

# **akJFIF\_Documentation**

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# Contents

<b>1</b>	<b>akJFIF_Documentation</b>	<b>1</b>
1.1	akJFIF : Documentation	1
1.2	copyright	2
1.3	disclaimer	2
1.4	distribution	3
1.5	payment	3
1.6	Usage and so on	3
1.7	Datatype FAQ	4
1.8	Making use of 680x0 CPUs and PPC accelerators	9
1.9	correspondence	11
1.10	thanks	12
1.11	prefs	14
1.12	history	18
1.13	About PNG - successor of GIF	21
1.14	PNG-Box - WWW tool for PNG writing	21

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# Chapter 1

## akJFIF\_Documentation

### 1.1 akJFIF : Documentation

akJFIF.datatype V44.6

- SHAREWARE -

© 1996-98 by Andreas Ralph Kleinert. All rights reserved.

A PerSuaSiVe SoftWorX PRODUCT.

Needs Kickstart V3.x

Release Date : 16.9.1998

Please consider registration - usually less than 1% of the users of a program do register. That's not much.

<Commercial> BTW: What is SViewII ? </Commercial>

<Commercial> Already tested PMPro ? </Commercial>

Copyright  
Disclaimer  
Distribution  
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Usage and Notes  
Free algorithms... PNG and JFIF: a team ...and free speech !  
Datatype FAQ  
68020-68060, PPC  
Prefs  
Correspondence  
Hall of Fame  
Version-History

\_ //  
Only \X/ Amiga makes it possible!

Please visit:

WWW Support Site  
<http://wdo.de/ark/> (AWeb-II)

The CHAOS theory:

"Like finding that bloody butterfly whose flapping wings cause all these storms we've been having lately and getting it to stop." (see "Witches Abroad" by Terry Pratchett)

Ahm...well:

...and thanks for all the fish.

## 1.2 copyright

The akJFIF.datatype in this version and its documentation files are (C)opyright 1996-98 by Andreas R. Kleinert. All rights reserved.

The right of using this program is granted to you by paying the SHAREWARE-fee of 15 DEM (10 U\$) or equivalent to the author.

This software is based in part on the work of the Independent JPEG Group.

akDT\_Installer by Robert C. Reiswig ©1996-1998.

If you wish to use any part of this installer you must ask. May not be integrated/placed into any other package! Changes, suggestions or problems: akDatatype@vgr.com

Prefs GUI design improved by Georg Rottlaender <Georg.Rottlaender@bonn.netsurf.de> under use of a 'NewIcon' graphics by Philip Vedovatti <vedovatt@u.washington.edu> - included with kind permission by the 'Team NewIcons'

The patch files were created using the scompare SAS Binary File Compare Program V6.50 which is copyright © 1992-1993 SAS Institute, Inc. The spatch SAS Binary File Patcher V6.50 is copyright © 1992 SAS Institute, Inc.

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## 1.3 disclaimer

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The author takes no responsibility for any results of the use of this program.

This software is provided "AS IS" and there is no warranty of any kind, so that you use this software at your own risk.

The author reserves the right to discontinue development of the program.

## 1.4 distribution

The akJFIF.datatype in this version is freely distributable (SHAREWARE). You may copy it, if the copyright notice is left intact and all of its parts are included in the distribution.

This program may only be included in commercial packages or commercial program collections with my written permission - ask for it.

This program may be put on public domain disks or included in public domain disk libraries - when being distributed that way, it is allowed to take a nominal fee including the costs for copying, without considering that as "commercial" in the above mentioned sense.

This program may also be distributed via electronic mail and may be put into mailboxes as long as the redistribution conditions are respected in all points.

By using or distributing this program you automatically agree to all of the above conditions and terms.

## 1.5 payment

You may send cash money in an envelope, euro-cheques, or just transfer the 15 DEM (10 U\$) shareware fee to the following account (mention your name): Deutsche Bank Siegen, BLZ 46070090 Kto. 0298174

No foreign cheques, please (euro-cheques or DM-cheques are ok).

## 1.6 Usage and so on

GIF is obsolete - you neither should use nor support it any longer. If you are doing WWW design, use PNG and JPEG instead. It's important !

Installation and Usage

-----

Just install the datatype files to their appropriate directories, and copy the akJFIFPrefs command to SYS:Prefs/Datatypes (optionally).

While the datatype itself can be placed elsewhere within a valid search path, the .ppc module HAS TO be placed to SYS:Classes/Datatypes/ - not a problem, if you use the installer script, otherwise please

remember...

Please make sure, that there is a directory available, where temporary data can be stored. There must be an assignment called "VMEM:" to this directory (just like with SuperViewLibrary and akPNG-dt).

The assignment originally would have been "JPEGTMP:" for the JFIF sources, but the memory manager has been strongly modified and enhanced - on a system with many RAM available you will perhaps never actually encounter usage of that directory.

