PDFTK Builder Enhanced

Version:	4.1.6
Date:	28 May 2021
Platform:	Windows 32-bit application
Developer:	David King
Compiler:	Delphi 10.2 (Tokyo)
License:	GNU General Public License (GPL), Version 3
Dependencies:	PDFtk (v2.02 supplied); installed PDF viewer
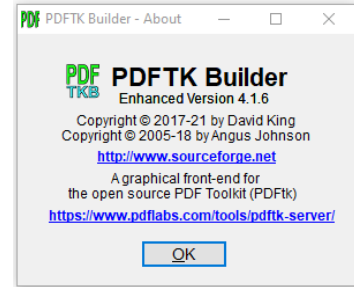
PDFTK Builder is a free, graphical user interface (GUI) for the Windows version of the popular PDF Toolkit (PDFtk) command line tool, **PDFtk Server**.

The PDFTK Builder Enhanced project forked Version 3 of **PDFTK Builder by Angus Johnson** to (1) enhance the user interface, (2) add PDF operations, and (3) update the program to be compatible with later versions of PDFtk. The resulting program is **PDFTK Builder Version 4**.

OVERVIEW

The following screenshot shows the main form of PDFTK Builder Version 4 with the 'Join Files' tab sheet active and the Document Protection panel open. The form contains three sections:

(1) 5 different tab sheets each containing an **input section** for selecting the desired action, input files and options for the PDF functions supported by the tab sheet:

Tab Sheet	Functions
Join Files	Merges multiple PDF files or reorders, deletes, duplicates or extracts pages from a single PDF file
Split Pages	Splits a single PDF file into separate files for each page or into two files containing odd and even pages
Mark Pages	Stamps, backgrounds or numbers the pages of a single PDF file
Rotate Pages	Rotates the specified range of pages of a single PDF file by -90, +90 or 180 degrees. Can also extract or delete the range of pages.
Tool Sets	15 additional tools, mostly less common PDFtk operations, arranged in 4 sets, 4 tools per set.

(2) A common, collapsible **'Document Protection' panel** for setting passwords and permissions to be applied to output PDF files, and

(3) A common **output section** to build and access the output PDF and to exit the program.

A menu and status bar are also located at the top and bottom of the form, respectively.
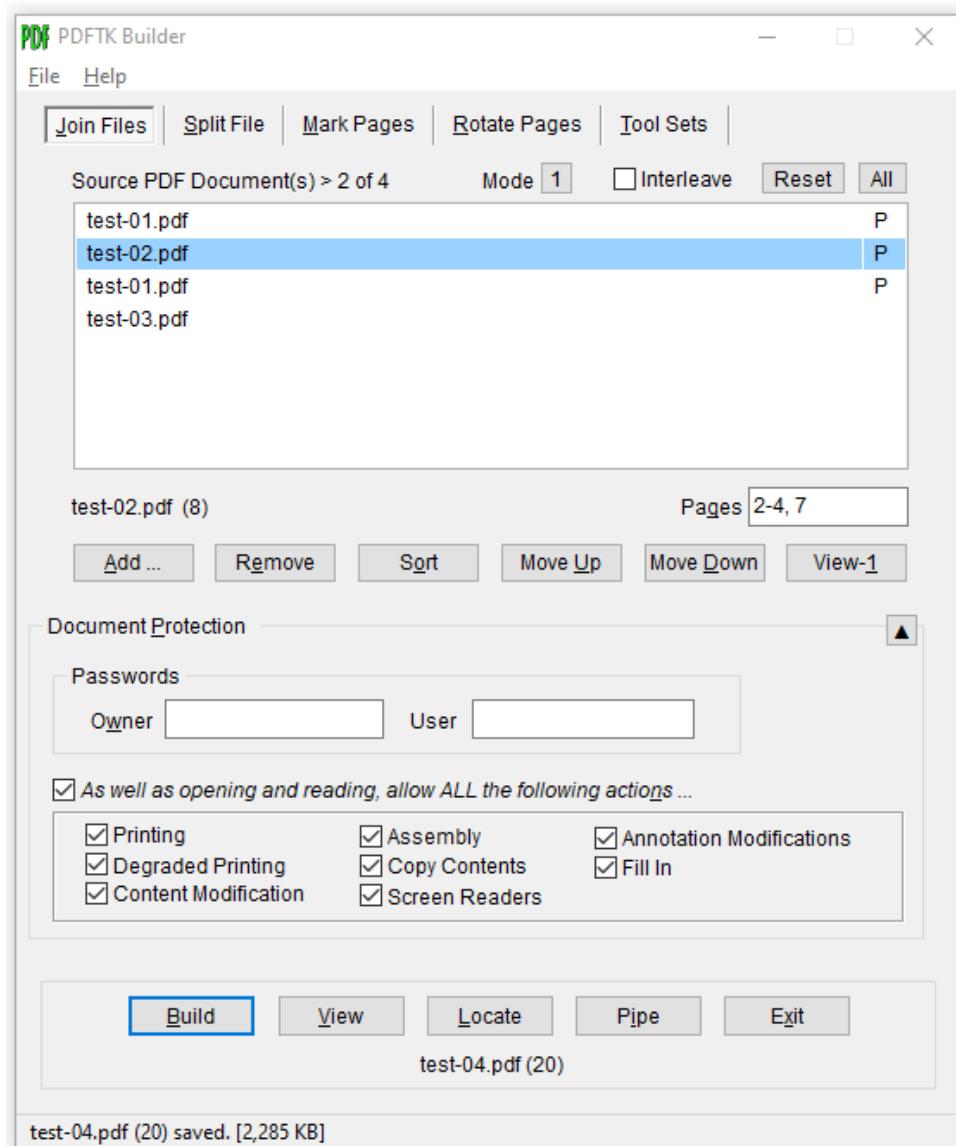
Join Files tab sheet with Document Protection panel open

In the above screenshot, three source PDF files, test-01, -02, -03.pdf, have been merged and the resulting output saved in a fourth PDF file (test-04.pdf) containing 20 pages as shown on the status bar. The test-01 source file is listed twice because pages 2-4, 7 of the 8-page test-02 file have been inserted between pages of test-01. A '**P**' in the right column indicates that the user has made an entry in the '**Pages**' box for the file to specify particular pages and their order (as shown for test-02) rather than accepting the default (all pages in their original order).

Files can be added to the list via '**Add**' button and a file open dialog or via **drag and drop** from Windows Explorer, with multiple files selected by simultaneously depressing the Shift or Ctrl key. When using drag and drop, files can be dropped anywhere on the destination form, not just on top of the intended destination control. Once added to the list, buttons are available below the list to move the selected file up or down in the list, view it in an external PDF viewer, or remove it from the list. When a file in the list is selected, its file name followed by its total page count in parentheses will be displayed on the line below the list, along with any manually entered page ranges in the '**Pages**' box. The '**Mode**' button immediately above the list toggles between displaying only file names or the full path of the PDF files in the list.

Buttons and other controls on the form can be accessed by clicking on them with a mouse or by entering their accelerator key from the keyboard. **Accelerator keys** take the form Alt-X, where X is the letter underlined in the caption (label) for the control. Note that as long as the focus is not on a control expecting text to be entered, the simultaneous Alt key is optional. The display of shortcut underlines is a Windows setting and should be enabled in *PC Settings > Ease of Access > Keyboard* (on Windows 10) if not visible. In addition to using accelerator keys to pick specific controls, the 'Tab' key can be used to move sequentially between enabled controls.

The **Document Protection panel** allows for setting the passwords and permissions to be applied to output PDFs for encryption and control of user access to the document. The panel is shown open in the preceding screenshot but is normally closed unless the security settings need to be changed. The user can toggle the panel open/closed by (1) clicking the button at the top right of the panel or on a blank area of the panel or (2) by typing the accelerator key Alt-P or Ctrl-P.

When the desired source PDF documents and output document protection settings have been selected, the '**Build**' button in the output section of the form must be clicked to generate the output. This will cause PDFTK Builder to prompt for the desired output file name, formulate the corresponding PDFtk command, pass the command to PDFtk Server for execution, and then save the output PDF in the location specified by the user. Buttons are available to view the output PDF, locate it in its destination folder, and pipe it back to the input for another step in a sequence of processing if applicable.

In addition to the 'Join Files' tab, there are four other tabs for (1) splitting a source PDF file into its individual pages or odd/even page files, (2) marking the pages (stamp, background, number pages), (3) rotating, deleting or extracting selected pages and (4) accessing additional PDF tools. Each of these tab sheets operates on only one source PDF document at a time. Some functions on these tab sheets also require a secondary input file; e.g., a stamp PDF file or an attachment file. To distinguish between the primary source PDF and secondary input file when using drag and drop, hold the Alt or Shift key down when dropping the secondary file onto the form. These tab sheets can also draw their source file from the selected file in the 'Join Files' Source PDF Document list.

Releases of this project are identified as PDFTK Builder Version 4.x.x. This project started in late 2017 with the Delphi source code of PDFTK Builder Version 3.9.4 (Apr 2015) and was kept in sync with the Version 3 baseline by retrofitting subsequent changes. PDFtk Server v2.02 (Jul 2013) has replaced PDFtk v1.41 (Nov 2006) supplied with PDFTK Builder Version 3. See the History section later in this User Guide for a list of changes incorporated in each release.

Releases are developed on the current version of 64-bit Windows 10 Pro using the Delphi 10.2 Tokyo Starter Edition. PDFTK Server v2.02, Adobe Reader XI and Notepad provide the 32-bit executables for PDFtk and the external .pdf and .txt viewers used by the PDFTK Builder application during testing. Releases are also checked out on 64-bit Windows 10 Home and on 32-bit Windows XP SP3 (where PDFtk Server also requires a copy of libiconv2.dll).

PDFTK Builder is free and open source software (FOSS) licensed under the terms of GNU GPLv3. PDFTK Builder is distributed as a portable app in the form of .zip file containing Windows binaries for PDFTK Builder and PDFtk Server v2.02 and documentation. A separate .zip archive is available for the Delphi source code for PDFTK Builder.

Supplied documentation consists of:

- PDFTK Builder Help File (.html),
- PDFTK Builder User Guide (.pdf) and
- PDFtk Server Reference Manual (.pdf).

Each of these documents is accessible from the Help menu of the program. The PDFtk Server Reference Manual contains copies of the PDFtk Server manual, command examples. and annotated version history. This PDFTK Builder User Guide contains this overview, detailed descriptions and screenshots of the five tab sheets, information on use of document protection, PDFTK Builder version history, and the following appendices:
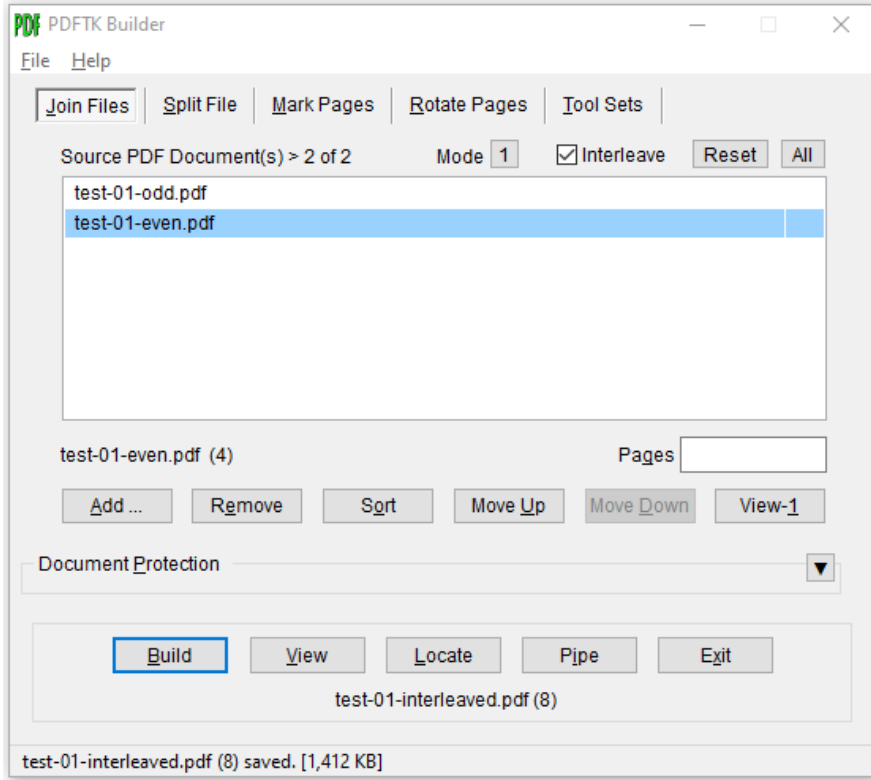
Appendix A - Tool Sets 1-4
Appendix B – PDFtk Command Syntax
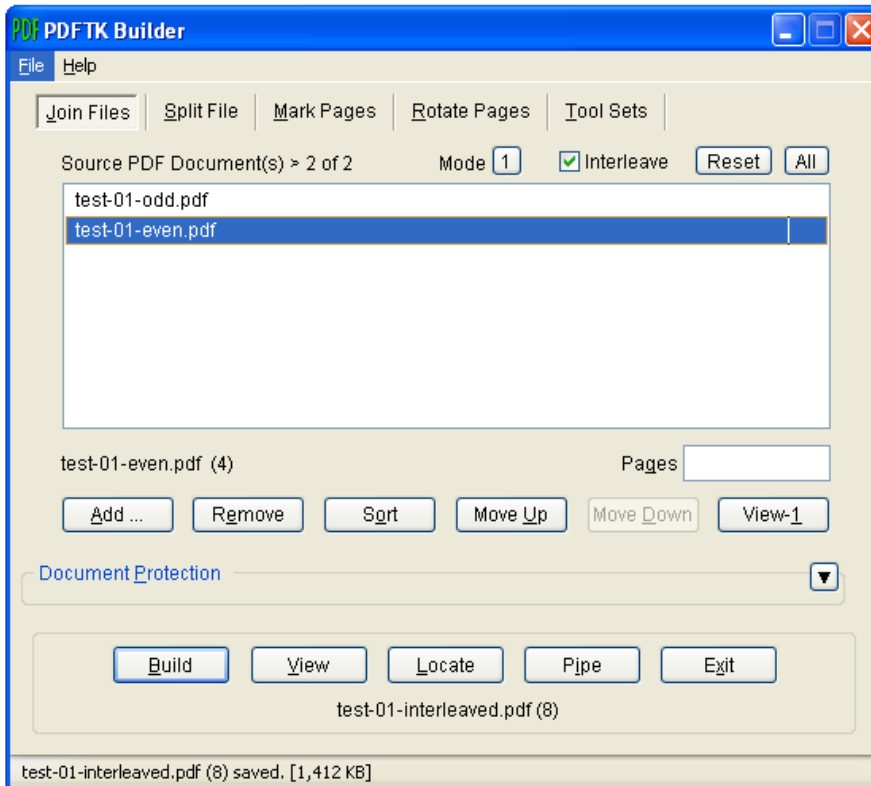Appendix C – Configuring PDFTK Builder
Appendix D – PDFTK Builder Visual Controls and Accelerator Keys
Appendix E – Other PDF Applications
Appendix F – Other GUIs for PDFtk

PDFTK Builder Enhanced on Windows 10 (above) and XP (below)

TAB SHEETS

The five tab sheets described below can be accessed either by selecting the tab with a mouse or entering the accelerator key combination from the keyboard.

Join Files – Use 'Join Files' (Alt-J or Ctrl-J) to combine pages from multiple PDF documents or to rearrange (reorder, delete, duplicate) or extract pages of a single document. The default method for joining files (PDFtk command 'cat') collates the pages from the input PDF files in the order they are listed in the 'Source PDF Documents' window.

If the optional 'Interleave' method (PDFtk command 'shuffle') is selected, the pages of the output document will be collated from the input PDFs one page at a time from the page ranges of the file. If a range runs out of pages in 'Interleave' mode, the output document will continue to be collated from the remaining ranges of other files. 'Interleave' is specifically intended for collating pages of a two-sided document which have been scanned in simplex mode into two separate PDF files, one containing the odd pages and the other file the even pages. If the even pages were scanned in reverse order, the order of the pages should be reversed by entering its range of page in reverse order in the 'Pages' edit box when interleaving the files.

Input PDF files can be added to the 'Source PDF Document(s)' list either via the 'Add' button which launches an open file dialog or via drag and drop from Windows Explorer. Both methods accommodate selection of multiple source files via the Ctrl or Shift key. An existing file in the list can be replicated by selecting the file and clicking on the 'Add' button with the 'Shift' key down (Alt-Shift-A). A 'T' will be displayed in the rightmost column if the listed file name had to be truncated to fit the display. Truncation of a file name preserves the starting and ending characters of the filename by deleting characters from the middle of the file name string. While PDFTK Builder can encrypt output files, it does not support processing of encrypted input files, except for decrypting them (requires password). This means that an encrypted PDF must first be decrypted, and the resulting decrypted PDF used as the input for any further processing.

The 'Mode' button allows the left column of the list to be toggled between (1) file name and (2) full path (includes the path and filename). Since displaying the full path can make it difficult to distinguish files in the list if leading portion of path is long or similar, Mode 1 is the default. The display can be switched temporarily to Mode 2 if it is necessary to display the path of the files. Detailed information on a selected file is readily available by popping up the context menu (right-click) and selecting the 'Properties' item. (Note: The 'Join Files' list does not support horizontal scrolling. In Mode 1, the file name will be truncated from the center of the column if needed to fit the display. In Mode 2, characters will not be visible at the end of the full path if it exceeds the width of the column.)

Page ranges are specified by selecting the file in the 'Source PDF Document(s) list and entering the page ranges in the 'Pages' box below the list. If page ranges are not specified (default), PDFTK Builder will assume all pages of the source document are to be included in the output file in their original order. When a page range is entered, a 'P' will be displayed in the right

column, allowing the user later to quickly determine which files have had their page ranges set. To display the page ranges that have been entered for a file, select the file and it will be displayed in the 'Pages' box and the file name and page count will be displayed to the left of the box. If PDFTK Builder is not able to determine the page count for the selected source file and a '?' will be displayed. In that case, PDFTK Builder will pop up a '?' button which the user can elect to ignore or click to have PDFtk try again to recover the page count.

Page ranges can denote a single page or a multiple consecutive pages in the same document and are specified by single page number or the start and end page numbers separated by a hyphen. Multiple page ranges can be entered in the 'Pages' box by separating them by commas or semi-colons. For example, given the range '2-4,7' in the 8-page document shown in the preceding screenshot, pages 2-4 and 7 will be included in the output file in that order, while pages 1, 5, 6 and 8 will be omitted. Reverse page orders are also supported; e.g., the range "4-1" will output the first 4 pages of the document in reverse order; i.e., 4, 3, 2 and 1. Pages can be deleted by omitting their page numbers in the 'Pages' box. Pages can be replicated by entering the page numbers or page range multiple times. When page ranges are entered for a file, the data will be checked and flagged in red font if a problem is detected; e.g., invalid format or page number out of range.

Below the Source PDF Documents list and 'Pages' box are buttons to move the selected up or down in the list, sort the list alphabetically on the full path name (mode 2), and display the selected source PDF file using an installed PDF viewer; e.g., Adobe Reader, Sumatra PDF, etc. The View-1 button is useful for checking that the correct source documents and page ranges are being selected and arranged. The selected file may also be viewed by double-clicking on its entry in the list or by right-clicking on the selected file to bring up a context menu which includes a View item. (Note: The button for viewing the selected or primary source document is labeled 'View-1' on all tab sheets to distinguish it from other buttons which view the output file (View) or the secondary input PDF file (View-2) on some of the other tab sheets.

When the input files have been selected and arranged in the desired order and the page ranges entered as needed, the 'Build' button should be clicked to generate the output PDF file. A save file dialog will be presented to select the destination folder and name of the output file. The resulting PDF file may then be opened by clicking the 'View' button or located in its folder via the 'Locate' button. Bookmarks will be preserved by PDFtk in the output PDF if complete files (rather than selected pages) have been merged.

