

# The ifxptex package<sup>\*†</sup>

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## Abstract

This package provides commands for detecting pTeX and its derivatives ( $\varepsilon$ -pTeX, upTeX,  $\varepsilon$ -upTeX, and ApTeX). Both L<sup>A</sup>TeX and plain TeX are supported.

## 1 Introduction

pTeX is an extension of TeX. It has several derivatives:

- $\varepsilon$ -pTeX: pTeX +  $\varepsilon$ -TeX + ...
- upTeX: pTeX + native Unicode support + ...
- $\varepsilon$ -upTeX:  $\varepsilon$ -pTeX + upTeX
- ApTeX:<sup>1</sup> upTeX +  $\varepsilon$ -TeX + ...

Table 1 shows the command line commands for invoking them.<sup>2</sup>

Table 1: Commands for invoking \*pTeX

Engine	Command		Output format(s) <sup>3</sup>
	Plain TeX	L <sup>A</sup> TeX	
pTeX	ptex	n/a	DVI (extended)
$\varepsilon$ -pTeX	eptex	platex	DVI (extended)
upTeX	uptex	n/a	DVI (extended)
$\varepsilon$ -upTeX	euptex	uplatex	DVI (extended)
ApTeX	ptex-ng	platex-ng	DVI (extended) and PDF

Both L<sup>A</sup>TeX3 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”.

<sup>\*</sup>CTAN Homepage: <https://ctan.org/pkg/ifxptex>

<sup>†</sup>Repository: <https://github.com/Man-Ting-Fang/ifxptex>

<sup>1</sup>Full name: Asiatic pTeX; synonym: pTeX-ng; obsolete names: Asian pTeX, toua-pTeX, toua-TeX, touaTeX, ...

<sup>2</sup>Old implementations and other TeX formats are not taken into consideration.

<sup>3</sup>DVI files produced by \*pTeX can be converted to PDF files by DVIPDFMx, or some scripts for convenience (also use DVIPDFMx 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  $\text{\TeX}$  engine called  $\text{\FooTeX}$ , then both  $\text{\FooTeX}$  and  $\text{\footex}$  are used in commands' names, but they refer to different things:  $\text{\FooTeX}$  stands for the  $\text{\FooTeX}$  engine itself, while  $\text{\footex}$  stands for all engines (mostly) compatible with  $\text{\FooTeX}$  (including  $\text{\FooTeX}$ ).
- Furthermore,  $\text{\UniFooTeX}$  and  $\text{\unifootex}$  stand respectively for  $\text{\FooTeX}$  and  $\text{\footex}$  when using Unicode as the internal encoding. (Similarly, “(Unicode)” used in the following tables indicates that the engine should be the corresponding  $\text{\UniFooTeX}$ .) (Note that  $\text{\ApTeX}$  always uses Unicode as its internal encoding.)

## 3 Usage

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

- $\text{\LaTeX}$ :  $\text{\usepackage{ifxptex}}$
- Plain  $\text{\TeX}$ :  $\text{\input ifxptex.sty}$

### 3.1 Conditionals

Table 2 lists the conditionals provided by this package.

Table 2: Conditionals provided by this package

Conditional	True when using (one of)				
	$\text{\pTeX}$	$\text{\varepsilon-pTeX}$	$\text{\upTeX}$	$\text{\varepsilon-upTeX}$	$\text{\ApTeX}$
$\text{\ifxpTeX}$	✓				
$\text{\ifxepTeX}$		✓			
$\text{\ifxupTeX}$			✓		
$\text{\ifxeupTeX}$				✓	
$\text{\ifxApTeX}$					✓
$\text{\ifxUniupTeX}$			✓ (Unicode)		
$\text{\ifxUnieupTeX}$				✓ (Unicode)	
$\text{\ifxptex}$	✓	✓	✓	✓	✓
$\text{\ifxeptex}$		✓		✓	
$\text{\ifxuptex}$			✓	✓	✓
$\text{\ifxeuptex}$				✓	
$\text{\ifxaptex}$					✓
$\text{\ifxuniuptex}$			✓ (Unicode)	✓ (Unicode)	✓
$\text{\ifxunieuptex}$				✓ (Unicode)	

These conditionals can be used as usual. For example:

```
 $\text{\ifxeupTeX}\langle\text{material for } \varepsilon\text{-upTeX}\rangle\text{\else}\langle\text{material not for } \varepsilon\text{-upTeX}\rangle\text{\fi}$ 
```

## 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

Declaration	Reports an error if the engine in use is not (one of)				
	pTeX	$\varepsilon$ -pTeX	upTeX	$\varepsilon$ -upTeX	ApTeX
<code>\RequireXpTeX</code>	✓				
<code>\RequireXepTeX</code>		✓			
<code>\RequireXupTeX</code>			✓		
<code>\RequireXeupTeX</code>				✓	
<code>\RequireXApTeX</code>					✓
<code>\RequireXUniupTeX</code>			✓ (Unicode)		
<code>\RequireXUnieupTeX</code>				✓ (Unicode)	
<code>\RequireXptex</code>	✓	✓	✓	✓	✓
<code>\RequireXeptex</code>		✓		✓	
<code>\RequireXuptex</code>			✓	✓	✓
<code>\RequireXeuptex</code>				✓	
<code>\RequireXaptex</code>					✓
<code>\RequireXuniuptex</code>			✓ (Unicode)	✓ (Unicode)	✓
<code>\RequireXunieuptex</code>				✓ (Unicode)	