

The etexcmds package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2010/01/28 v1.3

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>	4
2.6	<code>\expanded</code>	5
3	Test	5
3.1	Catcode checks for loading	5
3.2	Macro tests	7
4	Installation	8
4.1	Download	8
4.2	Bundle installation	8
4.3	Package installation	8
4.4	Refresh file name databases	9
4.5	Some details for the interested	9
5	History	9
	[2007/05/06 v1.0]	9
	[2007/09/09 v1.1]	9
	[2007/12/12 v1.2]	9
	[2010/01/28 v1.3]	9
6	Index	10

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 LaTeX 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 LaTeX.

```
2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \catcode123 1 % {
9 \catcode125 2 % }
10 \expandafter\let\expandafter\x\csname ver@etexcmds.sty\endcsname
11 \ifx\x\relax % plain-TeX, first loading
12 \else
13 \def\empty{}%
14 \ifx\x\empty % LaTeX, first loading,
15 % variable is initialized, but \ProvidesPackage not yet seen
16 \else
17 \catcode35 6 % #
18 \expandafter\ifx\csname PackageInfo\endcsname\relax
19 \def\x#1#2{%
20 \immediate\write-1{Package #1 Info: #2.}%
21 }%
22 \else
23 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
24 \fi
25 \x{etexcmds}{The package is already loaded}%
26 \aftergroup\endinput
27 \fi
28 \fi
```

```
29 \endgroup
```

Package identification:

```
30 \begingroup
31 \catcode35 6 % #
32 \catcode40 12 % (
33 \catcode41 12 % )
34 \catcode44 12 % ,
35 \catcode45 12 % -
36 \catcode46 12 % .
37 \catcode47 12 % /
38 \catcode58 12 % :
39 \catcode64 11 % @
40 \catcode91 12 % [
41 \catcode93 12 % ]
42 \catcode123 1 % {
43 \catcode125 2 % }
44 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
45 \def\x#1#2#3[#4]{\endgroup
46 \immediate\write-1{Package: #3 #4}%
47 \xdef#1{#4}%
48 }%
49 \else
50 \def\x#1#2[#3]{\endgroup
51 #2[{#3}]%
52 \ifx#1@undefined
53 \xdef#1{#3}%
54 \fi
55 \ifx#1\relax
56 \xdef#1{#3}%
57 \fi
58 }%
59 \fi
60 \expandafter\x\csname ver@etexcmds.sty\endcsname
61 \ProvidesPackage{etexcmds}%
62 [2010/01/28 v1.3 Prefix for e-TeX command names (HO)]
```

2.2 Catcodes

```
63 \begingroup
64 \catcode123 1 % {
65 \catcode125 2 % }
66 \def\x{\endgroup
67 \expandafter\edef\csname etexcmds@AtEnd\endcsname{%
68 \catcode35 \the\catcode35\relax
69 \catcode64 \the\catcode64\relax
70 \catcode123 \the\catcode123\relax
71 \catcode125 \the\catcode125\relax
72 }%
73 }%
74 \x
75 \catcode35 6 % #
76 \catcode64 11 % @
77 \catcode123 1 % {
78 \catcode125 2 % }
79 \def\TMP@EnsureCode#1#2{%
80 \edef\etexcmds@AtEnd{%
81 \etexcmds@AtEnd
82 \catcode#1 \the\catcode#1\relax
83 }%
84 \catcode#1 #2\relax
85 }
86 \TMP@EnsureCode{44}{12}% ,
```

```

87 \TMP@EnsureCode{45}{12}% -
88 \TMP@EnsureCode{46}{12}% .
89 \TMP@EnsureCode{47}{12}% /
90 \TMP@EnsureCode{61}{12}% =
91 \edef\etexcmds@AtEnd{%
92   \etexcmds@AtEnd
93   \escapechar\the\escapechar\relax
94 }
95 \escapechar=92 % backslash

```

2.3 Provide \newif

\etexcmds@newif

```

96 \def\etexcmds@newif#1{%
97   \expandafter\edef\csname etex@#1false\endcsname{%
98     \let
99     \expandafter\noexpand\csname ifetex@#1\endcsname
100     \noexpand\iffalse
101   }%
102   \expandafter\edef\csname etex@#1true\endcsname{%
103     \let
104     \expandafter\noexpand\csname ifetex@#1\endcsname
105     \noexpand\iftrue
106   }%
107   \csname etex@#1false\endcsname
108 }