The 'Join Files' list also serves a file management role for individual files on the list and for the other four tab sheets. Right-clicking on a file in the list will pop up a context menu with the options to view the file, open its location (folder), copy its path, extract the specified pages to a separate file, display its properties, or forward the selected file to the input of one of the other four tab sheet. Source files can be staged to the Join Files list and then Alt-Shift-S, -M, -R or T or the context menu can be used to forward the selected file to the specified tab sheet. Alternatively, the 'Use Join Files List' check box available on the other four tab sheets can be used to draw a source PDF file sequentially from the selection on the 'Join Files' list.
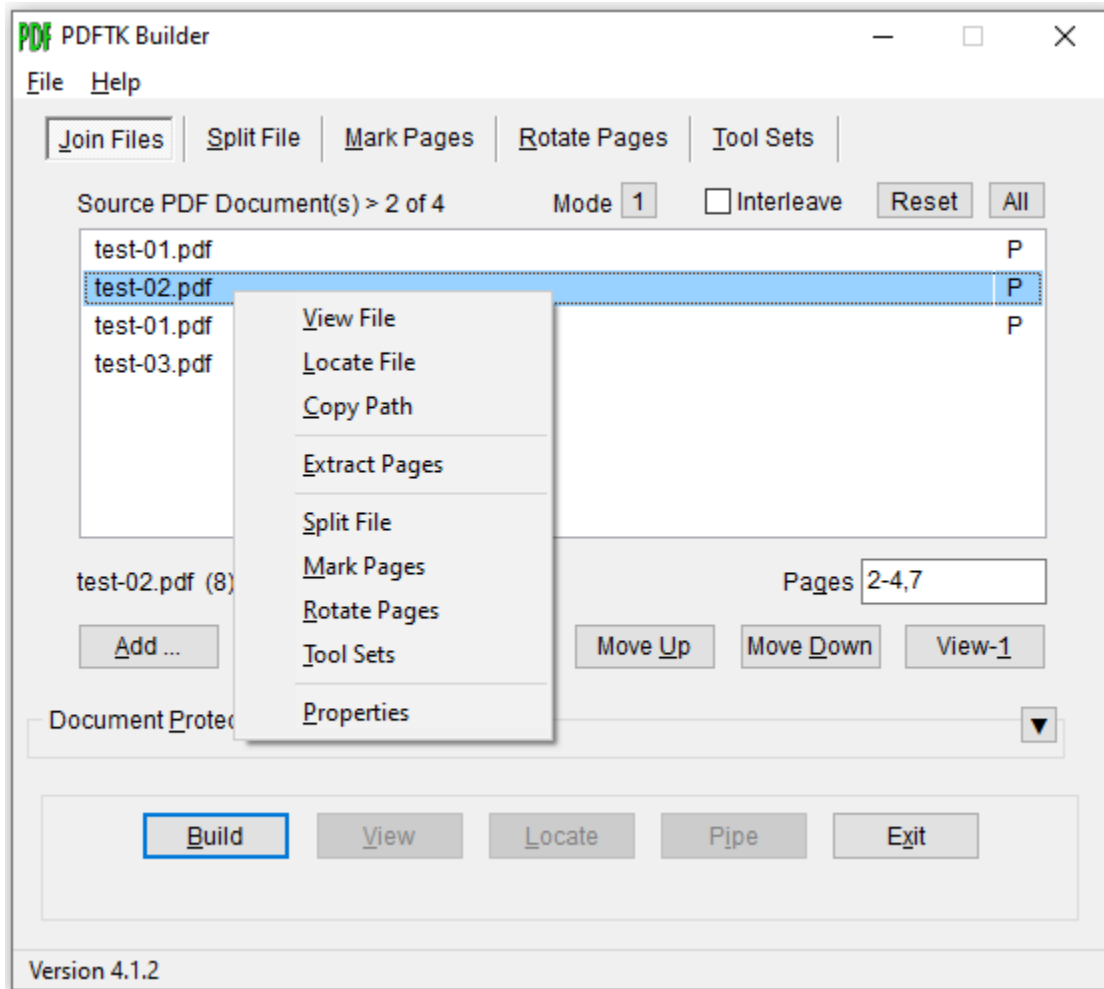
**Join Files tab sheet with context menu visible and
Document Protection panel closed**

Split File – Use 'Split File' (Alt-S or Ctrl-S) to split a source PDF document into numbered PDF files for each page or chunk of N pages. The default is to output all pages of the source document; however, a smaller page range may be specified by the user. By default, output files consist of individual pages (chunk size = 1). The output folder defaults to the same folder as the source PDF; however, clicking on the 'Change Output Folder …' button will provide a dialog to select a different folder or subfolder. The resulting PDF files will have the name of the input file with an additional numbered suffix, _nn, _nnn or _nnnn, indicating the page number of the first page in the file padded with leading zeroes depending on the total number of pages in the document (<100, <1,000 or <10,000). For example, if a source PDF named MyFile.pdf has between 100 and 999 pages, then the individual page files would be named MyFile_001.pdf, MyFile_002.pdf, etc. Although splitting a file may produce multiple output files, only the last file will be listed as saved on the status bar. The 'Split File' tab sheet also has an 'Odd/Even' option that produces two files, one containing the odd numbered pages and the other the even numbered pages in the specified page range; e.g., MyFile_odd.pdf and MyFile_even.pdf. This option is intended for printing double-sided hardcopy on a printer requiring two passes.
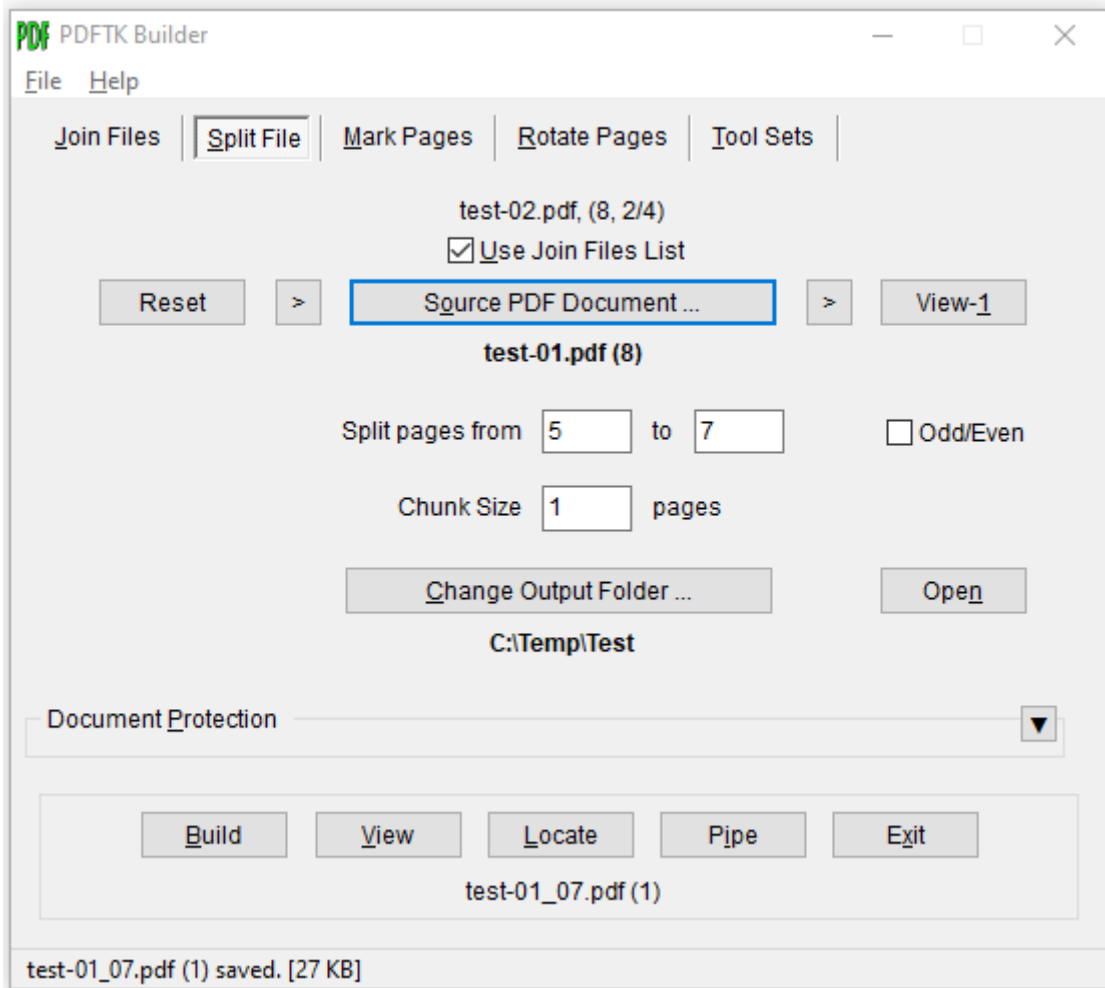
Split File tab sheet

There are five ways to select the source PDF document for the 'Split File' tab sheet and the other three tab sheets, Mark Pages, Rotate Pages and Tool Sets.

(1) The default method is to click on the 'Source PDF Document' button and to select the source file via an Open File dialog.

(2) Alternatively, the file can be selected from Windows Explorer and dragged and dropped onto the tab sheet. (Note: The file can be dropped anywhere on the form. Some other functions also require a secondary input file. To distinguish between source and secondary input files, hold the Alt or Shift key down when dropping the secondary file.)

(3) The third method is to select the desired document in the 'Join Files' list and then use the context menu to select the desired tab sheet to be sent the file or by typing Alt-Shift-S (or – M, -R, -T) from the keyboard. The active page will change from the Join Files tab sheet to selected tab sheet and the Source PDF Document field will be automatically populated with the selected document from the Join Files list.

(4) The fourth method is enabled by selecting the *'Use Join Files list'* checkbox above the 'Source PDF Documents' button on the tab sheet – see preceding 'Split File' screenshot. When this method is enabled, the source file name is taken from the currently selected file in the source documents list of the 'Join Files' tab when the button is clicked. This will also advance the selection to the next file in the list, so that the next time the 'Source PDF Document' button on the tab sheet is clicked the next document in the list will be inputted. The selection and its position in the list are displayed above the checkbox. This method allows the use of the drag and drop feature of the 'Join Files' source file list to quickly stage multiple source documents for the other tab sheets.

(5) Finally, the small > buttons to the left and right of the Source PDF Document button can be used to copy the source document full path from and to the Windows clipboard. In Windows Explorer, the full path of a file can be copied to the clipboard by shift right clicking on the desired file and selecting 'Copy as Path' in the context menu. The file can then be made the source document simply by clicking on the left > button. Similarly, once the source document has been selected, its full path can be copied to the clipboard by clicking on the right > button. Once in the clipboard, it can be used to provide the source document for another tab or as the input to an external application. The clipboard can also be used to add a document to the Join Files list by clicking on the 'Add' button and then copying the full path to the document from the clipboard to the Open dialog.

Mark Pages – 'Mark Pages' (Alt-M or Ctrl-M) supports three functions: Stamp, Background and Number Pages.
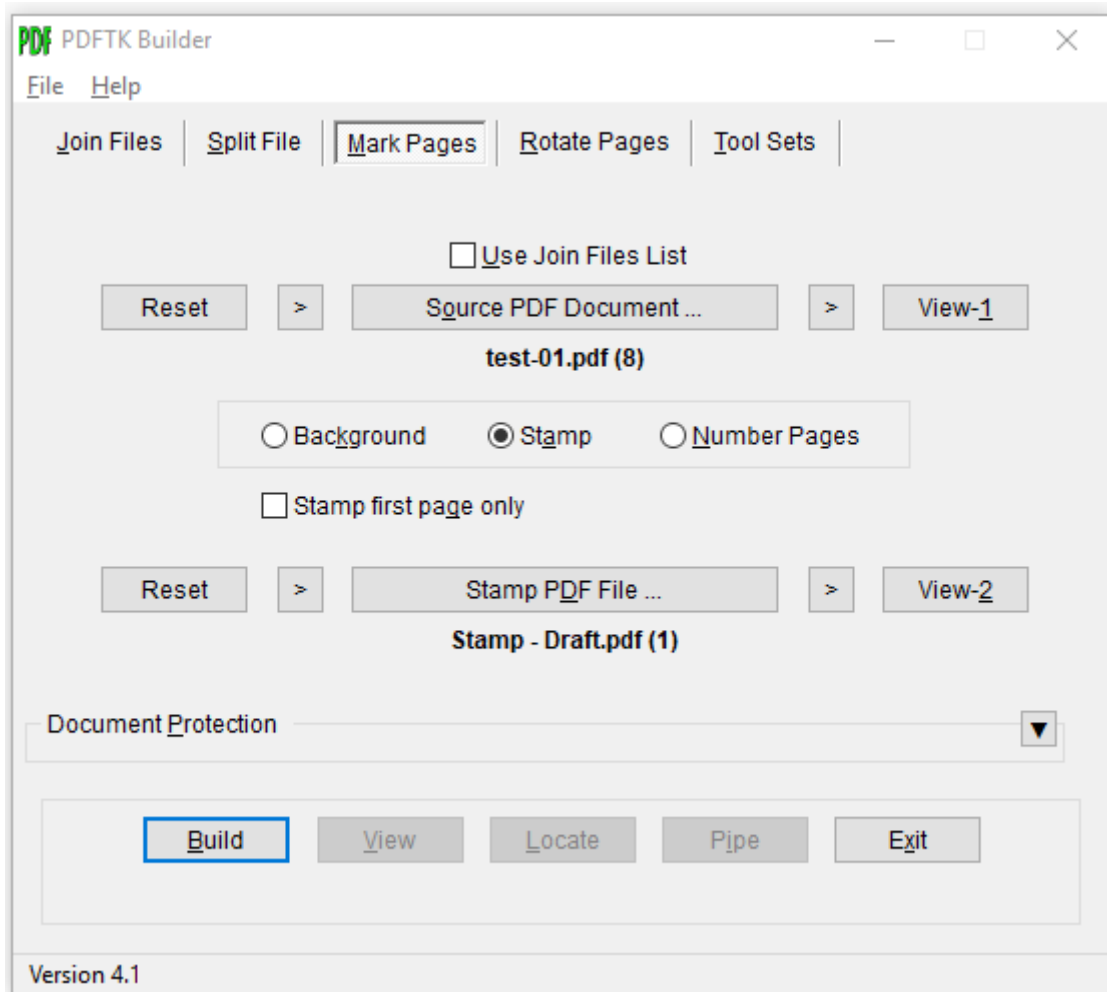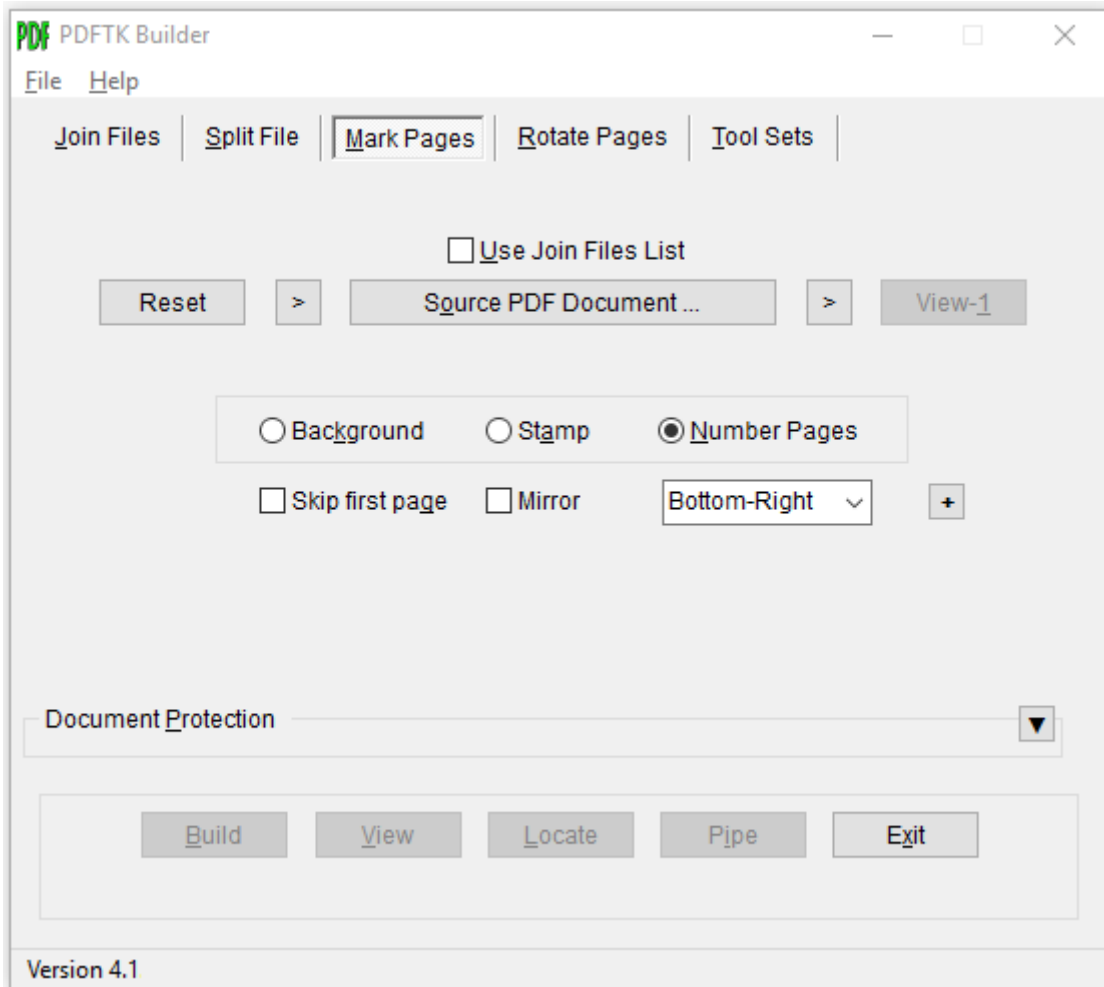

Mark Pages tab sheet with Stamp option selected

'Stamp' will add a foreground stamp to the first page only or to all pages of the source document. The stamp file (e.g., a 'DRAFT' stamp) must be another PDF document and normally will consist of a single page containing the stamp to be applied. If the stamp file has more than one page, PDFTK Builder will use the 'MultiStamp' operation of PDFtk which applies sequential pages of the stamp PDF to corresponding pages of the source document. If the source PDF has more pages than the stamp PDF, the final page of the stamp PDF will be repeated across remaining pages of the source file. For example, a stamp file with two pages will apply first page of the stamp file to the first page of the source document and the second page of the stamp file to all subsequent pages of the source document.

'Background' is identical to 'Stamp' but applies a watermark (e.g., a company logo) to the background (rather than foreground) of the source PDF document. Note that the PDF that is on top, either the source PDF for 'Background' operations or the stamp PDF for 'Stamp'

operations, must have a transparent background if the PDF underneath is to be visible.

'Number pages' in its basic mode will apply page numbers to a document, with an option to skip numbering the first page. Page numbers can be placed at the bottom (right, center or left) or top (right, center or left). Checking the mirror checkbox will cause the placement of page numbers on odd and even pages to alternate between right side and left side.

Mark Pages tab sheet with basic Number Pages options selected

Page Number Options/Limitations in basic mode:
- Choice of Top or Right (Right, Center or Left) position for page number
- Page number format is limited to page number only (expanded mode adds capability to include text with or without page number)
- All pages of the document will be numbered, starting with 1, except for the first page if the Skip First Page option has been checked (expanded mode adds options to specify starting and ending page to be numbered, as well as the starting page number)
- Position of page numbers can be mirrored

Mirror: Checking this option will keep the page number at the outside edge when right or left are the selected positions. It does this by placing the page number on chosen side for odd pages and on the opposite side for even pages.

Expanded mode for page numbering become available by clicking on the '+' button to the right of the page number position combo box. Expanded options allow a subset of pages and starting page number to be specified, page orientation to be changed, and labeling to include prefix text, page number (%p) and/or suffix text. Placeholders are available for date (%d) and file name (%n) text. Labels can set at different header or footer locations by repeating the process on the output file. Any expanded options remain in effect only while the expanded options are displayed (visible). Such settings will be ignored upon switching back to basic mode using the '-' button.
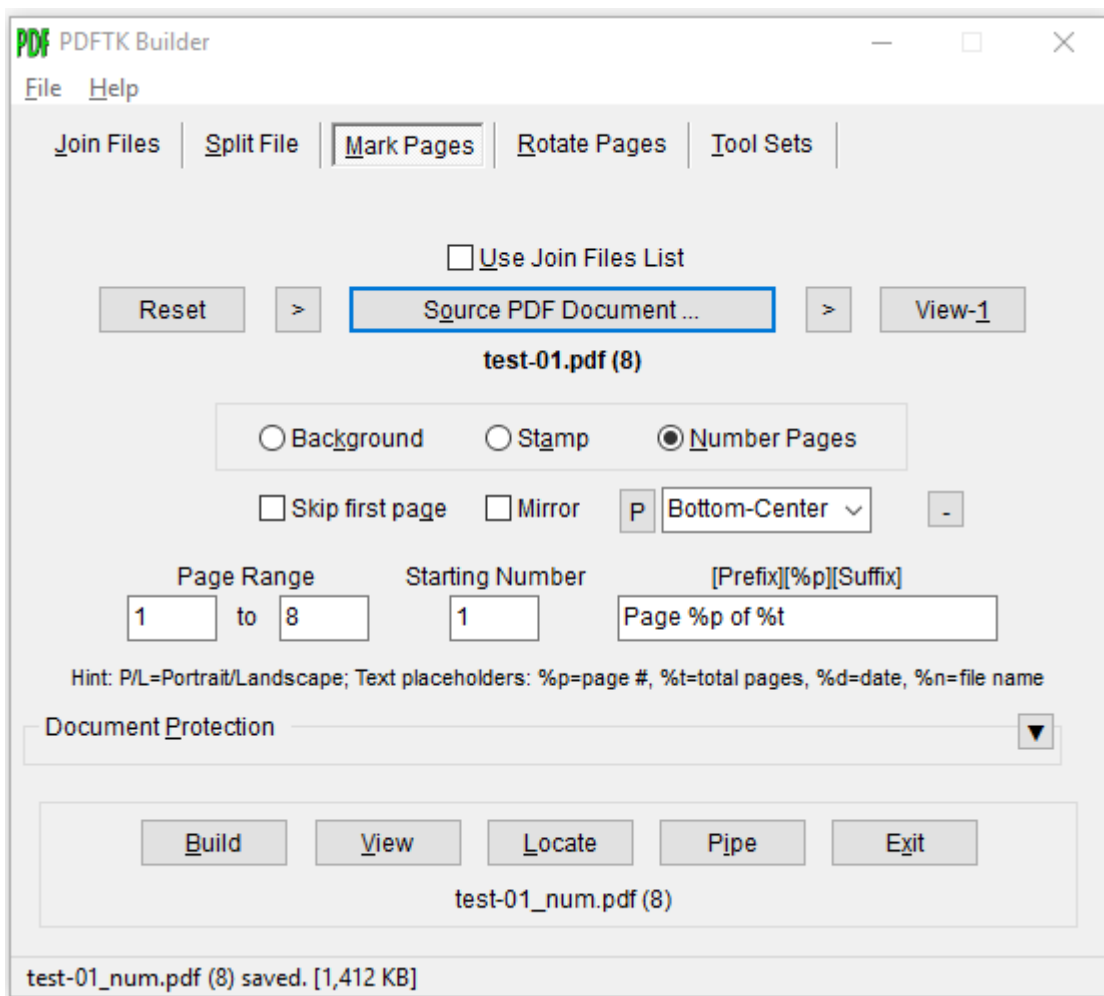
**Mark Pages tab sheet with extended Number Pages options selected**

The dimensions for page numbers (page size in portrait orientation, offset from bottom left corner, and font size) are specified in units of points (1/72 in.) in the PdftkBuilder.ini file. Suggested values for A4 and Letter size pages are shown in the following table. Note that switching between A4 and Letter size pages requires editing the .ini file (Help-Settings) to change the Size.CX and .CY values. Switching orientation between Portrait and Landscape does not require editing the .ini file.

