

mylatexformat

Use mylatexformat to make a format based on the preamble of any LaTeX file

FC

2011/02/12 – version 3.4

Abstract

mylatexformat can be used to make a format from the preamble of any \LaTeX file. The use of formats helps to speed up compilations: packages which have been dumped in the format are loaded at very high speed. A format (also known as *dump*) is therefore very suitable:

- if you have many documents that share the same preamble,
- if you have a document which loads a large amount of packages (like TikZ graphics libraries).

mylatexformat will dump all definitions until `\begin{document}` or `\endofdump`, more precisely:

```
\RequirePackage{...}
\documentclass{...}
\usepackage{...}
...
...
\begin{document}
```

```
\RequirePackage{...}
\documentclass{...}
\usepackage{...}
\endofdump
...
\begin{document}
```

```
\RequirePackage{...}
\documentclass{...}
\usepackage{...}
\csname
endofdump\endcsname
...
\begin{document}
```

The colored parts correspond to the format. The `.log` file will report:

start reading document "my document"	start reading document "my document"
on input line *** (\begin{document})	on input line *** (\endofdump)

mylatexformat was primarily written from **mylatex** by David Carlisle, but it is different in many points (see 3). In particular, **mylatexformat** allows to put almost any package in the format, with one exception: the package **minitoc** cannot be included in the format (you must use `\endofdump` before `\usepackage{minitoc}`).

Contents

1	Creating a format	2	4	Implementation	4
1.1	Using MikTeX	2	5	History	9
1.1.1	With preloaded pdflatex format (pdf output)	2		[2011/02/12 v3.4]	9
1.1.2	With preloaded latex format (dvi output)	2		[2011/01/19 v3.3]	9
1.1.3	With preloaded format xelatex (pdf output)	2		[2011/01/14 v3.1]	9
1.2	Using other distributions	2		[2011/01/12 v3.0]	9
2	Using a format	2		[2010/08/09 v2.9]	9
2.1	Using MikTeX	2		[2010/06/30 v2.1]	9
2.2	Using other distributions	2		[2010/05/20 v1.2]	9
3	How does it work ? (and why it is different from mylatex.ltx)	3		[2010/04/30 v1.0]	9
		6	Index		10

This documentation is produced with the DocStrip utility.

- To get the package, run: `etex mylatexformat.dtx`
- To get the documentation run (thrice): `pdflatex mylatexformat.dtx`
- To get the index, run: `makeindex -s gind.ist mylatexformat.idx`

The `.dtx` file is embedded into this pdf file thank to `embedfile`¹ by H. Oberdieck.

1 Creating a format

1.1 Using MikTeX

1.1.1 With preloaded pdf_latex format (pdf output)

Use the following command line:

```
etex -initialize [opts] "&pdflatex" mylatexformat.ltx ""abc.tex""
```

You need 3 quotes around your .tex file if its name contains space (only one quote if it does not contain any space, but 3 quotes is more general...)

Full example:

```
etex -initialize -save-size=20000 -stack-size=20000
      -jobname="The-Name-Of-The-.fmt-File(without .fmt extension)"
      "&pdflatex" mylatexformat.ltx ""Mon Fichier TeX.tex""
```

1.1.2 With preloaded latex format (dvi output)

Use the following command line:

```
etex -initialize [opts] "&latex" mylatexformat.ltx ""abc.tex""
```

1.1.3 With preloaded format xelatex (pdf output)

Use the following command line:

```
xetex -initialize [opts] "&xelatex" mylatexformat.ltx ""abc.tex""
```

1.2 Using other distributions

As I pointed out in the abstract, I have not been able to test the file on other distributions.

Some users told me they typed the following command line:

```
latex -ini -jobname="fmt-file-name" "&latex" mylatexformat.ltx ""abc.tex""
```

2 Using a format

2.1 Using MikTeX

Add the format to the very first line of your LaTeX file :

```
%&"Mon Beau Format"
```

You may use the ε -T_EX option : `-dont-parse-first-line` to avoid loading the format.

2.2 Using other distributions

As I pointed out in the abstract, I have not been able to test the file on other distributions.

