

# The `etexcmds` package

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## Abstract

New primitive commands are introduced in  $\varepsilon$ -TEX. Sometimes the names collide with existing macros. This package solves this name clashes by adding a prefix to  $\varepsilon$ -TEX's commands. For example,  $\varepsilon$ -TEX's `\unexpanded` is provided as `\etex@unexpanded`.

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

# 1 Documentation

## 1.1 \unexpanded

```
\etex@unexpanded
```

New primitive commands are introduced in  $\varepsilon$ - $\text{\TeX}$ . Unhappily  $\backslash\text{unexpanded}$  collides with a macro in Con $\text{\TeX}$ t with the same name. This also affects the L $\text{\TeX}$  world. For example, package m-ch-de loads base/syst-gen.tex that redefines  $\backslash\text{unexpanded}$ . Thus this package defines  $\backslash\text{etex@unexpanded}$  to get rid of the name clash.

```
\ifetex@unexpanded
```

Package etexcmds can be loaded even if  $\varepsilon$ - $\text{\TeX}$  is not present or  $\backslash\text{unexpanded}$  cannot be found. The switch  $\backslash\text{ifetex@unexpanded}$  tells whether it is safe to use  $\backslash\text{etex@unexpanded}$ . The switch is true ( $\backslash\text{iftrue}$ ) only if the primitive  $\backslash\text{unexpanded}$  has been found and  $\backslash\text{etex@unexpanded}$  is available.

## 1.2 \expanded

Probably  $\backslash\text{expanded}$  will be added in pdft $\text{\TeX}$  1.50 and Lua $\text{\TeX}$ . Again Con $\text{\TeX}$ t defines this as macro. Therefore version 1.2 of this packages also provides  $\backslash\text{etex@expanded}$  and  $\backslash\text{ifetex@unexpanded}$ .

# 2 Implementation

```
1 (*package)
```

## 2.1 Reload check and package identification

Reload check, especially if the package is not used with L $\text{\TeX}$ .

```
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@etexcmds.sty\endcsname
15 \ifx\x\relax % plain- $\text{\TeX}$ , 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\x\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{etexcmds}{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@etexcmds.sty\endcsname
67 \ProvidesPackage{etexcmds}%
68 [2016/05/16 v1.6 Avoid name clashes with e-TeX commands (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 etexcmds@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\etexcmds@AtEnd{%
96     \etexcmds@AtEnd
97     \catcode#1=\the\catcode#1\relax
98   }%
99   \catcode#1=#2\relax
100 }%
101 \TMP@EnsureCode{39}{12}%
102 \TMP@EnsureCode{40}{12}%
103 \TMP@EnsureCode{41}{12}%
104 \TMP@EnsureCode{44}{12}%
105 \TMP@EnsureCode{45}{12}%
106 \TMP@EnsureCode{46}{12}%
107 \TMP@EnsureCode{47}{12}%
108 \TMP@EnsureCode{60}{12}%
109 \TMP@EnsureCode{91}{12}%
110 \TMP@EnsureCode{93}{12}%
111 \edef\etexcmds@AtEnd{%
112   \etexcmds@AtEnd
113   \escapechar\the\escapechar\relax
114   \noexpand\endinput
115 }%
116 \escapechar=92 % backslash

```

### 2.3 Provide `\newif`

```

\etexcmds@newif
117 \def\etexcmds@newif#1{%
118   \expandafter\edef\csname etex@#1false\endcsname{%
119     \let
120     \expandafter\noexpand\csname ifetex@#1\endcsname
121     \noexpand\iffalse
122   }%
123   \expandafter\edef\csname etex@#1true\endcsname{%
124     \let
125     \expandafter\noexpand\csname ifetex@#1\endcsname
126     \noexpand\iftrue
127   }%
128   \csname etex@#1false\endcsname
129 }

