AmiWin

COLLABORATORS

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WRITTEN BY		February 6, 2023	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

AmiWin

1.1 AmiWin.guide

AmiWin

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   This is the documentation for AmiWin V2.0, an X11R6 package for
AmigaDOS. Copyright (C) 1994,1995 Holger Kruse. All rights reserved.

1.2 AmiWin.guide/NODE_DISCLAIMER

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Disclaimer
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AmiWin IS SUPPOSED TO BE AN X11R6 PACKAGE FOR AmigaDOS THAT CAN BE USED
TO RUN X11 APPLICATIONS ON YOUR AMIGA, AND REDIRECT THE OUTPUT OF X11R6
APPLICATIONS RUNNING ON OTHER MACHINES TO YOUR AMIGA. EVEN THOUGH
EVERY EFFORT HAS BEEN MADE TO MAKE AmiWin AS COMPATIBLE TO THE X11R6
STANDARD AS POSSIBLE, I CANNOT RULE OUT THE POSSIBILITY THAT AmiWin HAS
BUGS THAT HAVE HARMFUL SIDE EFFECTS ON YOUR SYSTEM OR ON OTHER MACHINES
CONNECTED TO YOUR AMIGA.

I HEREBY REJECT ANY LIABILITY OR RESPONSIBILITY FOR THESE OR ANY OTHER
CONSEQUENCES FROM THE USE OF AmiWin WHATSOEVER. THIS INCLUDES, BUT IS
NOT LIMITED TO, DAMAGE TO YOUR EQUIPMENT, TO YOUR DATA, TO OTHER
MACHINES YOUR AMIGA IS CONNECTED TO, ANY EQUIPMENT CONNECTED TO THAT
HOST, PERSONAL INJURIES, FINANCIAL LOSS OR ANY OTHER KINDS OF SIDE
EFFECTS.

YOU MAY USE THE AmiWin PACKAGE ONLY IF YOUR LOCAL LAW DOES NOT CONFLICT
WITH THE ABOVE PARAGRAPH. IF YOUR CITY, COUNTY, STATE OR OTHER
AUTHORITY FORBIDS THE RESTRICTIONS MADE IN THE ABOVE PARAGRAPH, THEN
YOU MAY NOT USE THE AmiWin PACKAGE. IT IS YOUR RESPONSIBILITY BEFORE
USING AmiWin TO ENSURE THAT YOUR LOCAL LAW DOES NOT CONFLICT WITH THE
ABOVE PARAGRAPH, AND THAT NO SITUATION COULD ARISE IN WHICH I WILL BE
BOUND BY ANY LAW VIOLATING THE RULES DEFINED IN THE ABOVE PARAGRAPH.

AMIWIN IS PROVIDED AS-IS. THIS MEANS I DO NOT GUARANTEE THAT AmiWin IS
FIT FOR ANY SPECIFIC PURPOSE AND I DO NOT GUARANTEE ANY BUG FIXES,
UPDATES OR HELP DURING ERROR RECOVERY.

1.3 AmiWin.guide/NODE_CONDITIONS

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Usage / Copying
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   AmiWin is shareware. In this case this means that there are two
different versions of the program:

   * an unregistered freely distributable (under the conditions outlined
     below) version that has fewer features, and contains fewer utility
     programs than the registered version.

   * a version for registered users, that has more features than the
     unregistered version, and contains more clients, drivers, fonts
     etc. This version requires a personalized key file that registered
     users receive from me, together with the complete registered
     AmiWin package. Neither the key file nor parts of the registered
     AmiWin package may be made available to other users ! Giving the
     key file to other users, using key files that you did not receive
     directly from me for your personal use, or giving other parts of
     the registered AmiWin package to other users is considered an act
     of software piracy !

   If you want to distribute the unregistered of registered version of
AmiWin, the following conditions apply:

   * The sales price must not be higher than the cost of the empty
     disks required for the AmiWin files plus a nominal copying fee
     plus costs for shipping. The total price must not be higher than
     10 US$ or 15 DM or the equivalent in any other currency.

   * If the unregistered version of AmiWin is to be distributed as part
     of a CD-ROM collection of public domain and/or shareware programs,
     then the retail price of the CD-ROM may not exceed 20 US$, 30 DM
     or the equivalent in any other currency.

   * All parts of the program and the documentation must be complete.
     The distribution of single parts or incomplete subsets of the
     original distribution is not allowed. Distribution of keyfiles or
     parts of the registered AmiWin package is not allowed.

   * AmiWin or parts of it may usually not be sold in combination with
     or as part of commercial software. However I might make exceptions
     to this in some cases – please contact me. However, unless and
     until you receive my explicit written approval, do not assume that
     you may distribute AmiWin or parts of it in combination or as part
     of commercial software.

   * Program and documentation may not be changed in any way.
     Exception (this means: acceptable) is the use of archivers such as
     LHA and packers like Imploder or Powerpacker, as long as it
     remains possible to retrieve the original program/data.

   * Please note: The documentation is copyrighted by me just like the
     software, and unauthorized translations violate the copyright. If
     you would like to distribute translations of the documentation or
     of any other text file, you MUST contact me first and obtain my
     permission.

