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`.

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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\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}%
```

```
      \aftergroup\endinput
    \fi
  \fi
\endgroup%
```

Package identification:

```
\begingroup\catcode61\catcode48\catcode32=10\relax%
  \catcode13=5 % ^^M
  \endlinechar=13 %
  \catcode35=6 % #
  \catcode39=12 % '
  \catcode40=12 % (
  \catcode41=12 % )
  \catcode44=12 % ,
  \catcode45=12 % -
  \catcode46=12 % .
  \catcode47=12 % /
  \catcode58=12 % :
  \catcode64=11 % @
  \catcode91=12 % [
  \catcode93=12 % ]
  \catcode123=1 % {
  \catcode125=2 % }
  \expandafter\ifx\csname ProvidesPackage\endcsname\relax
    \def\x#1#2#3[#4]{\endgroup
      \immediate\write-1{Package: #3 #4}%
      \xdef#1{#4}%
    }%
  \else
    \def\x#1#2[#3]{\endgroup
      #2[{#3}]%
      \ifx#1\@undefined
        \xdef#1{#3}%
      \fi
      \ifx#1\relax
        \xdef#1{#3}%
      \fi
    }%
  \fi
\expandafter\x\csname ver@etexcmds.sty\endcsname
\ProvidesPackage{etexcmds}%
  [2011/02/16 v1.5 Prefix for e-TeX command names (HO)]%
```

2.2 Catcodes

```
\begingroup\catcode61\catcode48\catcode32=10\relax%
  \catcode13=5 % ^^M
  \endlinechar=13 %
  \catcode123=1 % {
  \catcode125=2 % }
  \catcode64=11 % @
  \def\x{\endgroup
    \expandafter\edef\csname etexcmds@AtEnd\endcsname{%
      \endlinechar=\the\endlinechar\relax
      \catcode13=\the\catcode13\relax
      \catcode32=\the\catcode32\relax
      \catcode35=\the\catcode35\relax
      \catcode61=\the\catcode61\relax
      \catcode64=\the\catcode64\relax
      \catcode123=\the\catcode123\relax
      \catcode125=\the\catcode125\relax
    }%
  }%
```

```
\x\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 % ^^M
\endlinechar=13 %
\catcode35=6 % #
\catcode64=11 % @
\catcode123=1 % {
\catcode125=2 % }
\def\TMP@EnsureCode#1#2{%
  \edef\etexcmds@AtEnd{%
    \etexcmds@AtEnd
    \catcode#1=\the\catcode#1\relax
  }%
  \catcode#1=#2\relax
}
\TMP@EnsureCode{39}{12}% '
\TMP@EnsureCode{40}{12}% (
\TMP@EnsureCode{41}{12}% )
\TMP@EnsureCode{44}{12}% ,
\TMP@EnsureCode{45}{12}% -
\TMP@EnsureCode{46}{12}% .
\TMP@EnsureCode{47}{12}% /
\TMP@EnsureCode{60}{12}% <
\TMP@EnsureCode{91}{12}% [
\TMP@EnsureCode{93}{12}% ]
\edef\etexcmds@AtEnd{%
  \etexcmds@AtEnd
  \escapechar\the\escapechar\relax
  \noexpand\endinput
}
\escapechar=92 % backslash
```

2.3 Provide \newif

\etexcmds@newif

```
\def\etexcmds@newif#1{%
  \expandafter\edef\csname etex@#1false\endcsname{%
    \let
    \expandafter\noexpand\csname ifetex@#1\endcsname
    \noexpand\iffalse
  }%
  \expandafter\edef\csname etex@#1true\endcsname{%
    \let
    \expandafter\noexpand\csname ifetex@#1\endcsname
    \noexpand\iftrue
  }%
  \csname etex@#1false\endcsname
}
```

2.4 Load package **infwarerr**

```
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
  \def\TMP@RequirePackage#1[#2]{%
    \begingroup\expandafter\expandafter\expandafter\endgroup
    \expandafter\ifx\csname ver@#1.sty\endcsname\relax
      \input #1.sty\relax
    \fi
  }%
  \TMP@RequirePackage{infwarerr}[2007/09/09]%
  \TMP@RequirePackage{ifluatex}[2010/03/01]%
\else
  \RequirePackage{infwarerr}[2007/09/09]%
  \RequirePackage{ifluatex}[2010/03/01]%
```