Do not assign it to "T:" if it is somewhere on a Ram-Disk (that's why T: is not used by default) - just create a safe place for it.

Program information

-----  
akJFIF.datatype is a JPEG datatype, which is based on the latest IJG JFIF sources V6b.

So it does support progressive JPEG and all the other things introduced with V6a (note: it reads progressive JPEG, but DataTypes cannot display images progressively - instead only as a single chunk).

With V39-V42 picture.datatype it produces 256 color palette-based (with either none, floyd-steinberg or ordered dithering) or HAM6/8 output, with picture.datatype V43 as well 24 Bit may be exported unmodified.

There are picture.datatype V43 versions available for both, CyberGraphX and Picasso96, while the one for Picasso96 does work with ECS/AGA, too - simply use the appropriate one.

You must use the included preferences program for best configuration - of course you can also use one of the alternative prefs programs from Aminet, which should deliver the same functionality (but please remember not to send any corresponding bug reports to my address).

akJFIF.datatype is SHAREWARE, the future depends on YOU.

## 1.7 Datatype FAQ

CTRL-E support ?

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No, not this way, mate !

Keyfile system

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Yes, there's now a keyfile system used for this datatype - one could say, that this has been demanded, since it seems that most users obviously would like to get some value for their registration and also would like to see that "Registered ?" text disappear in the progressbar, after they indeed did register.

Please note, that the keyfile actually does not enable any "extra functionality" except making the PPC module fully

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functional and just replacing that "Registered ?" text in the progressbar.

Since the shareware fee of 15 DM is very low, and the keyfile is just an extra gimmick, I won't send any keyfiles via snail mail. If you want to receive the key, please mention your email address (clearly written) with your registration ! Otherwise I'd assume, that you don't need/want the keyfile...

If you registered the datatype earlier (when there wasn't a keyfile system at all), simply send me an email and request your keyfile afterwards.

NOTE: keyfile can be placed to either S: or where KEYPATH (env-variable) does point to.

#### PPC module (ELF)

-----

Yes, this datatype is prepared for a great speed up with phase5's powerUP (TM) boards.

For this, the ELF JFIF decoder module has to be placed at location SYS:Classes/Datatypes/akJFIF.ppc - the installer script will manage this for you on demand.

Make sure that you've the 68040/060 versions of the datatype installed, since the 68000/030 versions don't contain the necessary extra code (there are no powerUP boards with 68000/030s CPU available or planned as far as I know). Also, don't install the ELF module and/or ppc.library if you don't have a PPC board plugged in.

Raw loading speed up should be very impressive with this PPC module, although it of course can't increase rendering or dithering (remapping) speed of other system modules or the calling program.

HAM conversion (for 24 bit images, i.e. if not in V43 mode) is NOT yet PPC optimized - get a graphics card !

Please note, that this optional ELF decoder only will become fully functional for registered users of this datatype, who have a keyfile installed.

If you don't have a keyfile installed, you have two choices:

1. remove the PPC module and make use of the plain 68k decoder
2. make use of the PPC module but get only every 3rd line of the image (the whole image will be loaded and decoded, but only every 3rd line will be passed to the caller)

Speed: to test the speed of the decoder, you should go online with AWeb and load a WWW page with several large JPEG graphics. Then go offline again, and load the same page from the cache: this will show you the raw decoding speed, without any influence of download time or other tasks.

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Best is, to do the speed tests in V40 mode when using the demo version, since in V43 mode, the demo restrictions themselves (= not exporting every line of the image) will have some (undetermined) influence on speed - those lines explicitly have to be \*cleared\*, which needs some time on a 24 bit image. Sorry - this was introduced after V44.2 with a bugfix.

NOTE: decoding will need about twice as much memory as with the 68k decoder, plus approximately another 110K for the loaded ELF module, 16K for stack and 16K for I/O buffers (you know, RISC is 'reduced instruction set' and not 'reduced memory usage' - but now you are able to actually make use of all that expensive RAM ;-)  
Also, the progressbar is not available for PPC decoding (does not make much sense when e.g. WWW browsing, anyway).

#### Small PPC FAQ

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- Q: Why is a 060/PPC combo faster than the 040/PPC combo ?  
A: Perhaps because the 060 can process the I/O requests (aka OS calls) faster than the 040. Small differences may also be caused by using different hard drives - to minimize this, one could put the files into RAM: for example, but this wouldn't deliver real-life results. The following question is related, too.
- Q: Can't PPC loaders be faster than this datatype one ?  
A: Yes, they actually \*can\* be faster than the measured results may indicate. Problem is, that datatypes have to deal with bitmaps, which slows everything down. For example, in 24 bit mode DTM\_WRITEPIXELARRAY still has to be performed by the 68k, and in 8 bit mode, the same does apply to WritePixelLine8() - the latter one may include a c2p version on systems without a graphics card. To avoid the latter, one for example could try the PPC native loaders for SuperView-Library instead.
- Q: Why are there different speed-up factors for different images ?  
I've performed Jan Uerpmann's PicBench test from his site <<http://www.tu-bs.de/~y0002723/files/PicBench.lha>> and it seems to indicate this.  
A: The "larger" the images, the more the PPC can help increasing decoding speed; however, file size, image size and compression ratio of the JPEGs will influence the benchmark results, i.e. a small file with a high compression ratio may be more suitable for the PPC than a large file with only low compression (while keeping the image dimensions). Larger images, on the other hand may deliver better results than smaller images (keeping the compression factor constant). This benchmark does not check/proove this, we just tried "average" (accidental) images.

