

# 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

<b>1</b>	<b>User interface</b>	<b>1</b>
<b>2</b>	<b>Implementation</b>	<b>2</b>
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
<b>3</b>	<b>Installation</b>	<b>4</b>
3.1	Download	4
3.2	Bundle installation	4
3.3	Package installation	5
3.4	Refresh file name databases	5
3.5	Some details for the interested	5
<b>4</b>	<b>History</b>	<b>5</b>
	[2007/01/08 v1.0]	5
<b>5</b>	<b>Index</b>	<b>6</b>

## 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 \end{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 (H0)]%

```

### 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 `\pdfpagemresources`. Thus this package tries to be cooperative in the way that it embeds the previous contents of `\pdfpagemresources`. However it does not solve the problem, if several packages want to set `/ExtGState`.

```

60 \def\TRP@addresource{%
61   \begingroup
62   \edef\x{\endgroup
63     \pdfpagemresources{%
64       \the\pdfpagemresources
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@filesw
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 \</package>

```

## 3 Installation

### 3.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

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

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

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

TDS refers to the standard “A Directory Structure for T<sub>E</sub>X Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

### 3.2 Bundle installation

**Unpacking.** Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

---

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

### 3.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain- $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :

```
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):

```
transparent.sty      → tex/latex/oberdiek/transparent.sty
transparent.pdf      → doc/latex/oberdiek/transparent.pdf
transparent-example.tex → doc/latex/oberdiek/transparent-example.tex
transparent.dtx      → source/latex/oberdiek/transparent.dtx
```

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`.

### 3.4 Refresh file name databases

If your  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  distribution (te $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ , mi $\mathrm{kT}_{\mathrm{E}}\mathrm{X}$ , ...) relies on file name databases, you must refresh these. For example, te $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  users run `texhash` or `mktextlsr`.

### 3.5 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 .
```

**Unpacking with  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ .** The `.dtx` chooses its action depending on the format:

**plain- $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :** Run `docstrip` and extract the files.

**$\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :** Generate the documentation.

If you insist on using  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  for `docstrip` (really, `docstrip` does not need  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ ), 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 pdf $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :

```
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			
\@auxout	94	\newcommand	74, 125
\@gobble	58, 90	\newif	70
\@ifundefined	47, 113	\newpage	18
A		P	
\AddLineBeginAux	42	\p@	76, 77, 78, 83
\aftergroup	119	\PackageWarningNoLine	29, 36, 106
\AtBeginDocument	56	\pdfcolorstack	116, 123
\AtEndDocument	104	\pdfcolorstackinit	72
B		\pdfpageresources	63, 64
\begin	7	\protect	126
\bfseries	9	\providecommand	43
\bigskip	16	\ProvidesPackage	24
C		R	
\color	10	\RequirePackage	26, 41
\colorbox	8	S	
\csname	35, 51, 117	\strip@pt	89
D		T	
\dimen@	76, 77, 78, 80, 81, 83, 86, 89	\texttransparent	18, 125
\documentclass	2	\the	64
E		\transparent	12, 74, 128
\end	20	\transparent@current	99, 111, 113, 117
\endcsname	35, 51, 117	\transparent@reset	119, 122
\endinput	32, 39	\transparent@set	102, 112
G		\transparent@use	43, 46, 58, 95
\g@addto@macro	48	\TRP@addresource	57, 60
\gdef	45, 51	\TRP@colorstack	71, 116, 123
I		\TRP@list	45, 48, 65
\if@filesw	93	\TRP@reruntrue	114
\ifdim	77, 80, 83, 86	U	
\ifpdf	27	\usepackage	4, 5
\ifTRP@rerun	70, 105	W	
\ifx	35	\write	94
\immediate	94	X	
L		\x	62, 68, 84, 87, 89, 90, 95, 98, 99, 101
\leavevmode	126	Z	
N		\z@	80, 81, 86
\NeedsTeXFormat	23		