

# The `regstats` package

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## **Abstract**

This  $\text{\LaTeX}$  package allows to count the number of used registers (counter, dimen, skip, muskip, box, token, input, output, math families, languages, insertions) and compare these to the maximum available number of such registers. The time needed for a compilation run can be announced.

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Save per page about 200 ml water, 2 g CO<sub>2</sub> and 2 g wood:  
Therefore please print only if this is really necessary.

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## 1 Introduction

This L<sup>A</sup>T<sub>E</sub>X package allows to count the number of used registers (counter, dimen, skip, muskip, box, token, input, output, math families, languages, insertions). Therefore the according `\count` is read. While `\count10` should be the number of the counters, `\count11` the one of the dimens, and so on, it is possible to use option `proof`, in which case a new one of each register is used and looked at `\the\allocationnumber`, and this is compared to the number determined by reading the `\count`. The result for each register is compared to the maximum available number of the respective register (comparison independent of usage of option `proof`). With option `left` additionally the number of remaining registers of each type is given, and with option `timer` the time needed for the compilation run.

## 2 Usage

Just load the package placing

```
\usepackage[<options>]{regstats}
```

at the end of the preamble of your L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> source file. When you load packages `\AtBeginDocument`, `regstats` should be the last one of those packages. The resulting message will be presented at the end of the compilation messages at the screen and in the `log` file.

### 2.1 Options

`options`     The `regstats` package takes the following options:

#### 2.1.1 proof

`proof`     When option `proof` (or `proof=true`) is chosen, a new one of each register is used and looked at `\the\allocationnumber`, and this is compared to the number determined by reading the `\count`. The default is `proof=false`.

#### 2.1.2 left

`left`     When option `left` (or `left=true`) is chosen, also the number of remaining registers of each type is given. The default is `left=false`.

#### 2.1.3 timer

`timer`     When option `timer` (or `timer=true`) is chosen, also the the time needed for the compilation run is given. The default is `timer=false`.

## 3 Alternatives

- `regcount`, 1999/08/03, v1.0, by JEAN-PIERRE F. DRUCBERT, provides the command `\rgcounts`, which can write the numbers of used registers into the `log` file anywhere (not only at the end) and does this automatically `\AtBeginDocument` and `\AtEndDocument` (but not `\AtVeryVeryEnd`). The number of allocated insertions is *wrong* in my opinion, because these are not numbered 1,2,..., but start at a high number, which is then decreased. The package is compatibel with the `regstats` package (i.e. you can use both packages at the same time in one document) and available at <http://www.ctan.org/pkg/regcount>.
- One can manually search for the last appearance of `\count`, `\dimen`, `\skip`, `\muskip`, `\box`, `\toks`, `\read` (input), `\write` (output), `\mathgroup` (math family), `\language`, and `\insert`, and find the according number there. (This does not provide any information about the number of remaining registers, of course.)

(You programmed or found another alternative, which is available at [CTAN](#)? OK, send an e-mail to me with the name, location at [CTAN](#):, and a short notice, and I will probably include it in the list above.)

