Thoughts on DVD authoring.

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1 Getting Set Up

This was a bit of a nightmare under FC3, but under FC6, a simple `yum install kino` was all that was needed.

An important part of the setup is to set the default directory in Kino. It does not adhere to the starting directory, but is a pointy-clicky app. Hence, Edit Preferences, Other Tab, fill in where the files must go.

2 Capture

All plug 'n play. Every now and then it may bomb, so keep an eye on the process. When it does bomb, you've lost the story board. But a manual `kino *` will populate it. Then kill the overlaps.

Note that raw DV needs to be selected, and split files is better since the process is likely to bomb :-)

Also, camera must be on :-)

3 First Pass editing

Each "scene" on the Storyboard is each time you have clicked on the Record/Pause button on the camera. This is a little excessive, but nevertheless useful, as this can be intelligently combined.

Remember to save the StoryBoard often!! As `kino` still has a few hiccups, it is useful to cycle filename versions :-)

As a first pass, the Storyboard needs to be degumfed. Entire scenes will need cutting as irrelevant, or badly taken. Other scenes will need trimming at the start and end, others will need to be split, so that a middle bit can be exised. All done very efficiently by the `Trim` tool. Note that the original DV files are not messed with, the Storyboard is simply an XML file describing start and stop values within the DV files.

Again: Use the `Trim` tool. Yes, you *can* use the `Edit` tool, but that is at Storyboard level, not clip level. The start/stop etc buttons are *Hellishly* un-responsive.

At the end of the first pass, we have most of the stuff that we want to store in a reasonable format and order.

3.1 Date-based scenes

For the simplistic scheme adopted, it is useful to have a single menu hierarchy, with each "next" button being date based. This means that the many "scenes" in a day's shoot need concatenating and sexyfying.

Thus far I use this day-by-day (we don't constantly use the camera), but there is no reason not to have date ranges, as I do with my photo collection html files.

Note that a lot more can be done with these tools, re-ordering etc. For the main part the simple scheme mentioned here is all you need for a typical Home Video.

3.2 Transitions

Save a still image. Open in Gimp. Bucket fill with White :-) Save that as template.png. Copy it to 1.png etc. Add Text at a default of 50 pts, adding date and title (in that order).

Image/Flatten image, then can easily select (rectangular selection tool) and move the text manually. No easier way! Save.

Keyboard shortcuts make the process a lot easier: t in the image gets text mode. Click where you want it. type. Alt I f does the flattening, r gets rect select mode, select and move text, Ctrl S saves, Ctrl Q quits. This makes it an incredibly quick process.

Back in kino, select the clip you want to introduce, and click FX.

Select the Create tab, then create from file, using 100 frames. Use the png from the gimp, and under Video Transition, choose Fade, also Audio Transition Cross Fade. There is a bug: do not try and type the filename, you will lose hair. Pointy-Clickey.

Preview, then assume the standard filename/dir and click Render to actually create a DV file. (Which becomes a part of the StoryBoard). SAVE THE STORYBOARD!!!

I do this on a day-by-day basis, but can be longer/shorter etc. Its just nice to have the date!

This, then, is the Intro transition. Do all these first to prevent having to change settings, wasting time.

For inter-take transition, remove the filename of the png you have used as the intro (Big Bug). (Easier to kill kino (after SAVING!!) and restart it to get default settings) Choose the Overwrite tab instead of the create tab, and choose (tickbox) the limit to Closing 25 frames (of the currently selected clip) Works well. Hit the Render button, and an auto named file occurs in the storyboard after the clip. Save :-)

Move over the autonamed file onto your next clip, hit Render. Do not Render to the next White text entry, obviously!

It just removes the rather jarring transition from one take to another.

4 Second Pass editing

Once you have "finished" editing/cutting/transitioning...

Save the storyboard, and save as another name! Then use the join button to join everything after each intro transition. Your storyboard will now have collapsed dramatically, with only the white text Intro's on it.

