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Introducing VidEdit

VidEdit lets you create and edit audio-visual sequences consisting of a series of <u>frames</u> that contain digital audio and video data. With VidEdit, you can edit one or more frames of a video sequence, adjusting the audio, video, or color components of the frames.

Using VidEdit, you can easily add, delete, or move multimedia data in your video sequences. You can synchronize a presentation by moving sound data to match the video image. When you finish fine-tuning a video sequence, you can generate a compressed, <u>interleaved</u> .AVI file. VidEdit lets you adjust compression parameters to allow for such factors as image quality and the <u>data-transfer rate</u> for your particular storage device.

You can run multiple copies of VidEdit simultaneously, which is useful if you need to edit and refine portions of a sequence.

See Also

Creating Video Using VidEdit

There are several ways to create video files:
- Use VidCap to capture video from videotape, videodisc, or a camera
- Use VidEdit to import animation or sequential image files
- Use CapScrn to capture animation directly off the screen
- Use VidEdit to arrange individual images and sounds in sequential order

For information about using VidCap and CapScrn to create video, see the Help files for those applications. Once you've captured video, you can load it into VidEdit, adjust the presentation, and save it as a compressed .AVI file.

See Also

Editing Video Using VidEdit

VidEdit provides many functions for editing your video sequence. The content of a video sequence is stored in two tracks, the video track and the audio track. The tracks are divided into frames; a frame is a short segment of video or audio data. During the video presentation, video frames are displayed one after another, creating a moving picture. The audio frames are played in sequence, producing an unbroken sound track.

When editing a video sequence, you perform the following actions:

- Add or remove data from the video and audio tracks
- Synchronize the audio and video tracks
- Adjust the audio, video, and compression characteristics of the sequence
- Save the presentation as a compressed .AVI file

For example, you might want to replace the audio track with higher-quality sound captured in a separate session. You might remove some unnecessary material from the presentation. Or, you might splice two video clips together into a longer clip. When you're finished adjusting the content of the presentation, you might experiment with different compression settings to see which combination produces the best quality at the lowest storage cost. You can perform all these editing actions using VidEdit.

See Also

Overview: Editing Video and Audio Tracks

Overview: Working with Color Information

Overview: Setting Options for the Video Sequence

Compressing Video

Compression is a critical component of a digital-video system. Uncompressed video sequences have immense storage requirements, so an immediate problem is storing the sequence on the distribution medium (for example, a CD-ROM disc). Another critical problem is the data-transfer bottleneck. For example, when playing video from CD-ROM, data is transferred from the CD drive and into the main processing unit of the computer. It is then decompressed and converted to images suitable for display.

If the CD-ROM drive can't transfer data at sufficient speed, the animation might "fall behind" and become jerky or broken. An important goal of compression is reducing the amount of data required for each frame of video, thus reducing the amount of information to transfer from the storage device to the processing hardware.

In Video for Windows, compression is performed by software routines called *codecs* (short for compressor/decompressors). For additional performance, some codecs can interface with compression routines residing in hardware.

Video for Windows provides a selection of codecs, each of which has specific advantages and liabilities. You'll need to consider the advantages and disadvantages to determine which method is appropriate. For information about the compression routines included with Video for Windows, see <u>Compression Methods</u>.

Compression Process

After you've captured a video sequence, you can load the sequence into VidEdit and apply compression. VidEdit has a Compression Options command (available from the Video menu) that lets you choose a compression method and set other options affecting the attributes of the compressed sequence. Compression isn't applied until the video file is saved.

Within the compression settings, you can choose the target playback platform for the video sequence. The capabilities of the playback platform determine the target frame rate for the video sequence. VidEdit lets you select from several representative playback platforms; you can also choose custom combinations of compression settings.

After selecting a compression method and compression settings, you save the video sequence. Using the selected codec, VidEdit saves the video in compressed format. Depending on the compression method, compression might take a large amount of time.

See Also
Setting Compression Options
Compression Methods
Saving an AVI File

▶
VidEdit Toolbar and Controls

▶ Click the controls in the following illustration for an explanation of the VidEdit control:
▶

See Also

File Menu Commands

The File menu contains the following commands:

Command	Description
New	Clears and resets the workspace in preparation of a new video sequence.
Open	Opens a video file.
Save	Saves the current file in the .AVI format.
Save As	Lets you save the video sequence, specifying a different filename and options, if necessary.
Revert	Opens the last version of the video sequence saved on disk.
Insert	Lets you insert a picture, audio sequence, or video sequence at the current position.
Extract	Lets you extract one or more frames of video and/or audio information, saving the information in a variety of file formats.
Capture Video	Starts VidCap, the video-capture application. You can load files created by VidCap into VidEdit, or insert them into the current video sequence.
Play Preview	Displays a preview of the video sequence using the current video settings.
Exit	Closes the video sequence and quits VidEdit.

See Also

Importing Audio-Visual Sequences
Pasting and Inserting Frames
Playing Video
Extracting Audio and Video Tracks
Saving an AVI File

Edit Menu Commands

The Edit menu contains the following commands:

Command	Description
Undo	Undoes the last editing command or action.
Cut	Deletes frame data and places it on the Clipboard.
Copy	Copies frame data to the Clipboard.
Paste	Pastes audio and/or video data from the Clipboard.
Paste Palette	Lets you paste color information to one or more frames in the video sequence.
Delete	Deletes frame data.
Set Selection	Lets you select one or more frames of the video sequence.
Go To	Lets you jump to a specific frame number within the video sequence.
Track	Lets you select which tracks (video and/or audio) are available for editing.
Preferences	Lets you select configuration options for VidEdit.

See Also

Overview: Editing Video and Audio Tracks

Copying Frames

Pasting and Inserting Frames

Cutting and Deleting Frames

Cropping the Frame

Resizing the Frame

▶ View Menu Commands

The View menu contains the following commands:

Command	Description
Full Frame Update	Selects full-frame display. When VidEdit displays a frame in the editing window, it always displays the complete frame image. This option is slower than the Fast Frame Update option.
Fast Frame Update	Selects fast-frame display. When VidEdit displays a frame in the editing window, it overlays the video information for the current frame rather than rebuilding the complete image. This option can result in an incomplete frame display (but has no effect on the actual .AVI sequence).
Draw Full Frame	Displays the current frame as it will appear when playing the video sequence. This command is available only when the Fast Frame Update option is in effect.
Zoom	Magnifies or reduces the image displayed in the edit area. Zoom choices include half-size, normal size, twice normal size, and four times normal size.

See Also

Adjusting the Look of VidEdit

Adjusting the Video Frame Display

Setting Frame Update Options

Video Menu Commands

The Video menu contains the following commands:

Command	Description
Compression Options	Lets you select compression and formatting options for the video sequence.
Convert Frame Rate	Lets you change the <u>frame rate</u> (number of frames per second) for the video sequence.
Synchronize	Lets you synchronize audio playback with the video sequence by adjusting the frame rate and the starting position of the audio.
Audio Format	Lets you set the audio characteristics for the video sequence.
Video Format	Lets you change how color is stored in the video sequence.
Create Palette	Creates an optimal <u>palette</u> for any range of frames in the video sequence, and lets you apply the palette to other ranges of frames.
Crop	Lets you crop the video portion of the video sequence (thus changing the size of all the frames).
Resize	Lets you change the frame size of the video sequence.
Statistics	Displays statistics about the video sequence, including number of frames, total time, and data size.
Load File into Memory	Loads all the frames of a video sequence (or as many as will fit) into memory, which can speed up scrolling and editing operations.

See Also

<u>Displaying Video Statistics</u>
<u>Setting the Frame Rate</u>
<u>Setting the Audio Format</u>
<u>Setting Compression Options</u>
<u>Synchronizing Audio and Video Tracks</u>
<u>Creating Palettes</u>
<u>Pasting Palettes</u>
<u>Changing the Color Format</u>

Help Menu Commands

The Help menu contains the following commands:

Command	Description
Contents	Displays the Contents topic of this Help file.
About	Displays the version number and copyright statement for VidEdit.

See Also
How to use Help

VidEdit Keys

Use the following keys to perform VidEdit functions:

To	Press
Undo the last change	CTRL+Z, ALT+BKSP
Delete the current frame or current selection	DEL
Cut the current frame or current selection to the Clipboard	CTRL+X, SHIFT+DEL
Copy the current frame or current selection to the Clipboard	CTRL+C, CTRL+INS
Paste from the Clipboard	CTRL+V, SHIFT+INS
Change the editing mode between insert and overwrite settings	INS
Open a file containing a video sequence	CTRL+F12
Save the file to another name or format	F12
Save the file to the same name and format	SHIFT+F12
Redraw the current frame	F5
Display the Help Index	F1

See Also
VidEdit Toolbar and Controls

▶ Overview: Configuring VidEdit

VidEdit provides several features that let you customize the appearance of the window and increase the speed of certain editing operations. Many of these options are available from the Preferences dialog box, while others are available from the View menu.

For information about adjusting the look, frame display, and editing performance of VidEdit, see the following topics in this sequence.

See Also

[VidEdit Preferences Dialog Box](#)
[View Menu Commands](#)

►
Adjusting the Look of VidEdit

VidEdit provides several options for configuring the appearance of the editing window. The following procedures describe the different ways you can adjust the look of the application.

► **To adjust the window size when a new file is loaded**

VidEdit can expand or shrink its window to accommodate new video sequences as they are opened.

1 From the Edit menu, choose Preferences.

2 Select Resize Window To New Frame Size.

► **To change the background color**

You can specify the color for the area surrounding the video frame display in the VidEdit window.

1 From the Edit menu, choose Preferences.

2 In Background Color, select the color you want.

► **To display the frame number in the title bar**
You can display the number of the current frame in the VidEdit title bar.

1 From the Edit menu, choose Preferences.

2 Select Show Frame # In Title Bar.

► **To change the time units**

When specifying positions within the video sequence, you can use times (hh:mm:ss.hh) rather than frames. All position values throughout VidEdit are changed to the selected format.

1 From the Edit menu, choose Preferences.

2 Select Show Positions In Time Format.

► **To hide or show the toolbar and status bar**
1 From the Edit menu, choose Preferences.

2 Select or clear Tool Bar And/Or Status Bar.

See Also

►
Adjusting the Video Frame Display

VidEdit displays the current video <u>frame</u> in the editing window. The following procedures describe how to set options for the video frame display.

► **To center the frame display**

You can display the video frame in the center of the window, or you can display it at the top left.

