

1. Open the MPEG file in the Input monitor.
2. Set the monitor to full screen display mode.
3. Set the play speed to **I-only** by pressing the speed button twice (or the 'S' key).
4. Press the Space bar to start the fast play (or the 'A' and 'D' keys).
5. Use the mouse scroll wheel to stop the player and to mark a segment to be deleted.
6. Press the **trim cut** button (or the 'X' key) to remove the selected segment.
7. Repeat the last 3 steps above for all the segments that you want to be removed.

* You may still use the control key combinations such as "Ctrl + 1" and "Ctrl + 2", which were the only available keyboard shortcuts for forward speed control in early versions.
8. Restore the input monitor to its layout size.
9. To add the remaining program segments to the Timeline, press the 'G' key which is the keyboard shortcut for the menu selection for "Put to Timeline".
10. You can save the remaining program segments to an MPEG file using the "Trim" function from the context menu of the Input monitor.

**Hint:** use the combination keys 'Ctrl+1' and 'Ctrl+3' or 'Ctrl+2' to switch between normal speed and fast speed quickly.

**NOTE:** The method below was suggested when the Input monitor did NOT have the cut function, which is true for all versions before the October 2006 update release. With the cut function available, the method listed below becomes awkward, and the information below are only instructional as a usage illustration of the Input monitor.

The following are steps to do this quickly using the **Input Monitor**.

1. Open the MPEG file in the Input monitor.
2. Set the monitor to full screen display mode.
3. Set the play speed to **I-only** by pressing the speed button twice (or the 'S' key).
4. Press the Space bar to start the fast play (or the 'A' and 'D' keys).
5. Use the mouse scroll wheel to stop the player and to mark the segment.
6. Select the "Add to Clips" from the monitor menu (or the 'Ctrl + E' key combination) to save the segment to the video clip board in the **Project Manager**.
7. Repeat the last 3 steps above for all the segments of the TV show.
8. Restore the input monitor to its layout size.
9. Select all the clips in the "Clips->Video" page in the **Project Manager**.
10. Drag and drop them on to the Timeline to save the segments to a single file.
11. Drag and drop them on to the Batch of the **Trim Manager** to save the clips to separate files.

For a typical 2 hour MPEG movie, it takes about 5 to 10 minutes to complete.
5 Using Bookmarks

5.1 Adding Bookmarks

Bookmarks are special frames used to index a movie. These reference points are especially helpful in editing a lengthy movie. Aside from being a convenient reference point, each bookmark also represents a clip, from the bookmarked frame to the next bookmark or the end of the video file.

To add a Bookmark:

1. Display a frame in the Input Monitor.
2. Click the right mouse button in the Input Monitor window.
3. Select Bookmark Add from the menu, or select Bookmark Browser from the menu, which brings up the Bookmark window. Click Add.

5.2 Creating Bookmark List Automatically

To create a Bookmark list automatically:

From the video file displayed in the Input Monitor, you can automatically create a list of bookmarks from start to finish, with each one separated by a Step.

1. In the Bookmarks window, select a Step value for the distance in frames, seconds, or minutes between bookmarks.
2. Click Split, and the list will be generated for that clip.
3. Like the Split function, Blank Fades will automatically generate a list of bookmarks. This function searches the movie for Blank Fades. A Blank Fade is a short segment with consecutive blank images and very low (or muted) sound usually inserted to transition between two different program segments, especially when introducing commercials into a TV show. The Blank Fades function will conveniently divide the movie clip into segments, separating the commercial clips from the program ones. Now you can quickly filter out all commercials based on their relatively short duration, using the Filter Bookmarks command in the context menu. Remaining clips will consist solely of the desired program.

4. Similar to Blank Fades, the Scene function will also automatically generate a list of bookmarks, except the bookmark frames are selected based on a scene change detection algorithm used in MPEG video compression.

### 5.3 Managing Bookmark List

In order to have more than one list of bookmarks for the same movie, a standard set of file controls is provided at the top of the Bookmark window.

- **Open:** Open a saved Bookmark list file and load it into the Bookmark window.
- **Save:** Store the current Bookmark list as a text file.
- **Icon View:** Display Bookmarks with large icons.
- **List View:** Display Bookmarks as a list of starting time codes.
- **Details:** Display Bookmarks in a list by their start and end time codes and segment lengths.
- **Drag:** By clicking inside this little window while holding down the left mouse button, you can drag and drop all the selected bookmark clips into Timeline's video track or into Project Manager's Clips. Selected bookmarks will have a blue check mark either in the upper right corner (icon view) or next to the time code (list view, details). To deselect clips, simply click the box to uncheck it.

### 5.4 Using Bookmarks Menu

More bookmarks operations are provided via the bookmark context menu. To open the menu, right mouse click within the bookmark list window.
Delete: Remove selected bookmark (high lighted).
Delete All: Remove all bookmarks in the list.
Select All: Select the whole bookmark list.
Enable All: This makes the Input monitor to reload the movie, and as a result, all disabled bookmarks due to previous cut and trim operations become available.

<table>
<thead>
<tr>
<th>Uncheck Short Bookmarks (&lt; 120 sec.)</th>
<th>Ctrl+F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merge Unchecked Bookmarks</td>
<td>Ctrl+R</td>
</tr>
<tr>
<td>Merge Checked Bookmarks</td>
<td>Ctrl+Q</td>
</tr>
<tr>
<td>Cut Unchecked Bookmark Segments</td>
<td>Ctrl+D</td>
</tr>
<tr>
<td>Save Checked Bookmark Segments...</td>
<td>Ctrl+W</td>
</tr>
<tr>
<td>Add Checked Bookmark Segments to Timeline</td>
<td>T</td>
</tr>
</tbody>
</table>

Stop Player: S
Jump and Play Forward: D
Jump and Play Reverse: A

Set Mark In: I
Set Mark Out: O
Add Marked Segment to Timeline: G

Settings...

Cut Unchecked Bookmark Segments: This instructs the Input monitor to cut out all unchecked bookmark segments so that it plays only the checked bookmark segments.

Save Unchecked Bookmark Segments: This instructs the Input monitor to export all checked bookmark segments to a single MPEG file. Please note the save is based on the current selection of the bookmark list, NOT on the Input monitor. Also, please note this is equivalent to the sequence of steps of "Add Checked Bookmark Segments to Timeline" and the export the timeline to a new MPEG file using the "automatic" encoder settings.

Add Checked Bookmark Segments to Timeline: This adds all checked bookmark segments to the timeline's video track.

Stop/Start Player: Stop or start the player in the Input monitor. This provides convenient playback control without switching the window focus between the bookmark window and the input monitor window.
Jump and Play Forward: When a single bookmark is selected, this instructs the input monitor to jump to the bookmark frame and start (or continue) forward playback. Otherwise, it acts as a toggle switch between forward play and stop.

Jump and Play Reverse: When a single bookmark is selected, this instructs the input monitor to jump to the bookmark frame and start (or continue) reverse playback. Otherwise, it acts as a toggle switch between reverse play and stop.

Set Mark In: This is the Mark In function of the Input monitor, but without the need to switch the window focus.

Set Mark Out: This is the Mark Out function of the Input monitor, but without the need to switch the window focus.

Add Marked Segment to Timeline: This is the same function of the Input monitor to add the video segment selected by the Mark In and Mark Out frames, but without the need to switch the window focus.

Settings...: This gives you more control over the parameters used in bookmark search functions.

5.5 Reading BeyondTV .chapters.xml Files

To read a cut list from a BeyondTV .chapters.xml file:

From the Open bookmark list file dialog window, select "BTV Chapter Cut List File (*.chapters.xml)" under the "Files of Type" drop-down list.

Find the file and press Open; a bookmark list will be created.

Since each entry in a BTV cut list represents a commercial segment with a starting and an ending file offset, the bookmark corresponding to the cut segment will not be selected; and as a result, the clips by dragging and dropping the bookmark list onto the timeline will only include the non-commercial segments.

Please note that the reading may fail if the MPEG file, which is specified by the first line of the text file, cannot be found at the same location as the index file.
5.6 Reading ReplayTV .evt Time Code Index

To read a time code index list from a ReplayTV .evt file or its text dump file:

From the Open bookmark list file dialog window, select either "ReplayTV Index File (*.evt)", or "ReplayTV Index Text Dump File (*.txt)" under the "Files of Type" drop-down list.

Find the file and press Open; a bookmark list will be created.

Please note that the reading may fail if the MPEG file, which is specified by the first line of the text file, cannot be found at the same location as the index file.

5.7 Example of Using Bookmarks

This example uses an MPEG file from recording a one hour TV show. The actual show is about 40 minute long, and the commercial segments account for one third of the total length.

1. Open the movie in the Input Monitor.
2. Press the F3 key to open the Bookmarks window.
3. Press the "BlankFades" button in the Bookmarks window.

The search will take several minutes to finish.
4. Switch the bookmark list to the "Details" view style.

5. Apply the "Uncheck Short Bookmarks (< 120 sec.)" function to the list, and follow it by the "Merge Unchecked Bookmarks".
6. Now, do a "**Cut Uncheck Bookmark Segments**", and notice that the total length of the movie in the Input monitor.

7. To get a quick view of the cut list, open the Input monitor's menu and select "**Properties...**".

8. You can save the checked bookmark segments to a new MPEG file by issuing a "**Save Checked Bookmark Segments...**" from the **Bookmarks Menu**.

9. Instead of the "**BlankFades**" search, you can repeat the above example using the "**Scene**" change search.
6 Using the Timeline

6.1 About the Timeline

The Timeline is the main editing window where you do most of your editing. In this window, you add, select, arrange, and modify all video, audio, image, and title clips.

The Timeline contains four tracks: one video track for editing video and image clips, one title track for editing title and image clips,

- **Workarea:** The selected segment between the Mark in and Mark out points.
- **Edit line:** The current time indicator which helps position the clips accurately. Drag the edit line to preview the content in the Output Monitor.
- **Ruler:** Displays the time with scales and special points (Markers).
- **Tracks:** The area where you edit and organize different types of clips. They are referred to as, from top to bottom, Video Track, Title Track, Music Track, and Voice Track.
- **Scroll bar:** Drag the scroll bar to view clips in the track.
- **A Toggle:** Open or close the time code and toolbox display.
- **Time code:** In addition to the Time code display, there are 4 additional controls for helping you edit work on the Timeline.

1. **Step:** Use this to select the step size used to move through the timeline. Click on the vertical lines to select one of the 5 step sizes. Now click on any clip on the Timeline and use your arrow keys to move the edit line back and forth across the Timeline. The values of the 5 steps are pre-defined, but you may change them in the Timeline Options page.

2. **Select Right:** Select a clip on the timeline, all clips following the clip on the same track will be selected. This can also be done by clicking on the clip while holding down the Spacebar. See also selecting clips.

3. "**Snap**": Join the edit line quickly, like a magnet, to an edge of a clip, or between the edges of two clips on different tracks. See also snapping a clip.
4. **Frozen**: This switch allows you to drag clips on the Timeline directly to other Editor windows. Normally, you can only move clips around within the Timeline; after activating this switch though, you can click and drag them into the Input monitor or the Files and Clips submenus of the Project Manager. Consequently, you will not be able to move clips within the Timeline.

5. **Time Code**: Display the time of the Edit line in hours, minutes, seconds, and frames.

**Toolbox**: The functions of this toolbox are explained in the next page: using the toolbox.

### 6.2 Using the Toolbox

The Toolbox is a set of controls that assist the editing on the Timeline. It has a total of 22 buttons, 10 pairs of closely related buttons, one single for the DVD export, and one single for the Export.

- **Zoom in and zoom out**: increase or decrease the resolution of the Ruler scales.
- **Mark in and mark out**: set the starting point and ending point of a segment.
- **Undo and redo**: undo the last editing operation and restore the timeline state, or redo the last editing operation.
- **Left and right justify**: align the left/right edges of clips on different tracks. The left/right edge of the clip that was selected last will be used as the reference for the alignment.
- **Lock and disable**: lock and disable selected clips to prevent further change and to disable/enable the preview of their contents.
- **Split and delete**: break the selected clip into two clips at the edit line; remove the selected clips from the timeline.
- **Marker and clear**: add/clear (toggle) a marker at the current edit line, and remove all markers from the Timeline.
- **Group and ungroup**: combine two or more clips into a group, and remove the grouping.
- **Previous and next marker**: jump to the marker closest to the current edit line earlier or later in time.
- **Previous and next clip**: jump to the left/right edge of the clip that is closest to the current edit line. The jump points may include Mark in and Mark out.
- **DVD export**: export the timeline project to the DVD Maker.
- **Export**: produce a new MPEG file for the current editing project.
6.3 Using the Context Menus

Beside the controls of the Toolbox, the timeline also employs several context menus to enable a much broad set of editing controls on the Timeline. These are timeline ruler menu, track menu, and clip menu.

**Timeline ruler menu:**
With a right mouse click on the timeline ruler area, you can use the timeline ruler menu to change the timeline scale to a desired time resolution for the entire timeline display.

<table>
<thead>
<tr>
<th>Frame Rate</th>
<th>To select a frame rate for the timeline and the time code display.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preview Video Size</td>
<td>To select a image resolution for the video display in the output monitor.</td>
</tr>
<tr>
<td>Best Fit</td>
<td>Automatic selection of the maximum timeline resolution to make all clips visible on the timeline window.</td>
</tr>
<tr>
<td>Best Fit Workarea</td>
<td>Automatic selection of the maximum timeline resolution to make the complete workarea visible on the timeline window.</td>
</tr>
<tr>
<td>Zoom In</td>
<td>Increase the timeline resolution.</td>
</tr>
<tr>
<td>Zoom Out</td>
<td>Decrease the timeline resolution.</td>
</tr>
<tr>
<td>Max Zoom In</td>
<td>Select the highest timeline resolution.</td>
</tr>
<tr>
<td>Max Zoom Out</td>
<td>Select the lowest timeline resolution.</td>
</tr>
<tr>
<td>1 Frame, 1 Second, ...</td>
<td>Each selection corresponds to the timeline resolution for one major tick.</td>
</tr>
<tr>
<td>30 Minute</td>
<td>Information showing the current timeline resolution that is not listed in the menu.</td>
</tr>
<tr>
<td>Previous Scale</td>
<td>Restore the timeline to the previous resolution.</td>
</tr>
</tbody>
</table>
Track menu:
To open the track menu, right mouse click on any one of the tracks.

<table>
<thead>
<tr>
<th>Clear Gap</th>
<th>Remove space between the two clips near the current cursor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear All Gaps</td>
<td>Remove all spaces between all clips on the same track.</td>
</tr>
<tr>
<td>Select All</td>
<td>Select all clips on the same track.</td>
</tr>
<tr>
<td>Paste</td>
<td>Add the previously copied clips on the track near the current cursor.</td>
</tr>
<tr>
<td>Delete All Clips</td>
<td>Empty the track.</td>
</tr>
<tr>
<td>Delete all transitions</td>
<td>Delete all the transitions between the clip in the Video Track.</td>
</tr>
<tr>
<td>Disable</td>
<td>This makes the track virtual empty without removing the clips.</td>
</tr>
<tr>
<td>Mute</td>
<td>This mutes the sound for the whole track.</td>
</tr>
<tr>
<td>Lock</td>
<td>This prevents the track from any further change.</td>
</tr>
</tbody>
</table>

Clip menu:
The clip menu is accessed by a right mouse click on a clip.

<table>
<thead>
<tr>
<th>Split</th>
<th>Ctrl+Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trim Left</td>
<td>Shift+L</td>
</tr>
<tr>
<td>Trim Right</td>
<td>Shift+R</td>
</tr>
<tr>
<td>Delete Left</td>
<td>Ctrl+Shift+L</td>
</tr>
<tr>
<td>Delete Right</td>
<td>Ctrl+Shift+R</td>
</tr>
<tr>
<td>Cut</td>
<td>Ctrl+X</td>
</tr>
<tr>
<td>Copy</td>
<td>Ctrl+C</td>
</tr>
<tr>
<td>Delete</td>
<td>Del</td>
</tr>
<tr>
<td>Shifted Delete</td>
<td>Shift+Del</td>
</tr>
<tr>
<td>Trim Clip Outside Workarea</td>
<td>T</td>
</tr>
<tr>
<td>Best Fit Workarea to Selected Clips</td>
<td>F</td>
</tr>
<tr>
<td>Disable</td>
<td>Alt+D</td>
</tr>
<tr>
<td>Lock</td>
<td>Alt+L</td>
</tr>
<tr>
<td>Audio</td>
<td></td>
</tr>
<tr>
<td>Video</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td></td>
</tr>
<tr>
<td>Fade</td>
<td>Alt+F</td>
</tr>
<tr>
<td>Add Default Fades</td>
<td>Alt+A</td>
</tr>
<tr>
<td>Location &amp; Duration...</td>
<td>Ctrl+F</td>
</tr>
<tr>
<td>Begin &amp; End...</td>
<td>Ctrl+B</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl+E</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
</tbody>
</table>
### Adding Clips

There are several ways to add clips to the Timeline.

1. From the Project Manager: select one or more clips in one of the Video, Audio, Image and Title pages, and drag them onto a selected track.

2. From a file folder (in the Windows Explorer): select one or more files, and drag them onto a selected track.

3. From the **Input** monitor: drag the currently opened video clip onto a selected track. When initially dragged onto the Timeline, the clip will represent the currently marked segment (from Mark-In to Mark-Out) of the clip. This segment can be further adjusted directly on the Timeline.

4. From the **Bookmark Manager (F3)**: select the bookmarks from the **Drag Box** (at the lower right corner) of the **Bookmark** window, and drag them onto a selected track; or simply drag the **bookmark** manually onto a track. When dragged onto the Timeline, a **Bookmark** represents a segment that begins at the **Bookmark** and ends just before the next Bookmark (or the end of the clip).
5. From the **Title Editor**: drag the current title **Drag Box** (at the lower left of the **Title Editor** window) onto the title track.

Note that **Drag Boxes** exist to enable two different interpretations of the "drag" action within a given window. Generally, the Drag Box is interpreted to mean "drag the selected items from their current window to another window."

6. **How to import an editor project as a clip:**

   Since the 10-2007 update, the editor has added this function to treat an editor project as a single video (or audio) clip.

   To import an editor project, either a ".wbp" file in Windows Explorer or an icon in the editor, hold down the control key, and then drag the editor project and drop it onto a selected track of the timeline.

   Additionally, you may also preview an editor project in the Input monitor.

6.5 **Using WBP File as a Video/Audio Clip**

   You can edit the editor project file (".wbp") as a single video (or audio) clip. Referred to as a WBP clip, this makes the timeline a much more flexible and powerful video editor.

   Using a ".wbp" file as a WBP clip is mostly automatic, except for loading it directly into the timeline.

   **To add a WBP clip to the timeline**

   To import an editor project file as a WBP clip, either a ".wbp" file in Windows Explorer or an icon in the editor's Project Manager, hold down the control key, and then drag and drop the editor project file or the project icon onto a selected track of the timeline.

   **To load a WBP clip to the Input monitor**

   No control key or any special operation will be needed. Simply open a ".wbp" file, or drag and drop a ".wbp" file, or drag and drop an editor project icon, into the Input monitor, and it will be treated as a WBP clip.

   To import an editor project file as a WBP clip, either a ".wbp" file in Windows Explorer or an icon in the editor's Project Manager, hold down the control key, and then drag and drop the editor project file or the project icon onto a selected track of the timeline.

   **Example of recursive use of WBP clips**

   In the following, we give a step by step illustration of using WBP clips to build a video construction with 4 video segments each of which occupies one quarter of the image screen.

   1. Create 4 "Picture in Picture" video transition operators with different position parameters.

   In the editor's Project Manager, press the "Effect" tab and select the "2D" list, and find the transition named "Picture in picture" (P-in-P).

   Double click the "P-in-P" icon, select "Percent" for its "Style", set "Position(x,y)" to "0, 0", set "Size (width, height)" to "50, 50", and press the "MyList" button to add it to the list.
Repeat the above steps with "Position(x,y)" = "50,0" for the 2nd quarter, "Position(x,y)" = "0,50" for the 3rd quarter, and "Position(x,y)" = "50,50" for the 4th quarter.

Now, we have 4 different "P-in-P" transition operators in MyList.

2. Create a WBP clip with the 1st video segment taking the 1st quarter of the image screen.

Add the first video segment to the video track of the timeline.

Duplicate the video clip to have two identical video clips on the timeline.

Drag and drop the 1st P-in-P operator from the MyList onto the two video clips, and then change the transition length to its maximum (the length of the clip).

Save the timeline to a new ".wbp" file (e.g., "p-in-p-Q1.wbp").
3. Create a WBP clip with the 1st quarter WBP file and the 2nd video segment which takes the 2nd quarter of the image screen.

Press the "New" button to clear the timeline.

Find the saved WBP project icon in the Project Manager, and drag and drop it into the timeline as a WBP clip by holding down the control key.

Add the 2nd video segment to the timeline.

Repeat the same steps of Part 2 with the 2nd P-in-P transition, and save the timeline to a new ".wbp" file (e.g., "p-in-p-Q2.wbp").

4. Create a WBP clip with the 2nd quarter WBP file and the 3rd video segment which takes the 3rd quarter of the image screen.

Repeat the same steps as in Part 3 with the WBP clip saved in Part 3, the 3rd video segment, and the 3rd P-in-P transition. The result is saved as the 3rd new ".wbp" file (e.g., "p-in-p-Q3.wbp").

5. Create a WBP clip with the 3rd quarter WBP file and the 4th video segment which takes the 4th quarter of the image screen.

Repeat the same steps as in Part 4 with the WBP clip saved in Part 4, the 4th video segment, and the 4th P-in-P transition. The final result is saved as the 4th ".wbp" file (e.g., "p-in-p-Q4.wbp").

You could preview your final result in the Input monitor by simply dragging and dropping the 4th ".wbp" project icon from the Project manager into the Input monitor.
Note: Due to its repeated use of the WBP clips and the additional image processing for overlaying the 4 different video images, the video player could become substantially slow.

6.6 Selecting Clips

Click on the clip to select it.

To select two or more clips, hold down the Ctrl key, and click on each of the clips.

To select all clips of the same track, click on either the first or last clip, hold down the Shift key, and then click on the last or first clip.

Click the toggle button in the Time code window, to enable the automatic clip grouping. With this switch ON, when you click on one clip, all clips following the clip on the same track will be selected.

This kind of grouping can also be done by clicking on a clip while holding down the Spacebar on the keyboard (See "Select Next All" in the Keyboard Shortcuts list).

Hint: How to preview a clip on the Timeline?

1. Select a clip with the left mouse button.

2. Double-click the clip to preview only the clip; or

3. double-click the clip while holding down the Control key to preview the complete file in the Input Monitor with the clip as the segment between the MarkIn and MarkOut.
6.7 Trimming Clips

You can trim a clip by dragging the two edges of a clip directly on the Timeline.

1. Zoom in and out on the Time ruler to make the trim easier by clicking + or - in the Controls toolbox.

2. Position your mouse pointer over the edge of the clip. The pointer becomes a two-directional arrow.

3. Click-drag this edge to change the duration of the clip.

4. Release the mouse button. The clip is now trimmed.

**Special Feature**

When two clips are placed side by side, you can trim them to the exact frame you want. This function is especially convenient after splitting a clip.

1. Select the two clips by clicking on the clips one by one while holding down the Ctrl key.

2. Position your mouse pointer in between the two clips until it becomes a two-directional arrow.

3. Click and drag this arrow while holding down the Spacebar and viewing the Input Monitor. Two screens will display the frame for the corresponding clip. Drag the arrow until the images you want register on the Monitor. The left screen will show the end of one clip; the right screen displays the beginning of the second clip.

**Note:** If the Timeline option "Display images in the Input monitor when stretching clips" has been selected, then there is no need for holding down the Spacebar in Step 3.

6.8 Splitting Clips

Splitting a clip breaks the clip in two at the splitting point.

**To Split a Clip:**

1. Select a clip and position the edit line.

2. Click the Split button in the Tool window.
6.9 Cut, Copy, and Paste

To cut a clip:
1. Select a clip to be cut by clicking on the clip display.
2. Choose Cut from the right mouse button menu, or use the Ctrl+x keyboard shortcut.

