Movie Script

(Manual)

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REEL-EYES

Instructions for Installation

1. Insert ReelEyes CD into your disc drive.
2. Drag RE folder either to your desktop or onto your Hard Drive icon.

Note: It is not necessary to copy this program onto the hard drive for it to operate. However, it is recommended that you do copy it to the hard drive for maximum performance.

Technical Support

PLEASE CALL YOUR DEALER OR DISTRIBUTOR FIRST.

Please call before returning any product or service.

When calling PAR, please be sure to have serial number and place of purchase available. Visit our tech support on-line at www.irez.com, or call iREZ Technical Support at 480.922.0044, ext. 3, 9AM to 4PM (Arizona Time), Monday through Friday.

System Requirements

Minimum Requirements:	Optimum Requirements:
Mac 68,040 processor	Mac PPC
33 MHz	400 MHz
2 MB video RAM	8-32 MB video RAM
16 MB application RAM	64 MB application RAM
Mac OS 8.1	Mac OS 8.6
QuickTime 3.0	QuickTime 4.0

NOTE: We have designed this product and this manual for the use of the consumer. This manual should be used only for reference. The user assumes any and all risks.

iREZ Basics

"iREZ ReelEyes™1.1" allows you to watch and capture AV either to RAM (Random Access Memory, your computer's main source of memory. 128 MB are required to run this program) or to Disk (500 MB space required to run this program). You can also set up a fixed size cropped area of the video display window and grab only that portion in your movie. The software can also playback movies, do simple cut/copy/pastes/trim edits and save the selected portion of a clip as a self contained movie, Export a movie using different compression methods and add Time Codes to Movies.

For people using QuickTime 3 or higher, you can now record to multiple hard drives or partitions so that when the first - primary hard drive is nearly full, QuickTime will switch to a second hard drive and continue recording to that. Additionally, you can also have the Audio recorded to another hard drive, making it possible to have your AV recording session done to 3 hard drives at the same time (i.e. video recorded to 2 hard drives so that the second one will be used when the first is nearly full and the audio to a slower hard drive).

It can also play low data rate movies (like Midi) in the background.

Lastly, we added Apple Script support so that you can use Apple Scripts to control ReelEyes. The scripting Commands are described in the "ReelEyes- Apple Scripting" section below.

What it doesn't do is recompress video, doesn't have any special effects (fades, dissolves titling etc) or funky editing capabilities. Those features are provided by our companion product iREZ ReelEdit™©.

If you're having Problems, please check out the Frequently Asked Questions at the end of this manual.

General Settings

Setting it up for Video Capture

First, you should have Virtual Memory or RAM doubler turned off as it isn't giving you "Real RAM" and having it on will result in poor, erratic video capture. You should also have any unnecessary extensions turned off, other than the ones like QuickTime, QuickTime Power Plug, SystemAV, video card / digitizer card extensions etc. I find that Speed Doubler doesn't help video capture either, and that a big Disk Cache (memory Control Panel) should generally be set down as low as possible (under OS 8.5.1 this doesn't seem to be as important). You should also have AppleTalk and networking stuff turned off too, as they can cause video to be captured poorly.

For optimum capture to disk, we recommend you only capture to a hard drive or partition on a hard drive that is completely empty (and if your a fanatic about it and have a dedicated hard drive or partition for video capture, erase the disk before you grab to it - just be sure there isn't something on your drive you need before doing so). Even a defragmented hard drive (Norton Utilities Speed Disk can be used to defragment your drive) or partition that has files/applications (and Hidden files too!!!) on it may capture poorly, especially if you're trying to get accurate frame rate captures (i.e. you want 15 fps (frames per second) capture and the actual capture rate you get does not vary more than ± 1 fps from it). Second, the capture rate is going to depend on how fast the video images can be transferred from the AV card to your hard drive, so a fast or fast wide hard drive is important if you want to capture at >15 fps. Please read the iREZ ReelEyes- Optimizing Performance section for more info on getting good video capture.

Setting the Memory Partition for ReelEyes

Depending on what video card you're using for digitizing and your RAM / Hard disk space situation, you have essentially 3 choices for where video is grabbed to: directly to disk, to the available temporary memory or to available RAM inside of the iREZ ReelEyes memory partition. So first select the ReelEyes application and then choose Get Info from the File menu. Once the Info window appears, select the bottom-most field labeled "Preferred Size" and use the following guidelines for setting the memory allocation.

1) For Capture to disk, set Preferred Size value from 2 to 8 Megs (2048 to 8192K). Giving it more RAM doesn't hurt, but it won't make a significant difference except for playing back movies. After you launch iREZ ReelEyes, you must also make sure the "Record To RAM" menu item is unchecked. You may also want to specify which hard drive or folders the temporary QuickTime video gets grabbed to using the Preferences… menu item under the Digitizer menu and whether to post compress the video.

2) For Capture to RAM WITHOUT temporary memory, set Preferred Size value from about 4 to 6 megabytes less than the currently available RAM in your Mac. From the Desktop, select the Apple menu and choose the "About this Macintosh" item and then see what the Largest Unused Block is. Exp., if your largest unused block is 42 Megs, set the Preferred Size value for iREZ ReelEyes to about 38912 which is 38 Megs. After you launch iREZ ReelEyes, you'll also have to check the "Record To RAM" menu item and make sure the "Use Temp Mem" menu item is unchecked under the Digitizer Menu.

3) For Capture to RAM USING Temporary Memory, set the Preferred Size value to about 2048 (2 Megs). Temporary memory is the memory that is not used by the System or any currently running applications. If you close the Info window, double click on the iREZ ReelEyes application, then click on the desktop and choose "About this Macintosh" from the Apple menu, the available memory for video capture will be whatever the "Largest Unused Block" size is. Exp., if you have 48 megs of RAM, your system uses 6 megs and you have 2 megs allocated to iREZ ReelEyes, you have about 40 megs of temporary memory to use for video capture (which at 320x240 (CIF) size, 30 fps using the YUV compressor will give you about 9 seconds of video). After you launch iREZ ReelEyes, you'll also have to check the "Record To RAM" menu item and make sure the "Use Temp Mem" menu item is checked under the Digitizer Menu.

The "iREZ ReelEyes- Optimizing Performance" section discusses a 4th option that allows you to capture audio to memory and the video to disk, which provides an additional performance tweak.

Using iREZ ReelEyes (additional settings ‘n stuff)

Once the memory size is set, double click on the Application and then click on the File menu. If there is a video capture card installed, the Open Video Window item will be available; select it. If you can't select (it's grayed out), your monitor color depth may be too high (on the 6100 - 8100 AV Macs, video capture is only possible at 000's of colors or lower on a 14" monitor), the capture card you’re using isn't installed right (you may need a VDIG or other software from the card's manufacturer) or you don't have the QuickTime extensions in the Extension folder.

If you get "-9405 Bad channel video" error message after you select Open Video Window, iREZ ReelEyes is having problems talking to the Video Digitizer software, most likely because it has not been loaded into RAM. This usually means that another extension has "hogged" the heap space and it can not be loaded. I've found that this can be resolved in most cases by renaming the extensions so that all the QuickTime and video digitizer extensions load right after each other and no other extensions load between them.

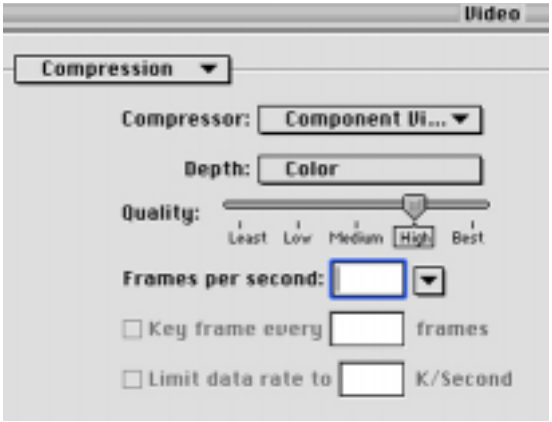
For example, with QuickTime 3.b11 (we hope you have upgraded to QuickTime 4.0) and the ATI Xclaim software installed, I would continually get -9405 errors with all video capture software I tried, so it was not a problem exclusively with iREZ ReelEyes. Watching the extensions that got loaded during restart showed that the ATI extensions appeared (loaded) first, then Global fax software, then the QuickTime extensions. I put a "•" in front of the global fax extension names so that they loaded last and the problem disappeared. You too may have to "juggle" the order in which extensions load to allow the digitizer to be loaded.

