The **pdfcol** package

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Abstract

Since version 1.40 pdfTeX supports color stacks. The driver file `pdftex.def` for package color defines and uses a main color stack since version v0.04b. Package pdfcol is intended for package writers. It defines macros for setting and maintaining new color stacks. It works also with luaTeX.

Contents

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*Please report any issues at https://github.com/ho-tex/pdfcol/issues

1 Documentation

Version 1.40 of pdfTeX adds new primitives `\pdfcolorstackinit` and `\pdfcolorstack`. Now color stacks can be defined and used. A main color stack is maintained by the driver file `pdftex.def` similar to dvips or dvipdfm. However the number of color stacks is not limited to one in pdfTeX. Thus further color problems can now be solved, such as footnotes across pages or text that is set in parallel columns (e.g. packages parallel or parcolumn). Unlike the main color stack, the support by additional color stacks cannot be done in a transparent manner.

This package pdfcol provides an easier interface to additional color stacks without the need to use the low level primitives.

1.1 Requirements

- pdfTeX 1.40 or greater or luaTeX.

- pdfTeXor luaTeX in PDF mode. (I don't know a DVI driver that support several color stacks.)

- `pdftex.def` or `luatex.def` newer than 2007.

Package pdfcol checks the requirements and sets switch `\ifpdfcolAvailable` accordingly.

1.2 Interface

`\ifpdfcolAvailable`

If the requirements of section 1.1 are met the switch `\ifpdfcolAvailable` behaves as `\iftrue`. Otherwise the other interface macros in this section will be disabled with a message. Also the first use of such a macro will print a message. The messages are print to the `.log` file only if pdfTeX and luaTeX not used in PDF mode.

`\pdfcolErrorNoStacks`

The first call of `\pdfcolErrorNoStacks` prints an error message, if color stacks are not available.

`\pdfcolInitStack {⟨name⟩}`

A new color stack is initialized by `\pdfcolInitStack`. The ⟨name⟩ is used for identifying the stack. It usually consists of letters and digits. (The name must survive a `\csname`.)

The intension of the macro is the definition of an additional color stack. Thus the stack is not page bounded like the main color stack. Black (`0 g 0 G`) is used as initial color value. And colors are written with modifier `direct` that means without setting the current transfer matrix and changing the current point (see documentation of pdfTeX for `\pdfliteral direct{...}`).

`\pdfcolIfStackExists {⟨name⟩} {⟨then⟩} {⟨else⟩}`

Macro `\pdfcolIfStackExists` checks whether color stack ⟨name⟩ exists. In case of success argument ⟨then⟩ is executed and ⟨else⟩ otherwise.

$\boxed{\texttt{\textbackslash pdfcolSwitchStack \{}\langle name\rangle\texttt{\}}}$

Macro `\pdfcolSwitchStack` switches the color stack. The color macros of package color (or xcolor) now uses the new color stack with name ⟨*name*⟩.

$\boxed{\texttt{\textbackslash pdfcolSetCurrentColor}}$

Macro `\pdfcolSetCurrentColor` replaces the topmost entry of the stack by the current color (`\current@color`).

$\boxed{\texttt{\textbackslash pdfcolSetCurrent \{}\langle name\rangle\texttt{\}}}$

Macro `\pdfcolSetCurrent` sets the color that is read in the top-most entry of color stack ⟨*name*⟩. If ⟨*name*⟩ is empty, the default color stack is used.

2 Implementation

1 ⟨∗package⟩

2.1 Reload check and package identification

Reload check, especially if the package is not used with LaTeX.

```
 2 \begingroup\catcode61\catcode48\catcode32=10\relax%
 3   \catcode13=5 % ^^M
 4   \endlinechar=13 %
 5   \catcode35=6 % #
 6   \catcode39=12 % '
 7   \catcode44=12 % ,
 8   \catcode45=12 % -
 9   \catcode46=12 % .
10   \catcode58=12 % :
11   \catcode64=11 % @
12   \catcode123=1 % {
13   \catcode125=2 % }
14   \expandafter\let\expandafter\x\csname ver@pdfcol.sty\endcsname
15   \ifx\x\relax % plain-TeX, first loading
16   \else
17     \def\empty{}%
18     \ifx\x\empty % LaTeX, first loading,
19       % variable is initialized, but \ProvidesPackage not yet seen
20     \else
21       \expandafter\ifx\csname PackageInfo\endcsname\relax
22         \def\x#1#2{%
23           \immediate\write-1{Package #1 Info: #2.}%
24         }%
25       \else
26         \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27       \fi
28       \x{pdfcol}{The package is already loaded}%
29       \aftergroup\endinput
30     \fi
31   \fi
32 \endgroup%
```

