

The **flags** package

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Abstract

Package **flags** allows the setting and clearing of flags in bit fields and converts the bit field into a decimal number. Currently the bit field is limited to 31 bits.

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1 Documentation

1.1 User interface

`\resetflags {⟨fname⟩}`

The bit field $\langle fname \rangle$ is cleared. Currently is also used for initialization, because a `\newflags` macro is not implemented.

`\setflag {⟨fname⟩} {⟨position⟩}`

The flag at bit position $\langle position \rangle$ is set in the bit field $\langle fname \rangle$.

`\clearflag {⟨fname⟩} {⟨position⟩}`

The flag at bit position $\langle position \rangle$ is cleared in the bit field $\langle fname \rangle$.

`\printflags {<fname>}`

The bit field `<fname>` is converted to a decimal number. The macro is expandible.

Example. See package `bookmark`. It uses package `flags` for its font style options.

1.2 Requirements

- ε -TeX (`\numexpr`)

1.3 ToDo

- Named positions.
- Setting positions by a key-value interface.
- Support for more than 31 bits while maintaining expandibility of `\printflags`.
- Eventually `\newflags`, `\newflagstype`.

2 Implementation

```

1 <*package>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{flags}%
4   [2007/03/07 v0.2 Flag setting in bit fields (HO)]

5 \begingroup\expandafter\expandafter\expandafter\endgroup
6 \expandafter\ifx\csname numexpr\endcsname\relax
7   \PackageError{flags}{%
8     Missing e-TeX, package loading aborted%
9   }{%
10     This packages makes heavy use of \string\numexpr.%
11   }%
12 \expandafter\endinput
13 \fi

\resetflags

14 \newcommand*{\resetflags}[1]{%
15   \expandafter\let\csname flags@#1\endcsname\@empty
16 }

\printflags Macro \printflags converts the bit field into a decimal number.

17 \newcommand*{\printflags}[1]{%
18   \expandafter\@printflags\csname flags@#1\endcsname
19 }
20 \def\@printflags#1{%
21   \expandafter\@firstofone\expandafter{%
22     \number\numexpr
23     \ifx#1\@empty
24       0%
25     \else
26       \expandafter\@@printflags#1%
27     \fi
28   }%
29 }
30 \def\@@printflags#1#2\fi{%
31   \fi
32   #1%
33   \ifx\\#2\\%
34   \else

```

```

35     +2*\numexpr\expandafter\@@printflags#2%
36   \fi
37 }

\setflag

38 \newcommand*{\setflag}[2]{%
39   \expandafter\@setflag\csname flags@#1\expandafter\endcsname
40   \expandafter{\romannumeral\number\numexpr#2-1\relax000}%
41 }
42 \def\@setflag#1#2{%
43   \edef#1{%
44     \expandafter\@@setflag\expandafter{#1}{#2}%
45   }%
46 }
47 \def\@@setflag#1#2{%
48   \ifx\#1\%
49     \FLAGS@zero#2\relax
50     1%
51   \else
52     \ifx\#2\%
53       1\@gobble#1%
54     \else
55       \@car#1\@nil
56       \expandafter\@@@setflag\expandafter{\@gobble#2}{#1}%
57     \fi
58   \fi
59 }
60 \def\@@@setflag#1#2\fi\fi{%
61   \fi\fi
62   \expandafter\@@setflag\expandafter{\@cdr#2\@nil}{#1}%
63 }

\clearflag

64 \newcommand*{\clearflag}[2]{%
65   \expandafter\@clearflag\csname flags@#1\expandafter\endcsname
66   \expandafter{\romannumeral\number\numexpr#2-1\relax000}%
67 }
68 \def\@clearflag#1#2{%
69   \edef#1{%
70     \expandafter\@@clearflag\expandafter{#1}{#2}%
71   }%
72 }
73 \def\@@clearflag#1#2{%
74   \ifx\#1\%
75   \else
76     \ifx\#2\%
77       0\@gobble#1%
78     \else
79       \@car#1\@nil
80       \expandafter\@@@clearflag\expandafter{\@gobble#2}{#1}%
81     \fi
82   \fi
83 }
84 \def\@@@clearflag#1#2\fi\fi{%
85   \fi\fi
86   \expandafter\@@clearflag\expandafter{\@cdr#2\@nil}{#1}%
87 }

88 \def\FLAGS@zero#1{%
89   \ifx#1\relax
90   \else
91     0%

```

```

92 \expandafter\FLAGS@zero
93 \fi
94 }
95 </package>

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/flags.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/flags.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:macros/latex/contrib/oberdiek/oberdiek-tds.zip](#)

3.2 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/

```

3.3 Package installation

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

```
tex flags.dtx
```

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

```

flags.sty → tex/latex/oberdiek/flags.sty
flags.pdf → doc/latex/oberdiek/flags.pdf
flags.dtx → source/latex/oberdiek/flags.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`.

3.4 Refresh file name databases

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

¹<http://ftp.ctan.org/tex-archive/>

3.5 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 flags.pdf unpack_files output .
```

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain-T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for `docstrip` (really, `docstrip` does not need L^AT_EX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{flags.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 pdfL^AT_EX:

```
pdflatex flags.dtx
makeindex -s gind.ist flags.idx
pdflatex flags.dtx
makeindex -s gind.ist flags.idx
pdflatex flags.dtx
```

4 History

[2007/02/18 v0.1]

- First version.

[2007/03/07 v0.2]

- Raise an error if ε -T_EX is not detected.

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