

1. PROforma Introduction

1.1 What is PROforma?

PROforma is short for FROGS Font & Raster Manager, and it does exactly what this name suggest. It is a library of routines to manage and display vector graphics and fonts on (raster) devices like screens and printers.

The availability of a separate program to manage graphics and fonts has several advantages. It allows application developers to create output of equal quality (resolution permitting) on several devices, and they can share resources. In short this means that the PROforma library only has to be loaded once, independent of the number of applications which use it. Also fonts only have to be loaded once, and can be shared between applications.

PROforma was originally developed as the graphics library for LINEdesign. That does not mean that this is the only kind of application for which PROforma is of use. PROforma is perfectly suitable as well for desktop publishers, word processors, business graphics and all applications which want high quality output (which must be just about every application except compilers and games). Actually, even at the time of writing there are things which are possible with PROforma and can't be accessed through LiNEdesign.

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1.3 This manual

This manual has been produced using a specialised in-house program to print text using the PROforma software, which can include pictures. The text was printed on an Atari SLM804 laser printer using the Yearbook font family. The pages were rendered by an Atari TT under QDOS emulation (level E drivers). The pictures were all created in LINEdesign.

1.4 Installation

PROforma is implemented as an extension thing. This means that the resident extensions which form the thing system have to be loaded before you load PROforma (unless you use the ST drivers), The thing system is included in Hotkey System II, which can be loaded by typing:

```
TK2_EXT : LRESPR flp1_hot_rext
```

PROforma has the actual appearance of a normal job (as most application programs). This means that PROforma can be loaded with a line like

```
EX PROforma
```

The fact that PROforma has the form of a job (and not a resident extension as most libraries like the Menu Extensions), has certain advantages. Jobs can always be loaded (if you have enough memory), and jobs can always be removed. So if you want to release the memory which is used by PROforma, you can just remove the job. Of course the disadvantage of this scheme is that you can accidentally remove the PROforma job, which is dangerous as all programs which use PROforma will also be removed, so you could lose data that way.

WARNING ! Removing the PROforma job may result in data lost by the applications which are at that moment using PROforma.

When PROforma is loaded, it will automatically search for the PF'fontmap' file. This file contains configuration information about the drivers and the fonts which can be used, the search path for drivers and fonts, and the memory usage of PROforma. Normally, the PFfontmap file is searched on the program default device (cfr. the Toolkit II command PROG_USE). However, if you want you can specify the device which should be used to search for the PFfontmap file. So the command:

```
EX flp1_PROforma;'flp2_pf_'
```

will load PROforma from 'flp1_' and load the PFfontmap file as flp2_pf_PFfontmap. If you want, the ending underscore can be left out.

1.5 PFConfig

On the disk there is also a PFConfig program. This is used to configure PROforma (meaning, to change the 'PF'fontmap' file). This program loads the PFfontmap file when loaded (just like PROforma does), and saves it back, containing the new information, when it finishes. The operation is quite straightforward.

1.5.1 Search path for fonts

- set the search path for fonts. Fonts which have to be loaded by PROforma are searched for on the given devices. You can specify more than one device if you separate the devices by semi-colons (;). Note that the devices have to include the ending underscore. The listed devices are searched from left to right. This may be important if there is a file with the same name in more than one directory.

1.5.2 Memory configuration

- You can set the (maximum) amount of memory which may be used by a buffer. For instance in LINEdesign v1 128k was allocated for the printer buffer. However, in PROforma, this is equivalent to a 64k buffer (because of more efficient memory usage). On an average 300dpi printer this will result in 17 passes. However, as another difference with LINEdesign v1, you can configure the amount of memory needed, and no more will be used. usually even less, as only the actually used amount is allocated. If you want to use this option, you should make sure 'maximum' is also indicated.

However PROforma can also use as much free memory as it can get, while still keeping some free for fonts, other jobs, and some memory needed for rendering complex images (or fonts). If you want to make sure that a minimum amount of memory is left free, then you also have to specify the 'minimum' option.