#### More datatypes ?

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On Aminet:util/dtype/ you can also find akLJPG, akPNG, akSVG and the co-production FAXX (with GPSofT) datatype.

#### What's the relationship between JFIF and LJPG ?

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The answer is simple: on file format level, there actually

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is none (\*), thus neither one of the two datatypes does replace the other one and you would need to install both to get the functionality of both - but akJFIF perhaps is the more important one.

(\*) well, there *is* a relationship, but it only does concern the file format construction and does not actually build a base for upward/sideward compatibility

No V43 with AGA ?

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There's a V43 picture.datatype coming with the Picasso96 RTG package (on Aminet), which works with plain AGA, too.

Crashes ?

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The first reason for a crash often is stack size. Not enough stack size. IPrefs/WBPatterns has this problem, and others as well. Checking this and/or using FastIPrefs (the replacement) is recommended.

Using (Fast)IPrefs in PPC mode may not be a good idea at all, but for some people, the following did help in s:startup-sequence:

```
Wait 8 secs
C:FastIPrefs W M L A G
```

For the others, the trick from the Picasso96 FAQ should do the job: put the tool "CPUBlit" (an old patch available on Aminet) to your s:startup-sequence *before* the monitors are started. You must call it as follows:

```
CPUBlit -a -b
```

You may also wish to check out tools like FBlit, FastBlit, CpuBlit98 and related ones from Aminet:util/boot - some may work perfectly on your machines, others perhaps won't at all. But experimenting may be worth it.

No write support ?

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Sorry, there won't be write support (DTM\_WRITE method), since I think, that datatypes are mainly a system for data exchange and not to do the job of existing conversion utilities.

To explain it even further:

The datatype mechanism certainly is a system to HIDE implementation and data format details. If one does offer too much choices for destination file formats, this would - in my opinion - completely be against this concept. The ideal way of keeping the datatypes' concept cleanly OOP would be to internally handle everything in an amiga-unique IFF format - which BTW is quite essential for clipboard data exchange as well. Unfortunately IFF-ILBM isn't very suitable for color depths greater than 8 bit. Maybe IFF-RGFX could be a good choice, here.

Why are "progressive" image files not displayed progressively ?

-----

Because picture.datatype's API (upto V43) relies on complete bitmaps to be returned by a datatype of subclass "picture".

Unfortunately the datatype cannot:

- supply many small bitmaps, one for each line
- give control back to picture.datatype during reading a file
- write into an existing, given bitmap

(to just supply some possible considerations how to solve this problem), so there currently is no way of displaying images progressively. Nevertheless the support of "progressive JPEG" is a noticeable feature, since (speaking of the JFIF file format) it is not backward-compatible with common JPEG and readers need to take special care for these files (JFIF V6a extensions).

When running in PPC mode, progressive display BTW would be a bad idea, anyway.

#### Odd screenmode selection

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graphics.library's BestModeID function isn't so well designed. Try Patching to a better one, e.g. with Aminet:util/sys/ModeP.lha

#### Progressbar and programs (esp. Browsers)

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Please note, that the (optional) progress bar will either open on a windows's screen as specified via pr\_WindowPtr, or on the default Public Screen, thus if your favoured Web Browser does not set pr\_WindowPtr or does not declare its screen as default pub screen, that's not my fault. PDATA\_Screen will be checked first, as well - but usually this won't work at all.

#### IBrowse troubles

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If you want to bypass the internal (68k) loaders of IBrowse and use the (PPC) datatypes instead, there may occur problems sometimes (not decoding and displaying all the graphics, but only some).

This seems to be caused by using the wrong priorities for internal and external decoders and data tranfers (and/or by MCP ;) )

If you really want to use datatypes for decoding, you should set their priority to e.g. 10 and the others to 0.

(original report by Boris Bojic <bbogic@arco.met.fu-berlin.de>)

#### Ramlib Crashes

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If you get "ramlib" gurus with this or any other program, then try installing Aminet:util/sys/StackAid.lha

#### Unknown datatypes (V43)

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If your datatypes stop working (unknown file format), please don't blame me, but at first check, whether you've still installed an already expired beta version of picture.datatype V43...

