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 \texttt{\unexpanded} is provided as \texttt{\etex@unexpanded}.

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1 Documentation

1.1 \unexpanded

\etex@unexpanded

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

\ifetex@unexpanded

Package \texttt{etexcmds} can be loaded even if \eTeX 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 pdf\TeX 1.50 and Lua\TeX. 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.

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 % ^^M
\endlinechar=13 %
\catcode35=6 % #
\catcode39=12 % '
\catcode44=12 % ,
\catcode45=12 % -
\catcode46=12 % .
\expandafter\let\expandafter\x\csname ver@etexcmds.sty\endcsname
\ifx\x\relax % plain-TeX, first loading
\else \def\empty{}% 
\ifx\x\empty % LaTeX, first loading, % variable is initialized, but \ProvidesPackage not yet seen
\else \expandafter\ifx\csname PackageInfo\endcsname\relax
\immediate\write-1{Package \texttt{etexcmds} Info: \texttt{stopped}}%
\else \def\x#1#2{%
\immediate\write-1{Package \#1 Info: \#2.}%
\}%
\\fi
\fi
\expandafter\let\expandafter\x\csname etexcmds\endcsname
\expandafter\expandafter\x\csname endcsname\endcsname
\ifx\x\relax % \etex@unexpanded
\else \fi
\fi
\\endgroup
\end{verbatim}
\begin{document}

\section*{2.2 Catcodes}

\begin{verbatim}
\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 % /\n\catcode48=12 % :\n\catcode49=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 Avoid name clashes with e-\TeX\ commands (HO)]%
\endgroup
\end{verbatim}

\end{document}
2.3 Provide \newif

\etexcmds@newif

\expandafter\edef\csname etex@false\endcsname{\let\expandafter\noexpand\csname ifetex@false\endcsname\noexpand\iffalse}

\expandafter\edef\csname etex@true\endcsname{\let\expandafter\noexpand\csname ifetex@true\endcsname\noexpand\iftrue}

\csname etex@false\endcsname

2.4 Load package infwarerr

\begingroup\expandafter\expandafter\expandafter\endgroup

\def\TMP@requirepackage#1[#2]{% 
  \begingroup\expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\csname ver@#1.sty\endcsname\relax
    \input #1.sty\relax
  \fi
  \endinput
}

\TMP@requirepackage{infwarerr}[2007/09/09]%
\TMP@requirepackage{ifluatex}[2010/03/01]%
\fi

\RequirePackage{infwarerr}[2007/09/09]%
\RequirePackage{ifluatex}[2010/03/01]%
\fi

2.5 \unexpanded

\ifetexunexpanded
\etexcmds@newif{unexpanded}
\etexunexpanded
\begingroup
\edef\x{\string\unexpanded}\
\edef\y{\meaning\unexpanded}\
\ifx\x\y\
\endgroup
\let\etexunexpanded\unexpanded
\etexunexpandedtrue
\else
\edef\y{\meaning\normalunexpanded}\
\ifx\x\y\
\endgroup
\let\etexunexpanded\normalunexpanded
\etexunexpandedtrue
\else
\edef\y{\meaning\@@unexpanded}\
\ifx\x\y\
\endgroup
\let\etexunexpanded\@@unexpanded
\etexunexpandedtrue
\else
\ifluatex
\ifnum\luatexversion<36
\else
\begingroup
\directlua{\textbackslash
\enableprimitives{\etex@\{'unexpanded\'}}%
\global\let\etexunexpanded\etexunexpanded
\endgroup
\fi
\fi
\fi
\edef\y{\meaning\etexunexpanded}\
\ifx\x\y\
\endgroup
\etexunexpandedtrue
\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%\MessageBreak
}\fi
\etexunexpandedfalse
\fi
\fi
\fi

2.6 \expanded

\ifetexexpanded
\etexcmds@newif{expanded}
195 \etexexpanded
\begin{verbatim}
\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
      \ifluatex
        \ifnum\luatexversion<36%
          \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}
    \etex@expandedfalse
  \fi
  \fi
  \etexcmds@AtEnd
\end{verbatim}

3 Test

3.1 Catcode checks for loading

\catcode`\{=1

3
\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
\else
\expandafter\@gobble
\fi
\else
\expandafter\@firstofone
\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 \\
\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 \\
\repeat \\
\} \\
\edef\RangeCatcodeInvalid{\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 \\
\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 \\
\repeat 

\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
⟨/𭗍𭖾𭗌𭗍𭟣⟩

3.2 Macro tests

⟨*𭗍𭖾𭗌𭗍𭟤⟩
\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
\@PackageError{etexcmds-test2}{Test failed}\@ehc
\fi
\end
⟨/𭗍𭖾𭗌𭗍𭟤⟩
⟨*𭗍𭖾𭗌𭗍𭝣⟩
\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-test2}{Test failed}\@ehc
\fi
\end
⟨/𭗍𭖾𭗌𭗍𭝣⟩

8
\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
\section{Installation}
\subsection{Download}
\begin{description}
\item[Package.] This package is available on CTAN\footnote{ftp://ftp.ctan.org/tex-archive/}:
\begin{itemize}
\item[CTAN:macros/latex/contrib/oberdiek/etexcmds.dtx] The source file.
\item[CTAN:macros/latex/contrib/oberdiek/etexcmds.pdf] Documentation.
\end{itemize}
\end{description}
\item[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.
\begin{itemize}
\item[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 \texttt{texmf} in their name are usually organized this way.
\end{itemize}
\subsection{Bundle installation}
\begin{description}
\item[Unpacking.] Unpack the \texttt{oberdiek.tds.zip} in the TDS tree (also known as \texttt{texmf} tree) of your choice. Example (linux):
\begin{verbatim}
unzip oberdiek.tds.zip -d ~/texmf
\end{verbatim}
\item[Script installation.] Check the directory TDS:scripts/oberdiek/ for scripts that need further installation steps. Package attachfile2 comes with the Perl script \texttt{pdfatfi.pl} that should be installed in such a way that it can be called as \texttt{pdfatfi}. Example (linux):
\begin{verbatim}
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
\end{verbatim}
\end{description}
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:

```
llatex \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 \texttt{caption} and \texttt{description} are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is \texttt{etexcmds.xml}.

\begin{verbatim}
<?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='1.5'/>
  <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#x2019;s commands. For 
    example, e\TeX#x2019;s <tt>\unexpanded</tt> is provided as 
    <tt>\etex@unexpanded</tt>.
  </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>
\end{verbatim}

6 History

[2007/05/06 v1.0]

- First version.

[2007/09/09 v1.1]

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

[2007/12/12 v1.2]

- \texttt{\etex@expanded} added.

[2010/01/28 v1.3]

- Compatibility to ini\TeX added.

[2011/01/30 v1.4]

- Already loaded package files are not input in plain \TeX.
• Using LuaTeX’s \texttt{tex.enableprimitives} if available.

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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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