

The uniquecounter package

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Abstract

This package provides a kind of counter that provides unique number values. Several counters can be created by different names. The numeric values are not limited.

Contents

1 Documentation	1
1.1 Example	2
2 Implementation	2
2.1 Reload check and package identification	2
2.2 Catcodes	3
3 Installation	6
3.1 Download	6
3.2 Bundle installation	6
3.3 Package installation	7
3.4 Refresh file name databases	7
3.5 Some details for the interested	7
4 History	7
[2009/09/11 v1.0]	7
[2009/12/18 v1.1]	8
[2011/01/30 v1.2]	8
[2016/05/16 v1.3]	8
5 Index	8

1 Documentation

`\UniqueCounterNew { $\langle name \rangle$ }`

Macro `\UniqueCounterNew` creates a new unique counter $\langle name \rangle$. An error is thrown, if the counter already exists.

*Please report any issues at <https://github.com/ho-tex/oberdiek/issues>

`\UniqueCounterCall {<name>} {<code>}`

Macro `\UniqueCounterCall` calls the given `<code>` with a new value of counter `<name>` as argument.

`\UniqueCounterIncrement {<name>}`

Macro `\UniqueCounterIncrement` generates a new value for the counter `<name>` by incrementing by one (globally).

`\UniqueCounterGet {<name>}`

Expandable macro `\UniqueCounterGet` returns the current value of counter `<name>`

1.1 Example

```
1 <*example>
2 \documentclass{minimal}
3 \usepackage{uniquecounter}
4 \UniqueCounterNew{anchor}
5 \makeatletter
6 \newcommand*{\DefNewAnchorName}[2]{%
7   % #1 is unique counter value
8   % #2 is name of anchor
9   \@namedef{anchor@#2}{a#1}%
10 }
11 \newcommand*{\NewAnchorName}[1]{%
12   \UniqueCounterCall{anchor}\DefNewAnchorName{#1}%
13 }
14 \newcommand*{\PrintAnchorName}[1]{%
15   \@nameuse{anchor@#1}%
16 }
17 \begin{document}
18   \NewAnchorName{Top}%
19   \NewAnchorName{Left}%
20   \noindent
21   Top: \PrintAnchorName{Top}\\%
22   Left: \PrintAnchorName{Left}%
23 \end{document}
24 </example>
```

2 Implementation

```
25 <*package>
```

2.1 Reload check and package identification

Reload check, especially if the package is not used with L^AT_EX.

```
26 \begingroup\catcode61\catcode48\catcode32=10\relax%
27 \catcode13=5 % ^^M
28 \endlinechar=13 %
29 \catcode35=6 % #
30 \catcode39=12 % '
31 \catcode44=12 % ,
32 \catcode45=12 % -
33 \catcode46=12 % .
```

```

34 \catcode58=12 % :
35 \catcode64=11 % @
36 \catcode123=1 % {
37 \catcode125=2 % }
38 \expandafter\let\expandafter\x\csname ver@uniquecounter.sty\endcsname
39 \ifx\x\relax % plain-TeX, first loading
40 \else
41 \def\empty{}%
42 \ifx\x\empty % LaTeX, first loading,
43 % variable is initialized, but \ProvidesPackage not yet seen
44 \else
45 \expandafter\ifx\csname PackageInfo\endcsname\relax
46 \def\x#1#2{%
47 \immediate\write-1{Package #1 Info: #2.}%
48 }%
49 \else
50 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
51 \fi
52 \x{uniquecounter}{The package is already loaded}%
53 \aftergroup\endinput
54 \fi
55 \fi
56 \endgroup%

