The aliascnt package

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Abstract

Package aliascnt introduces *alias counters* that share the same counter register and clear list.

Contents

1 User interface **2**
1.1 Introduction . . . 2
1.2 Syntax . . . 2

2 Implementation **2**
2.1 Identification . . . 2
2.2 Create new alias counter . . . 2
2.3 Counter clear list . . . 3

3 Installation **3**
3.1 Download . . . 3
3.2 Bundle installation . . . 4
3.3 Package installation . . . 4
3.4 Refresh file name databases . . . 4
3.5 Some details for the interested . . . 4

4 Catalogue **5**

5 Acknowledgement **5**

6 References **5**

7 History **6**
[2006/02/20 v1.0] . . . 6
[2006/08/16 v1.1] . . . 6
[2006/09/25 v1.2] . . . 6
[2009/09/08 v1.3] . . . 6
[2016/05/16 v1.4] . . . 6

8 Index **6**

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

1 User interface

1.1 Introduction

There are features that rely on the name of counters. For example, hyperref's `\autoref` indirectly uses the counter name to determine which label text it puts in front of the reference number ([3]). In some circumstances this fail: several theorem environments are defined by `\newtheorem` that share the same counter.

1.2 Syntax

Macro names in user land contain the package name aliascnt in order to prevent name clashes.

`\newaliascnt{`⟨*ALIASCNT*⟩`}{`⟨*BASECNT*⟩`}`

An alias counter ALIASCNT is created that does not allocate a new TEX counter register. It shares the count register and the clear list with counter BASECNT. If the value of either the two registers is changed, the changes affects both.

`\aliascntresetthe{`⟨*ALIASCNT*⟩`}`

This fixes a problem with `\newtheorem` if it is fooled by an alias counter with the same name:

```
\newtheorem{foo}{Foo}% counter "foo"
\newaliascnt{bar}{foo}% alias counter "bar"
\newtheorem{bar}[bar]{Bar}
\aliascntresetthe{bar}
```

2 Implementation

2.1 Identification

```
1 ⟨*package⟩
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{aliascnt}%
4   [2016/05/16 v1.4 Alias counters (HO)]%
```

2.2 Create new alias counter

`\newaliascnt` A new alias counter is set up by `\newaliascnt`. The following properties are added for the new counter CNT:

`\theH`⟨*CNT*⟩: Compatibility for hyperref

`\AC@cnt@`⟨*CNT*⟩: Name of the referenced counter in the definition.

```
5 \newcommand*{\newaliascnt}[2]{%
6   \begingroup
7     \def\AC@glet##1{%
8       \global\expandafter\let\csname##1#1\expandafter\endcsname
9         \csname##1#2\endcsname
10    }%
11    \@ifundefined{c@#2}{%
12      \@nocounterr{#2}%
13    }{%
14      \expandafter\@ifdefinable\csname c@#1\endcsname{%
15        \AC@glet{c@}%
16        \AC@glet{the}%
17        \AC@glet{theH}%
18        \AC@glet{p@}%
19        \expandafter\gdef\csname AC@cnt@#1\endcsname{#2}%
20        \expandafter\gdef\csname cl@#1\expandafter\endcsname
```

```
      \expandafter{\csname cl@#2\endcsname}%
    }%
  }%
 \endgroup
}
```

\aliascntresetthe The \the⟨*CNT*⟩ macro is restored using the main counter.

```
\newcommand*{\aliascntresetthe}[1]{%
 \@ifundefined{AC@cnt@#1}{%
  \PackageError{aliascnt}{%
   `#1' is not an alias counter%
  }\@ehc
 }{%
  \expandafter\let\csname the#1\expandafter\endcsname
   \csname the\csname AC@cnt@#1\endcsname\endcsname
 }%
}
```

2.3 Counter clear list

The alias counters share the same register and clear list. Therefore we must ensure that manipulations to the clear list are done with the clear list macro of a real counter.

\AC@findrootcnt \AC@findrootcnt walks throught the aliasing relations to find the base counter.

```
\newcommand*{\AC@findrootcnt}[1]{%
 \@ifundefined{AC@cnt@#1}{%
  #1%
 }{%
  \expandafter\AC@findrootcnt\csname AC@cnt@#1\endcsname
 }%
}
```

Clear lists are manipulated by \@addtoreset and \@removefromreset. The latter one is provided by the remreset package ([2]).