After you select it, the Video Window will appear. Now the Digitizer Menu will be selectable and you should next set the size of the capture window, Video Settings use for capture, the Audio settings, whether to record to Ram or disk and whether video should play back to the video window during your video recording. These settings are saved in your Preference Folder as the "iREZ ReelEyes Prefs" item when you quit the "ReelEyes" application.

Next choose the size of the video window (select one of the 160x120 to 640x480 or Fill Screen items). If you are using an 8mm, SVHS or Beta Video source, you can use 320x240 or larger (if the card can do it), but for most consumer grade video tapes (Standard VHS or tape rentals) there isn't enough resolution (lines of video) in the source tape to really go beyond 320x240 size. The Sizes part of the menu will automatically adjust to either NTSC size (160x120 - 240x180 etc.) or PAL/SECAM sizes (192x144, 384x288) depending on what Video Input source your using, NTSC or PAL.

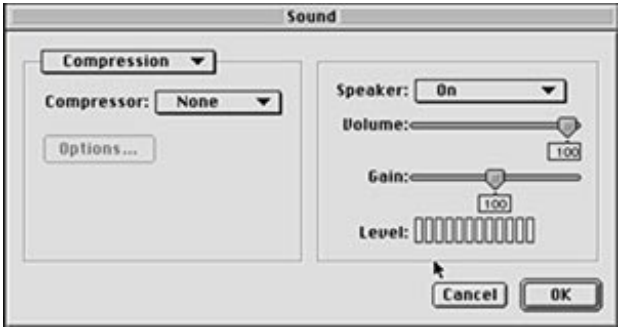
The Custom 640x480… size item allows you to specify a custom width x height that you can enter into a dialog.

Next select the Video Settings… item and select the Image, Compression and Source (± AV options with the AV Digitizer Options extension installed for the 6100/7100/8100 AV Macs) options you want to use. For people using Apple's AV or Xclaim VR cards, I'd suggest you try using the "Component Video" codec, which produces the best video quality (24 bit color) and is the fastest video capture codec there is without spending a lot of money on JPEG compression boards. If you're using the ATI 3.3 software with the Xclaim VR Cards, you should be using "ATI-Best" or "ATI-High" compressors.



On the down side, YUV capture plays back a bit jerky at larger sizes and higher frame rates for the 6100/7100/8100 series which don't have hardware decompression of YUV. On the upside, you can grab at a small size (which translates to faster capture rates and less disk/memory used) and have the built in pixel doubling hardware play it back at twice the original size with minimal video degradation. Two other options you might want to try are "None" or the "Video" compressors, but they don't grab at the level of quality as the YUV option. Note: You can adjust the Video display settings (Brightness contrast etc.) while you're watching video using the HBCS buttons; this is discussed later.

Next choose the Audio Settings… item and select the Compression, Sample and Source options you want to use. Generally, I'd stick to 44.100 KHz or 22.050KHz, 16 bit uncompressed (no compression) sound (choose stereo if you want or can use it). Although you can compress the sound, this compression does take time away from Grabbing video. Compressing the sound after you grab it (with another utility) is a better solution. The amount of memory / disk space that sound uses can be calculated out using the following formula: Note: You can adjust the Audio settings (Volume, Gain etc.) while you're watching video using the VGM buttons; this is discussed later in the manual.



Kilobytes of sound per second = Sound Depth/8 * SoundRateinHz * NumChannels / 1024

For 22.050 KHz 8 bit mono sound, each second of video uses 21.53 Kilobytes of memory (8/8 * 22050 *1/1024) and 44.1KHz 16 bit stereo sound it uses 172.26 Kilobytes per second (10.1 megabytes of memory per minute).

There are two more settings you are going to select next, Record To RAM and Play During Record.

Selecting Record to RAM will check mark it (or uncheck it if it's selected) so that the movie capture will be recorded to available RAM; leaving it unchecked will record the movie to disk. The Use Temp Mem item determines where in RAM the video is grabbed to. If it's checked, then the video capture will capture the video to Temporary Memory (which is the RAM available in your Mac not currently allocated to the system or an application) and if you uncheck it, then the video is captured to the available memory inside of iREZ ReelEyes.

Selecting Play During Record will check mark it (or uncheck it if it's selected) so that the video is always displayed during the Video Capture process. If you uncheck it, the video will only be displayed if the Mac can keep up with your frame rate and save the video. Most of the newer PowerMacs are fast enough to display the video during capture; this option may not affect playthrough.

The Show Megs Left option will display the amount of disk/memory space left during capture (nothing shows up untill you're recording). It does not have any impact on video capture rate. I'd pretty much leave it check marked.

Digitizer Preferences

The Preferences… item at the end of the Digitizer menu allows you to select Default Preference for iREZ ReelEyes, and brings up the iREZ ReelEyes Preferences dialog.

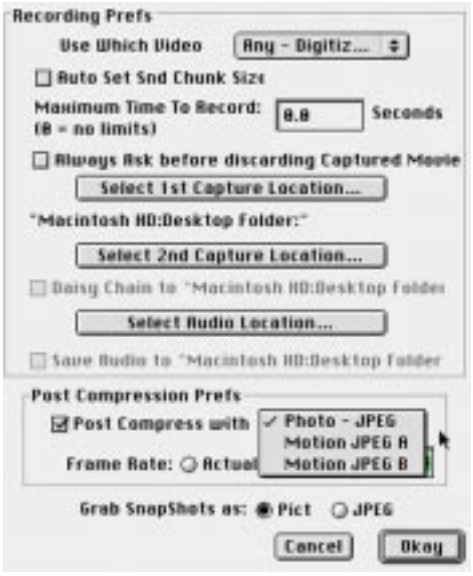
Items in the Recording Prefs section allow you to select the folder / hard drive that iREZ ReelEyes records to and other preferences that affect the recording of AV during capture.

The Use Which Video field pop up menu allows you to select which fields of the video to grab. Normally you'll just select the Any item, which allows the digitizer to choose it's own preference. The two other options are Odd or Even fields.

The Auto Set Snd ChunkSize check box allows iME to automatically adjust the sound chunksize for your current recording session (taking into account the frame rate you want to capture at and the audio settings you've selected). We recommend you check this item, which will generally result in more consistent capture rates and fewer dropped video frames.

The Maximum time to record allows you to specify the maximum time to record any given sequence, in seconds. Setting it to 0 lets the capture continue until you run out of recording space (Hard Drive or RAM).

The Select 1st Capture Location...button specifies which hard drive/folder you want your movies captured to. iREZ ReelEyes can record up to 40 gigabytes to this drive (assuming you have that much space free).



The Select 2nd Capture Location… button specifies which hard drive/folder you want to record to if the first capture location becomes full during a record operation. Once you've selected a location the "Daisy Chain to XXXX" check box will be available. Checking this item indicates you want QuickTime to continue recording to this hard drive after the first drive becomes full and unchecking means you do not want to use it. This is only available if you're using QuickTime 3 or higher.

The Select Audio Location… button specifies which hard drive/folder you want the Audio recorded to. Once you've picked your location, the "Save Audio to xxxx" check box will be available. Checking this item indicates you want to record the Audio to a different file / hard drive. This is only available if you're using QuickTime 3.0 or higher.

The items in the Post Compression Prefs box will allow you to decide how you want your captured movies post compressed.

Once you check mark the "Post Compress with" check box, the post compression items will be available.