1 From the Edit menu, choose Preferences.

2 To center the image, select Center Image In Window.

   Or, to display the image at the top, left corner of the window, clear Center Image In Window.

► **To zoom the frame display**

You can zoom or shrink the video frame within the editing window. Zooming the picture does not affect the actual size of the video sequence.

1 From the View menu, choose Zoom.

2 Choose the zoom proportion you want.

Or, choose the Zoom button on the toolbar. Choose it repeatedly to toggle between the different zoom sizes.

See Also

► **Setting Frame Update Options**

Some compression methods don't store full video information with each frame; they overlay information from the current frame on the image present from the previous frame. When you scroll forward through such a sequence, the data stored for the current frame is overlaid on the data from previous frames, providing a complete image. However, when you jump to an arbitrary frame, the images from previous frames might not be available, so the frame display might be incomplete.

In these situations, VidEdit can reconstruct the full-frame image by sequentially displaying the video data from all frames preceding the current frame. However, this reduces the display performance, so VidEdit lets you choose between speed and accurate display.

► **To choose between fast display and full display**

▪   From the View menu, choose Fast Frame Update or Full Frame Update.

► **To restore the full frame image (when using fast frame display mode)**

If your frame image has become jumbled, you can tell VidEdit to reconstruct the current frame image by displaying all the preceding frames.

▪   From the View menu, choose Draw Full Frame Image.

Or, choose the Redraw Frame button on the toolbar.

Or, press F5.

See Also

►
Enhancing Editing Performance

VidEdit sets aside a segment of memory to store audio and video data in memory. You can change the size of this memory cache; by increasing the memory used, you can speed editing operations. The following procedures describe how to configure the cache.

► **To change the size of the memory cache**

1 From the Edit menu, choose Preferences.

2 In Memory For Caching Images, type a new cache size value.

   Keep the size of the cache smaller than the amount of physical memory on your computer; otherwise, portions of the cache might be swapped to disk, eliminating any speed improvements.

3 Choose OK.

► **To load the entire video sequence into memory**

To speed editing performance, you can load a small video sequence into memory.

▪   From the View menu, choose Load File Into Memory.

See Also

▶
Overview: Creating Video

Video for Windows video sequences are stored in Audio-Video Interleaved (.AVI) files. You can capture video sequences using VidCap and CapScrn, or you can import Autodesk Animator animations, converted QuickTime movies, and bitmap (.DIB file) sequences directly into VidEdit.

VidEdit lets you perform the following tasks:
- Add or remove frames, and synchronize audio with video
- Set compression options
- Play previews of an entire video sequence, or selected portions
- Save the sequence as a compressed .AVI file

For more information about the basic functions provided by VidEdit, see the following topics in this sequence.

See Also

▶
Capturing Video

Video for Windows provides the following methods for capturing video sequences:
▪   You can use the VidCap application to capture video and audio from an external device, such as a VCR, videodisc player, or video camera. To capture from an external source, you need a video-capture board.
▪   You can use the CapScrn application to capture video directly off your computer display. For example, you can create a video sequence showing procedures performed in a word-processing or spreadsheet application.

You can start VidCap directly from VidEdit. Once you capture video using VidCap, you can load the capture file into VidEdit, perform any necessary editing, and then save the captured video as a compressed .AVI file. You can start CapScrn from the Video for Windows group in Program Manager.

▶ **To start the VidCap application to capture video**
▪   From the File menu, choose Capture Video.

Or, choose the Capture Video button ⊞ from the toolbar.

See Also

Importing Audio-Visual Sequences

You can import Autodesk Animation files, converted QuickTime movies, and device-independent bitmap (.DIB) sequences into VidEdit. After importing the sequence into VidEdit, you can insert additional video and audio sequences using the Insert command. You can then save the sequence in the .AVI format.

The following table lists more information about the conversions:

File Type	Conversion Notes
Autodesk Animation (.FLI, .FLC)	VidEdit converts video stored in Autodesk Animation files.
QuickTime movies	Use the Video for Windows Converter on the Macintosh to convert the QuickTime file into .AVI format. You can then transfer the .AVI file to the PC and load the .AVI file into VidEdit.
	For information about using the Video for Windows Converter, see the Help file for the converter application.
Microsoft DIB Sequence (.DIB)	The .DIB files should be numbered to show sequence; for example, ANIM1.DIB, ANIM2.DIB, ANIM3.DIB. Specify the name of the first file, and VidEdit searches the same directory for the rest of the files in the series.

Note Before playing a video sequence from an imported format, you should save the video sequence in the .AVI file format to improve its playback performance.

 To create a video sequence from an existing audio-visual sequence

1 From the File menu, choose Open.

   Or, choose the Open button on the toolbar.

2 Select the file you want to open.

   To choose a file format other than .AVI, select a new file type from the List Files Of Type box.

3 Choose OK.

   If the file is in a format other than .AVI, there will be a brief delay as VidEdit loads and converts the frames.

See Also
Open Video File Dialog Box
Pasting and Inserting Frames

Playing Video

When using VidEdit, you can play your video sequence using Media Player or directly from VidEdit. Media Player lets you play .AVI files, while VidEdit lets you play .AVI files as well as video sequences stored in other file formats. Media Player provides better playback performance, but you can play video sequences from VidEdit to quickly preview them (or a selection of frames).

When playing edited video sequences and video sequences stored in other formats, the VidEdit Play Preview command plays more slowly and might skip frames, insert audio breaks, or cause the video and audio to be unsynchronized. To improve the playback of an edited or imported video sequence, save the video sequence first; you can then play it using Media Player or directly from VidEdit.

 To play a video sequence using VidEdit

▪ From the File menu, choose Play Preview.

Or, select the following playback controls beneath the mark area:

Button	Description
▶	Plays a video sequence from the current frame to the end of the sequence. To play the currently selected frames, hold down the ALT key while choosing the button.
□	Stops the playback.
◄◄	Moves the current position left to the nearest <u>mark</u> or the first frame of the video sequence.
◄◄	Moves the current position backward through 10%.
►►	Moves the current position forward 10%.
►◄	Moves the current position right to the nearest mark or the last frame of the video sequence.

 To play a video sequence using Media Player

1 Save the video sequence in the .AVI format.

2 Switch to Program Manager and start Media Player.

3 Open the .AVI file in Media Player.

4 Choose the Play button .

See Also

Saving an AVI File

Saving an AVI File

When you save a video sequence, VidEdit saves the audio and video using the interleaving parameters you've chosen for the sequence. You can save a sequence with or without interleaving; with interleaving, you can choose from a variety of options.

There are three ways to save:

Saving to the current filename

Saving to a different filename

Saving to a different filename, retaining the previous video sequence in VidEdit

The third method is useful when you're experimenting with different variations of interleaving parameters. You can retain your uncompressed sequence in VidEdit and save different versions of the video sequence to different .AVI filenames.

Hints

While finalizing the content of a video sequence, save it in uncompressed format. After you've made all your editing changes, you can then save it in compressed format, experimenting as necessary with various compression parameters.

When saving a video sequence that's already been compressed, you should avoid performing additional compression on the data. To save without additional compression, display the compression options and make sure "No Recompression" is selected as the video-compression method.

 To save the video file to the current filename

From the File menu, choose Save.

Or, choose the Save button from the toolbar.

 To save the video file to a different filename
1 From the File menu, choose Save As.
   The Save Video File dialog box appears.
2 Set the drive, directory, and filename for the .AVI file.
3 To retain the current video sequence in VidEdit after saving, select the Save Copy check box.
4 To change the compression options, choose the Compression Options button and set the compression options you want.
5 Choose OK.

See Also
Save Video File Dialog Box
Setting Compression Options
Compression Options Dialog Box

Overview: Editing Video and Audio Tracks

VidEdit provides common video-editing capabilities, including the following:

Cutting unwanted portions of a sequence

Moving sequences to a different location

Making copies of sequences

Splicing sequences together

Most editing is performed using standard editing techniques in Windows: cutting and copying data to the Clipboard, pasting data from the Clipboard, and inserting the contents of files into the video sequence. The main difference in video editing is you're often dealing with a time-based segment of data that might include many <u>frames</u> of video and audio information. You can also work with individual frames (such as a single image). The following topics in this sequence describe the different editing operations.

Selecting Data for Editing

Editing operations such as insert, delete, cut, paste, and copy are performed on selections of video and audio data. The outcome of the editing operation depends on which data is selected. In VidEdit, the following factors determine the composition of a selection:

Which tracks are active. You can activate the audio track, the video track, or both tracks. Edits (such as cutting, pasting, or inserting data) only affect active tracks. For example, you can cut data from the video track but leave the audio track untouched.

Which frames are selected. By default, the current frame is selected. You can also select a range of frames using the Mark In

and Mark Out

buttons in the VidEdit window.

For example, you can select a single frame or a range of frames in the video data track, the audio data track, or both data tracks.

The other factor that affects the outcome of editing operations is the editing mode (<u>insert mode</u> or <u>overwrite mode</u>).

See Also

Overview: Working with Color Information

Overview: Setting Options for the Video Sequence

Clipboard Formats Supported by VidEdit

VidEdit lets you transfer video and audio data to and from the Clipboard. When pasting data from the Clipboard to the video sequence, VidEdit supports the following formats:

Waveform audio

Bitmaps

Palettes

Video sequences copied from VidEdit

For example, you can copy a segment of audio from Sound Recorder, switch to VidEdit, and paste the sound into the video sequence.

Note When you cut or copy a selection of one or more frames, VidEdit copies the following items onto the Clipboard:

A bitmap and palette from the first selected frame. This information is provided in a universal format that most applications can use.

The selected frames. The frame selection is copied in a format used only by VidEdit; you will only be able to paste the frames to VidEdit (though you can paste the frames into a different VidEdit session running on your computer).

The audio sequence (waveform) corresponding to the selection. The audio is copied in standard waveform audio (.WAV) format, so any application that accepts waveform sounds can use the audio information.

See Also

Activating Multimedia Data Tracks

When you edit .AVI files, you work with the following multimedia data <u>tracks</u>:

Video track

<u>Waveform</u> audio track

VidEdit lets you activate one or both tracks for editing. Editing commands such as Insert, Cut, Paste, and Delete only affect active editing tracks.

To activate a data track for editing

1 From the Edit menu, choose Track.

Another menu appears from the Edit menu, showing the data tracks you can select.