```

2.4 Load package infwarerr

```

109 \begingroup\expandafter\expandafter\expandafter\endgroup
110 \expandafter\ifx\csname RequirePackage\endcsname\relax
111   \input infwarerr.sty\relax
112 \else
113   \RequirePackage{infwarerr}[2007/09/09]%
114 \fi

```

2.5 \unexpanded

\ifetex@unexpanded

```

115 \etexcmds@newif{unexpanded}

```

\etex@unexpanded

```

116 \begingroup
117 \edef\x{\string\unexpanded}%
118 \edef\y{\meaning\unexpanded}%
119 \ifx\x\y
120   \endgroup
121   \let\etex@unexpanded\unexpanded
122   \etex@unexpandedtrue
123 \else
124   \edef\y{\meaning\normalunexpanded}%
125   \ifx\x\y
126     \endgroup
127     \let\etex@unexpanded\normalunexpanded
128     \etex@unexpandedtrue
129   \else
130     \edef\y{\meaning\@@unexpanded}%
131     \ifx\y
132       \endgroup
133       \let\etex@unexpanded\@@unexpanded
134       \etex@unexpandedtrue
135     \else
136       \endgroup

```

```

137     \@PackageInfoNoLine{etexcmds}{%
138         Could not find \string\unexpanded.\MessageBreak
139         That can mean that you are not using e-TeX or\MessageBreak
140         that some package has redefined \string\unexpanded.\MessageBreak
141         In the latter case, load this package earlier%
142     }%
143     \etex@unexpandedfalse
144 \fi
145 \fi
146 \fi

```

2.6 \expanded

\ifetex@expanded

```

147 \etexcmds@newif{expanded}

```

\etex@expanded

```

148 \begingroup
149 \edef\x{\string\expanded}%
150 \edef\y{\meaning\expanded}%
151 \ifx\x\y
152     \endgroup
153     \let\etex@expanded\expanded
154     \etex@expandedtrue
155 \else
156     \edef\y{\meaning\normalexpanded}%
157     \ifx\x\y
158         \endgroup
159         \let\etex@expanded\normalexpanded
160         \etex@expandedtrue
161     \else
162         \edef\y{\meaning\@@expanded}%
163         \ifx\y
164             \endgroup
165             \let\etex@expanded\@@expanded
166             \etex@expandedtrue
167         \else
168             \endgroup
169             \@PackageInfoNoLine{etexcmds}{%
170                 Could not find \string\expanded.\MessageBreak
171                 That can mean that you are not using pdfTeX 1.50 or\MessageBreak
172                 that some package has redefined \string\expanded.\MessageBreak
173                 In the latter case, load this package earlier%
174             }%
175             \etex@expandedfalse
176         \fi
177     \fi
178 \fi

179 \etexcmds@AtEnd
180 \endpackage

```

3 Test

3.1 Catcode checks for loading

```

181 \test1
182 \catcode'\{=1 %
183 \catcode'\}=2 %
184 \catcode'\#=6 %
185 \catcode'\@=11 %

```

```

186 \expandafter\ifx\csname count@\endcsname\relax
187   \countdef\count@=255 %
188 \fi
189 \expandafter\ifx\csname @gobble\endcsname\relax
190   \long\def\@gobble#1{}%
191 \fi
192 \expandafter\ifx\csname @firstofone\endcsname\relax
193   \long\def\@firstofone#1{#1}%
194 \fi
195 \expandafter\ifx\csname loop\endcsname\relax
196   \expandafter\@firstofone
197 \else
198   \expandafter\@gobble
199 \fi
200 {%
201   \def\loop#1\repeat{%
202     \def\body{#1}%
203     \iterate
204   }%
205   \def\iterate{%
206     \body
207     \let\next\iterate
208   \else
209     \let\next\relax
210   \fi
211   \next
212 }%
213 \let\repeat=\fi
214 }%
215 \def\RestoreCatcodes{}
216 \count@=0 %
217 \loop
218   \edef\RestoreCatcodes{%
219     \RestoreCatcodes
220     \catcode\the\count@=\the\catcode\count@\relax
221   }%
222 \ifnum\count@<255 %
223   \advance\count@ 1 %
224 \repeat
225
226 \def\RangeCatcodeInvalid#1#2{%
227   \count@=#1\relax
228   \loop
229     \catcode\count@=15 %
230   \ifnum\count@<#2\relax
231     \advance\count@ 1 %
232   \repeat
233 }
234 \expandafter\ifx\csname LoadCommand\endcsname\relax
235   \def\LoadCommand{\input etexcmds.sty\relax}%
236 \fi
237 \def\Test{%
238   \RangeCatcodeInvalid{0}{47}%
239   \RangeCatcodeInvalid{58}{64}%
240   \RangeCatcodeInvalid{91}{96}%
241   \RangeCatcodeInvalid{123}{255}%
242   \catcode'\@=12 %
243   \catcode'\=0 %
244   \catcode'\{=1 %
245   \catcode'\}=2 %
246   \catcode'\#=6 %
247   \catcode'\[=12 %