The pop up menu has three codecs for post compressing your video, PhotoJPEG, MJPEGA or MJPEGB. Using them results in about 4 to 1 video compression, reducing the file size to 25% of the original (without a significant loss of video quality) when you Save it. On a 7300 G3 308 MHz PowerMac, PhotoJPEG at 320x240 (or larger with ATI hardware) size plays back really well at 30 fps; lower end machines should be able to play it back at 240x180 or 160x120 without any problems.

The Frame Rate radio buttons allow you to decide at what frame rate you want the movie compressed, either Actual or a User Specified one that you type in.

The Actual button recompresses the movie at its Natural rate. This means that we do not change the duration of frames during compression, so if you have some video frames that are 15 fps and others that are 40 fps, they remain at those frame rates.

The Other button is whatever "rate" you have entered, so if you set it to 15 fps the captured movie gets recompressed so that each frame is exactly 15 fps. This can result in duplicate video frames in your movie if there is a large discrepancy between individual frame duration. However, fixed frame rates are easier to edit on a frame by frame basis with iREZ ReelEdit.

Also, the current movie size is used for Saving the post compressed video, so if you initially capture the video at say 240x180 size, then double size the window (to 480 x 360), select a portion of the movie and then choose Save, the movie saved to disk will be at 480 x 360 size. The same applies if you make the movie half or some other size.

The "Grab SnapShots as:" item lets you decide how you want your snap shot images to be saved to disk when you use Grab ("Command G") and you click on the appropriate radio button to save them as Pict or JPEG files. The JPEG option is only available if you’re using QuickTime 3 or higher.

The "H S B C S", "V G M", "SNAP" and "REC" buttons and Live Sound Bar

Near the bottom left corner of the Video window are two small composite buttons entitled "H S B C S" and "V G M", which allow you to adjust most of the Video display and Audio settings WITHOUT using a Dialog or floating window. Frankly, I hate having 5 additional floating windows that appear and disappear as I flip from a capture application to another application and waste/ clutter up valuable monitor space.

The "H S B C S" button allows you to change video display settings and stands for Hue, Saturation, Brightness, Contrast and Sharpness, in the same order as displayed in the Video Settings Dialog. To adjust the Brightness, place the arrow cursor over the "B" part of the "H S B C S" button and click the mouse. The "B" will invert, meaning it's active. Now hold down the Left Arrow"<--" key to darken the image or hold down the Right Arrow "-->" to brighten the image. To select another Setting, just click on it and then adjust it up or down using the Arrow keys. Re-clicking on one of the button parts will turn it off, so if the "H" is highlighted, then clicking on it again will turn it off. When you click on a button, the value of that setting is displayed in white text (i.e. 51.3) to the right of it. As you use the arrow keys, the value will increase/decrease.

The "V G M" button allows you to change audio settings and stands for Volume, Gain and Mute.

To adjust the sound input Gain, place the arrow cursor over the "G" part of the "V G M" button and click the mouse. The "G" will highlight; meaning it's active. Now hold down the Left Arrow"<--" key to lower the gain or hold down the Right Arrow "-->" to raise the gain. To select another Setting, just click on it and then adjust it up or down using the Arrow keys.

The Volume button adjusts the output volume. You can now adjust global sound level by clicking on the "V" button and then adjusting the global volume using the Left / Right Arrow keys. The program does not save or restore the sound levels after you change them. You’re just adjusting the volume as if you were doing in the Sound Control Panel / Monitor&Sounds control panel or using the Sound pop up slider in the Control Strip.

The Mute button is either on (darkened/ highlighted) or off (unlighted) and the Arrow cursors don't affect it. Re-clicking on one of the button parts will turn it off, so if the "G" is highlighted, then clicking on it again will turn it off.

To the right of the "V G M" button is a thin gray strip that shows the sound input volume in real time. A small white block indicates the maximum sound volume that has occurred within the last 3 seconds. If you have selected Stereo sound in the Audio Settings dialog, the bar will be split into 2 strips, with the upper strip being the left channel and the Lower bar being the right channel.

Fast Adjust Speed for H B C S and V G buttons with the Shift Key

Some people complained that it took too long to change the video and audio controls using the HSBCS and VG buttons with the Left / Right Arrow keys. So I added a 10 times scrolling accelerator by using the Shift Key (hold down the Shift Key and then use the Left Right arrow keyboard keys). Without the shift key, the HSBCS values will change 0.2 per key press and 2.0 per key press with the shift key down (VG buttons change 0.5 per key press and 5.0 with shift key per key press).

Side Note: The HSBCS button values are reported with decimal places, which is not possible to set with the Digitizer dialog. The reason for this is that the value of Brightness (and the other ones) is a number between 0 and 65535, which is "remapped" to a value of 100 in the Digitizer dialog. You can actually adjust the HSBCS values much more precisely using the Left / Right Arrow keys (in increments of 0.2%).

The SNAP button allows you to Grab a Snap shot (same as typing Command G).

The REC Button allows you to start recording a movie (same as typing Command R).

Cropping Video

Under the Digitizer menu are five items you can use to crop the video before recording it. PLEASE note that the Xclaim VR, Xclaim VR Pro card and Turbo TV cards do not work properly with clipping, and the cropping menu items will not be enabled if you’re using them.

Use Cropping (Command J) allows you to Turn On (if a cropped area was previously defined) or Turn Off Cropping.

The other four items allow you to define an area for cropping at 160x120, 240x180, 320x240 (or in PAL standard sizes if your watching PAL video), or a custom size you specify. The Video window must be greater than or equal to the dimensions of the area that are to be cropped. If you make the video window 160x120 size, you can't crop an area 320x240. After selecting one of the four items, the cursor changes to a "plus" and you position it inside the Digitizer window and then click and hold down the mouse. A rectangle will appear and as you drag the mouse around inside the window a second rectangle will appear that shows you what area is going to be Cropped to. Release the mouse button and your cropping will stick there. You can turn on or off this defined Crop area using Command J.

How to Record Video

Once you are ready to record the video (i.e. it's playing in the Video Window), all you have to do it is click on the REC button or select the Record (Command - R) item from the Digitizer menu. With the Show Megs Left item checked, the time recorded and megabytes left will be displayed at the bottom of the video capture window (T: xx M:xxx). To Stop video capture, click the mouse. If you are capturing to RAM, the cursor will change to a watch cursor while the movie in RAM is saved to disk. After this, the movie will appear in its own window (Cap #1, Cap #2 etc.) and you can play it back using the standard movie controllers. The items in the Edit and Movie menu will now be available, so that you can have it Loop, Loop Back and Forth, play the Selection Only, Cut / Copy / Paste / Trim and reduce or expand the dimensions of the movie window.

Normally the first few frames of the video you have recorded will have large delays (with RAM capture < 1 second, with record to disk up to 2 seconds), as the QuickTime software has to set things up for the recording session. For this reason, it is usually a good idea to grab a second or so of video before the actual footage you want to record and a bit afterwards as a trailer.

Once you've grabbed your video, you'll need to save it using "Save" or “Save As…” from the File menu. Selecting Save… (Command - S) works in this fashion.

1) If you have nothing selected, you'll be asked for a new file name for the movie. Clicking the Save button will result in the capture file being renamed to whatever you typed in and you don't have to wait for it to be saved; it's done. It essentially updates the capture movie with any changes you made (like deleting parts of it), which takes far less time for it. However, there is no interleaving (i.e. mixing the sound & video for optimum playback) and does not actually remove the parts you clipped out. This means that if your captured clip is 200 Megs in size, and you delete say 30 Megs of it, the movie is still 200 Megs in size, but for playback purposes QuickTime will not display the parts you deleted.

2) If you have a portion (or all) of a movie selected, that portion will be saved in a new file. If you have the "Post Compress with MJPEG" Digitizer preference check box checked, then it will be saved using MJPEG A - High Quality setting, which results in the Saved movie clip being reduced to about 20-25% of its original size with minimal loss in movie quality.

Selecting "Save As…" saves the entire movie to a new movie file, regardless of if you have a portion selected. Post Compression is not applied for Save As.

Save… & Save As… for Non Capture Movies

If you are doing simple cut/copy/paste/trim movie editing from a movie that was not just captured (i.e. it's not a "Cap#x" movie), Save… works in this fashion.