## 4 Example

```
1 (*example)
2 \documentclass[british]{article}[2007/10/19]% v1.4h
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %% \usepackage{etex}[1998/03/26]% v2.0
5 %% Uncomment the preceding line, if you want to use the eTeX-package
6 %% (which requires eTeX, of course).
7 \usepackage{hyperref}[2011/08/19]% v6.82h
8 \hypersetup{extension=pdf,%
9 plainpages=false,%
10 pdfpagelabels=true,%
11 hyperindex=false,%
12 pdflang={en},%
13 pdftitle={regstats package example},%
14 pdfauthor={Hans-Martin Muench},%
15 pdfsubject={Example for the regstats package},%
16 pdfkeywords={LaTeX, registers, read, write, language, box, dimen,%
17 count, toks, muskip, skip, counter, regstats, Hans-Martin Muench},%
18 pdfview=Fit,pdfstartview=Fit,%
19 pdfpagelayout=SinglePage%
20 }
21 \usepackage[proof=false,left=true,timer=true]{regstats}[2011/08/23]% v1.0f
22 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
23 \listfiles
24 \begin{document}
25 \pagenumbering{arabic}
26 \section*{Example for regstats}
27
28 This example demonstrates the use of package\newline
29 \textsf{regstats}, v1.0f as of 2011/08/23 (HMM).\newline
30 The used options were \texttt{proof=false,left=true,timer=true}.\newline
31 \texttt{proof=false} is the default, but neither \texttt{left=true}
32 nor \texttt{timer=true} are defaults (\texttt{left=false,timer=false}
33 would be the defaults).\newline
34
35 If  $\varepsilon$ -TeX is available with your LaTeX -distribution
36 and you want to use it, uncomment the\newline
37 \verb|%% \usepackage{etex}[1998/03/26]% v2.0|\newline
38 line in the preamble of this document.\newline
39 (Also \verb|\eTeX| instead of \verb| $\varepsilon$ -TeX|
40 would be available with it).\newline
41
42 For more details please see the documentation!\newline
43
44 \noindent Save per page about $200\unit{ml}$ water,
45 $2\unit{g}$ CO2 and $2\unit{g}$ wood:\newline
46 Therefore please print only if this is really necessary.\newline
47
48 For the resulting message, please compile regstats-example.tex and
49 have a look at the end of the log-file.
50
51 Because the compilation time for this example is usually quite short,
52 option \texttt{timer} is not demonstrated very spectacular.
53
54 \end{document}
55 \end{example}
```

## 5 The implementation

We start off by checking that we are loading into L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> and announcing the name and version of this package.

```
56 (*package)
57 \NeedsTeXFormat{LaTeX2e}[2011/06/27]
58 \ProvidesPackage{regstats}[2011/08/23 v1.0f
59     Counting used registers (HMM)]
60
```

A short description of the regstats package:

```
61 %% Allows to count the number of used registers
62 %% (counter, dimen, skip, muskip, box, token, input, output,
63 %% math families, languages, insertions)
64 %% and compare these to the maximum available number of such registers.
65
```

We need the kvoptions and atveryend packages by HEIKO OBERDIEK:

```
66 \RequirePackage{kvoptions}[2010/12/23]% v3.10
67 \RequirePackage{atveryend}[2011/06/30]% v1.8
68
```

A last information for the user:

```
69 %% regstats may work with earlier versions of LaTeX and these
70 %% packages, but this was not tested. Please consider updating
71 %% your LaTeX and packages to the most recent version
72 %% (if they are not already the most recent version).
73
```

See subsection 6.1 about how to get them.

We process the options:

```
74 \SetupKeyvalOptions{family=regstats,prefix=regstats@}
75 \DeclareBoolOption{proof}% \regstats@proof
76 \DeclareBoolOption{left}
77 \DeclareBoolOption{timer}
78
79 \ProcessKeyvalOptions*
80
81 \ifregstats@proof
82   \PackageInfo{regstats}{%
83     This package will use one of each kind of register itself!\MessageBreak%
84     (And other packages used by this package\MessageBreak%
85     probably use additional resources,\MessageBreak%
86     if those packages are not used anyway.)\MessageBreak%
87   }
88 \else
89   \PackageInfo{regstats}{%
90     This package will use one counter itself!\MessageBreak%
91     (And other packages used by this package\MessageBreak%
92     probably use additional resources,\MessageBreak%
93     if those packages are not used anyway.)\MessageBreak%
94   }
95 \fi
96
```

But that counter will be created not before `\AtVeryVeryEnd`, therefore if it is the one counter too much, it should not interfere with the creation of the document. (The other kinds of registers are used not before `\AtVeryVeryEnd`, too.)

```

97 \ifregstats@timer
98 \RequirePackage{intcalc}[2007/09/27]% v1.1
99 \fi
100

