PSTricks

pst2pdf

Running a PSTricks document with pdflatex;
v. 0.15

July 4, 2013

Package author(s):
Herbert Voß
Pablo González Luengo

Contents

1 Introduction 3

2 Requirements 3
2.1 Programs needed . . . 3
2.2 Preparating file . . . 3

3 Running the script 3
3.1 Default mode . . . 3
3.2 Single mode . . . 4

4 Options 4

5 Image format 4

References 5

1 Introduction

PSTricks as PostScript related package uses the programming language PostScript for internal calculations. This is an important advantage, because floating point arithmetic is no problem. Nearly all mathematical calculation can be done when running the DVI-file with Ghostscript. However, creating a PDF file in a direct way with pdflatex is not possible. pdflatex cannot understand the PostScript related stuff.

Instead of running pdflatex one can use the perl *script* pst2pdf, it extracts all PSTricks related code into single documents with the same preamble as the original main document.

The pst2pdf *script* runs document, clips all whitespace around the image and creates a .pdf (and .eps,.ppm) image of the PSTricks related code. In a last run which is the pdflatex the PSTricks code in the main document is replaced by the created images.

2 Requirements

2.1 Programs needed

pst2pdf needs pdftk, ImageMagick, pdftoppm and pdftops (from poppler-utils or xpdf-utils) for the process file. If you need a create .pdf image files (whitout pdftk) use single mode (see 3.2).

2.2 Preparating file

The script scan the file for pspicture and postscript environments, which are then taken with its contents from the main file to create stand alone documents with the same preamble as the main document. The pspicture environment can be nested, the postscript one not! But it can contain an environment pspicture, but not vice versa. The postscript environment should always be used, when there is some code before a pspicture environment or for some code which is not inside of a pspicture environment.

Put all related PSTricks package in separate lines in your preamble, pst2pdf delete al lines contains PSTricks package before last run.

This is an example of environments that support for pst2pdf:

```
\pspicture*          \begin{pspicture}     \begin{pspicture*}     \begin{postscript}
\psset{...}          \psset{...}           \psset{...}            \psset{...}
pstricks code        pstricks code         pstricks code          pstricks code
\endpspicture        \end{pspicture}       \end{pspicture*}       \end{postscript}
```

3 Running the script

3.1 Default mode

The general syntax for the perl *script* is simple:

```
perl pst2pdf file.tex -options
```

For TEXLive users:

```
pst2pdf file.tex -options
```

In this way pst2pdf creates a new file called *file-pst.tex* and copy all pspicture and postscript environments, then processed and create file-pdf.pdf and file-fig-1.pdf, file-fig-2.pdf, file-fig-....pdf and file-fig-1.tex, file-fig-2.tex, file-fig-....tex for all pspicture and postscript using pdftk.

3.2 Single mode

If you do not have `pdftk` use the option `-single` in this mode the files are processed separately (take a more time to create images files) by default create PDF files. For example:

```
pst2pdf file.tex -single
```

create file-pdf.pdf and file-fig-1.pdf, file-fig-2.pdf, file-fig-....pdf and file-fig-1.tex, file-fig-2.tex, file-fig-....tex for all `pspicture` and `postscript` environments (see 4).

4 Options

The options listed in Table 1 refer only to the *script* and not the LaTeX file.

Table 1: Optional arguments for `pst2pdf`

name	*values*	*default*	*description*
`-imageDir`	literal	`images/`	the directory for the created images.
`-Iext`	literal	`.pdf`	the extension for `PrependGraphicsExtensions`.
`-DPI`	integer	`75`	the dots per inch for a created `.ppm` file.
`-Iscale`	real	`1`	the value for the option `scale` in `\includegraphics`.
`-eps`	boolean	`0`	creates `.eps` images (need `pdftops`).
`-jpg`	boolean	`0`	creates `.jpg` images (need `pdftoppm` and `ImageMagick`).
`-png`	boolean	`0`	creates `.png` images (need `pdftoppm` and `ImageMagick`).
`-verbose`	boolean	`1`	for a long `pst2pdf` log.
`-PS2`	literal	`empty`	pass options to `ps2pdf`.
`-clear`	boolean	`0`	delete all temporary files.
`-help`	boolean	`1`	print help and exit.
`-single`	boolean	`0`	create images type (whitout pdftk).
`-all`	boolean	`0`	generte all image (.pdf, .eps, .jpg, .png, .tex) and clear.
`-license`	boolean	`0`	print license and exit.
`-xetex`	boolean	`0`	using `xelatex` instead of `latex` for the process.
`-noImages`	boolean	`0`	generate file-pdf.tex, but no images.
`-runBibTeX`	boolean	`0`	runs `bibtex`
`-runBiber`	boolean	`0`	runs `biber` if a file with extension `.bcf` exists

For Help in command line use:

```
pst2pdf -help
```

5 Image format

`pst2pdf` can create image files in the formats: `.pdf`, `.eps`, `.jpg` and `.png`. If you need to create other image formats use `pst2pdf` *file.tex* `-png` without the option `-clear`, than move to images dir and use `mogrify` command (from `ImageMagick`), for examples:

```
mogrify -format gif *.ppm
```

generate `.gif` images files and

```
mogrify -format tiff *.ppm
```

generate `.tiff` images files.