```

### 2.4 Load package `infwarerr`

```

130 \begingroup\expandafter\expandafter\expandafter\endgroup
131 \expandafter\ifx\csname RequirePackage\endcsname\relax
132   \def\TMP@RequirePackage#1[#2]{%
133     \begingroup\expandafter\expandafter\expandafter\endgroup
134     \expandafter\ifx\csname ver@#1.sty\endcsname\relax
135       \input #1.sty\relax
136     \fi
137   }%
138   \TMP@RequirePackage{infwarerr}[2007/09/09]%
139   \TMP@RequirePackage{ifluatex}[2010/03/01]%
140 \else
141   \RequirePackage{infwarerr}[2007/09/09]%
142   \RequirePackage{ifluatex}[2010/03/01]%
143 \fi

```

## 2.5 \unexpanded

```

\ifetex@unexpanded
144 \etexcmds@newif{unexpanded}

\etex@unexpanded
145 \begingroup
146 \edef\x{\string\unexpanded}%
147 \edef\y{\meaning\unexpanded}%
148 \ifx\x\y
149   \endgroup
150   \let\etex@unexpanded\unexpanded
151   \etex@unexpandedtrue
152 \else
153   \edef\y{\meaning\normalunexpanded}%
154   \ifx\x\y
155     \endgroup
156     \let\etex@unexpanded\normalunexpanded
157     \etex@unexpandedtrue
158 \else
159   \edef\y{\meaning\@@unexpanded}%
160   \ifx\x\y
161     \endgroup
162     \let\etex@unexpanded\@@unexpanded
163     \etex@unexpandedtrue
164 \else
165   \ifluatex
166     \ifnum\luatexversion<36 %
167     \else
168       \begingroup
169         \directlua{%
170           tex.enableprimitives('etex0',{'unexpanded'})%
171         }%
172         \global\let\etex@unexpanded\etex@unexpanded
173       \endgroup
174     \fi
175   \fi
176   \edef\y{\meaning\etex@unexpanded}%
177   \ifx\x\y
178     \endgroup
179     \etex@unexpandedtrue
180   \else
181     \endgroup
182     \PackageInfoNoLine{\etexcmds}{%

```

```

183      Could not find \string\unexpanded.\MessageBreak
184      That can mean that you are not using e-TeX or%
185      \MessageBreak
186      that some package has redefined \string\unexpanded.%\MessageBreak
187      In the latter case, load this package earlier%
188      }%
189      \etex@unexpandedfalse
190      \fi
191      \fi
192      \fi
193      \fi
194 \fi

```

## 2.6 \expanded

```

\ifetex@expanded
195 \etexcmds@newif{expanded}

\etex@expanded
196 \begingroup
197 \edef\x{\string\expanded}%
198 \edef\y{\meaning\expanded}%
199 \ifx\x\y
200   \endgroup
201   \let\etex@expanded\expanded
202   \etex@expandedtrue
203 \else
204   \edef\y{\meaning\normalexpanded}%
205   \ifx\x\y
206     \endgroup
207     \let\etex@expanded\normalexpanded
208     \etex@expandedtrue
209   \else
210     \edef\y{\meaning\@@expanded}%
211     \ifx\x\y
212       \endgroup
213       \let\etex@expanded\@@expanded
214       \etex@expandedtrue
215     \else
216       \ifluatex
217         \ifnum\luatexversion<36 %
218         \else
219           \begingroup
220             \directlua{%
221               tex.enableprimitives('etex@',{'expanded'})%
222             }%
223             \global\let\etex@expanded\etex@expanded
224           \endgroup
225         \fi
226       \fi
227       \edef\y{\meaning\etex@expanded}%
228       \ifx\x\y
229         \endgroup
230         \etex@expandedtrue
231       \else
232         \endgroup
233         \PackageInfoNoLine{\etexcmds}{%
234           Could not find \string\expanded.\MessageBreak

```

```

235      That can mean that you are not using pdfTeX 1.50 or%
236      \MessageBreak
237      that some package has redefined \string\expanded.%
238      \MessageBreak
239      In the latter case, load this package earlier%
240      }%
241      \etex@expandedfalse
242      \fi
243      \fi
244      \fi
245 \fi

246 \etexcmds@AtEnd%
247 {/package}

