

sun.datatype

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Chapter 1

sun.datatype

1.1 sun.datatype Documentation

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1.2 introduction

Introduction

This is V39.6 of the
Sun

datatype

. The version information can be verified
by using the AmigaDOS version command on the datatype file
SYS:classes/datatypes/sun.datatype after installation.

Once installed, the Sun datatype means that any datatype-aware programs can
read

Sun Raster
image files.

Examples of this are that a Sun image can be used as a Workbench screen backdrop, and Multiview can be used to display them.

The Sun datatype is freely distributable, but you may not charge for it, other than for reasonable media and distribution costs such as those charged by Fred Fish and other reputable PD libraries.

The Sun datatype can be distributed as part of a datatype collection, but then you have to supply both the 68000 and the 68020 version.

1.3 requirements

Requirements

Datatypes were introduced with Workbench 3.0, so the main requirement is that you have this version of the OS. Presumably, any future versions of the OS will also support them.

Do not try to install the datatype if you are using an OS older than 3.0 (i.e. 1.3, 2.04, or 2.1). The correct directories do not exist, and nothing will work even if you create them. I'm afraid you'll have to find some other program to view your
Sun Raster
files with.

When you use the datatype on a computer without the AGA chipset, then pictures with more than 16 colours hires or 32 colours lores are automatically dithered to the maximum number of available colours, unless you have a graphical card added.

24 Bit pictures need AGA chips (or AGA-emulation) to be displayed correctly.

1.4 installation

How to Install

Installation can be done in one of two ways:

- 1) Using Installer
- 2) Manual Installation

If you have a copy of Installer, you can simply double click on the sun.datatype.install icon and follow the onscreen instructions. The Installer script follows the manual sequence below, so you are advised to read it quickly so that you know what to expect.

If you do not have Installer, (which is strange, because you have Workbench 3), then follow the procedure below:

1) Copy the file sun.datatype.68000 or sun.datatype.68020 to the directory SYS:classes/datatypes and rename it to sun.datatype (SYS: is a logical name for the disk you boot from). You can perform the copy either from the Workbench or the Shell. Use the 68020 version only on Amigas with a 68020 processor or higher.

2) Decide whether you want the datatype to be permanently enabled, or manually run whenever you want to use it. Proceed to step 3 for a permanently enabled installation, otherwise proceed to step 4.

3) Copy the file "Sun Raster" to the directory DEVS:Datatypes (DEVS: is a logical directory on the disk you boot from. It is the same as the DEVS drawer on the boot disk). If using the Shell, you will also have to manually copy the icon file "Sun Raster.info". When you reboot your system, the Sun datatype will be available for use.

4) Copy the file "Sun Raster" to the directory SYS:Storage/Datatypes. If using the Shell, you will also have to manually copy the icon file "Sun Raster.info".

The Sun datatype will not be available until you double click on the "Sun Raster" icon, at which point it will remain installed until a reboot.

If you already had an older version of the sun.datatype, then you can remove the files Sun and Sun.info from the DEVS:DataTypes directory.

This completes installation.

1.5 sun

What is a Sun Raster file ?

A Sun Raster file is a file of an image, used on Sun computers. The files can be compressed or uncompressed, just like IFF ILBM files. It looks much like an IFF file, but compression is a little different and also less efficient than IFF compression.

1.6 datatypes

What is a Datatype?

Datatypes were introduced with Workbench 3.0, and provide a way for applications to read data files without having to learn all the messy details about how the data in the files are stored.

As an example, consider storing pictures on computer. As Amiga owners, we are relatively lucky in that all images are stored using the IFF ILBM format. Other computers have a bewildering array of incompatible formats, and there exist commercial packages with the sole purpose of converting images between them.

If I wanted to write a paint program, it would certainly be more useful if

it could read and maybe write out images in some of these other formats. However, implementing such feature would be a bit of a nightmare, as I would have to obtain the specifications of these formats, plus some test images, and write (and support) a significant amount of code to read and write these various formats.