References

[1] Denis Girou. Présentation de PSTricks. *Cahier GUTenberg*, 16:21–70, April 1994.

[2] Michel Goosens, Frank Mittelbach, Sebastian Rahtz, Denis Roegel, and Herbert Voß. *The LaTeX Graphics Companion*. Addison-Wesley Publishing Company, Reading, Mass., 2007.

[3] Laura E. Jackson and Herbert Voß. Die Plot-Funktionen von `pst-plot`. *Die TeXnische Komödie*, 2/02:27–34, June 2002.

[4] Nikolai G. Kollock. *PostScript richtig eingesetzt: vom Konzept zum praktischen Einsatz*. IWT, Vaterstetten, 1989.

[5] Herbert Voß. Die mathematischen Funktionen von PostScript. *Die TeXnische Komödie*, 1/02, March 2002.

[6] Herbert Voß. *Typesetting mathematics with LaTeX*. UIT, Cambridge, 2010.

[7] Herbert Voß. *PSTricks – Graphics for TeX and LaTeX*. UIT, Cambridge, 2011.

[8] Herbert Voß. *PSTricks – Grafik für TeX und LaTeX*. DANTE – Lehmanns, Heidelberg/Hamburg, 6. edition, 2011.

[9] Timothy van Zandt. *`multido.tex` - a loop macro, that supports fixed-point addition*. CTAN:/graphics/pstricks/generic/multido.tex, 1997.

[10] Timothy van Zandt and Denis Girou. Inside PSTricks. *TUGboat*, 15:239–246, September 1994.

[11] Timothy van Zandt and Herbert Voß. *PSTricks - `PostScript` macros for generic TeX*. http://PSTricks.tug.org/, 2011.

[12] Timothy van Zandt and Herbert Voß. *`pst-plot`: Plotting two dimensional functions and data*. CTAN:graphics/pstricks/generic/pst-plot.tex, 2011.

Index

-DPI, 4
-Iext, 4
-Iscale, 4
-PS2, 4
-all, 4
-clear, 4
-eps, 4
-help, 4
-imageDir, 4
-jpg, 4
-license, 4
-noImages, 4
-png, 4
-runBibTeX, 4
-runBiber, 4
-single, 4
-verbose, 4
-xetex, 4

.bcf, 4
biber, 4
bibtex, 4

Environment
    postscript, 3, 4
    pspicture, 3, 4
.eps, 3, 4
Extension
    .bcf, 4
    .eps, 3, 4
    .gif, 4
    .jpg, 4
    .pdf, 3, 4
    .png, 4
    .ppm, 3, 4
    .tiff, 4

.gif, 4

ImageMagick, 3, 4
\includegraphics, 4

.jpg, 4

latex, 4

Macro
    \includegraphics, 4

Package option
    -DPI, 4
    -Iext, 4
    -Iscale, 4
    -PS2, 4
    -all, 4
    -clear, 4
    -eps, 4
    -help, 4
    -imageDir, 4
    -jpg, 4
    -license, 4
    -noImages, 4
    -png, 4
    -runBibTeX, 4
    -runBiber, 4
    -single, 4
    -verbose, 4
    -xetex, 4
    PrependGraphicsExtensions, 4
    scale, 4
.pdf, 3, 4
pdflatex, 3
pdftk, 3
pdftoppm, 3, 4
pdftops, 3, 4
perl, 3
.png, 4
poppler-utils, 3
postscript, 3, 4
.ppm, 3, 4
PrependGraphicsExtensions, 4
Program
    biber, 4
    bibtex, 4
    ImageMagick, 3, 4
    latex, 4
    pdflatex, 3
    pdftk, 3
    pdftoppm, 3, 4
    pdftops, 3, 4
    perl, 3
    poppler-utils, 3
    pst2pdf, 3
    xelatex, 4
    xpdf-utils, 3
pspicture, 3, 4
pst2pdf, 3

scale, 4

.tiff, 4

xelatex, 4
xpdf-utils, 3