```

### 3 Test

#### 3.1 Catcode checks for loading

```

248 {*test1}
249 \catcode`\\=1 %
250 \catcode`\\=2 %
251 \catcode`#=6 %
252 \catcode`@=11 %
253 \expandafter\ifx\csname count@\endcsname\relax
254   \countdef\count@=255 %
255 \fi
256 \expandafter\ifx\csname @gobble\endcsname\relax
257   \long\def\@gobble#1{}%
258 \fi
259 \expandafter\ifx\csname @firstofone\endcsname\relax
260   \long\def\@firstofone#1{#1}%
261 \fi
262 \expandafter\ifx\csname loop\endcsname\relax
263   \expandafter\@firstofone
264 \else
265   \expandafter\@gobble
266 \fi
267 {%
268   \def\loop#1\repeat{%
269     \def\body{#1}%
270     \iterate
271   }%
272   \def\iterate{%
273     \body
274     \let\next\iterate
275   \else
276     \let\next\relax
277   \fi
278   \next
279 }%
280   \let\repeat=\fi
281 }%
282 \def\RestoreCatcodes{}
283 \count@=0 %
284 \loop
285   \edef\RestoreCatcodes{%

```

```

286     \RestoreCatcodes
287     \catcode\the\count@=\the\catcode\count@\relax
288   }%
289 \ifnum\count@<255 %
290   \advance\count@ 1 %
291 \repeat
292
293 \def\RangeCatcodeInvalid#1#2{%
294   \count@=#1\relax
295   \loop
296     \catcode\count@=15 %
297   \ifnum\count@<#2\relax
298     \advance\count@ 1 %
299   \repeat
300 }
301 \def\RangeCatcodeCheck#1#2#3{%
302   \count@=#1\relax
303   \loop
304     \ifnum#3=\catcode\count@
305     \else
306       \errmessage{%
307         Character \the\count@\space
308         with wrong catcode \the\catcode\count@\space
309         instead of \number#3%
310       }%
311     \fi
312   \ifnum\count@<#2\relax
313     \advance\count@ 1 %
314   \repeat
315 }
316 \def\space{ }
317 \expandafter\ifx\csname LoadCommand\endcsname\relax
318   \def\LoadCommand{\input etexcmds.sty\relax}%
319 \fi
320 \def\Test{%
321   \RangeCatcodeInvalid{0}{47}%
322   \RangeCatcodeInvalid{58}{64}%
323   \RangeCatcodeInvalid{91}{96}%
324   \RangeCatcodeInvalid{123}{255}%
325   \catcode`\@=12 %
326   \catcode`\\=0 %
327   \catcode`\\=14 %
328   \LoadCommand
329   \RangeCatcodeCheck{0}{36}{15}%
330   \RangeCatcodeCheck{37}{37}{14}%
331   \RangeCatcodeCheck{38}{47}{15}%
332   \RangeCatcodeCheck{48}{57}{12}%
333   \RangeCatcodeCheck{58}{63}{15}%
334   \RangeCatcodeCheck{64}{64}{12}%
335   \RangeCatcodeCheck{65}{90}{11}%
336   \RangeCatcodeCheck{91}{91}{15}%
337   \RangeCatcodeCheck{92}{92}{0}%
338   \RangeCatcodeCheck{93}{96}{15}%
339   \RangeCatcodeCheck{97}{122}{11}%
340   \RangeCatcodeCheck{123}{255}{15}%
341   \RestoreCatcodes
342 }
343 \Test