For instance 'minimum' and 64 would always leave 64k free when allocating a buffer. If you would have specified 'maximum' and 128, then at most 128k would be used for the buffer. As can be seen from this example, all sizes are given in kilobytes. We do advice always to use figures above twenty.

- Cache size can also be configured. To speed up the display of fonts a special mechanism called a font cache is used. This means that (within certain restrictions) when a character is displayed, it is also kept in the font cache in a special form so that it can be reproduced quickly at the same size and rotation. However, this can take quite a lot of memory. For this reason the font cache can be shared between applications. You can give any size to the font cache. We advice the font cache to be at least 64k long, if you can spare the memory you could make the font cache larger. If you can not spare any memory for the font cache you could specify a zero font cache size.

1.5.3 Font Management

- Add font to fontmap. This command allows you to make sure a certain font can be used by PROforma. When you indicate this command, you get a directory in which you can indicate a PROforma font file. This font will then be addd to the fontmap. Please note that the device where the font can be found should also be included in the search path or PROforma will still be unable to load the font. The program will not stop you to try to include the same file in the fontmap twice.

Fontfiles. All references inside PhOforma to a font are done using the name of that font. However this is usually not the same as the name of the font file. Therefore, the fontmap makes sure PROforma knows which files to load when a font is requested (the fontmap) and where to search for that file (the search path).

When you add a font to the fontmap, the PFConfig program tries to distinguish between the font name and directory, as we did not want to assume that all users use directories. Thus we assume that the actual filename does not contain underscores ('_'). For instance winl_pf_dixon_pff' is broken into three pieces: the directory winl_pf_', the filename 'dixon', and the extension '_pff'.

Add all fonts in directory to fontmap. You can add an entire directory with fonts to the fontmap with this one. Again this can create duplicates. This command is particularly useful when you have acquired a disk full of PROforma fonts from some source, and you want to be able to use them.

Delete a font from fontmap. This command allows you to select a font you want removed from the fontlist. You get a sorted list of all fonts which are currently in the fontmap, and if you indicate a font from the list, it is removed. Because the fonts are sorted (by name, case dependant), you can easily throw out duplicates.

1.5.4 Driver Management

PROforma uses drivers which do the actual work of displaying all the requested stuff. These drivers have to be loaded into memory when PROforma is loaded. Where these drivers are found, and which have to be loaded can be configured with the PFConfig program.

Actually, one more driver is loaded than can be configured, that is, the screen driver. However, as this is only specific for your system, we install this when you get your copy of PROforma.

- set the search path for the drivers. Drivers which have to be loaded by PROforma are searched for on the given devices. You can specify more than one device if you separate the devices by semi-colons (;). Note that the devices have to include the ending underscore. The listed devices are searched from left to right. This may be important if there is a file with the same name in more than one directory.
- Add font. This command allows you to make sure a certain font can be used by PROforma. When you indicate this command, you get a directory in which you can indicate a PROforma driver file. This font will then be added to the fontmap. Please note that the device where the font can be found should also be included in the search path or PROforma will still be unable to load the driver. The program will not stop you to try to include the same driver file in the fontmap twice.

When you add a driver to the fontmap, the PFconfig program tries to distinguish between the filename and director, and we did not want to assume that all users use directories. Thus we assume that the actual filename does not contain underscores ('_'). For instance 'win1_pf_drv_DeskJet_pfd' is broken into three pieces: the directory 'win1_pf_drv_', the filename 'DeskJet', and the extension '_pfd'.

- Delete a driver. This command allows you to select a driver which you don't want loaded all the time. This can be useful because drivers are always loaded and therefore use memory. Also deleting the never used drivers can make your driverlist less crowded, making it more difficult to select the wrong one. You get a list of all driver files which are currently in the fontmap, and if you indicate an item from the list, it is removed.
- Select the default driver. Most programs which use PROforma suggest a default driver. This command allows you to select which driver that should be. You will get a list with all the drivers which will be included by PROforma. If you select one of them, that one will be selected as the default. The current default driver will be the first one in the list.