Page Number Parameter	A4	Letter
Page Width (Size.CX)	595	612
Page Height (Size.CY)	842	792
Horizontal Page Margin (Offset.CX)	72	72
Vertical Header Margin (Offset.CY)	36	36
Font Size	10	10

Note: All values above are in units of points (1/72 inch).

WARNING: There is no facility within PDFTK Builder to modify or remove stamps, backgrounds or page numbers once they are applied. Therefore, it is recommended that a copy of original file be saved before marking a page, in case an error is made or it becomes necessary to later modify or delete a marking. Making any change to a page marking will require starting from scratch with the original, unmarked copy. (Note: It is possible to remove or edit the individual objects added by PDFTK Builder with a PDF editor, such as Adobe Acrobat.)

Rotate Pages – ''Rotate Pages'' (Alt-R or Ctrl-R) will rotate the specified list of page ranges in a single source document by 90° right, 90° left or by 180°. It alternatively supports extracting or deleting the selected page ranges. The list of page ranges initially defaults to the entire document (1-End) when the source PDF document is selected. The user can then edit the values if a smaller page range needs to be processed. Page ranges must be entered in increasing page order without any duplicate pages or reversed order. The ability to enter multiple ranges in a single edit box relies on the availability of the PDFtk 'rotate' command added in PDFtk Server v2.00 and therefore only applies to PdftkVersion 2.00 or higher (default). When deleting pages, the user enters the page ranges to be deleted. The program will automatically compute the complement of the page ranges; i.e., the pages to be retained, to generate the resulting document.
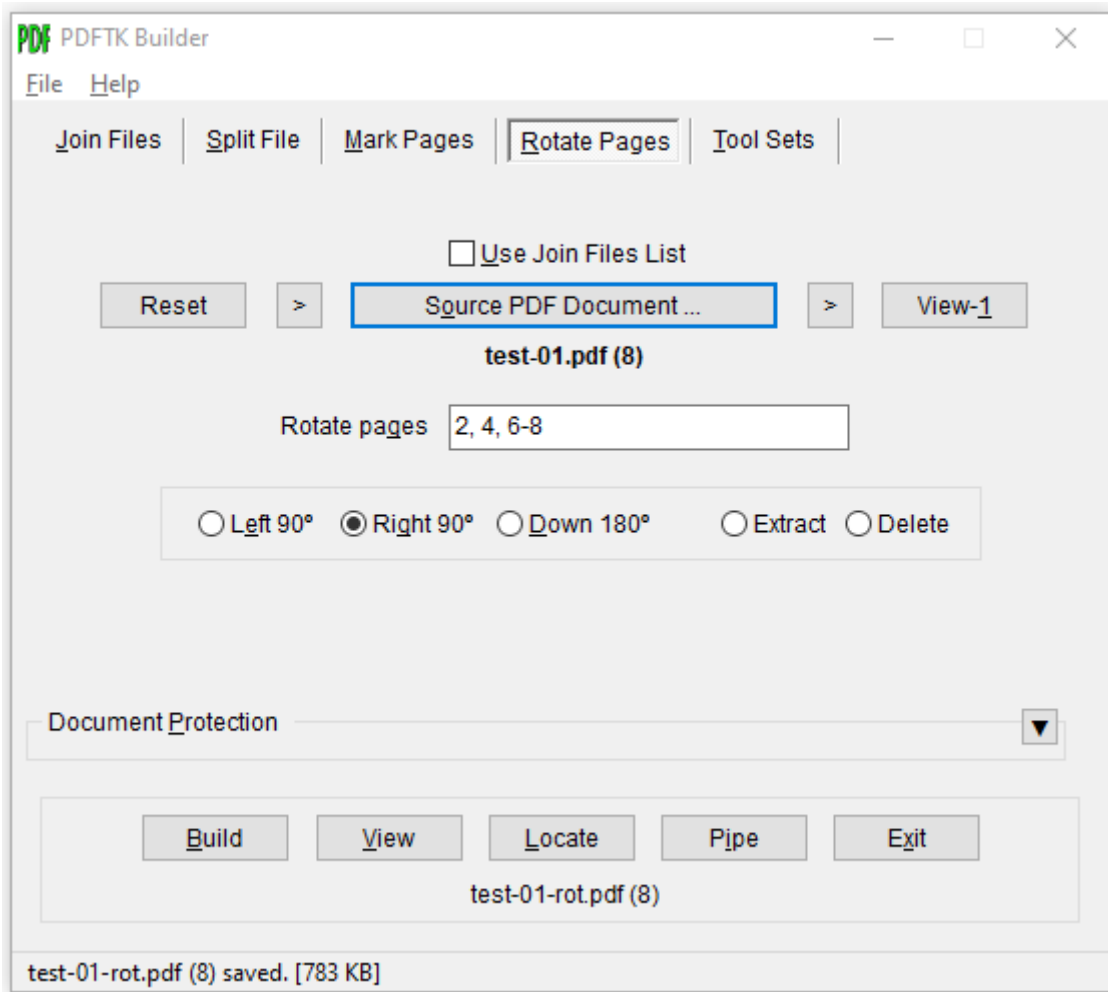
Rotate Pages tab sheet (PdftkVersion >= 2.00)

For PdftkVersion < 2.00, only a single page range can be entered and processed at a time. If more than one page range in the document needs to be rotated, the process can be repeated by either naming the output file for the first iteration the same as the source file or, if the name of the output file needs to be different from the source file, piping the output file from the first iteration so it becomes the source file for subsequent iterations, causing subsequent iterations to update (overwrite) the output file.
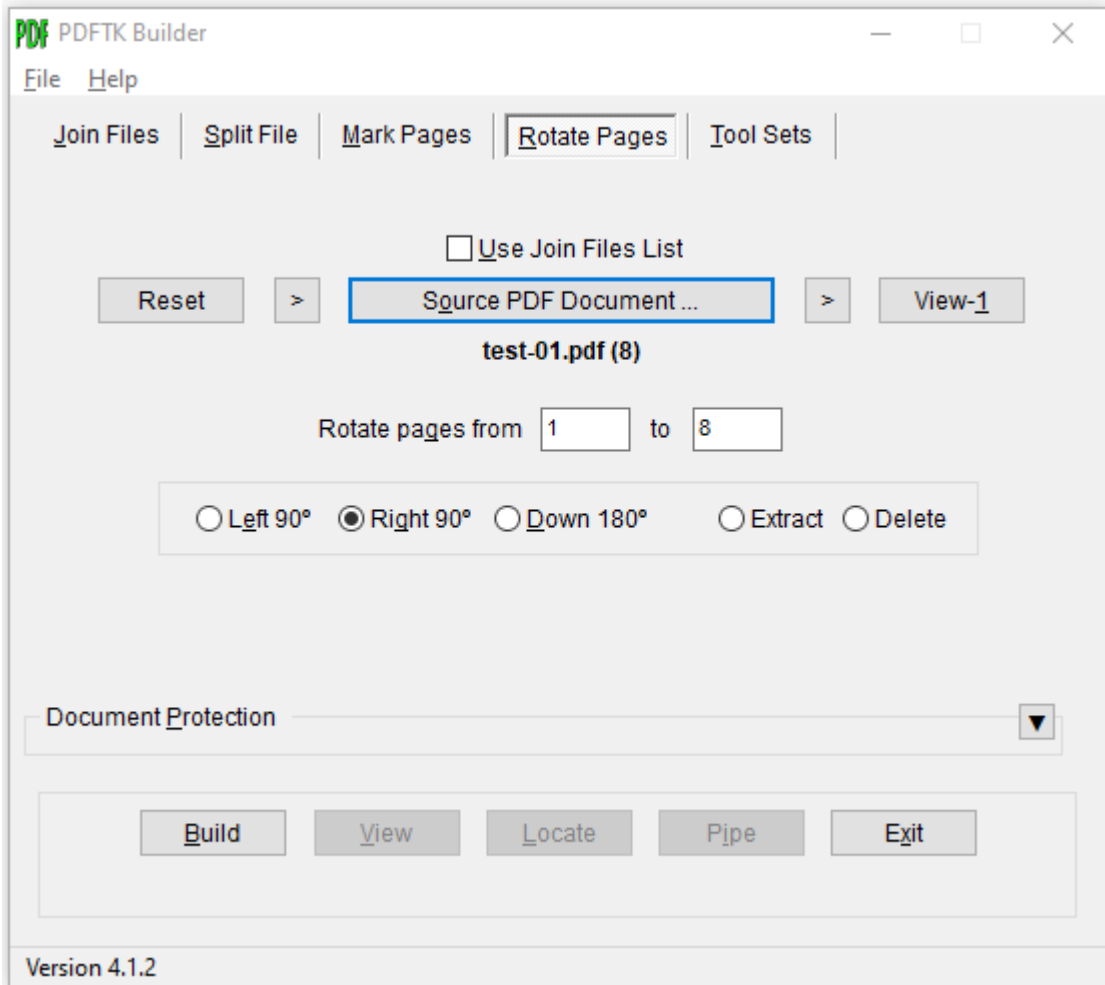
Rotate Pages tab sheet (PdftkVersion < 2.00)

Tool Sets – 'Tool Sets' (Alt-T or Ctrl-T) primarily provides access to other, less used functions of PDFtk. As listed below, there are fifteen tools arranged in four sets of four tools each. See Appendix A for screenshots and more detailed information.

Set	Tool/Function
1	**Dump Data** – Outputs metadata, page metrics, and bookmarks (if present) of a PDF document to a _data.txt dump file (see note below) and then opens the dump file in the assigned .txt app for viewing or editing. The source PDF file is not modified. The dump file can be edited and saved and then used with the 'Update Info' tool to update the corresponding data in the PDF file.
	Update Info – Updates metadata and bookmarks of the source PDF file with data from its corresponding _data.txt file.
	Uncompress – Removes compression from streams in the source PDF file so that the raw PDF code or data can be viewed or modified with a text editor.
	Compress – Re-compresses a PDF file.
2	**Decrypt** – Decrypts an encrypted PDF file. Owner password must be supplied.
	Repair – Takes a single corrupted source PDF file and outputs new PDF file in filter mode, applying all output options and regenerating XREF table and streams in an attempt to repair the file.
	Attach File – Attaches a single file to a PDF document. Repeat to attach more files.
	Unpack Files – Copies attached files to a user-specified folder.
3	**Dump Fields** – Outputs the field specs (e.g., title, location) of PDF form to a _fields.txt file. (Note: Functions in Tool Set 3 deal with PDF forms.)
	Gen(erate) **FDF** – Writes values of fields of PDF form to a Form Data Format text file (_fdf.txt). The format of this file is compatible with the Fill Form function.
	Fill Form – Updates the fields of source PDF form with values from its corresponding _fdf.txt file.
	Flatten – Merges fields and PDF form together so that fields can no longer be extracted or filled in
4	**Advanced** – Allows editing and submission of a command line to PDFtk. Provides access to the full range of PDFtk operations and arguments but requires knowledge of PDFtk command line syntax.
	Launch – Launches an external app (configured in .ini file) using the PDFTK Builder source, output, Join Files selection, or path in clipboard as the input PDF file.
	Compare – Compare the text of the source PDF and second PDF file using an external app; e.g., WinMerge with xdocdiff plugin
	Spare – Disabled (not currently used)

Note: Dump and FDF files are saved as .txt files with the same name as the source PDF file but with the .pdf extension replaced with _data.txt, _field.txt, _annots.txt or _fdf.txt as applicable; e.g., if the name of the source PDF is myfile.pdf then the data file produced by Dump Data will be named myfile_data.txt. This fixed naming convention retains the association with the source PDF file and does not require operator intervention to name or save the file.

BUTTONS

Buttons can be accessed by clicking on them with a mouse or entering the accelerator key combination from the keyboard. Buttons will automatically be enabled or disabled (grayed-out) depending on state of the input and output files. The first five buttons described below are located on the bottom Output panel. Reset buttons are on individual tab sheets.

Build – 'Build' (Alt-B) will generate the requested PDF and prompt for a file name for saving the output. The default output files for the save file dialog are as follows:

Tab Sheet	Default Save PDF File Name
Join Files	Name of selected source PDF file. Before clicking the 'Build' button, select the file to be overwritten or whose name is closest to the desired save file name in the Source PDF Documents list.
Split File	Name of source PDF file with a page number suffix _nn, _nnn, _nnnn, etc. appended to the name.
	Note: No dialog will be presented to specify the output folder for the page files when the 'Build' button is clicked. Rather, the files will be stored in the folder listed under the 'Change Output Folder' button. The default output folder is the folder containing the source file; however, it can be changed by clicking on the 'Change Output Folder' button and selecting or creating another folder or subfolder. The file for the last page is listed as the saved file; however, there are as many output files as there are pages in the specified page range of the source PDF.
Mark Pages	Name of source PDF file
Rotate Pages	Name of source PDF file
Tool Sets	Name of source PDF file. Note: Not all tools produce and save an output PDF; e.g., 'Dump Data' and 'Unpack Files' in Tool Set 1.

When the output file has been built and saved, its name, page count and size in KB will temporarily be displayed on the status line at the bottom of the form. The name and page count of the latest output file produced in a session will also be recorded below the bottom row of buttons. This file can then be 'piped' to the input of the same or another action as needed. The full path of the saved PDF document is also copied to the clipboard for possible use as input to an external application.

View – 'View' (Alt-V) opens the latest output PDF in the default PDF application or PDF viewer app specified in the .ini file. The 'View-1' (Alt-1) and 'View-2' (Alt-2) buttons on the input sections of tab sheets perform similar functions for the source PDF and secondary input PDF, respectively. These buttons are useful for verifying that the correct file(s), page ranges, or page

rotations have been chosen for input PDF files and that the desired output PDF has been produced or that additional processing is needed.

Locate – 'Locate' (Alt-L) will open the location (destination folder) of the latest output PDF file with the file selected. From that place, the output file can be viewed, printed, copied, moved, etc. using Windows or other applications. For the 'Split' action, click on the heading of the 'Name' column to sort the directory and have the individual page files listed adjacent to selected parent source document file.

Pipe – 'Pipe' (Alt-i) will copy the full path of the latest output PDF file to the Source PDF Document field of the same tab sheet. This function is useful if you need to rotate multiple page ranges of a file or need to perform a sequence of actions to produce the final file; e.g., using the 'Join Files' action to merge multiple PDF files and then sending the resulting output to the 'Mark Pages' action to number the pages of the merged document. Once the name of the source file name has been changed to the output file for an action, it is not necessary to click the Pipe button for subsequent cycles (since the source and output files have the same name).

Exit – 'Exit' (Alt-x) deletes any PDFTK Builder temporary files and quits the program.

Reset – 'Reset' clears the input file(s) on the active tab and clears related checkboxes. Use is optional with the Split, Mark Pages, Rotate Pages and Tool Sets tabs since selecting another input file will replace the current one. On the 'Join' tab, the smaller 'All' button adjacent to the 'Reset' button will clear all four tabs and reset any options to their default settings. The Document Protection panel is not affected.

HELP MENU

The Help menu contains the following items:

- Help (.html) – Displays the HTML help file (PdftkBuilder.html)

- User Guide (.pdf) – Displays the PDFTK Builder User Guide (PdftkBuilder.pdf)

- PDFtk Server (.pdf) – Displays the PDFtk Server Reference Manual (PdftkServer.pdf)

- Settings (.ini) – View (and possibly edit) the PDFTK Builder configuration file (PdftkBuilder.ini). Note: Exit and restart the program if any settings were modified via the Help menu.

- About – Displays the PDFTK Builder 'About' form.
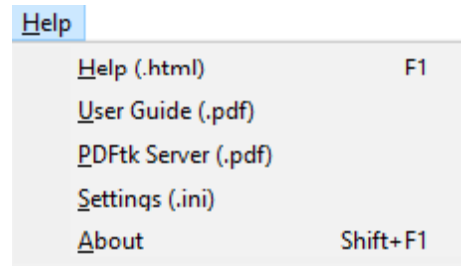
DOCUMENT PROTECTION

The Document Protection panel is used to change the permissions and owner and user passwords to be applied to output PDF documents. It can be toggled open or closed by clicking on the arrow button or a blank portion of the panel or by typing Alt-P or Ctrl-P.

The permissions section allows granting of some, none or all (default) of the following permissions to users of the output PDF document. These permissions derive from the iText PDF Java library and corresponding PDF version on which PDFtk Server is based. The permissions listed with 'b' in the first column are subsets of the preceding 'a' permission.

	Permission	Description
1a	*PRINTING*	User is permitted to print the document.
1b	*DEGRADED PRINTING*	User is permitted to print the document but not at the quality (resolution) offered by *PRINTING.*
2a	*CONTENT MODIFICATION*	User is permitted to modify the content; for example, to change the content of a page, or insert or remove a page. Also allows *ASSEMBLY.*
2b	*ASSEMBLY*	User is permitted to insert, remove, and rotate pages and add bookmarks. The content of a page can't be changed unless the permission *CONTENT MODIFICATION* is granted too.
3a	*COPY CONTENTS*	User is permitted to copy or otherwise extract text and graphics from the document, including using assistive technologies such as screen readers or other accessibility devices. Also allows *SCREEN READERS.*
3b	*SCREEN READERS*	User is permitted to extract text and graphics for use by accessibility devices.
4a	*ANNOTATION MODIFICATIONS*	User is permitted to add or modify text annotations and interactive form fields. Also allows *FILL IN.*
4b	*FILL IN*	User is permitted to fill form fields.

Setting passwords results in encryption of parts of the output PDF file. After a password has been set and the panel is closed, the caption on the Document Protection panel button will be displayed in red to indicate that encryption of output PDFs is now in effect..
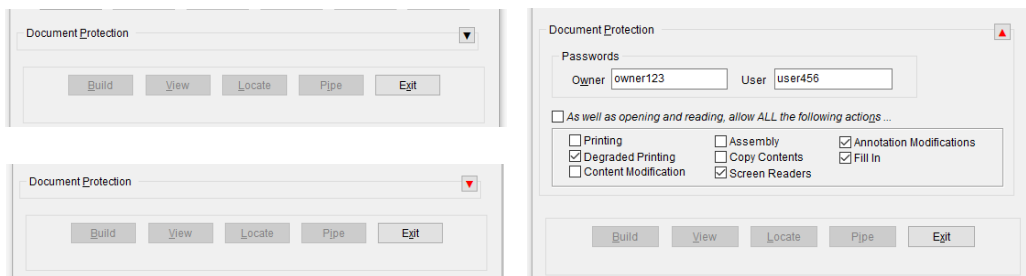

128-bit RC4 is the default encryption used by PDFtk. Because of the vintage of the iText PDF library used by PDFtk, PDFtk only fully supports (1) 40-bit RC4 (PDF 1.3) and (2) 128-bit RC4 (PDF 1.4) encryption. Support for 128-bit AES (PDF 1.6) decryption (but not encryption) was added in PDFtk Server v2.00. 256-bit AES (PDF 1.7 Extension Level 3 and PDF 2.0) is not supported.

The 'owner' (aka 'master' or 'permissions') password restricts who can change passwords and permissions (e.g., for printing, copying, etc.) but does not stop users from opening the document. Specifying a 'user' (aka 'open') password will stop anyone without either 'user' or 'owner' passwords from opening the document. A person who opens an encrypted document using the correct owner password will have full access to the document, including the ability to change passwords and permissions. A person who opens the document using the correct user password will be able to read it, but other operations will be restricted by the user permissions set for the document. If only an owner password is set, the streams and strings in the PDF file are still stored in encrypted form but the document will be decrypted by an empty password so a user can open the document. If a user password is being set, it is recommended that an owner password also be set, even if the same, to avoid the possibility that a blank (owner) password could open the document.

The default settings for Document Protection (no passwords set and all permissions enabled) provide full access to the output PDF file. Encrypting a PDF document can cause compatibility issues with users of older PDF software that is unable to decrypt a document encrypted by software supporting a later version of PDF. Setting an owner password may prevent a casual user from performing operations which are not permitted but that protection can be removed by software or bypassed by other methods. Setting a user password is reasonably secure but then requires distribution of the password to all users simply to open the document.

Note: PDFTK Builder and the underlying PDFtk tool generally expect source PDF files to be unencrypted. Therefore, any files generated with passwords will first need to be decrypted (using 'Decrypt' in Tool Set 2) before being further processed with PDFTK Builder. The figure to the right shows an error message displayed when an encrypted PDF file is encountered by PDFTK Builder.
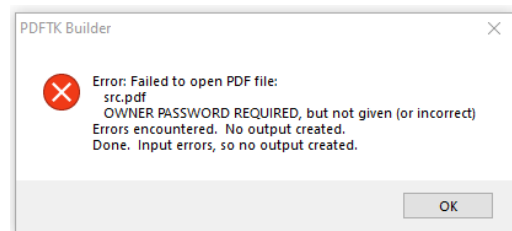
CONFIGURATION FILE

The configuration file (PdftkBuilder.ini) file allows specification of: (1) page size and the positions and font size of pages numbers, (2) non-default applications for viewing .pdf and .txt files within PDFTK Builder, (3) names and executables for up to five external PDF applications that may be launched from within the program, (4) application for comparing the text of two PDF files, (5) folder location of pdftk.exe if not located in PDFTK Builder folder, and (6) PDFtk version if less than 2.00. When the program is exited, the program also records the closing position of the PDFTK Builder window, name of the last stamp or background PDF file used, and state of the Document Protection panel (collapsed or expanded) in the .ini file under the user's name for recall the next time the user runs PDFTK Builder. The file is located in the PDFTK Builder folder and is accessible from the Help menu. See Appendix C and the default .ini file for details and examples of configuring PDFTK Builder.

Notes:

(1) Acceptance of default settings is specified in the .ini file by (1) omitting or (2) commenting out the corresponding statement or by (3) leaving the value of the setting blank (empty).

(2) The latest version of PDFtk is v2.02, 13 Jul 2013. Use of earlier versions is discouraged because they do not incorporate bugfixes and enhancements incorporated in later versions. If a PDFtk version less than 2.00 is used, its version needs to be specified in the PdftkVersion setting of the .ini file so that PDFTK Builder will account for the changes to the syntax of commands for page rotation introduced in PDFtk versions 1.45 and 2.00.

