

The ifpdf package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2007/09/09 v1.5

Abstract

This package looks for pdfTeX in pdf mode and implements and sets the switch `\ifpdf`. The detection is based on `\pdfoutput` and the package will not change this value. It works with plain or L^AT_EX formats.

Contents

1	Documentation	2
1.1	Introduction	2
1.2	Usage	2
1.3	Specification	3
1.4	Future	3
2	Implementation	3
2.1	Reload check and package identification	3
2.2	Catcodes	4
2.3	Check for previously defined <code>\ifpdf</code>	5
2.4	<code>\ifpdf</code>	5
2.5	Protocol entry	5
3	Test	6
3.1	Catcode checks for loading	6
4	Installation	6
4.1	Download	6
4.2	Bundle installation	7
4.3	Package installation	7
4.4	Refresh file name databases	7
4.5	Some details for the interested	7
5	History	8
	[2001/06/14 v1.0]	8
	[2001/07/14 v1.1]	8
	[2001/09/26 v1.2]	8
	[2005/07/22 v1.3]	8
	[2006/02/20 v1.4]	8
	[2007/09/09 v1.5]	8
6	Index	9

1 Documentation

1.1 Introduction

It is commonly known that Hàn Thê Thành's pdfT_EX generates PDF output directly and many people uses pdfT_EX for this purpose. However the DVI output was never thrown away. In contrary, he new features for typesetting that works in both PDF and DVI mode.

In the meantime many T_EX distributions replace the traditional T_EX binary with pdfT_EX. Then, for example, called as `latex` pdfT_EX works in DVI mode with the L^AT_EX format preloaded, called as `pdflatex` pdfT_EX starts in PDF mode.

Often packages or users want to know, whether the current document is typset by pdfT_EX in PDF mode, because the different modes have different capabilities (color setting, graphics inclusion, ...). For this purpose pdfT_EX's `\pdfoutput` can be asked.

As regulary reader of T_EX newsgroups and mailing lists I could observe many problems with this task. Common errors are:

- pdfT_EX has *two* modes. Using pdfT_EX does not mean that the user always want to have PDF mode. For example, the PostScript support is better in DVI mode in conjunction with a PostScript aware DVI driver (e.g. dvips). Also the additional typesetting features are mode independent and also available in DVI mode.
- L^AT_EX's `\@ifundefined` inherited the side effect from `\csname`. Unknown commands are defined with the meaning of `\relax`. If it is checked, whether `\pdfoutput` is defined, then this should not be forgotten.
- Having `\pdfoutput` does not automatically mean PDF mode. Also the value of `\pdfoutput` must be asked.
- `\pdfoutput` must not be destroyed in some way. Later code and packages are fooled then and will perhaps make wrong decisions. For example they may drop support for PDF mode, because they do not know that pdfT_EX is running at all.

Robin Fairbairns provides an entry for this topic in his excellent FAQ (<http://www.tex.ac.uk/faq>): **Am I using PDFT_EX?**

1.2 Usage

The package `ifpdf` can be used with both plain-T_EX and L^AT_EX:

plain-T_EX: `\input ifpdf.sty`

L^AT_EX 2_ε: `\usepackage{ifpdf}`

```
\ifpdf      The package provides the switch \ifpdf:

\ifpdf
... do things, if pdfTEX is running in pdf mode ...
\else
... other TEX or pdfTEX in dvi mode ...
\fi
```

Users of the package `ifthen` can use the switch as boolean:

```
\boolean{ifpdf}
```

The package can also be used to set global documentclass options:

```

\RequirePackage{ifpdf}
\ifpdf
\documentclass[pdftex,...]{...}
\else
\documentclass[...]{...}
\fi

```

1.3 Specification

The package have the following properties:

- It asks the setting of `\pdfoutput` for detecting pdfTeX in PDF mode.
- It never changes `\pdfoutput`.
- It can be used with many formats including plain-T_EX and L^AT_EX.

The mode detection implements the following algorithm:

```

if undefined(\pdfoutput)
  \ifpdf := \iffalse % pdfTeX is not running
else
  if \pdfoutput ≤ 0
    \ifpdf := \iffalse % pdfTeX in DVI mode
  else
    \ifpdf := \iftrue % pdfTeX in PDF mode
  fi
fi

```

The function `undefined` checks both cases, undefined command and `\relax`.

1.4 Future

Currently the package can be fooled, by redefining/undefining `\pdfoutput`. Therefore the package will use the `\primitive` feature that is discussed currently on the pdfTeX developer list (2006), if it hits a stable release. Of course the package will then remain usable with older pdfTeX versions as usual.