When we export, with Scene Split enabled, each day will be a chapter on the DVD, and the navigation buttons all work!!! So skipping through the DVD becomes easy.

5 Exporting

Once the final "Storyboard" has been put together, click on the `Export` tab. Choose `All` frames at the top, choose `MPEG` tab, then `8 - DVD` as the file format, and select `Output dvdauthor XML`. Choose a suitable filename: `t2`. Leave other settings.

The quality is a little too crummy using the above, and an hour tape does not fill the DVD. Hence, under Advanced Options, change the mpeg2enc settings to add -4 1 -2 1 -H -q 4 to choose highest quality in 4x4 blocks and 2x2 blocks, to preserve the High frequency contenti, and set the quantisation to 4 (higher quality than the default 8, lower values apparently can cause artifacts on 32-bit systems). This slows down the process, from about 2 hours to something nearer 3 hours, for an hour of playtime!

As mentioned, click Scene Split, and the chapters are all automatic. Click Export button.

Wait. And listen to your CPU fan speed up. On my 3.8GHz P4, I get about 500 frames per second, taking about 2 and 3/4 hours for an hour's video.

After the process of compression, comes the actual interleaving of the audio, video, and menu item streams, done by `mplex`.

The nature of the `XML` produced for `dvdauthor` now expects a directory in the current directory with the same name as your newly created mpeg video/audio streams:

```
mkdir t2
```

```
dvdauthor -o t2 -x t2-dvdauthor.xml
```

(Above two steps now automatic in the newer kino, left in for edification)

Make the image with

```
mkisofs -o /tmp/img/cd.raw -dvd-video t2
```

Finally burn with `cdDup`, a script which simply says:

(If writing to a DVD+RW, run `dvd+rw-format /dev/cdwriter` first)

```
cdrecord -v -dao -eject fs=16M /tmp/img/cd.raw
```

(You need to do this as root, to get all the memory permissions etc, to get rid of the dreaded underruns).

6 Cleaning Up

Don't forget that the DVD image uses MPEG2 compression, which is lossy. The original DV is also lossy, but only on a frame basis. Hence I want to write the *edited* DV files back to a tape, for future, better mpeg stuff? ie Do not only want a DVD quality archive!

Simply export to a IEEE1394 device, and the recorder starts recording!!! Incredible Plug 'n Play stuff here!!!!!

Archived Tape2 easily, Thus freeing the real Tape 2 for overwriting purposes!

Must turn the Recorder onto play!!!

Untick the Resample Audio. That is only used if there are different audio rates, which there will not be. The resampling takes a good four minutes, and you waste the first four minutes of the tape!

7 Labelling

Choose a still picture from the beginning and the end (using the trim tool again)—they are saved as jpegs. Use jpeg2ps to embed them as eps, then

cdlabelgen -c "'t Clarks's" -s "11/05/2007–25/12/2007" -e t4f.eps -S 0.55 -E t4b.eps -T 0.55 -d "Created by Alan Robert Clark"¿ hi.ps

Creates the label. To print, we use madam's computer:

From the shared directory, just double click and print from her computer. lpr from mine doesn't do a thing. Remember to enable Colour Printing under the native windoze driver.

To create the DVD label, take the front jpeg, and using CdLabelPrint on Madam's machine, drop pic, rescale, and add text "'t clarks" at 18 pt, and the date range, grab in middle and pull down, and it does the circular thing. Marvellous.

Adjust inner circle by -12mm on Stock Verbatim Discs, otherwise it leaves a lot of the picture out.

8 Concluding Comments

Thou Shalt not attempt to Re-Use a Mini-DV Tape

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If Thou is Fool enough to try, then Thou Shalt Place the recorder in a quiet place, and Lo! Placeth the Cap on the Lens, and record the Entire Bloody Tape first.

I have learned. (The hard way.)