

The transparent package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2007/01/08 v1.0

Abstract

Since version 1.40 pdfTeX supports several color stacks. This package shows, how a separate color stack can be used for transparency, a property besides color.

Contents

1	User interface	1
2	Implementation	2
2.1	Identification	2
2.2	Initial checks	2
2.2.1	Check for pdfTeX in PDF mode	2
2.2.2	Check pdfTeX version	2
2.3	Transparency	2
3	Installation	4
3.1	Some details for the interested	4
4	History	5
	[2007/01/08 v1.0]	5
5	Index	5

1 User interface

The package transparent defines `\transparent` and `\texttransparent`. They are used like `\color` and `\textcolor`. The first argument is the transparency value between 0 and 1.

Because of the poor interface for page resources, there can be problems with packages that also use `\pdfpageresources`.

Example for usage:

```
1 (*example)
2 \documentclass[12pt]{article}
3
4 \usepackage{color}
5 \usepackage{transparent}
6
7 \begin{document}
8 \colorbox{yellow}{%
9   \bfseries
10  \color{blue}%
11  Blue and %
12  \transparent{0.6}%
13  transparent blue%
```

```

14 }
15
16 \bigskip
17 Hello World
18 \texttransparent{0.5}{Hello\newpage World}
19 Hello World
20 \end{document}
21 \</example>

```

2 Implementation

2.1 Identification

```

22 \<*package>
23 \NeedsTeXFormat{LaTeX2e}
24 \ProvidesPackage{transparent}%
25   [2007/01/08 v1.0 Using a pdfTeX's color stack for transparency (HO)]

```

2.2 Initial checks

2.2.1 Check for pdfTeX in PDF mode

```

26 \RequirePackage{ifpdf}
27 \ifpdf
28 \else
29   \PackageWarningNoLine{transparent}{%
30     Loading aborted, because pdfTeX is not running in PDF mode%
31   }%
32   \expandafter\endinput
33 \fi

```

2.2.2 Check pdfTeX version

```

34 \begingroup\expandafter\expandafter\expandafter\endgroup
35 \expandafter\ifx\csname pdfcolorstackinit\endcsname\relax
36   \PackageWarningNoLine{transparent}{%
37     Your pdfTeX version does not support color stacks%
38   }%
39   \expandafter\endinput
40 \fi

```

2.3 Transparency

The setting for the different transparency values must be added to the page resources. In the first run the values are recorded in the .aux file. In the second run the values are set and transparency is available.

```

41 \RequirePackage{auxhook}
42 \AddLineBeginAux{%
43   \string\providecommand{\string\transparent@use}[1]{}%
44 }
45 \gdef\TRP@list{/TRP1<</ca 1/CA 1>>}
46 \def\transparent@use#1{%
47   \@ifundefined{TRP#1}{%
48     \g@addto@macro\TRP@list{%
49       /TRP#1<</ca #1/CA #1>>%
50     }%
51     \expandafter\gdef\csname TRP#1\endcsname{/TRP#1 gs}%
52   }{%
53     % #1 is already known, nothing to do
54   }%
55 }
56 \AtBeginDocument{%
57   \TRP@addresource
58   \let\transparent@use@gobble

```

59 }

Unhappily the interface setting page resources is very poor, only a token register `\pdfpageresources`. Thus this package tries to be cooperative in the way that it embeds the previous contents of `\pdfpageresources`. However it does not solve the problem, if several packages want to set `/ExtGState`.

```

60 \def\TRP@addressource{%
61   \begingroup
62     \edef\x{\endgroup
63       \pdfpageresources{%
64         \the\pdfpageresources
65         /ExtGState<<\TRP@list>>%
66       }%
67     }%
68   \x
69 }
70 \newif\ifTRP@rerun
71 \xdef\TRP@colorstack{%
72   \pdfcolorstackinit page direct{/TRP1 gs}%
73 }

```

`\transparent`

```

74 \newcommand*{\transparent}[1]{%
75   \begingroup
76     \dimen@=#1\p@\relax
77     \ifdim\dimen@>\p@
78       \dimen@=\p@
79     \fi
80     \ifdim\dimen@<\z@
81       \dimen@=\z@
82     \fi
83     \ifdim\dimen@=\p@
84       \def\x{1}%
85     \else
86       \ifdim\dimen@=\z@
87         \def\x{0}%
88       \else
89         \edef\x{\strip@pt\dimen@}%
90         \edef\x{\expandafter@gobble\x}%
91       \fi
92     \fi
93     \if@files
94       \immediate\write\@auxout{%
95         \string\transparent@use{\x}%
96       }%
97     \fi
98     \edef\x{\endgroup
99       \def\noexpand\transparent@current{\x}%
100     }%
101   \x
102   \transparent@set
103 }

104 \AtEndDocument{%
105   \ifTRP@rerun
106     \PackageWarningNoLine{transparent}{%
107       Rerun to get transparencies right%
108     }%
109   \fi
110 }
111 \def\transparent@current{/TRP1 gs}
112 \def\transparent@set{%
113   \@ifundefined{TRP\transparent@current}{%