Some driver files actually contain more than one driver (usually for the same printer, but with a different resolution). If such a driver file is selected as the default, it will be the first driver in the file which is the default. Normally, this will be the driver with the highest resolution.

1.6 Configuration of Drivers

Most of the individual drivers can be configured. This allows you to make sure the driver works as you want it.

The drivers can be configured using the standard configuration program from Qjump (which is on the disk). The program asks for the file which has to be configured, and then the program will tell you what you can configure.

The things which can be configured are:

- Default device used by the driver. Most application programs which use PROforma, will not suggest an output device which should be used by the driver. This means that the driver has to determine the output device (unless you do specify it of course!) Thanks to this feature, you will not always have to tell all applications that your printer is attached to the serial (or parallel) port. Just configuring the driver once is enough.

- Gray shade library which should be used by the driver. You are allowed to specify which gray shade library should be used. This can be useful because you may prefer a smaller grayshade which has less distinct shades (e.g. 2x2), but is less granular. Or you may prefer more shades with a higher granularity (e.g. 8x8).

Generally speaking, higher resolutions give better results with the larger grayshade (e.g. 8x8), and lower resolutions are best combined with a small grayshade, but you may want to experiment with this one. It can be useful to use different grayshades for certain types of output.

The amount of distinct shades can be calculated from the size. If you select a AxB grayshade, it will have $A*B+1$ distinct shades.

- Name of the drivers in the file. This can be useful if you want to install several (differently configured) versions of the same driver. If they have the same name, it would be difficult to distinguish between them!

- Paper size and margins, Unfortunately, most printers are not capable of printing on every piece of the page, there usually are margins. To make things worse, these margins differ from printer to printer, and can even depend on the way you insert a page in the printer. To make sure that coordinates on the page are real. you can configure the size and origin.

To do this, you have to know the size and origin for your printer You can then set these value during configuration. To do this the size and origin have to be given in big points (bpt) (sometimes refered to as scaled point). To convert : 1 in = 4718592 bpt, or 1 cm = 1857713.4 bpt.

So how can you determine you page size and origin? Unfortunately, this is a difficult one. If you are lucky, your printer manual will give you the proper values. If not, you will have to figure it out by trial and error. Here is how this can be done:

First reset the values in your driver to no margins (for A4: origin 0,0, x size = 595*65536, y size = 842*65536). Then print a large black filled rectangle (e.g. using LINEdesign) (best to do this a few times). The rectangle should be as big the page (which can cause the rectangle to be printed on a few pages). You can then measure the requested values (the size and origin of the black area on the first page printed) and configure your driver properly.

1.7 Example, installation on harddisk

If you want to install PROforma on your harddisk, we suggest you use the following procedure:

This procedure assumes that all the PROforma related files are in the root directory on flp1_, and the installation has to be done on win1_. Please check if this is true in your particular case.

Best you create some subdirectones to hold PROforma.

```
MAKE_DIR win1_pf_
MAKE_DIR win1_pf_fnt_
MAKE_DIR win1_pf_drv_
```

Then you should copy PROforma and the fontmap.

```
COPY flp1_PROforma,win1_pf_PROforma
COPY flp1_PFFontmap,win1f_PFFontmap
COPY flp1_PFConfig,win1_pf_PFConfig
```

And you should also copy all the fonts and drivers to your harddisk.

```
WCOPY flp1_.pff,win 1 _pf_fnt_pff
```

and

```
WCOPY Tip 1__pfd,wtnl _pf_drv_pfd
```

Now you should configure your fontmap file. The most important is that you have to change the search paths to the directory on your harddisk, so for the fonts this should include

```
win 1_pf_fnt_
```

and for the drivers this should include

```
win1_pf_drv_
```

Of course, you can also configure your fontmap further.