

The **regstats** package

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Abstract

This L^AT_EX 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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Therefore please print only if this is really necessary.

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1 Introduction

This L^AT_EX 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 (when either `pdf(1a)tex` or `lua(1a)tex` with `\directlua{starttime = os.clock()}` before `\documentclass` is used).

2 Usage

Just load the package placing

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

at the end of the preamble of your L^AT_EX 2_ε 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 time needed for the compilation run is given. The default is `timer=false`. The used `\pdfelapsedtime` is not available, when `lua(1a)tex` is used instead of `pdf(1a)tex` to compile the document. In that case at the very beginning of your `tex` file say `\directlua{starttime = os.clock()}` (even before `\documentclass!`), and the `timer` option can also be used with `lua(1a)tex`. When neither `lua(1a)tex` nor `pdf(1a)tex` is used to compile the document, the `timer(-option)` does not work.

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 compatible 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 %% When compiling with lua(la)tex (and wanting to use option timer=true,
3 %% the following line must be uncommented (i.e. remove the "%% ").
4 %% \directlua{starttime = os.clock()}
5 \documentclass[british]{article}[2007/10/19]% v1.4h
6 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
7 %% \usepackage{etex}[1998/03/26]% v2.0
8 %% Uncomment the preceding line, if you want to use the eTeX-package
9 %% (which requires eTeX, of course).
10 \usepackage[%
11 extension=pdf,%
12 plainpages=false,%
13 pdfpagelabels=true,%
14 hyperindex=false,%
15 pdflang={en},%
16 pdftitle={regstats package example},%
17 pdfauthor={H.-Martin Muench},%
18 pdfsubject={Example for the regstats package},%
19 pdfkeywords={LaTeX, registers, read, write, language, box, dimen,%
20 count, toks, muskip, skip, counter, regstats, H.-Martin Muench},%
21 pdfview=Fit,%
22 pdfstartview=Fit,%
23 pdfpagelayout=SinglePage%
24 ]{hyperref}[2011/12/04]% v6.82m
25 \usepackage[proof=false,left=true,timer=true]{regstats}[2012/01/01]%
26 %% v1.0g
27 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
28 \makeatletter
29 \ifundefined{eTeX}{\gdef\TeX{$\m@th \varepsilon$-\TeX }}{%
30 %% else \relax
31 }
32 \makeatother
33 \listfiles
34 \begin{document}
35 \pagenumbering{arabic}
36 \section*{Example for regstats}
37
38 This example demonstrates the use of package\newline
39 \textsf{regstats}, v1.0g as of 2012/01/01 (HMM).\newline
40 The used options were \texttt{proof=false,left=true,timer=true}.\newline
41 \texttt{proof=false} is the default, but neither \texttt{left=true}
42 nor \texttt{timer=true} are defaults (\texttt{left=false,timer=false}
43 would be the defaults).\newline
44
45 If \TeX{} is available with your \LaTeX{}-distribution
46 and you want to use it, uncomment the\newline
47 \verb|%% \usepackage{etex}[1998/03/26]% v2.0|\newline
48 line in the preamble of this document.\newline
49
50 For more details please see the documentation!\newline
51
52 \noindent Save per page about $200\unit{ml}$ water,
53 $2\unit{g}$ CO2 and $2\unit{g}$ wood:\newline
54 Therefore please print only if this is really necessary.\newline
55
56 For the resulting message, please compile regstats-example.tex and
```

```
57 have a look at the end of the log-file.  
58  
59 Because the compilation time for this example is usually quite short,  
60 option \texttt{timer} is not demonstrated very spectacular.  
61  
62 \end{document}  
63 \example
```

5 The implementation

We start off by checking that we are loading into L^AT_EX 2_ε and announcing the name and version of this package.

