

The etexcmds package

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2011/02/16 v1.5

Abstract

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

Contents

1	Documentation	2
1.1	<code>\unexpanded</code>	2
1.2	<code>\expanded</code>	2
2	Implementation	2
2.1	Reload check and package identification	2
2.2	Catcodes	3
2.3	Provide <code>\newif</code>	4
2.4	Load package <code>infwarerr</code>	4
2.5	<code>\unexpanded</code>	5
2.6	<code>\expanded</code>	5
3	Test	6
3.1	Catcode checks for loading	6
3.2	Macro tests	8
4	Installation	9
4.1	Download	9
4.2	Bundle installation	9
4.3	Package installation	10
4.4	Refresh file name databases	10
4.5	Some details for the interested	10
5	History	11
	[2007/05/06 v1.0]	11
	[2007/09/09 v1.1]	11
	[2007/12/12 v1.2]	11
	[2010/01/28 v1.3]	11
	[2011/01/30 v1.4]	11
	[2011/02/16 v1.5]	11
6	Index	11

1 Documentation

1.1 `\unexpanded`

`\etex@unexpanded`

New primitive commands are introduced in ε -TeX. Unhappily `\unexpanded` collides with a macro in ConTeXt with the same name. This also affects the L^AT_EX world. For example, package `m-ch-de` loads `base/syst-gen.tex` that redefines `\unexpanded`. Thus this package defines `\etex@unexpanded` to get rid of the name clash.

`\ifetex@unexpanded`

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

1.2 `\expanded`

Probably `\expanded` will be added in pdfTeX 1.50.4 and LuaTeX. Again ConTeXt defines this as macro. Therefore version 1.2 of this packages also provides `\etex@expanded` and `\ifetex@unexpanded`.

2 Implementation

```
1 (*package)
```

2.1 Reload check and package identification

Reload check, especially if the package is not used with L^AT_EX.

```
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-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{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 [2011/02/16 v1.5 Prefix for e-TeX command names (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('etex@',{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.%
187           \MessageBreak
188           In the latter case, load this package earlier%
189         }%
190         \etex@unexpandedfalse
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 \endpackage

```

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}[2011/02/16 v1.5 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}[2011/02/16 v1.5 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 CTAN¹:

[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 T_EX 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/
```

¹[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

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 etexcmds.dtx
```

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

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

Attached source. The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk etexcmds.pdf unpack_files output .
```

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{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 `pdf $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$` :

```
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 `iniTEX` added.

[2011/01/30 v1.4]

- Already loaded package files are not input in plain `TEX`.

[2011/02/16 v1.5]

- Using Lua`TEX`'s `tex.enableprimitives` if available.

6 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.

Symbols		
<code>\#</code>	251	41, 42, 43, 44, 45, 46, 47, 48, 49, 69, 70, 72, 73, 74, 78, 79, 80, 81,
<code>\%</code>	327	82, 83, 84, 87, 88, 90, 91, 92, 93,
<code>\@</code>	252, 325, 350	97, 99, 249, 250, 251, 252, 287,
<code>\@@expanded</code>	210, 213	296, 304, 308, 325, 326, 327, 350
<code>\@@unexpanded</code>	159, 162	<code>\count@</code> 254, 283,
<code>\@PackageError</code>	355, 368	287, 289, 290, 294, 296, 297,
<code>\@PackageInfoNoLine</code>	182, 233	298, 302, 304, 307, 308, 312, 313
<code>\@PackageWarningNoLine</code>	389, 392	<code>\countdef</code> 254
<code>\@ehc</code>	355, 368	<code>\csname</code> 14, 21, 50, 66,
<code>\@firstofone</code>	260, 263	76, 118, 120, 123, 125, 128, 131,
<code>\@gobble</code>	257, 265	134, 253, 256, 259, 262, 317, 344
<code>\@undefined</code>	58	
<code>\%</code>	326	D
<code>\{</code>	249	<code>\directlua</code> 169, 220
<code>\}</code>	250	<code>\documentclass</code> 375
A		E
<code>\advance</code>	290, 298, 313	<code>\empty</code> 17, 18
<code>\aftergroup</code>	29	<code>\end</code> 345, 357
B		<code>\endcsname</code> 14, 21, 50, 66, 76, 118, 120, 123, 125, 128, 131, 134, 253, 256, 259, 262, 317, 344
<code>\body</code>	269, 273	<code>\endinput</code> 29, 114
C		<code>\endlinechar</code> 4, 35, 71, 77, 89
<code>\catcode</code>	2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 33, 34, 36, 37, 38, 39, 40,	<code>\errmessage</code> 306
		<code>\escapechar</code> 113, 116