To copy a clip:
1. Select a clip to be copied by clicking on the clip display.
2. Choose Copy from the right mouse button menu, or use the Ctrl+c keyboard shortcut.

To paste a clip:
1. Select a position on a track by clicking the left mouse button.
2. Choose Paste from the right mouse button menu, or use the Ctrl+v keyboard shortcut.

A paste usually follows a cut, or a copy operation.
Note: cut, copy, and paste also apply to a group of clips.

6.10 Deleting Clips

To Delete a Single Clip:
1. Select a clip.
2. Click \(\times\) in the toolbox, or press the Delete key.

To Delete Two or More Clips:
1. Press Ctrl + select the clips.
2. Click \(\times\) in the toolbox, or press the Delete key.

To Remove Space between Clips:
1. Click the right mouse button on any empty space on the track.
2. Select Clear Gap or select Clear All Gaps to remove all empty spaces between clips on the track.

6.11 Using Markers

Markers are reference points used to index a movie on the Timeline. These reference points are very helpful in quickly finding specific editing points.

To Set a Marker
1. Drag the Edit line to the desired position.
2. Click \(\times\) in the toolbox. A red marker is displayed on the ruler to denote the position.

To Jump to a Marker
1. Click \(\rightarrow\) or \(\leftarrow\) in the toolbox.
2. The edit line will jump to the closest marker and the display in the Output Monitor will also be updated.

**To Delete a Marker**

1. Select the marker to delete using the button \[ \] or \[ \].
2. Click the toolbox button \[ \].

**To Delete all Markers**

Click the toolbox button \[ \].

**To add Marker for all video clips**

Press the 'N' key on the keyboard, the editor will add a marker at the beginning of each clip for all clips on the video track. Please note that this command is only available as a keyboard shortcut; and there is no corresponding button in the toolbox.

### 6.12 Snapping Clips

It is often necessary to align clips to a specific time point, such as to a marker, to an edge of another clip on a different track, or to the edit line. This particular move operation is called a "snap".

**To Enable or Disable the Snap Operation**

Click the toggle button in the Time code window to enable or disable the snap operation.

**To Snap a Clip to the Edit Line**

1. Select a clip and drop it to the desired track.
2. Move the edit line to the desired time point.
3. Drag the clip close to the edit line.
4. As soon as the edge of the clip approaches the edit line, it will automatically **snap** to the edit line.

**To Snap a Clip to a Marker**

1. Select a clip and drop it to the desired track.
2. Move the edit line to the desired **marker**.
3. Drag the clip close to the edit line.
4. As soon as its edge approaches the edit line, the clip will automatically **snap** to the edit line.
To Snap a Clip to another Clip on a Different Track
1. Select the clip.
2. Drag the clip close to the edge of the other clip to be aligned.
3. Once the edge of one clip approaches the edge of the other clip, the two edges will automatically snap together in alignment.

6.13 Grouping Clips

The Group control combines multiple clips into a group, allowing you to handle them as a single clip.

To Group Two or More Clips
1. Select the clips to be grouped by clicking on each of them while holding down the Ctrl key.
2. Click the button in the toolbox. Grouped clips are indicated by a small icon. Now, you can click on any one of the clips in the group and the whole group will be selected.
3. To un-group, click the button.

Note:
1. Only neighboring clips of the same track can be grouped.
2. Transition can no longer be added to grouped clips.
3. Filters and fades can still be added to grouped clips.

6.14 Setting the Workarea

The Workarea is the same as the segment defined by the mark in and mark out in the Monitor. Play the Workarea using the controls in the Output Monitor.

There are four ways to set the Workarea:

1. Click the blue arrowhead of the scrollbar and drag it to the position you want. The scrollbar represents the Workarea.
2. Drag the edit line to the desired position and click , and then drag the edit line to another position and click .
3. Click the left mouse button on the timeline, while holding down the Ctrl key, will set the mark in. Click the left mouse button on the timeline, but holding down the Shift key, will set the mark out.
4. Drag the edit line to the desired position, press the 'i' letter key to set mark in, or press the 'o' letter key to set mark out.

6.15 Locking and Unlocking

Lock an entire track to prevent accidental changes to the clips on it, while working on other tracks.

To Lock a Track
1. Right mouse click on an empty area of the track.
2. Select Lock from the popup menu.
To Unlock a Track
1. Right mouse click on an empty area of the track.
2. Select Unlock from the popup menu.

To Lock a Clip
1. Select a clip.
2. Click the toolbox button Once locked, the clip will be marked with an icon, as shown.

To Unlock a Clip
1. Select a locked clip.
2. Click the toolbox button

6.16 Keyboard Shortcuts

Timeline Editor

<p>| Help | F1 |</p>
<table>
<thead>
<tr>
<th>Command</th>
<th>Keyboard Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Ctrl + N</td>
</tr>
<tr>
<td>Open</td>
<td>Ctrl + O</td>
</tr>
<tr>
<td>Save</td>
<td>Ctrl + S</td>
</tr>
<tr>
<td>Save As</td>
<td>Ctrl + Shift + S</td>
</tr>
<tr>
<td>Export</td>
<td>E</td>
</tr>
<tr>
<td>DVD Export</td>
<td>Shift + D</td>
</tr>
<tr>
<td>Cut</td>
<td>Ctrl + X</td>
</tr>
<tr>
<td>Copy</td>
<td>Ctrl + C</td>
</tr>
<tr>
<td>Paste</td>
<td>Ctrl + V</td>
</tr>
<tr>
<td>Split</td>
<td>Ctrl + Q</td>
</tr>
<tr>
<td>Delete</td>
<td>Del</td>
</tr>
<tr>
<td>Disable / Enable Clips</td>
<td>Alt + D</td>
</tr>
<tr>
<td>Lock / Unlock Clips</td>
<td>Alt + L</td>
</tr>
<tr>
<td>Undo</td>
<td>Ctrl + Z</td>
</tr>
<tr>
<td>Redo</td>
<td>Ctrl + Shift + E</td>
</tr>
<tr>
<td>Trim Left</td>
<td>Shift + L</td>
</tr>
<tr>
<td>Trim Right</td>
<td>Shift + R</td>
</tr>
<tr>
<td>Delete Left</td>
<td>Ctrl + Shift + L</td>
</tr>
<tr>
<td>Delete Right</td>
<td>Ctrl + Shift + R</td>
</tr>
<tr>
<td>Play / Pause</td>
<td>Spacebar</td>
</tr>
<tr>
<td>Play Forward / Pause</td>
<td>D / Space</td>
</tr>
<tr>
<td>Play Reverse / Pause</td>
<td>A / Space</td>
</tr>
<tr>
<td>Set / Clear Video Reverse</td>
<td>Alt + R</td>
</tr>
<tr>
<td>Deinterlace Image</td>
<td>Alt + I</td>
</tr>
<tr>
<td>Zoom In</td>
<td>+</td>
</tr>
<tr>
<td>Zoom Out</td>
<td>-</td>
</tr>
<tr>
<td>Best Fit (Timeline Scale)</td>
<td>Numpad*</td>
</tr>
<tr>
<td>Max Zoom In</td>
<td>Ctrl + Numpad+</td>
</tr>
<tr>
<td>Max Zoom Out</td>
<td>Ctrl + Numpad-</td>
</tr>
<tr>
<td>Previous Scale</td>
<td>BackSpace</td>
</tr>
<tr>
<td>Jump to Next Clip Edge</td>
<td>Tab</td>
</tr>
<tr>
<td>Jump to Previous Clip Edge</td>
<td>Shift + Tab</td>
</tr>
<tr>
<td>Change Step Size</td>
<td>Insert</td>
</tr>
<tr>
<td>Step Forward</td>
<td>Left</td>
</tr>
<tr>
<td>Step Backward</td>
<td>Right</td>
</tr>
<tr>
<td>Scroll Timeline to Left</td>
<td>Down Arrow Key / Page Down</td>
</tr>
<tr>
<td>Scroll Timeline to Right</td>
<td>Up Arrow Key / Page Up</td>
</tr>
<tr>
<td>Action</td>
<td>Key Combination</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Set Mark In</td>
<td>I</td>
</tr>
<tr>
<td>Set Mark Out</td>
<td>O</td>
</tr>
<tr>
<td>Jump to Mark In</td>
<td>[</td>
</tr>
<tr>
<td>Jump to Mark Out</td>
<td>]</td>
</tr>
<tr>
<td>Jump to Home</td>
<td>Home</td>
</tr>
<tr>
<td>Jump to End</td>
<td>End</td>
</tr>
<tr>
<td>Set / Clear Marker</td>
<td>M</td>
</tr>
<tr>
<td>Clear all marker</td>
<td>Alt + M</td>
</tr>
<tr>
<td>Add markers at the beginning for all video clips</td>
<td>N</td>
</tr>
<tr>
<td>Jump to Next Marker</td>
<td>Ctrl + Tab</td>
</tr>
<tr>
<td>Jump to Previous Marker</td>
<td>Ctrl + Shift + Tab</td>
</tr>
<tr>
<td>Audio Volume Control</td>
<td>Ctrl + W</td>
</tr>
<tr>
<td>Audio Mute</td>
<td>Ctrl + M</td>
</tr>
<tr>
<td>Audio Default</td>
<td>Ctrl + I</td>
</tr>
<tr>
<td>Audio Mute Left</td>
<td>Ctrl + L</td>
</tr>
<tr>
<td>Audio Mute Right</td>
<td>Ctrl + R</td>
</tr>
<tr>
<td>Audio Duplicate Left</td>
<td>Ctrl + Y</td>
</tr>
<tr>
<td>Audio Duplicate Right</td>
<td>Ctrl + U</td>
</tr>
<tr>
<td>Audio Combine Left</td>
<td>Ctrl + J</td>
</tr>
<tr>
<td>Audio Combine Right</td>
<td>Ctrl + K</td>
</tr>
<tr>
<td>Audio Edit Sound Volume</td>
<td>Ctrl + D</td>
</tr>
<tr>
<td>View / Hide Audio Peaks</td>
<td>Ctrl + P</td>
</tr>
<tr>
<td>Audio Peaks Display control</td>
<td>Alt + P</td>
</tr>
<tr>
<td>Normalize...</td>
<td>Alt + N</td>
</tr>
<tr>
<td>Fade...</td>
<td>Alt + F</td>
</tr>
<tr>
<td>Add Default Fades</td>
<td>Alt + A</td>
</tr>
<tr>
<td>Location &amp; Duration...</td>
<td>Ctrl + F</td>
</tr>
<tr>
<td>Begin &amp; End...</td>
<td>Ctrl + B</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl + E</td>
</tr>
<tr>
<td>Select All</td>
<td>Ctrl + A</td>
</tr>
<tr>
<td>Select Next All</td>
<td>Space + Mouse</td>
</tr>
<tr>
<td></td>
<td>Click on a clip while holding down the Spacebar; all clips following the clip on the same track will be selected.</td>
</tr>
<tr>
<td>Preview forward</td>
<td>Numpad 1~7</td>
</tr>
<tr>
<td>Preview backward</td>
<td>Ctrl+Numpad 1~7</td>
</tr>
</tbody>
</table>
7 Adding Transitions

7.1 About Transitions

A transition is a small segment of one clip overlapping with another clip, on which a special effect involving a geometrical operation is introduced.

Usually, a transition is added to connect different clips. Occasionally, you may want to insert a transition into a continuous segment. In this case, the video segment will need to be split into two segments at the selected point, and the two segments will then be connected with a transition.

Currently, the editor has the following video transitions.

<table>
<thead>
<tr>
<th>2D</th>
<th>2D</th>
<th>2D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Dissolve</td>
<td>Haul Based Wipe</td>
<td>Rotate Based Wipe</td>
</tr>
<tr>
<td>Adopted Video Overlay*</td>
<td>Image Spiral</td>
<td>Split</td>
</tr>
<tr>
<td>Blend</td>
<td>Line Based Wipe</td>
<td>Split Back</td>
</tr>
<tr>
<td>Blind Based Wipe</td>
<td>Lens</td>
<td>Swap</td>
</tr>
<tr>
<td>Build Based Wipe</td>
<td>Mesh</td>
<td>Swing</td>
</tr>
<tr>
<td>Center Rotate Wipe</td>
<td>Mosaic Based Wipe</td>
<td>Stretch in</td>
</tr>
<tr>
<td>Center Split</td>
<td>Multi-Triangle Door</td>
<td>Triangle Push</td>
</tr>
<tr>
<td>Clock Based Wipe</td>
<td>Obscure</td>
<td>Triangle Slide</td>
</tr>
<tr>
<td>Cross Based Wipe</td>
<td>Overlap Alpha Blend</td>
<td>User-Defined Zoom</td>
</tr>
<tr>
<td>Cross Zoom</td>
<td>Patch</td>
<td>Wind</td>
</tr>
<tr>
<td>Double Slide</td>
<td>Picture in picture</td>
<td>Wipe</td>
</tr>
<tr>
<td>Edge Feather</td>
<td>Push Based Wipe</td>
<td>X Ray</td>
</tr>
<tr>
<td>Fade</td>
<td>Random Dissolve</td>
<td>Zoom</td>
</tr>
<tr>
<td>Gauze</td>
<td>Region Based Wipe</td>
<td>Zoom Box</td>
</tr>
<tr>
<td>Gradient Wipe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3D</th>
<th>3D</th>
<th>3D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bubbles</td>
<td>Flag</td>
<td>Roll</td>
</tr>
<tr>
<td>Curtain</td>
<td>Flip</td>
<td>Rotary Cube</td>
</tr>
<tr>
<td>Drive Off</td>
<td>Fold</td>
<td>Shatter</td>
</tr>
<tr>
<td>Fold</td>
<td>Folding Box</td>
<td>Window Grid</td>
</tr>
<tr>
<td>Peel Back</td>
<td>Page Turn</td>
<td>Z-Stretch</td>
</tr>
<tr>
<td>Rotary Cube</td>
<td>Peel Back</td>
<td></td>
</tr>
<tr>
<td>Z-Stretch</td>
<td>Projection</td>
<td></td>
</tr>
</tbody>
</table>

* This 2D transition, Adopted Video Overlay, is added to emulate a limited function of two video tracks, since the timeline editor has only one. As such, it automatically selects the maximum transition length possible for the two applied clips, i.e., the shorter length of the two clips; while all other transitions use the same default transition length defined on the timeline option page.
7.2 Add, Remove, and Replace Transitions

Transitions are managed in the Effect page of the Project Manager. Each transition is represented by an icon. Click the icon to view an animation of its function.

**To Add a Transition:**
1. Select the Effect page in the Project Manager.
2. Select a Transition you want to use.
3. Drag it to the Video track and drop it between two clips.

**To Add a Group of Transitions:**
1. Select the Effect page in the Project Manager.
2. Select the Transitions you want to use, with the help of the Shift or Control keys.
3. Click the right mouse button and select **Apply to Timeline**... from the menu.

**To Change the Length of a Transition:**
1. Select a timeline ruler scale so that the transition clip is clearly visible, e.g., select "5 second" from the timeline ruler menu.
2. Click the transition part of the clip display.
3. Move the pointer near one end of the transition until it changes into a two-directional box.
4. Click and drag the edge of the transition to the desired length. The steeper the curve, the shorter the transition.

**Note:** The initial length of a transition is always the same. To change the initial value for all transitions, go to the timeline Options page.

**To Remove a Transition:**
1. Select the transition.
2. Press the **Delete** key or select **Delete** from the context (right mouse button) menu.
To Remove all Transitions on the Video Track:
1. Right mouse click on the track control area on the left of the video track to open the track menu.
2. Select "Delete all transitions" from the track menu.

---

To Replace a Transition:
Select a new transition. Drag it from the Project Manager page, and drop it onto the transition.
Or select Properties from the clip menu to change it in the Transition Panel window as described in the next section.

---

### 7.3 Change Transition Length

You can change the length of a transition in two ways. One way is by using the mouse, and the other is via the context menu.

**Using the mouse**

1. Select a timeline ruler scale so that the transition clip is clearly visible, e.g., select "5 second" from the timeline ruler menu.
2. Click the transition part of the clip display.
3. Move the pointer near one end of the transition until it changes into a two-directional box.
4. Click and drag the edge of the transition to the desired length. The steeper the curve, the shorter the transition.
Via the context menu

1. Select a timeline ruler scale so that the transition clip is clearly visible, e.g., select "5 second" from the timeline ruler menu.
2. Right mouse click in the transition area, and select **Duration...** from the menu.
3. Enter your new duration value in the duration window.

![Timeline Ruler](image)

**Note:** the initial length of a transition is always the same, except for the newly added **video overlay** transition operator. To change the initial value for all transitions, go to the timeline **Options** page.

### 7.4 Using the Transition Panel

Access the Transition Panel by selecting **Property** from the context (right mouse button) menu on a transition in the Project Manager or on a transition in the Timeline.
Use the Transitions Panel to select a different transition and change its properties.

To change the current transition, select a different name from the list.

To change a transition's settings, select a different style, and enter the desired properties.

**Note:** Click the **Reset** button to revert to the original settings.

### 7.5 Adding Video Fades

Sometimes you may want to gradually bring up the images at the beginning of a movie, and then gradually blank out at the end. These video effects are called **"Fade In"** and **"Fade Out"**.

Unlike a video transition which involves two video clips, a video fade affects only one clip. To apply fades, select **"Fade..."** from a clip's context menu, as shown below.
Set the lengths of the fade-in and fade-out in the pop up window.

Add Default Fades

This menu selection lets you add fades to, or remove fades from all selected clips, using the default fades which you can change in the fade window.

When a clip has fades, the "Fade..." menu entry will be checked; and when the fades equal to the default values, the "Add Default Fades" menu entry will also be checked.

If the "Add Default Fades" menu entry is checked, select it again will clear the fades.

Note: You can set different default fades values for different tracks, i.e., the default fades of the 4 tracks are independent.
7.6 Transition Audio Mixing

A video clip usually includes both an image sequence and an audio soundtrack. When video transitions are applied to such clips, an audio mixing operation is also used. Select the appropriate audio mixing technique to produce the desired overall transition effect.

To select an audio mixing operator, right mouse click on the transition and choose from a list in the Audio Transition sub menu. The choices are: Cross Fade, Mix Equally, Mute, Cut at Middle, Use First Clip, and Use Second Clip.

7.7 Effect Clipboard: MyList

This page is used as a convenient place to hold those transitions and filters which are frequently used and whose parameters are different from the default values.

You may save the effect operators into a separate list file for a specific editing project.

Follow the steps below to select and add an effect operator to MyList.

1. Select the effect operator from the 2D or 3D Transition or Filter page.
2. Double click on the selected effect icon, make changes to the desired parameters, and then close the window.
3. Right mouse click on the selected effect icon, and select "Add to MyList".
4. You may change the name of the effect in the MyList window.
## 8 Adding Image Filters

### 8.1 About Image Filters

An image filter applies a selected image processing operation to alter the image data in order to achieve a desired visual effect, such as brightness, color contrast, zoom, and rotation.

Unlike a video transition, an image filter is applied to each individual video clip with the same operation to all its images. Furthermore, multiple image filters can be applied to the same clip.

Currently, MVW includes the following image filters, and more filters will be added in the future updates and new versions.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspect Ratio Converter</td>
<td>This filter is specifically designed to do image display format conversion between the standard TV format (4:3) and the widescreen TV format (16:9).</td>
</tr>
<tr>
<td>Blur</td>
<td>The Blur filter softens an entire image or a video clip, and is useful for retouching.</td>
</tr>
<tr>
<td>Brightness/Contrast</td>
<td>The Brightness/Contrast filter lets you make simple adjustments to the tonal range of an image or a video clip.</td>
</tr>
<tr>
<td>Clipper</td>
<td>The filter trims rows of pixels off the edges of the image, replacing the trimmed areas with a specified background color.</td>
</tr>
<tr>
<td>Color Balance</td>
<td>The Color Balance filter changes the overall mixture of colors in an image for generalized color correction.</td>
</tr>
<tr>
<td>Color Pass</td>
<td>The Color Pass filter converts a color video clip to grayscale, with the exception of a single specified color.</td>
</tr>
<tr>
<td>Color Replace</td>
<td>This filter lets you create a mask to select specific colors in an image and then replace those colors.</td>
</tr>
<tr>
<td>Cropper</td>
<td>The Cropper filter trims rows of pixel from the edges of the image and automatically resizes the trimmed clip to its original dimensions. You can crop by pixels or image percentage.</td>
</tr>
<tr>
<td>Diffuse</td>
<td>Diffuse Shuffles pixels of an image to soften focus.</td>
</tr>
<tr>
<td>Dynamic Brightness</td>
<td>The filter changes the brightness of an image (or images of a video clip) according to a piecewise linear curve.</td>
</tr>
<tr>
<td>Edge Feather</td>
<td>The Edge Feather filter lets you vignette the video in a clip by creating a soft black border on all four sides.</td>
</tr>
<tr>
<td><strong>Emboss</strong></td>
<td>The Emboss sharpens the edges of objects in the image and suppresses colors. The effect also highlights the edges from a specified angle.</td>
</tr>
<tr>
<td><strong>Fade</strong></td>
<td>The Fade adds gradual changes of brightness at the beginning and at the end of an image (or a video clip) according to selected styles of variation.</td>
</tr>
<tr>
<td><strong>Flip</strong></td>
<td>You can flip objects across their vertical or horizontal axis without moving their relative position on the stage.</td>
</tr>
<tr>
<td><strong>Hue / Saturation</strong></td>
<td>The filter lets you adjust the hue, saturation on a range of color weights for an image or video clip.</td>
</tr>
<tr>
<td><strong>Invert</strong></td>
<td>The Invert command inverts the colors in an image.</td>
</tr>
<tr>
<td><strong>Mosaic</strong></td>
<td>The Mosaic effect fills the corresponding region with solid-color rectangles, pixelating the original image.</td>
</tr>
<tr>
<td><strong>Noise Reduction</strong></td>
<td>The filter reduces the grainy appearance of images.</td>
</tr>
<tr>
<td><strong>Old Film</strong></td>
<td>The filter is used to achieve an &quot;Old cinema&quot; effect.</td>
</tr>
<tr>
<td><strong>Pan</strong></td>
<td>The filter is most useful to convert a still image into a motion video by simulating the process of camera motions over a still scene.</td>
</tr>
<tr>
<td><strong>Rotation</strong></td>
<td>The filter rotates an image (or images of a video clip) to a specified angle.</td>
</tr>
<tr>
<td><strong>Sharpen</strong></td>
<td>The Sharpen filter increases the contrast where color changes occur.</td>
</tr>
<tr>
<td><strong>Solarize</strong></td>
<td>The Solarize filter creates a blend between the negative and the positive of the same image, causing the image to appear to have a halo.</td>
</tr>
<tr>
<td><strong>Translation</strong></td>
<td>Use this filter to change the position of image on screen.</td>
</tr>
<tr>
<td><strong>Zoom</strong></td>
<td>The filter zooms the movie clip in or out by scaling it in the proportion you specified.</td>
</tr>
</tbody>
</table>

### 8.2 Add, Remove, and Replace Image Filters

Image Filters are managed in the Effect page of the Project Manager. Each filter is represented by an icon. Double click the icon to change the parameter settings for an image filter.
To Add an Image Filter:
1. Select the Effect page in the Project Manager.
2. Select the Filter page under the Effect page.
3. Select an image filter you want to use.
4. Drag it to the Video track and drop it on to a video clip. Please note the additional filter label displayed near the lower right corner of the clip.
Add Image Filters from the Clip menu:
1. Select a clip on the Video track.
2. Right mouse click on the selected clip to open the clip menu.
3. Select Video then Filter from the menu.

4. You can select filter from the left list to add it to the clip filter list on the right.

5. This is also the place to remove or replace an image filter from a video clip.
9 Using the Title Editor

9.1 About the Title Editor

The Title Editor is a simple text and graphics editor, which helps you create titles to add to your movies.

To launch the Title Editor, click the button on the Editor Toolbar.

9.2 Entering Text

To create a text title clip, select the Text page of the toolbox.

Use this toolbox page to format your text.

When creating titles for movies that will be shown on a television (rather than a computer), keep in mind that about 10-14% of the outer edge of the movie image will not be visible on the screen (an effect of "over scanning" in the television set's electronics). In this case, be sure to allow extra margin space around the text of your titles.
9.3 Drawing Graphics

To add graphics to your title clip, select the Graphics page of the toolbox.

