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

```
⟨*example⟩
\documentclass[12pt]{article}

\usepackage{color}
\usepackage{transparent}

\begin{document}
\colorbox{yellow}{%
  \bfseries
  \color{blue}%
  Blue and %
  \transparent{0.6}%
  transparent blue%
}

\bigskip
Hello World
\texttransparent{0.5}{Hello\newpage World}
Hello World
\end{document}
⟨/example⟩
```

2 Implementation

2.1 Identification

```
⟨*package⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{transparent}%
  [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

```
\RequirePackage{ifpdf}
\ifpdf
\else
  \PackageWarningNoLine{transparent}{%
    Loading aborted, because pdfTeX is not running in PDF mode%
  }%
  \expandafter\endinput
\fi
```

2.2.2 Check pdfTEX or LuaTEX version

```
\ifx\pdfextension\@undefined
  \let\TRP@pdfcolorstackinit\pdfcolorstackinit
  \let\TRP@pdfpageresources\pdfpageresources
  \let\TRP@pdfcolorstack\pdfcolorstack
\else
  \def\TRP@pdfcolorstackinit           {\pdffeedback colorstackinit}
  \protected\edef\TRP@pdfpageresources {\pdfvariable pageresources}
  \protected\def\TRP@pdfcolorstack     {\pdfextension colorstack}
\fi
\ifcsname TRP@pdfcolorstackinit\endcsname\else
  \PackageWarningNoLine{transparent}{%
    Your pdfTeX version does not support color stacks%
  }%
  \expandafter\endinput
\fi
```

2.3 Compability with pgf

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

```
\AtBeginDocument
{%
  \ifcsname pgfutil@addpdfresource@extgs\endcsname
   \let\TRP@addresource\relax
   \pgfutil@addpdfresource@extgs{\TRP@list}%
  \fi
}
```

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.

```
\RequirePackage{auxhook}
\AddLineBeginAux{%
  \string\providecommand{\string\transparent@use}[1]{}%
}
\gdef\TRP@list{/TRP1<</ca 1/CA 1>>}
\def\transparent@use#1{%
  \@ifundefined{TRP#1}{%
    \g@addto@macro\TRP@list{%
      /TRP#1<</ca #1/CA #1>>%
    }%
    \expandafter\gdef\csname TRP#1\endcsname{/TRP#1 gs}%
  }{%
    % #1 is already known, nothing to do
  }%
}
\AtBeginDocument{%
  \TRP@addresource
  \let\transparent@use\@gobble
}
```

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`.

```
\def\TRP@addresource{%
  \begingroup
    \edef\x{\endgroup
      \TRP@pdfpageresources{%
        \the\TRP@pdfpageresources
        /ExtGState<<\TRP@list>>%
      }%
    }%
  \x
}
\newif\ifTRP@rerun
\xdef\TRP@colorstack{%
  \TRP@pdfcolorstackinit page direct{/TRP1 gs}%
}
```

`\transparent`

```
\newcommand*{\transparent}[1]{%
  \begingroup
    \dimen@=#1\p@\relax
    \ifdim\dimen@>\p@
      \dimen@=\p@
    \fi
```

```
    \ifdim\dimen@<\z@
      \dimen@=\z@
    \fi
    \ifdim\dimen@=\p@
      \def\x{1}%
    \else
      \ifdim\dimen@=\z@
        \def\x{0}%
      \else
        \edef\x{\strip@pt\dimen@}%
        \edef\x{\expandafter\@gobble\x}%
      \fi
    \fi
    \if@filesw
      \immediate\write\@auxout{%
        \string\transparent@use{\x}%
      }%
    \fi
    \edef\x{\endgroup
      \def\noexpand\transparent@current{\x}%
    }%
  \x
  \transparent@set
}

\AtEndDocument{%
  \ifTRP@rerun
    \PackageWarningNoLine{transparent}{%
      Rerun to get transparencies right%
    }%
  \fi
}
\def\transparent@current{/TRP1 gs}
\def\transparent@set{%
  \@ifundefined{TRP\transparent@current}{%
    \global\TRP@reruntrue
  }{%
    \TRP@pdfcolorstack\TRP@colorstack push{%
      \csname TRP\transparent@current\endcsname
    }%
    \aftergroup\transparent@reset
  }%
}
\def\transparent@reset{%
  \TRP@pdfcolorstack\TRP@colorstack pop\relax
}
```

\texttransparent

```
\newcommand*{\texttransparent}[2]{%
  \protect\leavevmode
  \begingroup
    \transparent{#1}%
    #2%
  \endgroup
}

⟨/package⟩
```

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

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 TEX 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 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):

```
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 TEX distribution (teTEX, mikTEX, ...) relies on file name databases, you must refresh these. For example, teTEX users run texhash or mktexlsr.

[1] http://ctan.org/pkg/transparent

3.5 Some details for the interested

Unpacking with LaTeX. The .dtx chooses its action depending on the format:

plain TeX: Run docstrip and extract the files.

LaTeX: Generate the documentation.

If you insist on using LaTeX for docstrip (really, docstrip does not need LaTeX), 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 pdfLaTeX:

```
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 TeX 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.

```
⟨*catalogue⟩
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='transparent'>
  <name>transparent</name>
  <caption>Using a color stack for transparency with pdfTeX.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='2007'/>
  <license type='lppl1.3'/>
  <version number='1.2'/>
  <description>
    Since version 1.40 <xref refid='pdftex'>pdfTeX</xref> supports
    several color stacks. This package shows how a separate colour stack
    can be used for transparency, a property other than colour.
    <p/>
    The package is part of the <xref refid='oberdiek'>oberdiek</xref>
    bundle.
  </description>
  <documentation details='Package documentation'
      href='ctan:/macros/latex/contrib/oberdiek/transparent.pdf'/>
  <ctan file='true' path='/macros/latex/contrib/oberdiek/transparent.dtx'/>
  <miktex location='oberdiek'/>
  <texlive location='oberdiek'/>
  <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
</entry>
⟨/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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