```

L<sup>A</sup>T<sub>ε</sub>E<sub>X</sub> 2011/06/27 changed the `\enddocument` command and thus broke the `atveryend` package, which was then fixed. If new L<sup>A</sup>T<sub>ε</sub>E<sub>X</sub> and old `atveryend` are combined, `\AtVeryVeryEnd` will never be called. Therefore we `\let\AtVeryVeryEnd\AtEndAfterFileList` and give an error message. It is no problem at all for the `regstats` package, but other packages might really need `\AtVeryVeryEnd`, and the user might lose code and never get to know it (and just run into problems of unknown origin).

`\@ifl@t@r\fmtversion` is from `\@needsf@rmat` as in  
File L: `ltclass.dtx` Date: 2007/08/05 Version v1.1h, line 259,  
of The L<sup>A</sup>T<sub>ε</sub>E<sub>X</sub> Sources  
by JOHANNES BRAAMS, DAVID CARLISLE, ALAN JEFFREY, LESLIE LAMPORT,  
FRANK MITTELBACH, CHRIS ROWLEY, AND RAINER SCHÖPF,  
as of 2009/09/24.

```

101 \@ifl@t@r\fmtversion{2011/06/27}%
102 {\@ifpackagelater{atveryend}{2011/06/29}%
103   {% 2011/06/30, v1.8, or even more recent
104   }{% older version
105     \PackageError{regstats}{Outdated atveryend package}%
106     {You use \fmtname \space <\fmtversion>, but only \MessageBreak%
107     '\csname ver@atveryend.\@currxt\endcsname', \MessageBreak%
108     which is incompatibel with \fmtname \space <\fmtversion>.\MessageBreak%
109     Please update your atveryend package!\MessageBreak%
110     The regstats package now replaces \string\AtVeryVeryEnd \MessageBreak%
111     by \string\AtEndAfterFileList.\MessageBreak%
112     }%
113     \let\AtVeryVeryEnd\AtEndAfterFileList%
114   }%
115 }{%

```

In this case the used T<sub>E</sub>X format is outdated, but when `\NeedsTeXFormat{LaTeX2e}[2011/06/27]` is executed at the beginning of `regstats` package, the appropriate warning message is issued automatically. (And `regstats` should also work with older versions, I used it with a 2003/12/01 version myself.)

```

116 }
117

```

We try to determine, whether  $\varepsilon$ -T<sub>E</sub>X is available in the L<sup>A</sup>T<sub>ε</sub>E<sub>X</sub> distribution used to compile the document and really loaded by the user. Because it is possible to load packages `\AtBeginDocument`, but `\@ifpackageloaded` cannot be used after `\AtBeginDocument`, we check for  $\varepsilon$ -T<sub>E</sub>X `\AtBeginDocument` (and herewith ask the user to please load `regstats` as very last package, at least after the `etex` package):

```

118 \AtBeginDocument{%
119   \newif\ifetex
120   \begingroup\expandafter\expandafter\expandafter\endgroup
121   \expandafter\ifx\csname eTeXversion\endcsname\relax
122     \etexfalse

```

```

123 \else
124   \@ifpackageloaded{etex}{\etextrue}{\etexfalse}
125 \fi
126 \ifetex
127   \PackageInfo{regstats}{e-TeX found.}
128 \else
129   \PackageWarning{regstats}{Could not find e-TeX.\MessageBreak%
130     That can mean that e-TeX was disabled or\MessageBreak%
131     that your distribution of TeX does not contain e-TeX\MessageBreak%
132     or that you forgot to say \string\usepackage{etex}\MessageBreak%
133     in the preamble of \jobname.tex.\MessageBreak%
134     Some packages will not work without e-TeX,\MessageBreak%
135     but should give according messages.\MessageBreak%
136   }
137 \fi
138

