

# PfautSec DataBook Documentation

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## 1 About

PfautSec DataBook is a tool for compiling multiple portable document format (PDF) files into a single PDF file. Additionally, a cover page is generated to include the job information and a table of contents for the included documents.

## 2 Dependencies

This section describes PfautSec's dependencies, for installation instructions see: *Installing from source*.

PfautSec is a Python based interface for generating documents with the  $\text{\LaTeX}$  typesetting language. Its GUI is provided by the Qt5 library (via the PyQt5 wrapper). Document repair and compression is done by Ghostscript.

### 2.1 Python

PfautSec is written primarily in Python. From pythondocs.org:

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard

library are available in source or binary form without charge for all major platforms, and can be freely distributed.

The following Python modules are not part of the standard library and must be installed with pip:

## **2.1 (a) PyQt5**

PyQt5 is a Python wrapper for enabling the use of the Qt5 C++ GUI framework with Python. The GPL version that is utilized by PfauSec includes the binaries for Qt5, so Qt does not need to be installed separately.

## **2.1 (b) PyInstaller**

PyInstaller is a Python module used for packaging the Python source .py files, a Python interpreter, and all Python modules into a single .exe file.

## **2.1 (c) QDarkStyle**

QDarkStyle is a dark theme for Qt

## **2.1 (d) PyCryptodomex**

Python encryption module (used for distributing commercial font)

## **2.1 (e) FontTools**

Python font tools, used to validate decrypted fonts

## **2.2 Qt**

The high level GUI framework for PfauSec DataBook is provided by Qt5, however the binaries for Qt are included in the Python module PyQt5 and do not need to be installed separately. If you would like to make changes to the interface layout file (redirect.ui) Qt should be installed for access to its graphical interface editor QtCreator.

## **2.3 Ghostscript**

Ghostscript is an interpreter for the PostScript language and for PDF files. PDFs input to PfauSec DataBook are all opened and processed by Ghostscript first to fix any errors and (optionally) add compression.

## **2.4 TexLive**

Texlive is a distribution of the  $\text{\LaTeX}$  typesetting language that provides binaries and packages. PfauSec DataBook utilizes the XeLaTeX engine for compiling the final PDF.

## **3 Installing from source**

After downloading the PfauSec DataBook source, follow these steps to prepare the package for use on Windows.

### **1) Install Python.**

PfauSec requires Python 3.6 or newer. Installers are available at <https://www.python.org/downloads/> After installing Python, ensure that its installation folder and scripts subfolder have been added to your PATH system variable. If these folders are not

correctly added to PATH you will receive the following message: “python is not recognized as an internal or external command, operable program or batch file.”

## 2) Install Python modules

Python modules that are not part of the standard library can be installed with pip, the Python package manager. Pip is included with Python, if the command is not found ensure that “.../python3x/scripts” has been added to PATH. Also, if you are installing packages to a system wide Python installation you must run this command in an elevated command prompt.

Open a terminal and enter the following commands:

```
pip install pyqt5
```

```
pip install pyinstaller
```

```
pip install qdarkstyle
```

```
pip install pycryptodomex
```



```
pip install fonttools
```

## 3) Package into exe

Python is an interpreted language so it does not need to be compiled, however packaging the source code with an interpreter can be done for convenience. This also allows for the program to be run from a network drive without requiring the end user to have Python installed. To package the program, open a terminal and navigate to the PfauSec DataBook folder then enter:

```
pyinstaller --onefile --windowed --icon=TeX/db_logo.ico main.py
```

A folder called “dist” should now be found in the PfauSec DataBook folder. Copy the following items from the PfauSec DataBook folder into the dist folder:

-  TeX
-  sections\_config.ini

Next, rename main.exe inside dist to PfauSec\_DataBook.exe

## 4) Install TexLive

An installer for TexLive is available at: <https://www.tug.org/texlive/acquire-netinstall.html> It is recommended to download the “install-tl.zip” and not the “install-tl-windows.exe” as running the bat file found inside the zip will give more verbose output should the installer fail.