- Draw lines.
- Draw rectangles.
- Draw circles.
- Draw rounded rectangles.
- Draw polygons.
- Enter text.
- Draw the graphic with both a border and fill.
- Draw the graphic with an interior fill only.
- Draw the graphic with a border only.
Set the border width of the selected graphic.

Set the border color of the selected graphic.
Set the fill color of the selected graphic.

Apply a gradient effect - shading - to the graphic. Check the Gradient checkbox, and then click the smaller squares within the gradient box to change the colors. Click the triangles outside the box to set the shading direction.

9.4 Adding Shadow to Graphics

To add shadow to a graphic element, select the Shadow page.

Set the shadow type of the selected graphic.

Apply a gradient effect to the shadow. Check the Gradient checkbox, and then click the smaller squares within the gradient box to change the colors. Click the triangles outside the box to set the gradient direction.
Set the shadow color of the selected graphic.

Set the horizontal distance that the shadow departs.

Set the vertical distance that the shadow departs.

Note: A shadow only applies to graphics. If you want to have a shadowed text, you should enter your text in the Graphics mode.

9.5 Graphic Layering and Screen Size

If you have two or more graphic elements that overlap, you may change the order in which they are stacked.

To move a graphic to a different layer, right-click on the graphic you want to move and select Bring Forward to move
the graphic to an upper layer, or select **Send Backward** to move the graphic to a lower layer.

In the same menu, select **Bring to Front** to move a graphic to the top layer, or select **Send to Back** to move a graphic to the bottom layer.

![Graphic Layer Menu](image)

To change the screen size of a title clip, select **Screen Size** from the menu, and then select a screen size from the list or enter your desired values.

![Screen Size Menu](image)

### 9.6 Adding Movie Effects

To add a movie effect:

1. Click and hold down the arrow button on the Movie Effect box.
2. Move the pointer to select your desired effect from the list.
3. Release the mouse.
4. Click the **Play** button to preview the movie effect.
5. Drag the slider to set the playing speed.

![Movie Effect Controls](image)

The list of movie effect:
9.7 Adding Titles to TimeLine

You can add a title clip directly from the Title Editor to the Timeline.

To Add a title to the Timeline:
1. Save the title as a text file (".wbt").
2. Click \[\text{Drag: sample.wbt}\] and drag it to the Title Track of the TimeLine Editor.

Note: The length of a title clip is pre-determined by the editor, whose default value is set to 5 seconds. You can change this default length on the TimeLine Options page.

Add a text on top of a movie clip:
The following is an example of using the title editor to add a text on top of a movie clip.
1. Create a text title using the title editor.
2. Add the text clip to the 2nd track of the timeline.

3. The result is shown below.

4. You can change the intensity of the text display by adjusting the Transparency parameter from the clip context menu.
5. In the transparency window, select a value between 0 and 100 to control the alpha blend mixing of the movie image and the text image.

Mathematically, the value defines the pixelwise operation as

\[ \text{result} = (1 - \alpha) \times \text{movie} + \alpha \times \text{text} \]

where \( \alpha = (100 - \text{transparency}) / 100 \); and the operation applies only to the text pixels.

With the selected value of 25, the resulting display becomes.
6. Note that the default selection for the transparency when combining a title clip with a video clip is "Use Transparent Color" found by "Automatic select mass color in the image", which is the background color in the above example.

"Mass color" is the color that has most pixels in the same image.

However, instead of the default "mass color" selection, you could select a different color by switching the "Use Transparent Color" to "User special color" and then select a color from the drop down color plate or any other color from the "Other Color..." window.

The example below shows the use of the special color selection to crop a rectangle out of the video image and set the background to a selected color.
7. Furthermore, you can add more control over the text display with the combination of the Movie Effect built in the title editor, and the Video Fades available for a video/image/title clip on the timeline.
10  Editing Audio and Mixing Sound

10.1  Editing Audio Clips

All audio and sound editing of clips is done on the Timeline. There are two audio tracks on the Timeline Editor, on which you may add your favorite MP3 songs and the sound tracks from CD's. All audio clips may be moved around, trimmed and edited in a similar fashion to that performed on video clips and still images. In addition to embedded audio in video clips, you may mix two more audio tracks into your movie production.

10.2  Using the Sound Line

To Edit Sound on the Sound Line:

1. Open the clip context menu by right-clicking on the selected video clip, selecting Audio, and then Edit Sound Line. Do your Sound Line editing before adding transitions between clips.

2. Create an edit point by double clicking the horizontal edit line. The point will be displayed as a small black point.

3. To adjust the audio level, drag the edit up or down. The volume line bends as it follows the mouse. An upward slope indicates an increase in volume, and a downward slope indicates a decrease.

4. You may delete an edit point by selecting Delete Point from the clip context (right mouse button) menu. Select Delete All Points to return the clip to its default state.
5. When you finish, select Close Sound Line Editor from the clip context menu.

10.3 Adjusting the Sound Volume

Unlike the sound edit line, which determines the volume at specific intervals, the audio volume control adjusts the sound volume for the whole audio track.

To Adjust the Volume:
1. Select Audio and then Volume Control from the clip menu.

2. Move the sliders up and down to adjust the volume.
3. Use the **Mute** buttons to silence a channel or the whole track.

### 10.4 Fading the Ends

Sometimes you may want to gradually bring up the sound at the beginning of a movie, and then gradually reach silence at the end. This effect is called an "audio fade".

**To Add an Audio Fade:**
1. Select **Fade...** from the clip's context (right mouse button) menu.
2. Enter a length value for each of the fades in one of the three Time Format choices.

10.5 Sound Normalization

The digital sound are created with 16 bit (signed) samples of sound track, which gives a maximum dynamic range in integral value from -32,768 to +32767.

When this is converted into the power representation, the dynamic range is roughly 90 dB, as frequently claimed by most digital audio equipment manufacturers, i.e.,

\[ \text{Dynamic power} = 20 \cdot \log_{10} (32,768) = 90.3 \text{ dB} \]

It frequently happens that a recording equipment is not properly normalized that the resulting digital sound does not utilize the full range of the 16 bit integral value, and resulting a very low original sound. Thus, enter the use of a sound normalization.

What we have implemented in MVW for sound normalization is the following:

1. Scan the whole MPEG file, decode the complete audio track, and find the maximum sound sample value (PCM_max).
2. Compute the amount of dynamic power that has not been fully used, i.e.,
   \[ \text{dP} = 20 \cdot \log_{10} (\text{PCM}_\text{max} / 32768) = 90.3 - 20 \cdot \log_{10} (\text{PCM}_\text{max}) \]
3. If dP is less than 0.5 dB, the audio track is considered to be fully utilized in its dynamic power range.
4. Otherwise, the sound track can be normalized by multiplying the sound track with a scaling factor determined by the value of the maximum PCM found, i.e.,
   \[ \text{dScale} = 32,768.0 / \text{PCM}_\text{max} \]
   where the value displayed in the dialog window is the value of dP in the unit of dB (decibel).
5. The "Details" in the Export window will also reflect the status of a sound normalization in the audio encoder map.

The following explains the usage of the sound normalization.
1. Select a clip to be normalized by clicking on the clip display.
2. Choose "Audio->Normalize..." from the right mouse button menu, or use the Alt+N key board shortcut.
It will popup the "Audio Sound Normalization" window.

3. The "Scan" button: this starts the process that decode the whole audio track of an MPEG file.

4. The static text window "Increase" displays the amount of sound dynamic power that has not been fully used, and could be used with a sound normalization.

5. The checkbox: "Apply the modification" allow the user to determine whether a sound normalization should be applied. If the box is unchecked, the sound normalization will NOT be applied, and the compressed audio track will be copied if there is no other sound modification.

6. The checkbox: "Close the window at completion". If the box is checked, the dialog window will be closed automatically by the editor after the completion of the scan process.
10.6 Show Audio Peaks

Audio peaks are curves drawn on a clip to indicate the relative volume of the sound over time, which could be used as a cue to identify specific locations of the audio with a particular characteristic such as silence or loudness.

In order to show the audio peaks, the editor will need to do a quick scan of the sound stream to collect enough statistics of the sound for drawing the curves with sufficient accuracy. This scanning process could be time consuming depending on the total length of the audio and the total size of the movie file.

To View the Audio Peaks:
Open the clip context menu by right-clicking on the selected video or audio clip, selecting Audio, and then View Audio Peaks.

Please note that if this is the first time for showing audio peaks for a clip and its corresponding movie file, the editor will scan the audio stream for the whole movie file. Once this scanning has been performed for a movie file, the audio peaks for a clip of the same movie file will be drawn instantly.

For audio with more than one channel, the peaks display can be divided into separate curves with the left channel on the top, and the right channel on the bottom.

You may use the context menu to change the display. For example, you may select to display only one (Left) of the two sound channels,
which results in the display shown below.
11 Export MPEG Movies

11.1 About Export

To save your edited project as a new MPEG file, use the Export tool.

Click on the Editor Toolbar to open the Export window.

The Batch switch opens and closes the Batch Export, which helps you manage a group of export jobs.

11.2 Examples of exporting an MPEG movie

Export the Timeline to a new MPEG movie

1. Press the button in the Timeline's Toolbox.
This will bring up a dialog window and you will be prompted for a file name.

2. Use the "Automatic" template.
Select the "Automatic" template. The editor will select the output encoders with minimum video re-encoding, and the export process will start automatically.

3. Use the "Custom" template.
If you want to make your own selection, or if you don't want to start the export automatically, select the "Custom"
4. Select the format for your MPEG file. For detailed explanation about the different MPEG file formats, please read the section on selecting an MPEG file format.

5. Select the range of the export.

There are two ways to define the range for the export. The range to be exported is shown as time values in the Start and End boxes. By default, Start/End are set as the complete duration of the movie in the Timeline. To export only the segment between the mark in and the mark out points in the Timeline, click Workarea. To reset Start/End to the entire movie, click All.
6. Switch to the **Monitor** page of the Export, and press the Start button to export the MPEG file.

7. Press **Pause** to suspend the export process, and press **Resume** to continue. Cancel the job by pressing the **Abort** button. Check or uncheck the **Preview** box to enable or disable the previewing of the output MPEG video.

**Export an editor project file (".wbp") to a new MPEG movie**

1. You can export an MPEG directly from a project file by loading the desired project file in the Export window.

   ![Export Window](image)

   *Press "Start" to build a MPEG-2 movie.*

   - **Project File**: `J:\\My\\\video\\\2episo-11.wbp`

   Click here to find your project file

2. You may also export an MPEG directly from a project file by selecting **Export** from the Project Manager.
Follow Step 3 through Step 7 of the first example listed above.

11.3 Selecting an MPEG file format

To select an MPEG file format, use the file format list on the General page.

The following are definitions of the MPEG file formats.
MPEG-1 Audio  Export only audio, and the output file will be audio data file. The actual audio file format will determined by the selection of audio stream type in the **Audio page**.

MPEG-1 Video  Export only video, and use the MPEG-1 video compression standard.

MPEG-2 Video  Export only video, and use the MPEG-2 video compression standard.

MPEG-1 System  This is the MPEG-1 multiplexed data format. It usually contains both compressed video and compressed audio data formatted with additional information for audio and video synchronization.

VCD (MPEG-1 System)  This is a special case of MPEG-1 Systems stream with a limited set of video, audio and compression parameters, mainly to facilitate the video distribution using a conventional CD-ROM disk.

MPEG-2 Program  This is an MPEG-2 multiplexed data format, very similar to MPEG-1 Systems format with minor changes and mainly for formatting MPEG-2 compressed video and audio data. This is the format used by the Digital Video Disk (DVD) format.

SVCD (MPEG-2 Program)  This is a special case of MPEG-2 Program stream with a limited set of video, audio and compression parameters, mainly an intermediate format temporarily used as a compromise between video quality and band width, and mostly out dated.

MPEG-2 Transport  This is another MPEG-2 multiplexed data format, and it is mainly used for transmission of multi-program MPEG-2 compressed contents over telecommunication channels, such as cable TV and satellite TV broadcasting.

### 11.4 The Encoder Map Display

One of the most important issues in MPEG editing is to ensure that the original video is NOT re-encoded. MPEG compression has its flaws: for every encoding processing, the image quality slightly degrades. For this reason, the Automatic should always be used for the "Save as type" selection, if you want minimal loss of image quality to result in the final MPEG output.

However, if you do select a different template for your output, if you have added a lot of video fades and transitions, or if you are not sure about your "Save as type" selection, you can check the **Encode Map display**.

The **Encode Map display** draws two colored strips for the export encoding selection, with RED color indicating re-encoding and BLUE color indicating stream-copy.

![Encode Map Display](image)

The above encode map is corresponding to a sample editor project as shown in the timeline blow. In this example, the
re-encoded sections are, starting from the beginning (left) to the end (right) of the timeline, 1 second fade-in, 2 second transition, 1 second fade-out, 5 second image plus text title, 1 second fade-in, 2 second transition, and 1 second fade-out.

Since the total length of the project is 75.74 seconds, and the total length of the re-encoded sections is about 13.00 seconds, the division of the two types of export are 17.20% re-encoding and 82.80% stream-copy, excluding the slight difference between video and audio due the rounding error and their different frame lengths.

You could open the encode map display during your selection for an export file name, by pressing the Detail button on the Save As file window.

You could also view the encode map display during or before an export job by pressing the Detail button on the Monitor tab of the Export window.
11.5 Using the Export Templates

The Export Template manager helps you manage your various MPEG export needs.

When you export a project from the Timeline, you will be prompted for a file name. In the Save As dialog box, you may select a template from the drop-down menu as shown below.

The menu comes with an initial list of 6 templates.

- **Automatic**: the editor will select an output setting with the least re-encoding
- **Custom**: the same as **Automatic** except that the export process will not start automatically,
and gives an expert the opportunity to specify various video and audio encoder properties

**VCD NTSC** Video-CD format for the NTSC TV system

**VCD PAL** Video-CD format for the PAL TV system

**DVD NTSC** default DVD format for the NTSC TV system

**DVD PAL** default DVD format for the PAL TV system

**AVI** AVI file format using VFW (Video for Windows) plug-in drives

**MP4** MP4 export for iPod and PSP devices.

One of the most important issues in MPEG editing is to ensure that the original video is NOT re-encoded. MPEG compression has its flaws: for every encoding processing, the image quality slightly degrades. For this reason, **Automatic** should always be used if you want minimal loss of image quality to result in the final MPEG output.

However, if you do select a different template for your output, use the **Details** button to view the re-encoder maps, which will show how much re-encoding will be done on the project export.

In addition to the 7 initial templates, you can design and add your own templates to the list. This is accomplished by pressing the **Template** button and working with the **Recorder Template Manager**.
Once you set the parameters for your new template, select **Close**. The new template name will now appear as a file type in the **Save As** dialog box.

### 11.6 Advanced: Video Settings

You don't need to be an MPEG expert to use the **Video** page. This window gives you full control over Womble software MPEG video encoder.
The following are definitions of the properties.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
<td>Select the video clip you want to use as the template for the video encoder. Movie clip choices must be on the Timeline. All videos will be saved in the same settings as the reference clip, unless you override the values by changing the entries on the Video page.</td>
</tr>
<tr>
<td>Format</td>
<td>Choose one of the two MPEG video encoder standards.</td>
</tr>
<tr>
<td>Resolution</td>
<td>Specify the height and width in pixels for the output image size.</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>Select a frame rate for the video playback.</td>
</tr>
<tr>
<td>Bit Rate</td>
<td>Set a bit rate for the video encoder. The units are kilo-bits. Note that the bit rate for VBR (variable bit rate) encoding is the peak rate, i.e., the maximum average bit rate over one or two seconds. A rule of thumb for the total average bit rate of a VBR encoding is about 60% - 75% of its peak rate.</td>
</tr>
</tbody>
</table>

**Lock control:**
A lock is used to fix an encoder parameter together with the "Automatic" template selection for an export. This is useful in cases when you need to export several projects with one encoder parameter fixed to a particular value. When a lock is set, the editor will first select the export encoder parameters based on the "Automatic" template, and then select the lock value for the locked encoder parameter. For example, suppose you lock the video format to MPEG-2, and suppose you have a project with mostly MPEG-1 video contents. When you export this project with the "Automatic" template, the editor will first select the encoder parameters based on the criterion of minimizing video re-encoding, which results in an MPEG-1 video format. But since you have locked the video format to MPEG-2, the editor will change the selected video format from MPEG-1 to MPEG-2 for the export.

To lock or unlock a lock, click on the lock icon using a mouse.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock</td>
<td>Fix the encoder parameter to the selected value for the &quot;Automatic&quot; export.</td>
</tr>
<tr>
<td>Unlock</td>
<td>Release the lock, and the encoder parameter can be changed.</td>
</tr>
</tbody>
</table>

**Note:** The lock will be automatically released whenever a selection is made from the list of the export templates.
If you are an MPEG expert, you may want to use the **Expert** window to specify more advanced video encoder parameters.
The following are definitions of the additional parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm</td>
<td>Choose this to trade compression efficiency (with a smaller search distance) with computation speed. However, other than for testing, you should use the default.</td>
</tr>
<tr>
<td>Horizontal Distance</td>
<td>This is the horizontal search distance in pixels between two consecutive frames.</td>
</tr>
<tr>
<td>Vertical Distance</td>
<td>This is the vertical search distance in pixels between two consecutive frames.</td>
</tr>
<tr>
<td>Temporal Noise Reduction</td>
<td>Improve compression efficiency by reducing the random noise from the video recording device.</td>
</tr>
<tr>
<td>Scene-Change Detection</td>
<td>This will improve compression efficiency by starting a new GOP at a scene change.</td>
</tr>
<tr>
<td>Inverse Telecine</td>
<td>Use this process to restore the original movie film frame rate (24 fps) after converting it for TV (30 fps).</td>
</tr>
<tr>
<td>Closed GOP</td>
<td>Improve the vertical resolution of interlaced image frames.</td>
</tr>
<tr>
<td>GOP Size</td>
<td>All B-frames in one GOP will reference only I- and P-frames of that same GOP.</td>
</tr>
<tr>
<td>PAR</td>
<td>Pel Aspect Ratio: pixel display format used by video hardware.</td>
</tr>
<tr>
<td>Field Order</td>
<td>This is used only for an MPEG-2 video for which you may want to change the display order of an interlaced frame. For most MPEG-2 video with repeated fields, this will be disabled.</td>
</tr>
</tbody>
</table>

### 11.7 Advanced: Audio Settings

MPEG Video Wizard has a built-in MPEG-1 audio software encoder, which is capable of compressing any audio track into an MPEG-1 Layer-II audio stream.

Please note that MPEG Video Wizard does not have AC-3 audio encoder, and its audio editing is limited.

However, **MPEG Video Wizard DVD** has a built-in Dolby AC-3 consumer software encoder, which is capable of compressing any audio track into a 2 or 5.1 channels AC-3 audio stream.

Compared to the video encoder, the audio encoder has far fewer parameters that may be adjusted.
The following are definitions of the properties.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
<td>Select the audio clip you want to use as the template for the audio encoder. Audio clip choices must be on the Timeline. All audio will be saved in the same settings as the reference clip, unless you override the values by changing the entries on this Audio page.</td>
</tr>
<tr>
<td>Format</td>
<td>Choose one of the five audio encoder formats. Please note that not all MPEG files accept AC-3 and Linear PCM audio. Linear PCM is limited to an MPEG-2 Program file, and AC-3 audio MPEG-2 Program and Transport files. Also note that by selecting AC-3 or Linear PCM, the MPEG file format on the General page may be automatically changed.</td>
</tr>
<tr>
<td>Channels</td>
<td>Select a channel setting, for which the AC-3 5.1 is only selectable when the format is AC-3.</td>
</tr>
<tr>
<td>Bit Rate</td>
<td>Set a bit rate for the audio encoder. Unlike the video setting, you cannot set an arbitrary bit rate value for the audio, but must select one from Bit Rate list.</td>
</tr>
</tbody>
</table>

**Lock control:**

A lock is used to fix an encoder parameter together with the "Automatic" template selection for the export. This is useful in cases when you need to export several projects with one encoder parameter fixed to a particular value. For example, you can lock the audio encoder to an AC-3 5.1 encoder, and use the "Automatic" template for export all your editing projects, for which the editor will still select parameters for the video encoder to minimize video re-encoding.

To lock or unlock a lock, click on the lock icon using a mouse.

- **Lock**: Fix the encoder parameter to the selected value for the "Automatic" export.
- **Unlock**: Release the lock, and the encoder parameter can be changed.

**Note:** The lock will be automatically released whenever a selection is made from the list of the export templates.
11.8 Batch Export Manager

Since an export job usually involves a time consuming MPEG encoding process, Batch Export is an indispensable tool when you need to do a large number of export jobs.

The Batch Export manager is an extension of the Export window controlled by a switch button near the bottom of the main Export window.

The functions of the Batch window buttons are listed below.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="add.png" alt="Add" /></td>
<td>Add the current export job to the batch list.</td>
</tr>
<tr>
<td><img src="update.png" alt="Update" /></td>
<td>Update the batch job for the changes being made in the Export settings. This is enabled only when the job in the Export settings is the batch list item.</td>
</tr>
<tr>
<td><img src="start.png" alt="Start" /></td>
<td>Start the export job for the selected batch list item.</td>
</tr>
<tr>
<td><img src="start_all.png" alt="Start All" /></td>
<td>Start all the selected export jobs in the batch list.</td>
</tr>
<tr>
<td><img src="save.png" alt="Save" /></td>
<td>Save the batch job list as a batch list (text) file.</td>
</tr>
<tr>
<td><img src="load.png" alt="Load" /></td>
<td>Load a batch list file to fill the batch job list.</td>
</tr>
<tr>
<td><img src="open.png" alt="Open" /></td>
<td>Open project files and add them to the batch job list.</td>
</tr>
<tr>
<td><img src="delete.png" alt="Delete" /></td>
<td>Delete the currently selected batch job item from the list.</td>
</tr>
<tr>
<td><img src="delete_all.png" alt="Delete All" /></td>
<td>Delete all items off the batch list.</td>
</tr>
<tr>
<td><img src="move.png" alt="Move" /></td>
<td>Move the selected item up or down in the batch list.</td>
</tr>
</tbody>
</table>
Steps to change export settings for a group of batch jobs:
1. Start with loading one of the batch job into the Export manager, by double clicking on the corresponding row in the batch list.

2. Make changes to the export settings in the Export manager.

3. Select the batch jobs to which you want to apply the export settings, by using the mouse and the Shift or Control keys.

4. Click the right mouse button on the batch list, and this brings up a small menu for the batch job control as shown below.

5. Select "Apply to All", and click the left mouse button.

6. To verify this operation, you can double click on any one of the selected batch jobs and notice that the export settings are the same.

Hint: To change the export file directory for a group of export jobs, use the above steps 3 and 4, and then proceed to select "Change output directory".
11.9 Loading MVW Project in Other MPEG Encoders

Using the VFAPI MPEG encoder API, you can use an MPEG encoder in other MPEG editors that support the VFAPI to export an editing project from MPEG Video Wizard. This gives you the opportunity to export an MVW project to an output format for which MVW does not support.

Since the installation of MVW includes a VFAPI driver, you could simply open a ".wbp" file within other MPEG encoders.

Sometimes, you may need to enable the import of a ".wbp" file by manually selecting the corresponding item for "MPEG Video Wizard Project File (*.wbp)" in the "Settings..." or "Preferences" of the MPEG encoder. An example is given for the TMPGEnc MPEG encoder.
12 Exporting MPEG-4 movies

12.1 Steps to export an MPEG-4 movie

Steps to export an MPEG-4 movie are:

1. Press the button in the Timeline's Toolbox.

2. In the save file dialog window, click on the "Save as type" drop-down list, and select "MP4".

3. Select an MPEG-4 format.

In the MPEG-4 Export window, you may select one of the 4 output file formats.

- **Apple iPod** to import into and play on an iPod.
- **Sony PSP** to import into and play on a Sony PSP (Play Station Portable).
- **MPEG-4** standard MPEG-4 format without formatting specific to a hardware device.
- **Quicktime MOV** MPEG-4 format with additional Apple Quicktime formatting.
4. Set video encoder parameters in the Video page.