1.4 AmiWin.guide/NODE_REGISTRATION

```
               Registration
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```

   If you often use AmiWin, I suggest you obtain the registered AmiWin
version from me. It has many features which are not present in the
evaluation version, more display drivers, fonts etc. For a detailed
list of additional features see
               Restrictions
               .

   To register, print the enclosed form REGISTRATION and fill it out,
then send it to the address on top of the form along with the
registration fee.

   The registration fee is
before August 31st, 1995:
     US$ 40 plus media/shipping costs

after August 31st, 1995:
     US$ 50 plus media/shipping costs

   For details please see the file REGISTRATION.

   The only acceptable methods of payment are:

   * cash in US$ or DM

   * a check or money order in US$ drawn on a US bank

   * an international postal money order in US$. This is probably the
     easiest and safest way for European customers. You can buy one at
     your local post office.

   Please do NOT send EuroCheques !

   Please do NOT make any kind of payment in a currency other than US$
or DM !

   I assure you that the information you provide will be treated
confidentially.

   Thank you very much in advance !

   My address is:

     Holger Kruse
     12006 Coed Drive
     Orlando, FL 32826-3101
     USA

     Internet: kruse@cs.ucf.edu

1.5 AmiWin.guide/NODE_INTRODUCTION

```
                 Introduction
************
```

   AmiWin is a port of the X11R6 software package by the X consortium.

   X11R6 (X-Window-System, sometimes also referred to as "X-Windows")
is a GUI interface standard that is particularly common on Un*x
systems. The feature that most sets it apart from other GUI standards
is that X11 can run across a network, i.e. a GUI-based program can be
run on a machine that is different from the one the user is working on
(where the X server is located).

   The probably most interesting applications of an X11 server running
on your Amiga are:
   * There is a vast number of very good X applications (such as xv,
     Chimera, xdvi etc.) available in source code form that can be
     compiled and run on your Amiga running the AmiWin server. A
     "developers' package" containing include files etc. to compile
     your own AmiWin clients on your Amiga will be available soon (for
     registered users).

   * By connecting your Amiga to other Un*x machines you can execute
     GUI-based X programs on those machines, and then redirect the GUI
     to your Amiga. This allows you to use your Amiga as a graphical X
     terminal for programs such as Mosaic, NetScape etc. To use AmiWin
     in this fashion you need a TCP/IP protocol stack such as AmiTCP/IP
     or AS-225 R2.

   AmiWin is a straight port from the X11R6 CD-ROM distribution, patch
level 11 (the latest version as of July 1995).

   AmiWin has been compiled with SAS/C as a true Amiga application
without the need for any kind of Un*x emulation (such as
ixemul.library).

   AmiWin has a highly modular design. The AmiWin executable only
contains the core program code. Display drivers, keyboard drivers, X
extensions, X transports and most interface code are located in shared
libraries. This makes AmiWin easily extensible to support new graphics
boards, new TCP/IP packages etc.

   During the installation of AmiWin, a directory tree with a variety
of files will be created. Here is an explanation of the meaning of
those files, that also gives you an insight into how AmiWin is
organized:

x11:bin
     All server and client executables. This directory must be in your
     path (automatically done during installation).

```
x11:etc/X0.hosts
     List of authorized hosts. See
                 Configuration
                 .

x11:include/bitmaps
     Standard X11 bitmap images that are loaded by some applications.

x11:lib/x11/fonts
     Main directory for X11 fonts

x11:lib/x11/app-defaults
     Configuration files for X clients.

x11:lib/x11/locale
     Main directory for various files related to localization.

x11:lib/x11/twm/system.twmrc
     Configuration file for the window manager "twm".

x11:libs/#?.library
     All shared libraries used by servers and clients.

x11:xle/#?.xle
     Client interface libraries for X11 extensions. These files are
     automatically loaded by clients if they need to use non-standard
     features of the X11 server.

x11:xsd/#?.xsd
     Display drivers for the AmiWin server.

x11:xsk/#?.xsk
     X keyboard drivers

x11:xtp/#?.xtp
     X transport modules. These modules are used by clients and servers
     to access networking software such as AmiTCP/IP or AS-225 R2.
```

1.6 AmiWin.guide/NODE_REQUIREMENTS

```
                 Requirements
************

   You need

   * any Amiga running Kickstart 2.04 and Workbench 2.04 or higher.
     Kick2.04/WB2.1 and Kick3.1/WB3.1 were used for testing, but other
     configurations should work as well.

   * sufficient memory. Usually 4MB of RAM can be considered a minimum.
     For reasonable use, 8MB or more is recommended.