An other reason may be, that you did not delete all of the old (obsolete) "competing" JFIF descriptors from DEVS:Datatypes - in

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general, there should only remain JPEG/JFIF descriptor files that are shipped with the CURRENT release of this datatype.

And make sure, that you don't use picdtpatch (v39.2) from the Hypertext.datatype archive by Stefan Ruppert.

## 1.8 Making use of 680x0 CPUs and PPC accelerators

Basically, this program does run with a plain 68000 CPU.

However, if you do own an 68020/030+68881/882 FPU or 68040/060+FPU, or maybe a dual processor board with PPC, you may wish to make use of the extra horse power.

There are certain configuration options, special libraries and/or patches available, so you perhaps should investigate into that issue a little bit deeper - but carefully.

### PPC Support

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1. With CyberStorm PPC cards, it may make sense to make use of the "SetFastAvec" and "Set60nsMode" (SetMemMode) tools, which should speed up the system performance somewhat, i.e. by addressing your RAM with 60ns instead of 70ns access time. Newer versions allow to do these settings fromout the card's bootmenu. If you get random crashes, step back to 70ns.
2. Make sure, that you have a lot of RAM on the accelerator, so that the PPC isn't forced to make accesses to the slow motherboard RAM. If you get random crashes, make sure you followed the installation instructions, and did not configure SIMMs of different vendors for a 64 bit access bank.
3. This program does make use of "ppc.library". So: Make sure, that you a) don't have "powerpc.library" installed or b) have a version of "powerpc.library" installed, which does not conflict with "ppc.library" (V8 is said to work together with ppc.library). Don't install ppc.library without having a PPC board plugged in. Always make use of the newest 68040/68060.library plus ppc.library - as available under ftp.phase5.de or Aminet.
4. Read the corresponding FAQ pages for more information on PPC support and configuration - especially note, that a keyfile is required for fully functional PPC support within this datatype.

### 68020/030+68881/882 FPU and 68040/060+FPU Support

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Usually, Amiga OS' mathiee-Libraries do automatically manage the coprocessor support, but for some reasons, these libraries are not

used with this datatype:

- they can't be shared between processes
- they are not actually optimized for 68040/060+FPU as with OS 3.1

Unfortunately, the used FFP libraries don't support an FPU at all.

But there are certain patches available on Aminet, to speed up FPU support in general, add FPU support for the FFP libraries or in general allow more efficient use of the 040/060 CPUs, e.g. by avoiding unnecessary emulation of missing instructions through 68040/68060.library.

Make sure, that those patches don't conflict with certain versions of the 680x0 libraries or even are part of these already. If you've carefully read the docs you may wish to check out the following solutions:

#### 1. Fix bugs within the math libraries

This one has nothing to do with the FFP libraries, but since there's also a bug in mathieeesingbas.library (which resides in ROM), you should install a patch for that:

- a) best solution is a newer SetPatch Version V43.x (available from ftp.amiga.de somewhere in "/pub/")
- b) if SetPatch V43 does not work with your OS version, you should try for example "SetMathPatch" (coming e.g. with GhostScript - see Aminet:gfx/show)

Those patches may conflict with some math library replacements - it seems to be logically, that a completely rewritten replacement library of course does not need to be patched any further. At least not for the same bugs...

#### 2. Patching the math#? libraries for better (or introducing) FPU support:

- a) - FMath V40.6   Aminet:util/libs/FMath406.LHA  
  - FFPPatch     Aminet:util/boot/ffppatch.lha
- b) - HSMathLibs   Aminet:util/libs/HSMathLibs\_040.lha  
                  Aminet:util/libs/HSMathLibs\_060.lha
- c) various other patches from the "util" area of Aminet

With the 68040/68060.libraries of p5, according to their docs, further patches of the math libraries are not recommended - however may work nevertheless.

#### 3. General 040/060 speedup

For automatic speedup on 68020+ systems, this datatype makes use of utility.library.

This one has nothing to do with the FPU, but if you do own a 060 and OS 3.0 you should perhaps consider to install "Mult64Patch", which claims to implement the 64 bit integer functions UMult64/SMult64 utility.library V39+ (which have to be software emulated on the 060) two times faster than the patches done by 68060.library and four times faster than the trap emulation. A speed test program is included.

That program can be found under Aminet:util/boot/Mult64Patch.lha - however, it may already be obsolete for newer versions of your 68060.library. Do the speed check, then decide.

## 1.9 correspondence

\*\* General PerSuaSiVe SoftWorX WWW Support Site is <http://wdo.de/ark/>  
 \*\* - actually redirected to [http://home.t-online.de/home/Andreas\\_Kleinert/](http://home.t-online.de/home/Andreas_Kleinert/)

```

-----
|   You may reach me the following way.   |
|   Send bug-reports, money or whatever to: |
|-----|
|   * SuperView Development & Registration * |
|   * DRAFU Development & Registration *     |
|   * Image Engineer Registration Site Europe * |
|                                             |
|           PerSuaSiVe SoftWorX             |
|                                             |
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|                                             |
|           When calling via phone you may leave a message, |
|           if I'm not available - but don't expect me     |
|           calling back to USA, Australia, ... since     |
|           german phone rates are HIGHLY expensive.      |
|-----|

```

E-Mail:

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 Please think twice before sending them - my postbox is not unlimited in size.