1) If you have nothing in the movie Selected, then "Save…" just saves the movie and updates any changes you made to the old movie file.

2) If you select a portion or the entire movie and then do a "Save…" you will get a Save Selection as dialog, which allows you to save the portion you selected as a new self, contained movie.

Copying a Movie into a New Movie

If you want to copy a portion (or all) of a movie and create a new movie from it, you can use New Pasted Movie under the File Menu. Select (highlight) all or part of the movie you want, then select New Pasted Movie and a new movie will be created that contains your selection. This provides a shortcut to having to Create a new movie and then Paste stuff into it. Note that once you have created a New Pasted movie, you can continue to copy - paste other movies (or portions of them) into it to create a quick and dirty "Edit Cut" type movie.

If you decide to save the Pasted movie, the "Save" and "Save As…" commands under the file menu will be titled "Save Self Contained…" and "Save Reference…"

Save self-contained… removes all external references and transfers the information from the original movie(s) into the new one you’re saving to. The self-contained movie can get very large in a hurry and winds up duplicating the video stored on your hard drive. But if you’re planning on deleting the original movie(s) you copied and pasted, this is your only option.

Save Reference… creates a new movie file and puts a reference to the original movie(s) in the movie. The movie will be very small, but will not be playable unless the referenced movies in it are available (i.e. you'll need to mount or insert the CD / JAZZ / hard drive they reside on). It does allow you to do a very quick and dirty Edit Cuts type movie for playback.

Grabbing a Single Frame of Video

To grab a single frame from the video window (i.e. it's playing in the Video Window), all you have to do is click on the "SNAP" button or select the Snap Shot (Command - G) item from the Digitizer menu. The pict will be grabbed and saved to the Default Volume you specified for saving video clips (if you picked one in the Digitizer Preferences section) or in the same folder that iREZ ReelEyes resides in (if you haven't picked a default volume). The name of the Pict file will be like "101111 Pict" and the number value is a time stamp. You can rename the Pict to whatever you want later. NOTE: Your current monitors color depth settings (256, thousands, millions) controls the color depth of the snap shot picture. So if your monitor is in millions of colors, the Pict will be saved in millions of colors and if you’re in (ick) 256 colors, it's saved in 256 colors.

You can also grab a single frame from an Apple script and the "Take Picture" command. Please checkout "Grab Snap Shot script" for details on how to use it.

Digitizer Info

The Digitizer Info… item allows you to see information on what your video card hardware supports. I'm not going to describe what all the different items mean, but if your having a problem with digitizing video, we can use the information to possibly determine what the video card can or can't do. To send us a snap shot of the "Digitizer Info" dialog, simply type Command - Shift - 3 (or under Mac OS 8, type Command - Shift - 4 and then draw a selection rectangle around the dialog to grab that portion) and then e-mail us the pict, at support@irez.com.

Time Codes

Set TC Source Name

This item allows you specify the name of the Video Source for a TimeCode Track. Some Video Digitizers will add Time Code information when they capture, and you must fill in a name of the Video source before you capture it.

Movie Info, Analyze and Graph Frame Rate

The Movie Info…, Analyze… and Graph Frame Rate… items under the Movie menu allow you to get statistics on an open movie.

Movie Info… gives you a very quick look at your movie for duration, data rates and file size of the video, audio and total movie. It will only be accurate for frame rates if the movie you’re getting information on is not referencing other movies. If you need accurate frame rate information, then use Analyze.

Analyze… steps through every frame in a movie (which can be very slow for large movies or MPEG movies) and then gives you additional statistics, such as minimum/maximum frame duration. If you find Analyze… is taking too long, type command period and it will stop calculating the values.

The Average frame rate reported in Analyze… is the sum of all frame duration's divided by the number of frames (this takes time, as "ReelEyes" has to get each frame from disk, find out it's duration, and then calculate the average). The Max - Min Dur: values are frames per second and you can use this to gauge how "regular" the capture is. If you have a portion of the movie selected, the information is reported for only that selected portion.

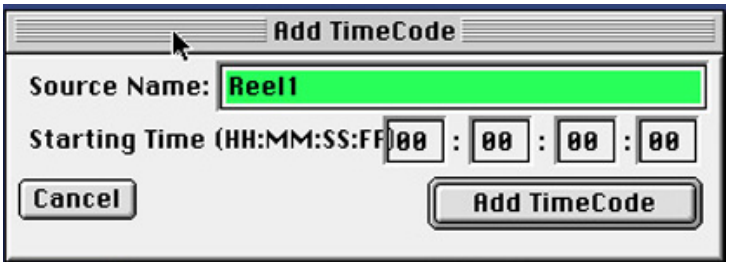
Graph Frame rate… analyzes your movie (or selected portion of a movie) and then creates a graph from it. The graph shows the number of frames that occur within a specified duration. You'd principally use it to look for dropped frames or clusters of dropped frames.

The vertical axis is the number of frames and the height of each red bar indicates the number of frames in that time category. The horizontal axis is in 1/600th of a second time values and has a maximum 60 time categories. So a graph time value of 20 is (20/600) 1/30th of a second (30 fps) and a value of 60 is 1/10th of a second duration (10 fps). The width of the vertical red bars will adjust depending on how many time increments are found (i.e. if there are 60 or greater time intervals, then each bar is 10 pixels wide - if there are 20 intervals, each bar is 30 pixels wide).

If there is no variation of the frame rate for the movie (or selected portion of a movie), you will get an error message stating that there is nothing to analyze and no graph will be created. Otherwise you'd just get a single vertical bar, which isn't useful or informative, so it isn't shown.

Add TimeCode…, Delete TimeCode and Show TimeCode items

These three items allow you to add, delete and show or hide TimeCode Tracks in a Movie. A TimeCode track has timing information in it for precisely locating yourself within the original video source, but can also be used to locate yourself within a QuickTime movie too.



The Add TimeCode… item adds aTimeCode track to any movie that has one or more video, MPEG, audio or midi music track(s). After selecting this, the Add TimeCode dialog will appear.

You enter the name you want the TimeCode to have in the Source Name (i.e. BirthdayParty10/02/1999 etc.) edit field.

The four Starting Time fields (all 00) allow you to fill in when the video started to be captured from in Hours:Minutes:Second:Frame format. If you started capturing the movie at 1 hour 22 minutes and 12 seconds into the "BirthdayParty10/02/1999" video tape, enter 01 22 12 00 in the 4 fields. You can also enter all zeros if you desire to do so.

The Delete TimeCode item will delete the TimeCode track(s) from a movie. This is not undoable, but does not affect the movie until you save it.

The Show TimeCode item allows you to Show (check marked) or Hide (unchecked) a TimeCode Track. The TimeCode will be shown in either the HH: MM: SS: FF or HH: MM: SS; FF format at the bottom of the Movie Window (white text on black background). The (FF) Frame separator ";" indicates that this movie is using the Drop Frame 29.97 NTSC method of handling inexact frame rates, which keeps both the Video Source Time and QuickTime Movie Time in Synch.

Presenting Movies

Under the File Menu is the Present Movie… and Movie Prefs… menu options. They allow you to blank the screen, center your movie and then play it back, so that you can record it to say a VCR or for your own viewing pleasure. To use it, first open a QuickTime movie, then click on the Movie menu and select an appropriate size (i.e. fill screen, double size, half size etc.) to play it back at. Next select Present Movie. The screen will go black, the menu bar will disappear and then in xxx seconds, the movie starts playing until you click the mouse button or the end of the movie is hit, which stops the presentation. HOWEVER, if you have a portion of a movie selected and then check the Play Selection Only item under the edit menu, then only the selected portion of the movie will be played when you use Present Movie.

Present Prefs… allows you to specify the delay in seconds before the movie begins playing (so you can hit the VCR record button), the delay after the movie finishes playing (so you can hit the VCR stop button) and the HighQuality Check box, which tells QuickTime to play this movie at the highest possible quality there is (which may result in jerky playback for slower Macs).

