The **ifluatex** package

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Abstract

This package looks for LuaTEX regardless of its mode and provides the switch \ifluatex. Also it makes \luatexversion available if it is not present. It works with plain TEX or LATEX.

Contents

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

1 Documentation

The package ifluatex can be used with both plain TeX and LaTeX:

plain TeX: \input ifluatex.sty

LaTeX 2ε: \usepackage{ifluatex}

\ifluatex   The package provides the switch \ifluatex:

> \ifluatex
> LuaTeX is running
> \else
> Without LuaTeX
> \fi

Since version 0.39 LuaTeX only provides \directlua at startup time. Also the syntax of \directlua changed in version 0.36. Thus the user might want to check the LuaTeX version. Therefore this package also makes \luatexversion and \luatexrevision available, if it is not yet done.

If you want to detect the mode (DVI or PDF), then use package ifpdf. LuaTeX has inherited \pdfoutput from pdfTeX.

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@ifluatex.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{ifluatex}{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@ifluatex.sty\endcsname
67 \ProvidesPackage{ifluatex}%
68   [2016/05/16 v1.4 Provides the ifluatex switch (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 ifluatex@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\ifluatex@AtEnd{%
96     \ifluatex@AtEnd
97     \catcode#1=\the\catcode#1\relax
98   }%
99   \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{10}{12}% ^^J
102 \TMP@EnsureCode{39}{12}% '
103 \TMP@EnsureCode{40}{12}% (
104 \TMP@EnsureCode{41}{12}% )
105 \TMP@EnsureCode{44}{12}% ,
106 \TMP@EnsureCode{45}{12}% -
107 \TMP@EnsureCode{46}{12}% .
108 \TMP@EnsureCode{47}{12}% /
109 \TMP@EnsureCode{58}{12}% :
110 \TMP@EnsureCode{60}{12}% <
111 \TMP@EnsureCode{94}{7}% ^
112 \TMP@EnsureCode{96}{12}% `
113 \edef\ifluatex@AtEnd{\ifluatex@AtEnd\noexpand\endinput}
```

2.3   Macro for error messages

\ifluatex@Error

```
114 \begingroup\expandafter\expandafter\expandafter\endgroup
115 \expandafter\ifx\csname PackageError\endcsname\relax
116   \def\ifluatex@Error#1#2{%
117     \begingroup
118       \newlinechar=10 %
119       \def\MessageBreak{^^J}%
120       \edef\x{\errhelp{#2}}%
121       \x
122       \errmessage{Package ifluatex Error: #1}%
123     \endgroup
124   }%
125 \else
126   \def\ifluatex@Error{%
127     \PackageError{ifluatex}%
128   }%
129 \fi
```

2.4   Check for previously defined \ifluatex

```
130 \begingroup
131   \expandafter\ifx\csname ifluatex\endcsname\relax
132   \else
133     \edef\i/{\expandafter\string\csname ifluatex\endcsname}%
134     \ifluatex@Error{Name clash, \i/ is already defined}{%
135       Incompatible versions of \i/ can cause problems,\MessageBreak
136       therefore package loading is aborted.%
137     }%
138     \endgroup
139     \expandafter\ifluatex@AtEnd
140   \fi%
141 \endgroup
```

2.5   \ifluatex

\ifluatex

```
142 \let\ifluatex\iffalse
```

4

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

```
143 \begingroup\expandafter\expandafter\expandafter\endgroup
144 \expandafter\ifx\csname luatexversion\endcsname\relax
145 \else
146   \expandafter\let\csname ifluatex\expandafter\endcsname
147               \csname iftrue\endcsname
148 \fi
```

2.6 LuaTeX v0.39

Starting with version 0.39 LuaTeX wants to provide `\directlua` as only primitive at startup time beyond vanilla TeX's primitives. Then `\directlua` exists, but `\luatexversion` cannot be found. Unhappily also the syntax of `\directlua` changed in v0.36, thus the user would want to check `\luatexversion`. Therefore we make `\luatexversion` available using LuaTeX's Lua function `tex.enableprimitives`.