PDFTK BUILDER HISTORY

Version	Date	Changes
4.1.6	25 May 21	Added: After a password has been set and the panel is closed, the caption on the Document Protection panel button will now be displayed in red to indicate that encryption of output PDFs is in effect.
4.1.5	13 Oct 19	Bugfix: Fixed user interface issue where those tools on the 'Tool Sets' tab that do not output PDF files (e.g., 'Dump Data') were erroneously enabling or affecting the 'View', 'Locate' and 'Pipe' output buttons.
4.1.4	18 Sep 19	Added: 'Split File' tab now supports producing output PDF files in chunks of N pages. Default output is individual page files (N=1).
4.1.3	13 Sep 19	Added: 'Rotate Pages' tab now supports entry of a list of page ranges in a single edit box for rotate, extract and delete options when PdftkVersion >= 2.00 (default). For PdftkVersion < 2.00, pages entry remains a single page range with separate edit boxes for start and end pages.
4.1.2	26 Jul 19	Initial public release of PDFTK Builder Enhanced. Added: (1) Options on 'Rotate Pages' tab sheet to delete and extract a range of pages; (2) PDFtk Server manual to Help menu. Update: (1) 'Shuffle' mode relabeled 'Interleave' on 'Join Files' tab; (2) 'Del' key added as hotkey to 'Remove' file in 'Join Files' list (when focus not on 'Pages' edit box); (3) .html and .pdf files relocated to 'docs' subfolder; (4) Ctrl-J, -S, -M, -R, -T, -P hotkeys for switching tabs, etc. restored without restoring 'View' menu deleted in v4.0.0.
4.1.1	26 Oct 18	Added: Page rotations can now be made backward compatible with PDFtk versions < 2.00 by setting PDFtk version in .ini file.

4.1.0	17 Jul 18	Added: (1) Drag and drop support for source and secondary input files on other 4 tab sheets; (2) context menu (right-click) with items to extract pages from selected file, open file location, display file properties; (3) double click to view the selected source PDF file in the 'Join Files' list; (4) additional page numbering options, including left and center positions, page range, starting number, and prefix/suffix text with text placeholders; (5) 'Uncompress' and 'Compress' operations to 'Tool Sets'; (6) dual input PDF file capability to 'Launch' action; (7) 'Compare' action to use external PDF text compare tool, such as WinMerge; (8) 'Odd/Even' option to 'Split File'; (9) Help menu items to view/edit .ini file and view User Guide (.pdf). Update: (1) Incorporated following cosmetic changes from v3.9.6, 24 Mar 2018: (a) save and restore last closed position of main form, (b) preserve top position of main form when opening/closing document protection panel, (c) add arrow button for opening/closing document protection panel; (2) Changed caption of Tools tab sheet from 'Misc Tools' to 'Tool Sets' and swapped members of Tool Sets 1 and 2. Bugfix: Retrofitted applicable bugfixes from v3.9.6, 24 Mar 18 through v3.10.0, 13 Jul 18.

4.0.0	28 Nov 17	Initial enhanced version of PDFTK Builder (based on v3.9.4, Apr 2015).

Added: (1) 'Shuffle' option to 'Join Files'; (2) file name only display mode, second column for P (pages) and T (truncated file name) indicators, and increased size of grid to display more rows and longer file names in 'Join Files' list; (3) capability to use 'Join File' list as sequential source for other tab sheets; (4) Alt-Shift-S, -M, -R, -T keys to 'Join Files' tab sheet to forward selected source document to another tab sheet; (5) capability to manually copy and paste input file names through the clipboard; (6) labels to display input file names and page counts on Split, Mark Pages, Rotate Pages and Tools tabs; (7) edit boxes to specify page range and button to change output folder to 'Split File' tab sheet; (8) 'multibackground' / 'multistamp' capability (automatically used for background/stamp files with multiple pages); (9) options for position, mirroring, and page orientation for page numbers; (10) 'Misc Tools' tab sheet with 12 new functions; (11) 'View', 'Locate' and 'Pipe' buttons to output panel; (12) page count and file size to status bar message and copy of file path to clipboard when output file saved.

Update: (1) Replaced PDFtk v1.41 (Nov 2006) with PDFtk Server v2.02 (Jul 2013); (2) incorporated revised rotation syntax from PDFtk v1.45; (3) dropped 'View' menu and use of Ctrl key for switching tab sheets; (4) replaced use of ctrl-A for selecting all items in Join Files list with 'Reset' button; (5) changed opening position of window from desktop center to screen center to fix main form from spanning dual monitors.

Bugfix (to v3.9.4): Removed extraneous auto re-sorting of source PDF list after file added via drag and drop (fixed in v3.9.7, Mar 18). |
| 3.10.0 | 13 Jul 18 | Latest release of PDFTK Builder Ver. 3 as of the date of this Guide. Changes sync'd in PDFTK Builder Enhanced v4.1.0, 17 Jul 18.
See **PDFTK Builder by Angus Johnson** for prior history. |

Appendix A, Tool Sets 1-4

This appendix provides descriptions, explanations and screenshots of Tool Sets 1-4. (Note: The v4.1.1 forms depicted in this appendix are unchanged for v4.1.3.)
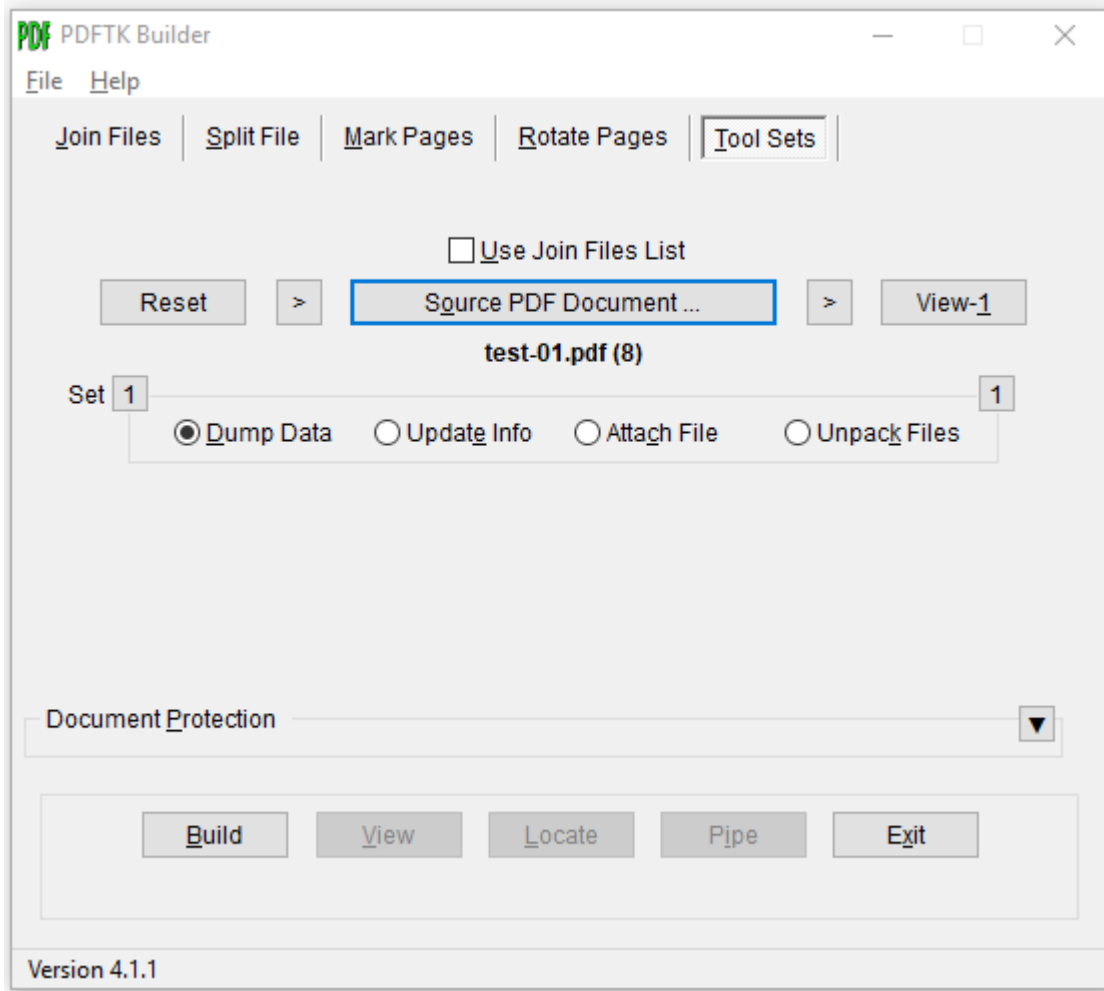
Tool Sets tab sheet with Set 1/Dump Data selected

The following are the required user entries for each of the functions in Tool Set 1:

- Dump Data – Source PDF file (output file is automatically named _data.txt*)
- Update Info – Source PDF file (Input file must be named _data.txt*), Output PDF file
- Attach File – Source PDF file, Attachment File, Output PDF file
- Unpack Files – Source PDF File, Output folder (for saving copies of attachment files)

* The text file outputted by 'Dump Data' or inputted to 'Update Info' has the same name as the source PDF file with the .pdf extension replaced by _data.txt; e.g., if the source file is named myfile.pdf then the corresponding data file is named myfile_data.txt.

'Dump Data' outputs a PDF file's metadata, bookmarks (if present), and page metrics (media, rotation, labels) to the _data.txt file and stores the file in the same folder as the source PDF. This fixed naming convention means that the user will not be prompted for an output file name or destination folder. The file will be saved automatically and then opened in default or configured .txt application (e.g., Notepad) for viewing and possible editing.

The 'Update Info' function can be used to change the metadata and bookmarks (but not page metrics) in a PDF file to match the data in the corresponding edited _data.txt input file. Like the 'Dump Data' function, the 'Update Info' function will not prompt for the location of the _data.txt input file as it is required to match the folder and name of the source PDF document.

As shown in the following example, the report contains metadata (info), bookmarks (if present in source PDF), and page metrics consisting of the following types of statements:

- Metadata: InfoBegin, Key, Value. Metadata may include items such as, document title (different from file name), author, subject, keywords, creator, producer, date created, date modified, etc. Metadata may be stored in PDF in the document information dictionary of the document or in an XML-based metadata stream.

- Bookmarks: BookmarksBegin, Title, Level (1, 2, 3, etc.), PageNumber

- Page Metrics: PageMediaBegin, Number (physical page number), Rect (coordinates of the lower left and upper right of the media box), Rotation (0, 90, 180, 270 CW), Dimensions (Width, Height) and CropRect (if applicable). The PDF coordinates and dimensions are in units of points (1/72 inch). PageLabel blocks may also be present to define logical page numbering and associated styles.

Example of Dump Data Report

Source PDF File: pdf_open_parameters.pdf
Dump Data File: pdf_open_parameters_data.txt

The following example of a dump data report is for an 8-page **Adobe technical document**. From the metadata information in the dump report, it can be seen that the source document was created with FrameMaker and that the PDF was then produced by Acrobat Distiller on 2007-04-11 (11 Apr 2007) at 11:19:48 local (which is 01 hour and 30 minutes behind GMT). The document also includes multilevel PDF bookmarks. The page media data shows that the 8 pages of the document are laid out on 8-1/2 x 11-inch (612 x 792 points) letter pages in portrait orientation with 1/8 inch (9 points) cropped of the left and right margins. The example includes a PageLabel block at the end to specify the page numbering style for the document.

InfoBegin
InfoKey: Creator
InfoValue: FrameMaker 7.1
InfoBegin
InfoKey: Title
InfoValue: Parameters for Opening PDF Files
InfoBegin
InfoKey: Producer
InfoValue: Acrobat Distiller 8.0.0 (Windows)
InfoBegin
InfoKey: Author
InfoValue: Adobe Developer Support
InfoBegin
InfoKey: Subject
InfoValue: Adobe Acrobat 8.0 SDK
InfoBegin
InfoKey: ModDate
InfoValue: D:20070411194823-01'30'
InfoBegin
InfoKey: CreationDate
InfoValue: D:20070411110909Z
PdfID0: 20eed2b073c43c39bcaae7ada11b774c
PdfID1: 1249e8bc520dbc43b92653c8267a1933
NumberOfPages: 8
BookmarkBegin
BookmarkTitle: Contents
BookmarkLevel: 1
BookmarkPageNumber: 3
BookmarkBegin
BookmarkTitle: Preface
BookmarkLevel: 1
BookmarkPageNumber: 4
BookmarkBegin
BookmarkTitle: Who should read this guide?
BookmarkLevel: 2
BookmarkPageNumber: 4
BookmarkBegin
BookmarkTitle: Related documentation
BookmarkLevel: 2
BookmarkPageNumber: 4
BookmarkBegin
BookmarkTitle: Parameters for Opening PDF Files
BookmarkLevel: 1
BookmarkPageNumber: 5
BookmarkBegin
BookmarkTitle: Parameters
BookmarkLevel: 2
BookmarkPageNumber: 5
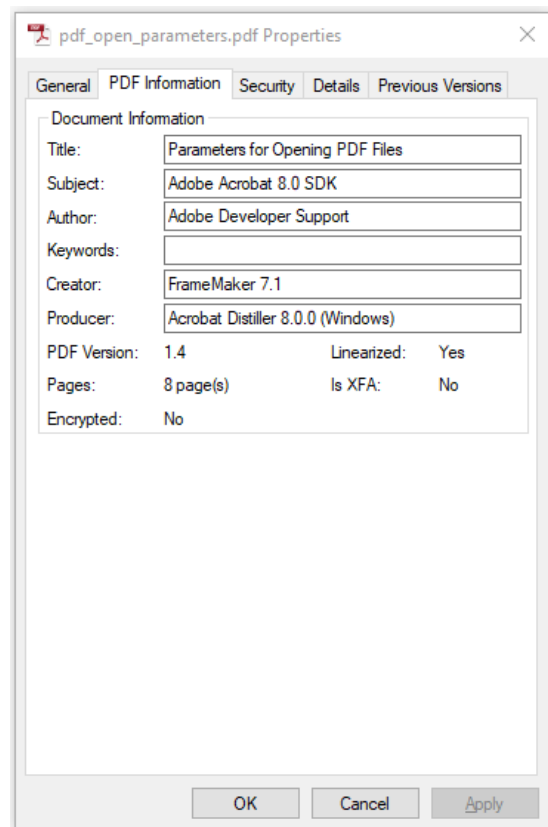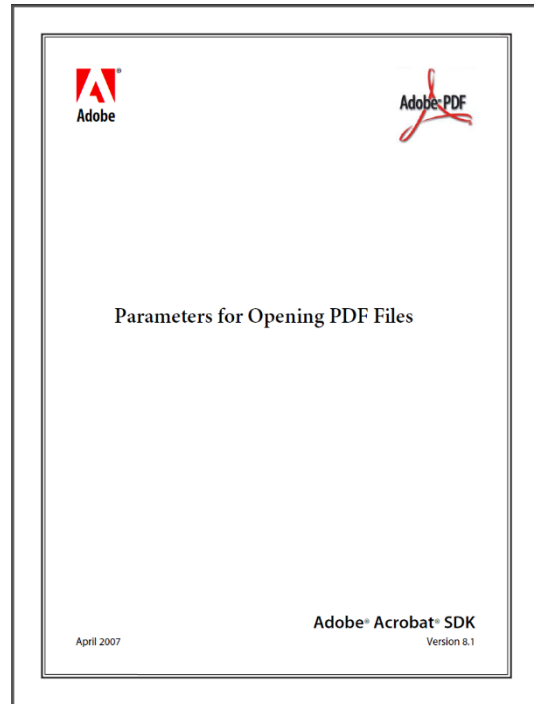
BookmarkBegin
BookmarkTitle: Specifying parameters in a URL
BookmarkLevel: 2
BookmarkPageNumber: 7
BookmarkBegin
BookmarkTitle: URL examples
BookmarkLevel: 3
BookmarkPageNumber: 8
BookmarkBegin
BookmarkTitle: URL limitations
BookmarkLevel: 3
BookmarkPageNumber: 8
PageMediaBegin
PageMediaNumber: 1
PageMediaRotation: 0
PageMediaRect: 0 0 612 792
PageMediaDimensions: 612 792
PageMediaCropRect: 9 0 603 792
PageMediaBegin
PageMediaNumber: 2
PageMediaRotation: 0
PageMediaRect: 0 0 612 792
PageMediaDimensions: 612 792
PageMediaCropRect: 9 0 603 792
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.
.
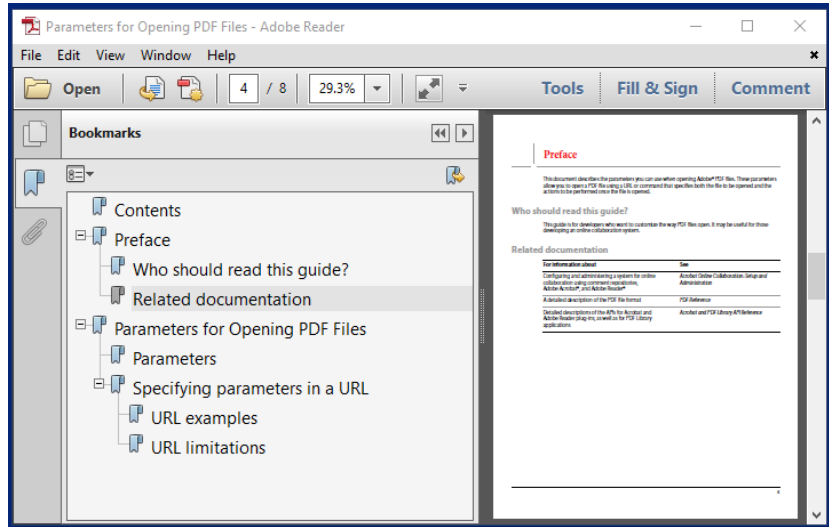
PageMediaBegin
PageMediaNumber: 7
PageMediaRotation: 0
PageMediaRect: 0 0 612 792
PageMediaDimensions: 612 792
PageMediaCropRect: 9 0 603 792
PageMediaBegin
PageMediaNumber: 8
PageMediaRotation: 0
PageMediaRect: 0 0 612 792
PageMediaDimensions: 612 792
PageMediaCropRect: 9 0 603 792
PageLabelBegin
PageLabelNewIndex: 1
PageLabelStart: 1
PageLabelNumStyle: DecimalArabicNumerals

The following two screenshots show the 'Attach File' and 'Unpack Files' functions of Tool Set 1.
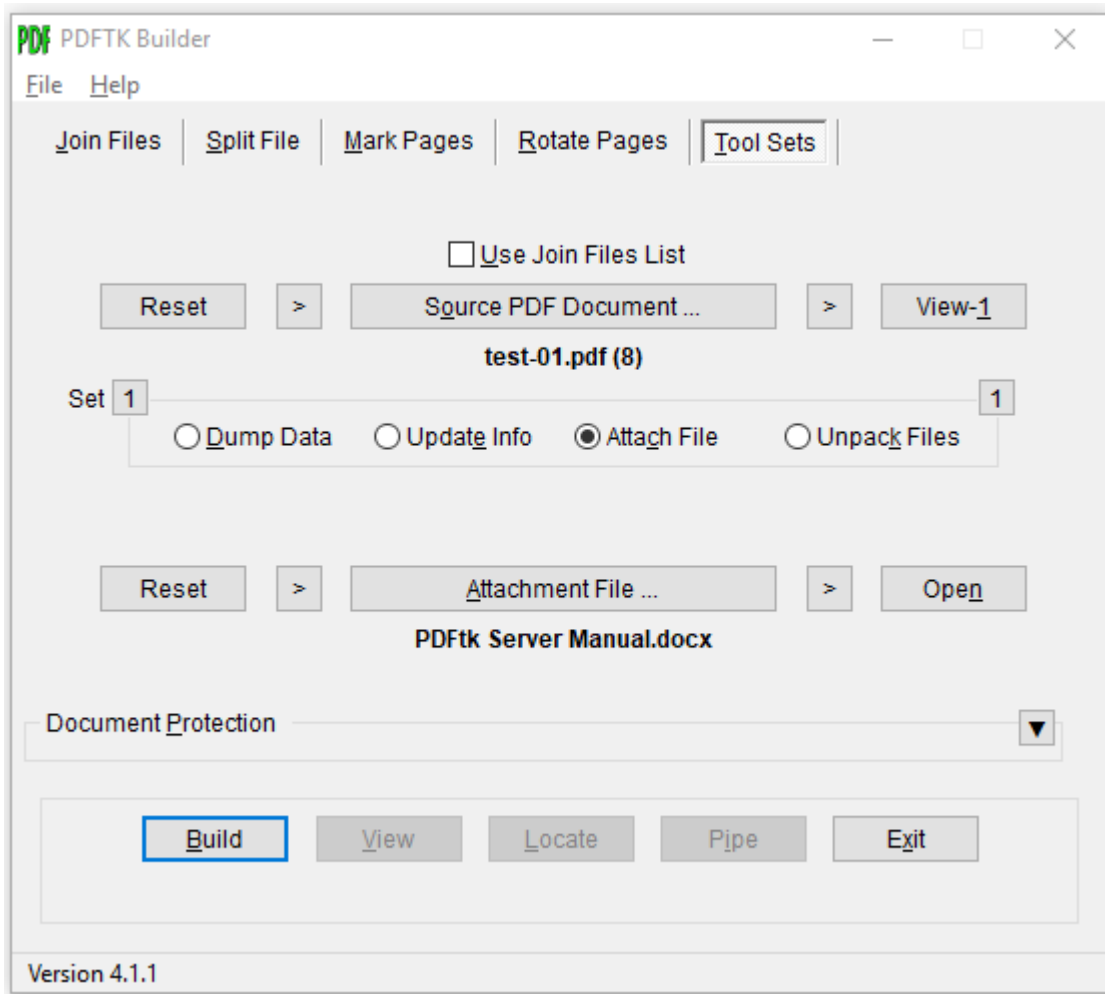
Tool Sets tab sheet with Set 1/Attach File selected

The 'Attach File' function attaches one file at a time. To attach multiple files to the same PDF document, repeat the process for each subsequent attachment file but with the source PDF file having the same name as the preceding output PDF file. Note that any type of file can be selected as an attachment, not just PDFs, while source and output files are restricted to PDF files.