```
\fi
```

2.5 \unexpanded

\ifetex@unexpanded

```
\etexcmds@newif{unexpanded}
```

\etex@unexpanded

```
\begingroup
\edef\x{\string\unexpanded}%
\edef\y{\meaning\unexpanded}%
\ifx\x\y
  \endgroup
  \let\etex@unexpanded\unexpanded
  \etex@unexpandedtrue
\else
  \edef\y{\meaning\normalunexpanded}%
  \ifx\x\y
    \endgroup
    \let\etex@unexpanded\normalunexpanded
    \etex@unexpandedtrue
  \else
    \edef\y{\meaning\@@unexpanded}%
    \ifx\x\y
      \endgroup
      \let\etex@unexpanded\@@unexpanded
      \etex@unexpandedtrue
    \else
      \ifluatex
        \ifnum\luatexversion<36 %
        \else
          \begingroup
            \directlua{%
              tex.enableprimitives('etex@',{'unexpanded'})%
            }%
            \global\let\etex@unexpanded\etex@unexpanded
          \endgroup
        \fi
      \fi
      \edef\y{\meaning\etex@unexpanded}%
      \ifx\x\y
        \endgroup
        \etex@unexpandedtrue
      \else
        \endgroup
        \@PackageInfoNoLine{etexcmds}{%
          Could not find \string\unexpanded.\MessageBreak
          That can mean that you are not using e-TeX or%
          \MessageBreak
          that some package has redefined \string\unexpanded.%
          \MessageBreak
          In the latter case, load this package earlier%
        }%
        \etex@unexpandedfalse
      \fi
    \fi
  \fi
\fi
```

2.6 \expanded

\ifetex@expanded

```
\etexcmds@newif{expanded}
```

\etex@expanded

```
\begingroup
\edef\x{\string\expanded}%
\edef\y{\meaning\expanded}%
\ifx\x\y
  \endgroup
  \let\etex@expanded\expanded
  \etex@expandedtrue
\else
  \edef\y{\meaning\normalexpanded}%
  \ifx\x\y
    \endgroup
    \let\etex@expanded\normalexpanded
    \etex@expandedtrue
  \else
    \edef\y{\meaning\@@expanded}%
    \ifx\x\y
      \endgroup
      \let\etex@expanded\@@expanded
      \etex@expandedtrue
    \else
      \ifluatex
        \ifnum\luatexversion<36 %
        \else
          \begingroup
            \directlua{%
              tex.enableprimitives('etex@',{'expanded'})%
            }%
            \global\let\etex@expanded\etex@expanded
          \endgroup
        \fi
      \fi
      \edef\y{\meaning\etex@expanded}%
      \ifx\x\y
        \endgroup
        \etex@expandedtrue
      \else
        \endgroup
        \@PackageInfoNoLine{etexcmds}{%
          Could not find \string\expanded.\MessageBreak
          That can mean that you are not using pdfTeX 1.50 or%
          \MessageBreak
          that some package has redefined \string\expanded.%
          \MessageBreak
          In the latter case, load this package earlier%
        }%
        \etex@expandedfalse
      \fi
    \fi
  \fi
\fi

\etexcmds@AtEnd%
```

⟨/package⟩

3 Test

3.1 Catcode checks for loading

⟨*test1⟩

```
\catcode`\{=1 %
\catcode`\}=2 %
\catcode`\#=6 %
\catcode`\@=11 %
\expandafter\ifx\csname count@\endcsname\relax
  \countdef\count@=255 %
\fi
\expandafter\ifx\csname @gobble\endcsname\relax
  \long\def\@gobble#1{}%
\fi
\expandafter\ifx\csname @firstofone\endcsname\relax
  \long\def\@firstofone#1{#1}%
\fi
\expandafter\ifx\csname loop\endcsname\relax
  \expandafter\@firstofone
\else
  \expandafter\@gobble
\fi
{%
  \def\loop#1\repeat{%
    \def\body{#1}%
    \iterate
  }%
  \def\iterate{%
    \body
      \let\next\iterate
    \else
      \let\next\relax
    \fi
    \next
  }%
  \let\repeat=\fi
}%
\def\RestoreCatcodes{}
\count@=0 %
\loop
  \edef\RestoreCatcodes{%
    \RestoreCatcodes
    \catcode\the\count@=\the\catcode\count@\relax
  }%
\ifnum\count@<255 %
  \advance\count@ 1 %
\repeat

