Script `runtexfile`

—

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Contents

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1 Introduction

The Lua program `runtexfile` parses an (L)TEX-document for lines starting with `%! HV` . The «HV» has no meaning, it should only be a significant marker for the command lines. Such lines can define commands which will be executed by `runtexfile`. These lines must be at the beginning of the document. Only empty lines before will be ignored. `runtexfile` will stop parsing for commands if a line without a preceeding `%! HV` is found. If there is no such line, it runs the document by default with `lualatex`.

1.1 Syntax

The syntax is `runtexfile [...] <file>` where `[...]` are optional arguments, either in short or long form which, of course, can be mixed:

```
runtexfile [-h,--help] [-v,--verbose] [-V,--version ] main-filename
```

Every executed command gets an own logfile `runtexfile-?.log` in which the question mark is the number of the corresponding command line in the document. This allows to locate any problem in the several external runs. With the option -v (verbose) a short logfile which lists more or less only the important steps from within the script is `runtexfile.log`.

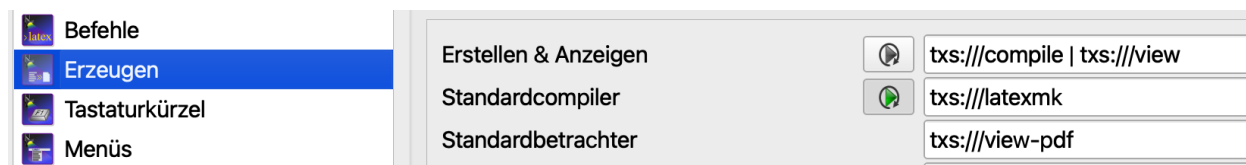All LATEX commands are startet with the option

```
--interaction=nonstopmode
```

The supported (L)TEX-commands are

```
local commands = {"lualatex", "luatex", "luahbtex", "latex", "pdflatex",
                  "xelatex", "xetex" }
```

This is not really of interest, because it is only needed for the decision to use the option `--interaction=nonstopmode` or not. It is only valid for any run depending to a (L)TEX-program. The optional filename `<file>` must always be used if the current command expects another filename (see example for multiple index files). See also section for online-compilers where you often do not know the main filename.

1.2 TEXstudio

For TEXstudio use as default compiler `latexmk` and simply replace the name by `runtexfile` (see last line in the second image):

Befehle	Externer PDF-Betrachter	open %.pdf > /dev/null
Erzeugen	DviPs	dvips -o %.ps %.dvi
Tastaturkürzel	DviPng	dvipng -T tight -D 120 %.dvi
Menüs	Ps2Pdf	ps2pdf -dALLOWPSTRANSPARENCY -dNoSafer %.ps
Symbolleisten	DviPdf	dvipdfmx %.dvi
GUI-Skalierung	BibTeX	bibtex %.aux
Editor	BibTeX 8-Bit	bibtex8 %.aux
Erweiterter Editor	Biber	biber %
Syntaxhervorhebung	Makeindex	makeindex %.idx
Vervollständigung	Texindy	texindy %.idx
Sprache prüfen	Xindex	xindex -k %.idx
Vorschau	Makeglossaries	makeglossaries %
Interner PDF-Betrachter	MetaPost	mpost -interaction=nonstopmode ?me)
SVN/GIT	Asymptote	asy ?m*.asy
	Ghostscript	gs "?am.ps"
	Latexmk	runtexfile ?m

2 examples

2.1 This document

The header looks like

```
%! HV lualatex
%! HV biber
%! HV xindex
%! HV lualatex
%! HV lualatex


%%   .12025 08 0216 44 17
%
\listfiles\setcounter{errorcontextlines}{100}
\documentclass[paper=a4,fontsize=11pt,DIV=14,parskip=half-,
            captions=tableabove,twoside=on]{scrartcl}
\usepackage{fontspec}
[...]
```

Command lines for this document

In this case no extra filename is needed, running `runtexfile runtexfile-doc` is sufficiant. More complex is the header of example `test2`:

2.2 Document test

This document uses package `imakeidx` which itself runs the index commands. (Beccari and Gregorio 2016)

```
                        Example test
%! HV lualatex --shell-escape
%! HV biber <test.aux>
%! HV lualatex --shell-escape
%! HV lualatex --shell-escape

%% The index files are run by imakeidx
[...]
```

The filename for `biber` is not really needed, because it also works with the main filename.

2.3 Document test2

A more complex example:

```
                        Example test2
%! HV lualatex --shell-escape
%! HV biber
%! HV lualatex --shell-escape
%! HV xindex
%! HV xindex  --config DIN2 -l DE -o test2.vwd <test2.vwx>
%! HV xindex  --config DIN2 -l DE -o test2.dbd <test2.dbx>
%! HV lualatex --shell-escape
%! HV lualatex --shell-escape
```

There is an optional argument for `lualatex` and options with another filename for two of the three `xindex` runs. (Voß 2025)

2.4 Document test3 – for Online-Compiler

Most applications do not need the original filename, but in an extended version, like LaTeX together with `asymptote` it is different. (Bowman and Hammerlindl 2025) Sometimes you do not know the original filename, for example when working with an online-compiler. In such a case one can use the placeholder `!!file!!` which will be later replaced by the original TeX-filename which is used by the first command line..

```
                  Example test3 (Asymptote)
%! HV lualatex --shell-escape
%! HV asy <!!file!!-*asy>
%! HV lualatex --shell-escape
```

Remember that this makes no real sense here, because you know the main file name.

References

Beccari, Claudio and Enrico Gregorio (Oct. 15, 2016). *The imakeidx package. A package for producing multiple indexes*. Version 1.3e. URL: https://ctan.org/pkg/imakeidx.

Bowman, John and Andy Hammerlindl (July 4, 2025). *The asymptote package. 2D and 3D TeX-Aware Vector Graphics Language*. Version 3.05. URL: https://ctan.org/pkg/asymptote.

Voß, Herbert (Aug. 2, 2025). *The xindex package. Unicode-compatible index generation*. Version 1.02. URL: https://ctan.org/pkg/xindex.

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