Remt - Note-taking Support Tool

Release 0.11.0

Remt team

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Remt project is note-taking support tool for reMarkable tablet

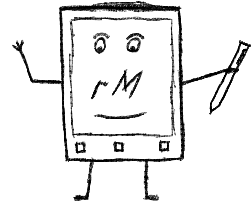https://remarkable.com/

The application allows to import PDF documents, export PDF documents and notebooks, and list PDF text annotations.

This documentation can be downloaded in PDF format.

Remt is *not* an official project of the reMarkable company.

Remt project is licensed under terms of GPL license, version 3. As stated in the license, there is no warranty, so any usage is on your own risk.

INTRODUCTION

Remt project is note-taking support tool for reMarkable tablet

https://remarkable.com/

1.1 Features

The features of Remt are

- reMarkable tablet operations
    - list files and directories
    - create directories
    - export a notebook as PDF file using reMarkable tablet renderer or Remt project renderer
    - export an annotated PDF document using reMarkable tablet renderer or Remt project renderer
    - import a PDF document
    - create index of PDF document annotations
    - interactive selection of files on a tablet using *fzf* command
- cache of reMarkable tablet metadata to speed up tablet operations; caching supports multiple devices
- Remt project renderer supports
    - export of large files and usually produces smaller PDF files comparing to the reMarkable tablet renderer
    - processing of multi-page notebooks and PDF files
    - most of the drawing tools
- Remt project can be used as a library for UI and other applications

1.2 Known Problems

1. Import of a PDF file requires restart of reMarkable tablet.

2. Remt ver. 0.10.0 removed support for brushes. The brushes were implemented using raster images, which does not look well in PDF export. The investigation into a vector based brushes can be found in Remt wiki.

INSTALLATION

2.1 Dependencies

Remt requires Python 3.10 or later, up-to-date firmware on reMarkable tablet, and many third party libraries.

It can work with older versions of reMarkable tablet firmware, but please use version 2.15 or later.

The list of required libraries can be found in Setuptools configuration file located in Remt source code repository. Most of the dependencies are downloaded during installation without a problem (see next section). However, it is the best, for libraries like Pycairo, PyGObject and Poppler, to use packages provided by an operating system or Python distribution.

The table below shows list of recommended packages to be installed for an operating system or Python distribution before installing Remt.

Distribution	Packages
ArchLinux	`gobject-introspection`, `python-cairo`, `poppler`
Ubuntu/Debian	`gir1.2-poppler-0.18`, `python3-gi-cairo`
Fedora	`pygobject3`, `python3-gobject`, `poppler`, `cairo-gobject`
Anaconda	`pygobject`, `poppler`, `cairo`

Note: Please create a ticket if the table contains an error or to add a new distribution.

2.2 Installation and Configuration

Install or upgrade Remt with command:

```
$ pip install -U remt
```

The command downloads Remt software and all of the dependencies.

Create configuration file *~/.config/remt.ini* with contents:

```
[connection]
host=10.11.99.1
user=root
password=<reMarkable tablet password>
```

The password can be found on reMarkable tablet near the bottom of copyright and licenses statement:

```
Menu -> Settings -> Help -> Copyrights and licenses
```

Check installation by listing files on the reMarkable tablet:

```
$ remt ls
```

Note: Alternatively, use SSH key to enable access to reMarkable tablet without specifying a password. Details can be found in the reMarkableWiki.

Once SSH key access to the tablet is configured, then set password to empty string in Remt configuration file.

```
$ remt ls
```

COMMAND-LINE INTERFACE

Remt is a command-line application. This, combined with a decent shell, gives an user features, which are rare in GUI programs

- easily execute or find previous commands

- combine multiple commands to unlock more features

- include Remt in scripts to automate tasks

3.1 Basic Usage

Use `remt` command to execute note-taking workflow tasks on reMarkable tablet device. The main Remt commands and parameters are documented in this manual, but use `--help` option to refer to the full list of commands:

```
$ remt --help
usage: remt [-h] {ls,mkdir,export,import,index} ...

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options:
  -h, --help            show this help message and exit

subcommands:
  {ls,mkdir,export,import,index}
    ls                  list files on the tablet
    mkdir               create a directory on the tablet
    export              export a notebook or an annotated PDF file from the tablet
    import              import a number of PDF files onto the tablet
    index               create index of PDF file annotations
```

The option can show help for a specific command as well:

```
$ remt ls --help
usage: remt ls [-h] [-l] [-R] [path]

positional arguments:
  path       Starting path (%i for interactive selection)

optional arguments:
  -h, --help  show this help message and exit
  -l          Use long listing format
  -R          List subdirectories recursively
```

3.2 Interactive Selection

It is hard to remember the structure of directories and files on a device. For that reason, many shells support previous command search and path expansion.

Remt enables user to find and select files and directories on a reMarkable tablet in an interactive way, which simplifies execution of commands.

For example, type the following command to list files on reMarkable tablet, find and select a file, and save the file in current directory:

```
$ remt export %i .
```

The help output of Remt commands indicates, which positional arguments accept *%i* for interactive selection. An argument points to a file or a directory on reMarkable tablet.

More examples of Remt command execution can be found in *Workflow* section.