3 How does it work ? (and why it is different from mylatex.ltx)

mylatex.ltx has three important limitations:

- 1) The end of the format is either `\begin{document}` or the comment `%mylatex`.
Therefore, after the format has been loaded, T_EX checks the commentaries in the preamble in order to skip everything before `%mylatex`.
But this way, braces **must match inside commentaries !**
- 2) mylatex.ltx temporarily redefines the command `\document` in order to stop the creation of the format (execution of `\dump`) at begin document.
However, the **initial definition of the macro `\document`** is saved and reloaded after the format has been loaded.
Therefore, packages that modifies this macro (such as `auxhook`² or `etoolbox`³ cannot be included in the format!
- 3) If your document starts with :
`\begin{document}% commentary` or with :
`\begin{document}\makeatletter`
the format is not stopped at `\begin{document}` and an error occurs.

With mylatexformat.ltx, those limitations are lifted.

mylatexformat.ltx:

- 1) Temporarily redefines `\begin` in order to check if its argument is `<document>`.
Therefore, packages like `auxhook` or `etoolbox` can be included in the format.
- 2) Stops the format when it encounters `\begin{document}` or `\endofdump`.
- 3) Does not read inside commentaries
- 4) After the format has been loaded, each line is checked to see if it **contains** either:

`\begin{document}`

or: `\endofdump`

or: `\csname endofdump\endcsname*`

Report is written in the `.log` file, with the job name, the name of the preloaded format, the list of preloaded files and the first input line read after loading of format.

* this way, the command `\csname endofdump\endcsname` is silently ignored (equiv. to `\relax`) in case the format is not used.

2. auxhook: CTAN:macros/latex/contrib/oberdiek/auxhook H. Oberdiek
3. etoolbox: CTAN:macros/latex/contrib/etoolbox P. Lehman

4 Implementation

```

1 <*package>
2 %%% -----
3 %%%                               mylatexformat.ltx
4 %%%                               ^^^^^^^^^^^^^^^^^^
5 %%% From an original idea by David Carlisle - mylatex.ltx 1994/09/27
6 %%% © lpp1 2010-2011 - F Chervet - 2011/02/12 v3.4
7 %%% -----
8 %%%
9 %%% Use this file to make a format based on the preamble of any LaTeX
10 %%% file.
11 %%%
12 %%% The format is made from the very beginning of the file up to either:
13 %%%   i) the command : \endofdump
14 %%%                  placed in the preamble
15 %%%   ii) the command : \csname endofdump\endcsname
16 %%%                   placed in the preamble
17 %%%   iii) \begin{document}
18 %%%                  if \endofdump nor \csname endofdump\endcsname
19 %%%                  haven't been found in the preamble.
20 %%%
21 %%% A format helps to speed up compilations, packages which have been
22 %%% dumped in the format are loaded at very high speed.
23 %%% -----
24 %%% There are no restrictions on the distribution or modification of
25 %%% this file, except that other people should not attempt to alter
26 %%% the master copy on the ctan archives.
27 %%%
28 %%% Making the format -----
29 %%% ^^^^^^^^^^^^^^^^^^                               USING MikTeX
30 %%% * With preloaded pdflatex format (pdf output) :
31 %%%   etex -initialize [opts] "&pdflatex" mylatexformat.ltx ""abc.tex""
32 %%%   => compile your document using :
33 %%%       pdflatex
34 %%%       or texify --tex-option=-output-format=pdf
35 %%%
36 %%% * With preloaded latex format (dvi output) :
37 %%%   etex -initialize [opts] "&latex" mylatexformat.ltx ""abc.tex""
38 %%%   => compile your document using
39 %%%       latex
40 %%%       or texify --tex-option=-output-format=dvi
41 %%%
42 %%% * With preloaded format xelatex (pdf output) :
43 %%%   xetex -initialize [opts] "&xelatex" mylatexformat.ltx ""abc.tex""
44 %%%   => compile your document using xelatex
45 %%%
46 %%% NOTA BENE:   Please, notice the 3 quotes !
47 %%% ^^^^^^^^^^
48 %%%
49 %%% In fact, 3 quotes are necessary only if you "file name.tex" contains a space !
50 %%%
51 %%% -----
52 %%% Exemple of a command line for making format using pdfTeX :
53 %%%
54 %%%   etex -initialize -interaction=nonstopmode
55 %%%           -save-size=20000 -stack-size=20000
56 %%%           -jobname="Mon Beau Format Perso"
57 %%%           "&pdflatex" mylatexformat.ltx "Mon Fichier TeX.tex"
58 %%%
59 %%%   "Mon Beau Format Perso.fmt" (en Français dans le texte) will be created
60 %%%   (or overwritten) in the current working directory.
61 %%%
62 %%% Using the format -----

