

Clut $\text{T}_{\text{E}}\text{X}$ manual

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Chapter 1

About Clut \TeX

Clut \TeX is an automation tool for \LaTeX document processing. Basic features are,

- Does not clutter your working directory with “extra” files, like `.aux` or `.log`.
- If multiple runs are required to generate correct document, do so.
- Watch input files, and re-process documents if changes are detected¹.
- Run `MakeIndex`, `BIB \TeX` , `Biber`, if requested.
- Produces a PDF, even if the engine (e.g. `p \TeX`) does not support direct PDF generation.

The unique feature of this program is that, auxiliary files such as `.aux` or `.toc` are created in an isolated location, so you will not be annoyed with these extra files.

¹needs an external program

Chapter 2

How to use Clut \TeX

2.1 Installation

If you are using the latest \TeX Live, you should have Clut \TeX installed. If not, upgrade your copy of \TeX Live with `tlmgr update --all`.

If you want to install Clut \TeX manually, fetch an archive from GitHub¹, extract it, and copy `bin/cluttex` or `bin/cluttex.bat` to somewhere in your `PATH`.

2.2 Command-line usage

Usage:

```
cluttex -e ENGINE OPTIONS [--] INPUT.tex
```

Basic options:

`-e, --engine=ENGINE` Set which \TeX engine/format to use. `ENGINE` is one of the following: `pdflatex`, `pdftex`, `lualatex`, `luatex`, `luajittex`, `xelatex`, `xetex`, `latex`, `etex`, `tex`, `platex`, `eptex`, `ptex`, `uplateg`, `euptex`, or `uptex`. Required.

`-o, --output=FILE` Set output file name. Default: `JOBNAME.FORMAT`

`--fresh` Clean auxiliary files before run. Cannot be used in conjunction with `--output-directory`.

`--max-iterations=N` Set maximum number of run, for resolving cross-references and etc. Default: 3

`--watch` Watch input files for change. Requires `fswatch` command to be available. See section 2.4 for details.

`--color[=WHEN]` Colorize messages. `WHEN` is one of `always`, `auto`, or `never`. If `--color` option is omitted, `auto` is used. If `WHEN` is omitted, `always` is used.

¹<https://github.com/minoki/cluttex>

`--includeonly=NAMEs` Insert `\includeonly{NAMEs}`.
`--make-depends=FILE` Write Makefile-style dependencies information to FILE.
`--tex-option=OPTION, --tex-options=OPTIONs` Pass extra options to `TEX`.
`--dvi-pdfmx-option=OPTION, --dvi-pdfmx-options=OPTIONs` Pass extra options to `dvi-pdfmx`.
`--[no-]change-directory` Change to the output directory when run. May be useful with shell-escaping packages.
`-h, --help`
`-v, --version`
`-V, --verbose`

Options for running auxiliary programs:

`--makeindex=COMMAND` Run `MakeIndex`.
`--bibtex=COMMAND` Run `BIBTEX`.
`--biber[=COMMAND]` Run `Biber`. Default value for `COMMAND`: `biber`
`--makeglossaries[=COMMAND]` Run `makeglossaries`. Experimental.

`TEX`-compatible options:

`--[no-]shell-escape`
`--shell-restricted`
`--synctex=NUMBER` Generate `SyncTEX` file. Note that `.synctex.gz` is created alongside the final `.pdf`. See section 2.3 for details.
`--[no-]file-line-error` Default: Yes
`--[no-]halt-on-error` Default: Yes
`--interaction=STRING` `STRING` is one of `batchmode`, `nonstopmode`, `scrollmode`, or `errorstopmode`. Default: `nonstopmode`
`--jobname=STRING`
`--fmt=FORMAT`
`--output-directory=DIR` Set output directory for `TEX` engine. Auxiliary files are produced in this directory. Default: somewhere in the temporary directory.
`--output-format=FORMAT` Set output format. Possible values are `pdf` or `dvi`. Default: `pdf`

Long options, except `TEX`-compatible ones, need two hyphens (e.g. `--synctex=1` is accepted, but not `--color`). Combining multiple short options, like `-Ve pdflatex`, is not supported.

