

# The `ifvtex` package

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## Abstract

This package looks for  $\text{\TeX}$ , implements and sets the switches `\ifvtex`, `\ifvtex<mode>`, `\ifvtexgex`. It works with plain or  $\text{\LaTeX}$  formats.

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\*Please report any issues at <https://github.com/ho-tex/oberdiek/issues>

# 1 Usage

The package `ifvtex` can be used with both plain `TEX` and `LATEX`:

**plain T<sub>E</sub>X:** `\input ifvtex.sty`

**L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>:** `\usepackage{ifvtex}`

The package implements switches for `VTEX` and its different modes and interprets `\VTeXversion`, `\OpMode`, and `\gexmode`.

`\ifvtex`

The package provides the switch `\ifvtex`:

```
\ifvtex
... do things, if VTEX is running ...
\else
... other TEX compiler ...
\fi
```

Users of the package `ifthen` can use the switch as boolean:

```
\boolean{ifvtex}
```

`\ifvtexdvi`  
`\ifvtexpdf`  
`\ifvtexps`  
`\ifvtexhtml`

`VTEX` knows different output modes that can be asked by these switches.

`\ifvtexgex`

This switch shows, whether `GeX` is available.

## 2 Implemenation

### 2.1 Reload check and package identification

```
1 (*package)
```

Reload check, especially if the package is not used with `LATEX`.

```
2 \begingroup\catcode61\catcode48\catcode32=10\relax%
3 \catcode13=5 % ^^M
4 \endlinechar=13 %
5 \catcode35=6 % #
6 \catcode39=12 % '
7 \catcode44=12 % ,
8 \catcode45=12 % -
9 \catcode46=12 % .
10 \catcode58=12 % :
11 \catcode64=11 % @
12 \catcode123=1 % {
13 \catcode125=2 % }
14 \expandafter\let\expandafter\x\csname ver@ifvtex.sty\endcsname
15 \ifx\x\relax % plain-TeX, first loading
16 \else
17 \def\empty{}%
```

```

18 \ifx\x\empty % LaTeX, first loading,
19 % variable is initialized, but \ProvidesPackage not yet seen
20 \else
21 \expandafter\ifx\csname PackageInfo\endcsname\relax
22 \def\x#1#2{%
23 \immediate\write-1{Package #1 Info: #2.}%
24 }%
25 \else
26 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27 \fi
28 \x{ifvtex}{The package is already loaded}%
29 \aftergroup\endinput
30 \fi
31 \fi
32 \endgroup%

```

Package identification:

```

33 \begingroup\catcode61\catcode48\catcode32=10\relax%
34 \catcode13=5 % ^^M
35 \endlinechar=13 %
36 \catcode35=6 % #
37 \catcode39=12 % '
38 \catcode40=12 % (
39 \catcode41=12 % )
40 \catcode44=12 % ,
41 \catcode45=12 % -
42 \catcode46=12 % .
43 \catcode47=12 % /
44 \catcode58=12 % :
45 \catcode64=11 % @
46 \catcode91=12 % [
47 \catcode93=12 % ]
48 \catcode123=1 % {
49 \catcode125=2 % }
50 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
51 \def\x#1#2#3[#4]{\endgroup
52 \immediate\write-1{Package: #3 #4}%
53 \xdef#1{#4}%
54 }%
55 \else
56 \def\x#1#2[#3]{\endgroup
57 #2[#{#3}]%
58 \ifx#1\@undefined
59 \xdef#1{#3}%
60 \fi
61 \ifx#1\relax
62 \xdef#1{#3}%
63 \fi
64 }%
65 \fi
66 \expandafter\x\csname ver@ifvtex.sty\endcsname
67 \ProvidesPackage{ifvtex}%
68 [2016/05/16 v1.6 Detect VTeX and its facilities (HO)]%

```

## 2.2 Catcodes

```

69 \begingroup\catcode61\catcode48\catcode32=10\relax%
70 \catcode13=5 % ^^M
71 \endlinechar=13 %
72 \catcode123=1 % {
73 \catcode125=2 % }
74 \catcode64=11 % @
75 \def\x{\endgroup
76 \expandafter\edef\csname ifvtex@AtEnd\endcsname{%