1) "Widen Audio Only Movie" increases the default width of audio only (i.e. sound, midi, etc.) movies to be wider than normal, so if a movie has a chapter list it will be visible (and iREZ ReelEdit can now add Chapter Lists to movie/AIFF etc. tracks).

2) "Play High Quality" forces all movies to always play back at maximum quality.

3) "Disable Hardware Acceleration" will turn off hardware compression playback of movies (QT 4 only). For people playing Cinepack, Sorensen and other types of Compressed movies on ATI hardware, this will allow you to play those movies without getting the brightness/gamma shift at sizes larger than the original. This isn't "specific" to ATI and may affect other Hardware Accelerated Displays.

Optimizing Capture Performance

To capture video with accurate frame rates, you should make the following adjustments to your system and hardware configurations. The following primarily applies to the "low end" video capture cards like Apple's built in AV or Xclaim VR, but should be applicable to other AV cards (CapSure™ Targa, Miro etc.).

By Accurate frame rates, I mean that you can get almost no variation between the frame rate you want to get and what your hardware is capable of achieving. Many Video Capture applications will show throughput of video as being 30 frames per second, but if you look at the variation of individual video frames, you'll see that some frames are at 15 fps and others are at 60 fps, which will average out to 30 fps. The following "guide" will describe how to squeeze the best performance out of your hardware and prevent you from making video frame rate choices that are unrealistic.

Required Hardware (for PowerMacs Only)

1) A fast PowerMac (100+ MHz) with 32+ free Megs of RAM and an AV card. (Or a CapSure card for PowerBooks)

2) Good quality cables plugged into the appropriate RCA / SVHS Video and RCA/Mini Plug Sound ports.

3) A clean (empty) hard drive or partition on a hard drive with NO FILES on it. Erasing the partition/ drive before capturing is usually the best method (select the partitions / drive on the desktop, Select Special and then select Erase…). You should probably not use OS 8.1's HFS+ formatted partitions/ drives for capture, as there is enough additional overhead in HFS+ to reduce the capture rate by about 100 to 300 K/sec. Note that things like DeskTop Printing and Mac OS 8.0's "pop up windows" will create invisible files (DesktopPrintingDB and OpenFolderList) on each drive or partition that is mounted, which may result in some minor fragmentation of the drive.

4) Another hard drive or partition that you save the movie clips too, rather than filling up the Empty drive we mentioned in 2. Trying to capture to a drive that is fragmented with other files will most likely result in poor performance.

Most "stock" Apple SCSI drives will be able to capture 15-fps video at 320x240 Component Video to disk (which is about 2250 K/sec). Fast SCSI 2 drives (with the built in internal fast SCSI 2 in the 7300,7500,7600, 8500, 8600, 9500,9600 Macs) or Fast Wide SCSI 2 / UltraSCSI drives with an appropriate PCI Ultra card will allow you to grab 30 fps video at 320x240 Component Video to disk (which is 4500 K/sec). To capture at 640 x480 30 fps you’re going to need a raid hard drive system and a really fast Ultra SCSI card to keep up with the transfer rates (18000 K/Sec) or a video capture card that can compress the video data in real time and get it down to under 5 megs per second.

Software/System Configurations

1) QuickTime 3.0 or higher.

2) Set the Disk Cache in the Memory Control panel as low as it will go (even under OS 8.1's new disk cache scheme - it may hurt capture rates especially on slower <150 MHz Macs) and turn off Virtual Memory (VM is a definite frame killer).

3) Turn off AppleTalk in the Chooser - it may hurt capture performance if it's active.

4) Remove all non essential extensions and control panels, especially on slower Macs (<150 MHz). The essential ones will be QuickTime and QuickTime Powerplug (soundmanager, SystemAV or AppleVision if they're in your system folder), and an extension for your video card (like ATI Video Digitizer or whatever). For OS 8.0 and 8.1 you need to leave the Appearance Extension in (or your Mac will croak) and for OS 8.1 you also need the Text Encoding Converter (for HFS+ formatted drives). Although you can use the Apple's EM extension to create sets for this, some extensions can not be turned off by it, so I usually create 2 folders (off extensions and Off controls) and then drag them into the folders manually (color coding your essential extensions by label makes it much easier to select the non essentials).

Note: You may not NEED to turn off all the extensions just to capture video(except for Virtual memory) if you have a fast Mac. On my PowerMac 7300/G3 (PowerLogic 220 cranked to 308 MHz) using OS8.5 and QT3 and recording to a fast SCSI 2 internal hard drive, I'm getting the same capture rate (and no dropped frames) with all my normal extensions (including AppleTalk and having the Cable Modem on all the time via Ethernet) on versus with only the bare essential extensions on.

5) Power up all hard drives you're going to use for capture now and then Restart your Mac.

6) Other companies recommend inserting a floppy in the floppy drive (desktop machines only) and a CD in your CD drive to prevent the Mac OS from polling these devices to see if anything is in them, which could result in dropped video frames. I've yet to see this make any difference with capture on my old Quadra 660AV, or my "beast" - a PowerBook G3/300. However it might make a difference in your own situation and could be worth trying. Removing the "Apple CD-ROM" extension should disable the CD drive, so you can probably just remove that extension and not bother with the CD in the CD Drive. With system OS 8.6 or higher this should not be a problem.

Setting Up iREZ ReelEyes

There are a couple of methods that iREZ ReelEyes has for optimizing capture, depending on how much RAM you have and how fast your hard drive(s) is (are). The following is primarily intended for people who have a stock apple hard drive or a Fast SCSI 2 internal hard drive. The "iREZ ReelEyes Docs" has additional methods / suggestions for capturing AV to disk.

Preliminary / Initial Stuff

The following things are only needed to be set once, unless you change your AV hardware or drives.

1) From the desktop, select "About this Computer…" (or Macintosh) from the Apple Menu and jot down how much free RAM is available (Largest Unused Block is 80.2 Megs etc.). Select iREZ ReelEyes and then choose Get Info (Command I) from the File menu. In the Preferred Size field enter a value that is about 10 megs less than the free memory (i.e. if you've got 75 megs free, then set the preferred size value to about 65000 K). Now close the Get info window.

TIP: You may want to make a duplicate copy (Command D) of iREZ ReelEyes now, then name it "iREZ ReelEyes- Player" (or whatever you want) and set the preferred size of it to 4000 K. This way, when you double click on a movie, the "iREZ ReelEyes- Player" gets launched, which has a small memory partition, and you don't wind up getting "not enough memory" messages from the finder. You can leave the "iREZ ReelEyes" application for only capturing video.

2) Launch (double click on) iREZ ReelEyes

3) From the File Menu, choose Open Vid Window… (Command T). Make sure the Video window is displayed in the monitor that is attached to your video card if you're using multiple monitors (this really hurts performance if it isn't). If you get a -9405 error from iREZ ReelEyes, the Video Digitizer is not being loaded into RAM. See the "iREZ ReelEyes Docs" for details on how to correct this situation (usually it's an extension conflict).

4a) If you're using QuickTime 3.0, do the following steps. Select the Digitizer menu. Next check mark the "Record to RAM" item, then checkmark the "Show Megs Left" item and select Size of the movie you want (i.e. like "320 x 240"). Make sure that "Use Temp Mem" is unchecked, as you're capturing to the RAM inside iREZ ReelEyes, not the RAM outside of it.

5) From the Digitizer menu select "Video Settings…". Use the Video Digitizer dialog to setup your different parameters (Image, Compression and Source in the Pop up menu). For Compression, select the "Component Video" compressor and then from the Frame Rate entry field, click on the frame rate pop up and select "Best" (we'll change this later on). For Source, select the Digitizer, Input (Composite - SVideo - Tuner etc.) and Format (NTSC -PAL) settings. Click Okay once you're done.

6) From the Digitizer menu select "Audio Settings…". In the Audio Settings dialog go through the options using the pop up menu to set the Compression (none), Sample (16/8 bit size, Mono/Stereo and rate) and Source (Built In & Sound In). For Audio Sample, you should probably use 16 bit, 44.1 or 22.05 settings. The higher the frequency, bit size, and number of channels (mono-stereo) results in more audio being stored to disk, so if your hard drive isn't fast enough, you will drop frames. Click okay when you're done.

