

TeXdoc online — a web interface for serving TeX documentation

Island of TeX (developers)

Abstract

When looking for TeX-related documentation, users have many options, including running `texdoc` on their local machine, looking up the package at CTAN, or using a service like `texdoc.net`. As the latter is known for lacking regular updates, the Island of TeX decided to take the opportunity to provide a complete rewrite of the provided service using a RESTful API and a self-updating Docker container.

1 Core features of `texdoc.net`

The most important feature of `texdoc.net` is the documentation search as the prominent first item on the landing page (cf. fig. 1). Searching for a package yields a table with the entries a user could retrieve locally by executing `texdoc -l <package>`. Each entry is linked to the corresponding document and the user is able to either view (if there is browser view support for the file type) or download the documentation file. This is especially useful for users without a local TeX installation like Overleaf users.

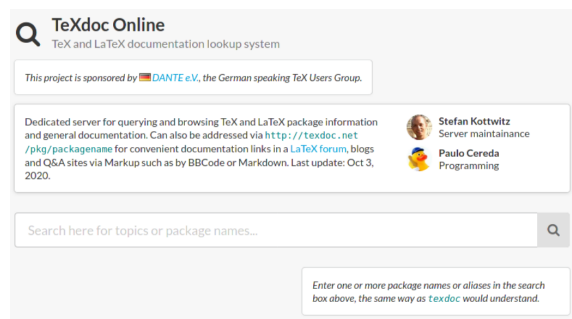


Figure 1: Screenshot of (top portion of) `texdoc.net`

A little bit more direct is the use of the HTTP endpoint `https://texdoc.net/pkg/<package>`; this responds with the file that `texdoc <package>` would open if executed locally. The user does not get to choose what to open but in most cases `texdoc` is good at determining the proper documentation if given the package name, so users get what they want.

The aforementioned feature of creating simple references to the documentation is what makes the service well suited for writing posts on web forums or sites like the TeX StackExchange. Linking to CTAN mirrors gives far longer urls with many unnecessary path components compared to the short syntax of `texdoc.net`.

The last noteworthy feature allows users to browse packages by topics. The list is retrieved from the (unmaintained) `texdoctk.dat` file available in the underlying TeX Live distribution. Within each topic a selection of packages is shown with the name, description and link to the main documentation for each. The topics and presented packages are not exhaustive and many packages on CTAN or even in TeX Live will not be presented to the user.

2 Providing a RESTful API for `texdoc`

A RESTful API is a stateless interface to web applications responding to typical HTTP requests with uniform responses. Usually, JSON is used for the response format. Following this principle, our software responds to HTTP GET requests with JSON representing documentation-related objects.

The endpoints you can access are described as follows. Keep in mind that these requests will return either HTTP status code 200 (OK) or, in the case of any error, HTTP status code 422 (Unprocessable Entity). The only endpoint that is guaranteed not to fail is located at `/version`.

`/version` This endpoint returns the versions of the API and data format (`api`), the installed version of `texdoc` (`texdoc`) and the date of the last TeX Live update as an ISO date string (`tlpdb`). Make sure your client software always expects the correct API version to avoid problems. Our API versions follow semantic versioning with all its consequences.

`/texdoc/<name>` On this path, the list of entries is returned that a local call to `texdoc -l` would produce. For each entry, there are two fields: `path`, containing the path to the documentation file relative to the `doc` subfolder of the `TEXMFDIST` directory; and `description` containing the file's description if there is one (empty otherwise). The application will always return a JSON array of such entries.

`/serve/<name>/<index>` This call results in the documentation file at index `<index>` of the result of `/texdoc/<name>` being returned to the client.

`/pkg/<name>` This endpoint is a shortcut for the `/serve/<name>/0` endpoint, defined to preserve compatibility with the API of `texdoc.net`.

`/topics/list` This endpoint returns the list of topics known to the application specified by their key and a caption called `details`. This is a direct interface to CTAN's API for topics. Network access for the server software is required.