   * sufficient harddisk space. The evaluation version requires about 2
```

MB, the full version requires more than 20 MB if all fonts are
installed.

* a graphics output device supported by AmiWin. At the moment, any
  graphics board and chipset which has a Workbench emulation
  (graphics.library emulation) is supported in monochrome. In
  addition AmiWin supports several graphics boards and chipsets in
  palette-color or true-color modes. Please see
                Display drivers
                 for
  details.

* If you want to redirect the GUI of X11 clients running on other
  machines to your Amiga, you need a TCP/IP protocol stack running
  on your Amiga. Currently supported protocol stacks are AmiTCP/IP
  V2.x or higher, and AS-225 R2.

* A 68030/68EC030 processor or higher is strongly recommended.

* A three-button mouse is recommended, because most X11
  installations are set up for three-button mice. If you do not have
  a three-button mouse, AmiWin can emulate the middle button for you.

1.7 AmiWin.guide/NODE_INSTALLATION

Installation
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   AmiWin comes with an Installer script. The program "Installer" (by
Commodore) is included with the registered AmiWin package, but not with
the evaluation package.

   If you want to install the evaluation version of AmiWin, please make
sure that you have "Installer" in your path. "Installer" is included
with many commercial software packages, and is also available from
public domain software sources.

   PLEASE DO USE the supplied Installer script to install AmiWin. Do
not attempt to install AmiWin manually. Otherwise you will have a
difficult time installing future updates, because the Installer scripts
of future updates will assume that AmiWin has been installed by
"Installer".

   The evaluation version can be installed "in place", i.e. in the
directory where you de-archived it, or it can be copied to a different
directory during installation.

   If you are worried that your system configuration files might be
changed or destroyed during Installation, here is what the Installer
script does:

* ALL AmiWin-related files are copied into one single directory.

* One single shared library is copied to LIBS: (or any other
  directory of your choice), unless a more recent version already
  exists in your system. The library is "ppipc.libray", a public
  domain library for inter-process communication. You can skip this
  step.

* Two entries have to be added to your s:user-startup file:
    - assign X11: <install-dir>/X11

    - path X11:bin add

  You can skip this step.

* Several environment variables are created.

1.8   AmiWin.guide/NODE_CONFIGURATION

                 Configuration
****

   Most of the configuration parameters of AmiWin are configured by a
set of environment variables. These variables are automatically set to
reasonable values during the installation.

   In addition, some clients have their own configuration files, which
are then identical in nature to their Un*x originals, e.g.
"x11:lib/x11/twm/system.twmrc" for "twm" etc. Please see the included
man-pages of these clients for details. All clients come with default
configuration files set to reasonable values.

   IMPORTANT: AmiWin does not require any files in addition to the ones
described here. If you use SnoopDos or a similar utility, you will find
that some clients and libraries attempt to load other configuration
files. This is for compatibility to Unix multi-user setups only. You
should not attempt to create additional config files just because these
files appear in SnoopDos.

   List of configuration files. (All of these are automatically set
during installation and configuration):

ENV:AMIWIN/AWOPTIONS
    This file contains a list of options for the X11 server. For a
    complete list of options, please see
              ENV:AMIWIN/AWOPTIONS
               and

              Display drivers
              ENV:AMIWIN/XTRANSPORTS
    This file contains a list of transports for use with all clients
    and servers. Valid entries are e.g.:
        amitcp
    or
        as225
    or

        amitcp as225

    Please mind lower-case ! In addition to the transports listed in
    this file, the "local" (MsgPort-based) transport is always
    available. Do not include "local" in this file !

    If more than one transport of the same type (e.g. TCP/IP) is
    specified, then the one specified first has priority if an address
    is specified by transport name (e.g. inet/myhost:0").

ENV:AMIWIN/XAW
    This config file is only meaningful in the registered version. It
    allows you to choose the style of the Athena Widget set. Current
    options are:

  xaw (or no config file at all)
        Standard xaw imagery.

    xaw3d
        3-dimensional xaw imagery (xaw3d style).

ENV:DISPLAY
    Default X11 display address. If you want the GUI of clients
    running on your Amiga to appear on your AmiWin screen, set this
    variable to "local:0". This is the default.

ENV:XAUTHORITY
    This file contains the path of your ".Xauthority" file. The
    recommended value (and default) is "X11:.Xauthority".

ENV:XFILESEARCHPATH
    This file contains a list of directories for application
    configuration files. The default is "X11:lib/x11/%T/%N". Please
    do not change this file unless you REALLY know what you are
    doing...

X11:.Xauthority
    This file is maintained by "x11:bin/xauth" and used by all clients
    and servers to implement the MIT-MAGIC-COOKIE-1 authorization
    scheme. Please see the man-page of "xauth" for details. Do not
    modify this file by hand. If this file does not exist, then
    MIT-MAGIC-COOKIE-1 authorization is not used.

X11:etc/X0.hosts
    This file contains a list of "trusted" hosts, i.e. hosts from
    which you want clients to connect to your X11 server without
    having to go through authorization. Just add the IP address of
    these hosts to this file. Default: empty.

1.9 AmiWin.guide/NODE_AWOPTIONS

                Format of the AWOPTIONS file
        ============================