7) From the Digitizer menu select "Preferences…". Once the Recording Prefs dialog appears, you should check mark "Auto Set Snd Chunk Size". Next click on the "Select 1st Capture Location" button and select the empty hard drive/partition you're capturing your video to.

Now click on the "Select Audio Location…" button and select a hard drive to capture your audio too (this drive can be another hard drive/partition or the same one your using for capturing your video). Make sure the "Save Audio To" check box beneath the "Select Audio Location…" button is check marked. Click Okay to save your preferences. (Note: this assumes that you are using QuickTime 3.0 or higher. If you are not yet using this version please refer to www.apple.com/quicktime).

NOTE: The Above recording options are a special situation to minimize the effect that audio recording has during video capture and mainly apply to video cards without real time hardware compression. If you have chosen a hard drive/partition for recording audio to in the Recording Prefs, have check marked the "Record to RAM" item in the Digitizer Menu and are using QuickTime 3, then iREZ ReelEyes will record the Video to your hard drive and the Audio to RAM. This special situation allows you to maximize the video capture throughput of your hard drive and reduce interference of audio capture to disk. On the negative side, it will somewhat limit how long a sequence you can capture AV for, depending on how much RAM you have available and your audio settings (rate, bit size, stereo / mono). The maximum recording can be calculated as:

Max recording time = free RAM in kilobytes ÷ (rate x (bit size ÷ 8) x Number of channels).

So with 50 Megs of free RAM and audio settings of 44.1KHz 16 bit mono sound, you can record 580 seconds (580.5 = (50 x 1024) ÷ (44.1 * (16 ÷ 8) x 1))) or 9.7 minutes before you run out of RAM.

Determining Maximum Frame Rate

Now we're ready to do a preliminary test to see what your hard drive can actually do for sustained throughput. Turn on your VCR / TV source and then type "Command R" to begin recording. After about 10 to 40 seconds click the mouse button to stop recording. Once the Movie window appears with your captured video, type Command I (or select Movie Info… from the Movie menu).

In the "Info" window look for the "Data Rate (k/s): XXXX.XXX" text within the "Video" part (Upper Left box). This Video Data Rate (VDR) is the maximum rate your hard drive can record video (VDR) at using Component Video compression. The maximum frame rate (MFR) you can achieve is calculated using:

MFR = (VDR x 1024) ÷ (movie width x movie height x 2)

So if your VDR rate is 2620 k/s and the video window size your recording at is 320x240 size (with Component Video), the MFR you can achieve is about:

17.47 = (2620x1024) ÷ (320x240x2).

So 17 is the absolute maximum Frame Rate you should use in the Video Settings… Compressor dialog.

If the MFR value is under 25, we recommend dropping the frame rate by 1 or 2 fps (like 15 or the next closest whole number) to prevent possible frame drop outs for extended recording sessions (hard drives do get slightly slower as you record on the outside tracks). Also if you're digitizing at smaller window sizes, you can recalculate what the MFR will be and probably get a bit more fps.

If the value comes out very close to 30 fps and your using a fast SCSI 2 or ultra SCSI drive, you can probably just use 30 fps or "Best" for Frame Rate.

Now that you know the MFR your hardware can achieve, select the Digitizer Menu, select the Video Settings… item, and in the dialog click on the Compressor pop up menu and fill in an appropriate Frame rate value.

Apple scripting iREZ ReelEyes

WARNING - "Danger Will Robinson"

We accept NO RESPONSIBILITY if you destroy any of your movies by Apple Scripting iREZ ReelEyes. It is possible to specify that the source and destination movies are the same (same file names and locations), which could result in unpredictable behavior and COULD potentially overwrite your source movie. Be very careful with your file naming and paths. ALWAYS check the result code (true or false) returned from ALL of our apple script commands before proceeding to do something or you will get into trouble.

A Tip: If you put a script in the same folder as the application it's using (i.e. the "Grab Movie Script" in the same folder as iREZ ReelEyes), then you will not be asked to locate that application manually. This can save you an additional step when running any script for a specific application. Also, Launching the Application before you run your script will also work too.

There are 6 apple script commands available for iREZ ReelEyes that allow you to:

1) Bring the video window to the foreground or create the video window if it doesn't exist yet.

2) Grab a snap shot image of the video window, save it as a Pict or JPEG image and name it to something other than our date stamp.

3) Record video to a movie for a specified duration.

4) Get the current "path" (which hard drive or folders) that temporary movie capture files are saved to.

5) Add portions of one movie to another movie or make a copy of an existing movie.

6) Save one movie as either a Mac reference movie, a flattened Mac movie, a cross platform reference movie or a cross platform flattened movie.

Theoretically, it is now possible to have iREZ ReelEyes grab image snap shots at a specified time to a specific folder (for posting to a web site or security snap shots) or to have iREZ ReelEyes record a short video segment at a specified time (like the evening news or a commercial or a weather report), without you being around to control it.

To see the Apple script commands, select "iREZ ReelEyes", and drag it overtop of Apple's "Script Editor" application and drop it.

There are a few example scripts in the iREZ ReelEyes Scripts folder that you can use or modify for your own purpose.

Selecting the Video Window

“Select Video Window" allows you to bring the video window to the foreground. If the video window has not been opened yet (Command T), then iREZ ReelEyes opens it for you. You should ALWAYS call this (and verify it can create the Video Window) before using the Take Picture or Record Video Apple Script calls.

Select Video Window.

Grabbing Frames as Pictures

“Take Picture” [as image named <thispict>] [as Jpeg <true/false>] allows you to Grab a snap shot of the video window and save it as a Pict or JPEG file. The Pict File is automatically saved to the location (Hard drive / folder etc.) you've selected for your default Capture location. If you do not specify a Pict name (in the optional [as Pict named <thispict>] part), iREZ ReelEyes will date stamp the created Pict file for you, like "11134512.pct". The default is to grab a Pict file, however you can optionally have iREZ ReelEyes save it as a JPEG file if you set "as Jpeg True".

To just Grab a Pict File with an iREZ ReelEyes date stamp name:

Take Picture.

To Grab a JPEG file and save it with your own file name of "MyPicture.jpg" use

Take Picture as image named *"MyPicture.jpg"* as Jpeg *true*

NOTE: Unless you’re using QuickTime 3 or higher, iREZ ReelEyes will not grab the image as a JPEG. Only QuickTime 3 has Image Export capability, so if your using QT 2.5 and use the "as JPEG true" in your Apple Script Command, iREZ ReelEyes will grab the image as a pict file.

The Grab Snap Shot script, Grab Timed Snapshot Script and Timed Snapshot Script are Apple Script examples of how to use "Take Picture" for grabbing single or multiple pictures.

Recording Video

Record Video for <duration> as movie named <mymovie> will record "duration" seconds of video and then save it in a movie named "mymovie". Once recording starts, if you Click the mouse Button before the duration time has elapsed, iREZ ReelEyes will stop capturing your video right then and your duration will be ignored.

To record 32.5 seconds of video and then save it as "Mymovie", use the following:

Record Video 32.5 as movie named *"Mymovie"*

To continuously record video until you run out of memory/disk space or you click the mouse button use the following:

Record Video *0* as movie named *"Unlimitedmovie"*

The 0 duration value tells iREZ ReelEyes to just keep recording.

Determining Where Captured movies/picts are saved

“Get Default Capture Location" returns a string that indicates where your captured movies are being saved to. It might return "MyHD: thisfolder: My Movies Folder:" which indicates your movies will be saved to a folder called "My Movies Folder" which is inside of "this folder" and resides on the hard drive or volume named "MyHD". If the string comes back empty "" then there is no default selected.

You would use this if you’re ever capturing movies or Pict files and you need to know where they are being saved. Then you can construct a full path name to the movies/picts and could delete them or move them to another folder or upload them to a web site.