5. Set audio encoder parameters in the Audio page.

6. Finally, press the Start button to export the movie.

12.2 Add MPEG-4 movies to your iPod

1. Build your MPEG-4 movie and export it with the Apple iPod format by following the Steps to export an MPEG-4 movie.
2. Prepare your iPod.

Open iTunes on your PC, and add your MPEG-4 movies into the iTunes Library.
Plug in your USB cable and connect your iPod to your PC. Notice that your iPod appears in the Source list on the left side of the iTunes window.

3. Sync movies to Your iPod.

Right mouse click on the iPod item in the Source list, and select "Update".

Watch as Movies automatically copy from your iTunes Library to your iPod, and notice the "Do not disconnect" message in the iTunes window and on your iPod, as well as the progress report message.

When iTunes has finished updating your iPod, the iTunes window, and the main menu on your iPod will indicate that the update is complete. Now, you may click the eject button next to the iPod in the Source list, disconnect your iPod, and ready to watch the movies.

12.3  Add MPEG-4 movies to your PSP

1. Build your MPEG-4 movie and export it with the Sony PSP format by following the Steps to export an MPEG-4 movie.

Note that the MPEG-4 movie for PSP must be named M4V*****.MP4 or MAQ*****.MP4 to be recognized by the PSP; and the '*' in the file name represents a number from 0 to 9. Files that named M4V*****.MP4 are MPEG-4 files with Xvid video codec and should be placed in the "100MNV01" folder. Files that named MAQ*****.MP4 are MPEG-4 files with H264 video codec and should be placed in the "100ANV01" folder.

Note also that a thumbnail image file (".THM") is automatically created by the MPEG-4 movie export process and is used as the movie icon by the PSP display.

2. Prepare your PSP.

First, insert the Memory stick into your PSP, and connect it to your PC with the USB cable.

Then, turn ON the PSP, and select the "USB Connection" in the PSP settings.

Now, open "My Computer", and you should see a new disk icon.

If this is not the first time to use the PSP, please skip the following and go to Step 3.

Double click on the new disk folder, create a new file folder, and name it as "MP_ROOT".

Double click again on the newly created (or existing) "MP_ROOT" file folder icon, create two new file folders, and name them "100MNV01" and "100ANV01".

3. Copy the MP4 movies into your PSP.

Copy the MP4 movies with Xvid video codec and THM files to your PSP's \MP_ROOT\100MNV01 folder. And copy the MP4 movies with H264 video codec and THM files to your PSP's \MP_ROOT\100ANV01 folder.
When it's done copying, press the 'X' button on the PSP to disconnect the USB connection and unplug the cable. Move over to the "Video" section on the PSP's menu and press the 'O' button. A list of the movies is now displayed on the PSP window, and you are ready to watch the movies.

12.4 MP4 Batch Export Manager

Since an MPEG-4 export job also involves a time consuming MPEG encoding process, the MP4 Batch Export is an indispensable tool for managing a large number of export jobs.

Similar to MPEG Batch Export Manager, the MP4 Batch Export is an extension of the MP4 Export window controlled by a switch button near the bottom of the main Export window.

The functions of the Batch window buttons are listed below:

- Add the current export job to the batch list.
- Editing the selected batch job item in the Export settings.
Update the batch job for the changes being made in the Export settings. This is enabled only when the job in the Export settings is the batch list item.

Start all the selected export jobs in the batch list.

Stop the batch export processing.

Pause the batch export processing.

Open project files or load a batch list file to fill the batch job list.

Save the batch job list as a batch list (text) file.

Delete the currently selected batch job item from the list.

Delete all items off the batch list.

**Steps to use the MP4 Batch Export Manager?**

1. Click the button to open the project files and add them to the batch job list.

2. Also, you can click the to add current editing project into batch job list.

3. Edit the item of batch job list.

   1) Start with loading one of the batch job into the Export Manager, by double clicking on the corresponding row or clicking the button.

   2) Make changes to the export setting into the Export Manager.

   3) Update the current batch job for the changes being made in the Export settings by clicking the button.

4. Click the to start the batch job list.

### 12.5 Format References

**XviD**

Reference 1: [http://www.xvidmovies.com](http://www.xvidmovies.com)

XviD is the name of a popular new video codec being developed as an open source project by volunteer programmers from all over the world. The format was created to offer a free alternative to other commercial video codecs, and despite being open source its quality and efficiency has made it one of the most popular video codecs online. While XviD still isn't as widely used as DivX, playback of XviD movies is usually supported in new DVD players nowadays. The XviD codec makes it possible to compress a full-length DVD-quality movie enough to fit on a single CD (might require 2 CDs depending on the length of the movie), while still maintaining the original image quality. Despite the fact that XviD movies offer higher quality video at smaller file sizes they take less time to encode than MPEG-2 due to the incredible compression technology. The video is usually combined with MP3 or...
AC3 audio to enable both high quality video and audio. These factors and the fact that the codec is distributed for free has contributed to the success of the format.

- Reference 2: [http://www.xvid.org](http://www.xvid.org)
  XviD is an ISO MPEG-4 compliant video codec, so designed to compress/decompress digital video. It's a open source project, which is developed and maintained by a handful of skilled and interested engineers from all over the world.

### H.264

  QuickTime 7 features a state-of-the-art video codec called H.264, which delivers stunning quality at remarkably low data rates. Ratified as part of the MPEG-4 standard (MPEG-4 Part 10), this ultra-efficient technology gives you excellent results across a broad range of bandwidths, from 3G for mobile devices to iChat AV for video conferencing to HD for broadcast and DVD.

  H.264, also known as MPEG-4 AVC (Advanced Video Coding), is a video compression standard that offers significantly greater compression than its predecessors. The standard is expected to offer up to twice the compression of the current MPEG-4 ASP (Advanced Simple Profile), in addition to improvements in perceptual quality. The H.264 standard can provide DVD-quality video at under 1 Mbps, and is considered promising for full-motion video over wireless, satellite, and ADSL Internet connections.

### AAC (Advanced Audio Coding)

- Reference 1: [http://www.mpeg.org](http://www.mpeg.org)
  AAC (Advanced Audio Coding) is one of the audio compression formats defined by the MPEG-2 standard. AAC used to be called NBC (Non-Backward-Compatible), because it is not compatible with the MPEG-1 audio formats. MPEG-2 also defined another audio format called MPEG-2 Multichannel or MPEG-2 BC (Backward Compatible), which is compatible with MPEG-1.

- Reference 2: [http://www.cdlabs.co.uk](http://www.cdlabs.co.uk)
  AAC (Advanced Audio Coding) Also called MPEG-4 AAC, this audio codec is the continuation of the MP3 codec created by Fraunhofer-Gesellschaft. Due to advances in the technology, AAC files encoded at a 96 kbps bit rate sound slightly better than MP3s encoded at 128 kbps.
13 DVD Maker

13.1 About the DVD Maker

This is a simple but full featured DVD authoring tool that lets you quickly convert MPEG video files into a DVD video file system ("VIDEO_TS") ready to be burned onto a DVD disc and played with a standard DVD player.

One major feature of this DVD editor is its ability to minimize video re-encoding, a process that is not only time consuming, but also causing video quality degradation. For example, you can create a DVD disc that contains both NTSC and PAL movies without video re-encoding.

The tool also lets you create DVD menu with a complete function set that includes multiple video titles and motion video background.

With the help of the menu template list, you can build a sophisticated DVD menu with only a few mouse clicks, and you can add your own menu design, reuse it, and even share it with other users.

Generally, you build your DVD with the following steps.

1. add video content;
2. add DVD menu;
3. export DVD video.

For a step by step example, please go to Quick Start.

DVD Editor window layout

The DVD Maker can be launched from the button on the Taskbar; it can also be started from Timeline's tool box.

The DVD maker has three main functional parts: a DVD Project Manager, a DVD menu layout and preview window, and a DVD menu design control box.
**13.2 Quick Start**

In the following, we build an example DVD project step by step to give you a quick start on its usage and to illustrate the main features of the DVD editor at the same time.

1. **Add video**

Start a new DVD project to put the DVD trees in a blank state.
Right mouse click on the video tree icon, and select "Add title..." in the context menu.

![DVD Project Manager interface](image)

In the open file dialog, check the box for "**multiple titles with one title per clip**", and select two MPEG video files.

![Open dialog for video files](image)

Add a number of chapters to the video titles by right mouse clicking on the video tree icon, and select "**Add Equal Length Chapters...**".
In the add chapter window, select a chapter number (e.g., 4) and press OK.

Here's the video tree after adding the chapters, and our DVD project now contains two video titles, each of which have four equal length chapters.

Please note that you can also add an editor project file as a video title, and you can add chapters by using markers on the timeline, or by adding equal length chapters, or by setting them manually, or by reading a list of time codes.
2. Add menu
The quickest way to add a DVD menu is to use the menu template. Right mouse click on the menu icon, and select "Template...".

In the menu template list window, select the Text menu template, and press OK.

We now have created a DVD menu with three menu pages: one main menu page, and two chapter menu pages for the two video titles, respectively.
You could add more to the menu with background video and background music, as well as motion video buttons. But for this sample project, we will use the first menu template.

3. Export DVD Video
Before proceeding to start the export job, you should check the encoder settings, by pressing the encoder button near the lower right corner of the DVD editor window. This brings up the encoder setting window.

By selecting different video title in the list on the upper left of the encoder settings window, you can check and set the encoder settings for each of the video title, such as setting the language identification for the audio.

Please note that the Automatic button may be pressed if the encoder settings is not for the minimum video re-encode selection.
Then, you save the project to a DVD project file (.wbd).

Now, we proceed to export the DVD video.
Depending on the total size of the DVD project and the amount of video re-encoding, the export job may take from a few minutes to several hours.

At the end of the export job, a VIDEO_TS file folder is created which contains the complete DVD movie and the menu.

We highly recommend that you should preview the exported DVD video with a software DVD player such as WinDVD or PowerDVD.

If everything is OK, you may proceed to burn it on a DVD disc by following the steps in the section on Burning a DVD Disc.

13.3 Working with DVD Project Files

Like an editor project with a "wbp" file, a DVD project is always associated with a DVD project file identified by the "wbd" file name extension.

A DVD project file is a text file created by the DVD maker to save your DVD video and menu design. It stores your video organization with titles and chapters, and it stores your menu design with menu page names, menu page layouts, page background color settings, chapter text attributes, chapter thumbnail image selections, and more.

Similarly, DVD project files are managed using the same file operations as those used for the management of editor project files.

To start a new DVD Project

1. Open the DVD Maker by click the button on the Taskbar.

2. Select  to start a new DVD project, and this will clean up the DVD menu list and the menu display.
3. Now, you can drag and drop an editor project file (.wbp), or a set of video clips, onto the DVD menu layout/preview window.

4. You can also start a new DVD project by pressing the DVD export button on the timeline, which will use the current editor project.

To open a DVD Project

1. Click the in the DVD Maker.

2. Select a DVD Project file (.wbd), or an editor project file (.wbp).

3. You can also open a DVD project by simply dragging and dropping a DVD project file (.wbd) onto the DVD menu layout/preview window.

Please note that if any video and/or audio clips in a DVD project are missing, the opening of the DVD project will be failed.

To save a DVD project

Click the in the Timeline's toolbox, and follow the normal file saving steps.
To update a project

Click the [button].

This will save all changes made to the current project file.

For a complicated DVD project, you should save (Update) often to protect your work from any accidental loss.

### 13.4 Managing Video

#### 13.4.1 Video Tree

The video tree on the DVD Tree list page is the main place for adding and managing the video content of your DVD project.

A direct way to add video is to drag and drop video files from a Windows Explorer onto the DVD editor window.

Another way to add video is by opening the context menu with a right mouse click on the video tree icon and selecting "Add title."
In the open file dialog, select your MPEG video files. Note that you may check the box for "**multiple titles with one title per clip**" if you want to create one video title for each video file.

Now, the video tree shows the structure of video titles and their chapters. When the video tree is the current selection of the DVD tree, the DVD maker window on the right is in the video preview, and it is ready for video playback and chapter adjustment.
The basic unit of the video tree is a video title, and a DVD project has one or more video titles.

There are three types of construction for a video title. In the example shown above, each video title is a video file with a number of equal length chapters.

A video title can also be an editor project file (".wbp").

It can also consist of a set of video clips.
Video Title Context Menu

The context menu for a video title is accessed by right clicking on the title icon in the video tree list.

**Title 1**

- **Add video...** To add video clips to the title. Note that this entry is not available for a title created with an editor project file (".wbp").
- **Edit label** To ready the page label text for editing.
- **Delete** To remove the video title from the video tree.
- **Create menu pages...** To bring up the menu template list and create menu pages with your selected template.
- **Add equal length chapters...** To add chapter markers from the beginning to the end with equal distance.
- **Delete all chapters** To remove all chapters except the first chapter.
- **Load chapters list...** To read a list of time codes and use it to set the chapters.
- **Save chapters list...** To save the chapters of the video title to a text file.
- **First play** To set the DVD player control so that this video title will be played before any other video when the DVD is loaded in a standard DVD player.
- **Encoder settings...** To bring up the encoder settings window where you may change the video and audio encoders for the video.
13.4.2  Video Title

A video title is a unit describing one complete movie contents in the DVD file system. It is a part of the file system that enables the flexible control and the versatile ways of movie presentation of a DVD program.

In this DVD editor, a video title is a unit that can have its individual encoder settings, so that one DVD project may contain movie contents which are created from different TV systems. Most importantly, it enables the editor to further reduce the need for video re-encoding.

For example, you may create a DVD project with one video title of NTSC movie and another video title of PAL movie.

As indicated in the encode maps for the two video titles, they are all stream copy and no video re-encoding.

Similarly, you can use the video title to manage the cases when you have MPEG video contents recorded from very different encoder settings, such as the case of a DVD project with one standard DVD video and another with HDTV recording.
13.4.3 Adding Chapters

A chapter in the DVD is defined by a Chapter Marker, which is a reference frame in the exported video.

In the MVW, we use Markers set on the timeline as the default Chapter Markers when the editor project is selected for DVD export.

Alternatively, you can also edit the Chapter Markers in the DVD Maker.

**To add equal length chapters:**
1. Right mouse click on the icon of the select video title under the DVD Tree list, and select "Add equal length chapters....".
2. Select a number, or select a length, and press OK.

![Automatically Add Chapters](image)

- **Number of chapters:** [8]
- **Chapter length:** [3] Minutes

**Total Length:** 16.84 Minutes

OK Cancel

This will add the specified number of chapters, which also replace all the previous chapters.

![DVD Tree](image)

**To set a chapter marker manually:**
1. Switch to the Preview mode by clicking on the VTS Tree or on a chapter node under the VTS Tree
2. Use the Control Buttons to add, remove, or jump to a chapter
3. You can also use the timeline slider, the mouse wheel, and the arrow keys to find a chapter frame.
start or stop a forward playback

add or clear a chapter marker

jump to the chapter that is closest to the current frame

**Time code:** current playback position

**Length:** total length of the clip or the VTS

**Mute:** silence the audio

**Volume:** adjust sound volume by holding down and dragging the left mouse button

**To read a list of time codes and use it to set the Chapters:**
1. Right mouse click on the DVD Tree page and select "Load Chapters List..."

| Add title... |
| Add equal length chapters... |
| **Load chapters list...** |
| Save Chapters List... |
| Encoder Settings... |

2. Find the chapters list file (e.g. *.ifo, *.chp, *.txt) and press Open; chapters will be created.

**To save the chapter list to a text file:**
1. Right mouse click on the DVD Tree page and select "Save Chapters List..."

| Add title... |
| Add equal length chapters... |
| Load chapters list... |
| **Save Chapters List...** |
| Encoder Settings... |

2. Select a file name to save the chapters list (".txt") and press Save; the current chapter list will be saved as a text file.
13.4.4 First Play

As you may have already noticed, a DVD player starts playing automatically whenever a new DVD movie disc is inserted.

For a standard commercial DVD movie, it usually starts with a copyright message, or frequently, with the main menu.

This is set by the "first play" control, which instructs the player to play the selected video title before anything else.

To set the "first play", right mouse click on the icon of the selected video title under the video tree, and select the entry.

When the "first play" is set for a video title, you may also want to set a proper "end action" so that at the end of ("first") playing the video title the DVD player will be at your desired video, such as returning to the main menu page. This can be done from the additional entry in the context menu.
If the "first play" video title has an "end action" of "continue play", the playback sequence of the DVD will circle through the whole video tree, and return to the menu.

Please also note that the default selection of the "first play" is the menu.

### 13.5 Adding Menu Pages

#### 13.5.1 Menu Tree

As demonstrated in the example of Quick Start, the easiest way to add menu to your DVD project is to select a menu from the template list.

To select a menu template, right mouse click on the top icon of the menu tree and select "Template..."."
Select a template from the list window, and the editor will create a menu system automatically.

The menu tree is a "tree" view for the menu pages and their chapters. When the menu tree is the current selection of the DVD tree, the DVD maker window on the right is ready for the menu layout and design.

Menu pages are the basic units of a DVD menu design, and they are independent of each other. The only connection between two menu pages are those menu buttons which link to different pages. As shown in the example above, the two buttons "Page 2" and "Page 3" under on the menu page "main menu" are linked to the 2nd menu page ("Page 2") and to the 3rd menu page ("Page 3"), respectively. Similarly, the button "main menu" under the menu page "Page 2" is linked to the 1st menu page ("main menu").
When the menu is played on a DVD player, only the 1st menu page on the top of the menu tree will be displayed. In order to access other menu pages, links must be created from buttons on the 1st menu page to the other pages; otherwise, those other pages may become inaccessible.

**Context Menus**

There are two context menus which can be used to control and change the various properties of a menu page.

The first is the context menu under the menu page tree, and accessed by right clicking on the page icon in the menu tree list.

<table>
<thead>
<tr>
<th>Add a new page (append)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page style...</td>
</tr>
<tr>
<td>Cut</td>
</tr>
<tr>
<td>Copy</td>
</tr>
<tr>
<td>Paste</td>
</tr>
<tr>
<td>Delete</td>
</tr>
<tr>
<td>Edit label</td>
</tr>
<tr>
<td>Hide all buttons</td>
</tr>
<tr>
<td>Move up</td>
</tr>
<tr>
<td>Move down</td>
</tr>
<tr>
<td>Background display...</td>
</tr>
<tr>
<td>Background music...</td>
</tr>
</tbody>
</table>

**Add a new page (append)** To add the new menu page to the end of the menu, using the same page style as that of the last created page.
Page style... To change the page style from the list of page templates.
Cut To copy the selected page (Copy) first, and then remove it from the list (Delete).
Copy To copy the selected page and save it in memory to be used for a Paste operation.
Paste To add a new page which is the same as the page saved by the last Copy or Cut operation.
Delete To remove the selected page.
Edit label To ready the page label text for editing.
Hide all buttons To make all buttons on the page invisible.
Move up To move the selected page above its upper page.
Move down To move the selected page below its lower page.
Background image... To select an external image file as the menu background image, and this equivalent to click on the image browse button.
Background music... To select an audio as the menu background music, and this equivalent to click on the browse audio button.

The second context menu is accessed by right clicking in the menu display and editing window.

Page 1
Insert a button...
Insert a picture...
Insert a text
Hide all buttons
Select All Ctrl+A
Save to MyTemplate...
Save to MyTemplate and set as default...
Page style...

Page 1
This is not a menu selection, but displaying the page label.
Insert a button... To add a chapter button from the button properties dialog window.
Insert a picture... To add an external image on the menu page.
Insert a text To add a text field on the menu page.
Hide all buttons To make all buttons on the page invisible.
Select all To select all items on the menu page.
Save to MyTemplate... To save the current menu page design to the list of user-defined templates.
Save to MyTemplate and set as default... To save the current menu page design to the list of user-defined templates, and set it as the default menu template.
Page style... To select a new page style from the menu page templates list.

13.5.2 Menu Templates

A menu template lets you use a menu design repeatedly, and saves your own menu design for later use.
The DVD maker manages two sets of menu templates: pre-defined templates, and user-defined templates.

Pre-defined Menu Templates
Currently, the DVD Maker has the following Pre-defined Template:

- "No Menu" Create the DVD without menu.
- "Text" menu template uses only text buttons.
- "Image Chapter" uses both image and text.
- "Image" uses only image buttons.
- "None Chapter Button" uses a single Play button on each page.
- "Main plus Chapter Menu" uses a combination of "Main Menu" and "Chapter Menu".
- "Movie Index" uses a combination of a "Main Menu" and multiple "Sub Menu" pages each of which is defined for a movie clip.

You may use the context menu to change the menu property such as chapters per page, to apply a menu to the current project, and to select it as the default template.

The context menu is accessed by a right mouse click on the template icon image.

- **Apply Selected Template**
  - Apply the selected template to the current DVD Project. Or double click on the selected template icon image.
- **Set As Default**
  - Set the selected template as the default menu template.
- **Property**
  - Display the various parameters of the menu template, including the number of Chapters per menu page, etc.

**User-defined Templates**
This is a list of DVD menu templates that you have designed and saved.
The context menu for the user-defined templates has several additional controls for you to manage the template list.

- **Import from a wbd file...** Create a user-defined DVD menu template using the design from the DVD project, and add it to the MyTemplate list.
- **Delete** Remove the selected templates from the list.
- **Select All** Select all items in the list for further operation, such as delete.
- **Load list** Read a saved template list and replace the list.
- **Save list** Store the current list to a disk file, which can be loaded back with the **Load** list.
- **Clear list** Delete all items in the list.

Please note that the menu templates, both pre-defined and user-defined, can also be accessed from the **Menu Tree**.

### 13.5.3 Page Templates

Similar to the example given in **Quick Start** for adding DVD menu pages, another quick way is to use the menu templates as shown by the following steps.

1. Open the menu context menu by right mouse clicking on the menu tree icon, and select "**Add a new page**."
This will add an empty page to the menu list.

2. Select a page style from the list of page templates by select "Page style..." from the menu context page.
3. Select your page style (e.g., "Image"), and press OK.

4. This sets the new page to the selected menu page style.

Additionally, you may want to add background image (video), and add background music.

13.5.4 Setting Background Image

Selecting an image as the background
First, click on a selected page branch in the page list to start editing the menu page, as shown below.
In this case, an default background image is used for the page.

Since each pre-defined menu has a different background image, you can interchange the default background image by clicking on the down arrow button, and then selecting one from the drop down list.

Secondly, you can also use one of your own images as the menu background by clicking on the "Browse" button.

And follow the file open steps in the pop-up window.
Selecting a color as the background

If you don't want to use an image as the menu background, you can select a color using the following steps.
1. Click the down arrow.
2. Select "Fill Colors..."

3. Select a color in the pop-up "Color" window.

4. Click OK, and the menu background will be filled with the selected color.
Note: If a background image is modified by an external image editing software, you may press the F5 function key to inform the DVD editor to reload the image file.

Selecting a motion video as the menu background

You can add video to the menu as a motion video background with the steps below.
1. Click on the "Browse" button.

![Selecting a motion video as the menu background](image)

2. Follow the file open steps in the pop-up window.

![Selecting a motion video as the menu background](image)

3. If the selected video also contain sound, it will also be automatically selected and set as the background music.

![Selecting a motion video as the menu background](image)

4. The additional controls for applying the video can be accessed by clicking on the "Trim background video..." button (the red marked scissor icon).

![Selecting a motion video as the menu background](image)
5. Then, make change in the dialog window.

6. Lastly, you can revert the background to an image display from the drop down menu.

13.5.5 Adding Background Music

You can add audio to the menu as a background music with the steps below.

1. Click on the "Browse audio file" button.

2. Follow the file open steps in the pop-up window.
3. Reversely, you can "Remove background music" by clicking on the named button.

### 13.6 Designing Menu Buttons

#### 13.6.1 Adding Menu Buttons

Menu buttons are the basic elements of a DVD menu design. With menu buttons, we can design a complicated menu system to make the DVD playback quick, easy, and flexible. This great flexibility of DVD menu is realized by a carefully designed links among menu buttons, menu pages, and video chapters.

To add a menu button:
1. Right click in the menu display window, and select "Insert a button...".
2. This brings up the menu button dialog; if necessary, set a link, select an end action and define its play sequence, and choose a button type; or simply use the default.