\* Do not send binaries via Fido or Fido-Gates ! \*

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(note, that mail sent to @gmx.de currently will be forwarded to @t-online.de - so, as long as it works, try to address the latter directly)
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  - From USA or elsewhere:
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## 1.10 thanks

Thanks go to (in order of appearance ;-)

=====

(some of these people did register, others did make suggestions/bug reports or helped otherwise - how about you ?)

- |                      |                        |                                |
|----------------------|------------------------|--------------------------------|
| - Martin Sprenger    | - Kristian Phillips    | - Swen K. Stullich             |
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- Martin Potter	- Alan Surette	- Keith Blakemore-Noble
- Vincenzo Morra	- Ross Kirk	- Michel Verstraeten
- George Elliott	- Kevin Futter	- Michael Groni
- Markus Grubinger	- Kimme Utsi	- Andrew Baldwin
- Otto Carvalho	- Andreas Krüger	- Gerd Schniggenberg
- Luca Ricossa	- Phillip Wright	- Frédéric Faux

Thanks also must go to:

- ...the Amitrix team, namely Brant Coghlan and Dale Currie
- ...the Cloanto team, namely Michael C. Battilana
- ...the DOpus team, namely Dr. Greg Perry and Jonathan Potter
- ...the Haage and Partner people, namely Jürgen Haage and Markus Nerding

- ...the people from phase5, namely Ralph Schmidt and Claus Herrmann
- ...the picture datatype V43 programmers, namely Frank Mariak and Olaf Barthel
- ...the other programmers of datatypes, for information exchange and useful comments
- ...dozens of people I forgot to mention here !

## 1.11 prefs

akJFIFPrefs

-----

akJFIFPrefs is the Preferences Program for akJFIF.datatype.

GUI has been designed with StormWizard 2.0, so this program needs "wizard.library" V37+ (you can find a copy on Aminet under "biz/haage/WizardLibrary.lha").

Icon by Bert Bosma <lmb@wxs.nl> (based on NewIcons).

An alternative MUI prefs program replacement by Alvaro Thompson (originally) and Achim Stegemann (later) is now available as util/dtype/akMUIPrefs.lha

The global settings will be written to ENV: (and maybe also ENVARC:) into a preferences file called "Datatypes/akJFIF.prefs".

### OPTIONAL

----- task specific settings files -----  
Settings specific to different caller programs may be created by copying the global settings from "Datatypes/akJFIF.prefs" to an optional task-related prefs file called

"Datatypes/akJFIF.prefs\_Tasks/TaSkNaMe"

where "TaSkNaMe" means the name of the program as e.g. shown by a system monitor (for obvious reasons, this does work best with workbench programs, which don't require name patterns as some CLI programs might do, like for example "CLI(3):Work:Browsers/XWebber"). So, with AWeb for example, you would just edit your global settings file and then do the following:

```
MakeDir ENV:Datatypes/akJFIF.prefs_Tasks
Copy ENV:Datatypes/akJFIF.prefs ENV:Datatypes/akJFIF.prefs_Tasks/AWebIP"
```

[... and the same for ENVARC: ...]

After that, AWeb will ignore the global settings and fetch its own from the given file.

As with V44.1 this no longer needs to be done by hand, but easily can be managed fromout the (original) preferences program (as long as the corresponding task actually is running at the same time).

-----

You can do the following settings:

- 1) DECODE\_METHOD=(FAST\_INTEGER|SLOW\_INTEGER|FLOATING\_POINT)
- 2) DITHERMODE=(NO\_DITHERING|DITHER\_FLOYD-STEINBERG|DITHER\_ORDERED|HAM\_OUTPUT)
- 3) V43MODE=(256|24BIT)
- 4) V40\_DEPTH=(3..8)
- 5) V40\_COLORSPACE=(COLOR|GRAY)
- 6) HAM\_MODE=(HAM6|HAM8)
- 7) COLOR\_QUANTIZING=(SLOW|FAST)
- 8) UPSAMPLING=(ON|OFF)
- 9) SCALE\_DENOM=(0..3)
- 10) INTERLEAVED\_BM8=(ON|OFF)
- 11) PROGRESSBAR=(ON|OFF)
- 12) SPEEDUP
- 13) CUSTOM\_MODES
- 14) NOPPC
- 15) NOASPECT