The following options (plus any options for display drivers, see

> Display drivers
>) can be used in the AWOPTIONS file:

-ac
>   Normally AmiWin only allows access from clients on machines which
>   * are listed in your X11:etc/X0.hosts file.
>
>   * have the "magic cookie" of your machine (as defined in your
>   ".Xauthority" file) stored in their own ".Xauthority" file.
>
>   All other clients are usually rejected. If you specify "-ac", then
>   no access control at all is used, and any client from any machine
>   is allowed to connect to your server.

-audit int
>   Specifies the audit trail level, where "int" can be 0, 1 or 2, and
>   specifies which connection attempts are logged. The meaning is:
>   0
>   No connection attempts are logged.
>
>   1
>   Only unauthorized connection attempts are logged (default).
>
>   2
>   All connection attempts are logged.

-auth string
>   Specifies the file used for authorization. The default is
>   "X11:.Xauthority".

bc
>   Enables "bug compatibility mode". Some X programs (in particular
>   old versions of "xterm") have bugs that require special workarounds
>   in the server. Option "bc" enables these workarounds.

-bs
>   Disable backing store support. This option usually slows down
>   window operations, but saves memory.

-cc int
>   Defines the default color visual class. Meaning of "int":
>
>   0
>   StaticGray: a fixed set of grayscales.
>
>   1
>   GrayScale: a variable set of grayscales.
>
>   2
>   StaticColor: a fixed set of colors (fixed palette).
>
>   3
>   PseudoColor: a variable set of colors (variable palette).

4
>   TrueColor: true color mode (no palette).

5
>   DirectColor: separate palette per color component (R/G/B).

>   Not all of these visuals are available with all display drivers.

-co string
>   Defines the path of the color database file. The default is
>   "x11:lib/x11/rgb.txt".

-config string
>   Specifies another option file (like ENV:AMIWIN/AWOPTIONS) to be
>   read at program startup.

-dpi int
>   Specifies the screen resolution in dots per inch. Default=72.

-deferglyphs [none|all|16]
>   Defers the loading of character bitmap data ("glyphs") until
>   needed (instead of loading them when the font is opened). This
>   saves memory and reduces the program startup time, but can slow
>   down text rendering. Default="none". "all"=defer all glyphs.
>   "16"=defer only 16-bit glyphs.

-fc string
>   Specifies the cursor font. Default="cursor".

-fn string
>   Specifies the default font. Default="fixed".

-fp string
>   Specifies the font search path. Default="X11:lib/X11/fonts/misc".

-keymap string
>   Defines the keymap for the X screen. Default: Workbench keymap if
>   one has been saved by "Input Preferences", otherwise "usa0".
>   Example: "-keymap d".

-lalt char
>   Specifies the mapping of the left "Alt" key. Meaning of char:

a
>   Left "Alt" key maps to X11 "Alt" key for use by applications
>   (default).

m
>   Left "Alt" key maps to X11 "Meta" key for use by applications.

s
>   Left "Alt" key maps to X11 "Mode_switch" key. At this setting
>   the "Alt" key produces international characters in the same
>   way as with AmigaDOS programs.

-logo
>   Enables the "X" logo in the screen saver.

-midbutton string
     Defines the input qualifier used to emulate the middle mouse button
     (when used together with the right button). Default="rcommand".

nologo
     Disables the "X" logo in the screen saver.

nogadget
     Normally there is a hidden gadget of size 1x1 in the upper right
     corner of the X screen. If you click on this gadget without moving
     the mouse, then the X screen is moved to the back. The option
     "nogadget" disables this feature.

nogui
     Disables the MUI-based graphical user interface of AmiWin.

-p int
     Specifies the screen-saver pattern duration in minutes.

-pn
     Allows AmiWin to startup even if it could not establish all
     listening sockets.

-r
     Turns off key auto-repeat.

r
     Turns on key auto-repeat.

-ralt char
     Specifies the mapping of the right "Alt" key. Meaning of char:

     a
          Right "Alt" key maps to X11 "Alt" key for use by applications
          (default).

     m
          Right "Alt" key maps to X11 "Meta" key for use by
          applications.

     s
          Right "Alt" key maps to X11 "Mode_switch" key. At this
          setting the "Alt" key produces international characters in
          the same way as with AmigaDOS programs.

-reset int
     Defines the action when the server is reset. Meaning of "int":
     0
          Ignore the reset.

     1
          Reset the server normally, i.e. terminate all clients and
          reinitialize the display driver.

     2
          Quit the server.

-s int
     Define the screen saver timeout in minutes.

-su
     Disable any "save under" support. This usually slows down the
     server, but may save some memory.

-to #
     Defines the connection time out.

-tst
     Disables the testing extension. This can be useful for security
     reasons, because the testing extension allows clients to interfere
     with the operation of other clients.

v
     Use video blanking for the screen saver.

-v
     Do not use video blanking for the screen saver.

-wm
     Let the X property "WhenMapped" default to using backing-store.
     This roughly corresponds to the "smart refresh mode" of
     layers.library.

-x string
     Loads the named X extension at initialization time. Only available
     in the registered version.

-xsd string
     Defines the display driver. This is technically not an option, but
     a required parameter, i.e. you MUST specify it. There is no
     default for it. Example: "-xsd rtg-1".

1.10   AmiWin.guide/NODE_DRIVERS

                    Display Drivers
****

   The following display drivers are currently supported by AmiWin. In
the evaluation version all drivers are limited to max screen sizes of
800x600.

rtg-1

               Monochrome driver using the RTG standard
               aga-1

               Monochrome driver for ECS/OCS/AGA
               aga-8