```
64 (*package)
65 \NeedsTeXFormat{LaTeX2e}[2011/06/27]
66 \ProvidesPackage{regstats}[2012/01/01 v1.0g
67     Counting used registers (HMM)]
68
```

A short description of the regstats package:

```
69 %% Allows to count the number of used registers
70 %% (counter, dimen, skip, muskip, box, token, input, output,
71 %%  math families, languages, insertions)
72 %% and compare these to the maximum available number of such registers.
73
```

We need the kvoptions, atveryend, and ltxcmds packages by HEIKO OBERDIEK:

```
74 \RequirePackage{kvoptions}[2010/12/23]% v3.10
75 \RequirePackage{atveryend}[2011/06/30]% v1.8
76 \RequirePackage{ltxcmds}[2011/04/18]% v1.20
77
```

A last information for the user:

```
78 %% regstats may work with earlier versions of LaTeX and these
79 %% packages, but this was not tested. Please consider updating
80 %% your LaTeX and packages to the most recent version
81 %% (if they are not already the most recent version).
82
```

See subsection 6.1 about how to get them.

We process the options:

```
83 \SetupKeyvalOptions{family=regstats,prefix=regstats@}
84 \DeclareBoolOption{proof}% \regstats@proof
85 \DeclareBoolOption{left}
86 \DeclareBoolOption{timer}
87
88 \ProcessKeyvalOptions*
89
90 \ifregstats@proof
91   \PackageInfo{regstats}{%
92     This package will use one of each kind of register itself!%
93     \MessageBreak%
94     (And other packages used by this package\MessageBreak%
95     probably use additional resources,\MessageBreak%
96     if those packages are not used anyway.)\MessageBreak%
97   }
98 \else
99   \PackageInfo{regstats}{%
100     This package will not use registers itself,\MessageBreak%
101     but packages used by this package\MessageBreak%
102     (and packages loaded by those packages)\MessageBreak%
103     use additional resources,\MessageBreak%
104     if those packages are not used anyway.\MessageBreak%
105   }
106 \fi
107
```

The different kinds of registers used with option `proof=true` are used not before `\AtVeryVeryEnd`, therefore even if it is the one used register too much, it should not interfere with the creation of the document.

```

108 \ifregstats@timer
109   \RequirePackage{intcalc}[2007/09/27]%   v1.1
110   \RequirePackage{ifluatex}[2010/03/01]% v1.3
111   \RequirePackage{ifpdf}[2011/01/30]%     v2.3
112 \fi
113
114 \ifregstats@timer
115 \newcommand{\regstats@timer}{%
116   \message{^^J}
117   \ifluatex
118     \@tempcnta=%
119     \directlua{
120       if starttime then
121         tex.sprint((os.clock()-starttime)*65536)
122       else
123         tex.sprint(0)
124       end
125     }\relax
126     \ifnum \the\@tempcnta = 0
127       \PackageError{regstats}{Did you forget to start the timer?}{%
128         Before \string\documentclass\space you need to say%
129         \MessageBreak%
130         \string\directlua{starttime = os.clock()} \MessageBreak%
131       }
132     \fi
133   \else
134     \ifpdf
135       \@tempcnta=\the\pdfelapsedtime\relax
136     \else
137       \PackageError{regstats}{Option timer only works with pdf(la)tex%
138         \MessageBreak%
139         and with lua(la)tex}{%
140         Neither appear to be used here. Announced compilation time %
141         will be zero.
142       }
143       \@tempcnta=0\relax
144     \fi
145   \fi
146   \edef\regstatselapsedtime{\the\@tempcnta}
147   \divide \@tempcnta by 65536% scaledseconds -> seconds
148   \edef\regstatsseconds{\the\@tempcnta}
149   \ifnum \regstatsseconds > 59
150     \edef\regstatsseconds{\intcalcMod{\the\@tempcnta}{60}}
151     \divide \@tempcnta by 60% seconds -> minutes
152   \else
153     \@tempcnta=0\relax% minutes = 0
154   \fi
155   \ifnum \regstatsseconds < 10
156     \message{Time elapsed for the last compiler run:^^J%
157       about \the\@tempcnta:0\regstatsseconds\space%
158       (m:ss; \regstatselapsedtime /65536 s).^^J}
159   \else

```



