The ifluatex package

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2016/05/16 v1.4

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{}.

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[2007/12/12 v1.0]
[2009/04/10 v1.1]
[2009/04/17 v1.2]
[2010/03/01 v1.3]
[2016/05/16 v1.4]

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∗Please report any issues at https://github.com/ho-tex/oberdiek/issues
1 Documentation

The package \texttt{ifluatex} can be used with both plain \TeX{} and \LaTeX{}:

\texttt{plain \TeX{}}: \texttt{\input ifluatex.sty}

\texttt{\LaTeX{} 2}\texttt{\_}: \texttt{\usepackage{ifluatex}}

\texttt{\ifluatex} The package provides the switch \texttt{\ifluatex}:

\begin{verbatim}
\ifluatex
Lua\TeX{} is running
\else
Without Lua\TeX{}
\fi
\end{verbatim}

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

If you want to detect the mode (DVI or PDF), then use package \texttt{ifpdf}. Lua\TeX{} has inherited \texttt{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{}.

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 \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 \else \def\empty{}\fi
\expandafter\ifx\csname PackageInfo\endcsname\relax
\x#1#2{"Package #1 Info: #2, stopped}\
\else
\PackageInfo{#1}{#2, stopped}\
\fi
\immediate\write-1{Package #1 Info: #2.}\
\aftergroup\endinput
\fi
\endgroup%
\end{verbatim}
2.2 Catcodes
2.3 Macro for error messages

2.4 Check for previously defined `ifluatex`

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

```latex
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname luatexversion\endcsname\relax
\else
  \expandafter\let\csname ifluatex\expandafter\endcsname\csname iftrue\endcsname
  \begingroup
    \newlinechar=10 \%
    \endlinechar=\newlinechar\%
    \ifnum0\%
      \directlua{
        if tex.enableprimitives then
          tex.enableprimitives('ifluatex', {'luatexversion'})
        tex.print('1')
      end
    \}%
    \ifx\ifluatexluatexversion\@undefined\else 1\fi %
    =11 %
  \global\let\luatexversion\ifluatexluatexversion%
  \else%
    \ifluatex\Error{Missing \string\luatexversion}{% 
      Update \LaTeX. %
    }%
    \%}
\endgroup%
  \fi%
\fi
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname luatexrevision\endcsname\relax
\else
  \begin{group}
    \ifx\luatexrevision\relax
      \let\luatexrevision\@undefined
    \fi
    \newlinechar=10 \%
    \endlinechar=\newlinechar\%
    \ifcase0%
      \directlua{
        if tex.enableprimitives then
          tex.enableprimitives('ifluatex', {'luatexversion'})
        tex.print('1')
      end
    \}%
    \ifx\ifluatexluatexversion\@undefined\else 1\fi %
    =11 %
  \global\let\luatexversion\ifluatexluatexversion%
  \else%
    \ifluatex\Error{Missing \string\luatexversion}{% 
      Update \LaTeX. %
    }%
    \%}
  \endgroup%
  \fi
  \fi
\end{group}
```

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

Starting with version 0.39 \LaTeX\TeX\ 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\TeX\'s Lua function \texttt{tex.enableprimitives}.

```latex
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname luatexversion\endcsname\relax
\else
  \expandafter\ifx\csname directlua\endcsname\relax
  \else
    \expandafter\let\csname ifluatex\expandafter\endcsname\csname iftrue\endcsname
    \begingroup
      \newlinechar=10 \%
      \endlinechar=\newlinechar\%
      \ifnum0\%
        \directlua{
          if tex.enableprimitives then
            tex.enableprimitives('ifluatex', {'luatexversion'})
          tex.print('1')
        end
      \}%
      \ifx\ifluatexluatexversion\@undefined\else 1\fi %
      =11 %
    \global\let\luatexversion\ifluatexluatexversion%
    \else%
      \ifluatex\Error{Missing \string\luatexversion}{% 
        Update \LaTeX. %
      }%
      \%}
  \endgroup%
  \fi
\fi
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname luatexrevision\endcsname\relax
\else
  \begin{group}
    \ifx\luatexrevision\relax
      \let\luatexrevision\@undefined
    \fi
    \newlinechar=10 \%
    \endlinechar=\newlinechar\%
    \ifcase0%
      \directlua{
        if tex.enableprimitives then
          tex.enableprimitives('ifluatex', {'luatexversion'})
        tex.print('1')
      end
    \}%
    \ifx\ifluatexluatexversion\@undefined\else 1\fi %
    =11 %
  \global\let\luatexversion\ifluatexluatexversion%
  \else%
    \ifluatex\Error{Missing \string\luatexversion}{% 
      Update \LaTeX. %
    }%
    \%}
  \endgroup%
  \fi
  \fi
\end{group}
```
2.7 Protocol entry

