

# The kvdefinekeys package

Heiko Oberdiek  
<heiko.oberdiek at gmail.com>

2010/03/01 v1.0

## Abstract

Package kvdefinekeys provides `\kv@define@key` to define keys the same way as keyval's `\define@key`. However, it works also using ini-TeX.

## Contents

<b>1</b>	<b>Documentation</b>	<b>1</b>
1.1	Motivation . . . . .	1
<b>2</b>	<b>Implementation</b>	<b>2</b>
2.1	Identification . . . . .	2
2.2	Package loading . . . . .	3
2.3	Provide key defining macro . . . . .	3
<b>3</b>	<b>Test</b>	<b>4</b>
3.1	Catcode checks for loading . . . . .	4
<b>4</b>	<b>Installation</b>	<b>5</b>
4.1	Download . . . . .	5
4.2	Bundle installation . . . . .	5
4.3	Package installation . . . . .	5
4.4	Refresh file name databases . . . . .	6
4.5	Some details for the interested . . . . .	6
<b>5</b>	<b>References</b>	<b>6</b>
<b>6</b>	<b>History</b>	<b>6</b>
	[2010/03/01 v1.0] . . . . .	6
<b>7</b>	<b>Index</b>	<b>7</b>

## 1 Documentation

### 1.1 Motivation

`\kvsetkeys` serves as replacement for keyval's `\setkeys`. This package adds macros to define keys, closing the gap `\kvsetkeys` leaves.

`\kv@define@key {<family>} {<key>},[<default>]`

Macro `\kv@define@key` reimplements keyval's `\define@key`. As difference to the original the defined keys also allow `\par` inside values.

## 2 Implementation

### 2.1 Identification

```
1 (*package)
```

Reload check, especially if the package is not used with L<sup>A</sup>T<sub>E</sub>X.

```
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@kvdefinekeys.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{kvdefinekeys}{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 \endgroup
```

```

57     \fi
58   }%
59   \fi
60 \expandafter\x\csname ver@kvdefinekeys.sty\endcsname
61 \ProvidesPackage{kvdefinekeys}%
62 [2010/03/01 v1.0 Defining keys (H0)]
63 \begingroup
64   \catcode123 1 % {
65   \catcode125 2 % }
66   \def\x{\endgroup
67     \expandafter\edef\csname KVD@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\KVD@AtEnd{%
81       \KVD@AtEnd
82       \catcode#1 \the\catcode#1\relax
83     }%
84     \catcode#1 #2\relax
85   }
86   \TMP@EnsureCode{46}{12}% .
87   \TMP@EnsureCode{47}{12}% /

```

## 2.2 Package loading

```

88 \begingroup\expandafter\expandafter\expandafter\endgroup
89 \expandafter\ifx\csname RequirePackage\endcsname\relax
90   \input ltxcmds.sty\relax
91 \else
92   \RequirePackage{ltxcmds}[2010/03/01]%
93 \fi

```

## 2.3 Provide key defining macro

`\kv@define@key`

```

94 \def\kv@define@key#1#2{%
95   \ltx@ifnextchar[{%
96     \KVD@DefineKeyWithDefault{#1}{#2}%
97   }{%
98     \long\expandafter\def\csname KV@#1@#2\endcsname##1%
99     }%
100 }

```

`\KVD@DefineKeyWithDefault`

```

101 \long\def\KVD@DefineKeyWithDefault#1#2[#3]{%
102   \expandafter\def\csname KV@#1@#2@default\endcsname
103   \expandafter{%
104     \csname KV@#1@#2\endcsname{#3}%
105   }%
106   \long\expandafter\def\csname KV@#1@#2\endcsname##1%
107 }

108 \KVD@AtEnd
109 \endpackage