When a PDF document with attached files is opened in Adobe Reader, the attachments are listed in the navigation panel in the Attachment view denoted by the icon of a paperclip. The user then has the choice of opening the selected attachment, saving a copy of selected attachment(s), or searching all attachments for a text string. Adobe Reader does not have functions to attach or delete files; those functions are reserved for the paid Acrobat product.
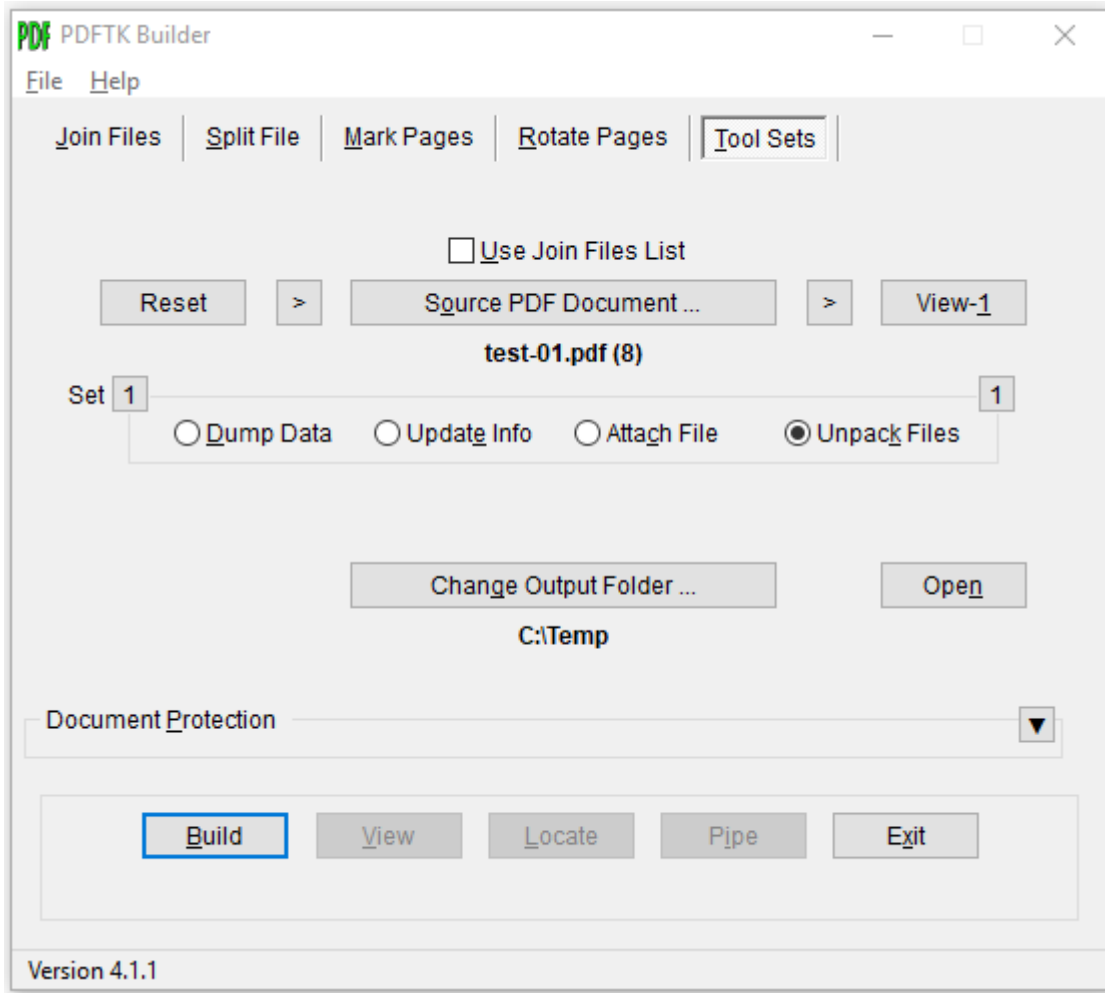
Tool Sets tab sheet with Set 1/Unpack Files selected

The 'Unpack Files' function will copy all files attached to the Source PDF Document to the selected Output Folder. The source PDF file is not altered by the 'Unpack Files' function. The default output folder for the copied attachments is the same folder where the source PDF file is located but the output folder may be changed by the user. The 'Unpack Files' function is similar to the 'Save Attachment' function in Adobe Reader except that it exports all attachments rather than just the selected attachment.

Although PDFTK Builder does not have an explicit function for deleting attachments from a PDF file, attachments can be deleted simply by dragging the file to the 'Join Files' list and then pressing the 'Build' button. Alternatively, the 'Extract' item in the 'Join Files' context menu can be used to extract all pages to a file. Both methods employ the PDFtk 'cat' operator which does not preserve attachments when building the output file. Attachments can also be deleted by printing the PDF file to a virtual PDF printer, such as Bullzip PDF Printer or Microsoft Office Save as Adobe PDF function.

Tool Set 2 provides access to some lesser used PDFtk operators for maintaining PDF files.
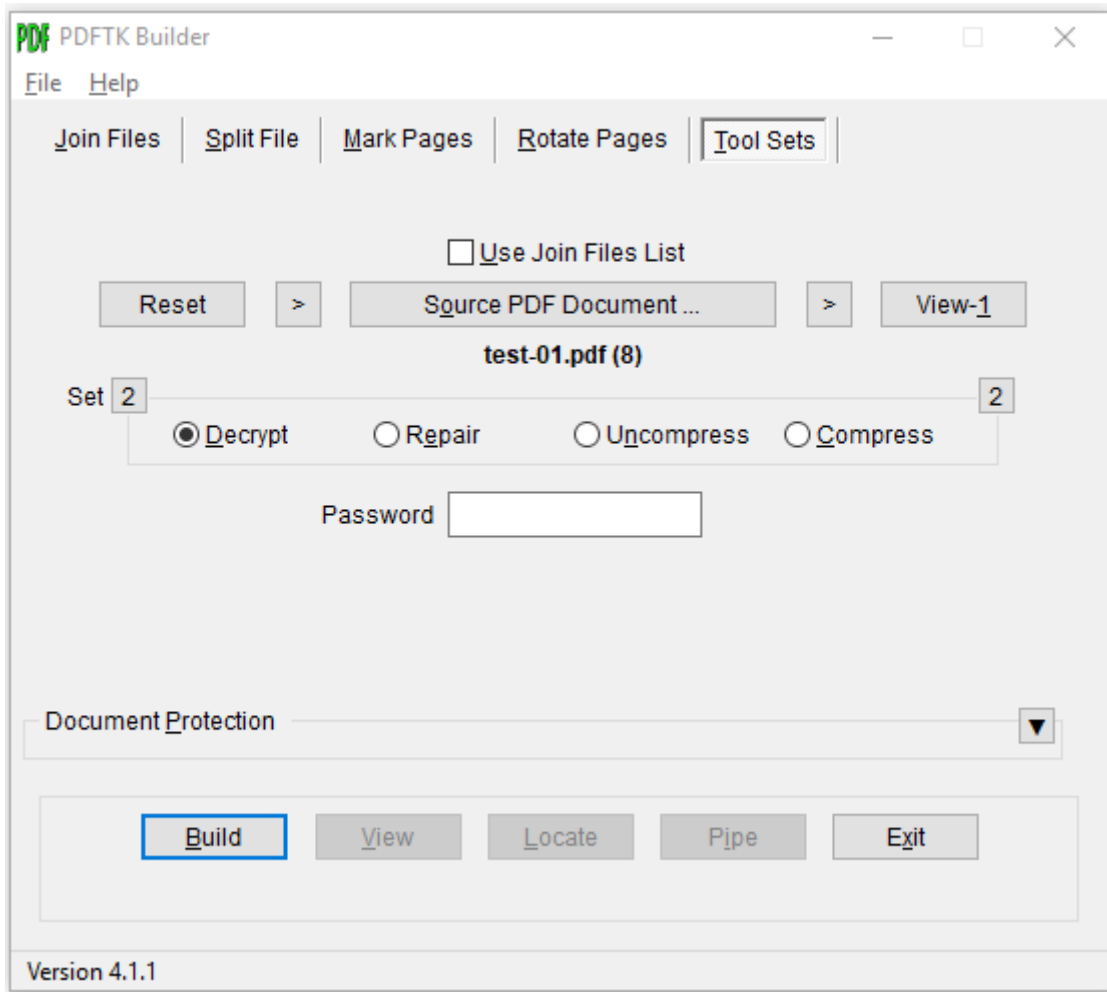
Tool Sets tab sheet with Set 2/Decrypt selected

A password-protected (encrypted) PDF file must first be decrypted with the 'Decrypt' function since any other processing using PDFtk must be performed on the unencrypted version of the file. Owner password must be supplied. The updated file can be re-encrypted if needed by setting passwords in the Document Protection panel when building the final file. 'Repair' attempts to repair a corrupted PDF by regenerating its XREF table and streams. 'Uncompress' and 'Compress' are only useful when you want to view or edit the raw PDF code and data with a text editor. The following are the required user entries for each of the functions in Set 2.

- Decrypt – Source PDF File, Password, Output PDF file
- Repair – Source PDF file, Output PDF file
- Uncompress – Source PDF file, Output PDF file
- Compress – Source PDF File, Output PDF file

Tool Set 3 contains functions where the source PDF document is a PDF form.
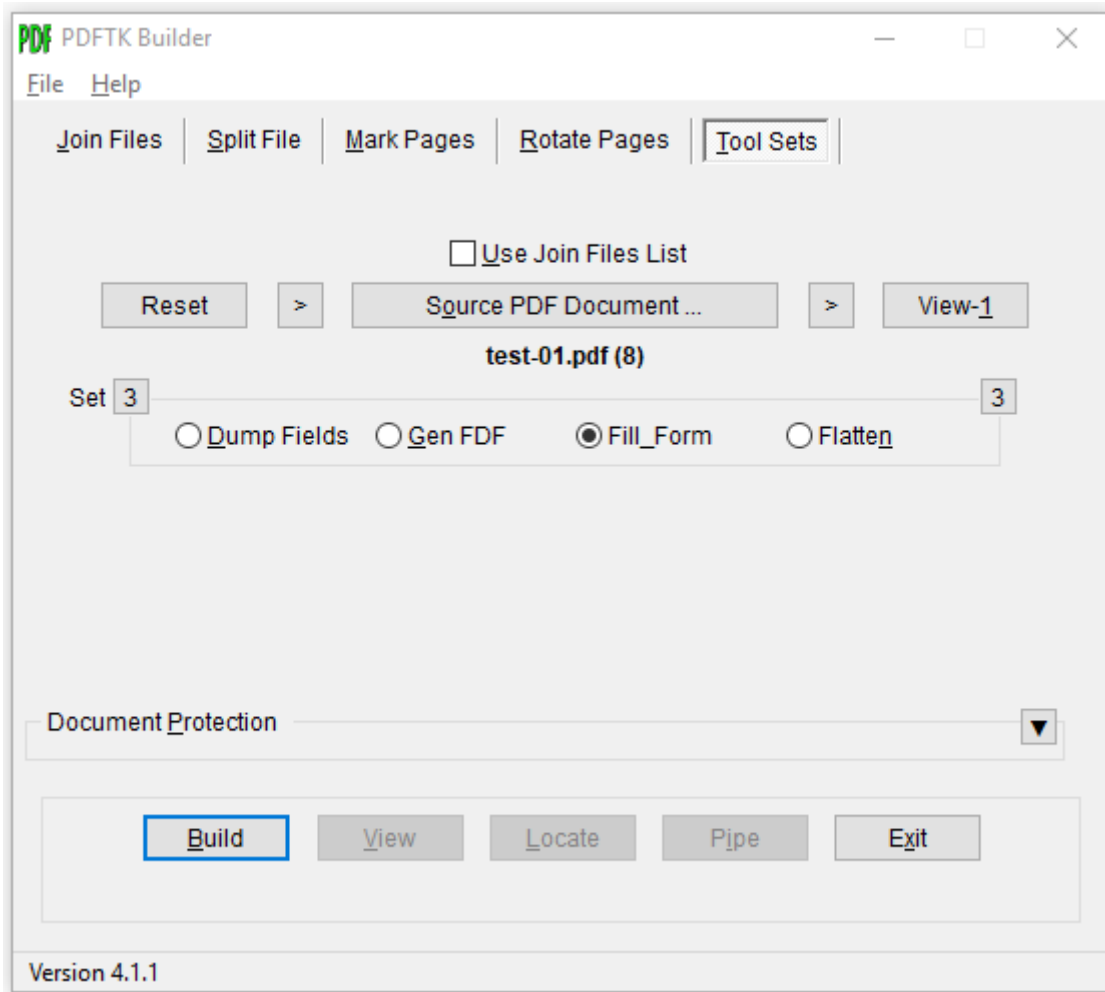
Tool Sets tab sheet with Set 3/Fill Form selected

'Dump Fields' extracts the field specs (e.g., name, type, max length, etc.) of the source PDF form to a _fields.txt file. 'Gen(erate) FDF' and 'Fill_Form' are complementary functions for form data as 'Dump Data' and 'Update Info" of Tool Set 1 are for PDF metadata. 'Gen FDF' writes the values of fields of the source PDF form to a Form Data Format text file (_fdf.txt). Its format is compatible with the input of the 'Fill Form' function. 'Fill Form' (Alt-Underscore) updates the fields of source PDF form with values from its corresponding _fdf.txt file. 'Flatten' merges fields and PDF form together so that fields can no longer be extracted or filled in. The following are the required user entries for each of the function:

- Dump Fields – Source PDF file (Output data file is automatically named _fields.txt)
- Gen FDF – Source PDF file (Output FDF file is automatically named _fdf.txt.)
- Fill Form – Source PDF file (Input FDF file must be named _fdf.txt), Output PDF file
- Flatten –Source PDF file, Output PDF file

The functions in Tool Set 4 allow the user to (1) directly formulate PDFtk commands, (2) launch external applications, and (3) perform a text comparison of two PDF documents. The following are the required user entries for each of the functions in Set 4.

- Advanced – Source PDF file, Template Selector (T1-T5), Template Edit Text, Open Dialog Filter (PDF or ANY), Secondary Input File or Folder, Output PDF file
- Launch – Source PDF file, App Selection, Secondary Input PDF file (if applicable)
- Compare – Source PDF file #1, Input PDF file #2 (Compares the text of two PDF files using a configured external application; e.g., WinMerge with xdocdiff plugin)
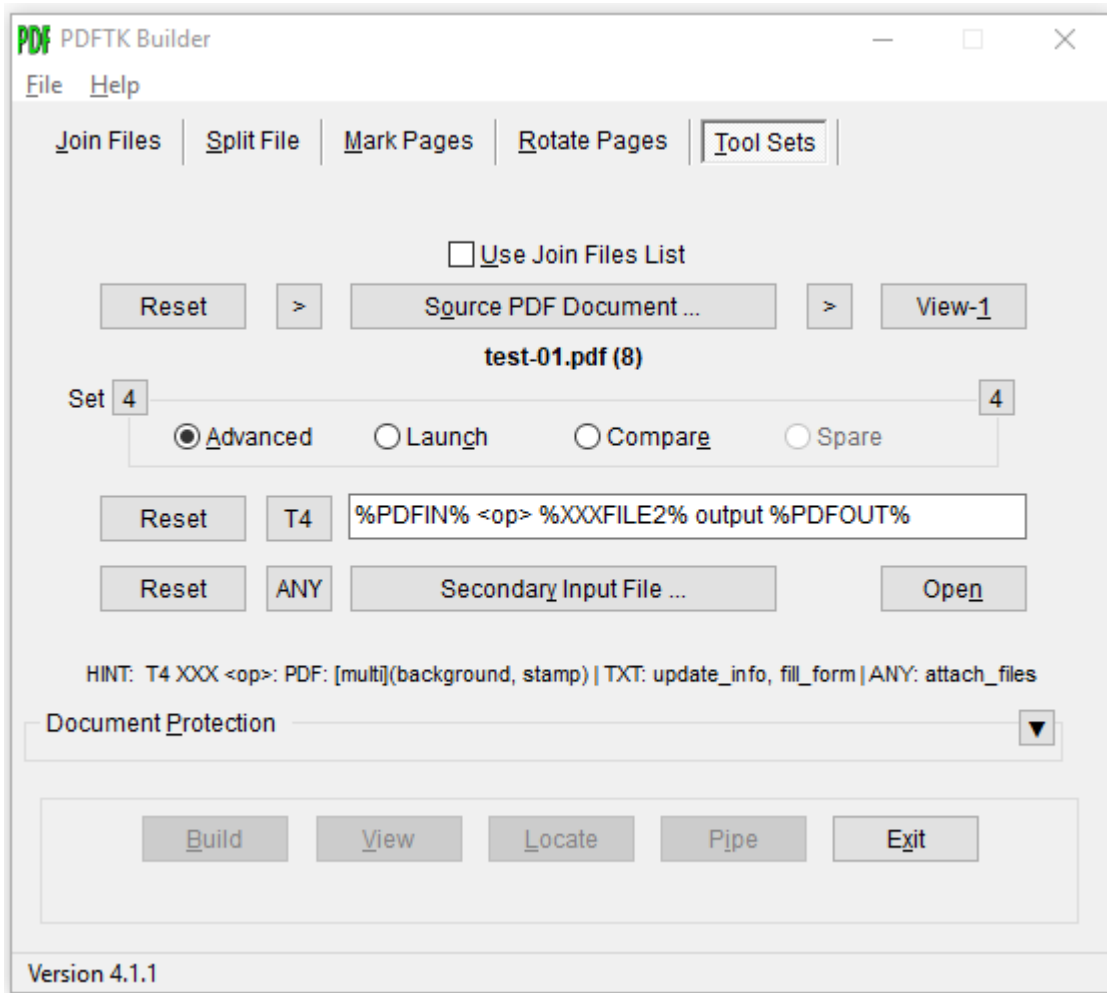
Tool Sets tab sheet with Set 4/Advanced selected

The Advanced tool shown above is intended for users who are familiar with PDFtk commands and need access to PDFtk operations and options not otherwise accessible via the PDFTK Builder GUI. The Advanced tool facilitates the formulation of PDFtk commands by presenting PDFtk command templates (T1-T5) for the user to edit and by handling the selection and entry of input/output files and folders for the command via the GUI.

The format of the five PDFtk command templates is shown below. Templates T1-T3 support operations with one input PDF file (%PDFIN%); templates T4-T5 support a primary input PDF (%PDFIN%) and a secondary input file (%XXXFILE2%, XXX = PDF, TXT or ANY).

    T1: %PDFIN% <op> output %FOLDER%
    T2: %PDFIN% <op> output %TXTOUT%
    T3: %PDFIN% <op> output %PDFOUT%
    T4: %PDFIN% <op> %XXXFILE2% output %PDFOUT% where XXX = PDF, TXT or ANY
    T5. A=%PDFIN% B=%PDFFILE2% <op> output %PDFOUT%

where the following are placeholders for input and output files and folders whose values are established via buttons and other controls on the GUI for the Advanced tool:

    %PDFIN% = Source PDF file on Tools tab sheet
    %PDFFILE2% = Secondary input PDF file (applies to T4, Op = [multi]stamp,
        [multi]background and T5, Op = cat, shuffle)
    %TXTFILE2% = input text file (normally uses same name as corresponding %TXTOUT% file;
        applies to T4, Op = update_info, fill_form)
    %ANYFILE2% = Attachment file (any file type; applies to T4, Op = attach_files)
    %PDFOUT% = PDF output file selected from Build save dialog
    %TXTOUT% = Text output file (auto-named based on name of %PDFIN% and operation;
        applies to T2, Op = dump*, generate_fdf)
    %FOLDER% = Output folder (defaults to %PDFIN% folder but can be changed by user;
        applies to T1, Op = burst, unpack_files)

and <op> denotes one of the following PDFtk operators (applicable template is shown in parentheses):

    none/filter mode (T3)
    burst (T1)
    cat (T3, T5), shuffle (T5)
    background (T4), stamp (T4), multibackground (T4), multistamp (T4)
    rotate (T3)
    attach_files (T4), unpack_files (T1)
    dump_data (T2), dump_data_utf8 (T2), update_info (T4), update_info_utf8 (T4)
    dump_data_fields (T2), dump_data_fields_utf8 (T2), generate_fdf (T2), fill_form (T4)
    dump_data_annots (T2)

To use the Advanced tool:

(1) Select Tool Sets > Set 4 > Advanced
(2) Select the applicable template for the PDFtk operation you wish to execute.

   T1: burst, unpack_files
   T2: dump_data, dump_data_utf8, dump_data_fields, dump_data_fields_utf8, dump_data_annots, generate_fdf
   T3: none (filter mode), cat, rotate
   T4: 1 %PDFFILE2%: background, multibackground, stamp, multistamp
       2: %TXTFILE2%: update_info, update_info_utf8, fill_form
       3: %ANYFILE2%: attach_files
   T5: cat, shuffle

   Note: A template is selected by pressing the 'Tn' button (n=1 to 5) to cycle through the five templates, T1 through T5. For template T4 only, the applicable type of secondary file %XXXFILE2% must also be selected by cycling through the types, PDF, TXT or ANY.

(3) Edit the template to replace <op> with the desired PDFtk operation (lowercase) and to delete, replace, add or paste other text, including arguments, as required to complete the command. Use the back and forward arrow keys to reposition the cursor within the one-line edit box.
(4) Select the source PDF document and, if applicable, any secondary input file or output folder required by the template by using the corresponding button or control.
(5) Press the 'Build' button to prompt for the output PDF file name (if applicable) and submit the command to PDFtk for execution.

Note: After the edited template has been submitted via the 'Build' button, the PDFTK Builder performs limited checking to ensure that the correct PDFtk operation and placeholders for files and folders are present in the template. See list of error codes (A01-A07) at end of this appendix for an explanation of the errors detected.

