FontCache

Thomas Richter

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FontCache Guide

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REMARK: Due to the new version, the file format of the fontcache has changed, again. FontCache will notice this automatically, but the first font requester won't be faster. A new 1.3 type cache will be created instead. All further requesters will, however, use this cache.

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Thomas Richter

Rühmkorffstraße 10A

12209 Berlin

Germany

EMail: thor@einstein.math.tu-berlin.de

WWW: http://www.math.tu-berlin.de/~thor/thor/index.html

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1.3   About FontCache

"FontCache" is a patch applied to the diskfont.library. It patches the AvailFonts() function, resulting in a very quick font requester initialisation. The patched library keeps the complete database of available fonts in a file on disk, and reads it instead of parsing the FONTS: directory tree; thus opening a font requester is much faster, depending on the number of fonts you keep - this IS NO additional RAM cache as the one supplied by the ASL or reqtools library, the cache is kept on disk.

For my approx. 300 fonts, building the font requester takes now 5 seconds instead of half a minute!

This is of course only useful if you have

a) a HD to keep the cache.

b) a big bunch of fonts.

Of course the cache is updated when you add new fonts to the font directory, you don't need to do that manually. The cache is completely transparent to the user, no need to worry about it at all.

Read here about caveats.

1.4   FontCache caveats

If you installed FontCache, the FIRST font requester won't be faster since the disk cache is not yet created - it will be written back as soon as the font list has been read.

Due to an undocumented feature of the format of the diskfont data, some very old programs won't work appropriate with FontCache, namely the 1.3 programs "FED" and "NotePad". I think nobody will miss them. Newer programs that use the ASL or reqtools requester or do the avail font parsing properly don't have these problems and work fine. In fact, I haven't noticed any other incompatibilities.

This incompatibility to the antique 1.3 might have been gone with the new 1.3 release anyways, but I haven't checked!

Adding of font directories:

The 1.3 version of the cache allows adding additional font directories with

Assign FONTS: <directory> add

something the old version had problems with. However, if you add assigns to FONTS: after the cache has already been written, the contents of the additional directories WILL NOT enter the cache. They are supposed to be "temporary font sources" that aren't worth to enter the cache. Their contents is scanned manually, without using the cache.

If you want to add a font directory permanently to your FONTS: assign, delete the caches with

Delete FONTS:_bullet/FontCache.#?

and add the necessary assign command to your startup-sequence. Then reboot. The next program that scans the font list will rewrite the cache for the enlarged font directory.

This mechanism has, of course, a caveat:

When installing new fonts and rewriting the cache, make sure that the FONTS: assign contains ONLY your system FONTS: directory and nothing else.

If the FONTS: assign contains additional directories at the time the cache is written, these assitional directories will enter the cache as well.

Changing the FONTS: assign completely will work, however, provided you flush the libraries to remove the RAM cache that ASL and reqtools keep. But that's not a problem of the FontCache at all.

The FontCache works fine, too, with the BetterOpenLibs program of the same author. Private fonts can be kept together with the program that need them - if you've installed this patch.

Where is the cache kept:

The cache itself is kept in the files

FONTS:_bullet/FontCache.<x>

where <x> is the mode AvailFonts() was invoked with. If you want to flush the disk cache explicitly, remove these files. If you only want to install a new font, it is not required to remove these files manually - FontCache will notice the change automatically and rewrite the cache as soon as a program requires a font list. You can just install the patch and forget about it.

1.5   Installing FontCache

On installation time, the diskfont library file is patched. To undo the patch or to be able to upgrade to a newer version of the FontCache program

PLEASE KEEP THE ORIGINAL diskfont library in a safe place!

To apply the patch, you need the original CBM 39.3 version of the diskfont library. It is part of the Workbench 3.1 and can't be supplied in this archive for copyright reasons. The patch WON'T WORK WITH "CRUNCHED" OR OTHERWISE MODIFIED VERSIONS OF THE DISKFONT.LIBRARY. YOU MUST USE THE ORIGINAL 3.1 VERSION.