```

```

77 \endlinechar=\the\endlinechar\relax
78 \catcode13=\the\catcode13\relax
79 \catcode32=\the\catcode32\relax
80 \catcode35=\the\catcode35\relax
81 \catcode61=\the\catcode61\relax
82 \catcode64=\the\catcode64\relax
83 \catcode123=\the\catcode123\relax
84 \catcode125=\the\catcode125\relax
85 }%
86 }%
87 \x\catcode61\catcode48\catcode32=10\relax%
88 \catcode13=5 % ^^M
89 \endlinechar=13 %
90 \catcode35=6 % #
91 \catcode64=11 % @
92 \catcode123=1 % {
93 \catcode125=2 % }
94 \def\TMP@EnsureCode#1#2{%
95 \edef\ifvtex@AtEnd{%
96 \ifvtex@AtEnd
97 \catcode#1=\the\catcode#1\relax
98 }%
99 \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{10}{12}% ^^J
102 \TMP@EnsureCode{39}{12}% '
103 \TMP@EnsureCode{44}{12}% ,
104 \TMP@EnsureCode{45}{12}% -
105 \TMP@EnsureCode{46}{12}% .
106 \TMP@EnsureCode{47}{12}% /
107 \TMP@EnsureCode{58}{12}% :
108 \TMP@EnsureCode{60}{12}% <
109 \TMP@EnsureCode{62}{12}% >
110 \TMP@EnsureCode{94}{7}% ^
111 \TMP@EnsureCode{96}{12}% `
112 \edef\ifvtex@AtEnd{\ifvtex@AtEnd\noexpand\endinput}

```

## 2.3 Check for previously defined \ifvtex

```

113 \begingroup
114 \expandafter\ifx\csname ifvtex\endcsname\relax
115 \else
116 \edef\i/{\expandafter\string\csname ifvtex\endcsname}%
117 \expandafter\ifx\csname PackageError\endcsname\relax
118 \def\x#1#2{%
119 \edef\z{#2}%
120 \expandafter\errhelp\expandafter{\z}%
121 \errmessage{Package ifvtex Error: #1}%
122 }%
123 \def\y{^^J}%
124 \newlinechar=10 %
125 \else
126 \def\x#1#2{%
127 \PackageError{ifvtex}{#1}{#2}%
128 }%
129 \def\y{\MessageBreak}%
130 \fi
131 \x{Name clash, \i/ is already defined}{%
132 Incompatible versions of \i/ can cause problems,\y
133 therefore package loading is aborted.%
134 }%
135 \endgroup
136 \expandafter\ifvtex@AtEnd

```

```

137 \fi%
138 \endgroup

```

## 2.4 Provide \newif

```

139 \begingroup\expandafter\expandafter\expandafter\endgroup
140 \expandafter\ifx\csname newif\endcsname\relax

```

\ifvtex@newif

```

141 \def\ifvtex@newif#1{%
142   \begingroup
143   \escapechar=-1 %
144   \expandafter\endgroup
145   \expandafter\ifvtex@@newif\string#1\@nil
146 }%

```

\ifvtex@@newif

```

147 \def\ifvtex@@newif#1#2#3\@nil{%
148   \expandafter\edef\csname#3true\endcsname{%
149     \let
150     \expandafter\noexpand\csname if#3\endcsname
151     \expandafter\noexpand\csname iftrue\endcsname
152   }%
153   \expandafter\edef\csname#3false\endcsname{%
154     \let
155     \expandafter\noexpand\csname if#3\endcsname
156     \expandafter\noexpand\csname iffalse\endcsname
157   }%
158   \csname#3false\endcsname
159 }%

```

```

160 \else

```

\ifvtex@newif

```

161 \expandafter\let\expandafter\ifvtex@newif\csname newif\endcsname
162 \fi

```

## 2.5 \ifvtex

\ifvtex Create and set the switch. \newif initializes the switch with \iffalse.

```

163 \ifvtex@newif\ifvtex
164 \begingroup\expandafter\expandafter\expandafter\endgroup
165 \expandafter\ifx\csname VTeXversion\endcsname\relax
166 \else
167   \begingroup\expandafter\expandafter\expandafter\endgroup
168   \expandafter\ifx\csname OpMode\endcsname\relax
169   \else
170     \vtexttrue
171   \fi
172 \fi