Package identification:

```
33 \begingroup\catcode61\catcode48\catcode32=10\relax%
34   \catcode13=5 % ^^M
35   \endlinechar=13 %
36   \catcode35=6 % #
37   \catcode39=12 % '
38   \catcode40=12 % (
```

```
39  \catcode41=12 % )
40  \catcode44=12 % ,
41  \catcode45=12 % -
42  \catcode46=12 % .
43  \catcode47=12 % /
44  \catcode58=12 % :
45  \catcode64=11 % @
46  \catcode91=12 % [
47  \catcode93=12 % ]
48  \catcode123=1 % {
49  \catcode125=2 % }
50  \expandafter\ifx\csname ProvidesPackage\endcsname\relax
51    \def\x#1#2#3[#4]{\endgroup
52      \immediate\write-1{Package: #3 #4}%
53      \xdef#1{#4}%
54    }%
55  \else
56    \def\x#1#2[#3]{\endgroup
57      #2[{#3}]%
58      \ifx#1\@undefined
59        \xdef#1{#3}%
60      \fi
61      \ifx#1\relax
62        \xdef#1{#3}%
63      \fi
64    }%
65  \fi
66 \expandafter\x\csname ver@pdfcol.sty\endcsname
67 \ProvidesPackage{pdfcol}%
68   [2022-09-21 v1.7 Handle new color stacks for pdfTeX (HO)]%
```

2.2 Catcodes

```
69 \begingroup\catcode61\catcode48\catcode32=10\relax%
70   \catcode13=5 % ^^M
71   \endlinechar=13 %
72   \catcode123=1 % {
73   \catcode125=2 % }
74   \catcode64=11 % @
75   \def\x{\endgroup
76     \expandafter\edef\csname PDFCOL@AtEnd\endcsname{%
77       \endlinechar=\the\endlinechar\relax
78       \catcode13=\the\catcode13\relax
79       \catcode32=\the\catcode32\relax
80       \catcode35=\the\catcode35\relax
81       \catcode61=\the\catcode61\relax
82       \catcode64=\the\catcode64\relax
83       \catcode123=\the\catcode123\relax
84       \catcode125=\the\catcode125\relax
85     }%
86   }%
87 \x\catcode61\catcode48\catcode32=10\relax%
88 \catcode13=5 % ^^M
89 \endlinechar=13 %
90 \catcode35=6 % #
91 \catcode64=11 % @
92 \catcode123=1 % {
93 \catcode125=2 % }
94 \def\TMP@EnsureCode#1#2{%
95   \edef\PDFCOL@AtEnd{%
96     \PDFCOL@AtEnd
97     \catcode#1=\the\catcode#1\relax
```

```
98    }%
99    \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{39}{12}%  '
102 \TMP@EnsureCode{40}{12}%  (
103 \TMP@EnsureCode{41}{12}%  )
104 \TMP@EnsureCode{43}{12}%  +
105 \TMP@EnsureCode{44}{12}%  ,
106 \TMP@EnsureCode{46}{12}%  .
107 \TMP@EnsureCode{47}{12}%  /
108 \TMP@EnsureCode{91}{12}%  [
109 \TMP@EnsureCode{93}{12}%  ]
110 \TMP@EnsureCode{96}{12}%  `
111 \edef\PDFCOL@AtEnd{\PDFCOL@AtEnd\noexpand\endinput}
```

2.3   Check requirements

\PDFCOL@RequirePackage

```
112 \ifcsname RequirePackage\endcsname
113   \def\PDFCOL@RequirePackage#1[#2]{%
114     \RequirePackage{#1}[{#2}]%
115   }%
116 \else
117   \def\PDFCOL@RequirePackage#1[#2]{\input #1.sty\relax}%
118 \fi
```