The templates include placeholders for files and folders but not for optional input, operation and output arguments that must be added by the user if applicable; e.g., owner and user passwords, permissions allowed, flatten, compress/uncompress, etc. See PDFtk Server manual for details. These arguments are not checked by the PDFTK Builder application and therefore may be rejected or not produce the intended results when PDFtk executes the command if the user has made an error.

Output security arguments (owner_pw, use_pw, allow) should not be directly appended to the template because the settings in the Document Protection panel are automatically added by the PDFTK Builder application. If the security settings for %PDFOUT% need to be changed, use the Document Protection panel to change them before pressing the 'Build' button.

The full Windows command line must also include the full path for the PDFtk executable represented by the placeholder %PDFTK% below; e.g., if the template edited by the user were the following:

   %PDFIN% stamp %PDFFILE2% output %PDFOUT%

the full command line template would be:

   %PDFTK% %PDFIN% stamp %PDFFILE2% output %PDFOUT%

The %PDFTK% placeholder is not included in the user-editable template since the path for the PDFtk executable (pdftk.exe) is automatically supplied by the PDFTK Builder application and depends on the setup of PDFtk executable on the local machine and settings in the PDFTK Builder configuration file.

When the 'Build' button is pressed, the PDFTK Builder application typically copies the input files to a temporary folder (\Users\<User>\AppData\Local\Temp\pdftkb) and submits a command to PDFtk to perform the operation on the copied files. The resulting output files are usually generated in the same temp folder and then copied or moved by PDFTK Builder to the output location specified by the user, overwriting any existing file of the same name.

The following section provides an explanation and examples of use of each of the five templates (T1-T5) available in the Advanced tool:

T1: %PDFIN% <op> output %FOLDER%
  • Op = burst, unpack_files
  • Output files are saved in %FOLDER% specified in "Change Output Folder" item on form. The default output folder is the folder where the source PDF file (%PDFIN%) is located. Note: %FOLDER% is not part of the PDFtk command, but rather is used by PDFTK Builder when relocating output files to their final user-specified location.
  • The optional "output" section specifies file name and number of digits in page number suffix, e.g. output MyFile_%03d.pdf generates MyFile_001.pdf, _002.pdf, etc. If "output" section is omitted, files are left with the default file names pg_0001.pdf, _0002.pdf, produced by PDFtk. Note: To facilitate entering the optional printf-formatted file name output argument, pressing Shift and the > button simultaneously will copy the source file name and corresponding printf page number suffix to the clipboard so it can be pasted into the template after the word "output".
  • If %FOLDER% is deleted from the template, the output section must specify the full path and name format for output page files in quotes.

Examples:

T1-1: %PDFIN% burst %FOLDER%

T1-2: %PDFIN% burst output "MyFile_%03d.pdf" %FOLDER%

T1-3: %PDFIN% burst output "C:\Temp\MyFile_%02d.pdf%"

T1-4: "C:\Temp\MyFile.pdf" burst output "C:\Temp\ MyFile_%02d.pdf%"

T1-5: %PDFIN% unpack_files output %FOLDER%

Note: Examples T1-2 and T1-3 above illustrate that it is actually possible to replace one or more placeholders with explicit text entered by the user rather than relying on the placeholders to supply file paths via the GUI. However, using placeholders is generally recommended since it simplifies template editing and reduces the likelihood of errors.

T2: %PDFIN% <op> output %TXTOUT%
- Op = dump_data, dump_data_utf8, dump_data_fields, dump_data_fields_utf8, dump_data_annots, generate_fdf
- Files are output to a TXT file in the %PDFIN% folder with same name as %PDFIN% but with the .pdf extension replaced with _data.txt, _data_utf8.txt, _fields.txt, _fields_utf8.txt, _annots.txt, _fdf.txt. Output folder and file name are not selectable by the user.

    Examples:
    T2-1: %PDFIN% dump_data output %TXTOUT%
    T2-2: %PDFIN% generate_fdf output %TXTOUT%

    Note: If the source PDF file in the above examples were named MyFile.pdf, the resulting output TXT files would be named MyFile_data.txt and MyFile_fdf.txt, respectively.

T3: %PDFIN% <op> output %PDFOUT%
- Op = none (filter mode), cat, rotate

    Examples:
    T3-1: %PDFIN% input_pw foopass output %PDFOUT%
    T3-2: %PDFIN% cat 1-4right 5-end output %PDFOUT%
            or equivalently, %PDFIN% rotate 1-4right output %PDFOUT%
    T3-3: %PDFIN% cat 1-endodd output %PDFOUT%
    T3-4: %PDFIN% input_pw foopass cat 1-12left 14-end output %PDFOUT

    Note: The input_pw argument for %PDFIN% can be manually included by the user in an edited template as shown in examples T3-1 and T-3-4 above if %PDFIN% is encrypted.

T4: %PDFIN% <op> %XXXFILE2% output %PDFOUT%
- %PDFFILE2%: Op = background, multibackground, stamp, multistamp
  Note: These operations require a secondary PDF file %PDFFILE2% containing the watermark and ns watermark all pages of the source file. The option to watermark only the first page that is available in the PDFTK Builder 'Mark Pages' tab sheet is accomplished by a sequence of PDFtk commands: (1) extracting page 1 of the input file to a separate file (cat), (2) watermarking it and then (3) combining (cat) it with pages 2-end of the input file.
- %TXTFILE2%: Op = update_info, update_info_utf8, fill_form
  Note: These operations require a secondary text file %TXTFILE2% with the updated metadata. The names of the secondary text files will typically have the same name as those produced by template T2; e.g. if the source file is named file1.pdf then the secondary text file for PDFtk operation update_info will typically be named (but is not constrained to) file1_data.txt.
- %ANYFILE2%: Op = attach_files
  Note: Any type of secondary file %ANYFILE2% can be attached to source PDF file. Although the raw PDFtk operation attach_files can attach multiple files in a single command, the PDFTK Builder interface is limited to attaching one file at a time. Repeat the command to add additional attachments. Example T4-5 also illustrates the use of the to_page option to attach the file to specific page other than the default of page 1.

  Examples:
  T4-1: %PDFIN% stamp %PDFFILE2% output %PDFOUT%
  T4-2: %PDFIN% multibackground %PDFFILE2% output %PDFOUT%
  T4-3: %PDFIN% update_info %TXTFILE2% output %PDFOUT%
  T4-4: %PDFIN% attach_files %ANYFILE2% output %PDFOUT%
  T4-5: %PDFIN% attach_files %ANYFILE2% to_page 6 output %PDFOUT%

T5: A=%PDFIN% B=%PDFFILE2% <op> output %PDFOUT%
- Op = cat, shuffle
- The PDFTK Builder interface limits this template to merging only two PDF files (%PDFIN% and %PDFFILE2%) at a time. Repeat the command to merge more than two files. While the PDFTK Builder, 'Join Files' tab sheet can merge more than two files at a time, it is limited to specifying page range options only. This Tools-Advanced form of cat or shuffle can include any applicable arguments.

  Examples:
  T5-1: A=%PDFIN% B=%PDFFILE2% cat A1-4 B A5-end output %PDFOUT%
  T5-2: A=%PDFIN% shuffle %PDFFILE2% A Bend-1 output %PDFOUT%
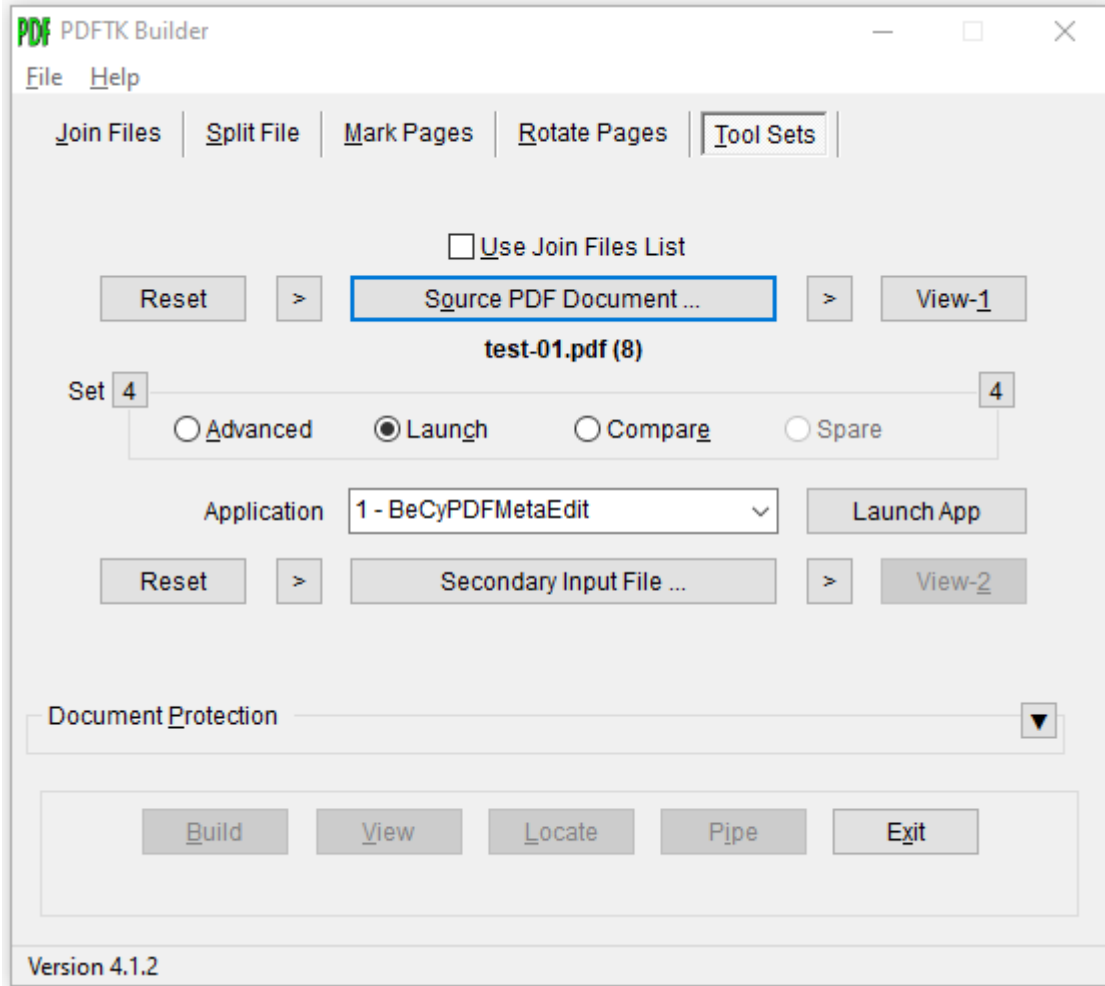
Tool Sets tab sheet with Set 4/Launch selected

The 'Launch' function will launch an external application chosen from the Application drop down list with the source PDF file (%PDFIN%) and secondary input PDF file (%PDFFIILE2% if applicable) as inputs if those files have been selected. This function allows PDFTK Builder to be augmented with other free PDF tools. The application is launched by clicking on the 'Launch App' button rather the 'Build' button. Up to five external apps can be configured in the [Applications] section of the PdftkBuilder.ini file as shown in the following example:

[Applications]
. . .
App1Item=App1 - BeCyPDFMetaEdit
App1Exe=C:\Program Files (x86)\BeCyPDFMetaEdit\BeCyPDFMetaEdit.exe
App1Arg=%PDFIN%
. . .

See Appendix C and examples in the .ini file for details on configuring the 'Launch' function.
See Appendix E for recommended applications.
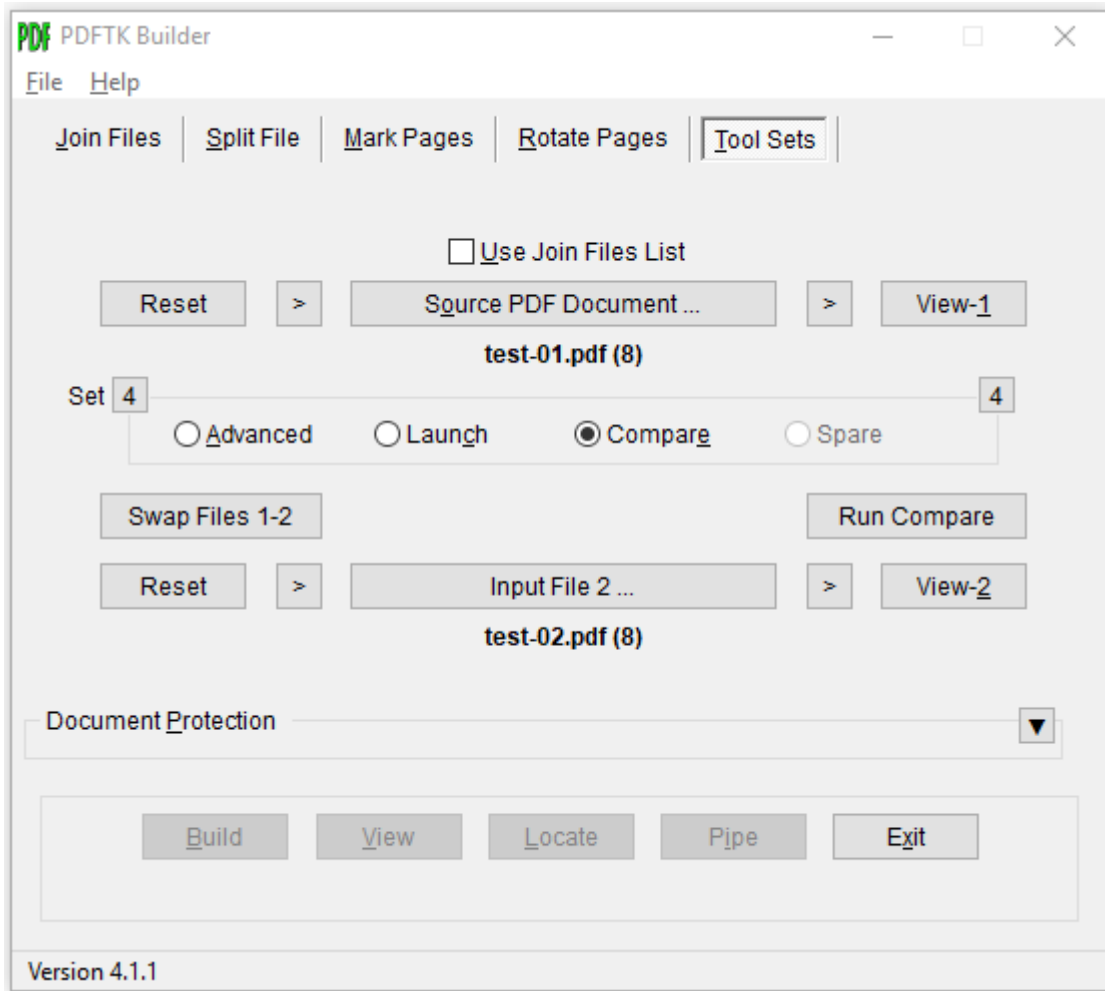
Tool Sets tab sheet with Set 4/Compare selected

The 'Compare' function will run a comparison of the text of two PDF files using an external app. The 'Compare' radio button is enabled if an appropriate external PDF text comparison app, such as WinMerge with xdocdiff plugin (free) or Beyond Compare (paid), has been installed on the machine and configured in the PdftkBuilder.ini file. The GUI facilitates selection of the two PDF files to be compared (Source PDF Document and Input PDF File 2) and launching of the app. The two PDF files can be selected via drag and drop from Windows Explorer. The compare application is launched by clicking the 'Run Compare' button and runs in a separate window.

See Appendix C for further details on configuring the 'Compare' function.

Tool Sets Error Codes

Set 1 - Update Info:

    D01: The required _data.txt input data file was not found.
    Explanation: The _data.txt file is not in the source PDF folder or has been renamed.
    The name and folder of the source PDF document and corresponding data file must match.

Set 3 - Fill Form:

    D02: The required _fdf.txt input data file was not found.
    Explanation: The _fdf.txt file is not in the source PDF folder or has been renamed.
    The name and folder of the source PDF document and the corresponding form data file
    must match.

Set 4 - Advanced:

    A01: Missing %PDFIN% placeholder
    Explanation: %PDFIN% must be the first item in all templates. Check for editing error.

    A02: Need to replace <op> with PDFtk operation
    Explanation: <op> has not been edited out to replace it with an actual PDFtk operation.

    A03: %XXXFILE2% placeholder not applicable
    Explanation: %XXXFILE2% is valid only in template T4.

    A04: No PDFtk operation found in template
    Explanation: No PDFtk operation was found in template. Check for editing error.

    A05: Placeholder missing or not applicable
    Explanation: A required placeholder Is missing or a placeholder is present that is not
    applicable to the template.

    A06: PDFtk operation not applicable in this template
    Explanation: The entered PDFtk operation is not applicable in the current template. The
    'Hint' on the form lists which operations apply to the template.

    A07: Extra secondary file placeholder or PDFtk operation not applicable
    Explanation: The T4 or T5 template contains an extra secondary input file placeholder, a
    secondary input file that does not exist, or a PDFtk operation that is not applicable.

Appendix B, PDFtk Command Syntax

pdftk < input PDF files | - | PROMPT >
    [input_pw < input PDF owner passwords | PROMPT >]

    [< operation > < operation arguments >]

    [output < output filename | - | PROMPT >]

    [encrypt_40bit | encrypt_128bit]
    [allow < permissions >]
    [owner_pw < owner password | PROMPT >]
    [user_pw < user password | PROMPT >]

    [flatten] [need_appearances]
    [compress | uncompress]
    [keep_first_id | keep_final_id]
    [drop_xfa]
    [verbose]
    [dont_ask | do_ask]

Where:
    < operation > can be empty, or:
    [cat | shuffle | burst | rotate |
    generate_fdf | fill_form |
    background | multibackground |
    stamp | multistamp |
    dump_data | dump_data_utf8 |
    dump_data_fields | dump_data_fields_utf8 |
    dump_data_annots |
    update_info | update_info_utf8 |
    attach_files | unpack_files]
and
    <permissions> can include one or more of the following:
    Printing – Top Quality Printing
    DegradedPrinting – Lower Quality Printing
    ModifyContents – Also allows Assembly
    Assembly
    CopyContents – Also allows ScreenReaders
    ScreenReaders
    ModifyAnnotations – Also allows FillIn
    FillIn
    AllFeatures – Allows the user to perform all of the above, and top quality printing.

Appendix C, Configuring PDFTK Builder

PDFTK Builder and Required Software

1. **PDFTK Builder:** Download the PdftkBuilder-n.n.n-portable.zip file (n.n.n = version number) and unzip it to a folder of your choice; e.g., C:\Util\PDFTK Builder or a subfolder of your Downloads folder. The resulting folder should contain the following files:

pdftk.exe   (PDFtk Server executable)
libiconv2.dll   (GNU Win32 package to convert between character encodings)

PdftkBuilder.exe   (PDFTK Builder executable)
PdftkBuilder.ini   (PDFTK Builder configuration file)

license.txt   (Licensing info)
instructions.txt   (Abbreviated instructions)

\docs subfolder containing the following 9 files
  PdftkServer.pdf   (PDFtk Server Reference Manual)
  PdftkBuilder.pdf   (PDFTK Builder User Guide)
  PdftkBuilder.htm   (PDFTK Builder Help File)
  pdftkb.png
  pdftkb_context_menu.png
  pdftkb_split.png
  pdftkb_number.png
  pdftkb_rotate.png
  pdftkb_compare.png

Note: If the PDFtk executable (pdftk.exe) is not included in your copy of the PDFTK Builder distribution, download the PDFtk Server installer for Windows from **https://www.pdflabs.com/tools/pdftk-server/** and run it. Then copy the installed pdftk.exe file from C:\Program Files (x86)\PDFtk Server\bin\ to your PDFTK Builder folder or set PdftkPath in the PDFTK Builder configuration file to the folder where pdftk.exe is located. If you are planning in running PDFtk on Windows XP, also copy the file libiconv2.dll which PDFtk Server uses for converting between character encodings.

2. **Accelerator Key Underlines.** The display of keyboard shortcut (access key) underlines is a Windows setting and should be enabled in *PC Settings > Ease of Access > Keyboard > Change how keyboard shortcuts work* if not visible. (Note: If the underlines are already enabled but are not displayed when first starting PDFTK Builder but do display after accessing a button via a mouse click, try setting underlines to Off and then back to On.)

3. **[Applications]** If the PDF Compare and Launch tools (in Tool Set 4) or non-default .txt and .pdf viewer apps are to be used, the required apps will need to be installed and the association made in the [Applications] section of the PdftkBuilder.ini file. Default values for settings will be assumed if no value is given for the item or if the entire line for the setting is deleted or commented out.

1. Provide an explicit path for pdftk.exe if it is not located in your PDFTK Builder program folder (default location)

  PdftkPath=C:\Program Files (x86)\PDFtk Server\bin\

2. (Optional) Provide explicit paths and arguments (args) for the PDF and text viewers if you want to use non-default apps for opening .pdf and .txt files. Typical default apps are Adobe Reader and Notepad, but the apps used within PDFTK Builder can be configured in the .ini file without changing the Windows file association for the .pdf and .txt file types. For example,

  PdfExe=C:\Program Files (x86)\SumatraPDF\SumatraPDF.exe
  PdfArg=%PDFFILE%

  TxtExe=C:\Program Files (x86)\Notepad++\notepad++.exe
  TxtArg=%TXTFILE%

3. (Optional) Install and provide an explicit path and args for a compatible PDF text compare program to enable the "Compare" function in Tool Set 4. See next page for detailed instructions for installing WinMerge (with xdocdiff plugin) and setting the Compare app path and args.

4. (Optional) Install and provide explicit name of the item to be displayed in the Application combo box, .exe path and args for up to five external apps that can be launched from the 'Launch' function of Tool Set 4. The following is an example of an entry for item 1 of 5.