That's mostly self-explaining, but as an example, here are the default settings and a short explanation:

```

DECODE_METHOD=FAST_INTEGER
DITHERMODE=DITHER_ORDERED
V43_MODE=24BIT
V40_DEPTH=8
V40_COLORSPACE=COLOR
HAM_MODE=HAM6
COLOR_QUANTIZING=FAST
UPSAMPLING=OFF
PROGRESSBAR=ON
SCALE_DENOM=0
INTERLEAVED_BM8=ON

```

#### General Explanation of Options

=====

##### 1) DECODE\_METHOD

-----

SLOW\_INTEGER: slow, but accurate integer algorithm  
FAST\_INTEGER: faster, but less accurate integer algorithm  
FLOATING\_POINT: floating point algorithm

##### 2) DITHERMODE

-----

NO\_DITHERING: no dithering, best pen selection  
DITHER\_FLOYD-STEINBERG: slow, high quality, floyd-steinberg dithering  
DITHER\_ORDERED: ordered dithering to fixed palette  
HAM\_OUTPUT: generate HAM output from 24 Bit data

The datatype will only output 24 Bit data, when DITHERMODE=NO\_DITHERING \_and\_ V43\_MODE=24BIT are set. Otherwise even with V43 picture.datatype the data will be dithered, HAM-converted or best-pen colormapped. Thus DITHERMODE=NO\_DITHERING activates the V43\_MODE switch for picture.datatype V43+

## 3) V43\_MODE (only with "NO\_DITHERING" and picture.datatype V43+)

-----  
 256: disable 24 Bit output even for V43 picture.datatype  
 24BIT: do raw 24 Bit output with V43 picture.datatype

The datatype will only output 24 Bit data, when DITHERMODE=NO\_DITHERING \_and\_ V43\_MODE=24BIT are set. Otherwise even with V43 picture.datatype the data will be dithered, HAM-converted or best-pen colormapped. Thus V43\_MODE will only act as a switch, when DITHERMODE=NO\_DITHERING has been set and picture.datatype V43 is running.

## 4) V40\_DEPTH

-----  
 When dithering to a palette (so: when in V40 mode) the number of palette colors, which is 256 by default, may be reduced here (e.g. on ECS systems). Valid depth values are 3..8 (which results in 16..256 colors, easily calculated by  $2^{\text{depth}}$ ).

## 5) V40\_COLORSPACE

-----  
 Whether you want to get 16..256 colors or 16..256 grayscales when requesting V40\_DEPTH.

## 6) HAM\_MODE (only with "HAM\_OUTPUT")

-----  
 HAM6: generate HAM6 output (max. 4096 different colors on screen)  
 HAM8: generate HAM8 output (262144+ different colors on screen)

Note, that HAM8 is native to AGA machines and thus may cause difficulties with graphic boards and won't work with OCS/ECS Amigas. With HAM6 and graphic boards also problems may occur.

## 7) COLOR\_QUANTIZING (with "DITHER\_FLOYD-STEINBERG" only)

-----  
 FAST: high speed color quantization  
 SLOW: high quality color quantization

## 8) UPSAMPLING

-----  
 ON: do careful upsampling of chroma components  
 OFF: do faster, but sloppier upsampling of chroma components  
 (often very small visual impact)

## 9) SCALE\_DENOM

-----  
 0..3: use a scale factor of either 1/1 (none), 1/2, 1/4 or 1/8 for graphics reading.  
 For reasons of better failure safety checks, this is specified as an exponent value between 0 and 3 ( $2^0=1$ ,  $2^1=2$ ,  $2^2=4$ ,  $2^3=8$ ).

## 10) INTERLEAVED\_BM8

-----  
 ON: will output interleaved bitmaps upto 256 colors  
 OFF: will output normal bitmaps (BMF\_CLEAR only) - you may switch interleaved mode off for specific programs, which cannot handle it, or when AllocBitmap() has been patched

for chunky modes by a graphics card software or e.g. EGSPPlus

Note: There's no need for BMF\_DISPLAYABLE, don't rely on it.  
 And: If you encounter 'out of memory' or 'cannot open screen'  
 problems, first try disabling interleaved bitmaps.

#### 11) PROGRESSBAR

-----

ON: pop up percentage display  
 OFF: do not pop up percentage display

#### 12) SPEEDUP (hidden option)

-----

Activates some bitmap related optimizations, including a special  
 hack for making image loading with AWeb somewhat faster.

#### 13) CUSTOM\_MODES (hidden option)

-----

When the keyword CUSTOM\_MODES is set,  
 only viewmodes out of the standard set  
 will be generated:

- LowRes ( 320x200/256)
- HighRes ( 640x200/256)
- SuperHighRes (1280x200/256)
- LowRes Lace ( 320x400/512)
- HighRes Lace ( 640x400/512)
- SuperHighRes Lace (1280x400/512)

When CUSTOM\_MODES=0x##### (e.g. CUSTOM\_MODES=0x00000000)  
 is set, the specified hexadecimal viewmode ID will be used always  
 - alternatively, you can specify the viewmode name as plain text,  
 for example "CUSTOM\_MODES=PAL:HighRes". Note, that spelling is  
 very critical here.