2 Select Video Only, Audio Only, or Both Video and Audio.

Or, choose the appropriate Data Track buttons:

Video

Audio

Both video and audio

See Also

Selecting Frames

You can select one or more <u>frames</u> in a contiguous block within the video sequence. Editing operations affect the frames in the selection, but only for those data <u>tracks</u> that are active.

There are two ways to select frames:

Using a dialog box

Using the Mark In/Mark Out buttons in the VidEdit window

If you haven't selected a block of frames, the edit commands use the current frame.

Note VidEdit lets you refer to frame positions using frame units or time units. The position values used with the Set Selection dialog box and Mark In/Mark Out use the time measurement you've selected.

To select frames using a dialog box
1 From the Edit menu, choose Set Selection.
2 In the From box, type the first frame number or time position to select.
3 In the To box, type the last frame number or time position to select.
4 Choose OK.

To select frames using the Mark In/Mark Out buttons
1 Move to the first position you want to include in the selection. You can drag the slider in the VidEdit window, or you can use a dialog box, as described in the next procedure.
2 Choose the Mark In button.
3 Move to the last position you want to include in the selection.
4 Choose the Mark Out button.

To jump to a specific position
1 From the Edit menu, choose Go To.

   Or, double-click the frame-number display area of the status bar.
2 Type the frame number, or type the time position (depending on which measurement is active).
3 Choose OK.

To change to a different time measurement
1 From the Edit menu, choose Preferences.
2 To use tracks, clear the Show Positions In Time Format check box.

   To use time, select the Show Positions In Time Format check box.
3 Choose OK.

See Also

Using the Editing Modes

VidEdit provides two editing modes that affect the outcome of editing operations. When inserting files into a video sequence or performing Clipboard operations such as cut and paste, you can use the following editing modes:

Editing Mode	Description
Insert mode	When adding data (by inserting a file or pasting from the Clipboard), VidEdit moves existing data forward to allow room for the new information.
	When removing data (by cutting or deleting), VidEdit moves existing data back to cover the space vacated by the deleted information.
Overwrite mode	When adding data (by inserting a file or pasting from the Clipboard), VidEdit writes over the data existing at the insertion position.
	When removing data (by cutting or deleting), VidEdit removes the frame information but leaves the frames intact, so the video sequence remains the same length.

For more information about working with the editing modes to add and remove data, see the following topics in this sequence.

To toggle between insert and overwrite modes

Press the INS key. The OVR/INS indicator in the status bar shows which mode is selected.

Or, double-click the OVR/INS indicator in the status bar.

See Also

Copying Frames

You can copy one or more frames of video or audio data to the Clipboard. After copying information to the Clipboard, you can paste it back into your video sequence. Also, some of the information that VidEdit transfers to the Clipboard is usable by other applications; for more information, see Clipboard Formats Supported by VidEdit.

The effects of copying depend on the following factors:

Factor	Effect
Frame selection	Determines which frames are copied. If no frames are selected, only the current frame is copied.
Active tracks	Data is only copied from active tracks. If only one track is active, only that track is copied.

 To copy frame data to the Clipboard

1 Select the frames you want to copy.

2 Activate the tracks from which to copy data.

3 From the Edit menu, choose Copy.

   Or, choose the Copy button from the toolbar.

See Also

Activating Multimedia Data Tracks

Clipboard Formats Supported by VidEdit

Cutting and Deleting Frames

You can remove one or more selected video or audio <u>frames</u> by using the Cut and Delete commands. The Cut command removes data and moves it to the Clipboard; the Delete command just removes the data.

The effects of cut or delete depend on the following factors:

Factor	Effect
Frame selection	Determines which frames are cut or deleted. If no frames are selected, only the current frame is removed.
Active <u>tracks</u>	Data is only removed from active tracks. If only one track is active, only that track is affected.
	Cutting data with both the video and audio data tracks active preserves synchronization between the two tracks. Cutting data on a single track affects synchronization between the two tracks.
Editing mode (<u>insert</u> or <u>overwrite</u>)	In insert mode, the selected frames are removed, and the time of the video sequence is shortened by the number of frames removed.
	In overwrite mode, data in the selected frames is removed, but the total time of the video sequence remains the same. For example, if video frames 100 through 105 are cut, the resulting video will show no changes between frames 99 and 105 (the action will appear to pause starting at frame 99).

To cut frame data to the Clipboard
1 Select the frames you want to cut.
2 Activate the tracks from which to cut data.
3 From the Edit menu, choose Cut.

   Or, choose the Cut button from the toolbar.

To delete frame data
1 Select the frames you want to cut.
2 Activate the tracks from which to cut data.
3 From the Edit menu, choose Delete.

To toggle between overwrite mode and insert mode

Press the INS key.

Or, double-click the INS/OVR indicator in the status bar.

To activate a data track for editing

1 From the Edit menu, choose Track.

Another menu appears from the Edit menu, showing the data tracks you can select.

2 Choose Video Only, Audio Only, or Both Video and Audio.

Or, choose the appropriate Data Track buttons:

Video

Audio

Both video and audio

Effect of Cutting or Deleting Video

The following illustration shows part of a video sequence that contains five frames of video with a corresponding audio track. The current frame is selected. Data in the audio track is not selected because the audio track is inactive.

Images Track

Current Frame
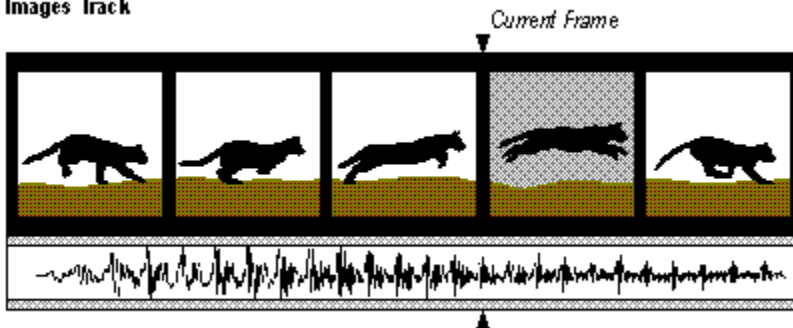
Wavefom Track

Click here to see the effect of a Cut or Delete command in insert mode.
Click here to see the effect of a Cut or Delete command in overwrite mode.

See Also

Pasting and Inserting Frames

You can add data to the video and/or audio tracks by pasting from the Clipboard or by inserting the contents of a file. You can add video, audio, or both.

When adding frames, make sure the inserted frames have the same size as the rest of the frames in the video sequence. If one or more images are smaller than the frame size, the unused portion of the frame might contain color information from earlier frames.

The effects of a paste or insertion depend on the following factors:

Factor	Effect
Frame selection	In insert mode, VidEdit deletes the selected frames and then inserts the new data in their place. If no frames are selected, the new data is inserted before the current frame.
	In overwrite mode, VidEdit starts overwriting data at the first frame of the selection. If the new data covers more frames than are selected, frames beyond the selection will be overwritten as well.
Active tracks	Data is only added to active tracks. If only one track is active, only that track is affected.
	If both tracks are active, and you're only inserting one type of data (only video data, or only audio data), blank frames are inserted in the track for which new data is unavailable.
Editing mode (insert or overwrite)	In insert mode, the new data is inserted before the current frame. If there's a selection, the selected frames are removed, and the new frames are inserted in their place.
	In overwrite mode, existing data is replaced by the new data. If there's a selection, the existing data is overwritten starting at the first selected frame. If no frames are selected, data is overwritten starting with the current frame. If the end of the video sequence is reached before the new data runs out, the video sequence is lengthened to accommodate the remaining frames of new data.

To paste data from the Clipboard

1 Set the current frame or the current selection to the position where you want to paste data.

2 From the Edit menu, choose Paste.

Or, choose the Paste button from the toolbar.

To insert a file

1 Set the current frame or current selection to the position where you want to insert file

data.

2 From the File menu, choose Insert.

3 Select a filename, and choose OK.

To toggle between overwrite mode and insert mode

Press the INS key.

Or, double-click the INS/OVR indicator in the status bar.

To activate a data track for editing

1 From the Edit menu, choose Track.

Another menu appears from the Edit menu, showing the data tracks you can select.

2 Select Video Only, Audio Only, or Both Video and Audio.

Or, choose the appropriate Data Track buttons:

Video

Audio

Both video and audio

Effects of Pasting or Inserting

The following illustration shows part of a video sequence that contains four frames of video with a corresponding audio track. There's also a representation of the Clipboard, which contains one frame each of video and audio data. The current frame is indicated with the triangles.
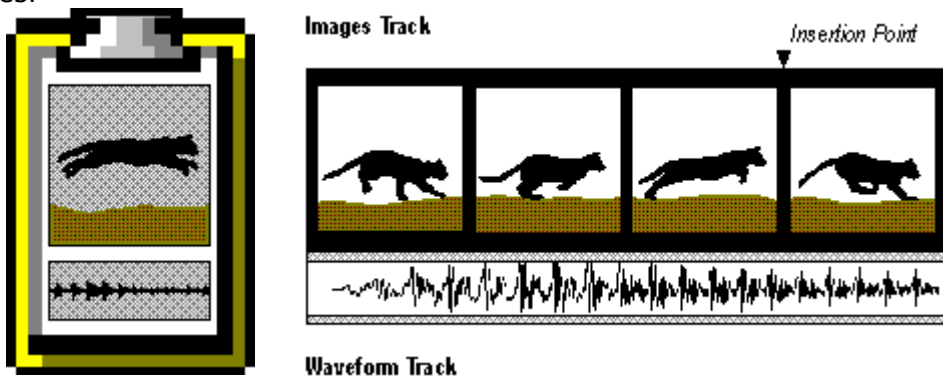
Click here to see the result of a paste in insert mode, and with only the video track activated.

The next illustration is similar to the preceding one. In this example, the Clipboard contains a single frame of video data but no audio data.

Images Track

Insertion Point
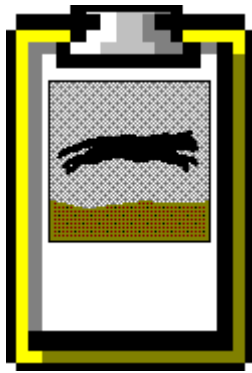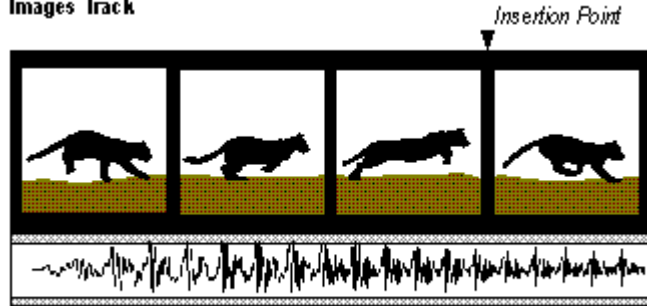
Waveform Track

Click here to see the result of a paste in insert mode, with both the video and audio tracks activated.