3. The result after the "insert button..." using the default above is shown below.

4. You can easily change the menu button via its context menu which is accessed by right mouse clicking on its display.
**Link to:** To change the link by clicking and then selecting from the drop down list on the right.

**End action...** To specify a different play sequence when starting play from the linked video item.

**Hide** To make the button invisible on the menu display, but keep it in place for a later change.

**Switch to image button** To change it to the image button type.

**Highlight style...** To modify the **highlight display style** when the menu button is selected in a DVD player.

**Edit label** To ready the button label text for editing.

**Cut** To copy the selected button (**Copy**) first, and then remove it from the list (**Delete**).

**Copy** To copy the selected button and save it in memory to be used for a **Paste** operation later.

**Delete** To remove it from the list.

**Layout control** To select from an extensive list of **layout controls**.

Other methods of adding menu buttons:
The following are different ways of add menu buttons.

1. Copy one or a ground of selected buttons, and paste it or them to the desired menu page.
2. Create a complete menu set for a video title from the **video title context menu**.
3. Equivalent to Method 2, a complete menu set with menu buttons can be created via the **Menu Templates**, as well as a complete menu page with menu buttons via the menu **Page Templates**.
13.6.2 Adding Text Menu Buttons

The first pre-defined menu template is a text menu, which uses only text entries to identify chapters in a menu page.

When a text menu is used, and when a chapter text or a text item is selected, the menu editing control box will change to a text setting control.

In the control box, you can select a font, change a font size, and set a font style such as boldface, etc.

In addition to the chapter text entries which are bound to the video chapters, you can add more information texts which are not bound to any video chapter. To add one such free text to a menu page, right mouse click in the menu page window and select "Insert a text".
Please note that depending on the current selection of the menu editing item, the control box automatically switches between a text setting control and a background setting control. You may observe this switching by selecting a chapter or a text item, and then selecting a menu page, or clicking on any background area in the menu window.

### 13.6.3 Adding Image Menu Buttons

The second pre-defined menu template is an image menu, which uses thumbnail images to identify chapters. For an image menu, each chapter will be bound by a thumbnail.

When an image menu is used, and when a chapter is selected, the menu editing control box will change to an image setting control.

![Image Menu Design Control Box](image)

In this image setting control, there are two selections for generating a chapter thumbnail. The first selection, which is also the default selection, is to use an internal image frame within the chapter video segment, and the second selection is to use an external image file.

**Using a video image**

You can select an image within the video segment of the whole chapter as the menu button image.

To select an image frame from the chapter video segment, you can move the slider or the player to find your desired image.
Using an external image
To use an external image file, you may use the steps below.

1. Switch to "External Image" from "Video Frame".

2. Click on the "Browse" button in the control box.

3. Select an image file by following the steps in the pop-up window.

Click on the button to discard the frame position change and restore it to the previous value.
Create a new image menu button
Above changes are used for an existing image menu button as the result of starting from the use of an image menu template. Alternatively, you can create a new image menu button with the following steps.

1. Right mouse click on the menu background window to open the context menu and select "Insert a picture";

or drag and drop an image file from Windows Explorer (or an icon from the Project Manager) into the DVD menu window.

2. Right mouse click on the newly added image to the context menu and select a chapter link.
3. To adjust the size of the image button, move your mouse to the edge or corner of the image rectangle till the cursor is changed to a two sided arrow, then hold down the left mouse button and drag it inward (or outward) to shrink (or enlarge) the image.

**Add a frame to the image button**

The default image button uses a frame image to surround its boundary to add an extra display control, as those buttons from the image menu template shown in the first image at the top of this page.

To add a frame to an image button, set the checkbox for "Frame Image", and then select one frame image from the drop-down list on the right, as shown in the example below.

![Frame Image Example](image_url)

You may use your own image as the frame by clicking on the browse button and importing it from the file dialog.

![Custom Frame Image](image_url)

Currently, the editor will only accept 32-bit (4 channels) images in the format of PNG and TGA.

Furthermore, the single color that defines the internal space (or transparent area/pixels for the button frame display) of the frame is a fixed RGB color of \{1,3,5\}, i.e., \(R=1, G=3, B=5\), also called "masking color", which is almost completely dark as shown in the selected frame image ("Frame Image-3").
This rather restrictive image format will be removed in a future update to include any image format without using a fixed color to define the transparency.

13.6.4 Adding Motion Menu Buttons

To add motion video to the menu display, you start with an image based DVD menu template.

First, select a menu page, as shown in this example.

Click the check box "**Motion Menu**", all buttons in the page will become motion video menu buttons.

For each menu button with motion video, the menu page will play their corresponding video starting from the selected image frame with the selected length, e.g., 10 seconds.

When a background music is included in a motion menu page, and when the length of the music and the length of motion video are different, the total length of a menu page is the longer of the two. For example, if the motion video is 10 seconds and the background is 30 seconds, the menu will play the music for the full 30 seconds while repeatedly play the motion video 3 times. In another example, if the motion video is 25 seconds and the music is only 10 seconds, the menu page will play the video for 25 seconds while repeatedly play the music 3 times but stopping half way in the 3rd repeat.

A final note about the motion video playback is for the cases when a chapter does not have enough video for the selected motion menu length, such as a very likely situation when the starting frame is near the end of a chapter.
In this case, the editor will repeat the video by wrapping around from the end to the beginning of the chapter, in order to make up the shortage.
Lastly, you may simply clear the "Motion Menu" checkbox if you decide not to use the motion menu.

13.6.5  Return to menu: Chapter End Action

One of the frequently used playback sequence is to return to the menu page after the completion of a movie segment (or an episode in the series), also known as "return to menu".

This can be specified by selecting an End Action to go back to a menu page at the end of the selected chapter.

Without this change of this "end action", the player will play all the following chapters till the end of the complete DVD movie, which is the default selection of "continue play".

Use the steps below to set an End Action of "return to menu".

1. Build your DVD project with a menu design.

2. Select a chapter item from the menu page, and open the chapter menu by right clicking on it.

3. Select the End Action from the context menu.

4. Set the chapter play sequence and end action.
As shown in the example, the DVD project has 2 menu pages. If "Page 1" is selected, the DVD player will stop playing any chapter following the selected chapter and go back to the first page of the menu.

When a DVD project has more menu pages, the page list in the sub page will be automatically extended.

### 13.6.6 Layout and Other Controls

**Layout Controls**

A set of layout controls is provided to facilitate the alignment of multiple items on a menu page.

You can open and close the layout controls by clicking on the toolbox thumbnail button.

A brief description for the function of each control is listed below.

- **Align Left:** Aligns all selected objects to the left edge of the last-selected object.

- **Align Vertical Center:** Aligns all selected objects to the vertical center of the last-selected object.

- **Align Right:** Aligns all selected objects to the right edge of the last-selected object.

- **Align Top:** Aligns all selected objects to the top edge of the last-selected object.

- **Align Horizontal Center:** Aligns all selected objects to the horizontal center of the last-selected object.
**Align Bottom:** Aligns all selected objects to the bottom edge of the last-selected object.

**Space Down:** adjusts the selected items so an equal amount of vertical space exists between objects.

**Space Across:** adjusts the selected items so an equal amount of horizontal space exists between objects.

**Vertical Centering:** moves the selected objects to the vertical center of the screen.

**Horizontal Centering:** moves the selected objects to the horizontal center of the screen.

**Make same width:** all selected objects are adjusted width so their match the object that has focus.

**Make same height:** all selected objects are adjusted height so their match the object that has focus.

**Make same size:** all selected objects are adjusted size so their match the object that has focus.

You can press Ctrl+ the arrow keys to change which object has focus.

Since the visible window for most TV monitors is smaller than the full video resolution, it is safe to limit your menu contents within this smaller window, which is about 20 pixels smaller on all four sides.

Display a grid in menu page to help you align items.

Please note that all the layout controls listed above can also be accessed from the context menu of a menu button. Also note that in the context menu, there are 4 additional controls for the display order of overlapped graphic elements.

**Selecting a Highlight Style**

DVD employs two highlight colors to enhance the visual display of a selected chapter on a menu page.

One is the select color used to show a selected chapter item, and the other is the active color to briefly display the selected chapter item when you press down the activation button.

To select a highlight style, open the context menu with a right mouse click on the layout window, and select "Set button highlight style...".

In the highlight setting window, you can select a highlight style from the drop down list, the two highlight colors, and other controls.
You may select a transparency scale for the highlight color for a better fit to the background color. For example, when the background color is too opaque, the visibility of a selection will be severely reduced.

Please note that the highlight color can only be applied to individual menu pages, while the highlight style can be applied to individual menu buttons.

**Button Properties**

Select "Properties..." from the context menu to set the button property.

Note that this is very similar to the insert menu button dialog, except the additional list of all menu buttons on the same menu page. With the list, you can make change to one or more buttons at the same time.

### 13.7 Preview a DVD Project

The Preview lets you do a final check on the menu design before starting an export job.
This is the navigation control to select a menu page and a chapter, which has the same function as those on a standard remote control of a home DVD Player.

Start or pause a forward playback.

Stop the playback.

Jump to the chapter marker prior to the current frame.

Jump to the chapter marker next to the current frame.

Return to the preview of the last menu page.

Return to the preview of menu display.

Check this to preserve the playback position when switching back and forth between the preview page and other DVD menu editing pages.

13.8 Exporting a DVD Project

The exporting process will save your DVD project as a new DVD video files.

Unlike the export of an editor project which creates only a single MPEG file, a DVD export will create a full DVD file system, which includes a "VIDEO_TS" file folder filled with DVD video (".VOB") files, and an empty "AUDIO_TS" file folder.

The DVD folder created can be then burned onto a DVD disk. It can also be viewed on the computer using a software DVD player.
To start the DVD export, press the **Export** button.

This will bring up the Export DVD window.

Use the browse button to select a hard disk and a file path to write the DVD. At this step, please make sure to select a drive with enough free disk space.

Finally, you may press the **Start** button.

**NOTE:**
You may export a DVD with nonstandard image format not listed in the DVD standard, by setting the "Allow export"
13.9 Burning a DVD Disc

You can use the **DVD Burning Tool** included in this editor to burn the VIDEO_TS folder created by MVW-DVD to a DVD disc.

You can also burn the VIDEO_TS folder created by MVW-DVD to a DVD disc by using your DVD burning software coming with your DVD-R/W hardware.

One important note is that when you burn the VIDEO_TS to a DVD disc, please make sure that you have selected the **DVD-Video** as the writing disc format.

Specifically, use the following steps:

- using MVW-DVD, export the DVD as a VIDEO_TS file folder
- start your burning software
- select DVD-Video format for a new DVD burn project
- select the VIDEO_TS file folder as the input data
- burn the disc.

13.10 Writing an ISO Image File

Alternatively, you can also burn the VIDEO_TS folder created by MVW-DVD to an ISO file if you want to save your DVD video export without burning a DVD disc.

An ISO file, often called an ISO image, is in fact an "image" of an entire CD or DVD. The entire contents of a disc can be perfectly represented in a single ISO file.

The following are the steps to write an ISO Image file from a DVD VIDEO_TS file folder.
1. select a DVD video source
Click on the file folder browse button near the right end of the DVD Source field (top row), and follow the steps to select your DVD video source (VIDEO_TS).

2. set the Burn To
Click on the drop-down list button near the right end of the Burn To field, select Write to ISO image file..., and follow the steps to select your ISO image file location and file name.

3. enter your DVD label (optional)
Enter your DVD label in the DVD Label field.

4. start the writing
Press the Burn button to create the ISO Image file.

13.11 How to Reduce the Size of a Movie to Fit a DVD Disc?
The method listed below works very well when the total size of an exported DVD movie does not exceed too far from the desired disc size, e.g., for a reduction between 25% to 35%; and it works great if the needed reduction is less than 15%.

Here, we assume that the input is MPEG-2 video suitable for DVD production without the need of video re-encoding.

Step 1. Download and install freeware DVD Shrink, for which the latest version is v3.2.0.15. Do a Google if you don't know where to find it.

Step 2. Build your DVD project with this editor, and export the VIDEO_TS with the "automatic" encoder settings, so that the main video segments, except a few seconds of fades and transitions, are all stream copy, as indicated by the blue color on the encoder map.

Step 3. Start DVD Shrink and do the following steps.
3-a Click "Open Files" and select the VIDEO_TS from Step 2.
3-b Open "Edit -> Preferences..." and select your desired disc size.
3-b Click "Backup" and select a new export file folder.

For a DVD-5 (4.7GB) export, Step 3 will only take about 10 to 15 minutes.

Step 4. Start your DVD burning software, and burn the output from Step 3 as a "DVD-VIDEO" project.
14 Using the Layout

14.1 About the Layout

The layout is the way editor components are arranged and displayed on your computer screen. Depending on the nature of your editing work, you may or may not need to use all editor components. MPEG Video Wizard lets you choose the layout with great flexibility.

To select a Layout, click on the Toolbar and choose from the menu, which lists the most commonly used editor component combinations. You can also set your own layout.

When one of the predefined layouts (except "Resizable") is selected, the tool buttons representing the selected component windows will be disabled, as shown below for the "Default" layout.

If you select "Unbind Windows" from the layout menu, the buttons will be enabled, and you may press them to hide or redisplay the component windows.

14.2 Binding and User Layout

The Binding command fuses together the editor component windows. Once bound, all windows behave as one when selected.

Conversely, use Unbinding to free the editor component windows, allowing them to move independently.
Use **Binding** and **Unbinding** to define your own layout and add it to the list.

**To Add a User Layout:**
1. Select **Unbinding** from the Layout menu.
2. Design a layout by choosing the component windows you want and arranging them in the desired position.
3. Select **Binding** from the Layout menu.
4. Select **Save User Layout** from the menu, name your layout, and press **Add**.

The new entry will be added to the layout menu.
15 Options

15.1 General Options

The options are used for setting and selecting software values and controls that you do not change very often.

To open the Option pages, click on the Toolbar and select Options from the menu.

The keyboard shortcut for the Options is the F10 function key, which is also content sensitive to the current window focus. For example, if the monitor has the current focus, an F10 press will bring up the Options window with the Monitor page.

The options on the General page are applicable to more than one editor component; or unlike the options on the other pages, they are not specific to any one editor component.

Display file name extension on large icons

Check this box to have the Project Manager display the file name extension of each clip on its image icon.
Open the Title Editor when double click a Title clip
When this box is checked (default), double click on a Title clip will bring up the Title Editor to edit the Title. If the box is unchecked, double click on a Title clip will send the Title clip to the Input monitor to view.

Use only the title bar to move the window
When the box is checked, you can only use the title bar on the top of a window to move it. This is the default behavior of a window. However, if you uncheck this box, you can move the window while the mouse is on the other unused area of a window.

Stop the tool tips
Check this box to stop the tool tips, which sometimes can get in the way.

Play a short sound at the completion of an export job
When an export job is completed, play a short sound to notify the event.

Start MBS file scanning automatically
When load an MPEG file in the Input monitor, and when the editor has detected the MPEG file as an Multiple Bit Stream (MBS) MPEG file, the editor will popup the MBS scanner and start scanning the file automatically. You can turn this automatic scanning OFF by clearing the checkbox.

Check the Web for software updates automatically
When this option is selected, the editor will try to connect the Womble web server to check for software update, every time the editor starts.

Maximum number of files listed in the Input menu
In the Input monitor context menu, there is a "Recent Files" sub menu which lists the most recently opened file names. This number will set the limit on the file name list.

Language (need restart):
Select a different language from the drop down list, and the change will take effect after one or two second delay for the editor to restart itself.

Officially, the editor supports English, German, and Chinese Simplified. However, several users have provided their own translations for a number of other languages. For a complete list, please read the FAQ section on 21. How to change language?
15.2 Timeline Options

Reload the last project at start:
Check this box to let the editor reload the last project you edited at every start.

Display images in the Input monitor when stretching clips:
Check this box to enable previewing of video in the Input monitor when stretching clips in the Timeline. If this box is unchecked, you can preview video in the Input monitor by holding down the Spacebar while stretching.

Image length:
Select the default duration of image clips.
Additionally, when the "Fill gap" box is checked, an image clip dropped into the gap between two clips will set its length to fill the gap.

Title length:
Select the default duration of title clips.

Transition length:
Select the default duration of video transitions.

Step size:
Select step sizes for all 5 steps of the vertical line control button in the Time code box. Those steps define the amount of time increment with each forward or reverse step.
15.3 Monitor Options

Start playing when a new clip is opened in the Input monitor:
Check this box to automatically start the playback of new clips in the Input Monitor.

Full screen mode when the monitor window is maximized:
Check this box to display image in full screen mode when the Monitor window is maximized.

Maintain the segment marks in the Input Monitor:
Check this box to stop resetting of segment marks when a new clip is loaded into the Input Monitor.

Continue play when the monitor is closed:
Check this box to continue the playback even when the monitor window is closed or minimized.

Save the Input Monitor state at exit, and restore it at next start:
When this box is checked, the editor will save the state of the Input monitor at exit, and restore it at next start.

Image display colors in the Input Monitor:
Set image colors displayed in the Input Monitor. Select 24 bit (true color) image display will consume more CPU power.

Snapshot Image file name:
Select a method for the automatic creation of file names when saving images: use consecutive integers, or use the time codes of the images. Also, you can select a name base for the image names, which defaults to "Snapshot".
15.4 Preview Options

Automatically hide the player control when monitor is in full screen mode:
Check this box to turn ON the automatic control that will hide the player control toolbar at the bottom of the display window, when there is no mouse movement for a few seconds.

Automatic - switch the decoded image size to fit the size of monitor window:
Check this box to allow the editor to make a selection of decoder image size that is both good to the preview and most efficient in computation.

Full - original coded picture size:
Check this box to instruct the editor to use full size decoder regardless of the monitor window size.

Half - decimated by 2 in both dimensions:
Check this box to instruct the editor to use half size decoder regardless of the monitor window size.

Quarter - reduced to 1/4 in both dimensions:
Check this box to instruct the editor to use quarter size decoder regardless of the monitor window size.

Hardware Video Overlay Acceleration:
those selections are useful when you need to turn OFF the video hardware overlay display. For example, you may switch the display to straight RGB display to avoid a software compatibility problem. You may also need to switch it to RGB display when you want to capture the screen display of the editor to include the video image in the monitors.

Automatic control:
The editor will try to use the YUV overlay whenever it is possible, with a higher priority for the Input monitor over the Output monitor.

Input Monitor Only:
The YUV overlay when available will be used only by the Input monitor.
**Output Monitor Only:**
The YUV overlay when available will be used only by the Output monitor.

**Disable Overlay:**
No YUV overlay display will be used even it is available. This will also turn OFF the option of "Use YV12 Pixel Format".

**RGB Only:**
All displays will be strictly RGB format. This will use more computation, but it will minimize the possibility of hardware incompatibility.

**Use YV12 Pixel Format:**
This is a special hardware display option, which seems to give a better visual color quality and a higher computational efficiency.

### 15.5 AVSync Options

First, a note about the PTS jumps.

In many MPEG hardware and software encoders, the system will drop video frames when it cannot keep up with a real time video input. When this occurs, the encoder will introduce a PTS time jump to the presentation time of the next image, while keeping the audio continuous. The video PTS jumps are relatively easy to deal with, by simply repeating the previous image for the missing images, and the resulting display may not be noticeable by a viewer.

However, there are MPEG files for which the audio presentation times are discontinuous, with audio PTS jumps. Usually, an audio PTS jump is caused by a data error while the audio is still continuous. In this case, the PTS jump should be
On the other hand, an audio PTS jump may be caused by dropping audio frames by the encoder. In order to maintain the synchronization of the video, the dropped audio frames should be replaced by the same length of sound. Thus, the options on this page become useful.

**Repeat previous audio frame:**  
The editor will repeat the last sound frame to fill the time duration of an audio PTS jump.

**Insert silent audio frames:**  
The editor will insert silent sound frame to fill the time duration of an audio PTS jump.

**Continuous play ignoring audio PTS jumps:**  
The editor will play the audio data continuous disregard the audio PTS times.

### 15.6 KeyMap Options

The values on this page are special keyboard mappings for video preview in the monitors, using the four arrow keys with and without the combination of the control and shift keys.

Please note the special cases of "P-only" and "I-only" for the Input monitor.
15.7 Export Options

GOP Trim:
Check this box to trim a video clip on GOP (I-frame) boundaries. With this option checked (ON), the saved file will be on an I-frame boundary and the packet structures of the original file will be preserved except at the beginning and the end of the saved file. Therefore, a "GOP Trim" is almost like a binary cut to an MPEG file. Please note that the saved file by a "GOP Trim" will always include both the Mark In and the Mark Out frames. Also, please note that this option will affect all trim jobs in the trim batch list.

GOP size compliance for DVD recording:
Check this box to require that all exported MPEG movies will have the GOP size compliance for DVD recording. This will introduce partial video re-encoding to those GOPs that exceed the maximum GOP size set by the DVD standard.

Use CRC error protection:
Check this box to require that all exported MPEG-1 audio frames will have the CRC error protection code. This is a requirement by the DVD standard format for the inclusion of MPEG-1 audio, but it is often ignored by most DVD systems.

Re-encode the whole audio if any part needs re-encoding:
Check this box to re-encode the whole audio track if any part needs to be re-encoded, such as a fade and a transition. This is useful to avoid any sound discontinuity that may be introduced at the connecting point between copied part and re-encoded part.

The default selection is to re-encode only those segments for which the sound has been modified. However, for some sound track this may introduce an audible sound artifact at the point across the re-encoded fade section and its immediate following copied sound segment, especially for a continuous single pitch sound.

Select this option will ensure the continuity of the whole sound track, but at the expense of added computation for re-encoding the complete sound track.
Automatically save multiple audio streams for the video track:
With this option checked (the default), the editor will save all unselected audio streams included in the video clips on the video track of the timeline. For those unselected audio streams, the editor will not apply all the editing operations that have been applied to the video clips, it will only copy the existing audio.

Preserve Field Order:
This is the default setting for exporting NTSC MPEG-2 video with repeated fields as frequently found in movies that are originated from films which have a 24 frame rate. If this is unselected, the editor may destroy the original field order in the exported video for such movies. Thus, it's highly recommended that this option be always selected.

No re-encoding for bit rate change over VBR files:
This option is used to direct the export to output the video as a stream copy without re-encoding when the video encoder (peak) bit rate is set to be lower than that of the input files, and when there is no other video encoder change.

This is useful mainly for an MPEG file whose video bit rate was set much higher than its actual data rate.

Trim file name:
Select one of the four methods listed for the auto-generation of the output file names.

15.8 DVD Options

Reload last project at start:
Check this box to let the DVD Maker reload the last project you edited at every start.

Stop play after jump chapter when previewing:
When this box is checked, the DVD preview will stop the playback after a chapter jump command.

Save the menu editing state when switching template:
This check box is used to request the DVD maker to save the menu editing state when switching template, so that when a previously used template is selected back, the user can continue the design without loss of previous work.

Allow export with nonstandard DVD format:
Check this box to instruct the DVD maker to export nonstandard DVD format.

You may use this option to avoid unnecessary video re-encoding for MPEG movies with image resolutions that are not
listed in the DVD standard, while your DVD player will not complain about playing such DVD.

For example, we have tested a number of DVD players from more than 10 manufacturers, with one exception, all of which played our testing DVD's of nonstandard DVD format with MPEG video at 480 x 480 (NTSC) and 480 x 576 (PAL) image resolutions.

Please note that the standard DVD video resolutions are 704 x 480, 720 x 480, 352 x 480, 352 x 240 for NTSC, and 704 x 576, 720 x 576, 352 x 576, 352 x 288 for PAL.

Furthermore, with this option checked, the DVD maker will export a DVD with MPEG video at a HDTV resolution, even though almost all standard DVD players are incapable of its decoding.

**Remove DVD menu prohibit option:**
This is a control flag in the DVD file system which when set instructs the DVD player to disable a DVD player control buttons when there is no valid operation.

For example, when you are at the menu display, and when the DVD menu prohibit flag is set, you will not get any response when you press a fast speed button on your remote control.

The default selection for this option is SET to clear the prohibit flag for the least restriction to a DVD player; but the default selection for the DVD file system is to set the prohibit flag.
16 Tools

16.1 MPEG Multiplexer

To open the MPEG Multiplexer, click the button on the Toolbar and select MPEG Multiplexer from the menu.