```
                    Color driver for ECS/OCS/AGA/A2024
                    picasso-l-8

                    Color driver for the Picasso graphics board
                    cybergraphx-8

                    Color driver for CyberGraphX boards
                    picasso-l-15

                    True-color driver for the Picasso graphics board
                    cybergraphx-15

                    True-color driver for CyberGraphX boards
```

1.11 AmiWin.guide/NODE_RTG_ONE

```
rtg-1 display driver
====================
```

   This driver supports monochrome (single-plane) display modes on
nearly every graphics board or chipset for which a Workbench emulation
(graphics.library emulation) exists. It does not use any direct memory
access, but complies with the RTG standard as defined by Commodore at
DevCon 93.

   All offscreen Pixmaps are stored in 1-bit planar format. The type of
memory used to store offscreen Pixmaps depends on the screen mode. If
the screen mode is a native Amiga mode, Pixmaps are stored in chip
memory. Otherwise Pixmaps are stored in fast memory (unless the driver
detects one of the graphics boards that do not support bitmaps in fast
memory such as CyberGraphX before version 40.52, and unless the user
manually overrides this by specifying "-chipmem").

   The default cursor type is "Hardcursor". The driver recognizes the
AGA chipset (or other compatible graphics boards) and in this case
tries to adjust the sprite resolution to the screen resolution and to
use 32-bit wide sprites when necessary. The screen width is rounded to
a multiple of 32 pixels.

   It is not recommended to use this driver with CyberGraphX, because
CyberGraphX does not support planar display modes. This means that with
this driver, CyberGraphX constantly has to perform Planar-To-Chunky
conversions, slowing the X server down considerably.

   Options supported by this graphics driver:
-sm string
     Specifies the screenmode. "string" can be either a screenmode id in
     the form "0x12345678" or the name of a screen mode in the display
     data base.

-chipmem
     Store all offscreen pixmaps in chipmem. This slows down the
     driver, but may be necessary for incomplete Workbench-emulations
     that do not support bitmaps in fastmem.

-col rrggbb/rrggbb
     Defines the color values used for black and white. The default is
     "000000/FFFFFF".

-softcursor
     Usually the X cursor is implemented by a hardware sprite.
     "-softcursor" uses a software sprite ("shape") instead.

1.12 AmiWin.guide/NODE_AGA_ONE

```
aga-1 display driver
====================
```

   This driver supports monochrome (single-plane) displaymodes with any
Amiga chipset (OCS/ECS/AGA). All rendering is done by a combination of
direct memory access and direct blitter access.

   All offscreen Pixmaps are stored in 1-bit planar format in chip
memory. The default cursor type is "Hardcursor". The driver recognizes
the AGA chipset and in this case tries to adjust the sprite resolution
to the screen resolution and to use 32-bit wide sprites when necessary.
The screen width is rounded to a multiple of 32 pixels.

   Options supported by this graphics driver:
-sm string
     Specifies the screenmode. "string" can be either a screenmode id in
     the form "0x12345678" or the name of a screen mode in the display
     data base.

-col rrggbb/rrggbb
     Defines the color values used for black and white. The default is
     "000000/FFFFFF".

-softcursor
     Usually the X cursor is implemented by a hardware sprite.
     "-softcursor" uses a software sprite ("shape") instead.

1.13 AmiWin.guide/NODE_AGA_EIGHT

```
aga-8 display driver
====================
```

   This driver supports 2-8 bit (4-256 color) displaymodes with any
Amiga chipset (OCS/ECS/AGA), and A2024 greyscale modes. All rendering
is done by a combination of direct memory access and direct blitter
access.

   All Pixmaps are stored in planar, interleaved format in chip memory.
The default cursor type is "Hardcursor" in most display modes. The

driver recognizes the AGA chipset and in this case tries to adjust the
sprite resolution to the screen resolution, to use 32-bit wide sprites
when necessary, and to remap the set of sprite color registers to avoid
conflicts with bitmap colors.

Modes for which "Hardcursor" is supported and the default:
* A2024: 2 bits (4 greyscales)

* OCS/ECS/AGA 2-4 bits (4-16 colors)

* AGA 5-7 bits (32-128 colors)

Modes for which "Hardcursor" is NOT supported:
* OCS/ECS 5 bits (32 colors)

* AGA 8 bits (256 colors)

Interleaved rendering is used whenever possible to avoid color
flashing.

The screen width is usually rounded to 32 pixels, but has to be
rounded to 64 pixels in some cases to comply with AGA alignment
restrictions.

Options supported by this graphics driver:
-sm string
    Specifies the screenmode. "string" can be either a screenmode id in
    the form "0x12345678" or the name of a screen mode in the display
    data base.

-depth int
    Specifies the color depth (2-8).

-round32
    In some cases AmiWin normally rounds the display width to 64 bits
    instead of 32 bits to improve performance (although it would
    technically be possible to round to 32 bits only). This option
    forces 32-bit rounding in these cases.

-softcursor
    In most display modes the X cursor is normally implemented by a
    hardware sprite. "-softcursor" uses a software sprite ("shape")
    instead.

Note: Unfortunately many X clients are buggy and do not support color
depths of 3, 5, 6 or 7 bits properly. It is therefore recommended to
use depths of 2, 4 or 8 bits only if you use graphics-oriented X clients
(such as WWW browsers).

Note: Many X clients allocate pens for their own use and assume that
their are "many" pens available in the server, usually at least 64. It
is therefore recommended to switch to a fixed-palette visual (option
"-cc 0") if you use the aga-8 driver with a small number of bitplanes
(5 or less). Otherwise you will probably get error messages like
"unable to allocate color..." from X clients.

1.14   AmiWin.guide/NODE_PICASSO_L_EIGHT

