The etexcmds package

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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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*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 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 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}%
  [2016/05/16 v1.6 Avoid name clashes with e-TeX commands (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}[2016/05/16 v1.6 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}[2016/05/16 v1.6 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] http://ctan.org/pkg/etexcmds

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

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 Catalogue

The following XML file can be used as source for the TEX 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 etexcmds.xml.

```
⟨*catalogue⟩
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='etexcmds'>
  <name>etexcmds</name>
  <caption>Avoid name clashes with e-TeX commands.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='2007,2010,2011'/>
  <license type='lppl1.3'/>
  <version number='1.6'/>
  <description>
    New primitive commands are introduced in e-TeX; sometimes the
    names collide with existing macros.  This package solves the
    name clashes by adding a prefix to e-TeX&amp;#x2019;s commands.  For
    example, eTeX&amp;#x2019;s <tt>\unexpanded</tt> is provided as
    <tt>\etex@unexpanded</tt>.

    <p/>
    The package is part of the <xref refid='oberdiek'>oberdiek</xref>
    bundle.
  </description>
  <documentation details='Package documentation'
      href='ctan:/macros/latex/contrib/oberdiek/etexcmds.pdf'/>
  <ctan file='true' path='/macros/latex/contrib/oberdiek/etexcmds.dtx'/>
  <miktex location='oberdiek'/>
  <texlive location='oberdiek'/>
  <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
</entry>
⟨/catalogue⟩
```

6 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.

[2016/05/16 v1.6]

- Documentation updates.

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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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