Texdoc

Find & view documentation in T_EX Live https://tug.org/texdoc/

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1 Quick Guide

Texdoc is a command-line tool to find and view documents in T_EX Live. Typing

texdoc (name)

in your command line, you will see a document of the $\langle name \rangle$ package is popped up. Of course, you have to replace $\langle name \rangle$ with the actual name of a package. To look up the documentation of more than one packages at once, just give multiple $\langle name \rangle$ s as arguments.

1.1 Modes

Texdoc has several modes that determine how results will be returned. The default is view mode, which opens the first, that is supposedly the best, result with a suitable viewer. It is rather handy when you know what you want to read. On the other hand, there may be other relevant documents for the given $\langle name \rangle$, which are ignored in the view mode.

In the list mode, Texdoc lists all relevant documentation and ask you which one you want to view. This mode is useful when there are other interesting sources of information in addition to the main documentation of a package.

There is also a mixed mode, intended to get the best of the view mode and list mode: if there is only one good result, then Texdoc opens it in a viewer, like in the view mode. Otherwise, it offers you a menu, like in the list mode.

By default, Texdoc hides some results, which expected to be less relevant, unless it cannot find any relevant result. In the showall mode, Texdoc always shows all results, including bad ones.

A couple of command-line options are available for selecting the mode to execute: -w (--view) for the view mode, -m (--mixed) for the mixed mode, -1 (--list) for the list mode, and -s (--showall) for the showall mode.

If you have your favorite mode and always use it, you may not want to keep typing the same option. The next section describes how to customize Texdoc using its configurations files.

1.2 Configuration files

The configuration file enables you to tweak Texdoc in many ways. You can use the --files option to know where to put your personal configuration file; you may need to create this file, possibly with some parent directories. If you want to know the full list of possible configuration files, see Section 2.3.

To set your favorite mode, just insert a line mode = $\langle mode \rangle$ in your personal configuration file, where $\langle mode \rangle$ is one of view, mixed, list, and showall. Though your preferred language is usually detected automatically by getting the system locale, you can set it explicitly with a line lang = $\langle 2$ -letter code \rangle in the configuration file.

1.3 Viewers

The way of Texdoc for choosing a viewer varies according to your platform. On Windows, macOS, or Unix with KDE, GNOME, or XFCE, it uses your file associations like when you double-click files in the Explorer, the Finder or your default file manager (except for the text viewer, which is always a pager). Otherwise, it tries to find a viewer in the path from a list of "known" viewers.

You may want to use a different viewer for some types of documents. This can be achieved by setting the various viewer_(ext) configuration items, where (ext) is an extension corresponding to a file type. For example, if you want to set xpdf as your default PDF viewer, and run it in the background, insert the line viewer_pdf = xpdf %s & in your configuration file. Herein, %s is a place holder for the name of the file to view.

You can stop reading now

The following parts explain the mechanisms of Texdoc for finding the best results and how to customize them. We have been trying hard to optimize the default configuration values so that normal users do not need to fiddle with it. Thus, the following parts are useful only when you are curious or have special needs.

2 Controlling Texdoc

2.1 Command-line options

The full usage of Texdoc can be summarized as follows:

```
texdoc (names)
texdoc (options) (names)
texdoc (action)
texdoc (options) (action)
```

We have tried to implement a GNU-compatible option parser. Short options, each of which consists of a single letter, must start with a single hyphen -. Multiple short options can be specified with a single hyphen, e.g., -vl is equivalent to -v -l. Long options have to be following double hyphens --. All options must be specified before the first argument. A String beginning with a hyphen after the first argument will be treated as an argument starting with a hyphen.

Some options are called action options, which can be used for $\langle action \rangle$ in the above usage. Four actions are available:

-h, --help

Shows a quick help message (namely a list of command-line options) and exit successfully.

-V, --version

Shows the current version of the program and exit successfully.

-f, --files

Shows the list of configuration files for the current installation and platform, with their status and exit successfully. Normally, only "active" and "disabled" files are shown (see lastfile_switch). To show "not found" files as well, you can use --verbose.

--just-view (file)

Open $\langle file \rangle$ in the usual viewer. The file should be given with full path, absolutely no searching is done. This option is not really meant for users, but rather intended to be used from another program, like a GUI front-end to Texdoc.