Use the MPEG Systems Multiplexer to combine an MPEG video stream and an MPEG audio stream into an MPEG system stream. You may introduce a time delay offset for the input audio stream so that the output MPEG Systems stream will have the desired synchronization (lip-sync). A positive delay value will postpone the sound in time; a negative delay will postpone the video.

For MPEG video with variable bit rate (VBR) encoding, the multiplexer will create a VBR system stream by default to minimize the output file size. If you turn off the VBR flag, the multiplexer will create a constant bit rate output. In this case, the output file size could be much larger than the total of the input files, as a result of padding (junk) data added by the multiplexer to meet the maximum video bit rate.

For example, a VBR video file has an average bit rate of 100 kB/second, and a maximum bit rate of 200 kB/second. To create a constant bit rate system stream, the multiplexer will basically treat the video input as a 200 kB/second constant bit rate data stream, and the output file will be padded with an amount of junk data that could be as large as the original input video file.

16.2 MPEG DeMultiplexer

To open the MPEG DeMultiplexer, click button on the Toolbar and select MPEG DeMultiplexer from the menu.
Use this tool to decompose an MPEG Systems stream into a set of elementary streams (video-only and audio-only streams).

You may also use this tool to help you resolve the audio-video synchronization problem, as frequently encountered in MPEG files with time code errors.

To correct an MPEG file with such problem, please follow these steps.

1. Check the box left of the text line "Create a new project on the Timeline with the output files".
2. De-multiplex the MPEG System file into separate video and audio files.
3. Adjust the relative offset between audio and video, by moving either the video clip or the audio clip, till they become in sync; while previewing the movie on the Output monitor, You may need to find special point in the movie to help you check the "lip-sync".
4. Save the result to a new MPEG file.

**16.3 MPEG Format Converter**

To open the MPEG Systems Stream Converter, click button on the Toolbar and select MPEG Systems Stream Converter from the menu.
Use this tool to convert one format of MPEG stream into another format of MPEG Systems stream.

The converter will only change the MPEG Systems format with various packet formations of compressed video and audio data. It will not alter the compressed video and audio data.

All the functionality provided by this tool can be accomplished by the combination use of the MPEG Systems DeMultiplexer and the MPEG Systems Multiplexer.

16.4 MPEG GOP Fixer

Click the button on the Toolbar and select MPEG GOP Fixer from the menu.

This tool lets you check and correct GOP time code errors, video and audio PTS (presentation time stamp) errors, and DVD GOP size violations, which may be present in an MPEG data file.

GOP Time Code Error
In MPEG compression, a video sequence is divided into groups of image frames. A typical sequence of picture frames looks like: "I B B P B B P B B P B B P B B". This is called a GOP (group of pictures). A header is usually stored before the I-picture, and is called a GOP header, and it is usually an 8-byte data segment. One of the important items of information stored in this header is a 25-bit integer, called an SMPTE time code (SMPTE: Society of Motion Picture and Television Engineers). This time code refers to the first picture of the GOP in display order.

This GOP header and its time code provide very convenient points for managing a coded MPEG movie. It allows the MPEG editor to randomly access a lengthy MPEG movie very efficiently. However, this also makes the editor highly dependent on the accuracy of time codes in the GOP header, and especially dependent on the continuity of the time codes in a complete MPEG movie. Unfortunately, an MPEG movie may have errors in the time code, or the time code may be disrupted, or the time code may not correctly reflect the coded image sequence. When any of these happens to an MPEG file, it is considered a GOP time code error.

The GOP fixer tool will correct the GOP time code errors based on its calculation from the complete video sequence. Very few bits of original data will be changed.

**Video PTS and Audio PTS Error**

Video and audio Presentation Time Stamps are 33-bit integers inserted in an MPEG stream to allow an MPEG decoder to synchronize the decoded audio sound with the decoded video image display. Those PTS values should match the playback time length of the decoded audio sound with the video frame rate. When they are in error, the MPEG movie cannot be played correctly, and the audio and the video will be out of sync.

The GOP fixer tool will correct those PTS errors based on its calculation from the complete audio data. It will only modify the erroneous 33-bit integers.

**DVD GOP Size Violation**

The DVD standard has special restrictions on the size of a GOP for a movie to be compressed into MPEG. Specifically, it requires that no GOP should have more than 18 frames for NTSC TV system and 15 frames for PAL TV system, even though the MPEG standards have no such limitations.

To make an MPEG file compliant with the DVD restriction on GOP size, the GOP fixer tool will find the violator and break it into multiple GOP's of smaller sizes. GOP's of the correct size will just be copied without modification.

**16.5 MPEG MBS Scanner**

Click the button on the Toolbar and select MPEG MBS Scanner from the menu.
This tool is created to help the editor to process MPEG files that contain one of the three changes list below,

1. **timebase change**, such as a time code restart;
2. **video encoder settings change**, such as image size, frame rate, and bit rate; and
3. **audio encoder settings change**, such as sampling frequency, bit rate, and number of sound channels.

As defined in MPEG standards, an MPEG movie stream should have a continuous time code to assist a decoder to synchronize its video and audio presentations. Also, an MPEG movie stream should not change, in the middle of the stream, its video encoder settings, or its audio encoder settings.

When an MPEG file contains one or all of the changes listed above, the editor will not be able to handle it correctly.

Typical examples of such files are MPEG files created by a digital camcorder with an internal MPEG recorder.

For a digital camcorder, one common usage is to take a sequence of shots and stops. And between shots, the camera settings may be changed, such as switching from an "SP" mode to an "LP" mode, which is essentially changing the video resolution and bit rate. For some camcorder, it also restarts the time code after a stop.

When a single MPEG file contains those changes within the file, we refer it as a Multiple Bit Stream (MBS) MPEG file.

Since an MPEG editor cannot correctly decode the second or the following segments of the same MPEG file without some additional information, and since it's hard to design a flexible MPEG player that can dynamically switch MPEG codec, the next best solution and perhaps the simplest solution to this problem is to divide the file into multiple segments, and treat each segment as an individual MPEG file, but without physically creating such segment files. This is what this utility does.

By scanning the MPEG file for any restart of its timecode and any change of MPEG encoder settings, it creates a list of segment files each of which saves a starting file offset and an ending file offset.

The segment file can be recognized by the MPEG editor by its file name extension of ".mbs", and be loaded properly as one complete MPEG stream.
Common examples of MBS files are VRO (".vro") files, DVD-R/W (".rec") files created by a DVD-R/W video recorder, and even some standard DVD (".vob") files.

The following is an example of multi-segment MPEG file,

```
D:\DVD recorder\PBC_ch9.vro
```

which contains two segments of MPEG recorded with a 720x480 resolution for the first segment and a 352x480 resolution for the second segment.

Two ".mbs" files will be created by the scanning process, and listed below.

**(1) D:\DVD recorder\PBC_ch9.vro_1.mbs**

```
[MBSFile]
NumFile= 1
File= D:\DVD recorder\PBC_ch9.vro
Segment= 0 93235200
```

**(2) D:\DVD recorder\PBC_ch9.vro_2.mbs**

```
[MBSFile]
NumFile= 1
File= D:\DVD recorder\PBC_ch9.vro
Segment= 93235200 147796772
```

Note: When load an MPEG file in the Input monitor and when the editor has detected the MPEG file as an Multiple Bit Stream (MBS) MPEG file, the editor will popup the MBS scanner and start scanning the file automatically. You can disable this automatic scanning by clearing the checkbox for the option "Start MBS file scanning automatically" on the "Options->General" page.

Hint: when you notice that an MPEG file is reported too short compared to its file size; you should try to use this tool to scan the file.

### 16.6 DVD Reader

This tool lets you open a DVD file folder and select a video title for editing. The first thing you should know is that this tool cannot open a copyright protected DVD.

To open the DVD Reader tool, click the Tools button on the Toolbar and select DVD Reader from the menu.
Click on the file browse button to open a DVD file folder.

This is an example of a commercial DVD with as many as 35 video titles, most of which have a very short video segment. For those cases, you can hide those short video titles by changing the minimum length of Settings to a large value.

Now, the list has been shortened to 9 items.
To load a video title into the editor, you can use either one of the four buttons.

**Save As...** - use this to save the selected video title to an MBS file.
**Open in Input Monitor** - this will load the selected video title into the input monitor.
**Add to Timeline** - this will load the selected video title to the video track of the timeline editor. Note this is the default selection in the Settings.
**Add to Project Manager** - this will add the selected video title to the video clip list in the project manager. Note this is also the default selection in the Settings.

Please note that before a video title is loaded into the editor, the DVD Reader creates an MBS file and stores it in the default file folder specified on the file path in the Settings....

A final note about the check boxes in the chapter list. As shown below, those check boxes are used only by the **Bookmark list** of the **Input Monitor**, and ignored by other editor components.

---

### 16.7 Editor Project Package

This is a feature that is unique to MPEG Video Wizard.

It resembles a simpler version of a file archive tool.

By specifying an MPEG Video Wizard project file, you can pack all files used into one single file. During the pack processing, you will not be asked to browse through content files, which may stored on many different places on your computer.

On the reverse process, you can unpack the packed file and expand it into a single file folder with all the video clips, audio clips, image clips, title clips, and the project file itself.

A step by step example of using the package tool is given on the FAQ section [27. How to move an editor project from one PC to another](#).
16.8 Exporting MPEG-4 movies

Steps to export an MPEG-4 movie

Add MPEG-4 movies to your iPod

Add MPEG-4 movies to your PSP

MP4 Batch Export Manager

Format References

16.9 AVI Exporter

This tool lets you save your edited project (".wbp") to a new AVI file (".avi").

1. open the AVI Exporter

There are two ways to open the tool: from the Tools list on the editor toolbar, or from the timeline's Export dialog.

From the editor toolbar:
Click the Tools button and select AVI Exporter from the menu.

From the timeline Export:
Press the button in the Timeline's toolbox, and select "AVI (*.avi)" in the "Save as type" list.
2. select encoder parameters for the AVI Exporter.

Input Project - click on the file browse button to open a project file. If you open the AVI Exporter from the timeline, the Input Project will be set as the "current project".

Output File - you may set the output file path and file name via the browse button.

Frame Rate - by clicking on the value display, you can change the output frame rate.

Resolution - by clicking on the value display, you can change the output video size.

Video Encoder - this list contains all AVI encoders currently installed on your system. Please note that most of them have implicit limitations, and may be usable for your desired output settings.

Audio Encoder - similar to the video encoder, this list contains all audio encoders currently installed on your system, and similar limitations may also exist.

Setup - this is the place to fine tuning your selected encoder.

Preview - this check box controls the display of images during the encoding process. You may turn it off to speed things up a little.
Export WorkArea - if you check on this box, the editor will only export the workarea you set for the timeline project.

Start - press this to start the encoding process, during which you can press it again to pause or to resume the job.

Stop - press this to abort the encoding job, after which you will be asked to keep or to delete the partially saved AVI file.

16.10 DVD Burning Tool

This tool lets you burn your DVD video export from the current DVD project or any other valid DVD video folder ("VIDEO_TS") to a DVD disc.

First, insert a disc in your computer DVD burner.

To open the DVD Burning tool, click the Tools button on the Toolbar and select DVD Burning Tool from the menu.

Click on the "Browse..." button to open a DVD file folder.

Then click on the "Burn" button to start burning.

Available Space - display the capacity of the current disc.

Disc Info... - To view the disc information.

Eject DVD when done - this will eject the DVD disc automatically once complete burning.

Please note that, if your disc is not empty, the editor will not rewrite it unless get your permission.
The DISC is NOT empty.

Rewrite it will destroy all its data.
Do you want to continue?

[Ok] [Cancel]
## 17 Keyboard Shortcuts

### 17.1 Monitors

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<th>Shortcut</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Open</td>
<td>Ctrl + O</td>
</tr>
<tr>
<td>Close</td>
<td>Ctrl + X</td>
</tr>
<tr>
<td>Trim</td>
<td>Ctrl + S</td>
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<tr>
<td>Trim Manager</td>
<td>Ctrl + T</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl + E</td>
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<tr>
<td>Add to Timeline</td>
<td>G</td>
</tr>
<tr>
<td>Set Mark In</td>
<td>I</td>
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<tr>
<td>Set Mark Out</td>
<td>O</td>
</tr>
<tr>
<td>Trim Cut</td>
<td>X</td>
</tr>
<tr>
<td>Trim Left</td>
<td>N</td>
</tr>
<tr>
<td>Trim Right</td>
<td>M</td>
</tr>
<tr>
<td>Cut single frame</td>
<td>Del</td>
</tr>
<tr>
<td>Forward Play / Pause</td>
<td>D / Space</td>
</tr>
<tr>
<td>Reverse Play / Pause</td>
<td>A / Space</td>
</tr>
<tr>
<td>I-only, P-only, and normal speed toggle</td>
<td>S</td>
</tr>
<tr>
<td>normal speed (reverse)</td>
<td>[Ctrl +] 1 (shift + 1)</td>
</tr>
<tr>
<td>P-only fast speed (reverse)</td>
<td>[Ctrl +] 2 (Shift + 2)</td>
</tr>
<tr>
<td>I-only fast speed (reverse)</td>
<td>[Ctrl +] 3 (Shift + 3)</td>
</tr>
<tr>
<td>one fifth (1/5) of the normal speed (reverse)</td>
<td>[Ctrl +] 4 (Shift + 4)</td>
</tr>
<tr>
<td>one half (1/2) of the normal speed (reverse)</td>
<td>[Ctrl +] 5 (Shift + 5)</td>
</tr>
<tr>
<td>twice (2) of the normal speed (reverse)</td>
<td>[Ctrl +] 6 (Shift + 6)</td>
</tr>
<tr>
<td>four times (4) of the normal speed (reverse)</td>
<td>[Ctrl +] 7 (Shift + 7)</td>
</tr>
<tr>
<td>eight times (8) of the normal speed (reverse)</td>
<td>[Ctrl +] 8 (Shift + 8)</td>
</tr>
<tr>
<td>sixteen times (16) of the normal speed (reverse)</td>
<td>[Ctrl +] 9 (Shift + 9)</td>
</tr>
<tr>
<td>Step Forward</td>
<td>-&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Step Backward</td>
<td>&lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Next P-frame</td>
<td>Shift + -&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Previous P-frame</td>
<td>Shift + &lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Next I-frame</td>
<td>Ctrl + -&gt; (Right Arrow), or mouse wheel scroll down</td>
</tr>
<tr>
<td>Previous I-frame</td>
<td>Ctrl + &lt;- (Left Arrow), or mouse wheel scroll up</td>
</tr>
<tr>
<td>Action</td>
<td>Shortcut</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Jump Forward a predefined amount (5%)</td>
<td>Down Arrow</td>
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<tr>
<td>Jump Backward a predefined amount (5%)</td>
<td>Up Arrow</td>
</tr>
<tr>
<td>Jump Forward a predefined amount (10%)</td>
<td>Page Down</td>
</tr>
<tr>
<td>Jump Backward a predefined amount (10%)</td>
<td>Page Up</td>
</tr>
<tr>
<td>Jump to Home</td>
<td>Home</td>
</tr>
<tr>
<td>Jump to End</td>
<td>End</td>
</tr>
<tr>
<td>Jump to Mark In</td>
<td>[</td>
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<tr>
<td>Jump to Mark Out</td>
<td>]</td>
</tr>
<tr>
<td>Clear Mark</td>
<td>C</td>
</tr>
<tr>
<td>Zoom Full Screen</td>
<td>Alt + Enter</td>
</tr>
<tr>
<td>Layout Size</td>
<td>Alt + 4</td>
</tr>
<tr>
<td>Zoom 50%</td>
<td>Alt + 1</td>
</tr>
<tr>
<td>Zoom 100%</td>
<td>Alt + 2</td>
</tr>
<tr>
<td>Zoom 200%</td>
<td>Alt + 3</td>
</tr>
<tr>
<td>Zoom 25%</td>
<td>Alt + 5</td>
</tr>
<tr>
<td>Looping</td>
<td>Alt + L</td>
</tr>
<tr>
<td>Play Segment</td>
<td>Alt + S</td>
</tr>
<tr>
<td>Deinterlace Image</td>
<td>Alt + I</td>
</tr>
<tr>
<td>Audio Mute</td>
<td>Ctrl + M</td>
</tr>
<tr>
<td>Audio Default</td>
<td>Ctrl + I</td>
</tr>
<tr>
<td>Audio Mute Left</td>
<td>Ctrl + L</td>
</tr>
<tr>
<td>Audio Mute Right</td>
<td>Ctrl + R</td>
</tr>
<tr>
<td>Audio Duplicate Left</td>
<td>Ctrl + Y</td>
</tr>
<tr>
<td>Audio Duplicate Right</td>
<td>Ctrl + U</td>
</tr>
<tr>
<td>Audio Combine Left</td>
<td>Ctrl + J</td>
</tr>
<tr>
<td>Audio Combine Right</td>
<td>Ctrl + K</td>
</tr>
<tr>
<td>Audio Shift</td>
<td>Ctrl + H</td>
</tr>
<tr>
<td>Find Next Blank Fade</td>
<td>Ctrl + F</td>
</tr>
<tr>
<td>Bookmark Add</td>
<td>F2</td>
</tr>
<tr>
<td>Bookmark Browser</td>
<td>F3</td>
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<tr>
<td>Save Image As</td>
<td>F4</td>
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<tr>
<td>Snapshot</td>
<td>F5</td>
</tr>
<tr>
<td>Undo</td>
<td>Ctrl + Z</td>
</tr>
<tr>
<td>Redo</td>
<td>Ctrl + Y</td>
</tr>
<tr>
<td>Properties</td>
<td>Ctrl + P</td>
</tr>
</tbody>
</table>

* You may still use the control key combinations such as "Ctrl + 1" and "Ctrl + 2", which were the only available keyboard shortcuts for forward speed control in early versions.
## 17.2 Timeline Editor

<table>
<thead>
<tr>
<th>Action</th>
<th>Hotkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help</td>
<td>F1</td>
</tr>
<tr>
<td>New</td>
<td>Ctrl + N</td>
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<tr>
<td>Open</td>
<td>Ctrl + O</td>
</tr>
<tr>
<td>Save</td>
<td>Ctrl + S</td>
</tr>
<tr>
<td>Save As</td>
<td>Ctrl + Shift + S</td>
</tr>
<tr>
<td>Export</td>
<td>E</td>
</tr>
<tr>
<td>DVD Export</td>
<td>Shift + D</td>
</tr>
<tr>
<td>Cut</td>
<td>Ctrl + X</td>
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<tr>
<td>Copy</td>
<td>Ctrl + C</td>
</tr>
<tr>
<td>Paste</td>
<td>Ctrl + V</td>
</tr>
<tr>
<td>Split</td>
<td>Ctrl + Q</td>
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<tr>
<td>Delete</td>
<td>Del</td>
</tr>
<tr>
<td>Disable / Enable Clips</td>
<td>Alt + D</td>
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<tr>
<td>Lock / Unlock Clips</td>
<td>Alt + L</td>
</tr>
<tr>
<td>Undo</td>
<td>Ctrl + Z</td>
</tr>
<tr>
<td>Redo</td>
<td>Ctrl + Shift + E</td>
</tr>
<tr>
<td>Trim Left</td>
<td>Shift + L</td>
</tr>
<tr>
<td>Trim Right</td>
<td>Shift + R</td>
</tr>
<tr>
<td>Delete Left</td>
<td>Ctrl + Shift + L</td>
</tr>
<tr>
<td>Delete Right</td>
<td>Ctrl + Shift + R</td>
</tr>
<tr>
<td>Play / Pause</td>
<td>Spacebar</td>
</tr>
<tr>
<td>Play Forward / Pause</td>
<td>D / Space</td>
</tr>
<tr>
<td>Play Reverse / Pause</td>
<td>A / Space</td>
</tr>
<tr>
<td>Set / Clear Video Reverse</td>
<td>Alt + R</td>
</tr>
<tr>
<td>Deinterlace Image</td>
<td>Alt + I</td>
</tr>
<tr>
<td>Zoom In</td>
<td>+</td>
</tr>
<tr>
<td>Zoom Out</td>
<td>-</td>
</tr>
<tr>
<td>Best Fit (Timeline Scale)</td>
<td>Numpad*</td>
</tr>
<tr>
<td>Max Zoom In</td>
<td>Ctrl + Numpad+</td>
</tr>
<tr>
<td>Max Zoom Out</td>
<td>Ctrl + Numpad-</td>
</tr>
<tr>
<td>Previous Scale</td>
<td>BackSpace</td>
</tr>
<tr>
<td>Jump to Next Clip Edge</td>
<td>Tab</td>
</tr>
<tr>
<td>Jump to Previous Clip Edge</td>
<td>Shift + Tab</td>
</tr>
<tr>
<td>Change Step Size</td>
<td>Insert</td>
</tr>
<tr>
<td>Step Forward</td>
<td>Left</td>
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<tr>
<td>Step Backward</td>
<td>Right</td>
</tr>
<tr>
<td>Action</td>
<td>Keyboard Shortcuts</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Scroll Timeline to Left</td>
<td>Down Arrow Key / Page Down</td>
</tr>
<tr>
<td>Scroll Timeline to Right</td>
<td>Up Arrow Key / Page Up</td>
</tr>
<tr>
<td>Set Mark In</td>
<td>I</td>
</tr>
<tr>
<td>Set Mark Out</td>
<td>O</td>
</tr>
<tr>
<td>Jump to Mark In</td>
<td>[</td>
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<tr>
<td>Jump to Mark Out</td>
<td>]</td>
</tr>
<tr>
<td>Jump to Home</td>
<td>Home</td>
</tr>
<tr>
<td>Jump to End</td>
<td>End</td>
</tr>
<tr>
<td>Set / Clear Marker</td>
<td>M</td>
</tr>
<tr>
<td>Clear all marker</td>
<td>Alt + M</td>
</tr>
<tr>
<td>Add markers at the beginning for all video clips</td>
<td>N</td>
</tr>
<tr>
<td>Jump to Next Marker</td>
<td>Ctrl + Tab</td>
</tr>
<tr>
<td>Jump to Previous Marker</td>
<td>Ctrl + Shift + Tab</td>
</tr>
<tr>
<td>Audio Volume Control</td>
<td>Ctrl + W</td>
</tr>
<tr>
<td>Audio Mute</td>
<td>Ctrl + M</td>
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<tr>
<td>Audio Default</td>
<td>Ctrl + I</td>
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<tr>
<td>Audio Mute Left</td>
<td>Ctrl + L</td>
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<tr>
<td>Audio Mute Right</td>
<td>Ctrl + R</td>
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<tr>
<td>Audio Duplicate Left</td>
<td>Ctrl + Y</td>
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<tr>
<td>Audio Duplicate Right</td>
<td>Ctrl + U</td>
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<tr>
<td>Audio Combine Left</td>
<td>Ctrl + J</td>
</tr>
<tr>
<td>Audio Combine Right</td>
<td>Ctrl + K</td>
</tr>
<tr>
<td>Audio Edit Sound Volume</td>
<td>Ctrl + D</td>
</tr>
<tr>
<td>View / Hide Audio Peaks</td>
<td>Ctrl + P</td>
</tr>
<tr>
<td>Audio Peaks Display control</td>
<td>Alt + P</td>
</tr>
<tr>
<td>Normalize...</td>
<td>Alt + N</td>
</tr>
<tr>
<td>Fade...</td>
<td>Alt + F</td>
</tr>
<tr>
<td>Add Default Fades</td>
<td>Alt + A</td>
</tr>
<tr>
<td>Location &amp; Duration...</td>
<td>Ctrl + F</td>
</tr>
<tr>
<td>Begin &amp; End...</td>
<td>Ctrl + B</td>
</tr>
<tr>
<td>Add to Clips</td>
<td>Ctrl + E</td>
</tr>
<tr>
<td>Select All</td>
<td>Ctrl + A</td>
</tr>
<tr>
<td>Select Next All</td>
<td>Space + Mouse</td>
</tr>
<tr>
<td></td>
<td>Click on a clip while holding down the Spacebar; all clips following the clip on the same track will be selected.</td>
</tr>
<tr>
<td>Preview forward</td>
<td>Numpad 1~7</td>
</tr>
<tr>
<td>Preview backward</td>
<td>Ctrl+Numpad 1~7</td>
</tr>
</tbody>
</table>
17.3 ShuttlePro Mapping

For those users who own a professional video editing device called ShuttlePro, you may download a reference map file for ShuttlePro 2.0.

shuttlepro_keymap_for_mvw.zip

The exact URL address is

"http://www.womble.com/mvw/shuttlepro_keymap_for_mvw.zip".
18 Frequently Asked Questions (FAQ)

18.1 FAQ Groups

Product features:
01. What are the differences between MPEG2VCR and MPEG Video Wizard?
20. Why is the image display color different between the 2 monitors?
21. How to change language?
22. What is the main difference between "MVW-DVD" and "MVW"?
27. How to move an editor project from one PC to another?