For HAM output, this is only true, if the mode ID actually is  
 capable of HAM (this usually is indicated by OR'ing it with HAM\_KEY),  
 otherwise a different ID will be computed.

#### 14) NOPPC (hidden option)

-----

When the keyword NOPPC is set, the PPC encoder module won't be used,  
 even with a PPC available. Instead the datatype will fall back to  
 68k mode. Useful e.g. for speed comparisons.

#### 15) NOASPECT (hidden option)

-----

If x/y aspect generation produces buggy results,  
 e.g. with PictIcon, this option may be used to  
 always force 1:1 to be returned.

#### Explanation of settings

=====

Please note, that it does not suffice to simply specify the preferred  
 options. Some also do react as switches. Here are some examples how  
 to manage specific configurations:

```

HAM Output (V40/V43):      DECODE_METHOD=FAST_INTEGER      *1
                           DITHERMODE=HAM_OUTPUT
                           V43_MODE=256                x1
                           HAM_MODE=HAM8                *1
                           UPSAMPLING=OFF              *1

Dithered Output (V40/V43): DECODE_METHOD=FAST_INTEGER      *1
                           DITHERMODE=DITHER_ORDERED     *2
                           V43_MODE=256                x1
                           COLOR_QUANTIZING=FAST         *1
                           UPSAMPLING=OFF              *1

256 Colors (V40/V43):    DECODE_METHOD=FAST_INTEGER      *1
(Best Pen selection)    DITHERMODE=NO_DITHERING
                           V43_MODE=256                x2
                           COLOR_QUANTIZING=FAST         *1
                           UPSAMPLING=OFF              *1

24 Bit (V43):           DECODE_METHOD=FAST_INTEGER      *1
                           DITHERMODE=NO_DITHERING
                           V43_MODE=24BIT              x2
                           UPSAMPLING=OFF              *1

```

```

x1 here: always ignored
    (because DECODE_METHOD not equal NO_DITHERING)
x2 here: acts as a switch between V40 and V43 mode,
    when running picture.datatype V43
    (because DECODE_METHOD=NO_DITHERING)
*1 may be changed as preferred
*2 may be changed to: DITHER_FLOYD-STEINBERG
    (side-effects described by "x1" and "x2")

```

## 1.12 history

Known Bugs: - Some people reported problems with the installation scripts in the past. If you encounter any problems or bugs, please report these directly to the script author Robert C. Reiswig <akDatatype@vgr.com>

- There did occur problems with V36.126 of wizard.library, so you may wish to upgrade to V37.127 or higher (see Aminet:gfx/misc/SvII-WIZ.lha). There also are newer versions available, but obviously not on Aminet - ask Haage and Partner or check their latest demo version releases. -- Since it's only used for the prefs program, there's no need to worry, if you don't use the wizard version, though...

- viewmode selection may not always be 'perfect'

Hint: - if you use this datatype with a WWW browser, then create a separate partition (sized 30-70 MB) for temporary data storage and do assign VMEM: and your browser's cache directory to it. Also, make sure that it has a decent AddBuffers setting (128 or more). When partitioning (danger:

data loss), it may make sense to increase the filesystem block size to a higher value, too (1024).  
 And make sure, you're using the latest FFS file system 43.x from [www.amiga.de](http://www.amiga.de) (it won't expire) - note, that you may update the FFS without repartitioning, but you have to be very careful when doing this fromout HDToolBox.

#### Keyfile problems:

People, who did not receive their keyfile within 2-4 weeks after sending their registration should also contact me. (During sommer, please note, that it not always does make sense to call after 2 weeks - some people tend to make holiday sometimes...)

#### History

=====

- V44.6 (16.9.98):
- credit card online registration via RegNet now is possible. Some special Offers have been set up for you, some of wich are derived from the usual Discount list. Please have a look!
  - added modified Prefs GUI by Georg Rottlaender
  - the newest wizard.library version seems to be V40.101; you can find in the archive with the AmigaWriter demo version under [ftp.haage-partner.com](http://ftp.haage-partner.com); however, if the prefs still tend to crash, maybe you'd just need to adjust the stacksize to 32768 bytes...
  - there's now another 68k/PPC datatype available: akTIFF
- V44.5 (1.9.98):
- now at least requires ppc.library V45 (V46 recommended !)
  - 68k I/O speedup
  - general speed improvements (68k)
  - prefs program now allows loading of task-specific (or again default) settings files (via menu); saving already was possible
  - PPC: under OS 3.1 pre-dithered/remapped JFIFs (V40 mode or best-pen) with upto 256 colors now will be moved faster to their destination bitmaps (registered version, only).
  - removed history entries for versions below 44.1
  - hey, did you ever imagine do own a LEGAL keyfile for this software product ? Register NOW and take a look into the CHEAP Discount offers, please!
- V44.4 (9.8.98):
- \*\*\* MAJOR RELEASE \*\*\*
- This version seems to be quite stable now.  
 Updates will appear when necessary.
- stripped ELF module (~2000 bytes)
- V44.3 (29.7.98):
- semaphore locking now more restrictive; possible
-