```
picasso-l-8 display driver
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```

   This driver supports 8-bit (256-color) screenmodes on Picasso-II
graphics board operating in linear mode with the original VillageTronic
Picasso software. Boards running in segmented mode are not supported.
If you are using CyberGraphX instead of the VillageTronic software
please use the driver "cybergraphx-8", not "picasso-l-8".

   The driver uses "vilintuisup.library" and the Picasso blitter for
on-screen copying and bit manipulation, and direct memory access
otherwise. All off-screen Pixmaps are stored in chunky format in fast
memory. "Hardcursor" support is not available. The screen width is
rounded to a multiple of 4 pixels.

   Options supported by this graphics driver:
-sm string
     Specifies the screenmode. "string" can be either a screenmode id in
     the form "0x12345678" or a resolution in the form "800x600". When
     specifying a screenmode id, please note that the screenmodes for
     vilintuisup.library are different from the screenmodes used by the
     Workbench emulation.

1.15   AmiWin.guide/NODE_CYBERGRAPHX_EIGHT

```
cybergraphx-8 display driver
============================
```

   This driver supports 8-bit (256-color) screenmodes on any CyberGraphX
graphics board that uses a simple 8-bit chunky bitmap organization.

   cybergraphics.library version 40.55 or higher is ABSOLUTELY required
for this driver. It does not work with 40.54 or below. At the time of
this writing cybergraphics.library 40.55 has not been released yet, but
it will be soon. Please do not ask me for a copy. Wait until it is
released, and get the official distribution archive.

   The driver uses a combination of graphics.library calls and direct
memory access for rendering. All off-screen Pixmaps are stored in
chunky format in fast memory. "Hardcursor" support is not available.
The screen width is rounded to a multiple of 4 pixels.

   Options supported by this graphics driver:
-sm string
     Specifies the screenmode. "string" can be either a screenmode id in
     the form "0x12345678" or a resolution in the form "800x600".

1.16 AmiWin.guide/NODE_PICASSO_L_FIFTEEN

```
picasso-l-15 display driver
===========================
```

   This driver supports 15/16-bit (32768/65536-color) true-color
screenmodes on Picasso-II graphics board operating in linear mode with
the original VillageTronic Picasso software. Boards running in
segmented mode are not supported. If you are using CyberGraphX instead
of the VillageTronic software please use the driver "cybergraphx-15",
not "picasso-l-15".

   The driver uses "vilintuisup.library" and the Picasso blitter for
on-screen copying and bit manipulation, and direct memory access
otherwise. All off-screen Pixmaps are stored in chunky format in fast
memory. "Hardcursor" support is not available. The screen width is
rounded to a multiple of 2 pixels.

   Options supported by this graphics driver:
```
-depth int
```
      Specifies the display depth. Valid values are 15 and 16. Please
      note that some X clients are buggy and do not support some color
      depths correctly. Most X clients have fewer problems with 16-bit
      than with 15-bit.

```
-sm string
```
      Specifies the screenmode. "string" can be either a screenmode id in
      the form "0x12345678" or a resolution in the form "800x600".

1.17 AmiWin.guide/NODE_CYBERGRAPHX_FIFTEEN

```
cybergraphx-15 display driver
=============================
```

   This driver supports 15/16-bit (32768/65536-color) true-color
screenmodes on any CyberGraphX graphics board that uses one of the
following bitmap organizations:
   * one bit unused, five bits red, five bits green, five bits blue

   * one bit unused, five bits blue, five bits green, five bits red

   * five bits red, six bits green, five bits blue

   * five bits blue, six bits green, five bits red

   * any of the above but Intel-style byte-swapped.

   cybergraphics.library version 40.55 or higher is ABSOLUTELY required
for this driver. It does not work with 40.54 or below. At the time of
this writing cybergraphics.library 40.55 has not been released yet, but
it will be soon. Please do not ask me for a copy. Wait until it is
released, and get the official distribution archive.

   The driver uses a combination of graphics.library calls and direct
memory access for rendering. All off-screen Pixmaps are stored in
chunky format in fast memory. "Hardcursor" support is not available.
The screen width is rounded to a multiple of 2 pixels.

   Options supported by this graphics driver:
-depth int
      Specifies the display depth. Valid values are 15 and 16. Please
      note that some X clients are buggy and do not support some color
      depths correctly. Most X clients have fewer problems with 16-bit
      than with 15-bit.

