

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.

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

Example for usage:

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

```

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 [2018/11/18 v1.3 Transparency via pdfTeX's color stack (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 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 Compability with pgf

<https://github.com/ho-tex/oberdiek/issues/19>

```

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@files@
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 \</package>

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[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_EX 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/
```

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):

<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`.

3.4 Refresh file name databases

If your T_EX distribution (teT_EX, miK_TE_X, ...) relies on file name databases, you must refresh these. For example, teT_EX users run `texhash` or `mktextlsr`.

¹<http://ctan.org/pkg/transparent>

3.5 Some details for the interested

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 Catalogue

The following XML file can be used as source for the [T_EX Catalogue](#). The elements `caption` and `description` are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is `transparent.xml`.

```
148 (*catalogue)
149 <?xml version='1.0' encoding='us-ascii'?>
150 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
151 <entry datestamp='$Date$' modifier='$Author$' id='transparent'>
152   <name>transparent</name>
153   <caption>Using a color stack for transparency with pdfTeX.</caption>
154   <authorref id='auth:oberdiek'>
155     <copyright owner='Heiko Oberdiek' year='2007'>
156       <license type='lppl1.3'>
157         <version number='1.2'>
158           <description>
159             Since version 1.40 <xref refid='pdftex'>pdfTeX</xref> supports
160             several color stacks. This package shows how a separate colour stack
161             can be used for transparency, a property other than colour.
162           <p/>
163           The package is part of the <xref refid='oberdiek'>oberdiek</xref>
164           bundle.
165         </description>
166         <documentation details='Package documentation'
167           href='ctan:/macros/latex/contrib/oberdiek/transparent.pdf'>
168           <ctan file='true' path='/macros/latex/contrib/oberdiek/transparent.dtx'>/>
169           <miktex location='oberdiek'>
170             <texlive location='oberdiek'>
171               <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'>/>
172             </entry>
173           </catalogue>
```

5 History

[2007/01/08 v1.0]

- First version.

[2016/05/16 v1.1]

- Documentation updates.

[2018/09/10 v1.2]

- Update for LuaTeX, remove dependency on PdfTeX command names.

[2018/11/18 v1.3]

- Added code for pgf compability, see <https://github.com/ho-tex/oberdiek/issues/19>

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