

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 L^ATeX.

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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 2_ϵ : `\usepackage{ifluatex}`

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

```

\ifluatex
  Lua $\text{\TeX}$  is running
\else
  Without Lua $\text{\TeX}$ 
\fi

```

Since version 0.39 Lua \TeX only provides `\directlua` at startup time. Also the syntax of `\directlua` changed in version 0.36. Thus the user might want to check the Lua \TeX 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`. Lua \TeX has inherited `\pdfoutput` from `pdf \TeX` .

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- $\text{\TeX}$ , 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 (H0)]%

```

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

```

Test `\luatexversion`. 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`.

```

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 LuaT_EX v0.39

Starting with version 0.39 LuaT_EX wants to provide `\directlua` as only primitive at startup time beyond vanilla T_EX'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 LuaT_EX'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 CTAN¹:

[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 T_EX 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
```

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 T_EX:

```
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`.

¹<http://ctan.org/pkg/ifluatex>

5.4 Refresh file name databases

If your T_EX distribution (teT_EX, mikT_EX, ...) relies on file name databases, you must refresh these. For example, teT_EX users run `texhash` or `mktextlsr`.

5.5 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 ifluatex.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{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 pdfL^AT_EX:

```
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 [T_EX 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='lpl1.3'>
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

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