```

160 \message{Time elapsed for the last compiler run:^^J%
161 about \the\@tempcnta:\regstatsseconds \space%
162 (m:ss; \regstatselapsedtime /65536 s).^^J}
163 \fi
164 }
165 \else
166 \newcommand{\regst@ts@timer}{\relax}
167 \fi
168
169 \let\regst@ts@statistics\AtVeryVeryEnd%
170

```

$\text{\LaTeX 2}_{\epsilon}$ 2011/06/27 changed the `\enddocument` command and thus broke the `atveryend` package, which was then fixed. If new $\text{\LaTeX 2}_{\epsilon}$ and old `atveryend` are combined, `\AtVeryVeryEnd` will never be called. `\@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 $\text{\LaTeX 2}_{\epsilon}$ Sources
 by JOHANNES BRAAMS, DAVID CARLISLE, ALAN JEFFREY, LESLIE LAMPORT,
 FRANK MITTELBACH, CHRIS ROWLEY, AND RAINER SCHÖPF,
 as of 2011/06/27, p. 464.

```

171 \@ifl@t@r\fmtversion{2011/06/27}% or possibly even newer
172 {\@ifpackagelater{atveryend}{2011/06/29}%
173 {% 2011/06/30, v1.8, or even more recent: OK
174 }{% else: older package version, no \AtVeryVeryEnd
175 \let\regst@ts@statistics\ltx@firstofone%
176 }
177 }{% else: older fmtversion: OK

```

In this case the used \TeX 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.)

```

178 }
179
180 \AtBeginDocument{%
181 \AtEndDocument{%
182 \BeforeClearDocument{%
183 \AfterLastShipout{%
184 \AtVeryEndDocument{%
185 \AtEndAfterFileList{%

```

The `regstats` package uses the `atveryend` package, which is not compatible with the `seminar` class nor the `slidesec` package. `\AtVeryVeryEnd` cannot be used with that class or package.

`\ltx@ifclassloaded` and `\ltx@ifpackageloaded` from the `ltxcmds` package can be used after `\AtBeginDocument` (in contrast to `\@ifclassloaded` and `\@ifpackageloaded`).

```

186 \ltx@ifclassloaded{seminar}{% no \AtVeryVeryEnd
187 \let\regst@ts@statistics\ltx@firstofone%
188 }{% else
189 \ltx@ifpackageloaded{slidesec}{% no \AtVeryVeryEnd
190 \let\regst@ts@statistics\ltx@firstofone%
191 }{% else: OK
192 }%
193 }%

```

`\AtEndAfterFileList` we write to `\AtVeryVeryEnd` (if available) via `\regst@ts@statistics`, thus the code will be executed quite late during the compilation. (Please load `regstats` as very last package!)

```
194 \regst@ts@statistics{%
```

We try to determine, whether the `etex`-package was loaded by the user (which requires ε -TeX being available in the L^AT_EX distribution used to compile the document).

```
195 \ltx@ifpackageloaded{etex}{%
196   \PackageInfo{regstats}{e-TeX-package found.}
197 }{% else
198   \PackageWarning{regstats}{Could not find the e-TeX-package.%
199     \MessageBreak%
200     That can mean that e-TeX was disabled or\MessageBreak%
201     that your distribution of TeX does not contain e-TeX%
202     \MessageBreak%
203     or that you simply forgot to say \string\usepackage{etex}%
204     \MessageBreak%
205     in the preamble of \jobname.tex.\MessageBreak%
206     The number of available counter, dimen, skip,\MessageBreak%
207     muskip, box, and toks registers as well as the\MessageBreak%
208     number of insertions would be larger when using%
209     \MessageBreak%
210     the e-TeX-package.%
211   }
212 }
```

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.