```

```

248 \catcode'\]=12 %
249 \catcode'\%=14 %
250 \catcode'\ =10 %
251 \catcode13=5 %
252 \LoadCommand
253 \RestoreCatcodes
254 }
255 \Test
256 \csname @@end\endcsname
257 \end
258 </test1>

```

3.2 Macro tests

```

259 <*test2>
260 \immediate\write16{etexcmds-test2.tex: test file for plainTeX}
261 \input etexcmds.sty\relax
262 \catcode'\@=11 %
263 \edef\x{\string\unexpanded}
264 \edef\y{\meaning\etex\unexpanded}
265 \ifx\x\y
266 \else
267 \PackageError{etexcmds-test2}{Test failed}\@ehc
268 \fi
269 \end
270 </test2>

271 <*test3>
272 \NeedsTeXFormat{LaTeX2e}
273 \ProvidesFile{etexcmds-test3.tex}[2010/01/28 v1.3 Test file for LaTeX]
274 \RequirePackage{etexcmds}
275 \makeatletter
276 \edef\x{\string\unexpanded}
277 \edef\y{\meaning\etex\unexpanded}
278 \ifx\x\y
279 \else
280 \PackageError{etexcmds-test3}{Test failed}\@ehc
281 \fi
282 \stop
283 </test3>

284 <*test4>
285 \NeedsTeXFormat{LaTeX2e}
286 \ProvidesFile{etexcmds-test4.tex}[2010/01/28 v1.3 Test file for LaTeX]
287 \documentclass{article}
288 \usepackage{m-pictex}
289 \def\normalwritestatus#1#2{%
290 \typeout{EMERGENCY HACK \string\normalwritestatus}%
291 \typeout{#1: #2}%
292 }
293 \usepackage{m-ch-de}
294 \usepackage{etexcmds}
295 \makeatletter
296 \ifetex\unexpanded
297 \edef\x{\string\unexpanded}%
298 \edef\y{\meaning\etex\unexpanded}%
299 \ifx\x\y
300 \else
301 \PackageWarningNoLine{etexcmds-test4}{Test failed}%
302 \fi
303 \else
304 \PackageWarningNoLine{etexcmds-test4}{%
305 Test failed because of ConTeXt%
306 }%

```

```

307 \fi
308 \stop
309 </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/
```

4.3 Package installation

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

```
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`.

¹<ftp://ftp.ctan.org/tex-archive/>

4.4 Refresh file name databases

If your \TeX distribution (te\TeX , mik\TeX , ...) relies on file name databases, you must refresh these. For example, te\TeX users run `texhash` or `mktexlsr`.

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 \LaTeX . The `.dtx` chooses its action depending on the format:

plain- \TeX : Run `docstrip` and extract the files.

\LaTeX : Generate the documentation.

If you insist on using \LaTeX for `docstrip` (really, `docstrip` does not need \LaTeX), 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 \LaTeX` :

```
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.

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; numbers in roman refer to the code lines where the entry is used.

