

The ifpdf package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2006/02/20 v1.4

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 LaTeX formats.

Contents

1	Documentation	1
1.1	Introduction	1
1.2	Usage	2
1.3	Specification	2
1.4	Future	3
2	Implementation	3
2.1	Reload check and package identification	3
2.2	Check for previously defined <code>\ifpdf</code>	4
2.3	<code>\ifpdf</code>	4
2.4	Protocol entry	4
3	Installation	5
3.1	Some details for the interested	5
4	History	6
	[2001/06/14 v1.0]	6
	[2001/07/14 v1.1]	6
	[2001/09/26 v1.2]	6
	[2005/07/22 v1.3]	6
	[2006/02/20 v1.4]	6
5	Index	6

1 Documentation

1.1 Introduction

It is commonly known that Hàn Thê Thành's pdfTeX generates PDF output directly and many people uses pdfTeX 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 `LATEX` format preloaded, called as `pdflatex` pdfT_EX starts in PDF mode.

Often packages or users want to know, whether the current document is typeset by pdfT_EX in PDF mode, because the different modes have different capabilities

(color setting, graphics inclusion, ...). For this purpose pdfTeX's `\pdfoutput` can be asked.

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

- pdfTeX has *two* modes. Using pdfTeX 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 pdfTeX 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 PDFTeX?*

1.2 Usage

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

plain-TeX: `\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-TeX 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   \expandafter\let\expandafter\x\csname ver@ifpdf.sty\endcsname
4   \ifcase 0%
5     \ifx\x\relax % plain
6   \else
7     \ifx\x\empty % LaTeX
8   \else
9     1%
10    \fi
11  \fi
12 \else
13   \expandafter\ifx\csname PackageInfo\endcsname\relax
14     \def\x#1#2{%
15       \immediate\write-1{Package #1 Info: #2.}%
16     }%
17   \else
18     \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
19   \fi
20   \x{ifpdf}{The package is already loaded}%
21 \endgroup
22 \expandafter\endinput
23 \fi
24 \endgroup

```

Package identification:

```

25 \begingroup
26   \expandafter\ifx\csname ProvidesPackage\endcsname\relax
27     \def\x#1#2#3[#4]{\endgroup
28       \immediate\write-1{Package: #3 #4}%
29       \xdef#1{#4}%
30     }%
31   \else

```

```

32 \def\x#1#2[#3]{\endgroup
33   #2[#3]}%
34 \ifx#1\relax
35   \xdef#1{#3}%
36 \fi
37 }%
38 \fi
39 \expandafter\x\csname ver@ifpdf.sty\endcsname
40 \ProvidesPackage{ifpdf}%
41 [2006/02/20 v1.4 Provides the ifpdf switch (H0)]

```

2.2 Check for previously defined \ifpdf

```

42 \begingroup
43 \expandafter\ifx\csname ifpdf\endcsname\relax
44 \else
45 \edef\i/{\expandafter\string\csname ifpdf\endcsname}%
46 \expandafter\ifx\csname PackageError\endcsname\relax
47 \def\x#1#2{%
48 \edef\z{#2}%
49 \expandafter\errhelp\expandafter{\z}%
50 \errmessage{Package ifpdf Error: #1}%
51 }%
52 \def\y{^^J}%
53 \newlinechar=10
54 \else
55 \def\x#1#2{%
56 \PackageError{ifpdf}{#1}{#2}%
57 }%
58 \def\y{\MessageBreak}%
59 \fi
60 \x{Name clash, \i/ is already defined}{%
61 Incompatible versions of \i/ can cause problems,\y
62 therefore package loading is aborted.%
63 }%
64 \endgroup
65 \expandafter\endinput
66 \fi
67 \endgroup

```

2.3 \ifpdf

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

```
68 \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`.

```

69 \begingroup\expandafter\expandafter\expandafter\endgroup
70 \expandafter\ifx\csname pdfoutput\endcsname\relax
71 \else
72 \ifnum\pdfoutput<1 %
73 \pdfoutput=0 or negative, so not generating pdf.
74 \else
75 \pdftrue
76 \fi

```

2.4 Protocol entry

Log comment:

```
77 \begingroup
```

```

78 \expandafter\ifx\csname PackageInfo\endcsname\relax
79 \def\x#1#2{%
80 \immediate\write-1{Package #1 Info: #2.}%
81 }%
82 \else
83 \let\x\PackageInfo
84 \expandafter\let\csname on@line\endcsname\empty
85 \fi
86 \x{ifpdf}{pdfTeX in pdf mode \ifpdf\else not \fi detected}%
87 \endgroup
88 \</package>

```

3 Installation

CTAN. This package is available on CTAN¹:

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

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

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):

```

ifpdf.sty → tex/generic/oberdiek/ifpdf.sty
ifpdf.pdf → doc/latex/oberdiek/ifpdf.pdf
ifpdf.dtx → source/latex/oberdiek/ifpdf.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`.

Refresh file databases. If your TeX distribution (teTeX, mikTeX, ...) rely on file databases, you must refresh these. For example, teTeX users run `texhash` or `mktexlsr`.

3.1 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-TeX: 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 intension:

```
latex \install=y\input{ifpdf.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

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

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
```

4 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.

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; numbers in *roman* refer to the code lines where the entry is used.

C	E
	<code>\empty</code> <i>7, 84</i>
	<code>\endcsname</code> <i>3,</i>
<code>\csname</code> <i>3, 13, 26, 39, 43, 45, 46, 70, 78, 84</i>	<i>13, 26, 39, 43, 45, 46, 70, 78, 84</i>

<code>\endinput</code>	22, 65		
<code>\errhelp</code>	49		
<code>\errmessage</code>	50		
		I	
<code>\i</code>	45, 60, 61		
<code>\ifcase</code>	4		
<code>\ifnum</code>	72		
<code>\ifpdf</code>	2, 68, 86		
<code>\ifx</code>	5, 7, 13, 26, 34, 43, 46, 70, 78		
<code>\immediate</code>	15, 28, 80		
		M	
<code>\MessageBreak</code>	58		
		N	
<code>\newif</code>	68		
<code>\newlinechar</code>	53		
		P	
<code>\PackageError</code>	56		
<code>\PackageInfo</code>	18, 83		
<code>\pdfoutput</code>	72		
<code>\pdftrue</code>	74		
<code>\ProvidesPackage</code>	40		
		W	
<code>\write</code>	15, 28, 80		
		X	
<code>\x</code>	3, 5, 7, 14, 18, 20, 27, 32, 39, 47, 55, 60, 79, 83, 86		
		Y	
<code>\y</code>	52, 58, 61		
		Z	
<code>\z</code>	48, 49		