```
213 \def\regstats@lft{%
214   \newcommand{\regstats@regstat}[5]{%
```

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

```
215   \@tempcnta=#1 \relax
216   \ifnum \the\@tempcnta = 0
217     \@tempcnta=2 \relax
218   \fi
219   \ifnum \the\@tempcnta > 1
220     \gdef\regstats@pl{#3}
221   \else
222     \gdef\regstats@pl{#2}
223   \fi
224   \ltx@ifpackageloaded{etex}{\edef\regstats@max{#5}}{%
225     \edef\regstats@max{#4}}
226   \ifregstats@left
227     \@tempcnta=\regstats@max \relax
228     \advance\@tempcnta by -#1%
229     \ifnum \the\@tempcnta > 0
230       \edef\regstats@lft{, left: \the\@tempcnta}
231     \else
232       \ifnum \the\@tempcnta = 0
233         \edef\regstats@lft{, left: \the\@tempcnta !!!}
234       \else% \the\@tempcnta < 0
```

```

235         \edef\regstats@lft{, left: \the\@tempcnta *****}
236     \fi
237 \fi

\else \regstats@lft will stay \empty.

238 \fi
239 }

```

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

```

240 \ifregstats@proof
241   \PackageWarning{regstats}{%
242     Package regstats loaded with option 'proof'.\MessageBreak%
243     This package itself will now use\MessageBreak%
244     one of each register for testing!\MessageBreak%
245   }%
246   \def\regstats@proof{1}
247   \newcounter{regstatscount}
248   \edef\regstats@counter{\the\allocationnumber}
249   \edef\regstats@test{\the\count10}
250   \ifx\regstats@counter\regstats@test
251   \else
252     \message{Discrepancy when counting count registers.^^J}
253     \def\regstats@proof{0}
254   \fi
255   \newdimen{\regstatsdimen}
256   \edef\regstats@dimen{\the\allocationnumber}
257   \edef\regstats@test{\the\count11}
258   \ifx\regstats@dimen\regstats@test
259   \else
260     \message{Discrepancy when counting dimen registers.^^J}
261     \def\regstats@proof{0}
262   \fi
263   \newskip\regstatsskip
264   \edef\regstats@skip{\the\allocationnumber}
265   \edef\regstats@test{\the\count12}
266   \ifx\regstats@skip\regstats@test
267   \else
268     \message{Discrepancy when counting skip registers.^^J}
269     \def\regstats@proof{0}
270   \fi
271   \newmuskip\regstatsskip
272   \edef\regstats@muskip{\the\allocationnumber}
273   \edef\regstats@test{\the\count13}
274   \ifx\regstats@muskip\regstats@test
275   \else
276     \message{Discrepancy when counting muskip registers.^^J}
277     \def\regstats@proof{0}
278   \fi
279   \newbox\regstatsbox
280   \edef\regstats@box{\the\allocationnumber}
281   \edef\regstats@test{\the\count14}
282   \ifx\regstats@box\regstats@test
283   \else
284     \message{Discrepancy when counting box registers.^^J}
285     \def\regstats@proof{0}
286   \fi

```

```

287 \newtoks\regstatstoks
288 \edef\regstats@toks{\the\allocationnumber}
289 \edef\regstats@test{\the\count15}
290 \ifx\regstats@toks\regstats@test
291 \else
292 \message{Discrepancy when counting toks registers.^^J}
293 \def\regstats@proof{0}
294 \fi
295 \newread\regstatsread
296 \edef\regstats@read{\the\allocationnumber}
297 \edef\regstats@test{\the\count16}
298 \ifx\regstats@read\regstats@test
299 \else
300 \message{Discrepancy when counting read registers.^^J}
301 \def\regstats@proof{0}
302 \fi
303 \newwrite\regstatswrite
304 \edef\regstats@write{\the\allocationnumber}
305 \edef\regstats@test{\the\count17}
306 \ifx\regstats@write\regstats@test
307 \else
308 \message{Discrepancy when counting write registers.^^J}
309 \def\regstats@proof{0}
310 \fi
311 \newfam\regstatsfam
312 \edef\regstats@fam{\the\allocationnumber}
313 \edef\regstats@test{\the\count18}
314 \ifx\regstats@fam\regstats@test
315 \else
316 \message{Discrepancy when counting fam registers.^^J}
317 \def\regstats@proof{0}
318 \fi
319 \newlanguage\regstatslanguage
320 \edef\regstats@language{\the\allocationnumber}
321 \edef\regstats@test{\the\count19}
322 \ifx\regstats@language\regstats@test
323 \else
324 \message{Discrepancy when counting language registers.^^J}
325 \def\regstats@proof{0}
326 \fi
327 \newinsert\regstatsinsert
328 \edef\regstats@insert{\the\allocationnumber}
329 \edef\regstats@test{\the\count20}
330 \ifx\regstats@insert\regstats@test
331 \else
332 \message{Discrepancy when counting insert registers.^^J}
333 \def\regstats@proof{0}
334 \fi

```

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