```

5 / 10

```

127%% \begin{document}
128%% Everything up to (but not including) the \begin{document} will
129%% be saved in the format and not executed in subsequent runs.
130%%
131%% If you are modifying the document (or working on a similar document)
132%% you may wish to add new commands to your document preamble.
133%% The 'mylatex' format normally skips the whole preamble (believing
134%% it to be pre-loaded) and so such new commands do not take effect.
135%% You could re-make the format, preloading the new preamble, but that
136%% might be inconvenient to do every time, and so an alternative scheme
137%% has been introduced.
138%% If the preamble contains a comment mylatex (ie a line just
139%% containing a % white space and the word mylatex) then the mylatex
140%% format will start reading the preamble at that point so any new
141%% commands can be placed after such a comment and they will be
142%% executed.
143%% -----
144%%
145%% \RequirePackage{etex}% \RequirePackage may be used before the class
146%%
147%% In principle \openout stream= filename need not be space terminated,
148%% and need not be immediate, but this covers \makeindex \makeglossary
149%% and index package's \newindex which are all the cases of \openout
150%% that occur before \begin{document} that I could see.
151%% Thanks to Ross Moore for pointing out \AtBeginDocument is too late
152%% eg changebar package *closes* the stream in \AtBeginDocument, so need
153%% to make sure it is opened before that. Make a special purpose hook.
154\makeatletter

```

`\begin` `\begin` is overloaded in order to stop `\dump` at begin document if the macro `\endofdump` is not given somewhere in the preamble. Rem: it is NOT POSSIBLE to redefine `\document`, for the macro `\document` is changed or patched by some classes or packages (auxhook, etoolbox etc.)

With etoolbox⁴ version 2.1 and earlier, `\begin` is patched, in order to insert the hooks `\AtBeginEnvironment` and `\AtEndEnvironment`.

Therefore, it's not possible to restore, at end of dump, the original definition of `\begin` in the L^AT_EX kernel. Instead, [mylatexformat](#) inserts a reversible patch of the `\begin` command: the patched is reversed at end of dump by `\MYLATEX@cleanup`.

```

155%% \begin is overloaded in order to stop \dump at begin document
156%% if the macro \endofdump is not given somewhere in the preamble.
157%% Rem: it is NOT POSSIBLE to redefine \document, for the macro
158%%      \document is changed or patched by some classes or packages
159%%      (auxhook, etoolbox etc.)
160\begin{group} \def\x #1{\endgroup
161  \gdef\begin ##1{\MYLATEX@StopAtdocument{##1}#1}
162 }\expandafter\x\expandafter{\begin{#1}}
163 \def\MYLATEX@StopAtdocument #1{\expandafter
164  \ifx\csname #1\endcsname\document \expandafter\endofdump \fi
165 }% \MYLATEX@StopAtdocument

```

`\openout` Files cannot be opened out during the building of the format. Instead, `\openout` is delayed until the end of the dump.

```

166\let\MYLATEX@openout \openout
167\def\openout#1 {\g@addto@macro\MYLATEX@opens{\immediate\openout#1 }}
168\def\MYLATEX@opens {\let\MYLATEX@opens \undefined}

```

`\MYLATEX@cleanup` Final clean up done at `\endofdump`: reverse the path for `\begin` and restores `\openout` primitive.

```

169\def\MYLATEX@cleanup {\let\MYLATEX@cleanup \@undefined
170  \def\MYLATEX@StopAtdocument ##1\MYLATEX@StopAtdocument ##2##3\@nil{%
171    \gdef\begin ####1{##1##3}%
172  }\expandafter\MYLATEX@StopAtdocument \begin{##1}\@nil

```

4. etoolbox: [CTAN:macros/latex/contrib/etoolbox](#)

```

173 \let\openout \MYLATEX@openout
174 \let\MYLATEX@openout \@undefined
175 \let\MYLATEX@StopAtdocument \@undefined
176}% \MYLATEX@cleanup

```

`\MYLATEX@fontpreloading` Some font can be preloaded: this gives an advantage to the format.