```

Package identification:

```

57 \begingroup\catcode61\catcode48\catcode32=10\relax%
58 \catcode13=5 % ^^M
59 \endlinechar=13 %
60 \catcode35=6 % #
61 \catcode39=12 % '
62 \catcode40=12 % (
63 \catcode41=12 % )
64 \catcode44=12 % ,
65 \catcode45=12 % -
66 \catcode46=12 % .
67 \catcode47=12 % /
68 \catcode58=12 % :
69 \catcode64=11 % @
70 \catcode91=12 % [
71 \catcode93=12 % ]
72 \catcode123=1 % {
73 \catcode125=2 % }
74 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
75 \def\x#1#2#3[#4]{\endgroup
76 \immediate\write-1{Package: #3 #4}%
77 \xdef#1{#4}%
78 }%
79 \else
80 \def\x#1#2[#3]{\endgroup
81 #2[#{#3}]%
82 \ifx#1\@undefined
83 \xdef#1{#3}%
84 \fi
85 \ifx#1\relax
86 \xdef#1{#3}%
87 \fi
88 }%
89 \fi
90 \expandafter\x\csname ver@uniquecounter.sty\endcsname

```

```

91 \ProvidesPackage{uniquecounter}%
92 [2016/05/16 v1.3 Provide unlimited unique counter (H0)]%

```

2.2 Catcodes

```

93 \begingroup\catcode61\catcode48\catcode32=10\relax%
94 \catcode13=5 % ^^M
95 \endlinechar=13 %
96 \catcode123=1 % {
97 \catcode125=2 % }
98 \catcode64=11 % @
99 \def\x{\endgroup
100 \expandafter\edef\csname uqc@AtEnd\endcsname{%
101 \endlinechar=\the\endlinechar\relax
102 \catcode13=\the\catcode13\relax
103 \catcode32=\the\catcode32\relax
104 \catcode35=\the\catcode35\relax
105 \catcode61=\the\catcode61\relax
106 \catcode64=\the\catcode64\relax
107 \catcode123=\the\catcode123\relax
108 \catcode125=\the\catcode125\relax
109 }%
110 }%
111 \x\catcode61\catcode48\catcode32=10\relax%
112 \catcode13=5 % ^^M
113 \endlinechar=13 %
114 \catcode35=6 % #
115 \catcode64=11 % @
116 \catcode123=1 % {
117 \catcode125=2 % }
118 \def\TMP@EnsureCode#1#2{%
119 \edef\uqc@AtEnd{%
120 \uqc@AtEnd
121 \catcode#1=\the\catcode#1\relax
122 }%
123 \catcode#1=#2\relax
124 }
125 \TMP@EnsureCode{33}{12}% !
126 \TMP@EnsureCode{39}{12}% '
127 \TMP@EnsureCode{42}{12}% *
128 \TMP@EnsureCode{43}{12}% +
129 \TMP@EnsureCode{46}{12}% .
130 \TMP@EnsureCode{47}{12}% /
131 \TMP@EnsureCode{91}{12}% [
132 \TMP@EnsureCode{93}{12}% ]
133 \TMP@EnsureCode{96}{12}% `
134 \edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
135 \begingroup\expandafter\expandafter\expandafter\endgroup
136 \expandafter\ifx\csname RequirePackage\endcsname\relax
137 \def\TMP@RequirePackage#1[#2]{%
138 \begingroup\expandafter\expandafter\expandafter\endgroup
139 \expandafter\ifx\csname ver@#1.sty\endcsname\relax
140 \input #1.sty\relax
141 \fi
142 }%
143 \TMP@RequirePackage{bigintcalc}[2007/11/11]%
144 \TMP@RequirePackage{infixarrr}[2007/09/09]%
145 \else