   LuaTeX Compatability

```
119 \ifx\pdfextension\@undefined\else
120   \def\pdfcolorstackinit {\pdffeedback colorstackinit}
121   \protected\def\pdfcolorstack      {\pdfextension colorstack}
122 \fi
```

```
123 \PDFCOL@RequirePackage{ltxcmds}[2010/03/01]
```

ifpdfcolAvailable

```
124 \ltx@newif\ifpdfcolAvailable
125 \pdfcolAvailabletrue
```

2.3.1   Check package **luacolor**

```
126 \ltx@newif\ifPDFCOL@luacolor
127 \ifcsname ver@luacolor.sty\endcsname
128   \PDFCOL@luacolortrue
129 \else
130   \PDFCOL@luacolorfalse
131 \fi
```

2.3.2   Check PDF mode

```
132 \PDFCOL@RequirePackage{infwarerr}[2007/09/09]
133 \PDFCOL@RequirePackage{iftex}[2019/11/07]
134 \ifcase\ifpdf\ifPDFCOL@luacolor 1\fi\else 1\fi0 %
135   \def\PDFCOL@Message{%
136     \@PackageWarningNoLine{pdfcol}%
137   }%
138 \else
139   \pdfcolAvailablefalse
140   \def\PDFCOL@Message{%
141     \@PackageInfoNoLine{pdfcol}%
142   }%
143   \PDFCOL@Message{%
144     Interface disabled because of %
145     \ifPDFCOL@luacolor
146       package `luacolor'%
```

5

```
147     \else
148       missing PDF mode of pdfTeX%
149     \fi
150   }%
151 \fi
```

2.3.3   Check version of pdfTeX

The version check has been removed. We assume a new enough pdfTeX.

2.3.4   Check `pdftex.def`

We no longer check the version but assume that it is new enough.

```
152 \ifpdfcolAvailable
```

Try to load package color if it is not yet loaded (LaTeX case).

```
153     \ifcsname documentclass\endcsname
154       \RequirePackage{color}
155     \fi
156 \fi
157 \let\pdfcolAvailabletrue\relax
158 \let\pdfcolAvailablefalse\relax
```

2.4   Enabled interface macros

```
159 \ifpdfcolAvailable
```

\pdfcolErrorNoStacks

```
160   \let\pdfcolErrorNoStacks\relax
```

\pdfcol@Value

```
161   \expandafter\ifx\csname pdfcol@Value\endcsname\relax
162     \def\pdfcol@Value{0 g 0 G}%
163   \fi
```

\pdfcol@LiteralModifier

```
164   \expandafter\ifx\csname pdfcol@LiteralModifier\endcsname\relax
165     \def\pdfcol@LiteralModifier{direct}%
166   \fi
```

\pdfcolInitStack

```
167   \def\pdfcolInitStack#1{%
168     \expandafter\ifx\csname pdfcol@Stack@#1\endcsname\relax
169       \global\expandafter\chardef\csname pdfcol@Stack@#1\endcsname=%
170         \pdfcolorstackinit\pdfcol@LiteralModifier{\pdfcol@Value}%
171         \relax
172       \@PackageInfo{pdfcol}{%
173         New color stack '#1' = \number\csname pdfcol@Stack@#1\endcsname
174       }%
175     \else
176       \@PackageError{pdfcol}{%
177         Stack '#1' is already defined%
178       }\@ehc
179     \fi
180   }%
```

\pdfcolIfStackExists

```
181   \def\pdfcolIfStackExists#1{%
182     \expandafter\ifx\csname pdfcol@Stack@#1\endcsname\relax
183       \expandafter\@secondoftwo
184     \else
185       \expandafter\@firstoftwo
186     \fi
187   }%
```

\@firstoftwo

```
188  \expandafter\ifx\csname @firstoftwo\endcsname\relax
189    \long\def\@firstoftwo#1#2{#1}%
190  \fi
```

\@secondoftwo

```
191  \expandafter\ifx\csname @secondoftwo\endcsname\relax
192    \long\def\@secondoftwo#1#2{#2}%
193  \fi
```

\pdfcolSwitchStack

```
194  \def\pdfcolSwitchStack#1{%
195    \pdfcolIfStackExists{#1}{%
196      \expandafter\let\expandafter\@pdfcolorstack
197                     \csname pdfcol@Stack@#1\endcsname
198    }{%
199      \pdfcol@ErrorNoStack{#1}%
200    }%
201  }%
```