Some normal options such as -v are effective for some actions but note that you have to specify such options before the action option. Options after an action option will be ignored.

The followings are other normal command-line options:

-w, --view

(default)

Set mode to view. Texdoc will open the best results it found by the best application it knows. See Section 1.1.

-l, --list

Set mode to list. Texdoc will show the lists of all relevant documents it found and ask you which to open. When used with the --nointeract option, Texdoc will just show the lists of documents and exit successfully.

-m, --mixed

Set mode to mixed. If Texdoc finds only a document for your keyword, then it opens it, and if it finds multiple, then it will behave like in the list mode.

-s, --showall

Set mode to showall. It also behave like in a list mode, but show all the documents it found including documents which seem to be not a good result.

-i, --interact

(default)

Texdoc may require user reactions, e.g., ask you which document to open in the list mode. Internally, this sets interact_switch to true.

-I, --nointeract

If this is specified, Texdoc will never request any input from users. Internally, this sets interact_switch to false.

-M, --machine

This make the result list of Texdoc machine-readable. Only effective for the list mode and its friends. This option implies --nointeract. Internally, this sets machine_switch to true.

-q, --quiet

This suppress warnings and most error messages. Internally, this sets verbosity_level to minimum.

-v, --verbose

Make Texdoc to print additional information such as viewer commands which are invoked by the program. Internally, this sets verbosity_level to maximum.

-d $\langle list \rangle$, --debug= $\langle list \rangle$, -D, --debug

This sets debug_list to show debugging information in the specified category. You can specify multiple categories with a comma-separated list. If you specify -D or --debug without specifying a list, it activates all available debug categories.

-c (name)=(value)

This enables you to set arbitrary configuration items $\langle name \rangle$ to $\langle value \rangle$ from the command-line. See Section 4 for the list of all available configuration items.

2.2 Environment variables

Some environment variables affect the behavior of Texdoc. The environment variables can be roughly categorized into three groups.

First, as well as other programs in T_EX Live, searching path for the Texdoc are determined with the Kpathsea variables like TEXMF*. The mechanism of Kpathsea is complex, so please refer to 'the T_EX Live Guide', which supposed to be open by texdoc texlive, and the document of Kpathsea for the details. Usually, Texdoc searches documents for the TEXMF trees including TEXMFDIST, TEXMFLOCAL, and TEXMFHOME and trees specified in TEXDOCS. It also self-locates its own program using TEXMF search path. In addition, Texdoc uses TEXMFROOT and TEXMFVAR to look for the tlpdb database and the cache respectively. Second, the viewers for opening documents can be controlled by some environment variables. They all correspond to some <code>viewer_(ext)</code> setting.¹ You can append _texdoc to every name in the first column: this wins over every other name. These variables can be split by colon : and the first non-nil occurrence is used. If a viewer command contains colon, please specify it by <code>viewer_(ext)</code>.

Variable	Use for	Configuration item
BROWSER	HTML files	viewer_html
DVIVIEWER	DVI files	viewer_dvi
MDVIEWER	Markdown files	viewer_md
PAGER	Text files	viewer_txt
PDFVIEWER	PDF files	viewer_pdf
PSVIEWER	PS files	viewer_ps

Third, on Unix systems, locale-related variables such as LANG and LC_ALL are used for the default value of lang.

2.3 Precedence of configuration sources

Values for a particular setting can come from several sources. The sources are looked at in the following order and the first value found is always used:

- 1. Command-line options.
- 2. Environment variables ending with <u>texdoc</u>.
- 3. Other environment variables.
- 4. Values from configuration files (see below).
- 5. Hard-coded defaults that may depend on the current machine.

The configuration files are found in the directories TEXMF/texdoc, where TEXMF is the kpathsea variable, in the order given by this variable. Inside each directory, three files are recognized, in this order:

- 1. texdoc-(platform).cnf where (platform) is the name of the current platform (defined as the name of the directories where the T_EX Live binaries are located, for example x86_64-linux). This may be useful when an installation is shared across machines with different architectures needing different settings, for example for viewers. Their use is not recommended in any other situation.
- 2. texdoc.cnf is the recommended file for normal use.