O.K., now the steps to install the patch:

- Open a shell.

- Copy the diskfont.library to a safe place. (! IMPORTANT !)

- Unpack the archive to "RAM:". (You might have already done this since you're reading this guide. :-)

A directory called "FontCache" should have been created.

- Add "RAM:FontCache" to the path.

- Enter the following command:

spatch -oRAM:diskfont.library -pRAM:FontCache/diskfont.pch LIBS:diskfont.library

(do not enter the line breaks you see above, they are created by MultiView! Enter just one single line, please.)

- Copy the output file "RAM:diskfont.library" back to LIBS:

If the installation procedure fails, please check if you have the latest version of the diskfont.library! You need an original 39.3 version!

- If you're updating from a previous version of the FontCache program, you might want to remove the old cache files manually. This is not strictly necessary because the algorithm will detect an obsolete cache file itself and will replace it; later releases, though, might require fewer or different cache files, thus, some of them won't be seen, touched or read at all.

The following line will remove all caches:

delete FONTS:_bullet/FontCache.#?

If you have further problems, write me!

REMARK: Do NOT apply this patch to the FontCache 1.0/1.1/1.2 patched diskfont.library. The original CBM version must be used instead, as always! (You kept the original version, didn't you?)

1.6   Contacting the Author

Here's my EMail address:

thor@einstein.math.tu-berlin.de

Thomas Richter

You may also want to visit my web page, latest versions of all my programs (plus more) are available there:

WWW: http://www.math.tu-berlin.de/~thor/thor/index.html

The selection is quickly expanding, check in monthly!

1.7   Developer information

Since nobody seems to read the RKRMs, here's again the correct algorithm how to use the AvailFonts() function:

int afShortage, afSize; struct AvailFontsHeader *afh;

...

afSize = 400; do { afh = (struct AvailFontsHeader *) AllocMem(afSize, 0); if (afh) { afShortage = AvailFonts(afh, afSize, AFF_MEMORY|AFF_DISK); if (afShortage) { FreeMem(afh, afSize); afSize += afShortage; } } else { fail("AllocMem of AvailFonts buffer afh failed\n"); break; } } while (afShortage);

/* * if (afh) non-zero here, then: * 1. it points to a valid AvailFontsHeader * 2. it must have FreeMem(afh, afSize) called for it after use */

Please note that you've to recall AvailFonts() as long as it returns a non-zero result. IT DOES NOT SUFFER TO CALL IT ONLY TWICE, using a memory block enlarged by the return value of the first call as buffer for the second call. THE SECOND CALL MIGHT ASK FOR MORE MEMORY AS WELL, so you have to restart over, like shown in the example above.

The additional calls might be required, not only by the FontCache, but also by the original diskfont.library functions.

1.8 History

Version 1.0: First AmiNet release.

Version 1.1: Removed problems with programs showing up some fonts twice. They depend, however, on an undocumented feature of the diskfont.library, which is now emulated by FontCache as well. Thanks goes to Iain Hyslop for pointing out this incompatibility with FontCache and Scala/Pagestream. This should be removed now.

Version 1.2: Rewrote parts of the patch to make it more conformal to the BetterOpenLibs patch. The cache files got shorter, too.

Version 1.3: Fixed a long standing problem with assign-added font directories which are now respected by the cache. Thanks to Dirk Neubauer for the hints. Fixed a bug in the 1.2 code that wrote invalid caches from time to time and which resulted in fewer "cache hits" as possible.

Version 1.4: The FontCache compares now the date in the cache with the latest directory in the FONTS: (multi-)assign instead of just checking the first FONTS: directory. Should avoid problems with multiassigned directories. Furthermore, it is checked first whether the cache is up to date, to avoid unnecessary calls of the AvailFonts function.