See Also

Cropping the Frame

To reduce the size of the video frames, you can crop the video sequence. When you crop, you select a portion of the frame to keep, and VidEdit discards the rest. Cropping affects every frame in the video sequence.

 To crop the frames of a video sequence

1 From the Video menu, choose Crop.

2 Position the cropping borders to select the area you want to save. Data outside the cropping borders is discarded. Choose from the following actions:

To	Do This
Set the border using the mouse	Click and drag inside the video frame to display the cropping rectangle.
Change the border using the mouse	Drag the handles to change the size of the border.
	Or, drag the border to move the entire cropping rectangle.
Set coordinates using the keyboard	In the Crop Video dialog box, type values for X, Y, Width, and Height.

3 Choose OK.

See Also

[Crop Video Dialog Box](#)

Resizing the Frame

To increase or reduce the size of the video frames, you can resize the video sequence. When you resize, you expand or shrink the frame image to the new size. Resizing affects every _frame_ in the video sequence.

Note Because VidEdit stretches or shrinks the frame image to the new size, you might experience some loss in image quality as a result of resizing.

To resize a video sequence

1 From the Video menu, choose Resize.

   The Resize Video dialog box appears.

2 Type new values for the video frame size in the Width and Height boxes (dimensions are expressed in pixels).

3 To save the new dimensions as the default window size for new video sequences, choose Save As Default Size.

4 Choose OK.

See Also
Resize Video Dialog Box

Synchronizing Audio and Video Tracks

The audio and video <u>tracks</u> of a video sequence might become unsynchronized. This can happen during video capture, due to a skew in timing, or during editing, when you add data to one or both of the data tracks. There are two ways to adjust synchronization:

Adjust the starting point of the audio, shifting the entire sound track forward or backward to align it with the video track. This is useful when the entire audio track is off by a specific number of frames.

Change the playback rate (<u>frame rate</u>) of the video track. This is useful when the video track is running faster or slower than the audio track.

Changing the playback rate affects the duration of the video sequence; for example, increasing the frame rate shortens the total time of the sequence. This is different from the Convert Frame Rate command, which maintains the duration of the video by adding or inserting frames to accommodate the changed rate.

You can perform both of these adjustments using the Synchronize command and then play segments of the video to determine whether you've succeeded.

Hint Choose a synchronization point (a point where an obvious sound coincides with an obvious action; for example, clapping hands). If you can synchronize this point, the rest of the sequence should be synchronized.

 To synchronize audio and video

1 From the Video menu, choose Synchronize.

   The Synchronize dialog box appears.

2 To adjust the starting point of the audio track, type a value in the Audio Offset box. Positive values move the audio track later in the video sequence; negative values move the audio track earlier in the sequence.

3 To adjust the frame rate, type a value in the Video Speed box. Larger values compress the duration of the video track, shortening the display period for each frame. Smaller values increase the display period for each frame.

4 To close the dialog box, choose OK.

   Or, to test your results, continue to the next procedure.

Note If you use the Synchronize routine repeatedly, you'll notice that the audio offset returns to zero each time you display the Synchronize dialog box. The offset always refers to a change in position from the current starting point of the waveform track, not an absolute position measured from the beginning of the video sequence.

 To test the synchronization

1 From the Synchronize dialog box, adjust values in the Sample Playback Of Video box:

   In Play Start, specify where to begin sample playback.

   In Play Duration, specify how many seconds of video and audio to play, starting at the specified point.

2 Choose the Play button. Note any differences between the audio and video synchronization points. You can play the sequence several times, changing the Play Start

and Play Duration values to see the effects of different frame ranges. If necessary, adjust your synchronization settings (as described in the first procedure).

3 When you're finished synchronizing, choose OK.

Note Video sequences previewed from the Synchronize dialog box are played from memory. When playing larger sequences (for example, using a 320 by 240 frame size), you may run out of memory, causing a degradation in the preview quality.

See Also

Extracting Audio and Video Tracks

You can extract any range of <u>frames</u> within the video and/or audio <u>tracks</u>, and save the data in separate file. You can extract video data, audio data, or both; and you can extract to an .AVI file or to other formats such as waveform audio (.WAV) or bitmap (.DIB) sequence.

The specific data extracted depends on which type of file you choose to extract:

Extracted Data	File Types
Video and audio	Microsoft .AVI
Multiple bitmaps; one bitmap file created for each selected frame	.DIB sequence
Audio only	Microsoft Waveform
Single bitmap; only one bitmap file created using the image from the first selected frame	Microsoft Windows .DIB, Microsoft RIFF .DIB, other image-file formats

To extract the current selection to a file

1 From the File menu, choose Extract.
2 Type the filename for the extracted file.
3 From the Save File As Type list, choose a file format you want.
4 To change the selection, choose Set Selection and specify a selection range.
5 Choose OK.

See Also

Canceling Editing Changes

You can undo the last editing change made in VidEdit. You can also reload the last saved copy of the video sequence.

 To undo an editing change

 From the Edit menu, choose Undo.

Or, choose the Undo button on the toolbar.

 To reload the last saved version of a video sequence

1 From the File menu, choose Revert. This command is only available if changes have been made to the current video sequence.

2 To discard the changed version and reload the previous version, choose OK.

See Also
[VidEdit Toolbar and Controls](#)

Overview: Working with Color Information

Video for Windows records color in video sequences in one of three ways:

Color Format	Description
8 bits per pixel	Uses a color palette that stores up to 256 unique colors. Each pixel is represented by an 8-bit reference to an entry in the color palette. The 8-bit format provides a maximum of 256 unique colors within a video frame.
16 bits per pixel	Stores color information directly in the pixel. Each pixel is represented by a 16-bit color value, providing a maximum of 32,767 unique colors per pixel.
24 bits per pixel	Similar to the 16-bit format, but represents pixels using a 24-bit color value. Provides a maximum of 16 million unique colors per pixel.

On display adapters that provide 8-bit color capability, true-color video sequences (those with 16-bit or 24-bit video format) use dithering to display color information properly. Dithering requires more time and lowers the accuracy of the color information, so if you're creating video sequences for commonly available 8-bit SVGA systems, you should use the 8-bit (palette) video format.

Video sequences that use color palettes require significantly less storage than the 16-bit and 24-bit formats. Using fewer colors can reduce the storage requirements per pixel, assuming you can trim the color palettes down to 8-bit (256-color) format. Using fewer unique colors can also reduce the number of changes from frame to frame, further decreasing the size of the video file. However, converting to 8-bit format can require additional editing of the video sequence.

Creating an 8-Bit Color Palette for a Video Sequence

You can use the following methods to convert your 16-bit or 24-bit video sequences to 8-bit format:

 You can use the Video Format command to change the format. With this technique, VidEdit remaps all colors to a gray-scale palette. For information about the Video Format command, see Changing the Color Format.

 Paste an 8-bit palette from the Clipboard to the video sequence. If the video sequence is in 16-bit or 24-bit format, VidEdit will change the color format to 8-bit.

VidEdit can create an 8-bit palette by combining the commonly used colors in one or more frames of the video sequence. You can also copy a palette (or any picture that has a palette) to the Clipboard. For example, you can open a bitmap in Paintbrush, select a portion of the bitmap, and copy the image to the Clipboard. Paintbrush puts the palette on

the Clipboard along with the image, and you can then paste the palette into your video sequence.

For information about building a palette from the frames of a video sequence, see Creating Palettes.

For information about pasting a palette to the video sequence, see Pasting Palettes.

Creating Common Palettes

Many SVGA adapters support a maximum of 256 simultaneous colors. If you want your multimedia applications to display colors accurately on these systems, you should develop common palettes for video sequences and still images that appear together on screen.

For example, if you display two video sequences simultaneously, and each sequence uses 256 unique colors, the system will be unable to display all 512 custom colors correctly. Priority will go to the video sequence in the active window, and colors in the other sequence will be mapped to similar colors available in the first video sequence.

To ensure correct color displays, you can create a common palette for the two video sequences. The common palette contains a composition of the most common colors from both video sequences. Both video sequences can use the common palette, so there won't be conflicts. Most importantly, creating a common palette gives you more control over which colors will be presented to the user.

Using a common palette also helps reduce flicker and can also aid in compression, because it reduces color changes from frame to frame.

See Also

Creating Palettes

VidEdit can build a palette using color information from one or more frames. After building the palette, VidEdit copies the palette to the Clipboard; you can then paste the palette to the video sequence. You can create a palette from a single frame, from a range of frames, or from the entire video sequence, and you can tell VidEdit how many colors to use in the new palette.

 To build a palette from a video sequence

1 From the Video menu, choose Create Palette.
2 Select the appropriate settings for building the palette. For information about the settings, see Create Palette Dialog Box.
3 If there are no frames in the current selection, you must set the current selection before choosing the Selection option. To display the Set Selection dialog box for the current selection, choose Set Selection.
4 Choose OK.

   When VidEdit finishes building a palette, the Palette Created dialog box appears. You can choose OK to close the dialog box, or choose Paste Palette to apply the palette back to the video sequence. For information about pasting a palette, see Pasting Palettes.

Note Creating and applying a palette to a 16-bit or 24-bit true-color video sequence changes the entire video sequence to an 8-bit frame depth and remaps all colors to the new palette.

See Also

Create Palette Dialog Box
Palette Created Dialog Box
Pasting Palettes

Pasting Palettes

You can copy <u>palette</u> data to the Clipboard and then paste it into your video sequence. To put a palette on the Clipboard, you can use VidEdit to build a palette from one or more <u>frames</u> in the video sequence; you can also copy an image (including the palette) using Paintbrush or other drawing programs. You can paste a palette to a single frame, to a range of frames, or to the entire video sequence.

You can remap the palette entries so colors in the new palette are substituted for similar colors in the original. For example, if you create a common palette from several video sequences, when pasting this new palette you'll want to preserve the original appearance of the video sequences by letting VidEdit match the colors.