After extracting the contents of “install-tl.zip”, run “install-tl-advanced.bat”. Toggle portable setup to yes, and select “.../PfauSec/databook/dist/texlive” as the installation folder. The installation will take a while, the full distribution of TexLive is several gigabytes in size.

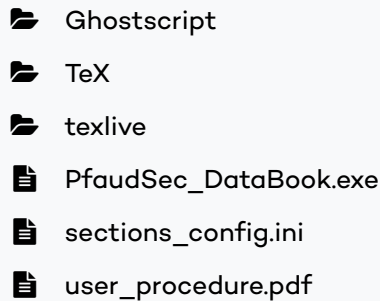
## 5) Install Ghostscript

A portable version of Ghostscript has been made available at [https://portableapps.com/apps/utilities/ghostscript\\_portable](https://portableapps.com/apps/utilities/ghostscript_portable) Run the installer and choose “.../PfauSec/databook/dist/Ghostscript/” as the installation directory.

## 6) Copy to network drive

PfauSec is designed to be portable and can be run from a network drive. Rename the dist folder to PfauSec\_DataBook and copy it to wherever you would like to run it from. A user procedure can be added to the folder with the name "user\_procedure.pdf" this PDF can be opened with the help > user procedure button in PfauSec.

The final folder should contain the following:



- Ghostscript
- TeX
- texlive
- PfauSec\_DataBook.exe
- sections\_config.ini
- user\_procedure.pdf

If PfauSec DataBook has already been installed and you are only upgrading, only the exe file should be copied.

Due to the license of the font used by PfauSec, the included font has been password protected. When PfauSec DataBook is run for the first time it will prompt you for this password. After the first run, the fonts will be loaded into the "TeX/font/OTF" folder. Alternatively, fonts can be installed by simply placing the appropriately named otf format fonts into the "TeX/font/OTF" folder.

## 4 Installing with binary release

To install PfauSec DataBook from the binary release, follow the same procedure as installing from source but skip to step: *Install TexLive*.

## 5 Usage

PfauSec DataBook scans a user defined folder for PDF files matching the "basename x.xx.pdf" format, where basename can be any word with no spaces. (usually MO number) followed by a space, then x.xx which is a numerical shorthand, These numerical shorthands are defined in sections\_config.ini.

This shorthand naming scheme is used for two reasons. First, so that only PDF files renamed to this format are included while omitting all others, and second so that documents from a scanner are easier to name. (where often only a physical numpad is available and not a full keyboard). Included documents are placed in a cover page table of contents based on which section they are defined under in sections\_config.ini. Entries in sections\_config.ini must be unique.

## Example sections\_config.ini

```
[Section One name]

1.1 = Document full name
1.2 = Other document full name

[Another section name]

2.1 = Another document
```

Job information is entered manually by the user. The program will not render a PDF until all job info fields have been filled in and a folder to pull PDF documents from has been selected.

A “loose file” option also exists for inserting pages from a Brazil databook or other source where all PDF files from the specified folder are included and named as they are found. After the document has completed being compiled, it will open and should be inspected for any errors.

## 6 Modifying cover page

To make changes to the cover page, open TeX/databook.tex with any text editor. Exercise caution when modifying this file as its contents contain some of the core functionality of PfauSec DataBook. A guide to  $\text{\LaTeX}$  syntax is available at <https://en.wikibooks.org/wiki/LaTeX/Basics>

## 7 License

Due to the licenses of PyQt5 and Ghostscript, PfauSec must be also released under a compatible license. In this case the GNU Affero General Public License (AGPL). A full copy of the license can be found with the source code. While not legal advice, the AGPL can be summarized as follows:

Must	Can	Cannot
<ul style="list-style-type: none"> <li>• Include Copyright</li> <li>• Include License</li> <li>• State Changes</li> <li>• Disclose Source</li> <li>• Include Install Instructions</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial Use</li> <li>• Modify</li> <li>• Distribute</li> <li>• Place Warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Sublicense</li> <li>• Hold Liable</li> </ul>