- problem when under heavy parallel use of the PPC decoder ?
- stackswap in LibInit now only when necessary and only to 8K (not 16K)
  - rewrote the docs section about 040/060 and math patch recommendations; don't patch your system worse !
  - addressed minor cacheflush problem (strlen+1)
  - rewrote major parts of the documentation; check it out!
  - PPC: fixed problem with partially trashed 24 bit bitmaps when in demo mode; assumed that the destination bitmap was empty (== black lines), which wasn't necessarily true. Now explicitly clearing those lines, which MIGHT slow down the PPC demo mode when compared to the registered PPC mode.
  - fixed "can't close shell window problem" (thanks to Michael Merkel for pointing out)
  - fixed problem with SAS/C's stdio initialization that could cause crashes when there was tried to do an Open("\*", ...) - now all the three stdio handles are NIL: since we don't use these, anyway. This finally should fix the problems we sometimes ran into with DOpus and IPrefs/WBPattern. Also, they're now properly unlocked (which was a problem related to the reuse of our ELF module and caused those shell problems).  
(-> thanks to Michael Merkel, Javier Marcet and Ralph Ewers for beta testing, Olaf Barthel, Frank Mariak, Dr. Greg Perry and Jonathan Potter for useful comments and Steve Krueger and Jim Cooper for all their work on SAS/C for PPC as we have it now).
  - fixed 1032 byte memory leak, as introduced in one of the latest versions  
(-> Troels Walsted Hansen)
  - fixed problem in prefs file handling, that could occur under low memory conditions
  - PPC: the demo version wasn't actually displaying every third line, but... following a different scheme  
(-> Javier Marcet)

- V44.2 (15.7.98):
- added info on new, permanent Shareware discount (bundling) offer
  - added info on FBlit, FastBlit, CpuBlit98 to FAQ (get your bitmaps into fast ram and/or utilize the CPU for blitting)
  - increased stacksize in prefs' icon from 4096 to 32768 bytes to avoid crashes from WB
  - added IBrowse info to FAQ
  - made some efforts to reduce stack usage within the datatypes' 68k code where possible; may help to avoid crashes sometimes
  - iffparse.library was opened although not needed
  - added some missing IoErr()s
-

- added temporarily 16K stackswap to init code, where it is safe (I will not do that for the main datatype dispatcher, it would most likely cause a bunch of new problems)
  - added StackCheck mechanism that will put up a requester and will allow you to make the choice to quit - giving a low memory error - before its too late. It's been tested with MultiView and DOpus5.
  - if you get "ramlib" gurus with this or any other program, then try installing the following patch:  
Aminet:util/sys/StackAid.lha
- V44.1 (27.6.98):
- prefs program now allows to do task-specific settings directly
  - jumped to V44 since some people seem to prefer version inflation over clarification
  - you should upgrade to ppc.library V46 (ftp.phase5.de)

### 1.13 About PNG - successor of GIF

PNG is the successor of the GIF file format. Other than GIF it is completely free of patent claims and has been designed with free data exchange in mind. Drop GIF for PNG - free algorithms are as important as free speech on the internet:

GIF is obsolete - you neither should use nor support it any longer. If you are doing WWW design, use PNG and JPEG instead. It's important !

For more information on PNG (pronounce: PiNG) for example look at:

- [1] PNG specification (AmigaGuide format)  
-> Aminet:docs/hyper/PNG-guide.lha
- [2] PNG WWW homepage  
-> <http://www.wco.com/~png/>
- [3] PNG upgrade tools like gif2png  
-> Aminet:gfx/conv/gif2png-0.6.lha
- [4] programs capable of PNG, like PPaint, SuperView, or PNG-Box, etc.

### 1.14 PNG-Box - WWW tool for PNG writing

PNG-Box

- SHAREWARE -

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A PerSuaSiVe SoftWorX PRODUCT.

Program information

-----

Now you can easily switch to PNG !

PNG-Box loads graphics files via SuperView-Library and allows to convert these to PNG (PiNG) file format for WWW usage with several WWW-specific options to be set:

- progression on/off
- transparency on/off  
(and set a transparent color ranged in 0..maxcolors)
- compression 0..9

The GUI will show you compression efficiency (byte sizes) and display various other useful information.

It's style guide conform and based on wizard.library.

Includes PPC optimized saver module (registered version, only) and takes advantage of SuperView-Libraries' PPC (loader) modules as well.

See program archive for copyright and distribution information.  
See Aminet:gfx/conv/PNG-Box.LHA for download.

---