In some cases, however, you might want to avoid remapping the entries and instead perform a straight copy of the palette. For example, when modifying all the colors of a palette, such as adding tinting or changing the contrast or brightness in the entire palette, you should not remap colors. This maintains (in each frame) the pixel references to the palette, so the video frames will assume the desired color changes.

Note Applying a palette to a true-color video sequence changes the entire video sequence to an 8-bit frame depth and remaps all colors to the palette.

To paste a palette from the Clipboard

1 From the Edit menu, choose Paste Palette.

2 In the Use Palette box, select where you want to paste the palette. To set a range of frames, choose the Set Selection button.

3 If you want VidEdit to remap the pixels to the new palette, select Remap Video To Best Palette Colors.

4 Choose OK.

See Also

[Paste Palette Dialog Box](#)

Changing the Color Format

The color format of a video sequence determines the amount of storage space used to represent each pixel. You can change the color format for the video sequence; this changes the size of the video sequence and can affect the accuracy of the colors used in the sequence. All frames in the video sequence use the same color format, so your change affects the entire sequence, not just a single frame.

Video for Windows supports the following color formats:

Color Format	Description
8 bits per pixel	Provides a maximum of 256 unique colors for an entire video frame and uses a color <u>palette</u>.
16 bits per pixel	Provides a selection of 32,767 unique colors per pixel and does not use a color palette. The 16-bit format uses twice the storage space as the 8-bit format.
24 bits per pixel	Provides a selection of 16 million unique colors per pixel and does not use a color palette. The 24-bit format uses three times the storage space as the 8-bit format.

Reducing the video format from 16-bit or 24-bit depth to the 8-bit depth changes the entire video sequence to an 8-bit depth and remaps all colors to a gray-scale palette. To retain accurate colors when converting to 8-bit format, you must create a color palette for the video sequence, then apply the palette to the entire sequence.

 To change the color format

1 From the Video menu, choose Video Format.

2 Select the color format for the entire video sequence.

3 Choose OK.

See Also

Overview: Setting Options for the Video Sequence

Video for Windows provides many options for configuring the attributes of video sequences. These options let you configure a video sequence for optimal playback given the constraints of the capture and playback environments. When setting the attributes of the video sequence, you must take into account the following factors:

Quality requirements. Achieving better quality video and sound generally costs more in terms of storage space and processing power. For example, CD-quality audio (44 kHz, 16-bit stereo) takes about 16 times more storage space than base-quality audio (11 kHz, 8-bit mono).

Color capabilities of the playback environment. Are you playing on 8-bit video adapters that only support 256 colors? Or will playback occur on true-color devices (16- or 24-bit adapters)? If you're playing on 8-bit devices, you'll want to use an 8-bit color palette so you can control the colors used at playback.

Data transfer rate of the storage device. Video demands fast transfer of data from the storage device, through the CPU, and to the video and sound hardware. You should configure your video sequence for optimal performance for the given transfer rate. Video for Windows lets you choose among several representative transfer rates (for CD-ROM drives and various hard disks); you can also choose a custom transfer rate.

Type of storage device. CD-ROM discs provide data sequentially, while hard disks provide more random access. Video for Windows lets you specify how video and audio data is interleaved in the video sequence, allowing you to create video sequences that play from CD-ROM devices without interruptions or skips.

Processor and hardware support. Different compressors have different hardware requirements; for example, at a certain frame size, an 80486 processor might be required for playback. Consult the documentation for the video compressor to determine whether it's appropriate for your playback environment.

The rest of the topics in this sequence provide information on the various options you can set for the video sequence.

See Also

Overview: Working with Color Information

Displaying Video Statistics

You can display a dialog box showing compression and size information for your video sequence.

 To generate statistics for a video sequence

From the Video menu, choose Statistics.

For information about the statistics, see <u>Statistics Dialog Box</u>.

Note VidEdit might take a few seconds to generate the statistics. You can cancel the calculation by choosing OK or by pressing ESC.

See Also

<u>Statistics Dialog Box</u>

Setting the Frame Rate

The frame rate determines how many frames of video are displayed per second. Faster frame rates provide smoother animation but require more storage space and demand faster data transfer.

When changing the frame rate, VidEdit adds or removes frames to retain the original duration of the video sequence. For example, if you increase the frame rate from 12 to 15 frames per second, VidEdit increases the total number of frames by 25%. VidEdit duplicates every fourth frame and adds the duplicates to the video sequence. When decreasing the frame rate, VidEdit removes frames.

Note You can also use the Synchronize command to change the frame rate. With the Synchronize command, VidEdit does not insert or remove frames to retain the original duration of the video.

 To change the frame rate

1 From the Video menu, choose Convert Frame Rate.

2 In the Frame Rate box, adjust the frame rate to the speed you want.

3 Choose OK.

See Also

Setting the Audio Format

The audio format determines the playback quality of the sound track. The audio format also affects the size of the audio data.

You can change the recording quality of the audio-data track in a video sequence. Audio ranges from the equivalent of a voice grade telephone line (8-bit <u>samples</u>, <u>mono</u> channel, and 11.025 kHz <u>frequency</u>) to CD audio quality (16-bit samples, stereo channels, and 44.1 kHz frequency).

To set the audio format

1 From the Video menu, choose Audio Format.
2 Select the audio properties you want.
   For information about the properties, see <u>Change Audio Format Dialog Box</u>.
3 Choose OK.

See Also

[Change Audio Format Dialog Box](#)

Setting Compression Options

Video for Windows provides several compression methods that let you choose among tradeoffs of quality, size reduction, and compression time. Also, you can select compression settings that affect the layout of the compressed video data within the video file. The compression options are used when you save the video sequence to disk.

Hint When experimenting with compression methods and options, always retain a copy of the original, uncompressed video file. Quality is lost each time you apply compression, so you don't want to compress the same video sequence using two different compression methods.

To set compression options

1 From the Video menu, choose Compression Options.
2 Select the compression options you want.

   To display more settings, choose Details.

   For information about the compression options, see Compression Options Dialog Box.
3 To preview the sequence with the selected compression options, choose the Preview button (this button is only available when the detailed options are displayed).
4 Choose OK.

See Also

Compression Methods

Video sequences are compressed and decompressed by routines called codecs (short for compressor/decompressor). A codec is responsible for compressing raw video data into a format suitable for distribution. When users play the compressed video sequence, the codec performs a reverse role, converting the compressed data into images that can be displayed on the user's system.

Video for Windows includes several codecs, each of which has advantages and disadvantages. When evaluating a codec, you should consider the following factors:

Quality: how well does the codec preserve the original colors, motion, and image detail?

Data rate: does the codec reduce the data-transfer rate to an acceptable level?

Storage size: how much storage space is saved as a result of compressing?

Time: how much time is required for compression and playback?

You should experiment with several compression methods to see which works best with your video content and delivery platforms.

Note Don't apply multiple compression methods to your video sequence. Most methods result in some loss of quality, and the loss is compounded if multiple techniques are applied. When experimenting with compression settings, save the original uncompressed version of your video sequence as a baseline.

The following compression methods are available from the Compression Options Dialog Box:

Method	Description
No Recompression	Retains the current compression method, so the video is saved without a change in compression technique. No additional compression is applied.
	When changing compression options (but retaining the same compression method), select No Recompression as the compression method. This option greatly reduces the time required to save the sequence, assuming you're only changing compression properties (for example, adding interleaving, or changing the data rate).
	This option is not available if the sequence has been edited (for example, if you've added or removed frames).
Microsoft RLE	Fast compression method useful for computer-generated animation, screen captures, and other sequences with areas of uniform color. Quality and size reduction drop rapidly if there are many changes from frame to frame (for

	example, as would be the case in a sequence captured from videotape).
	The RLE method is limited to 8-bit video sequences.
Full Frames	Not a compression method; instead, Full Frames decompresses the video sequence and saves each frame as a device-independent bitmap. If the sequence was already compressed, the resulting bitmaps will show any distortions introduced during compression.
Cinepak Codec by SuperMatch	Excellent compression method for video sequences delivered on CD-ROM. Cinepak provides good image and motion quality at CD-ROM data-transfer rates (15 frames per second with a 320-by-240 frame size produces an 150K per second data rate).
	The video sequence is stored using the 24-bit color format, which preserves much of the color information from the original video. When playing on 8-bit displays, Cinepak uses dithering to transfer the 24-bit color values to an 8-bit palette format.
	Cinepak uses an asymmetric compression technique, one that takes much longer during compression than during playback. On a fast capture system, allow approximately one hour of compression time per minute of video at 320-by-240 frame size, 15 frames per second.
Microsoft Video 1	Combines good playback quality with relatively quick compression times. If you're using the Cinepak codec as your final compression method, you might consider using Video 1 for draft versions of the video sequence. Just be sure to retain your original, uncompressed sequence as a master copy.
	The video sequence is stored in either 8-bit or 16-bit format. Using the 8-bit format, you can specify which palettes to use in the video sequence, so if your sequence is playing strictly on 8-bit machines, Video 1 provides better control over the palette colors than compression methods that use an automatic dithering technique.
Intel Indeo(TM) Video R3.1	Provides high-quality video (320-by-240 frame size and 15 frames per second), using an asymmetric compression technique.
	Indeo 3.1 uses a 24-bit color format. When played on 8-bit video displays, Indeo dithers the 24-bit colors to 8-bit format.
	Indeo takes advantage of compression hardware on the Intel Smart Video Recorder capture board, allowing real-time hardware compression

	during capture. Intel recommends a key-frame interval of 4.
Intel Indeo(TM) Video Raw	Uncompressed YUV format produced by the Intel Smart Video Recorder capture board. Capture in this format if you want to use a different compressor than Indeo 3.1.

See Also

Compression Options Dialog Box

Compressing Video

Saving an AVI File

Open Video File Dialog Box

Use this dialog box to open a Video for Windows (.AVI) sequence, as well as the following external video formats:

File Format	Notes
Microsoft DIB Sequence (.DIB)	The DIB files should be numbered to show sequence; for example, ANIM1.DIB, ANIM2.DIB, ANIM3.DIB. Specify the name of the first file, and VidEdit searches the same directory for the rest of the files in the series.
Autodesk Animation (.FLI)	VidEdit converts video stored in Autodesk Animation files.
Converted QuickTime movies	Using the Video for Windows Converter, you can convert QuickTime files into the .AVI format and play converted movies on your multimedia PC.

After importing one of these video files, you can save it as a Video for Windows (.AVI) sequence.