-sm string
      Specifies the screenmode. "string" can be either a screenmode id in
      the form "0x12345678" or a resolution in the form "800x600".

1.18 AmiWin.guide/NODE_TRANSPORTS

                         Transports
****

   Transports are used to transmit information between the server and
clients. At this time AmiWin supports three different transports:
   * A fast MsgPort-based local transport that uses the public domain
     library "ppipc.library" for implementation. This is the preferred
     transport for clients running on the same machine as the server.
     The "ppipc" transport is always available without further
     configuration. To access it from an X client, use a display string
     "local:0", "ppipc:0" or (compatibility to Un*x) "unix:0". If no
     TCP/IP transport is being used, the local transport is also
     accessible through "tcp:0" and "inet:0".

   * The transport library "amitcp.xtp" that accesses AmiTCP/IP 2.x or
     higher. To activate this transport, add "amitcp" to the file
     ENV:AMIWIN/XTRANSPORTS (see
                 Configuration
). To access this
     transport from an X client running on a Un*x box, use a display
     string "1.2.3.4:0", where 1.2.3.4 is the IP address of your Amiga.

   * The transport library "as225.xtp" that accesses AS-225 R2 or
     higher. To activate this transport, add "as225" to the file
     ENV:AMIWIN/XTRANSPORTS (see
                 Configuration
). To access this
     transport from an X client running on a Un*x box, use a display
     string "1.2.3.4:0", where 1.2.3.4 is the IP address of your Amiga.

   It is not possible to change the set of transports that AmiWin uses
while the AmiWin server is running. You have to shutdown the server
first and modify the XTRANSPORTS file, and then start the server up
again.

   When you start AmiWin all transports are initialized. This means

that if you use the "amitcp" transport, AmiTCP/IP must be running. If
you use the "as225" transport, AS-225 R2 must be running. Otherwise
AmiWin will not startup properly.

1.19   AmiWin.guide/NODE_USAGE

                  How to use AmiWin
****

   After the initial installation all you have to do to start the X
server is to type "startx". This starts AmiWin and a window manager
(twm in the evaluation version, optionally twm or fvwm in the
registered version).

   When the "startx" script is completed, you can start X clients, on
your Amiga as well as on other machines connected to your Amiga. See

                  How to use the TCP/IP transport
                   for information how to setup Un*x such
that X clients open their display on your AmiWin screen.

   Please note that the evaluation version of AmiWin has several
limitations (see
                  Restrictions
). One of them is that the number of X
clients at any time is limited to 4.

   To shutdown the server there are different ways:
   * "Break" the AmiWin process, i.e. send it a "Ctrl-C" signal.

   * On the X screen, type "RightAmiga-RightShift-Q".

   * Depending on the setting of "-reset", AmiWin may quit if you quit
     the last client running on the server (usually the window manager).

   * If you have not disabled the MUI-based user interface, hit the
     close gadget, click on "Quit" or select the menu entry "Quit".

   * If you have not disabled the MUI-based user interface, send a QUIT
     command to the ARexx port of AmiWin.
           rx "address AMIWIN.1;QUIT"

1.20   AmiWin.guide/NODE_TCPIP

                  How to use the TCP/IP transport
===============================

   There are a few things to do to setup AmiWin and Un*x boxes

correctly, such that you can run X clients on a Un*x box and have the
GUI redirected to AmiWin. Here is a description what you have to do:
   * Setup the XTRANSPORTS file correctly for AmiTCP/IP or AS-225 R2.
     Please see

                    Configuration
                     and
                    Transports
                     for details.

   * Startup your protocol stack (AmiTCP/IP or AS-225 R2).

   * If this is the first time you want to access AmiWin from outside
     of your Amiga you have to setup the access rights correctly.

     You have two options: You could use the ".Xhosts" mechanism which
     allows ANY client running on a specific machine to connect to your
     Amiga, no matter which user started it. This mechanism is easier
     to setup and use. Here is how:
        - Add the IP address (e.g. 10.50.210.56) of your Un*x box to the
          file X11:etc/X0.hosts.

     Alternatively you could use the ".Xauthority" mechanism. This is
     more complicated to use, but allows you to grant access only to X
     clients started by a specific user on the Un*x box. Here is how to
     do it:
        - If you already have an "X11:.Xauthority" file and want to
          start from scratch, delete this file.

        - start "xauth".

        - Think of a 32-bit hex number (e.g. 147AC453) to use as a
          "magic cookie" (password).

        - At the prompt, type
                add 127.0.0.1:0 . 147AC453
                exit

          where 147AC453 must be replaced by your magic number. Remember
          this number well, because you will need it when you setup
          your Un*x box.

          For more information please see the man-page of "xauth".

   * Start AmiWin on your Amiga.

   * Establish a telnet or rlogin connection to your Un*x box.