DVD editing:
09. How to edit a DVD movie or VOB files?
10. What is the difference between a VRO file and an MPEG file?
23. How to export a DVD with nonstandard image format?
24. How to load an MPEG file with multiple segments from a DVD recorder?
25. How to Reduce the Size of a Movie to Fit a DVD Disc?

File format:
03. Can I import AVI files into MPEG Video Wizard?
04. What is video PTS jumps in an MPEG file?
07. What is the limitation for AC-3 sound modification?
12. Can I import a Motion JPEG video clip?
18. How to read a BeyondTV chapter XML file?
19. Frustrations with the timecode display and the SMPTE timecode?

Editing:
02. How to cut out commercials without a 'Cut'?
08. How about the audio channel controls?
11. How to substitute audio in an MPEG file?
14. How can I fix this de-muxing problem?
15. How to place text over a graphic in the Title editor?
17. How to change video and audio in a multiple video and multiple audio MPEG file?
24. How to load an MPEG file with multiple segments from a DVD recorder?
26. How to delete a sound?

Export:
05. How to convert AC-3 to MPEG audio?
06. How to change aspect ratio?
13. How to use the Export Batch Manager?
16. How to export an MVW project in TMPGEnc MPEG encoder?
18.1 What are the differences between MPEG2VCR and MPEG Video Wizard?

The major difference between MPEG wizard and VCR are:
(1) MVW has a better MPEG editor engine, redesigned from that of VCR;
(2) MVW has a much better UI and feature set; and
(3) MVW has a very competitive software team; while VCR was designed and maintained by a single person.
(4) Other than major bug fixes, few new feature will be added to VCR, since the goal is to phase out the VCR gradually
by making MVW does everything that VCR does and better.

18.2 How to cut out commercials without a 'Cut'?

NOTE: The method below was suggested when the Input monitor did NOT have the cut function, which is true for all
versions before the October 2006 update release. With the implementation of the cut function in the Input monitor, the
method listed below becomes awkward, and the information below are only instructional as a usage illustration of the
Input monitor. For the usage of the cut function, please refer to the page on How to Edit Out Commercials.

The following is one way to cut out commercials of an MPEG recording using the Input monitor and the video clipboard.

1. Open the MPEG file in the Input monitor.
2. Set the input monitor to full screen display mode.
3. Set the play speed to I-only ('F') by pressing the speed button twice (or the 'S' key).
4. Press the Space bar to start the fast play (or the 'A' and 'D' keys).
5. Use the mouse scroll wheel to stop the player and to mark the segment you want to keep.
6. Select the "Add to Clips" from the monitor menu (right mouse click) to save the segment to the video clipboard in the
project manager.
7. Repeat the last 3 steps above for all the segments of a show.
8. Restore the input monitor to its layout size.
9. Select all the clips in the "Clips->Video" page in the project manager.
10. Drag and drop them on to the Timeline to save the segments to a single file, or;
10a. Drag and drop them on to the Batch of the Trim Manager to save the clips to separate files.

Using the full screen and the I-only fast play, it takes about 5 to 10 minutes to complete the editing of a 2 hour movie.

18.3 Can I import AVI files into MPEG Video Wizard?

Yes, you can.

In order to import an AVI file, the editor will need the help of an installed video/audio codec. Currently, the editor only
recognizes VFW (Video For Window) drivers.

Please also note that AVI is just a file name and like a big box which can contain different things --- compressed or
uncompressed video and audio.

For example, to open a DV file, one user had the following suggestion.

Date: Tue, 23 Dec 2003 11:19:38 +0100
From: an MVW user
To: "Tech Support <support" <support@womble.com>
Hello!
I downloaded DV Codec V2.4.4 from
<http://www.mainconcept.com/codecs.shtml>
and now I can open the uncompressed DVs within MVW.
Thanks for the support.
an MVW user

18.4 What is video PTS jumps in an MPEG file?

One of your new releases said it has this feature fixed: "Video and audio synchronization problem for MPEG files with video PTS jumps. (BUG)" Can you please explain what does it mean? Will it restamp PTS/DTS when I concatenate few MPEG files together?

In many MPEG hardware and software encoders, the system will drop video frames when it cannot keep up with a real time video input. This could be caused by an insufficient CPU/DSP processor power, temporary memory bandwidth shortage, temporary disk access error, system/disk/mememoy buffer full, or others. When this occurs, the encoder will introduce a PTS time jump to the presentation time of the next image, while keeping the audio continuous which is less likely to have the same problems as those of the video and which is also more noticeable if a sound drop occurred. Those video PTS jumps are encoded in the packet headers as a multiplexed MPEG stream. Also, the PTS time codes may start at any value in an MPEG file. Thus, each MPEG file will be treated as an independent time code base. When two MPEG files are connected together, the editor will make sure to generate a new continuous PTS time code and preserve all PTS jumps within the original 2 MPEG inputs.

18.5 How to convert AC-3 to MPEG audio?

Looking for a program to 'transcode' a MPEG stream. Some one says Womble can do that? In simple terms, I want to take a MPEG-2 file, which has AC3 audio on it, and re-encode the AC3 to MPEG audio, with the correct delay needed. Can womble do such, and how?

Yes, please follow the following steps.
1. Put the video file on the Timeline's video track.
2. Press the Export button on the Toolbox near the lower right (the red colored one).
3. Select "Custom" as the export template.
4. Select the Audio page in the Export window.
5. Change the audio encoder parameters.

18.6 How to change aspect ratio?

Is there a way to change aspect ratio with MPEG Video Wizard? I have a 16:9 clip that I need to convert to 4:3.
First, please note that the editor selects the display mode based on the coded information ("pel_aspect_ratio") found in an MPEG video sequence header.

To change this flag, follow the following steps.

1. Put the video clip on the video track of the timeline.
2. Export the timeline selecting the "Custom" template.
4. Press the Expert button on the Video page.
5. Select the desired aspect ratio flag from the PAR list.
7. Check the exported video file in the Input monitor.

18.7 What is the limitation for AC-3 sound modification?

I want to take some swearing our of some movies that I have on DVD. So far I'm doing this by bringing up the Sound line editor and adding some marker points and dragging the volume down. This works well except when I go to export the AC3 option is gone and I'm only left with 2 channels. I understand why this is due to Dolby licensing. Is there a way that you can cut the sound for a few seconds but maintain the vision so that the AC3 is maintained?

Yes, this limitation is due to the lack of an AC-3 encoder. However, without the capability of direct sound modification, the editor is able to add silent audio segments for AC-3 data. Hence, the only way is to manually find the audio blip and taking out the part by deleting the corresponding segment on an audio track, using the following trick: duplicate a video clip in the audio track by dragging and dropping the video clip while holding down the Control key; and then mute the video clip. Please also note that one drawback of this "work around" is that the result sound may be discontinuous.

Please note the above note does not apply to MPEG Video Wizard DVD, which has added full AC-3 encoder support.

18.8 How about the audio channel controls?

I understand that your editor will rip the audio from a captured mpg file. Does it differentiate the left and right channels? I need the left channel from one capture file and the right channel from another and then put the two together as the audio in the final product ready to burn. Does your tool support this? My task is a collection of multiplex karaoke laser discs that I want to convert to DVD while my LD player is still working. The problem is that the player processes the multiplex setting and produces the same audio on both outputs that is either the left track vocal demo and music or the right track music only. I have to make a capture with vocals on and another with it off to get both tracks. Then I need to get the different content on the left and right channels in the image I want to burn so that the DVD will also be multiplex. It sounds like this is the tool I need, but it's not clear whether you work on individual channels or not. You could use the Timeline to do the job with similar steps to the following.

1. Put one of the two clips on the video track since both have the same video.
2. Mute the audio for the video clip by right mouse clicking on the clip and selecting "Audio -> Mute" from the clip menu.
3. Put the clip with the left channel audio on the 1st audio track.
4. Put the clip with the right channel audio on the 2nd audio track.
5. In the 1st audio clip, select "Audio -> Duplicate Left" in its clip audio menu.
6. In the 2nd audio clip, select "Audio -> Duplicate Right" in its clip audio menu.
7. Select "Output to Left Channel" in the 1st audio track menu by right mouse clicking on the track button on the left.
8. Select "Output to Right Channel" in the 2nd audio track menu.
9. Save the timeline to a project file to protect your work by selecting the "Save As" from the upper left corner 4 button box of the timeline.
10. Press the Export button (the red one on the right of the timeline).
11. Select the "Automatic" template and the export job will start automatically without minimum re-encoding of the video.
12. Check the output clip in the Input monitor by finding it in the Clips page of the Project Manager and double clicking on it.

18.9 How to edit a DVD movie or VOB files?

I would like to explain what I need to do, then ask if your software will help me. I took old 8mm family movies and had them transferred to DVD. The movies are now in a vob file. I would like to be able to delete some of the scenes and burn a new dvd. Will any of your products do this? I'm fairly competent with a PC but have never done any video editing before. Thank you.

The answer is yes.

Please read the text below about the VOB file that will be helpful for you.

1. VOB stands for "Video Object" as defined in DVD specifications. Although a vob file is also an MPEG file, it has additional data that a standard MPEG decoder may not understand, e.g., the "private data", which only a DVD decoder will fully understand. Those data include information about the file offsets and time duration of all chapters included in the VOB file.

2. Whenever a vob file is edited, some of those information will no longer be valid and may be discarded by the editor; and some other data ("user data" in the MPEG specs) which include the caption texts, will be preserved by the editor. This is why that the editor does not have a VOB format for saving.

3. To write back the edited VOB files to a DVD disc for playback on a standard DVD player, you will need to go through another process called DVD authoring, which can be done using Womble's DVD Maker, or using another DVD authoring software. For details about the DVD authoring, please read the sections on DVD Maker.

4. Please note that for most of the DVD authoring tools, the MPEG files saved from the editor will be accepted without modifications.

5. In order to preserve the original chapters, you should import the VOB files from a commercial DVD disc by using a software tool such as the DVD Decrypter or the DVD SmartRipper. Since those free software are very efficient in reading a DVD disc, no slower than direct copying the VOB files from within the Windows file explorer, this work around does not incur any additional manual work, nor any loss of efficiency.
6. Since the editor is single file based, and since the DVD file system breaks one continuous movie stream into multiple 1 GB segments, this introduces video and audio discontinuities when loaded by the editor as consecutive clips. Those discontinuities may exhibit as loss of video for a maximum of one GOP (about half of a second) and as loss of audio for a maximum of two encoded sound frames (about 50 to 60 milliseconds). Worse still, this frequently destroys the original synchronization between video and audio. To work around this problem, it is always better to read the main program of the DVD into the computer as one single file, or as a set of chapter files.

For example, assume that you are using SmartRipper, you could do either of the following:

" (a). select "Settings" and "max-filesize" and set it large enough for the size of the whole DVD program; or
" (b). select "Settings" and "every chapter", and

followed by selecting a file folder and then doing a "Backup".

7. Sometimes, a VOB file obtained from the DVD reader may still contain multiple time bases, and the editor may have a number of problems, such as incorrect movie length, loss of audio and video synchronization, or complete loss of sound. For such file, you should use the MBS Scanner to scan the file, and the editor will then breaks the file into a set of segments based on the time base changes and encoder changes.

8. Please read the FAQ section on How to Reduce the Size of a Movie to Fit a DVD Disc when your movie size is larger than the disc size.

9. Also, please read the section on Scan MPEG File for Multiple Segments when you need to combine a multiple segments of movie files into a continuous movie without actually copying the files.

18.10 What is the difference between a VRO file and an MPEG file?

Please read the text below for detailed explanation.

1. A basic assumption used by the editor about an MPEG file is that it's a continuous stream in terms of its time codes. If a file has multiple time bases, which is basically a set of individual MPEG files packed into one file, the editor will not be able to handle it well.

2. This is especially true for VRO files or DVD-R/W files from a dvd-r/w video recorder, since the recorder writes different recording events with different setups (SP, LP, etc.) into one file.

3. With some embedded data (private data packets inserted into the MPEG file), the hardware is able to process the file correctly; but the editor does not understand those embedded information which are proprietary to the hardware vendors.

4. Please note a VOB file directly copied from a commercial DVD movie disk may have the same problem as that of a VRO file. In order to preserve the original chapters, you should import the DVD content using a software tool such as DVD Decrypter or DVD SmartRipper. with or without file splitting.

5. As you might have noticed when loading a VRO file or a VOB file, the editor does try to do a quick scan to determine whether the file is continuous or multi-segmented.

6. If a quick scan fails, the first thing you may notice is that the total length of the file is much shorter than the actual movie length.
7. One thing we could add to the editor is to add the file scanner for such files, and load the file as separate video clips based on their segmentation.

8. As for now, one suggestion is to record the program at once and edit the file on the computer, avoiding editing on the dvd hardware since it creates multi-segmentation.

Please note that a new tool called "MPEG MBS Scanner" has been added to the editor to alleviate the difficulty caused by the problem discussed above. For details, please read the sections on MBS file scan and How to load an MBS file.

18.11 How to substitute audio in an MPEG file?

I have some existing MPEG video files from a client that I need to edit, and I'm wondering if your tools will do what I need. What I need to do is to remove existing narration from the video clips, add new narration, and save the file back out without recompressing the video portion at all. The video is encoded with MPEG1, 496x288, 24fps. The audio is 16 bit stereo, 44.100 kHz, MPEG2 Layer 2, 192 kbits/s. The new audio could be sent into your software in whatever format it would need, but I'd want the recompressed audio to be similar to what's listed above.

Yes, this can be done using the steps below.
1. Put the MPEG file on the video track of the Timeline.
2. Put the substitute audio on one of the audio tracks.
3. Mute the video clip from the clip menu.
4. Press Export button (red) on the Timeline's toolbox.
5. Select "Custom" template.
7. Change the audio encoder to MPEG-1 Layer 2 at 44.1kHz and 192 kpbs.
8. Switch to Monitor page.
9. Press Start to complete the conversion.
If your substitute audio needs realignment with the video, you will need to do some manual adjustment, using a higher resolution time scale.

18.12 Can I import a Motion JPEG video clip?

When I try to open a small clip from a AVI file, I get the message, "The file is Motion JPEG. Editor can not find Codec on your system". This is the type my digital camera creates. Please advise

Since the editor does not have a native codec for the video type used in your camera, you will need to install a corresponding software driver (aka "plug-in") to import the file.

You may try a driver from the link below

http://www.free-codecs.com

Please note that you will need to reboot the system after its installation before running the editor to open the MJPEG file.
How to use the Export Batch Manager?

The Export Batch Manager is accessed via the batch switch button.

With the Export Batch window opened, you can drag and drop the project icons from the Project Manager; or you can drag and drop the project files from Windows Explore window.

The Batch will automatically select an output file name for each project.

You may change the output file name by selecting the item and clicking the right mouse button, as shown below.

You can also change the file path for two or more projects.
Finally, press the button to start all the selected export jobs in the batch list; or the button to start the export job for one single project.

For details about the batch job controls, please read the sections on the Export Batch Manager.

18.14 How can I fix this de-muxing problem?

Here's my situation. I have cut and re-encoded multiple MPEG2 PS (Program Stream) files recorded from HDTV without fail. However, I have this one file that will always play properly in my software player. But when the file is demuxed, it has an audio track that is 6 seconds longer than the video. I have tried doing all the GOP fixing, and it hasn't changed this result. What I don't get is how an MPEG player see the audio as being the proper length and play through the muxed file with perfect audio and video synchronization.

Is there any way I can "fool" MPEG Video Wizard into demuxing it like a decoder would? Or another way around this that I am missing? This seems like such a silly problem, but I cannot get the demuxed audio and video to match in length. The reason for the different lengths is that the demuxed video and audio have all lost their relative playing time arrangement as encoded in the time stamps of a multiplexed file. Also lost with demuxed files is the ability of hiding data errors incurred during the process of a hardware recording. If the demuxed video and audio files can still be played in synchronization, you could simply cut a small part at the end of one file to make them the same length. Otherwise, it's better keep the video and audio in a multiplexed file at all times.

18.15 How to place text over a graphic in the Title editor?

I'm trying to mask out something that's already in the video. So I go into the Title Editor and create a rounded rectangle with a dark gray fill. I position the rectangle to cover up what I don't want to be shown. Now I want to put white text on top of the rectangle. I had a great deal of trouble trying to get the text to land on the graphic in the title editor. Then the two were offset from each other when the title was placed on the timeline. And the rectangle has the 'foreground' over the text. Am I wrong in thinking that I can place text over a graphic?

There are two methods to create text in the title editor.

A. Double click the editor region in the title editor. This will create a text that is in the "Text Mode", which does not mix with graphic objects well.
B. Press the "T" button in Graphics Toolbox, single click the editor region in the Title editor, and then enter the text. Please use Method B to place text over a graphic.

The following shows an example using Method B to create a title with the text "Text Over Graphics" on top of a colored rectangle graphics.

1. Create a color filled rectangle.
2. Select the "T" button, single click in the title editor window, and then enter the text "Text Over Graphics".
3. Resize the text object and the color rectangle.
4. Right mouse click on the color rectangle, and select "Send to back" from the menu.
5. Bring the text over and put it on top the color rectangle.
The result is shown below.

### 18.16 How to export an MVW project in TMPGEnc MPEG encoder?

I've noticed that you have added the VFAPI MPEG encoder API with the Video Wizard, as mentioned in the export sections of your HTML help. But when I try to open a ".wbp" file in the TMPGEnc MPEG encoder which does support the VFAPI, I do not see the ".wbp" file extension in its list of "VFAPI Supported file".

Am I missing a step, or do I need some additional setup?

No, you don't need any additional setup, since the VFAPI MPEG encoder support was added since the release of the March 2005 update; but you may need one manual step to enable the ".wbp" file in the TMPGEnc MPEG encoder, since the default state of the VFAPI may not be automatically selected by the TMPGEnc.

To enable the MVW project file in the TMPGEnc, please follow the steps below.

For TMPGEnc 3.0 XPress:

1. Press the "Option" menu and select "Preferences...".
2. Switch to "Input plug-in settings" page.
3. In the lower window for "VFAPI plug-in priority order", find and check the item named "MPEG Video Wizard Project Reader 1.0 Beta".
4. Press "OK" and close the Preferences window.
5. Select "Set Source", press "Add file...", and then open the "Files of type:" list, you should see the ".wbp" file extension in the "VFAPI supported file".

For TMPGEnc Plus 2.5:

1. Press the "Option" menu and select "Environmental settings...".
2. Switch to "VFAPI plug-in" page.
3. Find and check the item named "MPEG Video Wizard Project Reader 1.0 Beta".
4. Press "OK" and close the window.
5. Press the "Browse" button for the "Video source", select "MPEG Video Wizard Project File (*.wbp)" from the "Files of type:" list, and then find or enter the MVW project file name you want to export.

Note: please note that this VFAPI is not available in all early versions of the MVW before the March 2005 release.
18.17 How to change video and audio in a multiple video and multiple audio MPEG file?

In the HTML help section on the Clip Context Menu of the Timeline, it says
"You may also change video and audio for a multiple video and multiple audio MPEG file."
Please tell me: What is a multiple video and multiple audio file? And What may be changed?

An MPEG file is usually composed of a video stream and multiple audio streams, multiplexed together as one data stream of video and audio packets.

For example, you are working with a multiple audio MPEG file when you play a DVD movie with a set of audio tracks for several languages.

In a recording of digital video broadcasting, one MPEG file usually contains multiple video and multiple audio streams, each pair of which represents on TV programming channel.

To identify those video and audio streams, MPEG files use one distinct integer called stream ID for each video or audio stream. This integer is stored in the packet header.

In the MVW, you can select video and/or audio by switching the stream ID; and this switching is done via the "Properties" entry in the context menu of the Input monitor or in the context menu of a clip on the Timeline.
18.18 How to read a BeyondTV chapter XML file?

To read a BTV cut list from a "chapters.xml" file:

1. Press F3 to open the Bookmark manager.
2. Press the "Load" button on the top left of the window.
3. From the Open bookmark list file dialog window, select "BTV Chapter Cut List File (*chapters.xml)" under the "Files of Type" drop-down list.
4. Find the file and press Open; a bookmark list will be created.

Please note that the reading may fail if the MPEG file, which is specified by the first line of the text file, cannot be found at the same location as the index file.
Please also note that since each entry in a BTV cut list represents a commercial segment by a pair of file offsets, the bookmark corresponding to the cut segment will not be selected after a successful loading of the cut list. As a result, the clips by dragging and dropping the whole bookmark list onto the timeline will only include the non-commercial segments.

18.19 Frustrations with the time code display and the SMPTE time code

Hi. I've been a registered user of Womble MPEG editor for some time. For a very long time, the time code display appears different than in versions long ago. Long ago, I could trust that the last frame number displayed would consistently reflect the number of frames present in the file or current edited project. There were always 30 frames per second. But the differences now are that sometimes a frame number gets repeated or is missing, and there are sometimes semi-colons between some numbers instead of colons. I have searched everywhere in the documentation (pdf file) but can't find anywhere an explanation of what these semi-colons mean and how their meaning differs from a regular colon. I've now just run into a very severe example. I started out with an mpeg2 file captured and encoded by a hardware encoder. I edited it with Womble editor. When I open the newly created file and go to the last frame, it says "0:36:21:15". (There is a semi-colon before the "15".) Then I feed this mpeg2 file into a freeware program to convert all the frames to a AVI file. Then I encode to Mpeg2 again via another software. If I open the encoded mpeg2 file in Womble editor, the last frame reads "0:36:19:08", and no semi-colon is involved. At first this made me think that some frames were lost along the way, but when I load both files into 2 respective instances of my MPEG2AVI software, they *each* show a frame count of 65379 (which is 0:36:21.479). And I also spot-checked to ensure that there's a one-to-one correspondence between all the respective frames. That is, frame # X in one file exists as frame # X in the other file, not X-1 or X+1; i.e., no dropped or duplicated frames. So I guess my questions are two-fold: 1. Why do the two program streams show two different final time codes, even though they are the same length; 2. What do those semi-colons mean?? (And why do some streams not show them?) (Again, I cannot find any documentation as to what those semi-colons mean, nor why the frame-count sometimes does not advance when moving from frame to frame as sometimes happens.) Sincerely,

The different time code display with or without the semi-column can be explained with some reading about the SMPTE time code, which are also known as "drop frame" and "non drop frame" time code. I did a search on google.com for "SMPTE time code", and found the two articles quoted below, which explain this succinctly.

(1) About SMPTE time code.

http://www.sfu.ca/sca/Manuals/ZAAPf/t/time_code.html

Time code, sometimes known as SMPTE time code or SMPTE code, is an electronic signal which is used to identify a precise location on time-based media such as audio or video tape or in digital systems. (SMPTE refers to the Society of Motion Picture and Television Engineers.) Essentially a string of 80 pulses or bits, containing information pertaining to the hour, minute, second and frame, the type of time code (non drop or drop frame) and 32 user-definable bits. Time code was developed in the early sixties to provide a kind of "virtual sprocket" for videotape. It is used extensively as a synchronization signal or reference throughout audio and video production and post production.

In analog media time code usually takes the form of an audio signal which is recorded on one of the tracks of the tape. Referred to as LTC or longitudinal time code, this signal comes in several different formats relating to the number of frames per second and, in the case of color video (29.97 f/s), whether it is "non-drop" or "drop" frame. In video production, the time code may be recorded as part of the video signal (in an unused line which is part of the vertical interval). Called VITC ("vitsee" or Vertical Interval Time Code) it has the advantage of being readable when the playback video deck is paused: since LTC is an audio signal, it is silent if the tape is not moving.
Time code systems generally have a single Master or time code source with all of the other devices referred to as "slaves. These slaves either: (a) read the time code recorded on their tracks and adjust playback speed to keep locked to the master (continuous resynchronization) or (b) read the time code and start playing when a specified time is reached (trigger sync). In either case, the slave is usually connected to (or has built in) a synchronizer.