```
149 \ifluatex
150 \else
151   \begingroup\expandafter\expandafter\expandafter\endgroup
152   \expandafter\ifx\csname directlua\endcsname\relax
153   \else
154     \expandafter\let\csname ifluatex\expandafter\endcsname
155                 \csname iftrue\endcsname
156     \begingroup
157       \newlinechar=10 %
158       \endlinechar=\newlinechar%
159       \ifnum0%
160         \directlua{%
161           if tex.enableprimitives then
162             tex.enableprimitives('ifluatex', {'luatexversion'})
163             tex.print('1')
164           end
165         }%
166         \ifx\ifluatexluatexversion\@undefined\else 1\fi %
167         =11 %
168       \global\let\luatexversion\ifluatexluatexversion%
169       \else%
170         \ifluatex@Error{%
171           Missing \string\luatexversion%
172         }{%
173           Update LuaTeX.%
174         }%
175       \fi%
176     \endgroup%
177   \fi
178 \fi

179 \ifluatex
180   \begingroup\expandafter\expandafter\expandafter\endgroup
181   \expandafter\ifx\csname luatexrevision\endcsname\relax
182     \ifnum\luatexversion<36 %
183     \else
184       \begingroup
185         \ifx\luatexrevision\relax
186           \let\luatexrevision\@undefined
187         \fi
188         \newlinechar=10 %
189         \endlinechar=\newlinechar%
190         \ifcase0%
191           \directlua{%
192             if tex.enableprimitives then
```

```
193          tex.enableprimitives('ifluatex', {'luatexrevision'})
194        else
195          tex.print('1')
196        end
197      }%
198      \ifx\ifluatexluatexrevision\@undefined 1\fi%
199      \relax%
200      \global\let\luatexrevision\ifluatexluatexrevision%
201    \fi%
202    \endgroup%
203  \fi
204  \begingroup\expandafter\expandafter\expandafter\endgroup
205  \expandafter\ifx\csname luatexrevision\endcsname\relax
206    \ifluatex@Error{%
207      Missing \string\luatexrevision%
208    }{%
209      Update LuaTeX.%
210    }%
211  \fi
212  \fi
213 \fi
```

2.7 Protocol entry

Log comment:

```
214 \begingroup
215 \expandafter\ifx\csname PackageInfo\endcsname\relax
216   \def\x#1#2{%
217     \immediate\write-1{Package #1 Info: #2.}%
218   }%
219 \else
220   \let\x\PackageInfo
221   \expandafter\let\csname on@line\endcsname\empty
222 \fi
223 \x{ifluatex}{LuaTeX \ifluatex\else not \fi detected}%
224 \endgroup

225 \ifluatex@AtEnd%

226 ⟨/package⟩
```

3 Test

3.1 Catcode checks for loading

```
227 ⟨*test1⟩

228 \catcode`\{=1 %
229 \catcode`\}=2 %
230 \catcode`\#=6 %
231 \catcode`\@=11 %
232 \expandafter\ifx\csname count@\endcsname\relax
233   \countdef\count@=255 %
234 \fi
235 \expandafter\ifx\csname @gobble\endcsname\relax
236   \long\def\@gobble#1{}%
237 \fi
238 \expandafter\ifx\csname @firstofone\endcsname\relax
239   \long\def\@firstofone#1{#1}%
240 \fi
241 \expandafter\ifx\csname loop\endcsname\relax
242   \expandafter\@firstofone
243 \else
```

```
244  \expandafter\@gobble
245 \fi
246 {%
247  \def\loop#1\repeat{%
248    \def\body{#1}%
249    \iterate
250  }%
251  \def\iterate{%
252    \body
253      \let\next\iterate
254    \else
255      \let\next\relax
256    \fi
257    \next
258  }%
259  \let\repeat=\fi
260 }%
261 \def\RestoreCatcodes{}
262 \count@=0 %
263 \loop
264  \edef\RestoreCatcodes{%
265    \RestoreCatcodes
266    \catcode\the\count@=\the\catcode\count@\relax
267  }%
268 \ifnum\count@<255 %
269  \advance\count@ 1 %
270 \repeat
271
272 \def\RangeCatcodeInvalid#1#2{%
273  \count@=#1\relax
274  \loop
275    \catcode\count@=15 %
276  \ifnum\count@<#2\relax
277    \advance\count@ 1 %
278  \repeat
279 }
280 \def\RangeCatcodeCheck#1#2#3{%
281  \count@=#1\relax
282  \loop
283    \ifnum#3=\catcode\count@
284    \else
285      \errmessage{%
286        Character \the\count@\space
287        with wrong catcode \the\catcode\count@\space
288        instead of \number#3%
289      }%
290    \fi
291  \ifnum\count@<#2\relax
292    \advance\count@ 1 %
293  \repeat
294 }
295 \def\space{ }
296 \expandafter\ifx\csname LoadCommand\endcsname\relax
297  \def\LoadCommand{\input ifluatex.sty\relax}%
298 \fi
299 \def\Test{%
300  \RangeCatcodeInvalid{0}{47}%
301  \RangeCatcodeInvalid{58}{64}%
302  \RangeCatcodeInvalid{91}{96}%
303  \RangeCatcodeInvalid{123}{255}%
304  \catcode`\@=12 %
305  \catcode`\\=0 %
```