\AC@patch The same patch principle is applicable to both \@addtoreset and \@removefromreset.

```
\def\AC@patch#1{%
 \expandafter\let\csname AC@org@#1reset\expandafter\endcsname
  \csname @#1reset\endcsname
 \expandafter\def\csname @#1reset\endcsname##1##2{%
  \csname AC@org@#1reset\endcsname{##1}{\AC@findrootcnt{##2}}%
 }%
}
```

If remreset is not loaded we cannot delay the patch to \AtBeginDocumen, because \@removefromreset can be called in between. Therefore we force the loading of the package.

```
\RequirePackage{remreset}
\AC@patch{addto}
\AC@patch{removefrom}
```

⟨/package⟩

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

[1] http://ctan.org/pkg/aliascnt

CTAN:macros/latex/contrib/oberdiek/aliascnt.dtx The source file.

CTAN:macros/latex/contrib/oberdiek/aliascnt.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.

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 aliascnt.dtx
```

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

```
aliascnt.sty → tex/latex/oberdiek/aliascnt.sty
aliascnt.pdf → doc/latex/oberdiek/aliascnt.pdf
aliascnt.dtx → source/latex/oberdiek/aliascnt.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 (teTEX, mikTEX, ...) relies on file name databases, you must refresh these. For example, teTEX 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{aliascnt.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 aliascnt.dtx
makeindex -s gind.ist aliascnt.idx
pdflatex aliascnt.dtx
makeindex -s gind.ist aliascnt.idx
pdflatex aliascnt.dtx
```

4 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 aliascnt.xml.

```
⟨*catalogue⟩
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='aliascnt'>
  <name>aliascnt</name>
  <caption>Alias counters.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='2006,2009'/>
  <license type='lppl1.3'/>
  <version number='1.4'/>
  <description>
    This package introduces aliases for counters, that
    share the same counter register and clear list.
    <p/>
    The package is part of the <xref refid='oberdiek'>oberdiek</xref>
    bundle.
  </description>
  <documentation details='Package documentation'
      href='ctan:/macros/latex/contrib/oberdiek/aliascnt.pdf'/>
  <ctan file='true' path='/macros/latex/contrib/oberdiek/aliascnt.dtx'/>
  <miktex location='oberdiek'/>
  <texlive location='oberdiek'/>
  <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
</entry>
⟨/catalogue⟩
```

5 Acknowledgement

Ulrich Schwarz: The package is based on his draft for "Die TeXnische Komödie", see [1].

6 References

[1] Ulrich Schwarz: *Was hinten herauskommt zählt: Counter Aliasing in LaTeX*, *Die TeXnische Komödie*, 3/2006, pages 8–14, Juli 2006.

[2] David Carlisle: *The remreset package*; 1997/09/28; CTAN:macros/latex/contrib/carlisle/remreset.sty.

[3] Sebastian Rahtz, Heiko Oberdiek: *The hyperref package*; 2006/08/16 v6.75c; CTAN:macros/latex/contrib/hyperref/.

7 History

[2006/02/20 v1.0]

- First version.

[2006/08/16 v1.1]

- Update of bibliography.

[2006/09/25 v1.2]

- Bug fix (`\aliascntresetthe`).

[2009/09/08 v1.3]

- Bug fix of `\@ifdefinable`'s use (thanks to Uwe Lück).

[2016/05/16 v1.4]

- Documentation updates.

8 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

\@ehc 30
\@ifdefinable 14
\@ifundefined 11, 27, 37
\@nocounterr 12

A

\AC@findrootcnt 36, 47
\AC@glet 7, 15, 16, 17, 18
\AC@patch 43, 51, 52
\aliascntresetthe *2*, 26

C

\csname 8, 9, 14, 19, 20, 21, 32, 33, 40, 44, 45, 46, 47

E

\endcsname 8, 9, 14, 19, 20, 21, 32, 33, 40, 44, 45, 46, 47

G

\gdef 19, 20

N

\NeedsTeXFormat 2
\newaliascnt *2*, 5
\newcommand 5, 26, 36

P

\PackageError 28
\ProvidesPackage 3

R

\RequirePackage 50