```

335 \edef\regstats@test{0}
336 \ifx\regstats@proof\regstats@test
337 \message{Regstats test for register numbers failed.^^J}
338 \message{Therefore option 'proof' is necessary to get the %
339 right numbers.^^J}
340 \fi
341 \else

```

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

```
342      \edef\regstats@counter{\the\count10}
343      \edef\regstats@dimen{\the\count11}
344      \edef\regstats@skip{\the\count12}
345      \edef\regstats@muskip{\the\count13}
346      \edef\regstats@box{\the\count14}
347      \edef\regstats@toks{\the\count15}
348      \edef\regstats@read{\the\count16}
349      \edef\regstats@write{\the\count17}
350      \edef\regstats@fam{\the\count18}
351      \edef\regstats@language{\the\count19}
352      \edef\regstats@insert{\the\count20}
353      \fi
```

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

```
354      \@tempcnta = 233 \relax
355      \advance\@tempcnta by -\regstats@insert%
356      \advance\@tempcnta by +1%
357      \edef\regstats@insert{\the\@tempcnta}
```

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 ε -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.)

```

358     \message{^^J}
359     \message{Here is how much of TeX's registers you used^^J}%
360     \message{\space (numbers of available registers are estimated!):^^J}%
361     \regstats@regstat{\regstats@counter}{s}{233}{32767}
362     \message{ \regstats@counter\space counter register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
363     \regstats@regstat{\regstats@dimen}{s}{233}{32767}
364     \message{ \regstats@dimen\space dimen register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
365     \regstats@regstat{\regstats@skip}{s}{233}{32767}
366     \message{ \regstats@skip\space skip register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
367     \regstats@regstat{\regstats@muskip}{s}{255}{32767}
368     \message{ \regstats@muskip\space muskip register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
369     \regstats@regstat{\regstats@box}{s}{233}{32767}
370     \message{ \regstats@box\space box register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
371     \regstats@regstat{\regstats@toks}{s}{255}{32767}
372     \message{ \regstats@toks\space toks register\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
373     \regstats@regstat{\regstats@read}{s}{15}{15}
374     \message{ \regstats@read\space input stream\regstats@pl\space (read) out of \regstats@max \regstats@lft ^^J}
375     \regstats@regstat{\regstats@write}{s}{15}{15}
376     \message{ \regstats@write\space output stream\regstats@pl\space (write) out of \regstats@max \regstats@lft ^^J}
377     \regstats@regstat{\regstats@fam}{y}{ies}{15}{15}
378     \message{ \regstats@fam\space math famil\regstats@pl\space (fam) out of \regstats@max \regstats@lft ^^J}
379     \regstats@regstat{\regstats@language}{s}{255}{255}
380     \message{ \regstats@language\space language code\regstats@pl\space out of \regstats@max \regstats@lft ^^J}
381     \regstats@regstat{\regstats@insert}{s}{101}{124}
382     \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 is 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.

