DVIview

by

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Documentation for
DVIview version 0.93

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DVIview allows you to view and print TeX generated dvi files from the RISC OS desktop. It started as modifications to Preview by Graham Toal, Pieter Schoenmakers and Ian Young but ended up as a complete rewrite. The only remaining parts of Preview are the files 'web2c.h', 'site.h' and 'dviread.c', and probably a few variable names. This documentation is also a rewrite of Preview's documentation.

1   Philosophy

DVIview has two purposes. The first is to replace Preview by being more robust and using less memory and the second is to allow draw files to be included in TeX documents.

2   Fonts

The TeX and LaTeX fonts are automatically installed when the '!TeXFonts'. This means that other applications will have these fonts available to them, which is handy if you are exporting pages as Draw files and want them to be displayed properly. Note that the TeX fonts have letters in different places to standard fonts and so you'll have to use '!Chars' to select characters if you want to use TeX fonts in, say, Impression or TechWriter.

If DVIview cannot find a particular font then it will generate a 'font not found' error and substitute 'cmr10'. If 'cmr10' is missing then DVIview will use the system font (which basically just makes a mess).

3   Loading a file

A dvi file can be loaded by double-clicking it or by dragging it or the directory in which it resides onto the DVIview icon on the icon bar. In the latter case, the file *must* be called dvi.

DVIview loads the first page of a file immediately, and any subsequent pages in the background. Each page is available for viewing as soon as it has been loaded completely.

The titlebar of a window shows the name of the file and the cardinal number of the page being shown possibly followed by a message in brackets. Messages may be:

Loading When pages from the file are still being loaded.

Incomplete When there has been an error and some pages are missing from the end of the file.

4   Coping with small amount of memory

Large `dvi` files can be loaded in chunks by using the `Start Page` item in the icon bar menu. Set this to the first page that you wish to see. So, if you load a `dvi` file and it only loads up to, say, page 15 before running out of memory, enter 16 as the start page and reload the file. Pages 16 to (about) 31 will be loaded. Ideally, I would like to have a 'load-on-demand' system for reading pages in only when needed but that's for the future (perhaps).

5   Printing

Ho, ho, ho. Existing users of `DVIview` will know what fun printing is. Currently, printing directly from `DVIview` is disabled and instead you must save the page you want printed as a Draw file and then drag it to the printer driver (you can drag directly from the Save box). To aid printing multiple pages you can use the `Save` menu item to save a directory full of pages, select them and drag them to the printer driver (where they'll be queued). The TEX fonts provided with V0.92 onwards *will* download to Postscript printers (hooray!). However, you get a font downloaded for each size of font you use (i.e. you might get `cmr8` and `cmr10` downloaded rather than just a general `cmr` which is scaled to the right size) so your printer may run out of memory. As of V0.93 the fonts are hinted (thanks to Chris Taylor) and so will print out fine on low resolution printers.

Printing pages singly (i.e. as separate Draw files) is very slow for Postscript printers because the fonts are downloaded for each page rather than in a single block at the start of the document. To speed things up you could try dropping the pages into a single Impression/Easiwriter/etc... document and printing from there.

In general, I would advise using a specialist `dvi` to Postscript converting program. The main advantages of going through the RISC OS printer drivers is that you can have Draw diagrams in your documents and that a wide range of printer are supported. For non-Postscript printers there is no problem.

6   Including Draw files in your documents

Simply put the line
`\special{drawfile = `*filename*`}`
at the point where you want the top-left of the draw file to appear. You can use the symbol '@' to represent the directory that the `dvi` file is in i.e.
`\special{drawfile = @.Diagrams.Picture}`
in the file '$.Report.dvi' would include the draw file '$.Report.Diagrams.Picture'. The draw files on a particular page are only loaded when that page is being viewed or printed thus saving memory. If there is not enough memory to load them the page will be drawn without them. As an example see figure 1.

There is a macro `\drawfile{`*width*`}{`*height*`}{`*filename*`}` in 'Doc.tex' that will make a box for a draw file if you give it the size but it would make life much easier if the macro could read the bounding box of the draw file. Unfortunately,

Figure 1: The Author — A self portrait

I am fairly new to TeX and I don't even know if this is possible so if there are any wizards out there who can help me then please get in contact.