```

\AtVeryEndDocument we write to \AtVeryVeryEnd, thus the code will be executed quite late during the compilation. (Please load regstats as very last package!) We define a new command to determine the singular/plural form, maximum of available registers, and (if option left was chosen) the number of remaining registers of that type.

```

139 \AtEndDocument{%
140   \BeforeClearDocument{%
141     \AfterLastShipout{%
142       \AtVeryEndDocument{%
143         \AtEndAfterFileList{%
144           \AtVeryVeryEnd{%
145             \def\regstats@lft{}}%
146             \newcommand{\regstats@regstat}[5]{%

```

The five parameters are: number of used registers of that type, singular ending, plural ending, number of available registers without  $\varepsilon$ -TeX, number of available registers with  $\varepsilon$ -TeX (in this order).

```

147   \setcounter{regstatscount}{#1}
148   \ifnum \value{regstatscount}=0
149     \setcounter{regstatscount}{2}
150   \fi
151   \ifnum \value{regstatscount}>1
152     \gdef\regstats@pl{#3}
153   \else
154     \gdef\regstats@pl{#2}
155   \fi
156   \ifetex\edef\regstats@max{#5}\else\edef\regstats@max{#4}\fi
157   \ifregstats@left
158     \setcounter{regstatscount}{\regstats@max}
159     \addtocounter{regstatscount}{-#1}
160     \ifnum \value{regstatscount}>0
161       \edef\regstats@lft{, left: \arabic{regstatscount}}
162     \else
163       \ifnum \value{regstatscount}=0
164         \edef\regstats@lft{, left: \arabic{regstatscount} !!!}
165       \else% \value{regstatscount}<0
166         \edef\regstats@lft{, left: \arabic{regstatscount} *****}
167       \fi
168     \fi

```

\else \regstats@lft will stay \empty.

```

169     \fi
170   }
171   \newcounter{regstatscount}
172   \edef\regstats@counter{\the\allocationnumber}

```

When option `proof` was chosen, a new register of the named types is used and its number compared with the according count number. We give a warning about the use of additional registers.

```

173   \ifregstats@proof
174     \PackageWarning{regstats}{%
175       Package regstats loaded with option 'proof'.\MessageBreak%
176       This package itself will now use\MessageBreak%
177       one of each register for testing!%
178     }%
179   \def\regstats@proof{1}
180   \edef\regstats@test{\the\count10}
181   \ifx\regstats@counter\regstats@test
182   \else
183     \message{Discrepancy when counting count registers.^^J}
184     \def\regstats@proof{0}
185   \fi
186   \newdimen\regstatsdimen}
187   \edef\regstats@dimen{\the\allocationnumber}
188   \edef\regstats@test{\the\count11}
189   \ifx\regstats@dimen\regstats@test
190   \else
191     \message{Discrepancy when counting dimen registers.^^J}
192     \def\regstats@proof{0}
193   \fi
194   \newskip\regstatsskip
195   \edef\regstats@skip{\the\allocationnumber}
196   \edef\regstats@test{\the\count12}
197   \ifx\regstats@skip\regstats@test
198   \else
199     \message{Discrepancy when counting skip registers.^^J}
200     \def\regstats@proof{0}
201   \fi
202   \newmuskip\regstatsmuskip
203   \edef\regstats@muskip{\the\allocationnumber}
204   \edef\regstats@test{\the\count13}
205   \ifx\regstats@muskip\regstats@test
206   \else
207     \message{Discrepancy when counting muskip registers.^^J}
208     \def\regstats@proof{0}
209   \fi
210   \newbox\regstatsbox
211   \edef\regstats@box{\the\allocationnumber}
212   \edef\regstats@test{\the\count14}
213   \ifx\regstats@box\regstats@test
214   \else
215     \message{Discrepancy when counting box registers.^^J}
216     \def\regstats@proof{0}
217   \fi
218   \newtoks\regstatstoks
219   \edef\regstats@toks{\the\allocationnumber}
220   \edef\regstats@test{\the\count15}
221   \ifx\regstats@toks\regstats@test
222   \else