```

## 2.6 Mode and GeX switches

```

173 \ifvtex@newif\ifvtexdvi
174 \ifvtex@newif\ifvtexpdf
175 \ifvtex@newif\ifvtexps
176 \ifvtex@newif\ifvtexhtml
177 \ifvtex@newif\ifvtexgex
178 \ifvtex
179   \ifcase\OpMode\relax
180     \vtextdvitrue
181   \or % 1

```

```

182 \vtxpdftrue
183 \or % 2
184 \vtxpstrue
185 \or % 3
186 \vtxpstrue
187 \or\or\or\or\or\or\or % 10
188 \vtxhtmltrue
189 \fi
190 \begingroup\expandafter\expandafter\expandafter\endgroup
191 \expandafter\ifx\csname gexmode\endcsname\relax
192 \else
193 \ifnum\gexmode>0 %
194 \vtxgextrue
195 \fi
196 \fi
197 \fi

```

## 2.7 Protocol entry

Log comment:

```

198 \begingroup
199 \expandafter\ifx\csname PackageInfo\endcsname\relax
200 \def\x#1#2{%
201 \immediate\write-1{Package #1 Info: #2.}%
202 }%
203 \else
204 \let\x\PackageInfo
205 \expandafter\let\csname on@line\endcsname\empty
206 \fi
207 \x{ifvtex}{%
208 VTeX %
209 \ifvtex
210 in \ifvtexdvi DVI\fi
211 \ifvtexpdf PDF\fi
212 \ifvtexps PS\fi
213 \ifvtexhtml HTML\fi
214 \space mode %
215 with\ifvtexgex\else out\fi\space GeX %
216 \else
217 not %
218 \fi
219 detected%
220 }%
221 \endgroup
222 \ifvtex@AtEnd%
223 \endpackage

```

## 3 Test

### 3.1 Catcode checks for loading

```

224 \test1\
225 \catcode`\{=1 %
226 \catcode`\}=2 %
227 \catcode`\#=6 %
228 \catcode`\@=11 %
229 \expandafter\ifx\csname count@\endcsname\relax
230 \countdef\count@=255 %
231 \fi
232 \expandafter\ifx\csname @gobble\endcsname\relax
233 \long\def\@gobble#1{%

```

```

234 \fi
235 \expandafter\ifx\csname @firstofone\endcsname\relax
236 \long\def\@firstofone#1{#1}%
237 \fi
238 \expandafter\ifx\csname loop\endcsname\relax
239 \expandafter\@firstofone
240 \else
241 \expandafter\@gobble
242 \fi
243 {%
244 \def\loop#1\repeat{%
245 \def\body{#1}%
246 \iterate
247 }%
248 \def\iterate{%
249 \body
250 \let\next\iterate
251 \else
252 \let\next\relax
253 \fi
254 \next
255 }%
256 \let\repeat=\fi
257 }%
258 \def\RestoreCatcodes{}
259 \count@=0 %
260 \loop
261 \edef\RestoreCatcodes{%
262 \RestoreCatcodes
263 \catcode\the\count@=\the\catcode\count@\relax
264 }%
265 \ifnum\count@<255 %
266 \advance\count@ 1 %
267 \repeat
268
269 \def\RangeCatcodeInvalid#1#2{%
270 \count@=#1\relax
271 \loop
272 \catcode\count@=15 %
273 \ifnum\count@<#2\relax
274 \advance\count@ 1 %
275 \repeat
276 }
277 \def\RangeCatcodeCheck#1#2#3{%
278 \count@=#1\relax
279 \loop
280 \ifnum#3=\catcode\count@
281 \else
282 \errmessage{%
283 Character \the\count@\space
284 with wrong catcode \the\catcode\count@\space
285 instead of \number#3%
286 }%
287 \fi
288 \ifnum\count@<#2\relax
289 \advance\count@ 1 %
290 \repeat
291 }
292 \def\space{ }
293 \expandafter\ifx\csname LoadCommand\endcsname\relax
294 \def\LoadCommand{\input ifvtex.sty\relax}%
295 \fi