3.3 Combining Commands

Combine Remt commands with other command-line utilities to unlock more features.

For example, to count number of files and directories on reMarkable tablet, send output of `remt ls` command to `wc` Unix-like operating system utility:

```
$ remt ls -l -R | wc -l
282
```

To count number of files only, filter out directories with `grep` command-line utility by constructing the pipeline as follows:

```
$ remt ls -l -R | grep -v '^d' | wc -l
227
```

WORKFLOW

Remt supports a note-taking workflow with a combination of the following features

- import of PDF files to reMarkable tablet

- export of annotated PDF files and notebooks from the device

- making an index of a PDF file annotations

4.1 File Import

Import a PDF file to reMarkable tablet with `remt import` command.

For example, to import *a-paper.pdf* document:

```
$ remt import a-paper.pdf %i
```

The `%i` argument tells Remt to show list of available directories on reMarkable tablet and allows to select the destination directory in an interactive way.

To upload the PDF file to a known destination directory:

```
$ remt import a-paper.pdf articles
```

To import multiple files, list the files one by one, or by using wildcards supported by users' shell:

```
$ remt import a.pdf b.pdf ?-paper.pdf a01-*.pdf articles
```

Note: After PDF file import, reMarkable tablet needs to be restarted to refresh list of files on the device.

Remt does not know how to notify reMarkable tablet, that a file is uploaded. At the moment, it is recommended to upload a file or multiple files and then restart reMarkable tablet.

4.2 File Export

Export a PDF file or a notebook from reMarkable tablet with `remt export` command.

The easiest way to export a PDF file from the device is:

```
$ remt export %i .
```

The command above allows to interactively select file stored on the tablet and saves exported file in current directory.

Alternatively, if a name of a document is known:

```
$ remt export articles/a-paper.pdf .
```

4.2.1 Original Renderer

Remt uses its own, custom renderer for notebooks and PDF file annotations by default. Alternatively, select reMarkable tablet's renderer with `-r` option, for example:

```
$ remt export -r remarkable %i .
```

To use the original renderer, connect reMarkable tablet to a computer via USB cable and enable USB web interface. More information about the web interface can be found at

- https://blog.remarkable.com/how-to-transfer-files-to-your-remarkable-without-wi-fi-d53956bd9869
- https://remarkablewiki.com/tech/webinterface

4.3 PDF Annotations Indexer

Create index of annotations of a PDF document with `remt index` option.

For example, to create index of annotations for a document and save it in HTML file:

```
$ remt index %i | rst2html - > doc-index.html
```

When creating index of PDF file, Remt recognizes highlighter annotations, and tries to merge overlapping horizontal highlights of text.

Use reMarkable tablet text highlighting features for the best experience.

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TROUBLESHOOTING

Remt connects to reMarkable tablet using SSH File Transfer Protocol. This section provides some troubleshooting advice in case of SSH key problems or network issues.

5.1 SSH Key Problems

The following error, when executing a Remt command, usually means there is an issue with SSH key:

```
[Errno 104] Connection reset by peer
```

Try to connect to reMarkable tablet using a SSH client. If there are any warnings about SSH key, then correct the issues as instructed by SSH client.

SSH key might need to be regenerated with key length longer than 512 if the error below is displayed:

```
ValueError: p must be exactly 1024, 2048, or 3072 bits long
```

5.2 Invalid Password

If SSH key is not used, then password to reMarkable tablet needs to be set correctly in the *~/.config/remt.ini* configuration file.

5.3 Data Transfer Issues

When data transfer to reMarkable tablet is interrupted randomly

1. There might be problem with network if Wi-Fi is used.
2. USB cable might be of bad quality or broken if USB connection is used.

To ensure connection quality, try to transfer few megabytes file to reMarkable tablet. If that fails, follow the usual advice on network quality issues.

When using connection over USB cable, check if there are any USB errors reported by personal computer's operating system. For example, on Linux *dmesg* command can be used in such situation. Try to replace the cable if there are any errors or warnings.

5.4 Connection Refused

The following error can be reported, when using reMarkable tablet renderer with export command:

```
urllib.error.URLError: <urlopen error [Errno 111] Connection refused>
```

Ensure that reMarkable tablet is connected to personal computer using good quality USB cable. Check that web interface is enabled on the tablet.

LINKS

1. Website: https://wrobell.dcmod.org/remt/index.html
2. Report bugs: https://gitlab.com/wrobell/remt/-/issues
3. Source code: https://gitlab.com/wrobell/remt

CHANGELOG

7.1 2022-10-26, ver. 0.11.0

- deal with deleted directories and files properly
- add support for "gray overlap" reMarkable highlighter color
- use yellow highlighter color when reMarkable saved black color for highlighter stroke
- Python 3.10 is required now

7.2 2021-12-23, ver. 0.10.1

- fix installation issues

7.3 2021-12-22, ver. 0.10.0

- Remt is a note-taking support tool, now
- support new features introduced in reMarkable firmware 2.10.x and 2.11.x
    - annotated text with highlighter; the information about annotated text is stored in separate files and required new implementation
    - green and pink highlighter colors
    - red and blue colors for other tools
- remove support for raster brushes
- Remt documentation is written