```



```

223     \message{Discrepancy when counting toks registers.^^J}
224     \def\regstats@proof{0}
225   \fi
226   \newread\regstatsread
227   \edef\regstats@read{\the\allocationnumber}
228   \edef\regstats@test{\the\count16}
229   \ifx\regstats@read\regstats@test
230   \else
231     \message{Discrepancy when counting read registers.^^J}
232     \def\regstats@proof{0}
233   \fi
234   \newwrite\regstatswrite
235   \edef\regstats@write{\the\allocationnumber}
236   \edef\regstats@test{\the\count17}
237   \ifx\regstats@write\regstats@test
238   \else
239     \message{Discrepancy when counting write registers.^^J}
240     \def\regstats@proof{0}
241   \fi
242   \newfam\regstatsfam
243   \edef\regstats@fam{\the\allocationnumber}
244   \edef\regstats@test{\the\count18}
245   \ifx\regstats@fam\regstats@test
246   \else
247     \message{Discrepancy when counting fam registers.^^J}
248     \def\regstats@proof{0}
249   \fi
250   \newlanguage\regstatslanguage
251   \edef\regstats@language{\the\allocationnumber}
252   \edef\regstats@test{\the\count19}
253   \ifx\regstats@language\regstats@test
254   \else
255     \message{Discrepancy when counting language registers.^^J}
256     \def\regstats@proof{0}
257   \fi
258   \newinsert\regstatsinsert
259   \edef\regstats@insert{\the\allocationnumber}
260   \edef\regstats@test{\the\count20}
261   \ifx\regstats@insert\regstats@test
262   \else
263     \message{Discrepancy when counting insert registers.^^J}
264     \def\regstats@proof{0}
265   \fi

```

When there was a discrepancy somewhere, we give the according message.

```

266     \edef\regstats@test{0}
267     \ifx\regstats@proof\regstats@test
268       \message{Regstats test for register numbers failed.^^J}
269       \message{Therefore option 'proof' is necessary to get the %
270         right numbers.^^J}
271     \fi
272   \else

```

Without option proof, we just take the values of the various counts.

```

273     \edef\regstats@dimen{\the\count11}
274     \edef\regstats@skip{\the\count12}
275     \edef\regstats@muskip{\the\count13}
276     \edef\regstats@box{\the\count14}
277     \edef\regstats@toks{\the\count15}

```

```
278     \edef\regstats@read{\the\count16}
279     \edef\regstats@write{\the\count17}
280     \edef\regstats@fam{\the\count18}
281     \edef\regstats@language{\the\count19}
282     \edef\regstats@insert{\the\count20}
283     \fi
```

inserts are used starting with a high number and moving downward.

```
284     \setcounter{regstatscount}{233}
285     \addtocounter{regstatscount}{-\regstats@insert}
286     \addtocounter{regstatscount}{+1}
287     \edef\regstats@insert{\arabic{regstatscount}}
```