```

```

146 \RequirePackage{bigintcalc}[2007/11/11]%
147 \RequirePackage{infwarerr}[2007/09/09]%
148 \fi

\uqc@IncNum
149 \begingroup\expandafter\expandafter\expandafter\endgroup
150 \expandafter\ifx\csname numexpr\endcsname\relax
151 \def\uqc@IncNum#1{%
152 \begingroup
153 \count@=\csname uqc@cnt@#1\endcsname\relax
154 \advance\count@\@ne
155 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
156 \number\count@
157 }%
158 \ifnum\count@=2147483647 %
159 \global\expandafter\let\csname uqc@inc@#1\endcsname
160 \uqc@IncBig
161 \fi
162 \endgroup
163 }%
164 \else
165 \def\uqc@IncNum#1{%
166 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
167 \number\numexpr\csname uqc@cnt@#1\endcsname+1%
168 }%
169 \ifnum\csname uqc@cnt@#1\endcsname=2147483647 %
170 \global\expandafter\let\csname uqc@inc@#1\endcsname
171 \uqc@IncBig
172 \fi
173 }%
174 \fi

\uqc@IncBig
175 \def\uqc@IncBig#1{%
176 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
177 \expandafter\expandafter\expandafter
178 \BigIntCalcInc\csname uqc@cnt@#1\endcsname!%
179 }%
180 }

\uqc@Def
181 \begingroup\expandafter\expandafter\expandafter\endgroup
182 \expandafter\ifx\csname newcommand\endcsname\relax
183 \def\uqc@Def#1{\def#1##1}%
184 \else
185 \def\uqc@Def#1{\newcommand*{#1}[1]}%
186 \fi

\UniqueCounterNew
187 \uqc@Def\UniqueCounterNew{%
188 \expandafter\ifx\csname uqc@cnt@#1\endcsname\relax
189 \expandafter\xdef\csname uqc@cnt@#1\endcsname{0}%
190 \global\expandafter\let\csname uqc@inc@#1\endcsname\uqc@IncNum
191 \@PackageInfo{uniquecounter}{New unique counter '#1'}%
192 \else
193 \@PackageError{uniquecounter}{Unique counter '#1' is already defined}\@ehc
194 \fi
195 }

```

```

\UniqueCounterIncrement

196 \uqc@Def\UniqueCounterIncrement{%
197   \expandafter\ifx\csname uqc@cnt@#1\endcsname\relax
198     \@PackageError{uniquecounter}{Unique counter ‘#1’ is undefined}\@ehc
199   \else
200     \csname uqc@inc@#1\endcsname{#1}%
201   \fi
202 }

\UniqueCounterGet

203 \uqc@Def\UniqueCounterGet{%
204   \csname uqc@cnt@#1\endcsname
205 }

\UniqueCounterCall

206 \uqc@Def\UniqueCounterCall{%
207   \expandafter\ifx\csname uqc@cnt@#1\endcsname\relax
208     \@PackageError{uniquecounter}{Unique counter ‘#1’ is undefined}\@ehc
209     \expandafter\uqc@Call\expandafter0%
210   \else
211     \UniqueCounterIncrement{#1}%
212     \expandafter\expandafter\expandafter\uqc@Call
213     \expandafter\expandafter\expandafter{%
214       \csname uqc@cnt@#1\endcsname\expandafter\expandafter
215     }%
216   \fi
217 }

\uqc@Call

218 \long\def\uqc@Call#1#2{#2{#1}}%

219 \uqc@AtEnd%

220 \</package>

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/uniquecounter.dtx](http://ctan.org/macros/latex/contrib/oberdiek/uniquecounter.dtx) The source file.

[CTAN:macros/latex/contrib/oberdiek/uniquecounter.pdf](http://ctan.org/macros/latex/contrib/oberdiek/uniquecounter.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](http://ctan.org/install/macros/latex/contrib/oberdiek.tds.zip)

TDS refers to the standard “A Directory Structure for T_EX Files” ([CTAN:pkg/tds](http://ctan.org/pkg/tds)). Directories with `texmf` in their name are usually organized this way.

¹[CTAN:pkg/uniquecounter](http://ctan.org/pkg/uniquecounter)

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
```

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 uniquecounter.dtx
```

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

```
uniquecounter.sty      → tex/generic/oberdiek/uniquecounter.sty
uniquecounter.pdf      → doc/latex/oberdiek/uniquecounter.pdf
uniquecounter-example.tex → doc/latex/oberdiek/uniquecounter-example.tex
uniquecounter.dtx      → source/latex/oberdiek/uniquecounter.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 (`TeX Live`, `mikTeX`, ...) relies on file name databases, you must refresh these. For example, `TeX Live` users run `texhash` or `mktexlsr`.