2 Implementation

```

1 (*package)

```

2.1 Reload check and package identification

Reload check, especially if the package is not used with L^AT_EX.

```

2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \expandafter\let\expandafter\x\csname ver@ifpdf.sty\endcsname
9 \ifcase 0%
10 \ifx\x\relax % plain
11 \else
12 \ifx\x\empty % LaTeX
13 \else
14 1%
15 \fi
16 \fi
17 \else

```

```

18 \expandafter\ifx\csname PackageInfo\endcsname\relax
19 \def\x#1#2{%
20 \immediate\write-1{Package #1 Info: #2.}%
21 }%
22 \else
23 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
24 \fi
25 \x{ifpdf}{The package is already loaded}%
26 \endgroup
27 \expandafter\endinput
28 \fi
29 \endgroup

```

Package identification:

```

30 \begingroup
31 \catcode40 12 % (
32 \catcode41 12 % )
33 \catcode44 12 % ,
34 \catcode45 12 % -
35 \catcode46 12 % .
36 \catcode47 12 % /
37 \catcode58 12 % :
38 \catcode64 11 % @
39 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
40 \def\x#1#2#3[#4]{\endgroup
41 \immediate\write-1{Package: #3 #4}%
42 \xdef#1{#4}%
43 }%
44 \else
45 \def\x#1#2[#3]{\endgroup
46 #2[{#3}]%
47 \ifx#1\relax
48 \xdef#1{#3}%
49 \fi
50 }%
51 \fi
52 \expandafter\x\csname ver@ifpdf.sty\endcsname
53 \ProvidesPackage{ifpdf}%
54 [2007/09/09 v1.5 Provides the ifpdf switch (H0)]

```

2.2 Catcodes

```

55 \expandafter\edef\csname ifpdf@AtEnd\endcsname{%
56 \catcode64 \the\catcode64\relax
57 }
58 \catcode64 11 % @
59 \def\TMP@EnsureCode#1#2{%
60 \edef\ifpdf@AtEnd{%
61 \ifpdf@AtEnd
62 \catcode#1 \the\catcode#1\relax
63 }%
64 \catcode#1 #2\relax
65 }
66 \TMP@EnsureCode{10}{12}% ^^J
67 \TMP@EnsureCode{39}{12}% '
68 \TMP@EnsureCode{44}{12}% ,
69 \TMP@EnsureCode{45}{12}% -
70 \TMP@EnsureCode{46}{12}% .
71 \TMP@EnsureCode{47}{12}% /
72 \TMP@EnsureCode{58}{12}% :
73 \TMP@EnsureCode{60}{12}% <
74 \TMP@EnsureCode{61}{12}% =
75 \TMP@EnsureCode{94}{7}% ^

```

```
76 \TMP@EnsureCode{96}{12}% ‘
```

2.3 Check for previously defined \ifpdf

```
77 \begingroup
78   \expandafter\ifx\csname ifpdf\endcsname\relax
79   \else
80     \edef\i/{\expandafter\string\csname ifpdf\endcsname}%
81     \expandafter\ifx\csname PackageError\endcsname\relax
82       \def\x#1#2{%
83         \edef\z{#2}%
84         \expandafter\errhelp\expandafter{\z}%
85         \errmessage{Package ifpdf Error: #1}%
86       }%
87       \def\y{^^J}%
88       \newlinechar=10 %
89     \else
90       \def\x#1#2{%
91         \PackageError{ifpdf}{#1}{#2}%
92       }%
93       \def\y{\MessageBreak}%
94     \fi
95     \x{Name clash, \i/ is already defined}{%
96       Incompatible versions of \i/ can cause problems,\y
97       therefore package loading is aborted.%
98     }%
99   \endgroup
100   \ifpdf@AtEnd
101   \expandafter\endinput
102 \fi
103 \endgroup
```

2.4 \ifpdf

`\ifpdf` Create and set the switch. `\newif` initializes the switch with `\iffalse`.

```
104 \newif\ifpdf
```

Test `\pdfoutput`. Is it defined and different from `\relax`? Someone could have used L^AT_EX internal `\@ifundefined`, or something else involving. Notice, `\csname` is executed inside a group for the test to cancel the side effect of `\csname`.

```
105 \begingroup\expandafter\expandafter\expandafter\endgroup
106 \expandafter\ifx\csname pdfoutput\endcsname\relax
107 \else
108   \ifnum\pdfoutput<1 %
109     \pdfoutput=0 or negative, so not generating pdf.
110   \else
111     \pdftrue
112   \fi
113 \fi
```

2.5 Protocol entry

Log comment:

```
113 \begingroup
114   \expandafter\ifx\csname PackageInfo\endcsname\relax
115     \def\x#1#2{%
116       \immediate\write-1{Package #1 Info: #2.}%
117     }%
118   \else
119     \let\x\PackageInfo
120     \expandafter\let\csname on@line\endcsname\empty
121   \fi
122   \x{ifpdf}{pdfTeX in pdf mode \ifpdf\else not \fi detected}%
123 \endgroup
```

```

123 \endgroup
124 \ifpdf@AtEnd
125 \end{package}