```

## 3 Test

### 3.1 Catcode checks for loading

```
110 <*test1>
111 \catcode'\{=1 %
112 \catcode'\}=2 %
113 \catcode'\#=6 %
114 \catcode'\@=11 %
115 \expandafter\ifx\csname count@\endcsname\relax
116   \countdef\count@=255 %
117 \fi
118 \expandafter\ifx\csname @gobble\endcsname\relax
119   \long\def\@gobble#1{}%
120 \fi
121 \expandafter\ifx\csname @firstofone\endcsname\relax
122   \long\def\@firstofone#1{#1}%
123 \fi
124 \expandafter\ifx\csname loop\endcsname\relax
125   \expandafter\@firstofone
126 \else
127   \expandafter\@gobble
128 \fi
129 {%
130   \def\loop#1\repeat{%
131     \def\body{#1}%
132     \iterate
133   }%
134   \def\iterate{%
135     \body
136     \let\next\iterate
137   \else
138     \let\next\relax
139   \fi
140   \next
141 }%
142 \let\repeat=\fi
143 }%
144 \def\RestoreCatcodes{}
145 \count@=0 %
146 \loop
147   \edef\RestoreCatcodes{%
148     \RestoreCatcodes
149     \catcode\the\count@=\the\catcode\count@\relax
150   }%
151 \ifnum\count@<255 %
152   \advance\count@ 1 %
153 \repeat
154
155 \def\RangeCatcodeInvalid#1#2{%
156   \count@=#1\relax
157   \loop
158     \catcode\count@=15 %
159   \ifnum\count@<#2\relax
160     \advance\count@ 1 %
161   \repeat
162 }
163 \expandafter\ifx\csname LoadCommand\endcsname\relax
164   \def\LoadCommand{\input kvdefinekeys.sty\relax}%
165 \fi
166 \def\Test{%
167   \RangeCatcodeInvalid{0}{47}%
```

```

168 \RangeCatcodeInvalid{58}{64}%
169 \RangeCatcodeInvalid{91}{96}%
170 \RangeCatcodeInvalid{123}{255}%
171 \catcode'\@=12 %
172 \catcode'\=0 %
173 \catcode'\{=1 %
174 \catcode'\}=2 %
175 \catcode'\#=6 %
176 \catcode'\[=12 %
177 \catcode'\]=12 %
178 \catcode'\%=14 %
179 \catcode'\ =10 %
180 \catcode13=5 %
181 \LoadCommand
182 \RestoreCatcodes
183 }
184 \Test
185 \csname @@end\endcsname
186 \end
187 </test1>

```

## 4 Installation

### 4.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

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

[CTAN:macros/latex/contrib/oberdiek/kvdefinekeys.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/
```

### 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 kvdefinekeys.dtx
```

---

<sup>1</sup><http://ftp.ctan.org/tex-archive/>

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

```
kvdefinekeys.sty      → tex/generic/oberdiek/kvdefinekeys.sty
kvdefinekeys.pdf       → doc/latex/oberdiek/kvdefinekeys.pdf
test/kvdefinekeys-test1.tex → doc/latex/oberdiek/test/kvdefinekeys-test1.tex
kvdefinekeys.dtx       → source/latex/oberdiek/kvdefinekeys.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 (`te $\TeX$` , `mik $\TeX$` , ...) relies on file name databases, you must refresh these. For example, `te $\TeX$`  users run `texhash` or `mktextlsr`.

## 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 kvdefinekeys.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{kvdefinekeys.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 kvdefinekeys.dtx
makeindex -s gind.ist kvdefinekeys.idx
pdflatex kvdefinekeys.dtx
makeindex -s gind.ist kvdefinekeys.idx
pdflatex kvdefinekeys.dtx
```

## 5 References

- [1] David Carlisle: *The keyval package*; 1999/03/16 v1.13; [CTAN:macros/latex/required/graphics/keyval.dtx](#).

## 6 History

[2010/03/01 v1.0]

- First version.

## 7 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	
\#	113, 175
\%	178
\@	114, 171
\@firstofone	122, 125
\@gobble	119, 127
\@undefined	52
\[	176
\]	172
\{	111, 173
\}	112, 174
\]	177
\_	179
A	
\advance	152, 160
\aftergroup	26
B	
\body	131, 135
C	
\catcode	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, 111, 112, 113, 114, 149, 158, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180
\count@	116, 145, 149, 151, 152, 156, 158, 159, 160
\countdef	116
\csname	10, 18, 44, 60, 67, 89, 98, 102, 104, 106, 115, 118, 121, 124, 163, 185
E	
\empty	13, 14
\end	186
\endcsname	10, 18, 44, 60, 67, 89, 98, 102, 104, 106, 115, 118, 121, 124, 163, 185
\endinput	26
I	
\ifnum	151, 159
\ifx	11, 14, 18, 44, 52, 55, 89, 115, 118, 121, 124, 163
\immediate	20, 46
\input	90, 164
\iterate	132, 134, 136
K	
\kv@define@key	1, 94
\KVD@AtEnd	80, 81, 108
\KVD@DefineKeyWithDefault	96, 101
L	
\LoadCommand	164, 181
\loop	130, 146, 157
\ltx@ifnextchar	95
N	
\next	136, 138, 140
P	
\PackageInfo	23
\ProvidesPackage	15, 61
R	
\RangeCatcodeInvalid	155, 167, 168, 169, 170
\repeat	130, 142, 153, 161
\RequirePackage	92
\RestoreCatcodes	144, 147, 148, 182
T	
\Test	166, 184
\the	68, 69, 70, 71, 82, 149
\TMP@EnsureCode	79, 86, 87
W	
\write	20, 46
X	
\x	10, 11, 14, 19, 23, 25, 45, 50, 60, 66, 74