3.5 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{uniquecounter.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 uniquecounter.dtx
makeindex -s gind.ist uniquecounter.idx
pdflatex uniquecounter.dtx
makeindex -s gind.ist uniquecounter.idx
pdflatex uniquecounter.dtx
```

4 History

[2009/09/11 v1.0]

- First public version.

[2009/12/18 v1.1]

- Bug fix in `\UniqueCounterCall` for values > 9 (bug report of Lev Bishop).

[2011/01/30 v1.2]

- Already loaded package files are not input in plain T_EX.

[2016/05/16 v1.3]

- Documentation updates.

5 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; plain numbers refer to the code lines where the entry is used.

Symbols		<code>\documentclass</code> 2
<code>\@PackageError</code> 193, 198, 208		
<code>\@PackageInfo</code> 191		E
<code>\@ehc</code> 193, 198, 208		<code>\empty</code> 41, 42
<code>\@namedef</code> 9		<code>\end</code> 23
<code>\@nameuse</code> 15		<code>\endcsname</code>
<code>\@ne</code> 154		. 38, 45, 74, 90, 100, 136, 139,
<code>\@undefined</code> 82		150, 153, 155, 159, 166, 167,
<code>\@</code> 21		169, 170, 176, 178, 182, 188,
		189, 190, 197, 200, 204, 207, 214
A		<code>\endinput</code> 53, 134
<code>\advance</code> 154		<code>\endlinechar</code> 28, 59, 95, 101, 113
<code>\aftergroup</code> 53		I
B		<code>\ifnum</code> 158, 169
<code>\begin</code> 17		<code>\ifx</code> 39, 42, 45, 74, 82,
<code>\BigIntCalcInc</code> 178		85, 136, 139, 150, 182, 188, 197, 207
C		<code>\immediate</code> 47, 76
<code>\catcode</code> 26, 27, 29, 30, 31, 32, 33, 34,		<code>\input</code> 140
35, 36, 37, 57, 58, 60, 61, 62, 63,		M
64, 65, 66, 67, 68, 69, 70, 71, 72,		<code>\makeatletter</code> 5
73, 93, 94, 96, 97, 98, 102, 103,		N
104, 105, 106, 107, 108, 111,		<code>\NewAnchorName</code> 11, 18, 19
112, 114, 115, 116, 117, 121, 123		<code>\newcommand</code> 6, 11, 14, 185
<code>\count@</code> 153, 154, 156, 158		<code>\noindent</code> 20
<code>\csname</code> 38, 45, 74, 90, 100, 136, 139,		<code>\number</code> 156, 167
150, 153, 155, 159, 166, 167,		<code>\numexpr</code> 167
169, 170, 176, 178, 182, 188,		P
189, 190, 197, 200, 204, 207, 214		<code>\PackageInfo</code> 50
D		<code>\PrintAnchorName</code> 14, 21, 22
<code>\DefNewAnchorName</code> 6, 12		<code>\ProvidesPackage</code> 43, 91

R	
\RequirePackage	146, 147
T	
\the	101, 102, 103, 104, 105, 106, 107, 108, 121
\TMP@EnsureCode	118, 125, 126, 127, 128, 129, 130, 131, 132, 133
\TMP@RequirePackage	137, 143, 144
U	
\UniqueCounterCall	1, 12, 206
\UniqueCounterGet	2, 203
\UniqueCounterIncrement	2, 196, 211
\UniqueCounterNew	1, 4, 187
\uqc@AtEnd	119, 120, 134, 219
\uqc@Call	209, 212, 218
\uqc@Def	181, 187, 196, 203, 206
\uqc@IncBig	160, 171, 175
\uqc@IncNum	149, 190
\usepackage	3
W	
\write	47, 76
X	
\x	38, 39, 42, 46, 50, 52, 75, 80, 90, 99, 111