¹Old names of environment variables, namely TEXDOCVIEW_{html,dvi,md,txt,pdf,ps} and TEXDOC_VIEWER_{HTML,DVI,MD,TXT,PDF,PS}, are deprecated but still work.

3. texdoc-dist.cnf is useful for installing a newer version of texdoc (including its default configuration file) in your home while retaining the use of the previous file for your personal setting; see GitHub repository for instructions on running the development version.

2.4 Exit codes

The status of Texdoc, which is whether or not it was successfully executed and an expected result was delivered, can be grasped by seeing its exit code. This will be useful to manage Texdoc by other programs. The current exit codes of Texdoc are:

- Success.
- 1 Internal error.
- 2 Usage error.
- 3 No documentation found.

3 Customizing the Search Results

3.1 An overview of how Texdoc works

When you type texdoc $\langle keyword \rangle$, first filenames related to the $\langle keyword \rangle$ are collected from the two following sources.

- 1. the TEXMF trees containing documentation that specified by the kpathsea variable TEXDOCS: Texdoc collects all files containing (keyword) in their filenames or in the names of their parent directories.
- 2. the T_EX Live Database (texlive.tlpdb): Texdoc searches for packages named $\langle keyword \rangle$ or containing a file $\langle keyword \rangle . \langle ext \rangle$ where $\langle ext \rangle$ may be sty or cls, and collects all document files of the found packages.

Second, the collected filenames are filtered by their extensions. After filtering, only files with known extensions (listed in ext_list) remain. If Texdoc cannot find any documentation, the fuzzy search will find the closest package name to the $\langle keyword \rangle$ and it will recollect document files (see Section 3.6).

Third, the collected filenames are given numeric scores by using some heuristics. For example, a filename $\langle keyword \rangle$.pdf is good, and thus gets a high score. A name $\langle keyword \rangle$ - $\langle lang \rangle$.pdf is also good and gets a higher score if the $\langle lang \rangle$ is the preferred language code in your configuration. In addition, there are several rules such as "a name $\langle keyword \rangle$ -doc always wins over any names $\langle keyword \rangle$ whatever" and "files under a directory named exactly $\langle keyword \rangle$ get bonuses". Scores may also be adjusted based on the

extensions and some known names or subwords. For example, by default, Makefiles get very low scores because basically they are not documents.²

Finally, a file with the highest score is opened with a viewer, or the list of results is shown, depending on the current mode. Usually, only results with positive scores are displayed, except in the showall mode. Results with very bad scores, that are lower than -100, are never displayed.

This model for searching and scoring is efficient, but unfortunately, it is not perfect: Texdoc may sometimes need a hint, either to find a relevant file or, more likely, to recognize which of the found files is the best. For example, suppose you are looking for a document of the \mathbb{L}T_EX package shortvrb. Texdoc will successfully find shortvrb.sty in the T_EX Live package latex. However, Texdoc will not be able to sort a number of documents in the latex package correctly because none of them contains the string shortvrb.

For such cases, aliases are useful: in the default configuration file, shortvrb is aliased to base/doc, so that Texdoc primarily look for base/doc when you type texdoc shortvrb. Note that Texdoc will also look for the original keyword, and that a name can be aliased to more than one new name.

3.2 Aliases

Aliases can be set in configuration files of Texdoc with the following syntax:

```
alias (original keyword) = (name)
alias((score)) (original keyword) = (name)
```

A number of aliases are already set in the default configuration file. You can also define your own aliases in your personal configuration files (see Section 1.2 or 2.3 to know where is that). For example, you can add a line

alias td = texdoc

to the file to alias td to texdoc. Then, files in the doc trees matching exactly with texdoc, i.e., this document texdoc.pdf, will be added to the result list when you search for the keyword td.

By default, files match with the aliased name get a score of 10. This score is greater than any result of heuristic scoring. It means that results found via aliases will always be ranked higher than results found for the original keyword. If you want the results associated with a particular alias to have

 $^{^{2}}$ Nevertheless, they often end up in the doc trees, because in T_EX Live, sources of documents are usually in the same directory as the documents themselves. Other source files for documents are discriminated by their extensions.

a custom score instead of the default score 10, you can use the optional argument to the alias directive. This can be useful if you associate multiple aliases to a keyword and want to specify the priorities for them.