A hook for **cmap** is necessary.

```

177\def\MYLATEX@fontpreloading{\let\MYLATEX@fontpreloading \@undefined
178 \begingroup \setbox0=\hbox {%
179   $$% math (not bold, some setups don't have \boldmath)
180   \def\x {\bfseries\itshape}{\itshape}\ttfamily\sffamily
181   \normalfont \x
182   \ifdefined\large \large \x \fi
183   \ifdefined\Large \Large \x \fi
184   \ifdefined\LARGE \LARGE \x \fi
185   \ifdefined\Huge \Huge \x \fi
186   \ifdefined\small \small \x \fi
187   \ifdefined\footnotesize \footnotesize \x \fi
188   \ifdefined\tiny \tiny \x \fi}%
189   \@for\x:={lae,lfe,lgr,ot1,ot1tt,ot6,t1,t2a,t2b,t2c,t5}\do{%
190     \ifcsname cmap@set@\x\endcsname \global\expandafter
191       \let\csname cmap@set@\x\endcsname \@undefined \fi
192     \uppercase\expandafter{\expandafter\def\expandafter\x\expandafter{\x}}%
193     \ifcsname cmap@set@\x\endcsname \global\expandafter
194       \let\csname cmap@set@\x\endcsname \@undefined \fi}%
195 \endgroup
196}% \MYLATEX@fontpreloading

```

`\endofdump`

```

197\let\MYLATEX@listfiles \listfiles
198\def\endofdump{\let\endofdump \relax
199 \MYLATEX@cleanup
200 \MYLATEX@fontpreloading
201 \makeatother
202 \everyjob\expandafter{\the\everyjob
203   \let\MYLATEX@temp \listfiles
204   {%
205     \MYLATEX@listfiles
206     \global\let\MYLATEX@listfiles \@undefined
207     \expandafter\MYLATEX@banner \@dofilelist
208   }%
209   \let\listfiles \MYLATEX@temp % to be able to used \listfiles once after the format
210   \let\MYLATEX@temp \@undefined
211   \MYLATEX@scanpreamble}%
212 \dump
213}% \endofdump

```

`\MYLATEX@banner` Set to be expanded at `\everyjob`: displays a banner in the log file.

`\MYLATEX@start`

```

214%% Banner for \everyjob.
215{\@makeother\" % just in case
216\xdef\MYLATEX@banner #1#2#3\typeout #4{%
217 \global\let\noexpand\MYLATEX@banner \noexpand\@undefined
218 \newlinechar'\noexpand\^^J\message{%
219 =====^^J}%
220 JOB NAME\@spaces\@spaces\space: "\noexpand\jobname"^^J}%
221 CUSTOMISED FORMAT: "\jobname"^^J}%
222 PRELOADED FILES:^^J}%
223 #3%
224 \message{%
225 =====}%
226}% \MYLATEX@banner
227\long\gdef\MYLATEX@start #1#2{\global\let\MYLATEX@start \@undefined
228 \message{%

```



```

229 (mylatexformat)Info: start reading document "\jobname"^^J%
230 (mylatexformat)\@spaces\space\on@line.
231 (\ifcase#1 \string\endofdump\else\string\begin{document}\fi)^^J%
232 =====}%
233 \endgroup
234 \MYLATEX@opens\relax #2%
235 }% \MYLATEX@start
236 }% \catcode group
237

```

\MYLATEX@scanpreamble While the preamble is being skipped (inside a group) the EOL is active and defined to grab each line and inspect it looking for :

```

\endofdump
or \csname endofdump\endcsname
or \begin{document}

238%% While the preamble is being skipped (inside a group)
239%% the EOL is active and defined to grab each line and
240%% inspect it looking for :
241%% \endofdump
242%% or \csname endofdump\endcsname
243%% or \begin{document}.
244%%
245%% The special catcodes required are not enabled until after the
246%% first TeX command in the file, so as to avoid problems with
247%% the special processing that TeX does on the first line, choosing
248%% the format, or the file name etc.
249{% catcode group
250\catcode'\^^M=13 \catcode'\& =8 %
251\long\gdef\MYLATEX@scanpreamble {%
252 \begingroup \catcode'\^^M=13%
253 \long\def\MYLATEX@endofdump ##1\endofdump##2##3&##4##5##6\MYLATEX {##5}%
254 \long\def\MYLATEX@csendofdump ##1\csname endofdump\endcsname##2##3&##4##5##6\MYLATEX {##5}%
255 \long\def\MYLATEX@document ##1document##2##3&##4##5##6\MYLATEX {##5}%
256 \long\def\MYLATEX@begindocument ##1\begin##2##3\MYLATEX##4{%
257 \MYLATEX@document ##2document&&\MYLATEX@start1{##4}}{\^^M}\MYLATEX}%
258 \long\def^^M##1^^M{%
259 \MYLATEX@endofdump##1\endofdump&&%
260 {\MYLATEX@start 0{##1}}}%
261 {\MYLATEX@csendofdump ##1\csname endofdump\endcsname&&%
262 {\MYLATEX@start 0{##1}}}%
263 {\MYLATEX@begindocument ##1\begin\relax\MYLATEX{##1}}}%
264 \MYLATEX}%
265 \MYLATEX}%
266 ^^M%
267}% \MYLATEX@scanpreamble
268}% catcode group

269%% Trick lookahead to allow mylatex.ltx and the document filename to be
270%% given on the same command line. (initex &latex mylatex.ltx {abc.tex})
271\expandafter\input\endinput%
272</package>

