

The transparent package

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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.

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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.

*Please report any issues at <https://github.com/ho-tex/transparent/issues>

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 [2019/11/29 v1.4 Transparency via pdfTeX's color stack (H0)]%
```

2.2 Initial checks

2.2.1 Check for pdfTeX in PDF mode

```
26 \RequirePackage{iftex}
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 or LuaTeX version

```
34 \ifx\pdfextension\@undefined
35   \let\TRP@pdfcolorstackinit\pdfcolorstackinit
36   \let\TRP@pdfpageresources\pdfpageresources
37   \let\TRP@pdfcolorstack\pdfcolorstack
38 \else
39   \def\TRP@pdfcolorstackinit      {\pdffeedback colorstackinit}
40   \protected\edef\TRP@pdfpageresources {\pdfvariable pageresources}
41   \protected\def\TRP@pdfcolorstack  {\pdfextension colorstack}
42 \fi
43 \ifcsname TRP@pdfcolorstackinit\endcsname\else
```

```

44 \PackageWarningNoLine{transparent}{%
45   Your pdfTeX version does not support color stacks%
46 }%
47 \expandafter\endinput
48 \fi

```

2.3 Compatibility with pgf

<https://github.com/ho-tex/transparent/issues/1>

```

49 \AtBeginDocument
50 {%
51   \ifcsname pgfutil@addpdfresource@extgs\endcsname
52     \let\TRP@addresource\relax
53   \pgfutil@addpdfresource@extgs{\TRP@list}%
54 \fi
55 }

```

2.4 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.

```

56 \RequirePackage{auxhook}
57 \AddLineBeginAux{%
58   \string\providecommand{\string\transparent@use}[1]{}%
59 }
60 \gdef\TRP@list{/TRP1<</ca 1/CA 1>>}
61 \def\transparent@use#1{%
62   \@ifundefined{TRP#1}{%
63     \g@addto@macro\TRP@list{%
64       /TRP#1<</ca #1/CA #1>>%
65     }%
66     \expandafter\gdef\csname TRP#1\endcsname{/TRP#1 gs}%
67   }{%
68     % #1 is already known, nothing to do
69   }%
70 }
71 \AtBeginDocument{%
72   \TRP@addresource
73   \let\transparent@use@gobble
74 }

```

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`.

```

75 \def\TRP@addresource{%
76   \begingroup
77   \edef\x{\endgroup
78     \TRP@pdfpageresources{%
79       \the\TRP@pdfpageresources
80       /ExtGState<<\TRP@list>>%
81     }%
82   }%
83   \x
84 }
85 \newif\ifTRP@rerun
86 \xdef\TRP@colorstack{%

```

```

87 \TRP@pdfcolorstackinit page direct{/TRP1 gs}%
88 }

```

\transparent

```

89 \newcommand*{\transparent}[1]{%
90 \begingroup
91 \dimen@=#1\p@\relax
92 \ifdim\dimen@>\p@
93 \dimen@=\p@
94 \fi
95 \ifdim\dimen@<\z@
96 \dimen@=\z@
97 \fi
98 \ifdim\dimen@=\p@
99 \def\x{1}%
100 \else
101 \ifdim\dimen@=\z@
102 \def\x{0}%
103 \else
104 \edef\x{\strip@pt\dimen@}%
105 \edef\x{\expandafter\@gobble\x}%
106 \fi
107 \fi
108 \if@filesw
109 \immediate\write\@auxout{%
110 \string\transparent@use{\x}%
111 }%
112 \fi
113 \edef\x{\endgroup
114 \def\noexpand\transparent@current{\x}%
115 }%
116 \x
117 \transparent@set
118 }

119 \AtEndDocument{%
120 \ifTRP@rerun
121 \PackageWarningNoLine{transparent}{%
122 Rerun to get transparencies right%
123 }%
124 \fi
125 }
126 \def\transparent@current{/TRP1 gs}
127 \def\transparent@set{%
128 \@ifundefined{TRP\transparent@current}{%
129 \global\TRP@reruntrue
130 }{%
131 \TRP@pdfcolorstack\TRP@colorstack push{%
132 \csname TRP\transparent@current\endcsname
133 }%
134 \aftergroup\transparent@reset
135 }%
136 }
137 \def\transparent@reset{%
138 \TRP@pdfcolorstack\TRP@colorstack pop\relax
139 }

```

\texttransparent

```

140 \newcommand*{\texttransparent}[2]{%
141   \protect\leavevmode
142   \begingroup
143     \transparent{#1}%
144     #2%
145   \endgroup
146 }

147 \end{package}

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

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

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

Bundle. All the packages of the bundle ‘transparent’ 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/transparent.tds.zip](#)

TDS refers to the standard “A Directory Structure for T_EX Files” ([CTAN:pkg/tds](#)). Directories with `texmf` in their name are usually organized this way.

3.2 Bundle installation

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

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

3.3 Package installation

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

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

¹[CTAN:pkg/transparent](#)

3.4 Refresh file name databases

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

3.5 Some details for the interested

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

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

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

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

```
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.

[2016/05/16 v1.1]

- Documentation updates.

[2018/09/10 v1.2]

- Update for $\text{LuaT}_{\text{E}}\text{X}$, remove dependency on $\text{PdfT}_{\text{E}}\text{X}$ command names.

[2018/11/18 v1.3]

- Added code for `pgf` compatibility, see <https://github.com/ho-tex/transparent/issues/1>

[2019/11/29 v1.4]

- Documentation updates.
- Use `iftex` package.

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