The dialog box has the following options:

Option	Description
File Name	Identifies the currently selected file. To specify another file, select another filename from the list beneath the box, or type another filename.
Directories	Specifies the directory path that contains the current file. To specify another directory, select another directory from the list beneath the box, or type another directory path in the File Name box.
List Files Of Type	Specifies the type of file that you want to use. To specify another type of file, select another entry from the list beneath the box.
Drives	Specifies the device that contains the current file. To specify another device, select another device from the list beneath the box, or type another device name in the File Name box.
OK	Opens the specified video sequence.
Cancel	Closes the dialog box without opening a video sequence.

See Also

Importing Audio-Visual Sequences

Save Video File Dialog Box

Use this dialog box to save the video sequence as a Video for Windows (AVI) file. The dialog box has the following options:

Option	Description
File Name	Specifies the filename for the video sequence. Type the filename for a new file, or select an existing file.
Directories	Specifies the current directory. To change the current directory, select a directory from the list below the box, or type another directory path in the File Name box.
Drives	Specifies the current disk drive. To specify another drive, select one from the list, or type a new drive name in the File Name box.
Save Copy	Select this option to retain the format of the video sequence loaded into VidEdit. With this option, the video sequence is saved using the specified compression options, but the original video sequence is retained in memory. This is useful if you're saving several versions of an same uncompressed video sequence.
	With the Save Copy option cleared, the video sequence loaded into VidEdit is replaced by the saved version.
Compression Options	Choose this button to change compression settings for the video sequence you're saving.
OK	Saves the video sequence using the selected options.
Cancel	Closes the dialog box without saving the video sequence.

See Also

Saving an AVI File

Compression Options Dialog Box

Insert File Dialog Box

Use this dialog box to insert a video sequence, audio sequence, or picture at the current location. The following VidEdit settings affect the outcome of the insertion:

Setting	Description
Insertion point or selection	Determines where the file data is placed.
	If there's a selection, the selected frames are deleted from the active data tracks before the insertion occurs.
	If no frames are selected, the file data is placed starting at the current frame (the one displayed in the editing window).
Editing Mode (Insert or Overwrite)	Determines whether the file data overwrites data in the existing video sequence.
Active Data Tracks (Video, Audio, or Both)	Determines what data is inserted (not used when inserting single-frame pictures or audio files).

The dialog box has the following options:

Option	Description
File Name	Specifies the file to insert. Type a filename, or select a filename from the list.
Directories	Specifies the current directory path. To specify another directory, select another directory from the list beneath the box, or type another directory path in the File Name box.
List Files Of Type	Specifies the type of file that you want to insert. To specify another type of file, select another entry from the list beneath the box.
Drives	Specifies the current disk drive. To specify another drive, select one from the list, or type a new drive name in the File Name box.
OK	Inserts the selected file.
Cancel	Closes the dialog box without inserting a file.

See Also
Pasting and Inserting Frames

Extract File Dialog Box

Use this dialog box to extract video and/or audio from the video sequence. You can extract the following types of information:

Video sequences, in .AVI format

Individual frames of video, in a variety of image formats

Audio sequences, in waveform audio format

The dialog box has the following options:

Option	Description
File Name	Specifies the filename for the extracted file. Type the filename for a new file, or select an existing file.
Directories	Specifies the current directory. To change the current directory, select a directory from the list below the box, or type another directory path in the File Name box.
Drives	Specifies the current disk drive. To specify another drive, select one from the list, or type a new drive name in the File Name box.
List Files Of Type	Specifies the type of file to create.
Set Selection	Choose this button to specify the portion of the video sequence to extract.
OK	Extracts data to the specified file.
Cancel	Closes the dialog box without extracting data.

See Also
Extracting Audio and Video Tracks
Selecting Frames
Set Selection Dialog Box

Paste Palette Dialog Box

Use this dialog box to paste color information from the Clipboard into a frame or range of frames within the video sequence. When pasting a palette, you can remap the new palette colors to the nearest colors in the previous palette. This option most closely preserves the current look of the video frames. For example, if you create a common palette from several video sequences, when pasting this new palette you'll want to preserve the original appearance of the video sequences by letting VidEdit match the colors.

You can also copy the new palette colors without remapping. If the color entries in the new palette are not arranged exactly like those in the previous palette, there can be significant color changes in the video frames. When modifying all the colors of a palette, such as adding tinting or changing the contrast or brightness in the entire palette, you should not remap entries (in this case, you want the colors to change).

The Paste Palette dialog box has the following options:

Option	Description
Use Palette (in current frame, in all frames, or in selection)	You can apply a palette to a single frame, a range of frames, or the entire video sequence.
	Note When pasting a palette to a 16- or 24-bit video sequence, the entire sequence is converted to the 8-bit format.
Remap Video To Best Palette Colors	Specifies whether to rearrange the palette entries so they approximate the colors used in the previous palette. With this option selected, you preserve more of the original appearance of the video frames.
	If you don't use this option, VidEdit simply copies the new palette entries over the old palette entries. If the new palette is not arranged exactly as the old palette, you might see significant color changes.
OK	Pastes the palette using the selected options.
Cancel	Closes the dialog box without pasting the palette.

See Also
Creating Palettes
Pasting Palettes

Set Selection Dialog Box

Use this dialog box to change the selection range within the video sequence. You can also select frames using the Mark In and Mark Out buttons in the VidCap window. The dialog box has the following options:

Options	Description
All	Selects all frames in the video sequence.
None	Removes any selection present.
Selected Range (From, To, and Size)	Specifies a range of frames to select.
	In From, specify the first frame in the selection.
	In To, specify the last frame in the selection, or, in Size, specify how many frames to select (starting with the From frame).
OK	Creates the selection using the options you chose.
Cancel	Closes the dialog box without changing the selection.

See Also

Selecting Frames

Activating Multimedia Data Tracks

VidEdit Toolbar and Controls

Go To Frame Dialog Box

Use this dialog box to jump to a specific <u>frame</u> number. You can also jump to a frame using the slider control in the VidEdit window. The dialog box has the following options:

Options	Description
Go To	Specifies the number of the frame to jump to.
OK	Jumps to the specified frame.
Cancel	Closes the dialog box without jumping to a different frame.

See Also

<u>Selecting Frames</u>

<u>VidEdit Toolbar and Controls</u>

VidEdit Preferences Dialog Box

Use this dialog box to set options for editing video. These options don't affect your video clip; they just change options for VidEdit. The dialog box has the following options:

Options	Description
Resize Window To New Frame Size	Select this option to resize the VidEdit window to accommodate changes in the frame size of the video sequence (for example, when cropping the frame or loading a new sequence). Clear this option to keep the VidEdit window the same size.
Center Image In Window	Select this option to center the video frame in the VidEdit window. Clear this option to display the video frame at the upper-left corner of the window.
Show Frame # In Title Bar	Select this option to display the current frame number in the VidEdit title bar.
Show Positions In Time Format	Select this option to display position measurements as times (hh:mm:ss.dd) rather than as frames.
Status Bar	Select this option to display the status bar at the bottom of the VidEdit window.
Tool Bar	Select this option to display the toolbar at the top of the VidEdit window.
Overwrite Mode	Select this option to use overwrite mode rather than insert mode when performing editing operations (insert, paste, cut, and delete). For more information about overwrite mode and insert mode, see Using the Editing Modes.
Memory For Caching Images	Specifies the amount of memory to reserve for storing video sequences while editing. Larger values can result in faster editing performance.
Background Color	Specifies the background color for the VidEdit window. The background color fills the area outside the video-frame display.
OK	Sets the specified editing options.
Cancel	Closes the VidEdit Preferences dialog box without changing options.

See Also
Adjusting the Look of VidEdit
Adjusting the Video Frame Display
Enhancing Editing Performance
Using the Editing Modes

Compression Options Dialog Box

Use this dialog box to set compression options for the video sequence. These options are used when the video sequence is saved to disk.

There are three parts to this dialog box. The simple version is displayed first; you can choose a Details button to display more options. After displaying the detailed options, you can expand again to display a preview using the specified compression options.

Basic Options

Option	Description
Target	Specifies the type of device on which the video sequence will be stored. The device type is important because it determines the speed at which data can be read and displayed. Each selection in the Target box has a matching set of compression options displayed in the details are of the Compression Options dialog box. To view the detailed compression options for a target device, choose the Details button.
Video Compression Method	Specifies which compressor (codec) to use. For information about the various compressors, see Compression Methods.
Save As Default	Saves the current compression options as default values to be displayed with new video sequences.
Use Default	Resets the compression options to default values.
OK	Saves the compression options. The options will be used when the video sequence is saved to disk.
Cancel	Closes the Compression Options dialog box without saving the compression options.
Details/Preview	With just the basic options displayed, the Details button expands the dialog box to display detailed compression options.
	With the detailed options displayed, the Details button changes into a Preview button. By choosing Preview, you can display a quality preview using the specified options. The quality preview lets you see how the selected compression options affect the quality of the video image.

Detailed Options

Options	Description
Data Rate	Specifies the expected data-transfer rate at playback. The video compressor uses this information to determine how much information to include on each frame; with higher data rates,

	more information can be stored, and quality is better.
	If the video sequence is played from a device that has a slower transfer rate than specified for compression, the playback quality might suffer.
Interleave Audio Every *n* Frames	Specifies that audio and video data will be stored in segments within the video sequence, with the segments placed at the indicated frame intervals. Interleaving has benefits when playing video sequences from storage devices that are more efficient in providing information sequentially (such as CD-ROM discs).
	For CD-ROM, use the default value of 1 frame to interleave every frame of video with audio data. For sequences played from hard disk or network drives, you can use a larger value (but use a value different from the key-frame value).
Key Frame Every *n* Frames	Specifies how often a full frame should be stored in the video sequence. Key frames provide a complete frame image and act as a reference point for successive frames that store only differences from the previous frame. Key frames provide convenient jump destinations for the video sequence; users can jump to the key frame, and the full-frame image will be displayed.
Pad Frames For CD-ROM Playback	Specifies that the same amount of data should be stored for each frame, so frames with smaller amounts of data are padded to keep a consistent size. This option is useful for CD-ROM playback because it lets the storage device maintain a constant data rate when retrieving the video sequence.
Compressor Settings	Lets you balance image quality with the specified data rate. Higher quality (moving the slider to the right) increases the importance of clear, accurate images at the expense of smooth motion. Lower quality (moving the slider to the left) decreases the image quality but provides smoother motion.
	Compressor Settings also contains a command button that provides compressor-specific settings or information.