The number of used registers of each type and the number of available ones (estimated, probably dependent on distribution and its version, here just distinguished according to availability of  $\varepsilon$ -TeX) is written to screen and log file. (Additional spaces are just for increased ease of readability of the code and will appear neither at the scree output nor in the log file.)

```

288     \message{^^J}
289     \message{Here is how much of TeX's registers you used^^J}%
290     \message{\space (numbers of available registers are estimated!):^^J}%
291     \regstats@regstat{\regstats@counter}{s}{233}{32767}
292     \message{ \regstats@counter\space counter register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
293     \regstats@regstat{\regstats@dimen}{s}{233}{32767}
294     \message{ \regstats@dimen\space dimen register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
295     \regstats@regstat{\regstats@skip}{s}{233}{32767}
296     \message{ \regstats@skip\space skip register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
297     \regstats@regstat{\regstats@muskip}{s}{255}{32767}
298     \message{ \regstats@muskip\space muskip register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
299     \regstats@regstat{\regstats@box}{s}{233}{32767}
300     \message{ \regstats@box\space box register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
301     \regstats@regstat{\regstats@toks}{s}{255}{32767}
302     \message{ \regstats@toks\space toks register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
303     \regstats@regstat{\regstats@read}{s}{15}{15}
304     \message{ \regstats@read\space input stream\regstats@pl\space (read) out of \regstats@max \regstats@lft ^^J}
305     \regstats@regstat{\regstats@write}{s}{15}{15}
306     \message{ \regstats@write\space output stream\regstats@pl\space (write) out of \regstats@max \regstats@lft ^^J}
307     \regstats@regstat{\regstats@fam}{y}{ies}{15}{15}
308     \message{ \regstats@fam\space math famil\regstats@pl\space (fam) out of \regstats@max \regstats@lft ^^J}
309     \regstats@regstat{\regstats@language}{s}{255}{255}
310     \message{ \regstats@language\space language code\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
311     \regstats@regstat{\regstats@insert}{s}{101}{124}
312     \message{ \regstats@insert\space insertion\regstats@pl\space out of \regstats@max \regstats@lft ^^J}

```

When option `timer` (or `timer=true`) was used, the `regstats` package additionally gives the time, which was needed for the (last) compilation (run). When more than one compilation run are necessary to compile the document, the individual times have to be added up manually. If `\pdfelapsedtime` was reset by another package, the result is not correct, of course, but unfortunately it is not possible to check for this. You could say `\def\pdfresettimer{\relax}` immediately after `\documentclass[...]{...}` to prevent this. Better use `\long\def\pdfresettimer{%  
\PackageError{regstats}{\string\pdfresettimer\space used}}` to be notified thereof. This redefinition could be implemented in this `regstats` package, but this would have no effect for the use of `\pdfresettimer` before this package is called. Because this package should be called as late as immediately before `\begin{document}`, this would mean that resetting would be possible during the whole loading of all packages.

```

313     \ifregstats@timer
314     \message{^^J}
315     \setcounter{regstatscount}{\the\pdfelapsedtime}
316     \edef\regstatselapsedtime{\arabic{regstatscount}}
317     \divide \value{regstatscount} by 65536% scaledseconds -> seconds
318     \edef\regstatsseconds{\arabic{regstatscount}}
319     \ifnum \value{regstatscount} > 59
320     \edef\regstatsseconds{\intcalcMod{\value{regstatscount}}{60}}
321     \divide \value{regstatscount} by 60% seconds -> minutes
322     \else
323     \setcounter{regstatscount}{0}% minutes = 0
324     \fi
325     \ifnum \regstatsseconds < 10
326     \message{Time elapsed for the last compiler run:^^J%
327     about \arabic{regstatscount}:0\regstatsseconds\space%
328     (m:ss; \regstatselapsedtime /65536 s).^^J}
329     \else
330     \message{Time elapsed for the last compiler run:^^J%
331     about \arabic{regstatscount}:\regstatsseconds \space%
332     (m:ss; \regstatselapsedtime /65536 s).^^J}
333     \fi
334     \fi
335     }%
336   }%
337 }%
338 }%
339 }%
340 }%
341 }
342
    That's it!
343 </package>

```

## 6 Installation

### 6.1 Downloads

Everything will become available at CTAN: , <http://www.ctan.org/tex-archive/>, but may need additional packages themselves.