2.3 SyncTeX

You can generate SyncTeX data with `--synctex=1` option.

Although ClutTeX has “Don’t clutter your working directory” as its motto, the `.synctex.gz` file is always produced alongside the PDF file. This is because SyncTeX cannot find its data file if it’s not in the same directory as the PDF.

2.4 Watch mode

If `--watch` option is given, ClutTeX enters *watch mode* after processing the document. An auxiliary program `fswatch`² needs to be installed for this mode.

A future version of ClutTeX may implement a built-in filesystem watcher.

2.5 MakeIndex and BibTeX

If you want to generate index or bibliography, using MakeIndex or BibTeX, set `--makeindex`, `--bibtex`, or `--biber` option. You need to explicitly specify the command name as an argument (e.g. `--makeindex=makeindex`, `--bibtex=bibtex`).

If you want to use Biber to process bibliography, the option to use is `--biber`, not `--bibtex=biber`.

2.6 For writing a large document

When writing a large document with L^ATeX, you usually split the TeX files with `\include` command. When doing so, `\includeonly` can be used to eliminate processing time. But writing `\includeonly` in the TeX source file is somewhat inconvenient. After all, `\includeonly` is about *how* to process the document, not about its content.

Therefore, ClutTeX provides an command-line option to use `\includeonly`. See section 2.7 for example.

Tips: When using `includeonly`, avoid using `--makeindex` or `--biber`.

Another technique for eliminating time is, setting `--max-iterations=1`. It stops ClutTeX from processing the document multiple times, which may take several extra minutes.

2.7 Using Makefile

You can create Makefile to avoid writing ClutTeX options each time. Example:

```
main.pdf: main.tex chap1.tex chap2.tex
    cluttex -e lualatex -o $@ --makeindex=mendex $<

main-preview.pdf: main.tex chap1.tex chap2.tex
    cluttex -e lualatex -o $@ --makeindex=mendex --max-iterations=1 $<

chap1-preview.pdf: main.tex chap1.tex
```

²<http://emcrisostomo.github.io/fswatch/>

```

    cluttex -e lualatex -o $@ --max-iterations=1 --includeonly=chap1 $<
chap2-preview.pdf: main.tex chap2.tex
    cluttex -e lualatex -o $@ --max-iterations=1 --includeonly=chap2 $<

```

With `--make-depends` option, you can let Clut \TeX infer sub-files and omit them from Makefile. Example:

```

main.pdf: main.tex
    cluttex -e lualatex -o $@ --make-depends=main.pdf.dep $<

-include main.pdf.dep

```

After initial `make` run, `main.pdf.dep` will contain something like this:

```
main.pdf: ... main.tex ... chap1.tex chap2.tex
```

Note that `--make-depends` option is still experimental, and may not work well with other options like `--makeindex`.

2.8 Default output directory

The auxiliary files like `.aux` are generated somewhere in the temporary directory, by default. The directory name depends on the following three parameters:

- The absolute path of the input file
- `--jobname` option
- `--engine` option

On the other hand, the following parameters doesn't affect the directory name:

- `--includeonly`
- `--makeindex`, `--bibtex`, `--biber`, `--makeglossaries`

Clut \TeX itself doesn't erase the auxiliary files, unless `--fresh` option is set. Note that, the use of a temporary directory means, the auxiliary files may be cleared when the computer is rebooted.

2.9 Aliases

Some Unix commands change its behavior when it is called under a different name. There are several examples in \TeX Live:

- `extractbb` and `dvipdfmx` are aliases for `xdvipdfmx`.
- `repstopdf` is an alias for `epstopdf`.

If Clut \TeX is called as `c1(ENGINE)`, the `--engine` option is set accordingly. For example, `cllualatex` is an alias for `cluttex --engine lualatex` and `clxelatex` for `cluttex --engine xelatex`.