  App1Item=1 - BeCyPDFMetaEdit
  App1Exe=C:\Program Files (x86)\BeCyPDFMetaEdit\BeCyPDFMetaEdit.exe
  App1Arg=%PDFIN%

See the PdftkBuilder.ini file for instructions and examples. See following pages for a sample of a complete, configured .ini file.

Installing the WinMerge PDF Text Compare Tool (Tool Set 4-Compare)

The Compare function (in Tool Set 4) requires an external app that automatically extracts the text of the two PDF files and then runs a text compare. The input files are .pdf files, not .txt files, and therefore the compare app may need to use a plugin to convert the input PDF files to text format. Recommended software: (1) WinMerge with xdocdiff plugin (both free) or (2) Beyond Compare (commercial; no plugin needed).

Instructions for (1) WinMerge are as follow: Install WinMerge first (A.1/2 below). Launch WinMerge and enable Plugins-Automatic Unpacking (A.3). Install the xdocdiff plugin (B). Finally, edit the PdftkBuilder.ini file (C).

A. WinMerge Installation (Note: A portable .zip file distribution is also available.)

1. Download the WinMerge installer from:
        http://winmerge.org/downloads/   (select default 32-bit installer, -Setup.exe)
2. Run the setup program. The 32-bit program will be installed in:
        C:\Program Files (x86)\WinMerge. The executable is WinMergeU.exe.
3. Launch WinMerge and select [Plugins]-[Automatic Unpacking] and exit program.

B. Xdocdiff Plugin Installation

1. Download the xdocdiff plugin zip file from:
        http://freemind.s57.xrea.com/xdocdiffPlugin/en/index.html
2. Unzip the file.
3. Copy files xdoc2txt.exe and zlib.dll to the WinMerge program folder.
4. Copy file amb_xdocdiffPlugin.dll to the WinMerge subfolder "MergePlugins".

C. PDFTK Builder Configuration File (.ini)

See that the CompareExe and CompareArg items in the Applications section of PdftkBuilder.ini are filled in as follows:

        CompareExe=C:\Program Files (x86)\WinMerge\WinMergeU.exe
        CompareArg=/e %PDFIN% %PDFFILE2%

Note: If the WinMerge side-by-side comparison of the two PDF files displays strange characters rather than expected text of the two files, check that *Automatic Unpacking* has been selected in the *Plugins menu* of WinMerge as required by step A.3 above.

Sample PdftkBuilder.ini

; PdftkBuilder.ini - Rev 0 - Configuration file for PDFTK Builder (pdftkb) Version 4.1.6
; Note: Comment lines begin with a semicolon and are ignored when loading the file
; Default values of parms are applied by commenting out or deleting the corresponding line

; [Numbering] section contains settings for Mark Pages-Number Pages.
; [Application] section contains command line parms for apps that pdftkb uses for displaying
; PDF and TXT files and for performing PDF text comparisons (Tool Set 4-Compare). It also
; contains command line parms for up to five user specified external apps (Tools-Launch).
; [<User>] section has the user's name. When exiting, pdftkb records its last window position,
; protection panel state, and stamp/bg file so they can be recalled next time user runs pdftkb.

[Numbering]
; Following specifies North American Letter (ANSI A) or ISO A4 pages in points (1/72 in)
; with 1 inch (25 mm) horizontal and vertical page margins
; 612x792 pts (215.9x279.4 mm, 8.5x11 in) = Letter (ANSI A) PageWidth x PageHeight
; 595x842 pts (210x297 mm, 8.27x11.69 in) = A4 (ISO) PageWidth x PageHeight (default)
; Comment out the PageWidth and PageHeight lines for the page size to be ignored

PageWidth=612
PageHeight=792
; PageWidth=595
; PageHeight=842
NumOffsetX=72
NumOffsetY=36
NumSize=10
DateTimeFormat=dd mmm yyyy

[Applications]
; Provide pdftk version if not using pdftk 2.xx (2.02 is default)
; PdftkVersion=1.41

; Provide explicit path for pdftk.exe folder if pdftk.exe not located in pdftkb folder
; PdftkPath=C:\Program Files (x86)\PDFtk Server\bin\

; Provide explicit .exe path and args if not using default apps (Windows file association)
; to open (view) .pdf and .txt files. File placeholder %PDFFILE% or %TXTFILE% is required
; in arg if app and arg are both specified
PdfExe=C:\Program Files (x86)\Adobe\Reader 11.0\Reader\AcroRd32.exe
PdfArg=/A "pagemode=thumbs" %PDFFILE%
; Comment out the following two lines to use default .txt app (e.g., Notepad)
; TxtExe=C:\Program Files (x86)\Notepad++\notepad++.exe
; TxtArg=%TXTFILE%

; Provide explicit .exe path and args for PDF text compare app to enable Compare button
; on Tool Set 4. Uncomment following two lines to activate WinMerge with xdocdiff plugin
CompareExe=C:\Program Files (x86)\WinMerge\WinMergeU.exe
CompareArg=/e %PDFIN% %PDFFILE2%

; Up to 5 external PDF apps (App1-5) can be specified by Item, Exe and Arg
; Up to two input PDF file placeholders can be specified in Arg as follows
; %PDFIN% = source PDF file, %PDFFILE2% = secondary input PDF file (if applicable)
App1Item=1 - BeCyPDFMetaEdit
App1Exe=C:\Program Files (x86)\BeCyPDFMetaEdit\BeCyPDFMetaEdit.exe
App1Arg=%PDFIN%
App2Item=2 - PDFill PDF Tools
App2Exe=C:\Program Files (x86)\PlotSoft\PDFill\PDFill_PDF_Tools.exe
App2Arg=
App3Item=3 - PDF-XChange Editor
App3Exe=C:\Program Files\Tracker Software\PDF Editor\PDFXEdit.exe
App3Arg=%PDFIN%
App4Item=4 - PDF-Shuffler
App4Exe=C:\Util\PdfBookShuffler\pdfshuffler.exe
App4Arg=%PDFIN%
; App5Item=5 - Undefined
; App5Exe=
; App5Arg=

[kingd]
PosLeft=408
PosTop=45
BackgroundFile=
Expanded=1

[User] As shown in the last section of the above sample .ini file, the last background file used during a session (may be none), closing position of the PDFTK Builder window, and closing state of the Documentation Protection panel are automatically written out to the [User] section of the .ini file by PDFTK Builder at the end of a session so they recalled the next time the user runs the program. Depending on the installation and usage of the program, there can be multiple [User] sections in an .ini file, each labelled with a different user's Windows login name. The [User] section is the only part of the .ini file modified by the program.

[**Numbering**] Values for page width, page height, coordinates for the left footer position and font size in the [Numbering] section of the .ini file are specified in units of points (1/72 inch) and should normally not need to be changed. PDFTK Builder computes the corresponding settings on the fly for landscape orientation and the other five possible positions in the header and footer from the values for the bottom left position as needed.

DateTimeFormat: The expanded options of the page numbering function support using a date (%d) placeholder in headers and footers. A user can define the format for the %d placeholder by supplying the format specification in the DateTimeFormat item of the [Numbering] section. The default format is 'ddddd' (ShortDate Format) which us equivalent to m/d/yyyy or d/m/yyyy depending on locale. If a different format is desired temporarily for a particular document, simply enter the desired date as text rather than using the %d placeholder and having to change the setting in the .ini file and restart the program.

Examples:
dd mmm yyyy   01 Jun 2018
mmmm d, yyyy   June 1, 2018
ddd, mm/dd/yy   Fri, 06/01/18
dd.mm.yy @ hhmm GMT   01.06.18 @ 1500 GMT

Specifier	Displays
d	Day as a number without a leading zero (1-31).
dd	Day as a number with a leading zero (01-31).
ddd	Day using ShortDayNames (Sun-Sat).
dddd	Day using LongDayNames (Sunday-Saturday).
ddddd	Date in ShortDateFormat.
dddddd	Date in LongDateFormat.
m	Month as a number without a leading zero (1-12). If the m specifier immediately follows an h or hh specifier, the minute is displayed instead.
mm	Month as a number with a leading zero (01-12). If the mm specifier immediately follows an h or hh specifier, the minute is displayed instead.
mmm	Month using ShortMonthNames (Jan-Dec).
mmmm	Month using LongMonthNames (January-December).
yy	Year as a two-digit number (00-99).
yyyy	Year as a four-digit number (0000-9999).
c	Date in ShortDateFormat followed by the time in LongTimeFormat. The time is not displayed if the date-time value indicates midnight precisely.
h	Hour without a leading zero (0-23).
hh	Hour with a leading zero (00-23).
n	Minute without a leading zero (0-59).

| nn	Minute with a leading zero (00-59).
s	Second without a leading zero (0-59).
ss	Second with a leading zero (00-59).
z	Millisecond without a leading zero (0-999).
zzz	Millisecond with a leading zero (000-999).
t	Time in ShortTimeFormat.
tt	Time in LongTimeFormat.
am/pm	Time using the 12-hour clock for the preceding h or hh specifier, and displays 'am' for any hour before noon, and 'pm' for any hour after noon. The am/pm specifier can use lower, upper, or mixed case, and the result is displayed accordingly.
a/p	Time using the 12-hour clock for the preceding h or hh specifier, and displays 'a' for any hour before noon, and 'p' for any hour after noon. The a/p specifier can use lower, upper, or mixed case, and the result is displayed accordingly.
ampm	Time using the 12-hour clock for the preceding h or hh specifier and the contents of TimeAMString global variable (e.g., 'am', 'morning') for any hour before noon, and the contents of TimePMString global variable (e.g., 'pm', 'afternoon') for any hour after noon.
/	Date separator character given by DateSeparator global variable.
:	Time separator character given by TimeSeparator global variable.
'xx'/"xx"	Characters enclosed in single or double quotation marks are displayed as such, and do not affect formatting.

For further information, see
(1) **http://docwiki.embarcadero.com/Libraries/Tokyo/en/System.SysUtils.FormatDateTime**
(2) **http://www.delphibasics.co.uk/RTL.asp?Name=FormatDateTime**

Paper Sizes

ISO A paper sizes (width x height, portrait orientation)

Size	Millimeters	Inches	Points	
A0	841 × 1189	33.11 × 46.81	2384 x 3370	
A1	594 × 841	23.39 × 33.11	1684 x 2384	
A2	420 × 594	16.54 × 23.39	1191 x 1684	
A3	297 × 420	11.69 × 16.54	842 x 1191	
A4	210 × 297	8.27 × 11.69	595 x 842	← Default size (ISO)
A5	148 × 210	5.83 × 8.27	420 x 595	
A6	105 × 148	4.13 × 5.83	298 x 420	
A7	74 × 105	2.91 × 4.13	210 x 298	
A8	52 × 74	2.05 × 2.91	147 x 210	
A9	37 × 52	1.46 × 2.05	105 x 147	
A10	26 × 37	1.02 × 1.46	74 x 105	

The A-series consists of a logical set of paper sizes that are defined by the ISO 216 standard. The largest size (A0) measures one square meter. The height/width ratio remains constant (1:1.414) for all sizes. This means you get the A1 size by folding an A0 paper in two along its shortest side. Then fold the A1 size in two to get an A2 size paper, and so on… A-sizes are used to define the finished paper size in commercial printing. A4 is the most commonly used ISO paper size for office and home printing. ISO B- and C-series paper sizes are also defined. B-sizes are often used for posters; C-sizes are used for folders, postcards, and envelopes to match A-series paper.
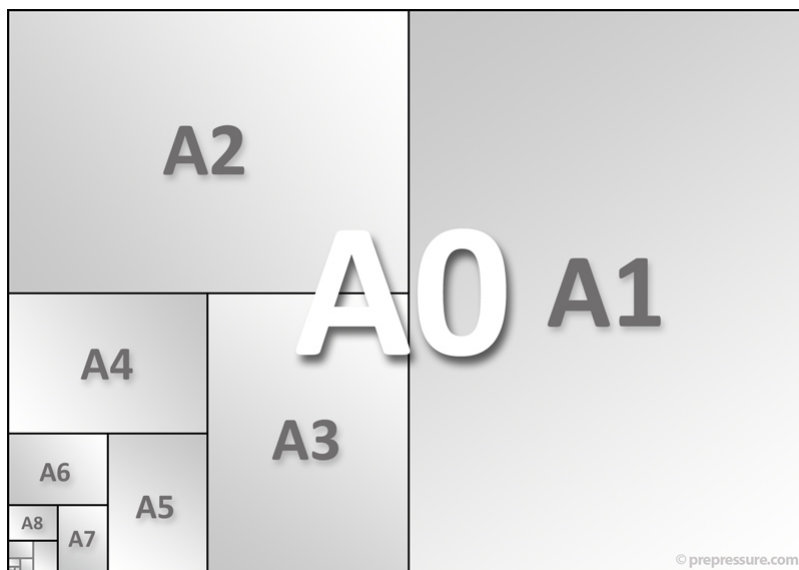
North American/ANSI paper sizes (width x height)

Size	Inches	Millimeters	Points	
Letter (ANSI A)	8.5 × 11	215.9 × 279.4	612 x 792	← Default size (ANSI)
Legal	8.5 × 14	215.9 × 355.6	612 x 1008	
Tabloid (ANSI B)	11 × 17	279.4 × 431.8	792 x 1224	
Ledger (ANSI B)	17 x 11	431.8 x 279.4	1224 x 792	
ANSI C	17 x 22	431.8 x 558.8	1224 x 1584	
ANSI D	22 x 34	558.8 x 863.6	1584 x 2448	
ANSI E	34 x 44	863.6 x 1117.6	2448 x 3168	

Letter (ANSI A) is the most commonly used paper size for printing in North America. Each ANSI size is a combination of two sheets of the preceding ANSI size. ANSI long-to-short side ratios alternate between 1.294 and 1.545, whereas ISO long-to-short side ratio is a constant 1.414.

ANSI A through E sheets are similar in size to ISO A4 through A0 sheets, respectively. For example, ANSI A (Letter) sheets measure 8.5 x 11 inches versus 8.3 x 11.7 inches for ISO A4 sheets. To print a document in A4 format on letter paper, set the magnification factor to 94% (11/11.7). To print a letter document on A4 paper, set the magnification to 97% (8.3/8.5).

References: **https://www.prepressure.com/library/paper-size**
                     https://en.wikipedia.org/wiki/Paper_size

Margins

The standard page margins for A4 and letter sheets are approximately equal, 25 mm and 1 inch (25.4 mm), respectively.

If A4 and letter users are sharing documents, it is recommended that layouts be restricted to an area that both sizes can accommodate. Authors preparing A4 sheets in portrait orientation should increase the bottom margin from 25 mm to 45 mm, while authors preparing letter sheets in landscape orientation should increase their bottom margin by 0.2 in (5 mm). These bottom margin adjustments will ensure that text will not extend into the no-go zone at the bottom of the page when viewed or printed on either sheet size at 100% magnification.

Note: Page size and margins are specified in the [Numbering] section of the PDFTK Builder .ini file. These parameters are only used when the 'Number Pages' option on the 'Mark Pages' tab is selected to apply page numbers or text labels to the header or footers of the source PDF document. Depending on the user's region, these parameters should be set for either standard A4 or letter sheets and should only need to be modified if a pages of a different size need to be numbered.

PDF Boundary Boxes

A PDF describes the content and appearance of one or more pages. It also contains a definition of the physical size of those pages. A PDF can define up to five rectangular boundary (page) boxes that relate to the size of the pages as follows:

- The <u>MediaBox</u> is used to specify the width and height of the page or press sheet. For the average user, the media box equals the actual page size. However, for prepress, the press sheet is typically oversized and trimmed after printing.
- The <u>CropBox</u> defines the boundary of the page that the PDF application is expected to display or print. The CropBox is generally not used in prepress applications.
- The <u>TrimBox</u> defines the dimensions of the finished page after it is trimmed. It is the basis for positioning pages on a press sheet. By default, the TrimBox equals the CropBox.
- The <u>BleedBox </u>defines the boundary to which the page contents need to be clipped when printed professionally to allow for trimming and folding. Usually the BleedBox is 3 to 5 millimeters larger than the TrimBox. By default, the BleedBox equals the CropBox.
- The <u>ArtBox</u> defines the region of meaningful content of the page, including white space.

A PDF always has a MediaBox definition. The MediaBox should be the largest page box in a PDF. Other page boxes may or may not be defined. Definition of a TrimBox, Bleedbox and/or Artbox are typically reserved for professional prepress applications. The adjacent figure shows a PDF prepared for prepress with its MediaBox outlined in magenta, the smaller BleedBox in cyan and the still smaller TrimBox in dark blue.

Reference:
https://www.prepressure.com/pdf/basics/page-boxes

The following example (obtained by using the Dump Data operator in Tool Set 1 of PDFTK Builder) shows the page metrics for page 1 of a PDF file with 8-1/2 x 11 inch (letter) pages and 1 inch margins which have been cropped by 7/8 inch (63 pts) on all sides for easier viewing. The resulting CropBox is defined by the PageMediaCropRect item below and is a 7-5/8 x 10-1/8-inch region having 1/8-inch margins and centered on the page.

PageMediaBegin
PageMediaNumber: 1
PageMediaRotation: 0
PageMediaRect: 0 0 612 792
PageMediaDimensions: 612 792
PageMediaCropRect: 63 63 549 729

Appendix D, PDFTK Builder Visual Controls and Accelerator Keys

	Visual Control	Keyboard	Notes
GENERAL			See note at end about Alt key.
Main Menu	File-Exit (menu)	Alt-FX	Close and exit program
	Help-Help (menu)	Alt-HC, F1	Display Help file (.html)
	Help-About (menu)	Alt-HA, Shift-F1	Display 'About' form
	Help-Guide (menu)	Alt-HG	Display User Guide (.pdf)
	Help-Settings (menu)	Alt-HS	View/Edit Settings (.ini)
Tab Sheets (ts)	Join Files (ts)	Alt-J, Ctrl-J	
	Split File (ts)	Alt-S, Ctrl-S	
	Mark Pages (ts)	Alt-M, Ctrl-M	
	Rotate Pages (ts)	Alt-R, Ctrl-R	
	Tool Sets (ts)	Alt-T, Ctrl-T	
Doc Protection	Doc Protect (dblClick) Arrow (btn)	Alt-P, Ctrl-P	Show/Hide Doc Protection
	Owner (edit)	Alt-W	Owner password
	User (edit)		User password
	Permissions (9 cb)		
Output	Build (btn)	Alt-B	
	View (btn)	Alt-V	View output file
	Locate (btn)	Alt-L	Open output file location
	Pipe (btn)	Alt-I	
	Exit (btn)	Alt-X, Esc	
JOIN FILES			
List	Add (btn) StringGrid (drag and drop)	Alt-A	Add file to StringGrid
		Alt-Shift-A	Add duplicate of selected file
	Remove (btn)	Alt-E or Del(ete)	Remove selected file. Del key does not apply if focus is on the 'Pages' edit box.
	Sort (btn)	Alt-O	Sort file list
	Move Up (btn)	Alt-U	Move selection up one row
		Alt-Shift-U	Move selection to top of list
	Move Down (btn)	Alt-D	Move selection down one row
		Alt-Shift-D	Move selection to bottom
	View-1 (btn) or Selection (dblClick)	Alt-1	View selected source PDF file
	Pages (edit)	Alt-G	
	Mode 1/2 (btn)		Display mode (1) name or (2) full path

	Shuffle (cb)		
	Reset (btn)		Reset Join Files sheet
	All (btn)		Reset All tab sheets
	Shift <Tab Ltr> (ts)	Alt-Shift-S, -M, -R, -T	Send selection to specified tab sheet (copies path of selected file, does not alter 'Join Files' list; same function available from context menu below)
Context Menu	View File (popMenu)	V	Also View btn & dblClick selection
	Locate File (popMenu)	L	
	Copy Path (popMenu)	C	
	Extract Pages (popMenu)	E	
	Split File (popMenu)	S	Send selection to Split Files
	Mark Pages (popMenu)	M	Send selection to Mark Pages
	Rotate Pages (popMenu)	R	Send selection to Rotate Pages
	Tool Sets (popMenu)	T	Send selection to Tool Sets
	Properties (popMenu)	P	
TABS (2-5) GEN			
Buttons	Use Join Files List (cb)	Alt-U	
	Reset		
	Left > (btn)		Copy clipboard to src full path
	Source PDF Document	Alt-O	
	Right > (btn)		Copy src full path to clipboard
	View-1 (btn)	Alt-1	View source PDF document
SPLIT FILE			
	From (edit)		
	To (edit)		
	Odd/Even (cb)		
	Change Output Folder (btn)	Alt-C	
	Open (btn)	Alt-N	Open output folder
MARK PAGES			
	Background (rb)	Alt-K	
	Stamp (rb)	Alt-A	
	Number Pages (rb)	Alt-N	
B	Bkgrnd first page only (cb)	Alt-G	
S	Stamp first page only (cb)		
N	Skip first page (cb)		
BS	Bkgrnd/Stamp PDF (btn)	Alt-D	

BS	View-2 (btn)	Alt-2	View Background/Stamp PDF
N/+N	+/-		Number only
+N	Mirror (cb)		
+N	Position (combo-6)		Top-LRC, Bottom-LCR
+N	P/L (btn)		Portrait/Landscape
+N	From (edit)		Page Range <From> to <To>
+N	To (edit)		
+N	Starting Number (edit)		
+N	Prefix (edit)		[Prefix][%p%][Suffix]
ROTATE PAGES			
	Pages (edit)		List of page ranges (pdftk v2)
	Pages From (edit)		Single page range (pdftk v1)
	Pages To (edit)		
	Left 90 (rb)	Alt-E	
	Right 90 (rb)	Alt-G	
	Down 180 (rb)	Alt-D	
	Extract (rb)		
	Delete (rb)		
TOOL SETS	1>2>3>4> (Left Set btn)		Next Tool Set (forward)
	1>4>3>2> (Right Set btn)		Next Tool Set (reverse)
	1-1 Dump Data (rb)	Alt-D	Set 1 (Tools 1-4)
	1-2 Update Info (rb)	Alt-E	
	1-3 Attach File (rb)	Alt-C	
	Reset (btn)		
	Attachment File (btn)	Alt-A	
	Open (btn)	Alt-N	Open atch file in default app
	1-4 Unpack Files (rb)	Alt-K	
	Change Out Fldr (btn)		Change Output Folder
	Open (btn)		Open output folder
	2-1 Decrypt (rb)	Alt-D	Set 2 (Tools 5-8)
	Password (edit)		
	2-2 Repair (rb)	Alt-E	
	2-3 Uncompress (rb)		
	2-4 Compress (rb)		
	3-1 Dump Fields (rb)		Set 3 (Tools 9-12)
	3-2 Gen FDF (rb)		
	3-3 Fill Form (rb)		
	3-4 Flatten (rb)		
	4-1 Advanced (rb)	Alt-A	
	Reset (btn)		

	Template (btn)		T4>T5>T1>T2>T3>T4
	PDFtk Cmd (edit box)		Template text
	Reset (btn)		
	PDF/TXT/ANY (btn)		Secondary file type/filter
	Secondary File/Folder (btn)	Alt-Y	
	Open	Alt-N	
	Shift-Right > (btn)		Copy formatted output file name specification for individual page files; e.g., "MyFile_%03d.pdf" for use with 'burst' operation. Available only with T1 template is selected.
	4-2 Launch (rb)	Alt-C	Set 4 (Tools 13-16)
	Application (combo-5)		
	Launch App (btn)		
	Reset (btn)		
	Left > (btn)		
	Secondary File (btn)		
	Right > (btn)		
	View-2	Alt-2	
	4-3 Compare (rb)	Alt-E	
	Run Compare (btn)		
	Reset (btn)		
	Left > (btn)		
	Input File 2/1 (btn)		
	Right > (btn)		
	View-2	Alt-2	

Note: The Alt key functions as an escape key. In a hot key of the form Alt-X, the Alt key is generally optional unless the focus is on an edit box. If the focus is on an edit box, the Alt key and character (X) must be pressed simultaneously since the single lower case or upper case (Shift-) character will be interpreted as input in the edit box rather than as a hotkey. For menus (including context menus), the focus shifts to the menu when it is opened and shifts away from the menu when it closes after a selection is made, so the Alt key is always optional.