`regstats.dtx` For unpacking the `regstats.dtx` file and constructing the documentation it is required:

- T<sub>E</sub>XFormat L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>: <http://www.CTAN.org/>
- document class `ltxdoc`, 2007/11/11, v2.0u,  
[CTAN:macros/latex/base/ltxdoc.dtx](http://www.ctan.org/ctan/macros/latex/base/ltxdoc.dtx)
- package `pdfscape`, 2008/08/11, v0.10,  
[CTAN:macros/latex/contrib/oberdiek/pdfscape.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/pdfscape.dtx)
- package `holtxdoc`, 2011/02/04, v0.21,  
[CTAN:macros/latex/contrib/oberdiek/holtxdoc.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/holtxdoc.dtx)
- package `hypdoc`, 2010/03/26, v1.9,  
[CTAN:macros/latex/contrib/oberdiek/hypdoc.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/hypdoc.dtx)

`regstats.sty` The `regstats.sty` for L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> (i. e. each document using the `regstats` package) requires:

- T<sub>E</sub>XFormat L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, <http://www.CTAN.org/>
- package `kvoptions`, 2010/12/23, v3.10,  
[CTAN:macros/latex/contrib/oberdiek/kvoptions.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/kvoptions.dtx)
- package `atveryend`, 2011/06/30, v1.8,  
[CTAN:macros/latex/contrib/oberdiek/atveryend.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/atveryend.dtx)

When option `timer` is used, additionally

- package `intcalc`, 2007/09/27, v1.1,  
[CTAN:macros/latex/contrib/oberdiek/intcalc.dtx](http://www.ctan.org/ctan/macros/latex/contrib/oberdiek/intcalc.dtx)

is needed.

`regstats-example.tex` The `regstats-example.tex` requires the same files as all documents using the `regstats` package, i. e. the ones named above and additionally:

- class `article`, 2007/10/19, v1.4h, from `classes.dtx`:  
[CTAN:macros/latex/base/classes.dtx](http://www.ctan.org/ctan/macros/latex/base/classes.dtx)
- package `regstats`, 2011/08/23, v1.0f,  
[CTAN:macros/latex/contrib/regstats/regstats.dtx](http://www.ctan.org/ctan/macros/latex/contrib/regstats/regstats.dtx)  
(Well, it is the example file for this package, and because you are reading the documentation for the `regstats` package, it can be assumed that you already have some version of it – is it the current one?)

**Alternative** As possible alternative in section 3 there is listed

- `regcount`, 1999/08/03, v1.0:  
<http://www.ctan.org/pkg/regcount>

**Oberdiek** All packages of HEIKO OBERDIEK's bundle 'oberdiek' (especially `holtxdoc`,  
**holtxdoc** `kvoptions`, `atveryend`, `intcalc`, and `pdfscape`) are also available in a TDS compliant  
**kvoptions** ZIP archive:  
**atveryend** [CTAN:install/macros/latex/contrib/oberdiek.tds.zip](http://mirror.ctan.org/install/macros/latex/contrib/oberdiek.tds.zip).  
**intcalc** It is probably best to download and use this, because the packages in there are  
**pdfscape** quite probably both recent and compatible among themselves.

**hyperref** `hyperref` is not included in that bundle and needs to be downloaded separately,  
<http://mirror.ctan.org/install/macros/latex/contrib/hyperref.tds.zip>.

**Münch** A hyperlinked list of my (other) packages can be found at <http://www.Uni-Bonn.de/~uzs5pv/LaTeX.html>.

## 6.2 Package, unpacking TDS

**Package.** This package is available on [CTAN](http://mirror.ctan.org):

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

[CTAN:macros/latex/contrib/regstats/regstats.pdf](http://mirror.ctan.org/macros/latex/contrib/regstats/regstats.pdf)  
 The documentation.

[CTAN:macros/latex/contrib/regstats/regstats-example.pdf](http://mirror.ctan.org/macros/latex/contrib/regstats/regstats-example.pdf)  
 The compiled example file, as it should look like.

[CTAN:macros/latex/contrib/regstats/README](http://mirror.ctan.org/macros/latex/contrib/regstats/README)  
 The README file.