In addition, aliases for $\langle keyword \rangle - \langle lang \rangle$, where $\langle lang \rangle$ is your preferred language's 2-letter code (as detected or configured, see the lang option), are also used when searching for $\langle keyword \rangle$. Files match with these language-based aliases get additional bonus scores so that they win over the results for language-independent aliases.

For concrete examples, please have a look at the default configuration file, which can be found in the last line of the output for texdoc - f. If you think aliases you defined locally should be added to the default configuration, please share the idea to the mailing list or GitHub repository.

Aliases are additive: if you define your own aliases for a keyword in your configuration file, and there are also aliases for the same keyword in the default configuration, they will add up. To prevent the default aliases from being applied for a particular keyword, add a line stopalias (keyword) in your personal configuration file. It will preserve the aliases defined before this directive if any, but prevent all further aliasing on this keyword.

Here are some notes for aliases. First, they are case-insensitive. Second, they do not work recursively: only aliases set to the original keyword are used. Third, results found for aliases always get the score defined by the alias directive (10 by default). The adjustments described in the other subsections are not applied to results for aliases.

3.3 Score adjustments

Scores can be arbitrary adjusted by using the adjscore directive in the configuration files. The adjustment can be done either for global, i.e., for any keywords, or a particular keyword. The syntax is as follow:

```
adjscore (pattern) = (score adjustment)
adjscore((keyword)) (pattern) = (score adjustment)
```

When the optional argument $\langle keyword \rangle$ is specified, the adjustment will be applied only when a user searches for the $\langle keyword \rangle$. Otherwise, the adjustment applied always for the $\langle pattern \rangle$.

Here are a few examples from the default configuration file.

```
adjscore /Makefile = -1000
adjscore /tex-virtual-academy-pl/ = -50
adjscore(tex) texdoc = -10
```

Herein, all files named Makefile, and those with suffixes, e.g., Makefile.in, will be eliminated from results: by adjusting their score with such a large negative value, their final score will be less than -100. Which means they will never be displayed. Files from the tex-virtual-academy-pl directory, on the other hand, are not eliminated but get a negative adjustment, since they are a common source of "fake" matches which hide better results. The third line gives a minus adjustment for results containing texdoc only when the searched keyword is tex. Otherwise, such results would get high scores because the heuristic scoring would assume texdoc is the name of documentation for T_EX itself. The adjustment value -10 is enough to ensure that those results will have a negative score, so the files containing texdoc will not be displayed unless showall mode is used.

Note that the values of scores, such as the default score for aliases and the range of heuristic scores, may be changed in a future version of Texdoc. Therefore, you may need to adapt your score adjustments after updating Texdoc in the future.

3.4 Extensions and basenames of files

File extensions regarded as documents by Texdoc can be specified with the configuration item ext_list. By default, files with extensions pdf, html, htm, txt, dat, md, ps, and dvi and files without extension are recognized as documents.

During the scoring process, the configuration item badext_list is also used: files with a "bad" extension appearing in this list will get a lesser score.

In the practical filenames, things which are not actually extensions can follow dots, e.g., readme.fr and readme.texlive. Thus, in addition to the lists of known extensions, Texdoc has lists for known basenames: basename_list and badbasename_list. These configuration items are respectively similar to ext_list and badext_list. In short, a file will be selected if either its extension or its basename is known, and get a lesser score if either is known to be "bad".

3.5 Common filenames

Document filenames of packages are often in the form of $\langle package \rangle$ -doc. Respecting this culture in the T_EX community, Texdoc gives a special score for files named $\langle package \rangle \langle suffix \rangle$, where $\langle suffix \rangle$ is an element of the list suffix_list. Please refer to the shipped configuration file for the default setting. Also, feel free to suggest additional elements for the list to the mailing list with a real-life example. 3.6 Fuzzy search

When the normal search cannot find any document in T_EX Live, Texdoc will execute a fuzzy search. The fuzzy search tries to find the closest name of a package in T_EX Live³ to the input $\langle keyword \rangle$. The results of the fuzzy search are shown in an info message, which can be seen by using the command-line option -v.