See Also
Setting Compression Options
Compression Methods
Saving an AVI File

Convert Frame Rate Dialog Box

Use this dialog box to change the <u>frame rate</u> for the video sequence. The change does not affect the duration of the video or the synchronization of the video and audio <u>tracks</u>; VidEdit just inserts or removes <u>frames</u> to accommodate the change.

The dialog box has the following options:

Options	Description
Frame Rate	Specifies the new frame rate for the video sequence.
	Increasing the frame rate increases the number of frames in the sequence. For example, changing from 12 to 15 frames per second increases the number of frames by 25%. VidEdit duplicates every fourth frame to accommodate the new sequence.
	Decreasing the frame rate decreases the number of frames in the sequence. For example, changing from 12 to 9 frames per second reduces the number of frames by 25%. VidEdit removes every fourth frame to accommodate the reduced rate.
OK	Saves the new frame rate. The new frame rate will be used when the video sequence is saved to disk.
Cancel	Closes the dialog box without changing the frame rate.

See Also
<u>Setting the Frame Rate</u>
<u>Synchronizing Audio and Video Tracks</u>

Synchronize Dialog Box

Use this dialog box to synchronize the video and audio tracks. You can adjust the starting point of the audio track, adjust the speed at which the video frames are displayed, and preview the results.

The dialog box has the following fields:

Options	Description
Audio Offset	Specifies the number of milliseconds to move the audio track. The entire audio track will be shifted the specified distance. You can type positive or negative values.
Video Speed	Specifies a new frame rate for the video portion of the sequence. Unlike the frame-rate adjustments made in the Convert Frame Rate dialog box, synchronization changes don't result in the addition or deletion of frames (the frame speed is the only change).
Sample Playback Of Video	Lets you play a sample of the video to preview the effects of your synchronization efforts. You can specify the starting position and duration of the playback. Choose Play to start playback; you can choose the same button (renamed Stop) to stop the playback.
	Note Video sequences previewed from the Synchronize dialog box are played from memory. When playing larger sequences (for example, using a 320 by 240 frame size), you may run out of memory, causing a degradation in the preview quality.
OK	Saves the synchronization changes.
Cancel	Closes the Synchronize dialog box without saving the synchronization changes.

See Also

Synchronizing Audio and Video Tracks

Change Audio Format Dialog Box

Use this dialog box to change the format of the audio information stored in the sequence. The dialog box has the following options:

Option	Description
Sample Size	Defines the amount of storage used for each digitized portion of the waveform. 8-bit samples use less memory to store waveform information; 16-bit samples provide greater dynamic range.
Channels	Defines the waveform as mono or stereo. Mono waveforms store audio information in a single audio track. Stereo waveforms use two tracks to store waveform information and double the amount of audio information per frame.
Frequency	Defines the rate at which audio samples are taken. The 11.025 kHz frequency (roughly equivalent to a voice-grade telephone line) samples over 11,000 samples per second.
	The 22.05 kHz frequency (equivalent in quality to AM radio) obtains samples twice as often as 11.025 kHz frequency.
	The 44.1 kHz frequency is the sampling rate used for audio CDs.
OK	Saves the audio settings.
Cancel	Closes the Change Audio Format dialog box without saving the audio settings.

See Also
Setting the Audio Format

Video Format Dialog Box

Use this dialog box to change the color format for the entire video sequence. The color format determines how much space is used to store each pixel of a video frame and, as a result, the number of unique colors that can appear in each frame. Changes to video format apply to every frame in the sequence.

The dialog box has the following options:

Options	Description
8-bit	Provides a maximum of 256 unique colors per frame, using a color palette.
	When converting a 16- or 24-bit sequence to 8-bit format, VidEdit remaps all colors to a gray-scale palette. To retain accurate colors, you should not use the Video Format dialog box to perform the conversion. Instead, build an 8-bit palette (for more information, see Creating Palettes), then apply the palette to the entire sequence (for more information, see Applying a Palette).
16-bit	Provides an unlimited number of colors per frame, with each pixel having 32,767 color choices. Does not use a palette.
24-bit	Provides an unlimited number of colors per frame, with each pixel having 16 million color choices. Does not use a palette.
OK	Saves the video format changes.
Cancel	Closes the Video Format dialog box without saving changes.

See Also
Changing the Color Format
Creating Palettes
Pasting Palettes

Create Palette Dialog Box

Use this dialog box to create an 8-bit (256-color) <u>palette</u> using the colors of one or more <u>frames</u> in the video sequence. For example, to convert a true-color (24-bit) video sequence to 8-bit format, you might build an 8-bit palette from a representative range of frames in the sequence, then apply that palette to the entire sequence.

The dialog box has the following options:

Options	Description
Current Frame	Specifies to build a palette using colors from the currently displayed frame.
All Frames	Specifies to build a palette using all frames in the sequence.
Selection	Specifies to build a palette using a selected range of frames. This option is only available if you've selected a range of frames; if it's disabled, you can choose the Set Selection button to create a selection.
Colors In Created Palette	Specifies how many colors will appear in the palette.
	If you specify 1 to 236 colors, VidEdit creates a palette with the specified number of entries. The default size is 236; this allows space for the 20 system colors that are always used by Windows.
	If you specify 256 colors, VidEdit creates an identity palette containing 236 colors drawn from the video sequence. The identity palette also contains the 20 system colors (arranged in a preset location expected by Windows) and provides more efficient processing during playback.
OK	Creates the palette and copies it to the Clipboard.
Cancel	Closes the dialog box without creating a palette.

See Also
<u>Creating Palettes</u>
<u>Pasting Palettes</u>
<u>Paste Palette Dialog Box</u>

Palette Created Dialog Box

This dialog box is displayed after VidEdit finishes building a <u>palette</u> from one or more video <u>frames</u>. VidEdit has copied the palette to the Clipboard. You can take one of the following actions:

To close the dialog box, choose OK.

To display the Paste Palette dialog box, which lets you apply the Clipboard palette to one or more frames in the video sequence, choose Paste Palette.

See Also

Creating Palettes

Pasting Palettes

Paste Palette Dialog Box

Crop Video Dialog Box

Use this dialog box to reduce the size of the video <u>frame</u>. When cropping, you specify the area of the frame that you want to keep, and VidEdit discards the rest. Cropping affects all frames in the sequence.

To crop the frame, move the dialog box out of the way of the frame display. Then drag to draw a cropping rectangle around the frame area you want to keep. You can drag the handles to size the rectangle, or drag the rectangle border to move the rectangle. You can also type coordinate values in the dialog box; the rectangle is updated to show the new values.

Note You can also resize the video frame by shrinking or expanding the frame image (without cropping the frame image). For more information, see <u>Resizing the Frame</u>.

See Also

Resize Video Dialog Box

Use this dialog box to change the size of the video <u>frame</u>. When resizing, you shrink or expand the frame image to the new size. Resizing affects all frames in the sequence.

The dialog box has the following options:

Options	Description
Width	Specifies the width of the frame (in pixels).
Height	Specifies the height of the frame (in pixels).
Save As Default Size	Saves the current size as the default for new sequences.
OK	Resizes the frame to the specified size.
Cancel	Closes the dialog box without resizing the frame.

See Also
<u>Resizing the Frame</u>
<u>Cropping the Frame</u>

Statistics Dialog Box

Use this dialog box to view statistics about the video sequence. To close the dialog box, press ESC, or choose the OK button.

The dialog box has the following statistics:

Statistic	Description
Est. File Size	Approximate size of the file containing the video sequence.
File Length	Number of <u>frames</u> making up the video sequence.
File Duration	Running time of the video sequence, assuming the specified frame and data-transfer rates.
Frame Rate	Number of video frames recorded for each second of playback of the video sequence.
Data Rate	Predicted <u>data-transfer rate</u> of the playback environment.
Video <u>Track</u> Size	Number of bytes of the file containing video-frame data.
Video Format	Color format of the video sequence (number of bits per pixel) and compression method.
Audio Track Size	Total size of the audio data in the sequence.
Audio Format	Characteristics of the audio data track, including <u>sample size</u>, <u>sampling frequency</u>, and number of channels (<u>mono</u> or <u>stereo</u>).
<u>Interleaved</u> every X frames	Video-chunk size (in frames) interspersed between chunks of audio data throughout the video file (expressed as the number of contiguous video frames regularly occurring throughout the video file).

See Also
<u>Displaying Video Statistics</u>
<u>Setting Compression Options</u>

Title Bar

Displays "VidEdit" and the name of the video sequence. You can also display the current frame number in the title bar; for more information, see <u>Adjusting the Look of VidEdit</u>,

Menu Bar

Contains a list of menus. You open menus and then choose commands from them to instruct VidEdit to perform actions.

Edit Area

Displays the current frame image.

Because many compression methods store only the changes from frame to frame, the edit area might not display a complete frame image. To generate a complete frame image for the current frame, press F5.

File Open Button

Opens an .AVI file or other video file (same as the Open command on the File menu).

File Save Button

Saves the current file in the .AVI format (same as the Save command on the File menu).

Cut Button

Deletes frame data and pastes it onto the Clipboard (same as the Cut command on the Edit menu).

Copy Button

Copies frame data onto the Clipboard (same as the Copy command on the Edit menu).

Paste Button

Pastes audio or video data from the Clipboard (same as the Paste command on the Edit menu).

Undo Button

Undoes the last operation (same as the Undo command on the Edit menu).

Capture Video Button

Starts VidCap, the video-capturing application (same as the Capture Video command on the File menu).

Redraw Full Frame Button

Redraws the complete frame image (same as the Draw Full Frame command on the View menu). This button is only active when Fast Frame Drawing is selected.

For more information, see <u>Setting Frame Update Options</u>.

Zoom Button

Changes the magnification of the image displayed in the Edit area (same as the Zoom commands on the View menu).

Track Bar

Shows the current position within the video sequence. You can move the slider to move to different frames in the video sequence. Choose the arrow keys to move one frame at a time.

Mark In Button and Display

The Mark In button sets the beginning of a frame selection. The starting position of the selection is displayed to the right of the words "Mark In".

Mark Out Button and Display

The Mark Out button sets the end of a frame selection. The ending position of the selection is displayed to the right of the words "Mark Out".

Play Button

Previews a video sequence from the current frame to the end of the file.

By holding down the ALT key and choosing this button, you can play only the selected frames.

Stop Button

Stops the video preview.