```
306  \catcode`\%=14 %
307  \LoadCommand
308  \RangeCatcodeCheck{0}{36}{15}%
309  \RangeCatcodeCheck{37}{37}{14}%
310  \RangeCatcodeCheck{38}{47}{15}%
311  \RangeCatcodeCheck{48}{57}{12}%
312  \RangeCatcodeCheck{58}{63}{15}%
313  \RangeCatcodeCheck{64}{64}{12}%
314  \RangeCatcodeCheck{65}{90}{11}%
315  \RangeCatcodeCheck{91}{91}{15}%
316  \RangeCatcodeCheck{92}{92}{0}%
317  \RangeCatcodeCheck{93}{96}{15}%
318  \RangeCatcodeCheck{97}{122}{11}%
319  \RangeCatcodeCheck{123}{255}{15}%
320  \RestoreCatcodes
321  }
322  \Test
323  \csname @@end\endcsname
324  \end
```

325 ⟨/test1⟩

4   Reload check for plain

326 ⟨*test-reload1⟩
```
327  \input ifluatex.sty\relax
328  \input ifluatex.sty\relax
329  \csname @@end\endcsname\end
```
330 ⟨/test-reload1⟩

331 ⟨*test-reload2⟩
```
332  \input miniltx.tex\relax
333  \input ifluatex.sty\relax
334  \input ifluatex.sty\relax
335  \csname @@end\endcsname\end
```
336 ⟨/test-reload2⟩

5   Installation

5.1   Download

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

CTAN:macros/latex/contrib/oberdiek/ifluatex.dtx The source file.

CTAN:macros/latex/contrib/oberdiek/ifluatex.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.

5.2   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

---

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

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/
```

5.3 Package installation

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

```
tex ifluatex.dtx
```

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

ifluatex.sty	→ tex/generic/oberdiek/ifluatex.sty
ifluatex.pdf	→ doc/latex/oberdiek/ifluatex.pdf
test/ifluatex-test1.tex	→ doc/latex/oberdiek/test/ifluatex-test1.tex
test/ifluatex-test2.tex	→ doc/latex/oberdiek/test/ifluatex-test2.tex
test/ifluatex-test3.tex	→ doc/latex/oberdiek/test/ifluatex-test3.tex
ifluatex.dtx	→ source/latex/oberdiek/ifluatex.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.

5.4 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.

5.5 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{ifluatex.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 ifluatex.dtx
makeindex -s gind.ist ifluatex.idx
pdflatex ifluatex.dtx
makeindex -s gind.ist ifluatex.idx
pdflatex ifluatex.dtx
```

6 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 **ifluatex.xml**.

```
337 ⟨*catalogue⟩
338 <?xml version='1.0' encoding='us-ascii'?>
339 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
340 <entry datestamp='$Date$' modifier='$Author$' id='ifluatex'>
341   <name>ifluatex</name>
342   <caption>Provides the \ifluatex switch.</caption>
343   <authorref id='auth:oberdiek'/>
344   <copyright owner='Heiko Oberdiek' year='2007,2009,2010'/>
345   <license type='lppl1.3'/>
346   <version number='1.4'/>
347   <description>
348     The package looks for  LuaTeX regardless of its mode and provides
349     the switch <tt>\ifluatex</tt>; it works with Plain TeX or LaTeX.
350     <p/>
351     The package is part of the <xref refid='oberdiek'>oberdiek</xref>
352     bundle.
353   </description>
354   <documentation details='Package documentation'
355      href='ctan:/macros/latex/contrib/oberdiek/ifluatex.pdf'/>
356   <ctan file='true' path='/macros/latex/contrib/oberdiek/ifluatex.dtx'/>
357   <miktex location='oberdiek'/>
358   <texlive location='ifluatex'/>
359   <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
360 </entry>
361 ⟨/catalogue⟩
```

7 History

[2007/12/12 v1.0]

- First public version.

[2009/04/10 v1.1]

- Test adopted for LuaTeX 0.39.

- Makes `\luatexversion` available.

[2009/04/17 v1.2]

- Fixes (Manuel Pégourié-Gonnard).

- `\luatextrue` and `\luatexfalse` are no longer defined.

- Makes `\luatexrevision` available, too.

[2010/03/01 v1.3]

- Line ends fixed in case `\endlinechar` = `\newlinechar`.

[2016/05/16 v1.4]

- Documentation updates.

8 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.