```

```

114     \global\TRP@reruntrue
115 }{%
116     \pdfcolorstack\TRP@colorstack push{%
117         \csname TRP\transparent@current\endcsname
118     }%
119     \aftergroup\transparent@reset
120 }%
121 }
122 \def\transparent@reset{%
123     \pdfcolorstack\TRP@colorstack pop\relax
124 }

\texttransparent

125 \newcommand*{\texttransparent}[2]{%
126     \protect\leavevmode
127     \begingroup
128         \transparent{#1}%
129         #2%
130     \endgroup
131 }

132 \end{package}

```

3 Installation

CTAN. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/transparent.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/transparent.pdf](#) Documentation.

Unpacking. The .dtx file is a self-extracting docstrip archive. The files are extracted by running the .dtx through plain-TeX:

```
tex transparent.dtx
```

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

<code>transparent.sty</code>	→	<code>tex/latex/oberdiek/transparent.sty</code>
<code>transparent.pdf</code>	→	<code>doc/latex/oberdiek/transparent.pdf</code>
<code>transparent-example.tex</code>	→	<code>doc/latex/oberdiek/transparent-example.tex</code>
<code>transparent.dtx</code>	→	<code>source/latex/oberdiek/transparent.dtx</code>

If you have a `docstrip.cfg` that configures and enables docstrip’s TDS installing feature, then some files can already be in the right place, see the documentation of docstrip.

Refresh file databases. If your TeX distribution (TeX, MiKTeX, ...) rely on file databases, you must refresh these. For example, TeX users run `texhash` or `mktexlsr`.

3.1 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the .dtx source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk transparent.pdf unpack_files output .
```

¹<http://ftp.ctan.org/tex-archive/>

Unpacking with L^AT_EX. The .dtx chooses its action depending on the format:

plain-T_EX: Run docstrip and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for docstrip (really, docstrip does not need L^AT_EX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{transparent.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the .dtx or the .drv to generate the documentation. The process can be configured by the configuration file ltxdoc.cfg. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL^AT_EX:

```
pdflatex transparent.dtx
makeindex -s gind.ist transparent.idx
pdflatex transparent.dtx
makeindex -s gind.ist transparent.idx
pdflatex transparent.dtx
```

4 History

[2007/01/08 v1.0]

- First version.

5 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols		D	
\@auxout	94	\dimen@	76, 77, 78, 80, 81, 83, 86, 89
\@gobble	58, 90	\documentclass	2
\@ifundefined	47, 113		
A		E	
\AddLineBeginAux	42	\end	20
\aftergroup	119	\endcsname	35, 51, 117
\AtBeginDocument	56	\endinput	32, 39
\AtEndDocument	104		
B		G	
\begin	7	\g@addto@macro	48
\bfseries	9	\gdef	45, 51
\bigskip	16		
C		I	
\color	10	\if@filesw	93
\colorbox	8	\ifdim	77, 80, 83, 86
\csname	35, 51, 117	\ifpdf	27
		\ifTRP@rerun	70, 105
		\ifx	35
		\immediate	94

L		T	
<code>\leavevmode</code>	126	<code>\texttransparent</code>	18, 125
N		<code>\the</code>	64
<code>\NeedsTeXFormat</code>	23	<code>\transparent</code>	12, 74, 128
<code>\newcommand</code>	74, 125	<code>\transparent@current</code>	99, 111, 113, 117
<code>\newif</code>	70	<code>\transparent@reset</code>	119, 122
<code>\newpage</code>	18	<code>\transparent@set</code>	102, 112
P		<code>\transparent@use</code>	43, 46, 58, 95
<code>\p@</code>	76, 77, 78, 83	<code>\TRP@addresource</code>	57, 60
<code>\PackageWarningNoLine</code>	29, 36, 106	<code>\TRP@colorstack</code>	71, 116, 123
<code>\pdfcolorstack</code>	116, 123	<code>\TRP@list</code>	45, 48, 65
<code>\pdfcolorstackinit</code>	72	<code>\TRP@reruntrue</code>	114
<code>\pdfpageresources</code>	63, 64	U	
<code>\protect</code>	126	<code>\usepackage</code>	4, 5
<code>\providecommand</code>	43	W	
<code>\ProvidesPackage</code>	24	<code>\write</code>	94
R		X	
<code>\RequirePackage</code>	26, 41	<code>\x</code>	62, 68, 84, 87, 89, 90, 95, 98, 99, 101
S		Z	
<code>\strip@pt</code>	89	<code>\z@</code>	80, 81, 86