The default allowance of Levenshtein distance is 3. You can change this allowance by using the configuration item fuzzy_level. Results of fuzzy search could be different among executions if multiple package names have the same Levenshtein distance to the input.

4 Configuration items

Configuration files are line-oriented text files. Comments begin with a # and run to the end of line. Lines containing only space are ignored. Space at the beginning or end of a line, as well as around an = sign, is ignored. Apart from comments and empty lines, each line must be of one of the following forms.

```
(configuration item) = (value)
alias (original keyword) = (name)
alias((score)) (original keyword) = (name)
stopalias (original keyword)
adjscore (pattern) = (score adjustment)
adjscore((keyword)) (pattern) = (score adjustment)
```

We will concentrate on the \langle configuration item \rangle part here, since other directives have already been presented (Section 3.2 and 3.3).

In the above, $\langle value \rangle$ never needs to be quoted: quotes would be interpreted as part of the value, not as quotation marks (this also holds for the other directives).

Lines which do not obey these rules raise a warning, as well as unrecognised values of $\langle configuration item \rangle$. The $\langle value \rangle$ can be an arbitrary string, except when the name of the $\langle configuration item \rangle$ ends with:

- 1. _list, then <value> is a coma-separated list of strings. Spaces around commas are ignored. Two consecutive comas or a coma at the beginning or end of the list means the empty string at the corresponding place.
- 2. _switch, then $\langle value \rangle$ must be either true or false (lowercase).
- 3. _level and _lines, then $\langle value \rangle$ is an integer.

³ Note that the feature searches only package names at this point. Other objects such as aliases cannot be found by the fuzzy search.

In these cases, an improper $\langle value \rangle$ will raise a warning too.

mode = view | list | mixed | showall

(default: view)

Set the mode to the given value. The various modes have been described in Section 1.1.

interact_switch = true | false

(default: true)

Turn on or off interaction. Turning interaction off prevents Texdoc from asking you to choose a file to view when there are multiple choices, so it just prints the list of files found.

$suffix_list = \langle list \rangle$

(default: empty)

Set the list of known suffixes to $\langle list \rangle$ (see Section 3.5). Default is the empty list, but see the shipped configuration file for more.

ext_list = (list) (default: pdf, html, htm, txt, dat, md, dvi, ps,)

Set the list of recognised extensions to $\langle list \rangle$. This list is used to filter and sort the results that have the same score (with the default value: pdf first, etc). Two special values are recognised:

- The empty element. This means files without extensions, or more precisely without a dot in their name. This is meant for files like README, etc. The file is assumed to be plain text for viewing purpose.
- * means any extension. Of course if it is present in the list, it can be the only element!

There is a very special case: if the searched $\langle name \rangle$ has .sty extension, Texdoc enters a special search mode for .sty files (not located in the same place as real documentation files) for this $\langle name \rangle$, independently of the current value of ext_list and mode. In an ideal world, this wouldn't be necessary since every sty file would have a proper documentation in pdf, html or plain text, but...

For each $\langle ext \rangle$ in ext_list there should be a corresponding viewer_ $\langle ext \rangle$ value set. Defaults are defined corresponding to the default ext_list, but you can add values if you want. For example, if you want Texdoc to be able to find man pages and display them with the man command, you can use

```
ext_list = pdf, html, htm, 1, 5, txt, md, dvi, ps,
viewer_1 = man
viewer_5 = man
```

As a special case, if the extension is sty, then the txt viewer is used; similarly, if it is htm the html viewer is used. Otherwise, the txt viewer is used and a warning is issued.

badext_list = (list)

(default: txt, dat,)

Set the list of "bad" extensions to $\langle list \rangle$. Files with those extensions get a malus of 1 on their heuristic score if it was previously positive.

