The ifluatex package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

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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.

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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
3   \catcode44 12 % ,
4   \catcode45 12 % -
5   \catcode46 12 % .
6   \catcode58 12 % :
7   \catcode64 11 % @
8   \catcode123 1 % {
9   \catcode125 2 % }
10  \expandafter\let\expandafter\x\csname ver@ifluatex.sty\endcsname
11  \ifx\x\relax % plain-TeX, first loading
12  \else
13    \def\empty{}%
14    \ifx\x\empty % LaTeX, first loading,
15      % variable is initialized, but \ProvidesPackage not yet seen
16    \else
17      \catcode35 6 % #
18      \expandafter\ifx\csname PackageInfo\endcsname\relax
19        \def\x#1#2{%
20          \immediate\write-1{Package #1 Info: #2.}%
21        }%
22      \else
23        \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
24      \fi
25      \x{ifluatex}{The package is already loaded}%
26      \aftergroup\endinput
27    \fi
28  \fi
29 \endgroup
```

Package identification:

```
30 \begingroup
31   \catcode35 6 % #
32   \catcode40 12 % (
33   \catcode41 12 % )
34   \catcode44 12 % ,
35   \catcode45 12 % -
36   \catcode46 12 % .
37   \catcode47 12 % /
38   \catcode58 12 % :
39   \catcode64 11 % @
40   \catcode91 12 % [
41   \catcode93 12 % ]
```

```
  \catcode123 1 % {
  \catcode125 2 % }
  \expandafter\ifx\csname ProvidesPackage\endcsname\relax
    \def\x#1#2#3[#4]{\endgroup
      \immediate\write-1{Package: #3 #4}%
      \xdef#1{#4}%
    }%
  \else
    \def\x#1#2[#3]{\endgroup
      #2[{#3}]%
      \ifx#1\@undefined
        \xdef#1{#3}%
      \fi
      \ifx#1\relax
        \xdef#1{#3}%
      \fi
    }%
  \fi
\expandafter\x\csname ver@ifluatex.sty\endcsname
\ProvidesPackage{ifluatex}%
  [2009/04/17 v1.2 Provides the ifluatex switch (HO)]
```

2.2 Catcodes

```
\begingroup
  \catcode123 1 % {
  \catcode125 2 % }
  \def\x{\endgroup
    \expandafter\edef\csname ifluatex@AtEnd\endcsname{%
      \catcode35 \the\catcode35\relax
      \catcode64 \the\catcode64\relax
      \catcode123 \the\catcode123\relax
      \catcode125 \the\catcode125\relax
    }%
  }%
\x
\catcode35 6 % #
\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{41}{12}% )
\TMP@EnsureCode{44}{12}% ,
\TMP@EnsureCode{45}{12}% -
\TMP@EnsureCode{46}{12}% .
\TMP@EnsureCode{47}{12}% /
\TMP@EnsureCode{58}{12}% :
\TMP@EnsureCode{60}{12}% <
\TMP@EnsureCode{61}{12}% =
\TMP@EnsureCode{94}{7}% ^
\TMP@EnsureCode{96}{12}% `
```

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
```

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}{%
      Incompatible versions of \i/ can cause problems,\MessageBreak
      therefore package loading is aborted.%
    }%
    \endgroup
    \ifluatex@AtEnd
    \expandafter\endinput
  \fi
\endgroup
```

2.5 \ifluatex

\ifluatex

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

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`.

```
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname luatexversion\endcsname\relax
\else
  \expandafter\let\csname ifluatex\expandafter\endcsname
                  \csname iftrue\endcsname
\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`.

```
\ifluatex
\else
```

```
\begingroup\expandafter\expandafter\expandafter\endgroup
\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 LuaTeX.%
      }%
    \fi %
  \endgroup %
\fi
\fi
\ifluatex
  \begingroup\expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\csname luatexrevision\endcsname\relax
    \ifnum\luatexversion<36 %
    \else
      \begingroup
        \ifx\luatexrevision\relax
          \let\luatexrevision\@undefined
        \fi
        \newlinechar=10 %
        \endlinechar=\newlinechar %
        \ifcase0%
            \directlua{%
              if tex.enableprimitives then
                tex.enableprimitives('ifluatex', {'luatexrevision'})
              else
                tex.print('1')
              end
            }%
            \ifx\ifluatexluatexrevision\@undefined 1\fi %
            \relax %
          \global\let\luatexrevision\ifluatexluatexrevision
        \fi
      \endgroup
    \fi
    \begingroup\expandafter\expandafter\expandafter\endgroup
    \expandafter\ifx\csname luatexrevision\endcsname\relax
      \ifluatex@Error{%
        Missing \string\luatexrevision%
      }{%
        Update LuaTeX.%
      }%
    \fi
  \fi
```

```
\fi
```

2.7 Protocol entry

Log comment:

```
\begingroup
  \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}%
\endgroup
\ifluatex@AtEnd
```

⟨/package⟩

3 Test

3.1 Catcode checks for loading

⟨*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
  \expandafter\@firstofone
\else
  \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
}
\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 %
  \catcode`\{=1 %
  \catcode`\}=2 %
  \catcode`\#=6 %
  \catcode`\[=12 %
  \catcode`\]=12 %
  \catcode`\%=14 %
  \catcode`\ =10 %
  \catcode13=5 %
  \LoadCommand
  \RestoreCatcodes
}
\Test
\csname @@end\endcsname
\end
```

⟨/test1⟩

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 CTAN[1]:

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

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
```

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

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 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 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.

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