```


5 History

[2011/02/12 v3.4]

- Reorganisation of the code + optimisation.

[2011/01/19 v3.3]

- Modification of the code for `\begin` in order to keep the patching introduced by `etoolbox` version 2.1 for the hooks `\AtBeginEnvironment... \AtEndEnvironment`.

[2011/01/14 v3.1]

- `\@for` loop introduced for compatibility with the `cmap` package had the bad side effect to define a control sequence `\x`. Fixed.

[2011/01/12 v3.0]

- Fix a problem with package `cmap` which could not be included in the format.
- Documentation revisited after Users' feedback (and the `interfaces` package).

[2010/08/09 v2.9]

- Modification of the macros that scan the preamble when the `.tex` file is compiled with its format. It is now possible to start a file with `\begin{document}` just after the format specification (`&myformat`).

To do: Command line to make the format on Linux (`-ini` instead of `-initialize` ???).

[2010/06/30 v2.1]

- Added: `\listfiles` is now available in the preamble, after `\endofdump`, when the document is compiled with its format.
- Documentation update.

[2010/05/20 v1.2]

- Fixed a bug in `\MYLATEXopens`
(There was problems when including an index in the format for example...)

[2010/04/30 v1.0]

- First version.

6 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		M	
<code>\&</code>	75, 94, 103, 250	<code>\message</code>	218, 224, 228
<code>\@makeother</code>	215	<code>\MYLATEX</code>	253, 254, 255, 256, 257, 263, 264, 265
<code>\@nil</code>	170, 172	<code>\MYLATEX@banner</code>	207, <u>214</u>
<code>\^</code>	218, 250, 252	<code>\MYLATEX@begindocument</code>	256, 263
B		<code>\MYLATEX@cleanup</code>	<u>169</u> , 199
<code>\begin</code>	<u>155</u>	<code>\MYLATEX@cseofdump</code>	254, 261
C		<code>\MYLATEX@document</code>	255, 257
<code>\catcode</code>	236, 250, 252	<code>\MYLATEX@endofdump</code>	253, 259
D		<code>\MYLATEX@fontpreloading</code>	<u>177</u> , 200
<code>\document</code>	157, 158, 164	<code>\MYLATEX@listfiles</code>	197, 205, 206
<code>\dump</code>	155, 212	<code>\MYLATEX@openout</code>	166, 173, 174
E		<code>\MYLATEX@opens</code>	167, 168, 234
<code>\endofdump</code>	13, 18, 156, 164, <u>197</u> , 231, 241, 253, 259	<code>\MYLATEX@scanpreamble</code>	211, <u>238</u>
<code>\everyjob</code>	202, 214	<code>\MYLATEX@start</code>	<u>214</u> , 257, 260, 262
I		<code>\MYLATEX@StopAtdocument</code>	161, 163, 165, 170, 172, 175
<code>\ifcase</code>	231	<code>\MYLATEX@temp</code>	203, 209, 210
<code>\ifcsname</code>	190, 193	N	
<code>\input</code>	81, 271	<code>\newlinechar</code>	218
J		O	
<code>\jobname</code>	220, 221, 229	<code>\on@line</code>	230
L		<code>\openout</code>	147, 149, <u>166</u> , 173
<code>\listfiles</code>	197, 203, 209	T	
		<code>\typeout</code>	216
		U	
		<code>\uppercase</code>	192