Symbols	
<code>\#</code>	184, 246
<code>\%</code>	249
<code>\@</code>	185, 242, 262
<code>\@expanded</code>	162, 165
<code>\@unexpanded</code>	130, 133
<code>\@PackageError</code>	267, 280
<code>\@PackageInfoNoLine</code>	137, 169
<code>\@PackageWarningNoLine</code>	301, 304
<code>\@ehc</code>	267, 280
<code>\@firstofone</code>	193, 196
<code>\@gobble</code>	190, 198
<code>\@undefined</code>	52
<code>\[</code>	247
<code>\]</code>	243
<code>\{</code>	182, 244
<code>\}</code>	183, 245
<code>\]</code>	248
<code>_</code>	250
A	
<code>\advance</code>	223, 231
<code>\aftergroup</code>	26
B	
<code>\body</code>	202, 206
C	
<code>\catcode</code>	3, 4, 5, 6, 7, 8, 9, 17, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 64, 65, 68, 69, 70, 71, 75, 76, 77, 78, 82, 84, 182, 183, 184, 185, 220, 229, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 262
<code>\count@</code>	187, 216, 220, 222, 223, 227, 229, 230, 231
<code>\countdef</code>	187
<code>\csname</code>	10, 18, 44, 60, 67, 97, 99, 102, 104, 107, 110, 186, 189, 192, 195, 234, 256
D	
<code>\documentclass</code>	287
E	
<code>\empty</code>	13, 14
<code>\end</code>	257, 269
<code>\endcsname</code>	10, 18, 44, 60, 67, 97, 99, 102, 104, 107, 110, 186, 189, 192, 195, 234, 256
<code>\endinput</code>	26
<code>\escapechar</code>	93, 95
<code>\etex@expanded</code>	148
<code>\etex@expandedfalse</code>	175
<code>\etex@expandedtrue</code>	154, 160, 166
<code>\etex@unexpanded</code>	2, 116, 264, 277, 298
<code>\etex@unexpandedfalse</code>	143
<code>\etex@unexpandedtrue</code> ..	122, 128, 134
<code>\etexcmds@AtEnd</code> ...	80, 81, 91, 92, 179
<code>\etexcmds@newif</code>	96, 115, 147
<code>\expanded</code>	149, 150, 153, 170, 172
I	
<code>\ifetex@expanded</code>	147
<code>\ifetex@unexpanded</code>	2, 115, 296
<code>\iffalse</code>	100
<code>\ifnum</code>	222, 230
<code>\iftrue</code>	105
<code>\ifx</code> .	11, 14, 18, 44, 52, 55, 110, 119, 125, 131, 151, 157, 163, 186, 189, 192, 195, 234, 265, 278, 299
<code>\immediate</code>	20, 46, 260
<code>\input</code>	111, 235, 261
<code>\iterate</code>	203, 205, 207
L	
<code>\LoadCommand</code>	235, 252
<code>\loop</code>	201, 217, 228
M	
<code>\makeatletter</code>	275, 295
<code>\meaning</code>	118, 124, 130, 150, 156, 162, 264, 277, 298
<code>\MessageBreak</code>	138, 139, 140, 170, 171, 172
N	
<code>\NeedsTeXFormat</code>	272, 285
<code>\next</code>	207, 209, 211
<code>\normalexpanded</code>	156, 159
<code>\normalunexpanded</code>	124, 127
<code>\normalwritestatus</code>	289, 290
P	
<code>\PackageInfo</code>	23
<code>\ProvidesFile</code>	273, 286
<code>\ProvidesPackage</code>	15, 61
R	
<code>\RangeCatcodeInvalid</code>	226, 238, 239, 240, 241
<code>\repeat</code>	201, 213, 224, 232
<code>\RequirePackage</code>	113, 274
<code>\RestoreCatcodes</code> ..	215, 218, 219, 253
S	
<code>\stop</code>	282, 308
T	
<code>\Test</code>	237, 255
<code>\the</code>	68, 69, 70, 71, 82, 93, 220
<code>\TMP@EnsureCode</code> .	79, 86, 87, 88, 89, 90
<code>\typeout</code>	290, 291

U		X	
<code>\unexpanded</code>	117, 118, 121, 138, 140, 263, 276, 297	<code>\x</code>	10, 11, 14, 19, 23, 25, 45, 50, 60, 66, 74, 117, 119, 125, 149, 151, 157, 263, 265, 276, 278, 297, 299
<code>\usepackage</code>	288, 293, 294		
W		Y	
		<code>\y</code>	118, 119, 124, 125, 130, 131, 150, 151, 156, 157, 162, 163, 264, 265, 277, 278, 298, 299
<code>\write</code>	20, 46, 260		