Previous Mark Button

Moves the current position left to the nearest <u>mark</u> or to the first frame of the video sequence.

By holding down the SHIFT key and choosing this button, you can move to the first frame of the video sequence.

Page Left Button

Jumps to the previous 10% of the video sequence.

Page Right Button

Jumps to the next 10% of the video sequence.

Next Mark Button

Moves the current position right to the nearest mark or to the end of the video sequence.

By holding down the SHIFT key and choosing this button, you can move to the last frame of the video sequence.

Video/Audio Tracks Button

Activates both the video and audio tracks for editing.

Video Track Button

Activates the video track for editing.

Audio Track Button

Activates the audio track for editing.

Current Position and Total Length

The first figure (before the slash) identifies the position of the current frame. The second figure specifies the total length of the video sequence.

You can use frame units or time units within VidEdit. For information about changing units, see Adjusting the Look of VidEdit.

Edit Mode

Identifies the current edit mode. INS indicates insert mode; OVR indicates overwrite mode. You can double-click this region to toggle between modes.

In insert mode, deleting frames causes the following frames to move forward in the video sequence, and the total length of the sequence is shortened by the number of frames deleted. Inserting frames increases the length of the video sequence.

In overwrite mode, deleting frames removes the frame information but leaves the time space intact, so the total length of the sequence remains the same. Inserting frames overwrites any information at the insertion location.

Palette Change Indicator

Specifies whether the palette changes with the current frame.

If this box contains the letter P, the current frame redefines the palette. If no P is present, the current

frame uses the same palette as the previous frame.

Key Frame Indicator

Specifies whether the current frame is a key frame. If this box contains the letter K, the current frame is a key frame.
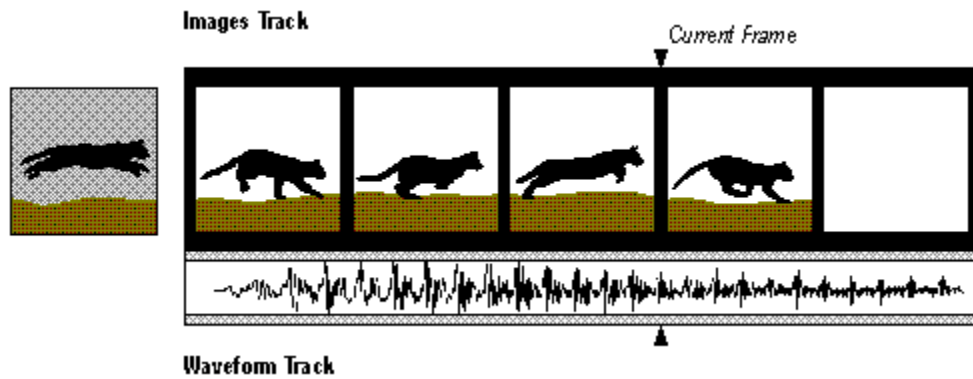
A key frame is a frame in which the full image is stored (as opposed to the differences from the last frame).

Data Tracks Indicator

Identifies data tracks selected for editing. You can activate the video track, audio track, or both.

Editing operations only affect active data tracks.

Cut or Delete in Insert Mode

Images Track

Current Frame

Waveform Track

Because only video editing is active, only the video track is affected. Frames following the current frame move one position closer to the beginning of the video sequence. With the Cut command, the data in the current frame is moved from the video track to the Clipboard; with Delete, the data is discarded.

Cut or Delete in Overwrite Mode

Images Track
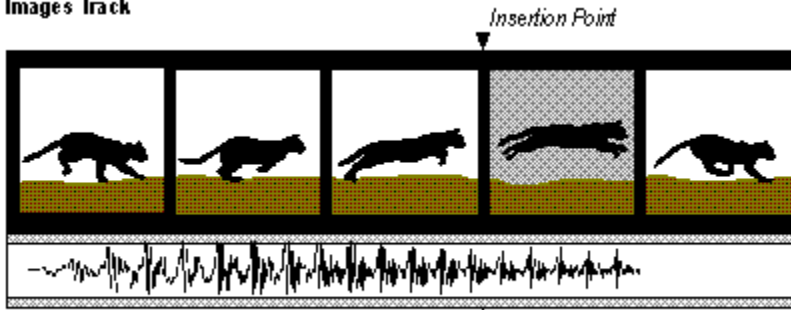
Current Frame

Waveform Track
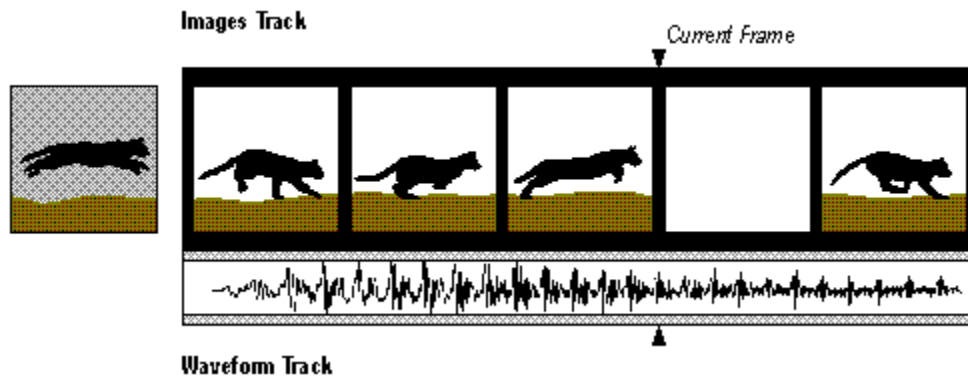
Because only video editing is active, only the video track is affected. Data in the current frame is removed, but the total number of video frames remains the same. During playback, the video frame will not be updated while the cut frame is active, so the action will appear to freeze.

With the Cut command, the data in the current frame is moved from the video track to the Clipboard; with Delete, the data is discarded.

Paste in Insert Mode, with Video Track Active

**Images Track**

Insertion Point

Waveform Track

Because only video editing was active, the Paste command only affected the video track. The video frame on the Clipboard is inserted before the current frame. Although the Clipboard also contains audio data, the audio-data track remains unchanged because audio editing is not active.

If both the audio and video-data tracks were active, the same Paste command in insert mode would also add the frame of waveform data on the Clipboard to the video sequence.

Paste in Insert Mode, with Video and Audio Tracks Active
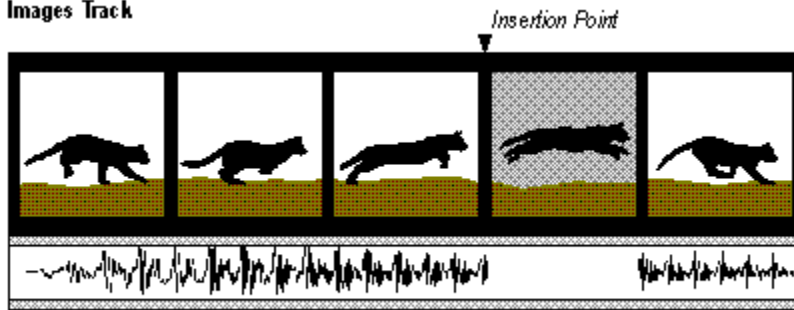
The pasted video frame is inserted. Because no waveform data is on the Clipboard, VidEdit inserts the Clipboard image before the current frame and inserts empty space (representing silence) equivalent to the length of one frame in the waveform track.

interleave

A method of storing video and audio data together in a video file, such that a segment of video data is followed by a segment of audio data. By interleaving video and audio data, Video for Windows can maintain a smooth transfer of audio/video information while playing a video sequence from a hard disk or CD-ROM drive.

track

A linear depository of information within a video sequence. All video sequences have at least two tracks: a video track storing frames of video data, and an audio track storing segments of audio.

frame

A single unit of information within a video sequence. A video sequence consists of many frames of video and audio data; when the frames are played in sequence, you see an unbroken video sequence with accompanying audio playback.

palette

A collection of color information for a picture or video sequence.

Video for Windows can use an 8-bit palette format. With this format, up to 256 color values can be stored in a table. Images within the video sequence reference the entries in this table; each pixel has an 8-bit value identifying which palette color to draw. The 8-bit palette format uses less storage space than the 16-bit and 24-bit formats, which do not use a palette (rather than reference a value in a table, they store color information directly with the pixel).

bitmap

An image format commonly used for scanned photographs and artwork. A bitmap divides a picture into a grid of pixels, with each pixel assigned a specific color. Bitmaps usually have .BMP or .DIB extensions.

waveform audio

A technique of recreating an audio waveform from digital samples of the waveform. The sound track for a video sequence is stored as waveform audio data.

insert mode

One of two VidEdit editing modes. In insert mode,

space is provided for data added to the video sequence; existing data is retained and pushed later in the sequence. When data is removed from a video sequence, data following the deletion is shifted back to cover the empty area.

overwrite mode

One of two VidEdit editing modes. In overwrite mode, data added to the video sequence replaces any existing data at the insertion point. When data is removed from a video sequence, the frames storing the deleted data are retained (leaving an empty frame).

frame rate

The number of frames recorded for each second of video playback. Higher frame rates can provide smoother motion than lower frame rates.

dithering

A technique for simulating an unavailable color by combining two or more available colors.

sampling frequency

The rate at which digital-audio samples are taken. Higher sampling frequencies provide better fidelity but require more storage space.

sample size

The amount of storage space used for each digitized portion of the audio track. Larger sample sizes provide greater dynamic range and, therefore, better audio reproduction (but they also require more storage space).

stereo (audio)

Audio format in which two channels are used. Stereo audio can provide better sound reproduction, but it also requires twice the storage space as monaural (mono) audio.

mono (monaural audio)

Audio format in which a single channel is used. Monaural audio requires half the storage space as stereo audio, which uses two channels of audio information.

codec, or Compressor/Decompressor

A software component that provides compression services (while creating a video sequence) and decompression services (while playing a video sequence). The Video for Windows architecture provides for the use of multiple codecs, so you can choose the one that's most appropriate for your application.

data-transfer rate

The speed at which data is transferred from a storage device to the processing hardware of the computer. Devices with higher data-transfer rates can provide better playback quality.

key frame

A fully-drawn frame stored as a reference point for successive frames. Most video sequences store only the changes from frame to frame (they don't store a complete image for each frame). A key frame stores a complete frame image, so an application can jump to the key frame and obtain a fully drawn image for that point in the video sequence.

mark

A position marker defining the beginning or end of a selected range of frames.