```

```

344 \csname @@end\endcsname
345 \end
346 </test1>

3.2 Macro tests

347 /*test2|
348 \immediate\write16{etexcmds-test2.tex: test file for plainTeX}
349 \input etexcmds.sty\relax
350 \catcode`\@=11 %
351 \edef\x{\string\unexpanded}
352 \edef\y{\meaning\etex@unexpanded}
353 \ifx\x\y
354 \else
355   \PackageError{etexcmds-test2}{Test failed}\@ehc
356 \fi
357 \end
358 </test2>
359 /*test3|
360 \NeedsTeXFormat{LaTeX2e}
361 \ProvidesFile{etexcmds-test3.tex}[2016/05/16 v1.6 Test file for LaTeX]
362 \RequirePackage{etexcmds}
363 \makeatletter
364 \edef\x{\string\unexpanded}
365 \edef\y{\meaning\etex@unexpanded}
366 \ifx\x\y
367 \else
368   \PackageError{etexcmds-test3}{Test failed}\@ehc
369 \fi
370 \stop
371 </test3>
372 /*test4|
373 \NeedsTeXFormat{LaTeX2e}
374 \ProvidesFile{etexcmds-test4.tex}[2016/05/16 v1.6 Test file for LaTeX]
375 \documentclass{article}
376 \usepackage{m-pictex}
377 \def\normalwritestatus#1#2{%
378   \typeout{EMERGENCY HACK \string\normalwritestatus}%
379   \typeout{#1: #2}%
380 }
381 \usepackage{m-ch-de}
382 \usepackage{etexcmds}
383 \makeatletter
384 \ifetex@unexpanded
385   \edef\x{\string\unexpanded}%
386   \edef\y{\meaning\etex@unexpanded}%
387   \ifx\x\y
388   \else
389     \PackageWarningNoLine{etexcmds-test4}{Test failed}%
390   \fi
391 \else
392   \PackageWarningNoLine{etexcmds-test4}{%
393     Test failed because of ConTeXt%
394   }%
395 \fi
396 \stop
397 </test4>

```

## 4 Installation

### 4.1 Download

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

`CTAN:macros/latex/contrib/oberdiek/etexcmds.dtx` The source file.

`CTAN:macros/latex/contrib/oberdiek/etexcmds.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 TeX 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 `TDSScripts/oberdiek/` for scripts that need further installation steps.

### 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain TeX:

```
tex etexcmds.dtx
```

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

<code>etexcmds.sty</code>	→ <code>tex/generic/oberdiek/etexcmds.sty</code>
<code>etexcmds.pdf</code>	→ <code>doc/latex/oberdiek/etexcmds.pdf</code>
<code>test/etexcmds-test1.tex</code>	→ <code>doc/latex/oberdiek/test/etexcmds-test1.tex</code>
<code>test/etexcmds-test2.tex</code>	→ <code>doc/latex/oberdiek/test/etexcmds-test2.tex</code>
<code>test/etexcmds-test3.tex</code>	→ <code>doc/latex/oberdiek/test/etexcmds-test3.tex</code>
<code>test/etexcmds-test4.tex</code>	→ <code>doc/latex/oberdiek/test/etexcmds-test4.tex</code>
<code>etexcmds.dtx</code>	→ <code>source/latex/oberdiek/etexcmds.dtx</code>

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 TeX distribution (teTeX, mikTeX, ...) relies on file name databases, you must refresh these. For example, teTeX users run `texhash` or `mktexlsr`.

---

<sup>1</sup>`CTAN:pkg/etexcmds`

## 4.5 Some details for the interested

**Unpacking with L<sup>A</sup>T<sub>E</sub>X.** The .dtx chooses its action depending on the format:

**plain T<sub>E</sub>X:** Run docstrip and extract the files.

**L<sup>A</sup>T<sub>E</sub>X:** Generate the documentation.

If you insist on using L<sup>A</sup>T<sub>E</sub>X for docstrip (really, docstrip does not need L<sup>A</sup>T<sub>E</sub>X), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{etexcmds.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 pdfL<sup>A</sup>T<sub>E</sub>X:

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

## 5 History

[2007/05/06 v1.0]

- First version.

[2007/09/09 v1.1]

- Documentation for \ifetex@unexpanded added.
- Catcode section rewritten.

[2007/12/12 v1.2]

- \etex@expanded added.

[2010/01/28 v1.3]

- Compatibility to iniT<sub>E</sub>X added.

[2011/01/30 v1.4]

- Already loaded package files are not input in plain T<sub>E</sub>X.

[2011/02/16 v1.5]

- Using LuaT<sub>E</sub>X's `tex.enableprimitives` if available.

[2016/05/16 v1.6]

- Documentation updates.

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