This device reads the incoming code and compares it to the code written on the slave's tracks. The synchronizer searches for the correct spot (with fast forward or rewind) and then plays with variable speed until the slave code equals the master code. This is the moment when the two have "locked" and there is usually some visual indication of this status on the slave or synchronizer. Synchronizers allow the user to program an arbitrary "offset" into the system so that the slave code need not bear any resemblance to the master code: for example you might want the slave to sync its location 01:20:39:15 to the master's 01:22:39:15, etc. It is important to note that most systems will not tolerate differences in time code type: always insure that all tapes are "striped" or recorded with exactly the same frame rate and non drop or drop type!

The act of recording or poor tape quality , etc. may degrade the time code signal and make it difficult for the synchronizer to differentiate pulses.

A time code refresher is sometimes used to amplify and alter the on/off slope of the pulses to reduce the amount of errors. If the code disappears entirely the slave will stop unless the system provides for "jam sync". Jam sync refers to the synchronizer's ability to take over generating code when the source stops. Of course the accuracy of the synchronization is in jeopardy because the new source is “freewheeling” or independent of the actual code recorded - however if the drop out is for short period, jam syncing will work.

The master time code should be a stable signal. In professional studios there is usually a "house sync" or master time code available to all synchronization systems. In addition to the hour/minute/second/frame information, it also contains a steady signal referred to as video black which serves as a time base for all of the devices; thus the video signal synchronizes and the time code locates. Computers (usually functioning as sequencers or Digital Audio Workstations) can synchronize to time code although most will only read or generate MIDI time code. Therefore a card or external device is needed to (a) read MIDI and (b) convert SMPTE to MIDI and vice versa.

(2) About time code Drop Frame
http://www.sfu.ca/sca/Manuals/ZAAPf/t/tcode_dropframe.html

Color video was slowly introduced into broadcast.

It was therefore necessary to make it compatible with black and white receivers and design color receivers or televisions to be able to receive black and white programming as well.

In order to accommodate the extra information needed for color the black and white 30 frame/second rate was slowed to 29.97 f/s for color.

Although usually not an issue for non-broadcast applications, in broadcast, the small difference between real time (or the wall clock) and the time registered on the video can be problematic. Over a period of 1 hour (SMPTE) the video will be 3.6 seconds or 108 extra frames longer in relation to the wall clock. To overcome this discrepancy drop frame is used. Drop frame: Every frame :00 and :01 are dropped except for minutes with 0's (00:, 10:, 20:, 30:, 40: and 50:).

18.20 Why is the image display color different between the 2 monitors?

Have simply loaded a file and taken a clip from it. I have done nothing to it (no color correction, etc.). Note the input
The editor uses the hardware YUV overlay for video display in the monitor window whenever available. Due to the design of the hardware and Windows DirectDraw API, there can only be one window that uses the YUV overlay. This means that it will be either the Input or the Output monitor that uses the YUV overlay display at any time. In terms of visual appearance, the YUV overlay display uses the YUV video data as decoded from an MPEG file to directly control the video display hardware without going through the normal YUV to RGB color conversion, and the image color on the monitor window using the YUV overlay looks better than the one not using the YUV overlay.

Furthermore, there is one more additional hardware control called the YV12 pixel format, which some time causes a software compatibility problem for some video display controller. When this problem occurs, the monitor window that uses the YUV overlay may become black. In this case, you will need to turn the YUV overlay mode OFF via the option control at "Options...->Preview" to select the "RGB Only" mode.

Also, you should turn off this hardware acceleration when you need to compare image quality using the two player windows.

One note about the selection of the YUV overlay for the two monitors: the editor will assign the YUV overlay to the two monitors on the basis of "first come first serve".

You may override this arbitrary assignment to only one monitor by changing the default selection in the Preview option page.

### 18.21 How to change language?

_I have your Mpeg Video Wizard DVD. Can you please send me an email with the URL for the German version of the program, I could only find the download of the English version, but I would prefer the German version?_

You don't need to download it again, since it's the same program and the language can be changed by an option control. To switch it to German, please use the steps below.

- click the Tools button on the Taskbar and select "Options..."
- switch to the General page in the Options window
- select "German" from the language drop down list
- press the OK button to close the Options window
- the editor will switch the language by closing and then re-opening the editor windows.

Also, you may download a copy of the German translation of HTML help from the link below.  
[HTML Help in German](#)

Recently (08/2008), we have received a Russian translation of the HTML help from [Al.Vi.R](#), which can be downloaded from the link below.  
[HTML Help in Russian](#)
Currently, the editor supports three languages: English, German, and Simplified Chinese. Additionally, thanks to our users, the following is a list of language files translated and provided by our users.

<table>
<thead>
<tr>
<th>Language</th>
<th>Download Link</th>
<th>Translator</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td><a href="http://www.womble.com/user_download/French.ini.rar">http://www.womble.com/user_download/French.ini.rar</a></td>
<td>by Michon Michel</td>
</tr>
<tr>
<td>Italian</td>
<td><a href="http://www.womble.com/user_download/Italian.ini.rar">http://www.womble.com/user_download/Italian.ini.rar</a></td>
<td>by Claudio Trevisi</td>
</tr>
<tr>
<td>Russian</td>
<td><a href="http://www.womble.com/user_download/Russian.ini.rar">http://www.womble.com/user_download/Russian.ini.rar</a></td>
<td>by Sapiens</td>
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<td><a href="http://www.womble.com/user_download/Russian2.ini.rar">http://www.womble.com/user_download/Russian2.ini.rar</a></td>
<td>by Al.Vi.R</td>
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<tr>
<td>Polish</td>
<td><a href="http://www.womble.com/user_download/Polish.ini.rar">http://www.womble.com/user_download/Polish.ini.rar</a></td>
<td>by Janusz Grzybek</td>
</tr>
<tr>
<td>Arabic</td>
<td><a href="http://www.womble.com/user_download/Arabic.ini.rar">http://www.womble.com/user_download/Arabic.ini.rar</a></td>
<td>by Mohamad Fath</td>
</tr>
</tbody>
</table>

Steps to install a new language (*.ini*) file.

- Find the **Language** folder under the software installation, e.g.,
  - "C:\Program Files\Womble Multimedia\MPEG Video Wizard DVD\Language",
  where you should see the three supported language files: "English.ini", "German.ini", and "Chinese Simplified.ini".

- Copy the new language (e.g., "French.ini") into the Language folder.

- Start the editor and open the Options General page, and you should find the additional entry for the new language.

**18.22 What are the main differences between "MVW-DVD" and "MVW"?**

*What is the main difference between "MVW-DVD" and "MVW"? Can I accomplish the same thing with "MVW" in deleting commercials as I indicated below?*

*I like your program in the respect to editing out commercials using the bookmark browser and associated blank fades button to drag the bookmark clips to the timeline for the quick commercial removal at each fade location.*

Yes. Both MVW-DVD and MVW editors have the same functionality and execute the same code, except that the DVD version has a DVD author component and a Dolby AC-3 encoder.

If you need to edit audio with sound modifications such as volume increase and audio fades, and if you also need to export audio in AC-3 format such as building your own DVD movie library, then you should use MVW-DVD. Otherwise, use MVW.

**18.23 How to export a DVD with nonstandard video format?**

You can export a DVD with nonstandard video format by setting the "Allow export with nonstandard DVD format" on the DVD Option page.

- open the Options window from the Tools menu on the Taskbar, or using the keyboard shortcut by pressing F10
- switch to the DVD page
- check the "Allow export with nonstandard DVD format" line
- press OK to confirm the change and close the Options window.
This option will instruct the editor to export the video without re-encoding even when the video format is not strictly conform to the DVD standard.

One of the main usages of this non standard option is to export video with an image resolution that is not listed in the DVD standard.

According to the DVD standard, the list of video resolutions are 720 x 480, 704 x 480, 352 x 480, 352 x 240 for NTSC, and 720 x 576, 704 x 576, 352 x 576, 352 x 288 for PAL.

However, this is unnecessarily over restrictive, since there are wide spread uses of other image formats, and the additional image size conversion will gain nothing but video quality degradation.

Furthermore, we have tested a number of DVD players from more than 10 manufacturers, with one exception, all of which played DVD's made of nonstandard image size at 480 x 480 (NTSC) and 480 x 576 (PAL).

Another most common case of non standard video format is about the video bit rate limit.

Again, according to the DVD standard, the maximum video bit rate is about 9,802,000 bits per second.

This maximum video bit rate is violated in many cases when MPEG-2 video is digitally broadcasted, where for some reason the video bit rate was set to an artificially high value, much higher than the actual video data rate.

When you start an export job, the DVD editor will check the video format against the DVD standard limits explained above. If it found any violation, it will display a warning message similar to the one shown below.
Lastly, please note that with the "Allow export with nonstandard DVD format" option checked, the DVD maker will export a DVD with MPEG video at a HDTV resolution, even though almost all standard DVD players are incapable of its decoding.

18.24 How to load an MPEG file with multiple segments from a DVD recorder?

When a single MPEG file contains one of the three changes listed below, we refer it as a Multiple Bit Stream (MBS) MPEG file.

1. **timebase change**, such as a time code restart;
2. **video encoder settings change**, such as image size, frame rate, and bit rate; and
3. **audio encoder settings change**, such as sampling frequency, bit rate, and number of sound channels.

As defined in MPEG standards, an MPEG movie stream should have a continuous time code to assist a decoder to synchronize its video and audio presentations. Also, an MPEG movie stream should not change, in the middle of the stream, its video encoder settings, or its audio encoder settings.

When an MPEG file contains one or all of the changes listed above, the editor will not be able to handle it correctly.

Typical examples of such files are MPEG files created by a digital camcorder with an internal MPEG recorder.

For a digital camcorder, one common usage is to take a sequence of shots and stops. And between shots, the camera settings may be changed, such as switching from an "SP" mode to an "LP" mode, which is essentially changing the video resolution and bit rate. For some camcorder, it also restarts the time code after a stop.

When a single MPEG file contains those changes within the file, we refer it as a Multiple Bit Stream (MBS) MPEG file.

Since an MPEG editor cannot correctly decode the second or the following segments of the same MPEG file without some additional information, and since it's hard to design a flexible MPEG player that can dynamically switch MPEG codec, the next best solution and perhaps the simplest solution to this problem is to divide the file into multiple segments, and treat each segment as an individual MPEG file, but without physically creating such segment files. This is what this utility does.

By scanning the MPEG file for any restart of its timecode and any change of MPEG encoder settings, it creates a list of segment files each of which saves a starting file offset and an ending file offset.
The segment file can be recognized by the MPEG editor by its file name extension of ".mbs", and be loaded properly as one complete MPEG stream.

Common examples of MBS files are VRO (".vro") files, DVD-R/W (".rec") files created by a DVD-R/W video recorder, and even some standard DVD (".vob") files.

The following is an example of multi-segment MPEG file,

D:\DVD recorder\PBC_ch9.vro

which contains two segments of MPEG recorded with a 720x480 resolution for the first segment and a 352x480 resolution for the second segment.

Two ".mbs" files will be created by the scanning process, and listed below.

(1) D:\DVD recorder\PBC_ch9.vro_1.mbs
   [MBSFile]
   NumFile= 1
   File= D:\DVD recorder\PBC_ch9.vro
   Segment= 0 93235200

(2) D:\DVD recorder\PBC_ch9.vro_2.mbs
   [MBSFile]
   NumFile= 1
   File= D:\DVD recorder\PBC_ch9.vro
   Segment= 93235200 147796772

Combine Multiple Segment Files Into One Continuous Stream

Another usage of this MBS file format is to combine a set of MPEG files which are really segments of one continuous MPEG stream, but cut into small pieces in order to satisfy the limitation of a file system, for example.

One typical example is the set of VOB files for one DVD program, such as the following list.

   VTS_01_1.vob
   VTS_01_2.vob
   VTS_01_3.vob
   VTS_01_4.vob

The corresponding ".mbs" file for this example is the following.

   [MBSFile]
   NumFile= 4
   File= D:\VIDEO_TS\VTS_01_1.vob
   File= D:\VIDEO_TS\VTS_01_2.vob
   File= D:\VIDEO_TS\VTS_01_3.vob
   File= D:\VIDEO_TS\VTS_01_4.vob

This is the reverse of a multi-segment file as explained previously.
How to Reduce the Size of a Movie to Fit a DVD Disc?

The method listed below works very well when the total size of an exported DVD movie does not exceed too far from the desired disc size, e.g., for a reduction between 25% to 35%; and it works great if the needed reduction is less than 15%. Here, we assume that the input is MPEG-2 video suitable for DVD production without the need of video re-encoding.

Step 1. Download and install freeware DVD Shrink, for which the latest version is v3.2.0.15. Do a Google if you don’t know where to find it.

Step 2. Build your DVD project with this editor, and export the VIDEO_TS with the "automatic" encoder settings, so that the main video segments, except a few seconds of fades and transitions, are all stream copy, as indicated by the blue color on the encoder map.

Step 3. Start DVD Shrink and do the following steps.
   3-a Click "Open Files" and select the VIDEO_TS from Step 2.
   3-b Open "Edit -> Preferences..." and select your desired disc size.
   3-b Click "Backup" and select a new export file folder.

For a DVD-5 (4.7GB) export, Step 3 will only take about 10 to 15 minutes.

Step 4. Start your DVD burning software, and burn the output from Step 3 as a "DVD-VIDEO" project.

Reduce the size of an HD TV recording.

We have tested that the above method can be used to reduce the size of an HD TV recording to a size that is neither the size of a DVD-5 (4.38 GB) nor that of a DVD-9 (7.92 GB).

The steps are exact the same as the above. In Step 3-b, instead of selecting one of two DVD disc types, select "Custom" and enter your desired output size in the right field.

Lastly, please remember to set the check box for the DVD Options to "Allow export with nonstandard DVD format".

18.25 How to Reduce the Size of a Movie to Fit a DVD Disc?

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Step 4. Start your DVD burning software, and burn the output from Step 3 as a "DVD-VIDEO" project.

Reduce the size of an HD TV recording.
We have tested that the above method can be used to reduce the size of an HD TV recording to a size that is neither the size of a DVD-5 (4.38 GB) nor that of a DVD-9 (7.92 GB).
The steps are exact the same as the above. In Step 3-b, instead of selecting one of two DVD disc types, select "Custom" and enter your desired output size in the right field.
Lastly, please remember to set the check box for the DVD Options to "Allow export with nonstandard DVD format".

18.26 How to delete a sound?

Just another question, can I delete unwanted audio from a home movie and add music instead? I have tried to do this in the trial but can't get it to work. Thanks again.

Please use the steps in the following example.
Step 1. load the movie file to the video track of the timeline.
Step 2. copy the video clip (Ctrl+C) and paste (Ctrl+V) it to the first audio track.
Step 3. mute the video clip on the video track.
Step 4. find the audio segment to be deleted (or replaced) using the MarkIn and MarkOut markers.
Step 5. split the marked segment using the "Split (Ctrl+Q)" function.
Step 6. mute (or fade, or sound line edit) the separated audio segment.
Step 7. add your music clip to the 2nd audio track and align it properly.
The result is shown here.
18.27 How to move an editor project from one PC to another?

I am trying to take a video project at work to complete at home. You suggested the use of an editor project package tool. Could you explain what you mean by "an editor project package tool", and how I may go about using it? Thanks!

First a reminder, the usage of the **Editor Project Package** tool is also explained in the HTML help section on "Tools: Pack and Unpack Project".

The following are more detailed steps.

**Pack an Editor Project**

**Step 1.** save your final editing project on the timeline to an editor project file ("MyProject.wbp").

**Step 2.** click on the Tools button to open the list, and select **Editor Project Package**.

**Step 3.** in the package tool window, open your editor project file, and please note that you can also drag and drop an editor project icon from the **Project Manager**, or a ".wpb" file from a Windows Explorer file folder.
Step 4. press the Start button to create the package file, and wait for its completion.

Unpack an Editor Project

Step 1. open the Package tool window, and switch to Unpack.

Step 2. find and load the package file, and use the default unpack location, or select a different file folder.

Step 3. press the Unpack button, and wait for its completion.
Note that at the end of a successful unpack, the unpacked editor project will be automatically added to the Project Manager.
19 Glossary

-A-

Aspect Ratio
An Image's Aspect Ratio represents a comparison of its width to height. Two common video graphic aspect ratio are 4:3 (1.33:1), universal for standard-definition video formats, and 16:9 (1.78:1), universal to high-definition television and European digital television.

AUDIO_TS
Most DVDs have both AUDIO_TS and VIDEO_TS folder, but the AUDIO_TS holder is usually empty. DVD-Audio would be stored in an AUDIO_TS folder but is a separate format to DVD-Video.

AVI
AVI, which stands for Audio Video Interlace, is a multimedia container format introduced by Microsoft in November 1992 as part of its Video for Windows technology.
Please beware the difference between a file format and a video codec. In the case of AVI, as a "multimedia container", it does not specify nor limit which codec should be used to encode the video and audio data, but simply define how to combine a video stream and one or several audio streams into a single file.

-B-

B Frame
Bi-directional predictive pictures, which is commonly referred to as B frames. They are not full frames and predicted by the previous frames and the next frames.

Bitrate (bps)
Bitrate represents the amount of information, or detail, that is stored per unit of time of a recording. Bitrate calculations are typically made in kilobits per seconds (kbps) or Megabits per seconds (Mbps).

Bookmark
Bookmarks are special frames used to index a movie. Please read "Using Bookmarks" for more detail.

-C-

Constant Bitrate (CBR)
Constant Bitrate (CBR) refers to video and audio encoding where the bitrate does not fluctuate. Constant bit rate encoding means that the rate at which a codec's output data should be consumed is constant.

Channel
In Audio, a channel is a stream of audio that is to be played by one speaker.

Chapters
On the DVD, a chapter is a segment of a movie file. DVDs are separated into chapters for easier navigation.

Closed GOP
Closed GOP stands for Closed Group of Pictures. A closed GOP setting means that frames from the current GOP cannot
reference I frame from the previous GOP.

**CRC (Cyclic redundancy check)**
A CRC is an error-detecting code. It is a type of function that takes as input a data stream of any length and produces as output a value of a certain fixed size.

**Cropping**
This is a method of cutting away parts of video. For example, you could have a recording where all the action is in the middle. You could crop away the sides so that only the area with the action is shown.

**-D-**

**Decibel (dB)**
The decibel (dB) is a logarithmic unit used to describe a ratio. It is used to measure sound level, but it is also widely used in electronics, signals and communication.

**Deinterlace**
Deinterlace is the process of creating a single frame from the two interlaced fields of a video frame.

**Demultiplexer (Demux)**
Demultiplexer (Demux) is a tool of splitting the file that contains both audio and video data into separate files, each containing one element of the original file. Demuxing file does not weaken the video nor audio quality, it just simply save them into separate files.

**Dolby Digital (AC-3)**
Dolby Digital (AC-3) is Dolby's third generation audio coding algorithm. It is the common version containing up to six discrete channels of sound, with five channels for normal-range speaker and one channel for the low-frequency effects.

**DV**
DV is a video format used for digital video cameras.

**DVD**
DVD stands for Digital Versatile Disc. It is a popular optical disc storage media format. Its main users are video and data storage.

**-F-**

**Field**
A field is one of the many still images which are displayed sequentially to create the impression of motion on the screen. Two fields comprises one video frame.

**Field Order**
Field order refers to the choice of which field of an interlaced video signal is chosen as the point at which video edits occur.

**Filter**
Filter can be applied to the video content in order to achieve a desired effect.
First Play
On a DVD-Video compilation, First Play refers to a video clip that is automatically shown when a DVD disc is inserted into a DVD Player.

Frame rate (fps)
Frame rate is the measurement of the frequency at which individual images in the video are displayed on the screen during playback. The television frame rate in US (NTSC) is 29.97 frames per second (fps). In many parts of Europe and Japan, the television standard is PAL at 25 fps.

-G-

Group of pictures (GOP)
The GOP is a group of successive pictures within an MPEG-coded video stream. Each MPEG-coded video stream consists of successive GOPs.

-H-

HDTV
HDTV stands for High-Definition Television. It is high-resolution digital television combined with Dolby Digital surround sound. The formats used in HDTV are:
- 720i: 1280x720 pixels interlaced
- 720p: 1280x720 pixels progressive
- 1080i: 1920x1080 pixels interlaced
- 1080p: 1920x1080 pixels progressive

Hertz (Hz)
Hertz (Hz) is the measurement for frequency or cycles per sound.

-I-

I Frame
An I frame, or Key frame, is encoded as a single image without reference to any pictures.

-L-

Linear PCM
Linear pulse code modulation (LPCM) is a method of encoding audio information digitally.

-M-

at MBS
MBS stands for Multiple Bit Stream MPEG file in the Womble Editor. Please read "MPEG MBS Scanner" for more detailed.

MOV
.mov is a file extension used by the Quick Time wrapped files.

MPA
MPEG Audio Stream with no video.
**MPEG-1 System**
This is the MPEG-1 multiplexed data format. It usually contains both compressed video and compressed audio data formatted with additional information for audio and video synchronization (ISO/IEC-11171).

**MPEG-1 Video**
Compressed video using the MPEG-1 video compression standard (ISO/IEC-11172).

**MPEG-2 Program stream**
This is an MPEG-2 multiplexed data format (ISO/IEC-13818-1), very similar to MPEG-1 Systems format with minor changes and mainly for formatting MPEG-2 compressed video and audio data. This is the format used by the Digital Video Disk (DVD) format.

**MPEG-2 Transport stream**
This is another MPEG-2 multiplexed data format (ISO/IEC-13818-1), and it is mainly used for transmission of multi-program MPEG-2 compressed contents over telecommunication channels, such as cable TV and satellite TV broadcasting.

**MPEG-2 Video**

**MPV**
MPEG-1 or MPEG-2 video elementary stream with no audio. MPEG-1 stream have a .m1v extension and MPEG-2 stream have a .m2v extension.

**Multiplexer (Mux)**
Multiplexer (Mux) is a tool of joining video and audio to one file.

**Normalize**
Normalize refers to raising the volume so that the highest level sample in the file reaches a user defined level.

**NTSC**
NTSC is the television system in use in the United States, Canada, Japan, Mexico, Philippines, South Korea, Taiwan, and some other countries. It is named for the National Television Standards Committee.

**Overlay**
Video overlay is a technique used to display a video window on a computer display. This is done in order to speed up the video display.

**P Frame**
P frame is a predicted frame. It is a video frame encoded relative to the past reference frame. The past reference frame is the closest preceding reference frame.

**PAL**
PAL, short for Phase Alternation Line, is a colour encoding system used in large parts of the world.

**Pixel Aspect Ratio (PAR)**
Pixel aspect ratio (PAR) is the ratio of width to height of a single pixel.

**PSP**
PSP stands for Sony's handheld gaming console, PlayStation Portable.

**-R-**
**RGB**
RGB is an color model in which red, green, and blue. Every color in the visible spectrum can be made from these three colors.

**-S-**
**Sample Rate**
The sample rate is the number of samplers per second used to store a sound.

**SVCD**
SVCD strands for Super Video CD. It is a format used for storing video on standard compact discs.

**-T-**
**Trim**
A function that will output a clip segment without changing any of the original content and compression parameters. Please read "Trimming Video Clips" for more.

**-U-**
**Undo/Redo**
These commands allow you to change a project back to a previous state.

**VBR**
VBR stands for Variable Bit Rate. VBR files vary the amount of output data per time segment. VBR can be used to increase bitrate during high motion scenes in a video.

**VIDEO_TS**
On a DVD disc, DVD movie files are stored in the VIDEO_TS folder.

**VOB**
VOB stands for DVD Video Object. It is a container format contained in the DVD-Video media.

**-W-**
**WAV**
WAV format is the standard Windows audio file format.
YUV
The YUV model defines a color space in terms of one luminance (Y) and two chrominance components (U and V).

20 Contacting Us

Visit our website or email us for information on the latest products and updates. Send us your suggestions and bug reports; we value your feedback.

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