\pdfcolSetCurrentColor

```
202  \def\pdfcolSetCurrentColor{%
203    \pdfcolorstack\@pdfcolorstack set{\current@color}%
204  }%
```

\pdfcolSetCurrent

```
205  \def\pdfcolSetCurrent#1{%
206    \ifx\\#1\\%
207      \pdfcolorstack\@pdfcolorstack current\relax
208    \else
209      \pdfcolIfStackExists{#1}{%
210        \pdfcolorstack\csname pdfcol@Stack@#1\endcsname current\relax
211      }{%
212        \pdfcol@ErrorNoStack{#1}%
213      }%
214    \fi
215  }%
```

\pdfcol@ErrorNoStack

```
216  \def\pdfcol@ErrorNoStack#1{%
217    \@PackageError{pdfcol}{Stack '#1' does not exists}\@ehc
218  }%
```

2.5 Disabled interface macros

```
219 \else
```

\pdfcolErrorNoStacks

```
220  \def\pdfcolErrorNoStacks{%
221    \@PackageError{pdfcol}{%
222      Color stacks are not available%
223    }{%
224      Update pdfTeX (1.40) and 'pdftex.def' (0.04b) %
225          if necessary.\MessageBreak
226      Ensure that 'pdftex.def' is loaded %
227          (package 'color' or 'xcolor').\MessageBreak
228      Further messages can be found in TeX's %
229          protocol file '\jobname.log'.\MessageBreak
230      \MessageBreak
231      \@ehc
232    }%
233    \global\let\pdfcolErrorNoStacks\relax
234  }%
```

```
235  \def\PDFCOL@Disabled{%
236    \PDFCOL@Message{%
237      pdfTeX's color stacks are not available%
238    }%
239    \global\let\PDFCOL@Disabled\relax
240  }%
```

\pdfcolInitStack

```
241  \def\pdfcolInitStack#1{%
242    \PDFCOL@Disabled
243  }%
```

\pdfcolIfStackExists

```
244  \long\def\pdfcolIfStackExists#1#2#3{#3}%
```

\pdfcolSwitchStack

```
245  \def\pdfcolSwitchStack#1{%
246    \PDFCOL@Disabled
247  }%
```

\pdfcolSetCurrentColor

```
248  \def\pdfcolSetCurrentColor{%
249    \PDFCOL@Disabled
250  }%
```

\pdfcolSetCurrent

```
251  \def\pdfcolSetCurrent#1{%
252    \PDFCOL@Disabled
253  }%
```

```
254 \fi
```

```
255 \PDFCOL@AtEnd%
256 ⟨/package⟩
```

3 Installation

3.1 Download

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

CTAN:macros/latex/contrib/pdfcol/pdfcol.dtx The source file.

CTAN:macros/latex/contrib/pdfcol/pdfcol.pdf Documentation.

3.2 Package installation

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

    tex pdfcol.dtx

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

    pdfcol.sty → tex/generic/pdfcol/pdfcol.sty
    pdfcol.pdf → doc/latex/pdfcol/pdfcol.pdf
    pdfcol.dtx → source/latex/pdfcol/pdfcol.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.

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[1][CTAN:pkg/pdfcol](CTAN:pkg/pdfcol)

3.3 Refresh file name databases

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

3.4 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{pdfcol.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 pdfcol.dtx
makeindex -s gind.ist pdfcol.idx
pdflatex pdfcol.dtx
makeindex -s gind.ist pdfcol.idx
pdflatex pdfcol.dtx
```

4 History

[2007/09/09 v1.0]

- First version.

[2007/12/09 v1.1]

- `\pdfcolSetCurrentColor` added.

[2007/12/12 v1.2]

- Detection for package luacolor added.

[2016/05/16 v1.3]

- Documentation updates.

[2016/05/17 v1.4]

- Use luatex85 package for new luatex compatibility

[2018/11/01 v1.5]

- Remove luatex85 dependency

[2019/12/29 v1.6]

- iftex package.

[2022-09-21 v1.7]

- Improved luatex compatitiblity, removed unneeded version checks.

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; plain numbers refer to the code lines where the entry is used.