```

3 Test

3.1 Catcode checks for loading

```

126 \test1
127 \catcode'\@=11 %
128 \def\RestoreCatcodes{}
129 \count@=0 %
130 \loop
131   \edef\RestoreCatcodes{%
132     \RestoreCatcodes
133     \catcode\the\count@=\the\catcode\count@\relax
134   }%
135 \ifnum\count@<255 %
136   \advance\count@\@ne
137 \repeat
138
139 \def\RangeCatcodeInvalid#1#2{%
140   \count@=#1\relax
141   \loop
142     \catcode\count@=15 %
143     \ifnum\count@<#2\relax
144       \advance\count@\@ne
145     \repeat
146 }
147 \def\Test{%
148   \RangeCatcodeInvalid{0}{47}%
149   \RangeCatcodeInvalid{58}{64}%
150   \RangeCatcodeInvalid{91}{96}%
151   \RangeCatcodeInvalid{123}{255}%
152   \catcode'\@=12 %
153   \catcode'\@=0 %
154   \catcode'\{=1 %
155   \catcode'\}=2 %
156   \catcode'\#=6 %
157   \catcode'\[=12 %
158   \catcode'\]=12 %
159   \catcode'\%=14 %
160   \catcode'\_ =10 %
161   \catcode13=5 %
162   \input ifpdf.sty\relax
163   \RestoreCatcodes
164 }
165 \Test
166 \csname @@end\endcsname
167 \end
168 \test1

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/ifpdf.dtx](http://ctan.org/macros/latex/contrib/oberdiek/ifpdf.dtx) The source file.

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

[CTAN:macros/latex/contrib/oberdiek/ifpdf.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:macros/latex/contrib/oberdiek/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.

4.2 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/
```

4.3 Package installation

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

```
tex ifpdf.dtx
```

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

<code>ifpdf.sty</code>	\rightarrow <code>tex/generic/oberdiek/ifpdf.sty</code>
<code>ifpdf.pdf</code>	\rightarrow <code>doc/latex/oberdiek/ifpdf.pdf</code>
<code>test/ifpdf-test1.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/ifpdf-test1.tex</code>
<code>ifpdf.dtx</code>	\rightarrow <code>source/latex/oberdiek/ifpdf.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`.

4.4 Refresh file name databases

If your \TeX distribution (`te \TeX` , `mik \TeX` , ...) relies on file name databases, you must refresh these. For example, `te \TeX` users run `texhash` or `mktextlsr`.

4.5 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 ifpdf.pdf unpack_files output .
```

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{ifpdf.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 ifpdf.dtx
makeindex -s gind.ist ifpdf.idx
pdflatex ifpdf.dtx
makeindex -s gind.ist ifpdf.idx
pdflatex ifpdf.dtx
```

5 History

[2001/06/14 v1.0]

- First public version.

[2001/07/14 v1.1]

- Documentation addition: global options

[2001/09/26 v1.2]

- Documentation typo corrected.
- Version number corrected.
- Line number in log entry removed.

[2005/07/22 v1.3]

- Some source code comments from Robin Fairbairns added.
- Bug fix for negative values of `\pdfoutput` (Oleg Katsitadze)
- LPPL 1.3
- Installation section with locations added.

[2006/02/20 v1.4]

- DTX framework.
- More robust check in case of undefined `\pdfoutput`.
- Extended documentation.

[2007/09/09 v1.5]

- Catcode settings added.

6 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	
\#	156
\%	159
\@	127, 152
\@ne	136, 144
\[157
\[153
\{	154
\}	155
\]	158
_	160
A	
\advance	136, 144
C	
\catcode	3, 4, 5, 6, 7, 31, 32, 33, 34, 35, 36, 37, 38, 56, 58, 62, 64, 127, 133, 142, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161
\count@	129, 133, 135, 136, 140, 142, 143, 144
\csname	8, 18, 39, 52, 55, 78, 80, 81, 106, 114, 120, 166
E	
\empty	12, 120
\end	167
\endcsname	8, 18, 39, 52, 55, 78, 80, 81, 106, 114, 120, 166
\endinput	27, 101
\errhelp	84
\errmessage	85
I	
\i	80, 95, 96
\ifcase	9
\ifnum	108, 135, 143
\ifpdf	2, <u>104</u> , 122
\ifpdf@AtEnd	60, 61, 100, 124
\ifx	10, 12, 18, 39, 47, 78, 81, 106, 114
\immediate	20, 41, 116
\input	162
L	
\loop	130, 141
M	
\MessageBreak	93
N	
\newif	104
\newlinechar	88
P	
\PackageError	91
\PackageInfo	23, 119
\pdfoutput	108
\pdftrue	110
\ProvidesPackage	53
R	
\RangeCatcodeInvalid	139, 148, 149, 150, 151
\repeat	137, 145
\RestoreCatcodes	128, 131, 132, 163
T	
\Test	147, 165
\the	56, 62, 133
\TMP@EnsureCode	59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76
W	
\write	20, 41, 116
X	
\x	8, 10, 12, 19, 23, 25, 40, 45, 52, 82, 90, 95, 115, 119, 122
Y	
\y	87, 93, 96
Z	
\z	83, 84