

# iexec: L<sup>A</sup>T<sub>E</sub>X Package for Inputable Shell Executions\*

Yegor Bugayenko  
yegor256@gmail.com

01.10.2022, 0.6.1

## 1 Introduction

This package helps you execute shell commands right from the document and then put their output to the document:

```
\documentclass{article}
\usepackage{iexec}
\begin{document}
Today is
  \iexec{date +%e-%b-%Y}
\end{document}
```

Today is 1-Oct-2022

`\iexec` The only command provided by this package is `\iexec [options] {cmd}`. Its only mandatory argument *cmd* is the command to be executed through the terminal shell (bash, or whatever is set as the default one on your user console).

You have to run `pdflatex` (or just `latex`) with the `--shell-escape` flag in order to let `shellesc` (the package we use) to execute your shell command.

## 2 Options

`quiet` If you don't want the output to be visible, use `\phantom{\iexec{...}}`. Otherwise, you can use `quiet` option:

```
\documentclass{article}
\usepackage{iexec}
\begin{document}
I just want to delete some file:
\iexec[quiet]{rm -f foo.txt}
\end{document}
```

---

\*The sources are in GitHub at [yegor256/iexec](https://github.com/yegor256/iexec)

In this case, whatever the shell command produces will not be included into the document.

**stdout** The output of your code is saved into the file provided as the second optional argument of `\iexec` (the default value is `iexec.tmp`):

```
\documentclass{article}
\usepackage{iexec}
\begin{document}
Today is \iexec[stdout=date.txt]{date +%e-%b-%Y | tr -d '\n'}.
\end{document}
```

The tailing part of the command here removes all ends-of-line.

**trace** The file specified will be deleted right after its usage. If you don't want this to happen, use `trace` package option: all files will remain in the directory where they were created. It's possible to turn tracing on globally, for the entire document, using `trace` option of the package:

```
\documentclass{article}
\usepackage[trace]{iexec}
\begin{document}
This file won't be deleted: \iexec[stdout=me.txt]{whoami}.
\end{document}
```

### 3 Implementation

**\iexec** It is implemented with the help of `\ShellEscape` from `shellesc` package:

```
1 \makeatletter\newcommand\iexec[2] [] {%
2   \begingroup
3     \pgfqkeys{/iexec}{#1}%
```

First, we verify that latex is running with `--shell-escape` option, since without it nothing will work; so, it's better to throw an error earlier than later:

```
4   \ifdefined\pdfshellescape\ifnum\pdfshellescape=1\else%
5     \PackageError{iexec}{You must run latex with
6       --shell-escape option}{}%
7   \fi\fi%
8   \begingroup%
```

Then, we define a few special chars in order to escape them in the shell (the full list of them is in [macros2e](#)):

```
9     \let\%\@percentchar%
10    \let\\\@backslashchar%
11    \let\{\@charlb%
12    \let\}\@charrb%
```

Then, we execute it:

```
13      \ShellEscape{#2 > \iexec@stdout}%
```

Then, a message is printed to TeX log:

```
14      \message{^^Jiexec: [#2 > \iexec@stdout]^^J}%
15  \endgroup%
```

Then, include the produced output into the current document:

```
16  \ifdefined\iexec@quiet
17    \message{^^Jiexec: Due to 'quiet' we didn't read
18      the content of '\iexec@stdout'^^J}%
19  \else%
20    \input{\iexec@stdout}%
21    \message{^^Jiexec: The content of '\iexec@stdout'
22      was included into the document^^J}%
23  \fi%
```

Finally, delete the file or leave it untouched:

```
24  \ifiexec@trace%
25    \message{^^Jiexec: Due to package option 'trace',
26      the file '\iexec@stdout' was not deleted^^J}%
27  \else%
28    \ifdefined\iexec@traceit%
29      \message{^^Jiexec: Due to 'trace' option,
30        the file '\iexec@stdout' was not deleted^^J}%
31    \else%
32      \ShellEscape{rm \iexec@stdout}%
33      \message{^^Jiexec: The file '\iexec@stdout' was deleted^^J}%
34    \fi%
35  \fi%
36  \endgroup
37 }\makeatother
```

# Change History

v0.2.0		
General: Initial version	.....	2
v0.4.0		
General: Runtime verification for		
-shell-escape option	.....	2
v0.4.1		
General: Options trace, stdout, and		
quiet added	.....	2
v0.5.0		
General: Major bug fixes	.....	2

## 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; numbers in *roman* refer to the code lines where the entry is used.

Symbols		
\%	..... 9	
\@backslashchar	. 10	
\@charlb	..... 11	
\@charrb	..... 12	
\@percentchar	.... 9	
\\	..... 10	
\{	..... 11	
\}	..... 12	
I		
\iexec	..... <u>1</u> , <u>1</u>	
\iexec@quiet	.... 16	
\iexec@stdout	...	13, 14, 18, 20, 21, 26, 30, 32, 33
\iexec@traceit	.. 28	
\ifdefined	.. 4, 16, 28	
\ifiexec@trace	.. 24	
\ifnum	..... 4	
\input	..... 20	
M		
\makeatletter	.... 1	
\makeatother	.... 37	
\message	.... 14,	17, 21, 25, 29, 33
P		
\PackageError	.... 5	
\pdfshellescape	.. 4	
\pgfqkeys	..... 3	
Q		
\quiet	..... <u>1</u>	
S		
\ShellEscape	.. 13, 32	
\stdout	..... <u>1</u>	
T		
\trace	..... <u>1</u>	