`\pdfelapsedtime` is not available when `lua(la)tex` is used instead of `pdf(la)tex` to compile the document. In that case at the very beginning of your `tex` file say

```
\directlua{starttime = os.clock()}
```

(even before `\documentclass!`), and the `timer` option can also be used with `lualatex`. When neither `lualatex` nor `pdflatex` is used to compile the document, the `timer(-option)` does not work.

```
383      \regst@ts@timer
384      }%
385      }%
386      }%
387      }%
388      }%
389      }%
390 }
391
392 </package>
```

6 Installation

6.1 Downloads

Everything is 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_EXFormat L^AT_EX 2_ε: <http://www.CTAN.org/>
- document class `ltxdoc`, 2007/11/11, v2.0u, [CTAN:macros/latex/base/ltxdoc.dtx](http://www.ctan.org/macros/latex/base/ltxdoc.dtx)
- package `pdflscape`, 2008/08/11, v0.10, <http://ctan.org/pkg/pdflscape>
- package `holtxdoc`, 2011/02/04, v0.21, <http://ctan.org/pkg/holtxdoc>
- package `hypdoc`, 2010/03/26, v1.9, <http://ctan.org/pkg/hypdoc>

`regstats.sty` The `regstats.sty` for L^AT_EX 2_ε (i. e. each document using the `regstats` package) requires:

- T_EXFormat L^AT_EX 2_ε, <http://www.CTAN.org/>
- package `kvoptions`, 2010/12/23, v3.10, <http://ctan.org/pkg/kvoptions>
- package `atveryend`, 2011/06/30, v1.8, <http://ctan.org/pkg/atveryend>

When option `timer` is used, additionally

- package `intcalc`, 2007/09/27, v1.1, <http://ctan.org/pkg/intcalc>
- package `ifluatex`, 2010/03/01, v1.3, <http://ctan.org/pkg/ifluatex>
- package `ifpdf`, 2011/01/30, v2.3, <http://ctan.org/pkg/ifpdf>

are 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/macros/latex/base/classes.dtx)
- package `regstats`, 2012/01/01, v1.0g, <http://ctan.org/pkg/regstats>
(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, ifluatex, ifpdf, intcalc, ltxcmds, and pdfscape) are also avail-
 kvoptions able in a TDS compliant ZIP archive:
 atveryend [CTAN:install/macros/latex/contrib/oberdiek.tds.zip](http://mirror.ctan.org/install/macros/latex/contrib/oberdiek.tds.zip).
 ifluatex It is probably best to download and use this, because the packages in there are
 ifpdf quite probably both recent and compatible among themselves.
 intcalc
 ltxcmds
 pdfscape
 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/regstats-example.log](http://mirror.ctan.org/macros/latex/contrib/regstats/regstats-example.log)

A log file for the example.

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

The README file.

There is also a regstats.tds.zip available:

[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

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

```
regstats.sty      → tex/latex/regstats/regstats.sty
regstats.pdf      → doc/latex/regstats/regstats.pdf
regstats-example.tex → doc/latex/regstats/regstats-example.tex
regstats-example.pdf → doc/latex/regstats/regstats-example.pdf
regstats-example.log → doc/latex/regstats/regstats-example.log
regstats.dtx      → source/latex/regstats/regstats.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`.

6.3 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`.

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 the following 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)(la)tex regstats-example.tex`
or (after removing the `%%` before `\directlua{starttime = os.clock()}`) in the line before `\documentclass...`) via
`lua(la)tex regstats-example.tex`.

7 Acknowledgements

I would like to thank HEIKO OBERDIEK for providing the `hyperref`, `hottxdoc`, `kvoptions`, `atveryend`, `ifluatex`, `ifpdf`, `intcalc`, `ltxcmds`, and `pdflscape` 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 as well as <http://tex.stackexchange.com> 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 $\varepsilon\text{-}\text{\TeX}$.
- Change in $\varepsilon\text{-}\text{\TeX}$ -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 `TEX` format and `atveryend` package version. 2011/06/30, v.1.8 should 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.

[2012/01/01 v1.0g]

- Now supports (but does not require) `lua(la)tex` for option `timer`.
- Bug fix: wrong path given in the documentation, fixed.
- Due to the use of temporary counters, no longer a new counter is used (except when option `proof=true` is chosen, of course).
- Circumvention of the incompatibility of the `atveryend` package with `seminar` class and `slidesec` package introduced.
- Quite some additional changes in the `dtx` and README files.

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.)

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