As an example, check out the following, which would grab a snapshot JPEG, then construct a path name to the file, then upload the file to an FTP site and lastly delete the grabbed JPEG. A repeat loop could be used to grab video frames at a specified time too.

```
Tell application "iREZ ReelEyes 2.0", if Select Video then:

Set mypath to Get Default Capture Location

-- Get the default location if Take Picture as image named "thissnapshot.jpg" as JPEG
yes then

--grab itset myfilelocation to (mypath & "ThisSnapShot")

--create the path to the grabbed picture

Tell application "Anarchy"

--upload the JPEG to our ftp site

Store file myfilelocation URL "ftp.mywebsite.com/currentsnaps/"

end tell

tell Application "Finder"

delete file myfilelocation

-- move the JPEG to the trash

empty trash

-- dispose of the JPEG we grabbed

end tell

end if

end if

end tell
```

Copying portions of movies together

Add movie file <thismovie>[start <xxx.x>][duration <yyy.y>] [at start <true/false>] to movie file <othermovie>.

The above Apple Script Command copies all or a portion of "thismovie" to "othermovie". The copied movie portion is always added as a reference movie to "othermovie". This means you can add numerous movies together without dramatically increasing the resulting movie size. However, since the movies are added as references, deleting any of the movies that were added may result in the resulting movie not being playable. If you're going to throw the other movies out, then use the Save Movie to Movie as flattened.

NOTE: You must include the word "file" before "thismovie" and "othermovie" as shown in all the examples below or it will not work.

If "othermovie" doesn't exist where you're saving it, iREZ ReelEyes will automatically create a new movie for you at that location and give it the name you specified. "Start" and "Duration" are time values in seconds (12.3 124.5 etc.) and the optional "at start" parameter specifies whether the copied portion is inserted at the start or the end of the "othermovie".

In simplest case, we could copy one movie and paste it to the end of another movie using:

Add movie file "thisHD:This folder: thismovie" to movie file "otherhd:otherfolder:theothermovie"

In the above, we did not specify any "start" or "duration" times (they are optional parameters and iREZ ReelEyes will automatically copy the entire movie if they aren't specified). If "theothermovie" doesn't exist at "otherhd:otherfolder", then iREZ ReelEyes will create it there and then copy over "thismovie" into it. If "theothermovie" DOES exist, iREZ ReelEyes will open it and then copy over "thismovie" into it.

If you want to copy a portion of a movie using the optional start and duration parts, we can use the following:

Add movie file *"thishd:This folder:thismovie"* start 1.25 duration 4.5 at start yes to movie file *"otherhd:otherfolder:theothermovie"*

The above copies 4.5 seconds of "thismovie" starting from 1.25 seconds into it (so effectively, your copying a section from 1.25 to 5.75 seconds) and then adds it to the start of the "theothermovie".

In cases where you don't know the duration you want to copy, there's a little option I've put in iREZ ReelEyes to handle this case.

Add movie file *"thishd:This folder:thismovie"* duration *-3.0* to movie file *"otherhd:otherfolder:theothermovie"*

If you specify a negative value for the duration (like -3.0), iREZ ReelEyes subtracts that duration off of the actual duration of the movie and then only copies that portion. So if our "thismovie" was 30 seconds long and we specify -5.0 for duration, then the copied movie part put in “theothermovie” will be 25 seconds in length.

So if you needed to trim 5 seconds from the start and end of a movie, use the following:

Add movie file *"thishd:This folder:thismovie"* start *5.0* duration *-5.0* to movie file *"otherhd:otherfolder:theothermovie"*

The above trims off 5 seconds from the start and 5 seconds from the end (reducing the total movie duration by 10 seconds) and copies what's left into "theothermovie".

The "paused video script" shows an example of using Add Movie. What it does is captures a series of video clips and then copies them into a main controlling movie.

Saving a movie to another movie

"Save movie file <thismovie> to new movie file <othermovie> flatten <yes/no> cross platform <yes/no>"

The above Apple Script Command saves <thismovie> to another movie <othermovie> and allows you to save it in one of four ways depending on what you set the flatten (yes/no) and cross platform (yes/no) parameters too. Note that NONE of these parameters are optional, you explicitly must set them before using the command.

NOTE: You must include the word "file" before "thismovie" and "othermovie" as shown in all the examples below or it will not work.

The term "reference" means the resulting movie IS dependent on or refers to other movies. If any of the movies that are "referred" to in the reference movie become unavailable (i.e. you deleted them, you ejected the CD they reside on, the network server these movies are on is unavailable), then the reference movie will not play properly.

The term "flatten" means the resulting movie is NOT dependent on any other movies. All the movie data (midi, audio, sprite, movie, QD3D etc. tracks) is copied from the source movie (including other movies referenced in the source) and then saved in the resulting movie. This makes the resulting movie self-contained and it doesn't rely on any other movies for play back.

The term "cross platform" means the resulting movie can be played on Macs and PCs that have QuickTime installed.

1) To make a Mac only reference movie (which contains no actual movie data, just a reference to existing movies) set both flatten and cross platform to false, as shown below.

Save movie file *"thishd:This folder:thismovie"* to new movie file *"otherhd:macrefmovie"* as flattened *no* as cross platform *no*

2) To make a cross platform reference movie (which contains no actual movie data, just a reference to existing movies) set flatten to false and cross platform to true, as shown below.

Save movie file *"thishd:This folder:thismovie"* to new movie file*"otherhd:crossplatformrefmovie"* as flattened no as cross platform yes

3) To make a Mac only flattened/self-contained movie (which puts all the movie data in the new movie) set flatten to true and cross platform to false, as shown below.

Save movie file "thishd:This folder:thismovie" to new movie file "otherhd:macflatmovie" as flattened yes as cross platform no

4) To make a cross platform flattened/self contained movie (which puts all the movie data in the new movie) set both flatten and cross platform to true, as shown below.

Save movie file *"thishd:This folder:thismovie"* to new movie file *"otherhd:crossplatformflatmovie"* as flattened yes as cross platform yes

DV Capture (updated August 15, 1999)

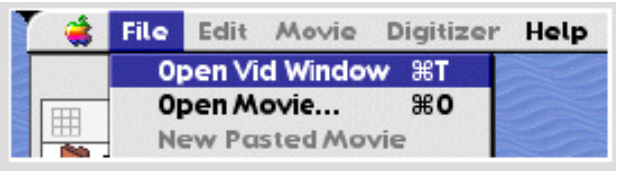
To configure ReelEyes for DV capture via DV Cam Corders on B&W G3s or other FireWire equipped Macs, complete the following steps. For people doing DV Pal capture, select the appropriate Pal items as necessary.

1) Connect your hardware (DV Cam Corder to FireWire Cable to FireWire Port).

2) Power up the DV Cam Corder and set it to VTR mode. If the Cam Corder is not powered up the VDIG will not load, ReelEyes won't "see" it and you'll get -9405 errors reported.

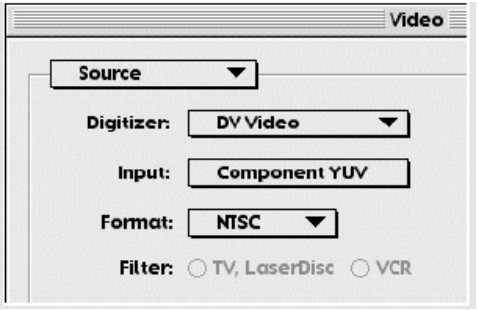
3) Double Click on ReelEyes to fire it up.

4) Click on the File menu and select the "Open Vid Window…" (or T) item.

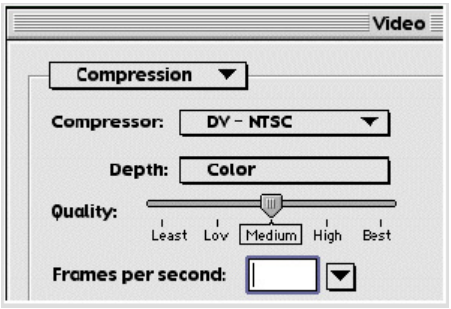


5) Once the Video window appear, we need to configure the Video settings. Click on the Digitizer menu and select the Video Settings… item.