\def\RangeCatcodeInvalid#1#2{%
  \count@=#1\relax
  \loop
    \catcode\count@=15 %
  \ifnum\count@<#2\relax
    \advance\count@ 1 %
  \repeat
}
\def\RangeCatcodeCheck#1#2#3{%
  \count@=#1\relax
  \loop
    \ifnum#3=\catcode\count@
    \else
      \errmessage{%
        Character \the\count@\space
        with wrong catcode \the\catcode\count@\space
        instead of \number#3%
      }%
```

```
    \fi
  \ifnum\count@<#2\relax
    \advance\count@ 1 %
  \repeat
}
\def\space{ }
\expandafter\ifx\csname LoadCommand\endcsname\relax
  \def\LoadCommand{\input etexcmds.sty\relax}%
\fi
\def\Test{%
  \RangeCatcodeInvalid{0}{47}%
  \RangeCatcodeInvalid{58}{64}%
  \RangeCatcodeInvalid{91}{96}%
  \RangeCatcodeInvalid{123}{255}%
  \catcode`\@=12 %
  \catcode`\\=0 %
  \catcode`\%=14 %
  \LoadCommand
  \RangeCatcodeCheck{0}{36}{15}%
  \RangeCatcodeCheck{37}{37}{14}%
  \RangeCatcodeCheck{38}{47}{15}%
  \RangeCatcodeCheck{48}{57}{12}%
  \RangeCatcodeCheck{58}{63}{15}%
  \RangeCatcodeCheck{64}{64}{12}%
  \RangeCatcodeCheck{65}{90}{11}%
  \RangeCatcodeCheck{91}{91}{15}%
  \RangeCatcodeCheck{92}{92}{0}%
  \RangeCatcodeCheck{93}{96}{15}%
  \RangeCatcodeCheck{97}{122}{11}%
  \RangeCatcodeCheck{123}{255}{15}%
  \RestoreCatcodes
}
\Test
\csname @@end\endcsname
\end
```

⟨/test1⟩

3.2 Macro tests

⟨*test2⟩

```
\immediate\write16{etexcmds-test2.tex: test file for plainTeX}
\input etexcmds.sty\relax
\catcode`\@=11 %
\edef\x{\string\unexpanded}
\edef\y{\meaning\etex@unexpanded}
\ifx\x\y
\else
  \@PackageError{etexcmds-test2}{Test failed}\@ehc
\fi
\end
```

⟨/test2⟩

⟨*test3⟩

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{etexcmds-test3.tex}[2011/02/16 v1.5 Test file for LaTeX]
\RequirePackage{etexcmds}
\makeatletter
\edef\x{\string\unexpanded}
\edef\y{\meaning\etex@unexpanded}
\ifx\x\y
\else
  \@PackageError{etexcmds-test3}{Test failed}\@ehc
\fi
\stop
```

```
⟨/test3⟩
⟨*test4⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{etexcmds-test4.tex}[2011/02/16 v1.5 Test file for LaTeX]
\documentclass{article}
\usepackage{m-pictex}
\def\normalwritestatus#1#2{%
  \typeout{EMERGENCY HACK \string\normalwritestatus}%
  \typeout{#1: #2}%
}
\usepackage{m-ch-de}
\usepackage{etexcmds}
\makeatletter
\ifetex@unexpanded
  \edef\x{\string\unexpanded}%
  \edef\y{\meaning\etex@unexpanded}%
  \ifx\x\y
  \else
    \@PackageWarningNoLine{etexcmds-test4}{Test failed}%
  \fi
\else
  \@PackageWarningNoLine{etexcmds-test4}{%
    Test failed because of ConTeXt%
  }%
\fi
\stop
⟨/test4⟩
```

4 Installation

4.1 Download

Package. This package is available on CTAN[1]:

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 `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/

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):

```
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 TEX distribution (teTEX, mikTEX, ...) relies on file name databases, you must refresh these. For example, teTEX 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 pdfLATEX:

```
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 LuaTEX's `tex.enableprimitives` if available.

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