P96_TurboSVD

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COLLABORATORS

	TITLE : P96_TurboSVD		
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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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P96_TurboSVD

1.1 P96_TurboSVD

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          Picasso96 video driver for ShapeShifter
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                  (c) 1997, Didier Levet
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   P96_TurboSVD is a new driver supporting the Picasso96 RTG system
for the well known ShapeShifter Macintosh emulator. It allows you to
use Chunky, HiColor and TrueColor modes, and provides fast conversion
functions to handle all color formats. Last but not least, this is
the only video driver which may ensure that ShapeShifter will no
longer crash any other opened screen (68040/68060 users only).

   Requirements : A2000/A3000/A4000, WB 3.0+, 68020+ and a Gfx board.
                  Picasso96 v1.14+
                  ShapeShifter 3.5+

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1.2 Distribution

   P96_TurboSVD is MailWare.

   You are allowed to copy it, or redistribute it free of charge,
but I wonder how many people use it ;-)

    You can get the source files (100% asm) if you are a programmer,
and only if these files may help you to finish or enhance some of
your program (you'll have to prove that).
    These files should not be redistribute, modified nor reused, what
ever reason you'll have.

1.3 Installation

                             Installation

    The easiest way is to use the Installer script. It copies the
driver into ShapeShifter's Video drivers directory, and a catalog
translation file into the Catalogs directory. This catalog is only
used to translate error messages and thus is not mandatory.

1.4 Usage

                               Usage

    Start ShapeShifter, then open the graphic setup window. Select the
color depth you want to use and turn the driver type gadget to
External. Select the P96_TurboSVD driver, then choose the screen
mode. Next, adjust the refresh rate according to your CPU power and
the screen mode. All screen modes may need a refresh.

    68020/68030 users should use a high value for refresh rate
because the whole screen has to be redrawn each time. You should
select "Amiga mouse cursor" too, otherwise the cursor will jump every
time.

    68040/68060 users may use a value of 1, because of the increase in
speed due to the MMU. Please read the ShapeShifter documentation for
more information about this. The Refresh always and MMU refresh
check boxes don't have to be checked.

NOTE: Refresh modes need a lot of memory. If ShapeShifter complains
that there is not enough memory, you should probably use a 8 bits
color depth, or lower the memory requirement for ShapeShifter to
leave more Amiga memory for the screen.

1.5 Refresh information

                         Refresh information

    You will probably want to use the fastest display mode, but this
may not always be possible. Because the display speed is based upon
your CPU power, the color format used, the gfx board and the Zorro
bus, you should test all possible solutions to find which is the best
configuration on your system,

The driver always tries to achieve the maximum speed. The information below may help you to figure out what happens when you use one display mode or another.

68020/68030 : Only CLUT, RGB15 and ARGB color formats don't require any refresh. All other color formats require refresh.

68040/68060 : If you use a ZorroII gfx board, all color formats are refreshed to avoid uneeded ZorroII accesses. If you have a ZorroIII gfx board, the driver never refreshes the Mac native color formats (CLUT, RGB15 and ARGB).

1.6 Memory usage

Memory usage

The table below show how many bytes are needed for the buffers (800x600). You can see that the driver may need a lot of memory...

```
                                       QuickDraw  Delta buffer TOTAL
8 bits screen depth without refresh :    480000          0     480000
8 bits screen depth with refresh    :    480000     480000     960000
16 bits screen depth without refresh :   960000          0     960000
16 bits screen depth with refresh   :    960000     960000    1920000
24 bits screen depth with refresh   :   1920000    1440000    3360000
32 bits screen depth without refresh :  1920000          0    1920000
32 bits screen depth with refresh   :   1920000    1920000    3840000
```

NOTE : The Delta buffer is no longer used when you have a Zorro III
       gfx board and either a 68040 or a 68060. Then, the memory is
       equal of the QuickDraw buffer size (v1.4)

1.7 Bugs

Bugs

None found yet.
The driver was currently tested with A4000/060/PicassoIV Picasso96 v1.22a, ShapeShifter 3.8

 You should send bug repports to me via E-Mail only. Please tell me :
· What is your machine? (A1200/A2000/A3000/A4000)
· Which CPU you have (68020/68EC030/68030/68040/68060)
· The amount of memory you have and how much is used by ShapeShifter.
· The Picasso96 and ShapeShifter versions.
· Your Gfx board (along with its type: Zorro II/III)
· ...and anything else :-)

1.8 History

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                              History
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  v1.2 (17.3.97)  First public release.
```

```
  v1.3 (24.4.97)  Second public release.
```
· Full source clean-up. Most parts are reworked.
· Use 040/060 MMU to support screen switching, only if the Gfx
  raster memory is succesfully aligned. This would be the case
  since Picasso96 release 1.14. THIS WON'T RUN with older
  versions. Screen switching support means that ShapeShifter WILL
  NOT CRASH your other screens anymore !
· Use SaveFunc() and RenderFunc() with all screen modes (less
  memory consumption).
· Add RGBA and BGRA conversion functions. These color formats are
  used when available instead of RGB24 (or BGR24).
· Add a conversion function for ZorroII Gfx boards (for non-
  refresh modes) when the user has a 68040/68060 (for speed
  reasons)
· The driver is now localized (Error messages)
· Added an optimized refresh function for 68020/68030. Speed gain
  goes from +24% to -33% (speed loss occurs only in special cir-
  cumstances)
· Disable interrupts while playing with MMU translation tables.
· Use MOVE16 again (040/060 only) when I backup/render the whole
  raster.
· Check the Picasso96API version number (and not only the
  revision)
· Added some requesters which may help the user to get the best
  speed from the driver.
```

```
  v1.4 (28.7.97) Third public release.
```
· Bug fix : The driver didn't complain when ShapeShifter has to
  use a refreshed screen mode, and the Delta buffer was not allo-
  cated.
· The delta buffer is no longer allocated if you have a Zorro III
  gfx board and a 68040 or a 68060. Huge refreshes will be faster,
  but this slow things down when there are only some pixels to re-
  draw
· Very little optimization of LoadRGB32()
· Updated this documentation.

## 1.9  Future

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                              Future
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· 68030 MMU support.
  I can't do it myself, so...

· Perhaps more optimizations, if it is possible... ;-)

· Memory defragmentation (for driver's buffers only)
  Nobody ask me about that

· ShapeShifter's screen in a PIP window.

This may be done, but only with a hack. (Discard ?)

BTW, ShapeShifter 3.8 now has an internal driver for Picasso96, which
makes TurboSVD useless in most cases.

So, if I have to release a new version, this will be probably for :
- Bug fixes.
- 68030's MMU support.
- QuickDraw support if Christian Bauer is kind enough to make this
  use possible with an external driver...

1.10 Authors

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                               Authors

P96_TurboSVD :     (c) 1997 Didier Levet (kakace@aix.pacwan.net)

Picasso96 :        (c) Tobias Abt and Alexander Kneer
ShapeShifter :     (c) Christian Bauer

Deutsch catalog : (c) 1997 Jens Langner


Big thanks to Richard Starr who help me with this english doc !
But I had modified it for this release, so don't blame Richard ;-)
```