The ifluatex package

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Abstract
This package looks for Lua\TeX\ 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. 

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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: \usepackage{ifluatex}

\ifluatex

The package provides the switch \ifluatex:

\ifluatex

Lua\TeX{} is running
\else
Without Lua\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 ifpdflatex. Lua\TeX{}
has inherited \pdfoutput from pdflatex.

2 Implementation

1 (*package)

2.1 Reload check and package identification

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

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 \% \^M
\endlinechar=13 \%
\catcode35=6 \% #
\catcode39=12 \% '
\catcode44=12 \% ,
\catcode45=12 \% -
\catcode46=12 \% .
\catcode58=12 \% :
\catcode64=11 \% @
\catcode123=1 \% {
\catcode125=2 \% }
\expandafter\let\expandafter\x\csname ver@ifluatex.sty\endcsname
\ifx\x\relax \% plain-\TeX, first loading
\else
\def\empty{}\%
\ifx\x\empty \% \LaTeX, first loading, 
\% \variable is initialized, but \ProvidesPackage not yet seen
\else
\expandafter\ifx\csname PackageInfo\endcsname\relax
\def\x#1#2{\%
\immediate\write-1{Package #1 Info: #2.}%
}\%
\else
\expandafter\ifx\csname PackageInfo\endcsname\relax
\def\x#1#2{\%
\immediate\write-1{Package #1 Info: #2, stopped}%
}\%
\else
\fi
\fi
\fi
\aftergroup\endinput
\endgroup%
\end{verbatim}

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2.2 Catcodes
\catcode64=11 % @
\catcode123=1 % {
\catcode125=2 % }
\def\TMP@EnsureCode#1#2{%
\edef\ifluatex@AtEnd{%
\ifluatex@AtEnd
\catcode#1=\the\catcode#1\relax
}%
\catcode#1=#2\relax%
}
\TMP@EnsureCode{10}{12}% ^^J
\TMP@EnsureCode{39}{12}% '
\TMP@EnsureCode{40}{12}% (,
\TMP@EnsureCode{44}{12}% ,
\TMP@EnsureCode{45}{12}% -,
\TMP@EnsureCode{46}{12}% .
\TMP@EnsureCode{47}{12}% :,
\TMP@EnsureCode{58}{12}% <
\TMP@EnsureCode{94}{7}% ^
\TMP@EnsureCode{96}{12}%`
\edef\ifluatex@AtEnd\noexpand\endinput

2.3 Macro for error messages
\ifluatex@Error
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname PackageError\endcsname\relax
\def\ifluatex@Error#1#2{%
\begingroup
\newlinechar=10 %
\def\MessageBreak{^^J}%
\edef\x{\errhelp{#2}}%
\x
\errmessage{Package ifluatex Error: #1}%
\endgroup
}%
\else
\def\ifluatex@Error{%
\PackageError{ifluatex}%
}%
\fi
\endgroup

2.4 Check for previously defined \ifluatex
\begingroup
\expandafter\ifx\csname ifluatex\endcsname\relax
\else
\edef\i//{\expandafter\string\csname ifluatex\endcsname}%
\ifluatex@Error{Name clash, \i/ is already defined}{%
\MessageBreak
 incompatible versions of \i/ can cause problems,\MessageBreak
 therefore package loading is aborted.}%
}\endgroup
\else
\expandafter\ifluatex@AtEnd
\fi
\endgroup

2.5 \ifluatex
\let\ifluatex\iffalse
\let\\iffalse
Test \texttt{\textbackslash latexversion}. Is it defined and different from \texttt{\textbackslash relax}? Someone could have used \TeX's internal \texttt{\textbackslash atundefined}, or something else involving. Notice, \texttt{\csname} is executed inside a group for the test to cancel the side effect of \texttt{\csname}.

\begin{verbatim}
\begin{group}
  \expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\csname luatexversion\endcsname\relax
      \else
        \expandafter\let\csname ifluatex\expandafter\endcsname\csname iftrue\endcsname
      \fi
  \fi
\end{verbatim}

