The iftex package

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

2022/02/03 v1.0f TeX engine tests

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1 Introduction

This original iftexas written as part of the 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 ifetex package by Martin Scharrer, the ifxetex package by Will Robertson, the ifxetex and ifvtxex packages from Heiko Oberdick and parts of ifptex by Takayuki Yato.

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

- a conditional, \texttt{\iffootex} that is true if the \texttt{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 TeX and \LaTeX.

2.1 Loading the package in plain TeX

```latex
\input iftex.sty
```

2.2 Loading the package in \LaTeX

```latex
\usepackage{iftex}
```

2.3 Loading the package in iniTeX

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

3 Engine test conditionals

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

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

```latex
\ifetex, \ifeTeX
  True if an eTeX enabled format is in use. (This is necessarily true in all \LaTeX variants.)
\fi
```

```latex
\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.
```

```latex
\ifxetex, \ifxeTeX
  True if Xe\TeX is in use.
```
\ifluatex, \ifLuaTeX
  True if \LaTeX{} and extensions such as \LaTeX{} 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

\ifvtx, \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 \mathchardef{} is available, which essentially means that it is true for \LaTeX{} and \TeX, allowing constructs such as

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

\iftexpadtex, \ifTexpadTeX
  True if Texpad\LaTeX{} is in use. Please note that Texpad\LaTeX{} can run in two modes, one which uses Unicode and native fonts internally (similar to \TeX{} and \LaTeX{}), and one which uses 8-bit codepages internally (similar to \PDF\LaTeX). This can be determined using \iftutex.
\fi

\ifhint, \ifHINT
  True if \Hi\LaTeX{} (HINT output format) is in use.
4 Requiring specific engines

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

\texttt{\textbackslash RequireeTeX}
\texttt{\textbackslash RequirePDFTeX}
\texttt{\textbackslash RequireXeTeX}
\texttt{\textbackslash RequireLuaTeX}
\texttt{\textbackslash RequireLuaHBTeX}
\texttt{\textbackslash RequirepTeX}
\texttt{\textbackslash RequireupTeX}
\texttt{\textbackslash RequirepTeXng}
\texttt{\textbackslash RequireVTeX}
\texttt{\textbackslash RequireAlephTeX}
\texttt{\textbackslash RequireTUTeX}
\texttt{\textbackslash RequireTexpadTeX}
\texttt{\textbackslash RequireHINT}

5 Output mode conditional

This package also provides an \texttt{\textbackslash 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 \texttt{ifpdf} package.

Unlike the engine tests above this is defined as if by \texttt{\newif} with user-documented commands \texttt{\pdftrue} and \texttt{\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 \texttt{\pdfoutput=0} in PDF\LaTeX{}).

Unlike the original \texttt{ifpdf} package, the version here also detects PDF output mode if running in \texttt{VTeX}.
6 Additional packages

This extended \texttt{iftex} is designed to replace the original \texttt{iftex} and also the packages \texttt{ifetex}, \texttt{ifluatex}, \texttt{ifvtex}, \texttt{ifxetex}, \texttt{ifpdf}.

This collection includes small packages with these names that include the main \texttt{iftex} 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 \texttt{iftex} package directly.

Note that while this package provides basic support for detecting \texttt{pTeX} (Japanese \TeX) variants and is broadly compatible with the \texttt{ifptex} package, the \texttt{ifptex} package has many more detailed tests for \texttt{pTeX} variants and this package does not replace the \texttt{ifptex} (or \texttt{ifxptex}) 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 \texttt{scrbase}

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