[CTAN:install/macros/latex/contrib/regstats.tds.zip](http://mirror.ctan.org/install/macros/latex/contrib/regstats.tds.zip)  
 Everything in TDS compliant, compiled format.

which additionally contains

<code>regstats.ins</code>	The installation file.
<code>regstats.drv</code>	The driver to generate the documentation.
<code>regstats.sty</code>	The <code>.sty</code> file.
<code>regstats-example.tex</code>	The example file.
<code>regstats-example.log</code>	A <code>log</code> file for the example.

For required other packages, see the preceding subsection.

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

```
tex regstats.dtx
```

About generating the documentation see paragraph 6.4 below.

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

<code>regstats.sty</code>	→ <code>tex/latex/regstats.sty</code>
<code>regstats.pdf</code>	→ <code>doc/latex/regstats.pdf</code>
<code>regstats-example.tex</code>	→ <code>doc/latex/regstats-example.tex</code>
<code>regstats-example.pdf</code>	→ <code>doc/latex/regstats-example.pdf</code>
<code>regstats-example.log</code>	→ <code>doc/latex/regstats-example.log</code>
<code>regstats.dtx</code>	→ <code>source/latex/regstats.dtx</code>

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`.

### 6.3 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 `mktextlsr`.

### 6.4 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{regstats.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 a 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 regstats.dtx
makeindex -s gind.ist regstats.idx
pdflatex regstats.dtx
makeindex -s gind.ist regstats.idx
pdflatex regstats.dtx
```

### 6.5 Compiling the example

The example file, `regstats-example.tex`, can be compiled via `(pdf)latex regstats-example.tex`.

## 7 Acknowledgements

I would like to thank HEIKO OBERDIEK for providing the `hyperref` and `atveryend` as well as a lot (!) of other useful packages (from which I also got everything I know about creating a file in `.dtx` format, ok, say it: copying), JEAN-PIERRE F. DRUCBERT for his `regcount` package, ROBIN FAIRBAIRNS for pointing me to the `regcount` package, and the `news:comp.text.tex` and `news:de.comp.text.tex` newsgroups for their help in all things  $\TeX$ .

## 8 History

[2011/05/14 v1.0a]

- Upload to [CTAN](#).

[2011/05/16 v1.0b]

- Name clash with `regcount` package, fixed.
- `regcount` package listed as possible alternative.
- Bug: `skip` and `muskip` mixed up, fixed.
- Counting of skips, math families, and insertions added.
- Bug fix: insertions are numbered high to low.
- Option `proof` added.
- Diverse details.

[2011/06/08 v1.0c]

- Bug Fix: Number of available `\skip` registers with  $\varepsilon$ -TeX.
- Change in  $\varepsilon$ -TeX-detection.
- New option `left`.
- Minor details.

[2011/06/18 v1.0d]

- Bug Fix: Information about used registers/counter fixed.
- New option `timer`.
- Some details.

[2011/08/22 v1.0e]

- The information about the used registers is now presented even later.
- Quite some details in the documentation.
- Updated to TeXlive2011.
- Hot fix: TeX 2011/06/27 has changed `\enddocument` and thus broken the `\AtVeryVeryEnd` command/hooks of `atveryend` package as of 2011/04/23, v1.7. Until it is fixed, `\AtEndAfterFileList` is used.



[2011/08/23 v1.0f]

- The atveryend package was fixed (2011/06/30, v.1.8). Now `regstats` differentiates according to T<sub>E</sub>X format and `atveryend` package version. 2011/06/30, v.1.8 will become available at CTAN soon. `regstats` also works with the old version, the information is just presented a little bit earlier during compilation, thus theoretically there could be missed some register use after that information, which would be obvious in the `log`-file.
- New `hyperref` package used for the documentation.

When you find a mistake or have a suggestion for an improvement of this package, please send an e-mail to the maintainer, thanks! (Please see BUG REPORTS in the README.)

## 9 Index

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