   * If you are using the Xauthority mechanism and this is the first
     time that you are connecting to your Amiga from this host, you
     need to setup the Xauthority mechanism on your Un*x box.
        - Start "xauth" and at the prompt type:
                add 12.34.56.78:0 . 147AC453
                exit

          where 12.34.56.78 must be replaced by the IP address of your
          Amiga, and 147AC453 must be replaced by your magic number.

```
 * You need to setup your DISPLAY variable on your Un*x box
   correctly. This is usually done by
        set DISPLAY 12.34.56.78:0
   or
        setenv DISPLAY 12.34.56.78:0

   depending on which shell you are using. 12.34.56.78 must be
   replaced by the IP address of your Amiga. Some shells also require
   an additional
        export DISPLAY
```

   After that X clients started on your Unix box should come up on your
Amiga.

1.21 AmiWin.guide/NODE_GUI

```
              Graphical User Interface
***********************
```

   AmiWin has a simple, optional graphical user interface to examine
and change some run-time parameters. It is based on MUI (Magic User
Interface by Stefan Stuntz). MUI 2.2 or higher is required if you want
to use the GUI.

   Note: I realize that some of you do not like MUI for various
reasons. Personally I am not interested in getting involved in this
debate in any way. I used MUI "because it is there", because it is easy
to use, because it has all the features I need (including
iconification, ARexx) and because I like it. If you do not like it,
don't use it. Just add "nogui" to your AWOPTIONS file. AmiWin runs just
fine without a GUI frontend, and most other X servers (on Un*x e.g.) do
not have a GUI frontend either. I respect other opinions regarding GUI
packages, but I am afraid I have neither the time nor the interest to
write a different GUI frontend, and I think that the time required to
do this could be put to better use (such as writing new display
drivers, porting X clients etc.), so please do not bother me about this.

   If MUI is installed and you do NOT have the option "nogui" in your
AWOPTIONS file, then AmiWin will open a MUI window upon startup, that
will be iconified as soon as the server has intialized itself
completely.

   To use the window, un-iconify it and "click and play". The user
interface elements are fairly straight-forward and correspond to
configuration options (see
              Configuration
). It is not possible to save
the settings, because MUI-specific config files would conflict with the
Un*x-compatible configuration files.

   The "Security" page corresponds to the "Xhosts" mechanism. The
gadgets on the "Transports" and "Extensions" pages are purely
informational, i.e. not modifiable.

1.22 AmiWin.guide/NODE_RESTRICTIONS

```
Restrictions
************
```

The evaluation version has a number of restrictions that are not
present in the registered version:

  * In the unregistered version the number of clients connected to the
    X server at any time is limited to 4 (128 in the registered
    version).

  * The unregistered version of AmiWin does not support external X
    extension modules. The registered version comes with the "Sync"
    and "Multibuffering" extensions.

  * All display drivers in the evaluation version have a maximum
    screen size of 800x600.

  * The evaluation version does not contain the true-color display
    drivers.

  * The evaluation version of the font access library only supports X
    bitmap fonts. Scalable outline fonts (Speedo, Type1) and remote
    font access are not supported.

  * The evaluation version only contains two fonts. Other bitmap fonts
    are available from other sources though (e.g. ftp.x.org), and can
    be used with the evaluation version of AmiWin. The registered
    version comes with a large font collection (17 MB) including
    scalable fonts, precompiled for AmiWin for best performance.

  * The registered version contains several more clients, including
    the virtual window manager "fvwm" and all associated modules.

  * The registered version contains 68030-optimized versions of all
    display drivers.

  * The registered version contains "xaw3d.library", a library that
    gives the Athena Widgets set a 3-dimensional look, and
    "xpm.library", a library for handling color images.

  * The registered version comes with a printable copy of the AmiWin
    manual (.dvi and .ps formats).

1.23 AmiWin.guide/NODE_HISTORY

```
History
*******
```

```
V2.0/V2.0d (July 31th, 1995)
     initial release

V1.x
     BETA-VERSIONS - DO NOT USE !
```

1.24 AmiWin.guide/NODE_FUTURE

```
The Future of AmiWin
********************
```

   Here is an incomplete list of things I would like to do in the
future. It is in no particular order, without specific priorities. I
would appreciate any feedback and suggestions:
   * more display drivers, including 24-bit drivers for several
     architectures, drivers for EGS and Retina

   * optimizations in existing drivers

   * some more X clients (in particular: I have ported the WWW browser
     "Chimera" and the image manipulation program "xv". Both programs
     are currently at an alpha stage. If I get the permissions from the
     authors I would like to release both programs to the public
     eventually, after a bit more testing).

   * X11R6 font server

   * improved font library that allows standard Amiga (bitmap and
     scaled) fonts to be used with X11R6.

   * more transport libraries, e.g. for Envoy or Enlan-DFS

   * tcl/tk/tcl-dp and Zircon (IRC client)

   * developer package to compile your own X11 clients for AmiWin
     (include files, autodocs, FD-files, link libraries etc.). This
     should be done quickly, as soon as all the library interfaces are
     really stable.

   * X11R6 Session Manager

   * LBX (Low-Bandwidth-X): a proxy client/server set that drastically
     improves performance of X connections over slow serial links
     (PPP/SLIP). This is one of the things I would like to do very
     soon, but I will need beta-testers who have access to a complete
     X11R6 source tree on a Unix box and permission to compile a few
     programs there.

1.25 AmiWin.guide/NODE_ACKNOWLEDGEMENTS

```
Acknowledgements
****************
```