```

```

296 \def\Test{%
297   \RangeCatcodeInvalid{0}{47}%
298   \RangeCatcodeInvalid{58}{64}%
299   \RangeCatcodeInvalid{91}{96}%
300   \RangeCatcodeInvalid{123}{255}%
301   \catcode`\@=12 %
302   \catcode`\|=0 %
303   \catcode`\%=14 %
304   \LoadCommand
305   \RangeCatcodeCheck{0}{36}{15}%
306   \RangeCatcodeCheck{37}{37}{14}%
307   \RangeCatcodeCheck{38}{47}{15}%
308   \RangeCatcodeCheck{48}{57}{12}%
309   \RangeCatcodeCheck{58}{63}{15}%
310   \RangeCatcodeCheck{64}{64}{12}%
311   \RangeCatcodeCheck{65}{90}{11}%
312   \RangeCatcodeCheck{91}{91}{15}%
313   \RangeCatcodeCheck{92}{92}{0}%
314   \RangeCatcodeCheck{93}{96}{15}%
315   \RangeCatcodeCheck{97}{122}{11}%
316   \RangeCatcodeCheck{123}{255}{15}%
317   \RestoreCatcodes
318 }
319 \Test
320 \csname @@end\endcsname
321 \end
322 </test1>

```

## 4 Installation

### 4.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/iftex.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/iftex.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 T<sub>E</sub>X Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

### 4.2 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/

```

---

<sup>1</sup><http://ctan.org/pkg/iftex>



### 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :

```
tex ifvtex.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
ifvtex.sty      → tex/generic/oberdiek/ifvtex.sty
ifvtex.pdf      → doc/latex/oberdiek/ifvtex.pdf
test/ifvtex-test1.tex → doc/latex/oberdiek/test/ifvtex-test1.tex
ifvtex.dtx      → source/latex/oberdiek/ifvtex.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.

### 4.4 Refresh file name databases

If your  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  distribution (te $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ , mik $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ , ...) relies on file name databases, you must refresh these. For example, te $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  users run `texhash` or `mktextlsr`.

### 4.5 Some details for the interested

**Unpacking with  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ .** The `.dtx` chooses its action depending on the format:

**plain  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :** Run docstrip and extract the files.

**$\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :** Generate the documentation.

If you insist on using  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  for docstrip (really, docstrip does not need  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ ), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{ifvtex.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 pdf $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ :

```
pdflatex ifvtex.dtx
makeindex -s gind.ist ifvtex.idx
pdflatex ifvtex.dtx
makeindex -s gind.ist ifvtex.idx
pdflatex ifvtex.dtx
```

## 5 Catalogue

The following XML file can be used as source for the  [\$\mathrm{T}\_{\mathrm{E}}\mathrm{X}\$  Catalogue](#). The elements `caption` and `description` are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is `ifvtex.xml`.

```
323 (*catalogue)
324 <?xml version='1.0' encoding='us-ascii'?>
325 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
```

```

326 <entry datestamp='$Date$' modifier='$Author$' id='ifvtex'>
327   <name>ifvtex</name>
328   <caption>Detects use of VTeX and its facilities.</caption>
329   <authorref id='auth:oberdiek' />
330   <copyright owner='Heiko Oberdiek' year='2001,2006-2008,2010' />
331   <license type='lppl1.3' />
332   <version number='1.6' />
333   <description>
334     The package looks for VTeX and sets the switch <tt>\ifvtex</tt>.
335     In the presence of VTeX, the mode switches <tt>\ifvtexdvi</tt>,
336     <tt>\ifvtexpdf</tt> and <tt>\ifvtexps</tt> are set;
337     <tt>\ifvtexgex</tt> tells you whether GeX is operating.
338   <p/>
339   The package is part of the <xref refid='oberdiek'>oberdiek</xref> bundle.
340 </description>
341   <documentation details='Package documentation'
342     href='ctan:/macros/latex/contrib/oberdiek/ifvtex.pdf' />
343   <ctan file='true' path='/macros/latex/contrib/oberdiek/ifvtex.dtx' />
344   <miktex location='oberdiek' />
345   <texlive location='oberdiek' />
346   <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip' />
347 </entry>
348 </catalogue>

```

## 6 History

### [2001/09/26 v1.0]

- First public version.

### [2006/02/20 v1.1]

- DTX framework.
- Undefined tests changed.

### [2007/01/10 v1.2]

- Fix of the `\ProvidesPackage` description.

### [2007/09/09 v1.3]

- Catcode section added.

### [2008/11/04 v1.4]

- Bug fix: Misspelled `\OpMode` (found by Hideo Umeki).

### [2010/03/01 v1.5]

- Compatibility with `iniTeX`.

### [2016/05/16 v1.6]

- Documentation updates.

## 7 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; plain numbers refer to the code lines where the entry is used.

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