$basename_list = \langle list \rangle$

(default: readme, 00readme)

Set the list of "known" basenames to $\langle list \rangle$. Files with those basenames are selected regardless of their extension. If the extension is unknown, the text viewer will be used to view the file.

badbasename_list = (list)

(default: readme, 00readme)

Set the list of "bad" basenames to $\langle list \rangle$. Files with those names get a malus of 1 on their heuristic score if it was previously positive.

viewer_(ext) = (command)

Set the viewer command for files with extension $\langle ext \rangle$ to $\langle command \rangle$. For files without an extension, viewer_txt is used. Note that there is no viewer_ variable. In $\langle command \rangle$, %s can be used as a placeholder for the filename, which is otherwise inserted at the end of the command. The command can be an arbitrary shell construct.

lang = $\langle 2 \text{-letter code} \rangle$

Set your preferred language. By default, it reflects your system's locale.

verbosity_level = (number)

(default: 2)

Set the verbosity level to $\langle number \rangle$. At level 3, errors, warnings and informational messages will be printed on stderr; 2 means only errors and warnings, 1 only errors and 0 nothing except internal errors (obviously not recommended).

debug_list = (list)

Set the list of activated debug categories. Available debug categories are config, files, search, score, texdocs, tlpdb, version, view, and all to activate all of these. Implies --verbose. Debug information are printed on standard error.

max_lines = (number)

Set the maximum number of results to be printed without confirmation in list, mixed or showall mode. This setting has no effect if interaction is disabled.

machine_switch = true | false

(default: false)

(default: 20)

Turn on or off machine-readable output. With this option active, the value of interact_switch is forced to false, and each line of output is

$\langle argument \rangle \ t \langle score \rangle \ t \langle filename \rangle$

where $\langle argument \rangle$ is the name of the argument to which the results correspond (mainly useful if there were many arguments), \t is the tab (AS-CII #9) character, and the other entries are pretty self-explanatory. Nothing else is printed on stdout, except if an internal error occurs (in which case exit code will be 1). In the future, more tab-separated fields may be added at the end of the line, but the first 3 fields will remain unchanged. Currently, there are two additional fields: a two-letter language code, and an unstructured description, both taken from the CTAN catalogue (via the T_EX Live database). These fields may be empty, and they are not guaranteed to keep the same meaning in future versions of Texdoc.

zipext_list = (list)

(default: empty)

List of supported extensions for zipped files. Allows compressed files with names like foobar. $\langle zipext \rangle$, where $\langle zipext \rangle$ is an element in the given $\langle list \rangle$, to be found and unzipped before the viewer is started (the temporary file will be destroyed right after).

Warning: Support for zipped documentation is not meant to work on windows, a Unix shell is assumed! If you add anything to this list, please make sure that you also set the corresponding unzip_(zipext) item for each (zipext) in the list. At the same time, make sure you are using blocking (i.e., not returning immediately) viewers.

Remark: T_EX Live does not ship any compressed documentation file, so this option is mainly useful with re-packaged versions of T_EX Live that do, for example one in Linux distributions.

unzip (zipext) = (command)

The unzipping command for compressed files with extension (zipext). You should set one for each item in the *zipext list*. The command must print the result on stdout, like gzip -d -c does.

rm file = (command)

Commands for removing files on your system. Only useful for zipped documents (see zipext list).

rm dir = (command)

Commands for removing directories on your system. Also only useful for zipped documents (see zipext list).

lastfile switch = true | false

If set to true, prevents Texdoc from reading any other configuration file after this one (they will be reported as "disabled" by texdoc - f). Mainly useful for installing a newer version of Texdoc in your home and preventing the default configuration file from older versions to be used (see the README for instructions on how to do so).

fuzzy level = $\langle number \rangle$

Set the allowance of Levenshtein distance to (number) for fuzzy search. At level 0, the fuzzy search feature is disabled.

texlive tlpdb = (path)

This enables you to specify the (path) for the database texlive.tlpdb which Texdoc uses for searching documents. By default, Texdoc uses TEXMFR00T/tlpkg/texlive.tlpdb. Usually, you don't have to (or should not) set this configuration item. This is only useful when you want to use Texdoc within a TFX Live-based TFX distribution which does not ship texlive.tlpdb.

(default: false)

(default: rmdir)

(default: rm - f)

(default: 3)

(no default)

5 Licence

The current version of Texdoc program and its documentation are copyright 2008–2022 Manuel Pégourié-Gonnard, Takuto Asakura, the T_EX Live Team.

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Previous work (Texdoc program) in the public domain:

- Contributions from Reinhard Kotucha (2008).
- First texlua versions by Frank Küster (2007).
- Original shell script version by Thomas Esser, David Aspinall, and Simon Wilkinson.

Happy T_EXing!