6) When the Video Dialog appears, click on the upper left pop up menu (it will initially be either Source, Compression or Image) and select "Source". Then set the remaining items as shown below. Note that the Input: popup menu item may be different for other firewire cards (Orange Micro shows up as "DV Camera").

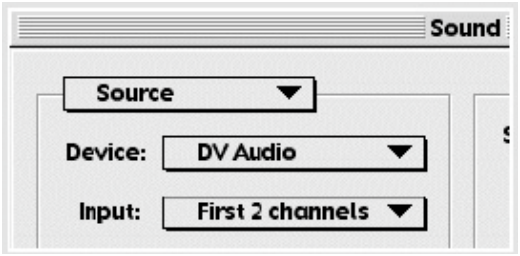


7) Next click on the upper left pop up menu (Source) and select the “Compression” item. Then set the remaining items as shown below (select “Best” for Frames per second and “DV - PAL” from Compressor if your recording PAL). Click Okay to save the changes.

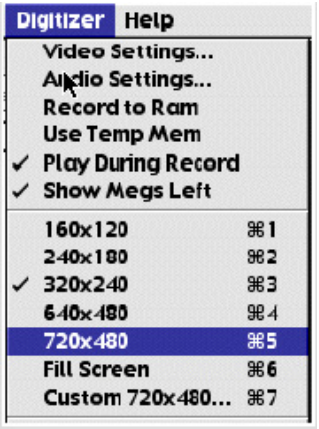


8) Now configure the Audio capture. Click on the Digitizer menu and select the Audio Settings… item.

9) When the Sound Dialog appears, click on the upper left pop up menu and select the “Source” item. Set the remaining items as shown below and then click Okay.



10) Now we set ReelEyes's window to Full DV size. Click on the Digitizer menu and select the "720x480" or "720x576" for Pal (or just type 5).



11) You should now be able to record DV video into ReelEyes at full size.

FAQ - Frequently Asked Questions...

Q: I launched ReelEyes but I don't see the video window.

A: Select "Open Video Window" from the File Menu to see the Video Window. ReelEyes does not automatically bring up the video window like Xclaim VR player or AppleVideoPlayer. Since ReelEyes can play/edit QuickTime movie too, pulling up the video window on launch would be inappropriate behavior. Note you could create an Apple Script that automatically launches ReelEyes and brings the Video Window up for you, see the "ReelEyes - Apple Scripting" document for details.

Q: After selecting "Open Video Window", I get an error message about "Bad Channel Video" (or something similar) and iREZ ReelEyes won't let me see the Video Window.

A: First try restarting your Mac and then try it opening the video window again (sometime the VDIG software just doesn't load itself properly). If this does not fix it, it's most likely caused by an extension conflict, where the VDIG software for the AV hardware can not allocate enough memory to load itself. See the section "Other Settings inside of iREZ ReelEyes" in the "iREZ ReelEyes © Docs" text file for details on how to possibly fix this.

Q: I have the video window up in iREZ ReelEyes, the TV/VCR on and all the cables plugged in properly, but all I see is a black/blue window filled window with no video.

A: Most likely you have not selected a Video Source yet. Click on the Digitizer Menu and select the Video Settings… item. In the Video Dialog Panel that appears, click on the top left pop up menu and then select the menu item named "Source". In the Panel below should be several pop up items named "Digitizer:" "Input:" and "Format:" Normally you'll only need to fool around with the "Input:" part, which is usually Composite or S-Video (or possibly TV Tuner).

Select the Input item for your configuration (if the VCR is connected using the RCA style Composite plugs, select Composite and if it's connected by SVHS plugs, then select S-Video). You may also have to select a "Format:" NTSC, PAL or SECAM too, depending on what signal your VCR outputs. You can check your choices by watching what happens in the small live preview TV part in the upper right portion of the dialog as you select things.

Q: The image in the video window is Gray scale or black and white with Apple's AV hardware, even though I've selected color in the Video Settings dialog.

A: Usually this happens when the Video Digitizing hardware does not have enough Video RAM to display both the video in color and your monitor at the same time. What you need to do is free up more Video RAM for the video card by selecting the Monitor (or Monitor & Sounds) control panel and then reducing the number of colors displayed (say from millions to thousands or even 256) or by reducing the resolution of the monitor (i.e. it's 1024x768 so drop it to say 800x600 or 640x480).

Q: I want to fill my monitor / power book screen with the Video, but 640x480 is the biggest size I see.

A: Click on the Digitizer Menu and then select the "Custom XXXX…" (the XXX part may be 600x400 or something else) item below the "640x480" menu item. This allows you to specify the height and width of the video window and you can enter 800-width 600 height there. After that, your video window will be the dimension you entered (if the Video Hardware can support a size of that dimension). The "Custom XXXX…" item will also change to reflect your new custom size values, so if you enter 832 wide by 624 high in the dialog, it will now be "Custom 832x624…" and you can reuse this any time you need to.

Q: What are those buttons for in the bottom left part of the Video Window? I clicked on one and nothing happened, other than some white text appeared to the right of them.

A: Those buttons allow you to adjust the display of your video (HSBCS) and the sound (VGM). The white text is the current value for the button you clicked on. You click on one of the buttons (like the B or Brightness button) and then use the Left (<--) or Right (-->) Arrow keys on your keyboard to adjust the buttons value up or down. You can find out more about what these buttons by reading the "The H S B C S and V G M "buttons" and Sound Bar" section in the "iREZ ReelEyes Docs" file.

Q: Some items like Cropping options or Pause Video are not enabled, why?

A: They are disabled because either the Video Card / VDIG software you're using doesn't support that feature OR we've tested iREZ ReelEyes and found out a manufacturers AV hardware or VDIG software doesn't work properly and rather than receiving bug reports about it, we trap it out.

Q: How do I record more than 2 gigabytes of video?

A: For starters, you must be using QuickTime 3.x and must have more than 2 gigabytes of free space on either one or 2 hard drives. If both of the above are true, then launch iREZ ReelEyes, bring the video window up and under the Digitizer menu select Preferences. When the Prefs dialog appears, click on the Select 2nd Capture Location button and select the hard drive/folder to record to (this can be to the same hard drive/folder as the First Capture location is or to another hard drive.) Next make sure the "Daisy Chain to" check box is checked. Click Okay and you're all set to record up to 40 gigabytes of video in one session.

Q: I have an "XXXX" AV Video card installed. Will iREZ ReelEyes work with it?

A: Try it out and see. I've closely followed Apple's QuickTime API for Digitizer when creating iREZ ReelEyes and assuming the AV Card manufacturer also follows them, there shouldn't be a problem. Most problems happen because the manufacturer does not return appropriate responses when I test for features. For example IXMicros TurboTV software says it can use Field Settings for capturing video, but explodes if I do try and use them. In cases like these, there is nothing we can do except trap it out manually from bug reports that people send in.

Q: What Compressor should I use for Capturing Video?

A: It really depends on what Video Capture card your using. You use the Digitizer > Video Settings… menu item and the "Video" dialog to select the compressor and frame rate your capturing at.

- For G3 Desktop and Power Books with Apple Built-in AV solutions at sizes to 320x240, PhotoJPEG or Component Video, especially under OS 8.5.

- For other cards, review whatever documents come with the card and see what the manufacturer says. In most cases they probably will have a special compressor for their particular card, and it will probably show up under the Compressor menu with the name of the card as part of the name, like "ATI Medium" etc.

- For the ATI Xclaim cards (with ATI 3.3 software), ATI Best or ATI High Quality work fine (I'd avoid ATI medium quality because of sporadic "freezes" during capture after about 13 minutes of video capture).

- For the Apple built in Video cards, you should probably use Component Video (or Component Video YUV), None (at thousands off colors) or try PhotoJPEG. What I found works best with the old Quadra and PowerMac 6100/7100/8100AV was Component Video. On PowerBooks 233 or higher, the video compressor works best.