The ifxptex package*†

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Abstract

This package provides commands for detecting pTEX and its derivatives (ε-pTEX, upTEX, ε-upTEX, and ApTEX). Both LATEX and plain TEX are supported.

1 Introduction

pTEX is an extension of TEX. It has several derivatives:

- ε-pTEX: pTEX + ε-TEX + ···
- upTEX: pTEX + native Unicode support + ···
- ε-upTEX: ε-pTEX + upTEX
- ApTEX:[1] upTEX + ε-TEX + ···

Table 1 shows the command line commands for invoking them.[2]

Table 1: Commands for invoking *pTEX

Engine	Command		Output format(s)[3]
	Plain TEX	LATEX	
pTEX	`ptex`	n/a	DVI (extended)
ε-pTEX	`eptex`	`platex`	DVI (extended)
upTEX	`uptex`	n/a	DVI (extended)
ε-upTEX	`euptex`	`uplatex`	DVI (extended)
ApTEX	`ptex-ng`	`platex-ng`	DVI (extended) and PDF

Both LATEX3 and the ifptex package (and its alias, the ifuptex package) have already provided commands for detecting some *pTEX engines. However, they do not satisfy the author, thus this package is written. For compatibility, all user commands provided by this package have an extra letter "`x`" or "`X`".

*CTAN Homepage: `https://ctan.org/pkg/ifxptex`

†Repository: `https://github.com/Man-Ting-Fang/ifxptex`

[1] Full name: Asiatic pTEX; synonym: pTEX-ng; obsolete names: Asian pTEX, toua-pTEX, toua-TEX, touaTEX, ...

[2] Old implementations and other TEX formats are not taken into consideration.

[3] DVI files produced by *pTEX can be converted to PDF files by DVIPDFM*x*, or some scripts for convenience (also use DVIPDFM*x* internally), but this subject is outside the scope of this document. (Note that ApTEX outputs both DVI and PDF files directly.)

2 Naming conventions

There are two more naming conventions in this package:

- Suppose that there is a TEX engine called FooTEX, then both `FooTeX` and `footex` are used in commands' names, but they refer to different things: `FooTeX` stands for the FooTEX engine itself, while `footex` stands for all engines (mostly) compatible with FooTEX (including FooTEX).
- Furthermore, `UniFooTeX` and `unifootex` stand respectively for `FooTeX` and `footex` when using Unicode as the internal encoding. (Similarly, "(Unicode)" used in the following tables indicates that the engine should be the corresponding `UniFooTeX`.) (Note that ApTEX always uses Unicode as its internal encoding.)

3 Usage

This package has no options, just load it as usual:

- LATEX: `\usepackage{ifxptex}`
- Plain TEX: `\input ifxptex.sty`

3.1 Conditionals

Table 2 lists the conditionals provided by this package.

Table 2: Conditionals provided by this package

	True when using (one of)				
Conditional	pTEX	ε-pTEX	upTEX	ε-upTEX	ApTEX
`\ifxpTeX`	✓				
`\ifxepTeX`		✓			
`\ifxupTeX`			✓		
`\ifxeupTeX`				✓	
`\ifxApTeX`					✓
`\ifxUniupTeX`			✓ (Unicode)		
`\ifxUnieupTeX`				✓ (Unicode)	
`\ifxptex`	✓	✓	✓	✓	✓
`\ifxeptex`		✓		✓	
`\ifxuptex`			✓	✓	✓
`\ifxeuptex`				✓	
`\ifxaptex`					✓
`\ifxuniuptex`			✓ (Unicode)	✓ (Unicode)	✓
`\ifxunieuptex`				✓ (Unicode)	

These conditionals can be used as usual. For example:

`\ifxeupTeX`⟨material for ε-upTEX⟩`\else`⟨material not for ε-upTEX⟩`\fi`

3.2 Declarations

Table 3 lists the declarations provided by this package. (This table is very similar to Table 2.)

Table 3: Declarations provided by this package

	Reports an error if the engine in use is not (one of)				
Declaration	pTEX	ε-pTEX	upTEX	ε-upTEX	ApTEX
`\RequireXpTeX`	✓				
`\RequireXepTeX`		✓			
`\RequireXupTeX`			✓		
`\RequireXeupTeX`				✓	
`\RequireXApTeX`					✓
`\RequireXUniupTeX`			✓ (Unicode)		
`\RequireXUnieupTeX`				✓ (Unicode)	
`\RequireXptex`	✓	✓	✓	✓	✓
`\RequireXeptex`		✓		✓	
`\RequireXuptex`			✓	✓	✓
`\RequireXeuptex`				✓	
`\RequireXaptex`					✓
`\RequireXuniuptex`			✓ (Unicode)	✓ (Unicode)	✓
`\RequireXunieuptex`				✓ (Unicode)	