7   Options

The '!Run' file sets an environmental variable `DVIview$Options` and you can change this to suit your particular preferences. The only option currently supported is the default magnification for windows. For example :
```
Set DVIview$Options m0
```
will start windows at magstep0 and
```
Set DVIview$Options m2
```
starts windows at magstep2.

8   Keyboard shortcuts

There are varous keyboard shortcuts available for moving around your document:

Page Up	Move to previous page
Page Down	Move to next page
←→↑↓	Scroll around current page
∧Q	Zoom out
∧W	Zoom in

If you would like other keyboard shortcuts then please ask.

9   Remarks

A few things are worth noting about version 0.93 of `DVIview`:

- When a page is viewed (i.e. has a window open onto it) a draw diagram is created and used to perform redrawing in the window. This is a bit slow but was easy to implement and is perfectly usable — remember to set a large font cache to speed things up.

- If a page has multiple windows onto it only one draw diagram is created.

- When all the windows onto a page are closed the draw diagram is removed and the memory it used freed.

- If there is not enough memory to create the draw diagram then the window will be blank. However, once enough memory becomes available the draw diagram will be created and the page will be seen in the window.

- `DVIview` uses RISC OS outline fonts to draw characters. The advantage of using outlines is that they only take about 20% of the disc space needed to store a full set of `pk` files and they can be plotted at any point size. The disadvantage is that you are limited to the fonts provided (although for most people that won't be a problem). There is no automated way of generating outline fonts from metafont files.

- Unlike `Preview` all errors should be trapped properly and should not cause the program to exit. (Lack of memory errors are most likely to cause problems because, although all memory allocations are checked for success, there are so many of them that I can't check that the 'failure' code works properly for all of them). If you find a bug then let me know.

- `DVIview` assumes A4 paper. Some `dvi` files (e.g. from America) have not been formatted for A4 and so may appear off centre. You can use the `Page Offsets` item on the icon bar menu to alter the position of the text on the page. The offsets will apply to new pages loaded — not to existing pages.

10 Copying and altering the program

You may freely distribute this software provided that :

1. No charge is made for it.

2. It is not distributed as a 'freebie' with commercial software.

3. *All* the files are distributed unchanged.

4. *All* the files are distributed unchanged.[1]

You may modify the software, provided that you do not distribute the modified program. Instead, send the alterations to me and I'll include them and an acknowledgement of your work in the next release (which I'll send to you — email preferably). The source code is not provided with this release but I'm happy to send it to anyone who wants it.

11 Registering

I would be grateful if all users of the software who have an email address registered with me. Just send a message stating your email address and that you are using `DVIview`. Doing this has two benefits :

1. I'll send any upgrades to you immediately.

2. There may actually be some upgrades — if no one registers then I'll assume that no one uses the software and not bother to support it.

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[1]You might think that this is the same as the last point and you'd be right. However, I have found variants of `DVIview` floating about and I'd prefer to know what's going on. If you want to change something and distribute the files then just ask.

12   Contacting the author

My email address is : paulf@dcs.qmw.ac.uk (Until the end of 1994)
I can also be contacted at :
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13   Versions

0.91
- Missing fonts are replaced by 'cmr10'.
- Dragging a directory to the DVIview icon now works (Big ooops there).

0.92
- The TEX fonts will now download to Postscript printers (The LATEX ones won't because they are bitmap fonts not outlines)
- A 'Start page' can be specified so that large dvi files can be loaded in chunks.
- A range of pages can be saved in one operation.
- The left and top offsets of a page can be altered.

0.93
- The TEX fonts have been reorganised so that they are all in the same font family (i.e. 'TeX.cmr10' rather than 'cmr10'. This will stop the font list in other programs being 5 times the height of the screen).
- The TEX fonts are now fully hinted (thanks to Chris Taylor)
- The LATEX fonts will now download to Postscript printers (again, thanks to Chris Taylor)
- Added keyboard shortcuts