The \texttt{iftex} package

The \LaTeX{} Project Team\footnote{https://github.com/latex3/iftex}*

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1 Introduction

This original \texttt{iftex} was written as part of the \texttt{bidi} collection (by the Persian \TeX{} Group / Vafa Khalighi) and provided checks for whether a document was being processed with PDF\TeX{}, or Xe\TeX{}, or Lua\TeX{}. This version recodes the package and incorporates similar tests from the \texttt{ifetex} package by Martin Scharrer, the \texttt{ifxetex} package by Will Robertson, the \texttt{ifluatex} and \texttt{ifvtex} packages from Heiko Oberdieck and parts of \texttt{ifptex} by Takayuki Yato.

For each \TeX{} variant engine supported two commands are provided:

- a conditional, \texttt{\textbackslash iffootex} that is true if the (footex) engine (or a compatible extension) is being used.

\footnote{https://github.com/latex3/iftex}
For compatibility with earlier packages which did not all use the same naming convention all these conditionals are provided in two forms, a lowercase name \iffootex and a mixed case name \iffooTeX.

- a command RequireFooTeX which checks that footex is being used, and stops the run with an error message if a different engine is detected.

2 Loading the package

The package can be loaded in the usual way in both Plain T\TeX and \LaTeX.

2.1 Loading the package in plain T\TeX

\input iftex.sty

2.2 Loading the package in \LaTeX

\usepackage{iftex}

2.3 Loading the package in ini\TeX

The package assumes no existing macros and may be loaded during format setup in a format without the plain T\TeX or \LaTeX format being loaded. From an initial ini\TeX setup the package may be loaded as for plain T\TeX.

3 Engine test conditionals

All the conditionals defined here are used in the same way:

\ifluatex
luatex specific code
\else
code for other engines
\fi

\ifetex, \ifeTeX
True if an e\TeX enabled format is in use. (This is necessarily true in all \LaTeX variants.)

\ifpdftex, \ifPDFTeX
True if PDF\TeX is in use (whether writing PDF or DVI), so this is true for documents processed with both the latex and pdflatex commands.

\ifxetex, \ifXeTeX
True if Xe\TeX is in use.
\ifluatex, \ifLuaTeX
   True if LuaTeX and extensions such as LuaHBTex are in use.
\fi
\ifluahbtex, \ifLuaHBTex
   True if the luaharftex Lua module is available. This will be true in luahbtex
   and may be true in luatex if a binary Lua luaharftex module has been
   compiled and is available in Lua's search path.
\fi
\ifptex, \ifpTeX
   True if any of the pTeX variants are in use.
\fi
\ifuptex, \ifupTeX
   True if any of the upTeX variants are in use. (\ifetex could be used in
   addition to distinguish uptex and euptex.)
\fi
\ifptexng, \ifpTeXng
   True if pTeX-ng (Asiatic pTeX) is in use.
\fi
\ifvtex, \ifVTeX
   True if VTeX is in use.
\fi
\ifalephtex, \ifAlephTeX
   True if Aleph is in use. (The aleph-based \LaTeX command is lamed.)
\fi
\iftutex, \ifTUTeX
   This is not strictly an engine variant, but it is true if \texttt{\Umathchardef}
   is available, which essentially means that it is true for LuaTeX and XeTeX,
   allowing constructs such as

   \iftutex
   \usepackage{fontspec}
   \setmainfont{TeX Gyre Termes}
   \usepackage{unicode-math}
   \setmathfont{Stix Two Math}
   \else
   \usepackage{newtxtex, newtxmath}
   \fi
\fi

4 Requiring specific engines

For each supported engine, the package provides a command \texttt{\Require...}
which checks that the document is being processed with a suitable engine, and stops
with an error message if not.

\RequireeTeX
\RequirePDFTeX
\RequireXeTeX
\RequireLuaTeX
\RequireLuaHBTeX
\RequirepTeX
\RequireupTeX
\RequirepTeXng
\RequireVTeX
\RequireAlephTeX
\RequireTUTE\TeX

5 Output mode conditional

This package also provides an `\ifpdf` conditional that is true if the format is set up to output in PDF mode rather than DVI. This is equivalent to the test in the existing `ifpdf` package.

Unlike the engine tests above this is defined as if by `\newif` with user-documented commands `\pdftrue` and `\pdffalse` that can change the boolean value. These would be needed to reset the boolean if the output mode is reset (for example by setting `\pdfoutput=0` in PDFLa\TeX{}).

Unlike the original `ifpdf` package, the version here also detects PDF output mode if running in V\TeX{}.

6 Additional packages

This extended `if\TeX` is designed to replace the original `if\TeX` and also the packages `ifetex`, `ifluatex`, `if\vTeX`, `ifxetex`, `ifpdf`.

This collection includes small packages with these names that include the main `if\TeX` package, and in some cases define additional commands for increased compatibility. These packages should mean that authors do not need to change existing documents, although it is recommended that new documents use the `if\TeX` package directly.

Note that while this package provides basic support for detecting p\TeX{} (Japanese \TeX{}) variants and is broadly compatible with the `if\vTeX` package, the `if\vTeX` package has many more detailed tests for p\TeX{} variants and this package does not replace the `if\vTeX` (or `ifx\vTeX`) packages, which are maintained by their original authors and recommended for Japanese documents that need fine control over the Japanese \TeX{} system in use.
7 Compatibility with scrbase

The scrbase package (which is automatically included in the popular KOMA-Script classes) by default defines \ifpdf and \ifVTeX with a different syntax. If you use the scrbase option internalonly then scrbase will not define these and the definitions as described here will take effect. This is recommended and will not affect any scrbase package code as internally scrbase uses private versions of those commands prefixed with \scr@. However this package detects if the scrbase definitions are in effect and if so does not redefine them, for compatibility with existing documents. The iftex versions will still be available under the names \ifPDFTeX and \ifVTeX.