Log comment:

\begin{group}
\expandafter\ifx\csname PackageInfo\endcsname\relax
\def\x#1#2{\immediate\write-1{Package #1 Info: #2.}}
\else
\let\x\PackageInfo
\expandafter\let\csname on@line\endcsname\empty
\fi
\x{ifluatex}{LuaTeX \ifluatex\else not \fi detected}
\end{group}

\ifluatex\AtEnd
⟨/package⟩

3 Test

3.1 Catcode checks for loading

\begin{test1}
\catcode\{"=1 \%
\catcode\\}=2 \%
\catcode\#=6 \%
\catcode\@=11 \%
\expandafter\ifx\csname count\endcsname\relax
\countdef\count@=255 \%
\fi
\expandafter\ifx\csname @gobble\endcsname\relax
\long\def\@gobble#1{}\%
\fi
\expandafter\ifx\csname @firstofone\endcsname\relax
\long\def\@firstofone#1{#1}\%
\fi
\expandafter\ifx\csname loop\endcsname\relax
\else
\expandafter\@firstofone\fi
\end{test1}
\expandafter\@gobble 
\fi 
\def\loop\#1\repeat{% 
  \def\body{#1}%
  \iterate
%}
\def\iterate{% 
  \body 
  \let\next\iterate 
  \else 
  \let\next\relax 
  \fi 
  \next
%}
\let\repeat=\fi 
\def\RestoreCatcodes{}
\count@=0 
\loop 
  \edef\RestoreCatcodes{\RestoreCatcodes \catcode\the\count@=\the\catcode\count@\relax }
%}
\ifnum\count@<255 
  \advance\count@ 1 
  \repeat
%
\def\RangeCatcodeInvalid#1#2{ 
  \count@=#1 \relax 
  \loop 
  \catcode\count@=15 
  \ifnum\count@<#2 \relax 
  \advance\count@ 1 
  \repeat
%
\def\RangeCatcodeCheck#1#2#3{ 
  \count@=#1 \relax 
  \loop 
  \ifnum#3=\catcode\count@ \else 
  \errmessage{Character \the\count@ \space with wrong catcode \the\catcode\count@ \space instead of \number\count@3} 
  \fi 
  \ifnum\count@<#2 \relax 
  \advance\count@ 1 
  \repeat
%
\def\space{ }
\expandafter\ifx\csname LoadCommand\endcsname\relax 
\def\LoadCommand{\input ifluatex.sty\relax}%
\fi 
\def\Test{% 
  \RangeCatcodeInvalid{0}{47}%
  \RangeCatcodeInvalid{58}{64}%
  \RangeCatcodeInvalid{91}{96}%
  \RangeCatcodeInvalid{123}{255}%
  \catcode`\@=12 
  \catcode`\\=0 
}
4 Reload check for plain

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


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 \texttt{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 \texttt{texmf} tree) of your choice. Example (linux):

```bash
unzip oberdiek.tds.zip -d ~/texmf
```

1\url{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 (\TeXe, mi\TeX, …) relies on file name databases, you must refresh these. For example, \TeXe users run texhash or mktexlsr.

5.5 Some details for the interested

Unpacking with \LaTeXe. The .dtx chooses its action depending on the format:

plain \TeX: Run docstrip and extract the files.

\LaTeXe: Generate the documentation.

If you insist on using \LaTeXe for docstrip (really, docstrip does not need \LaTeXe), 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 \texttt{ifluatex.xml}.

\begin{verbatim}
<?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 \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.
  </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>
\end{verbatim}

7 History

\begin{itemize}
  \item [2007/12/12 v1.0] First public version.
  \item [2009/04/10 v1.1] Test adopted for Lua\TeX 0.39.
    Makes \texttt{\luatexversion} available.
  \item [2009/04/17 v1.2] Fixes (Manuel Pégourié-Gonnard).
    \texttt{\luatextrue} and \texttt{\luatexfalse} are no longer defined.
    Makes \texttt{\luatexrevision} available, too.
  \item [2010/03/01 v1.3] Line ends fixed in case \texttt{\endlinechar = \newlinechar}.
  \item [2016/05/16 v1.4] Documentation updates.
\end{itemize}
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