`/topic/<name>` This endpoint returns details for a topic by returning the key (what is passed as

<name>), a string with a short description called **details** and a list of package names (strings) called **packages**. This is a direct interface to CTAN’s API for topics. Network access for the server software is required.

3 The new front end

The front end of T_EXdoc online is structured in a similar way to `texdoc.net`. The main feature is still searching for packages. This is based on the `/texdoc/<package>` endpoint presented in the previous section. The results will be the same as on `texdoc.net`.

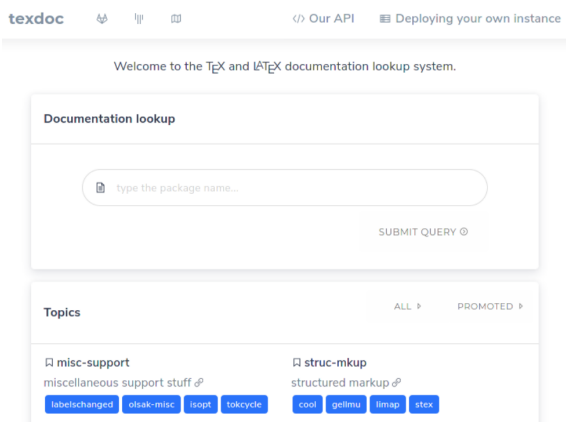


Figure 2: Screenshot of (top portion of) `texdoc-online`

Topics are handled differently, though. We use CTAN’s JSON API to fetch their topics and packages belonging to these topics. Any user visiting the landing page will be shown six random categories with a few packages each. If a category holds several packages, four of them are selected at random. Users have the option to show all topics and list the packages for any topic they are interested in. Also, each package entry can be automatically queried for documentation. This covers many more packages than the old `texdoctk.dat` file, though it does have the disadvantage that some of CTAN’s topics are sparsely populated.

The front page also offers a “jump to documentation” section introducing the API and options to host the software yourself. These are covered in the next section.

4 Deploying the software

The source code for T_EXdoc online is hosted at GitLab and may be found at <https://gitlab.com/islandoftex/images/texdoc-online>. There are also download options to get an executable JAR file with all dependencies included that you can simply

run using your local Java installation. Running the JAR bundle will open a local web server that can be accessed using the url `http://127.0.0.1:8080` from your browser. It will not work without Internet access (because of how it fetches topics) or a local T_EX installation (for T_EXdoc) though.

As an alternative to running the JAR file we also provide a dockerized image that users can pull using (line break is editorial; this is a one-line string) `registry.gitlab.com/islandoftex/images/texdoc-online:latest`

This image is based on our T_EX Live images, which makes it quite large in terms of file size but also eliminates the need for a local T_EX installation. Using Docker is the preferred solution for hosting your own instance of T_EXdoc online.

The Docker image also provides daily updates. The container will update daily at midnight (container time) and thus stays up to date as long as the current version of T_EX Live is supported. Our continuous integration ensures that you can always pull the `latest` tag and receive the latest and greatest T_EX documentation, which when pulled and run will update itself.

To ease deployment we provide a ready-made `docker-compose.yml` configuration for Docker Compose (<https://docs.docker.com/compose/>), an orchestration tool for Docker containers. It uses the Caddy web server to provide automatic HTTPS with local certificates or, on public domains, Let’s Encrypt certificates. Alter the `localhost` line within that file to suit your needs and `docker-compose up` will start a production-ready instance of T_EXdoc online.

5 Final remarks

In cooperation with Stefan Kottwitz we are working on providing a hosted solution as a future replacement of `texdoc.net`. Stay tuned for seeing this transition happen within the next months.

T_EXdoc online is still a work in progress and there is room for improvement. We are working on new features as well as considering ways to extend the current front-end for additional, hosting-based content. The RESTful API, through the endpoints presented in section 2, allows external applications and services to easily query T_EX package documentation from an updated lookup system.

Feedback can be provided through the project repository in GitLab. We look forward to hearing from you!

- ◇ Island of T_EX (developers)
<https://gitlab.com/islandoftex>