\texttt{2.6 Lua\TeX\ v0.39}

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

\begin{verbatim}
\ifluatex
\else
  \begingroup
  \expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\csname directlua\endcsname\relax
      \else
        \expandafter\let\csname ifluatex\expandafter\endcsname\csname iftrue\endcsname
      \fi
  \begingroup
    \newlinechar=10 \%
  \endlinechar=\newlinechar\%
  \ifnum0\%
    \directlua{\%
      if tex.enableprimitives then
        tex.enableprimitives('ifluatex', {'luatexversion'})
        tex.print('1')
      \end{verbatim}

\texttt{2.6 Lua\TeX\ v0.39}

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

Log comment:

3 Test

3.1 Catcode checks for loading
\expandafter\@gobble
247 \fi
248 \def\loop\#1\repeat{%
249 \def\body{\#1}%
250 \iterate
251 \def\iterate{%
252 \body
253 \let\next\iterate
254 \else
255 \let\next\relax
256 \fi
257 \next
258 }%  
261 \def\RestoreCatcodes{}
262 \count@=0 %
264 \edef\RestoreCatcodes{
265 \RestoreCatcodes
266 \catcode\the\count@=\the\catcode\count@\relax
267 }%  
268 \ifnum\count@<255 %
269 \advance\count@ 1 %
270 \repeat
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
278 }
291 \count@=#1\relax
292 \loop
293 \ifnum#3=\catcode\count@
295 \errmessage{%
296 Character \the\count@ space
297 with wrong catcode \the\catcode\count@ space
298 instead of \number#3%
299 }%
300 \fi
302 \ifnum\count@<#2\relax
303 \advance\count@ 1 %
304 \repeat
319 \space{ }
4 Reload check for plain

(*test-reload1)
\input ifluatex.sty\relax
\input ifluatex.sty\relax
\csname @@end\endcsname\end
(*test-reload1)

(*test-reload2)
\input miniltx.tex\relax
\input ifluatex.sty\relax
\input ifluatex.sty\relax
\csname @@end\endcsname\end
(*test-reload2)

5 Installation

5.1 Download

Package. This package is available on CTAN¹:


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

¹http://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
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 (\TeX, \miktex, ...) relies on file name databases, you must refresh these. For example, \TeX\ 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 pdf\LaTeX:

```
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 \texttt{caption} and \texttt{description} are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is ifluatex.xml.

\begin{verbatim}
<catalogue>
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='ifluatex'>
  <name>ifluatex</name>
  <caption>Provides the \texttt{\ifluatex} switch.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='2007,2009,2010'/>
  <license type='lppl1.3'/>
  <version number='1.4'/>
  <description>
    The package looks for Lua\TeX\ regardless of its mode and provides
    the switch \texttt{\ifluatex}; it works with Plain TeX or \LaTeX\.
    
    The package is part of the \texttt{oberdiek} bundle.
  </description>
  <documentation details='Package documentation'
    href='ctan:/macros/latex/contrib/oberdiek/ifluatex.pdf'/>
  <ctan file='true' path='/macros/latex/contrib/oberdiek/ifluatex.dtx'/>
  <miktex location='oberdiek'/>
  <texlive location='ifluatex'/>
  <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
</entry>
</catalogue>
\end{verbatim}

7 History

[2007/12/12 v1.0]
- First public version.

[2009/04/10 v1.1]
- Test adopted for Lua\TeX\ 0.39.
- Makes \texttt{\luatexversion} available.

[2009/04/17 v1.2]
- Fixes (Manuel Pégourié-Gonnard).
  \texttt{\luatextrue} and \texttt{\luatexfalse} are no longer defined.
- Makes \texttt{\luatexrevision} available, too.

[2010/03/01 v1.3]
- Line ends fixed in case \texttt{\endlinechar = \newlinechar}.

[2016/05/16 v1.4]
- Documentation updates.
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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.

### Symbols

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<th>Symbol</th>
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