A datatype is a little program that performs this conversion for me, and completely hides all the messy implementation details about what file headers exist, how they are structured, etc. My application can open the datatypes library, pass a file to it and ask if it recognises the format. The datatypes library has a look at the file, and then consults its list of installed datatypes to see if any of them recognise it. It then comes back to the application with a reply saying "Yup, its a Sun picture".

My application can then ask for the data to be read in, and after a short while the library will return the information in an Amiga standard format, in this case, an IFF image. Of course, someone has to write the datatype, but once written and installed, any other program that uses datatypes can take advantage of it at no extra cost or expense.

This datatype decodes Sun images, and any application that wishes to read this format of images can do so without having to know anything about them.

1.7 implementation

Implementation Details (Release Notes)

These are the release notes for V39.6 of the Sun datatype.

This implementation will decode

Sun Raster
files in up to 256 colours.

24 Bit Sun Raster images are converted to HAM8. Only standard and byte-encoded files are handled. If a colourmap is supplied then it needs to be in equal RGB format.

If you are using Multiview to display

Sun Raster
files without

the SCREEN tooltype/parameter, the

Sun Raster
file will be

displayed in a window on the Workbench, it will be quantised down to however many colours you have set up on your Workbench screen. 24 Bit pictures are always shown on a separate HAM8 screen.

If you are using Multiview with the SCREEN tooltype/parameter, the datatype will choose the screen resolution that it thinks is most appropriate for displaying the image from the selection available in the display database. This decision is made using the BestModeID function, and is based on the size, colour count and aspect ratio of the image. I am not really satisfied with the results from BestModeID, but I haven't found a better way yet.

When you display a picture of 1152 * 900 * 256 colours, which is a standard Sun format, then the image doesn't appear when showing on the Workbench

screen. This is a memory problem, that is probably produced by the picture.datatype. If the picture doesn't appear, then try to display the picture on a separate screen. This will probably work better.

1.8 history

Revision History

Version 39.1 released 11-12-1993

- First release

Version 39.2 released 12-12-1993

- Bug fixed, for colourmaps with less than 2^{depth} colours.

Version 39.3 released 15-2-1994

- Major bug fix. Compressed pictures using colour 0x80 were displayed wrong. I finally had some Sun images to test it.
- Removed some unused structure members
- Colourmap reading speed improved
- Used SAS-C V6.51 to compile
- Added 68000 version of the datatype, for people who updated their Amiga 500, 500+, 600, 2000 or 2500 to Kickstart 3.

Version 39.4 released 13-3-1994

- Uses less memory. If the file can't be read in 1 part, it will be read in smaller parts, requiring less memory
- NTSC and PAL screens are promoted to DBLNTSC and DBLPAL if available. BestModeID doesn't seem to do this always
- Added support for 24 bit images. These images are converted to HAM8, using a standard internal palette. No support for 24 bit cards yet
- Changed the datatype description file from SUN to SUN Raster
- Sources included

Version 39.5 released 6-9-1994

- Bug fixed, black & white pictures were displayed wrong.
- Changed datatype description file from 'SUN Raster' to 'Sun Raster' to keep the same name convention as the Commodore 'Sun Audio' datatype.

Version 39.6 released 23-1-1995

- Replaced Chunky2planar and RGBtoHAM8 routines by assembler routines, made
-

by John Hendrikx

1.9 acknowledgements

Acknowledgements

Sun datatype is based on the BMP datatype.

This AmigaGuide® file and the Installer script have been copied from the JPEG.datatype by Steve Goddard and have been adapted to the Sun datatype.

The code for the 24 bit to HAM8 conversion is based on Display24.c from Michael Saunby.

Thanks to John Hendrikx (TextDemo/FastView) for the Chunky2planar and RGBtoHAM8 routines.

Sun datatype was compiled using SAS/C V6.51

1.10 author

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