PDFTK Builder Hotkey Usage (Sorted by Scope of Control)

Char	Join	Split	Mark	Rotate	Tools	Notes
						COMMON CONTROLS
F	X	X	X	X	X	File (menu)
H	X	X	X	X	X	Help (menu)
J	X	X	X	X	X	Join Files (ts); also can use Ctrl-J
S	X	X	X	X	X	Split file (ts); also can use Ctrl-S
M	X	X	X	X	X	Mark Pages (ts); also can use Ctrl-M
R	X	X	X	X	X	Rotate Pages (ts); also can use Ctrl-R
T	X	X	X	X	X	Tool Sets (ts); also can use Ctrl T
P	X	X	X	X	X	Doc Protection (groupbox); also Ctrl-P
W	X	X	X	X	X	Owner Password (edit)
B	X	X	X	X	X	Build (btn)
V	X	X	X	X	X	View (btn) – View Output PDF
L	X	X	X	X	X	Locate Output (btn)
I	X	X	X	X	X	Pipe (btn)
X	X	X	X	X	X	Exit (btn)
						TAB SHEET-SPECIFIC CONTROLS
A	X		X		X2	Add (btn), Stamp (rb), Attachment File (btn), Advanced (rb)
C		X			X3	Change Fldr (btn), Attach File (rb), Compress (rb), Launch (rb)
D	X		X	X	X2	Down (btn), Back/Stamp File (btn), Down (rb), Dump (rb), Decrypt (rb)
E	X			X	X2	Remove (btn), Left (rb) Update Info (rb), Repair (rb)
G	X		X	X	X2	Pages (edit), First Page (cb), Right (rb), Change Unpack Folder (btn), Gen FDF (rb)
K			X		X	Background (rb), Unpack Files (rb)
N		X	X		X3	Open Split Folder (btn), Number (rb), Open Atch (btn), Uncompress (rb), Adv-Open Secondary File (btn)
O	X	X	X	X	X	Sort (btn), Source PDF (4 btn)
Q						
U	X	X	X	X	X	Up (btn), Use Join (4 cb)
1	X	X	X	X	X	View-1 (btn) – View Selection/ Source PDF
Y					X	Adv-Secondary File (btn)
Z						
_					X	Fill_Form (rb)
2			X		X2	View-2 (btn) – View Background/Stamp PDF, Tools-Launch/Compare File2
Del	X					Remove; only when focus not on edit box

PDFTK Builder Hotkey Usage (Sorted Alphabetically)

Char	Join	Split	Mark	Rotate	Tools	Notes
A	X		X		X2	Add (btn), Stamp (rb), Attachment File (btn), Advanced (rb)
B	X	X	X	X	X	Build (btn)
C		X			X3	Change Fldr (btn), Attach File (rb), Compress (rb), Launch (rb)
D	X		X	X	X2	Down (btn), Back/Stamp File (btn), Down (rb), Dump (rb), Decrypt (rb)
E	X			X	X2	Remove (btn), Left (rb), Update Info (rb), Repair (rb)
F	X	X	X	X	X	File (menu)
G	X		X	X	X2	Pages (edit), First Page (cb), Right (rb), Change Unpack Folder (btn), Gen FDF (rb)
H	X	X	X	X	X	Help (menu)
I	X	X	X	X	X	Pipe (btn)
J	X	X	X	X	X	Join Files (ts); also Ctrl-J
K			X		X	Background (rb), Unpack Files (rb)
L	X	X	X	X	X	Locate Output (btn)
M	X	X	X	X	X	Mark Pages (ts); also Ctrl-M
N		X	X		X3	Open Split Folder (btn), Number (rb), Open Atch (btn), Uncompress (rb), Adv-Open Secondary File (btn)
O	X	X	X	X	X	Sort (btn), Source PDF (4 btn)
P	X	X	X	X	X	Doc Protection (groupbox); also Ctrl-P
Q						
R	X	X	X	X	X	Rotate Pages (ts); also Ctrl-R
S	X	X	X	X	X	Split file (ts); also Ctrl-S
T	X	X	X	X	X	Tool Sets (ts); also Ctrl-T
U	X	X	X	X	X	Up (btn), Use Join (4 cb)
V	X	X	X	X	X	View Output PDF
W	X	X	X	X	X	Owner Password (edit)
X	X	X	X	X	X	Exit (btn)
Y					X	Adv-Secondary File (btn)
Z						
_					X	Fill_Form (rb)
1	X	X	X	X	X	View-1 (btn) – View Source PDF Doc
2			X		X2	View-2 (btn) – View Background/Stamp PDF, View Tools-Launch/Compare File2
Del	X					Remove

Appendix E, Other PDF Applications

1. Required PDF Applications (Free)

PDFtk Server - PDF Toolkit (PDFtk) command line tool (pdftk.exe)
**https://www.pdflabs.com/tools/pdftk-server/** (version 2.02)

2. Optional (Free)

WinMerge (with xdocdiff plugin) – Free text file/folder diff app. Uses xdocdiff plugin to convert the two PDF files to text before comparing. WinMerge (with xdocdiff plugin) or equivalent is required in order to enable the Compare function of Tool Set 4.
http://winmerge.org/downloads/ or
https://github.com/sdottaka/winmerge-v2/releases (fork with additional enhancements)
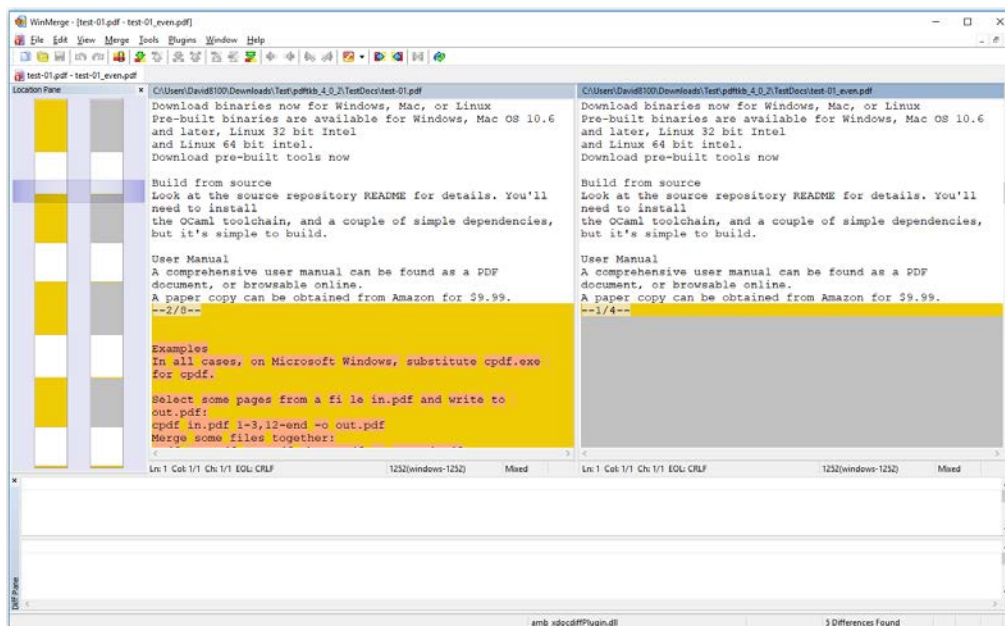
Note: The above WinMerge screenshot shows a text comparison of an 8-page PDF file (pages 1-8) and a 4-page PDF file containing only the even-numbered pages (pages 2, 4, 6, 8).

See Appendix C for detailed instructions for installing and configuring WinMerge with the xdocdiff plugin.

CompareExe=C:\Program Files (x86)\WinMerge\WinMergeU.exe
CompareArg=/e %PDFIN% %PDFFILE2%

Xdocdiff Plugin – plugin for WinMerge which allows text comparisons of PDF, rtf, MS Word, Excel, PowerPoint and other types of files
http://freemind.s57.xrea.com/xdocdiffPlugin/en/index.html

Xdoc2txt - Command line tool used by Xdocdiff plugin to extract text from multiple file formats.
http://ebstudio.info/home/xdoc2txt.html#download
https://documentation.help/xdoc2txt/xdoc2txt_en.html

Note: Xdoc2txt.exe (v1.46) is distributed as part of xdocdiff plugin (v1.0.06d) for WinMerge. Therefore, if you have installed the xdocdiff plugin for WinMerge, xdoc2txt.exe is already available in the WinMerge program folder. For later versions of Xdoc2txt, see above links.

App1Item=1 - Xdoc2txt
App1Exe=C:\Program Files (x86)\WinMerge\xdoc2txt.exe
App1Arg=-f %PDFIN%

Notes:

a. Many popular PDF reader applications include a 'Save As' command that can export the text of a PDF file. For example, if Adobe Reader (or Acrobat Reader DC) is your PDF viewer app used with PDFTK Builder, you can simply view the selected PDF file by clicking the View-1 button and then pick the 'Save as 'Other' (or 'Save as Text') option from the File menu of the Reader to export the text of the PDF to a separate file.

b. Another recommended standalone program for extracting text from PDF is pdftotext, part of the Xpdf command line tools. It operates similarly to Xdoc2txt above but is specifically for use with PDFs and includes options for maintaining the physical layout of the text and for specifying the sizes of left, right, top and bottom margins so text in the margins can be ignored.

Xpdf command line tools: **https://www.xpdfreader.com/download.html**
pdftotext man file: **https://www.xpdfreader.com/pdftotext-man.html**

c. Simple extract-and-compare text methods generally do not work well if there are large numbers of changes or the document has something other than a simple layout. More sophisticated approaches that make use of the internal structure of the PDFs and present and locate the changes visually in the context of the PDF pages can produce better and more usable results. The following web-based and desktop applications are recommended and free to use:

Draftable Online: **https://draftable.com/compare**
Kiwi PDF Comparer: **https://kiwipdfcomparer.com/**

3. Recommended PDF Applications (Free)

Adobe Acrobat Reader DC. De facto standard PDF viewer. Supports annotations and drawing markups, filling forms, saving PDF as text, and printing PDF in n-up or booklet format. **https://get.adobe.com/reader/**

Adobe Reader XI. Although Adobe Reader and Acrobat XI are now discontinued and no longer supported, Adobe Reader XI remains viable, particularly if you have an existing installation of Acrobat XI which you are not upgrading or prefer the traditional interface of XI over that of DC.
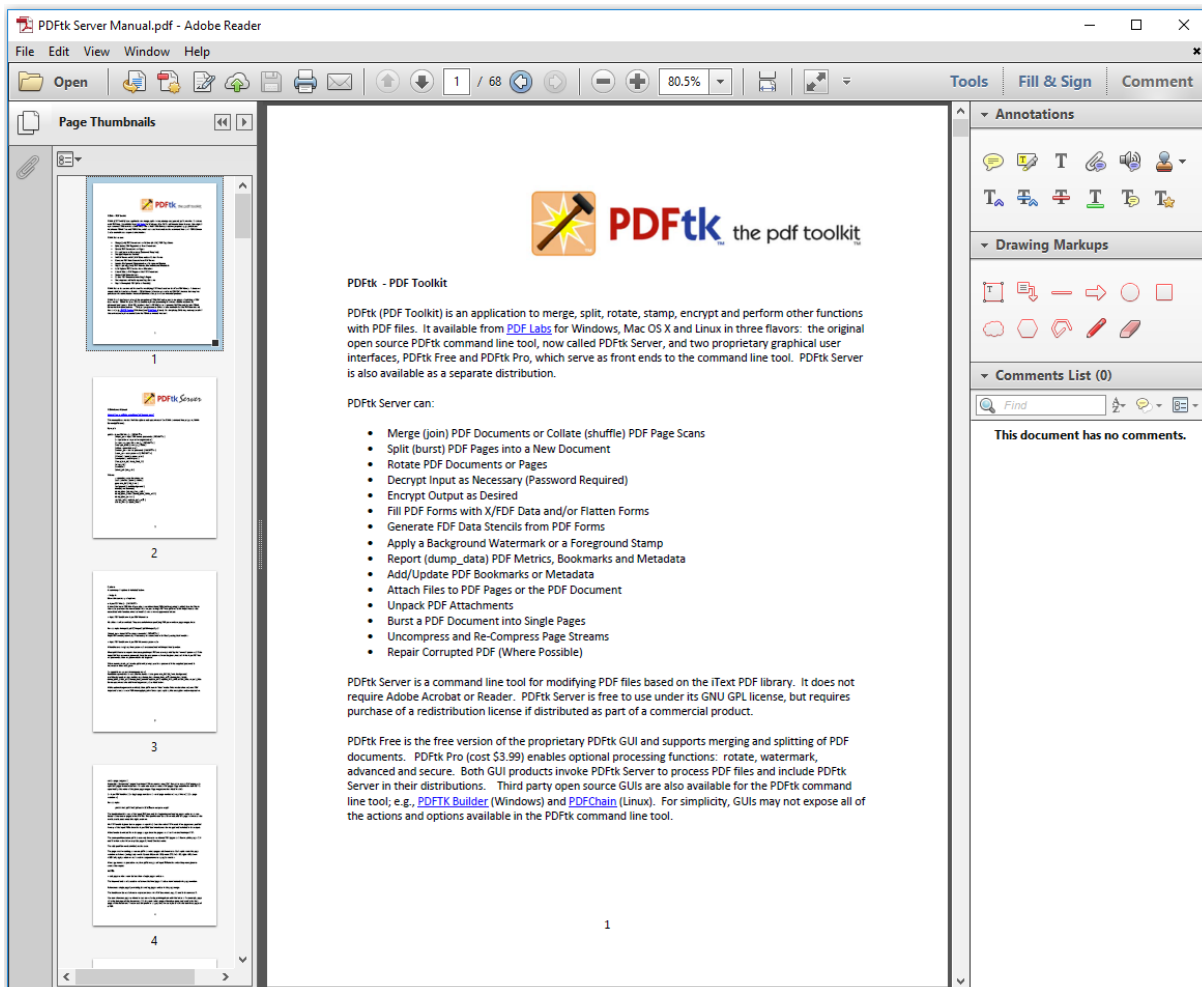
Note: The above screenshot depicts Adobe Reader XI (final version 11.0.23, Nov 2017).

PdfExe=C:\Program Files (x86)\Adobe\Reader 11.0\Reader\AcroRd32.exe
PdfArg=/A "pagemode=thumbs" %PDFFILE%

PdfExe=C:\Program Files (x86)\Adobe\Acrobat Reader DC\Reader\AcroRd32.exe
PdfArg=/A "pagemode=thumbs" %PDFFILE%

Sumatra PDF – Small, portable viewer for PDF, eBook, chm and other file formats.
https://www.sumatrapdfreader.org/free-pdf-reader.html

PdfExe= C:\Program Files (x86)\SumatraPDF\SumatraPDF.exe
PdfArg=%PDFFILE%

Item =1 - SumatraPDF
App1Exe= C:\Program Files (x86)\SumatraPDF\SumatraPDF.exe
App1Arg=%PDFIN%

Other PDF Readers

Foxit Reader Portable – Modern, full-featured PDF reader (free)
https://portableapps.com/apps/office/foxit_reader_portable

PDF-XChange Editor – PDF editor/viewer (free or paid)
https://www.tracker-software.com/product/downloads
https://www.tracker-software.com/product/pdf-xchange-editor#feature_list

Note: PDF-XChange Editor can be installed as a licensed (purchased) product or a free version.

App1Item=1 - PDF-XChange Editor
App1Exe=C:\Program Files\Tracker Software\PDF Editor\PDFXEdit.exe
App1Arg=%PDFIN%

MuPDF-gl – Lightweight PDF/E-book viewer based on same rendering engine as Sumatra and includes support for annotation (free)
https://www.mupdf.com/index.html
https://www.mupdf.com/docs/manual-mupdf-gl.html
https://www.mupdf.com/downloads/index.html

BeCyPDF Meta Edit – View and edit PDF metadata, viewer preferences, bookmarks, etc.
https://www.softpedia.com/get/Office-tools/PDF/BeCyPDFMetaEdit.shtml
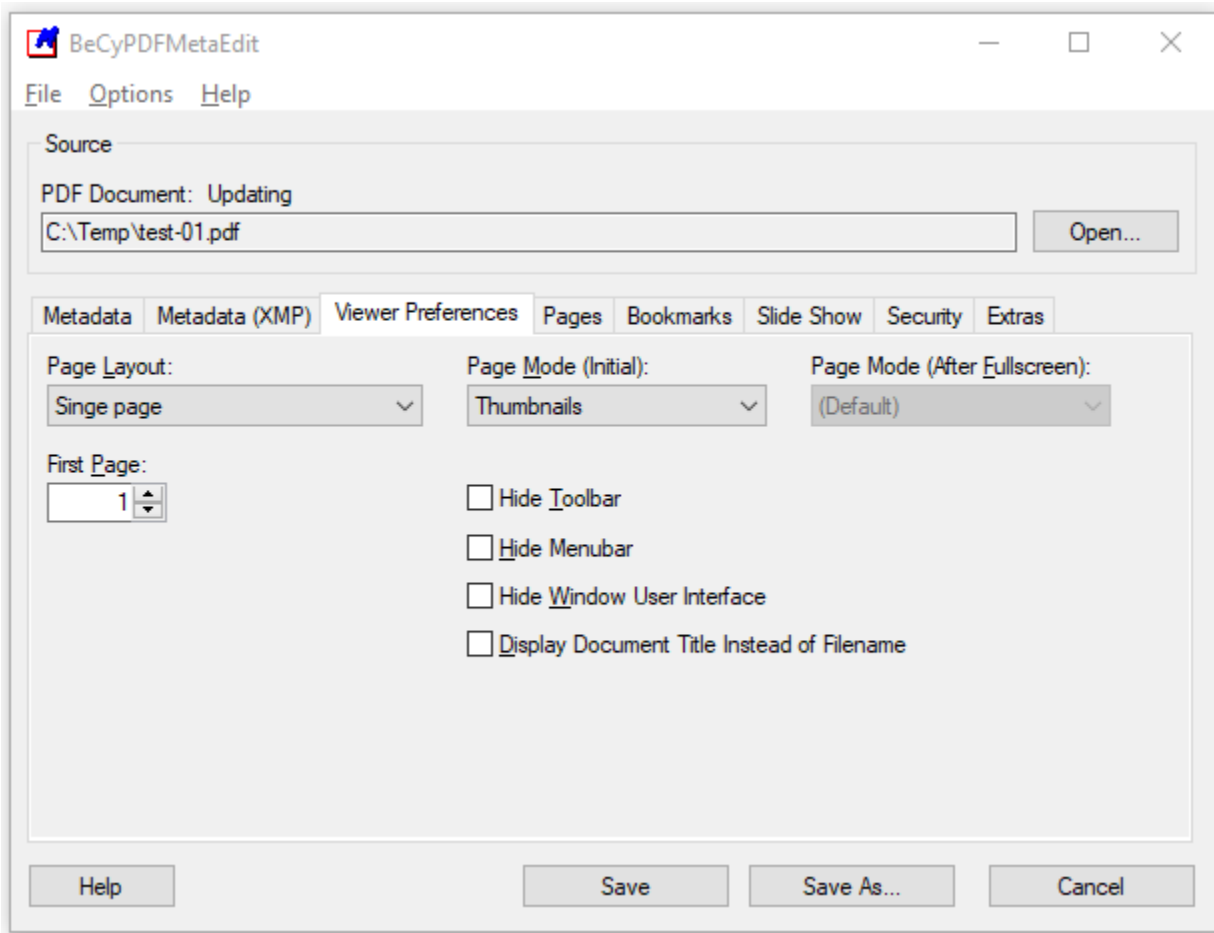
App1Item=1 - BeCyPDFMetaEdit
App1Exe=C:\Program Files (x86)\BeCyPDFMetaEdit\BeCyPDFMetaEdit.exe
App1Arg=%PDFIN%

jPDF Tweak – Java app that can merge, split, reorder, rotate, watermark, format multiple pages, change page numbers and labels, encrypt, add attachments, set viewer preference and metadata.
http://jpdftweak.sourceforge.net/
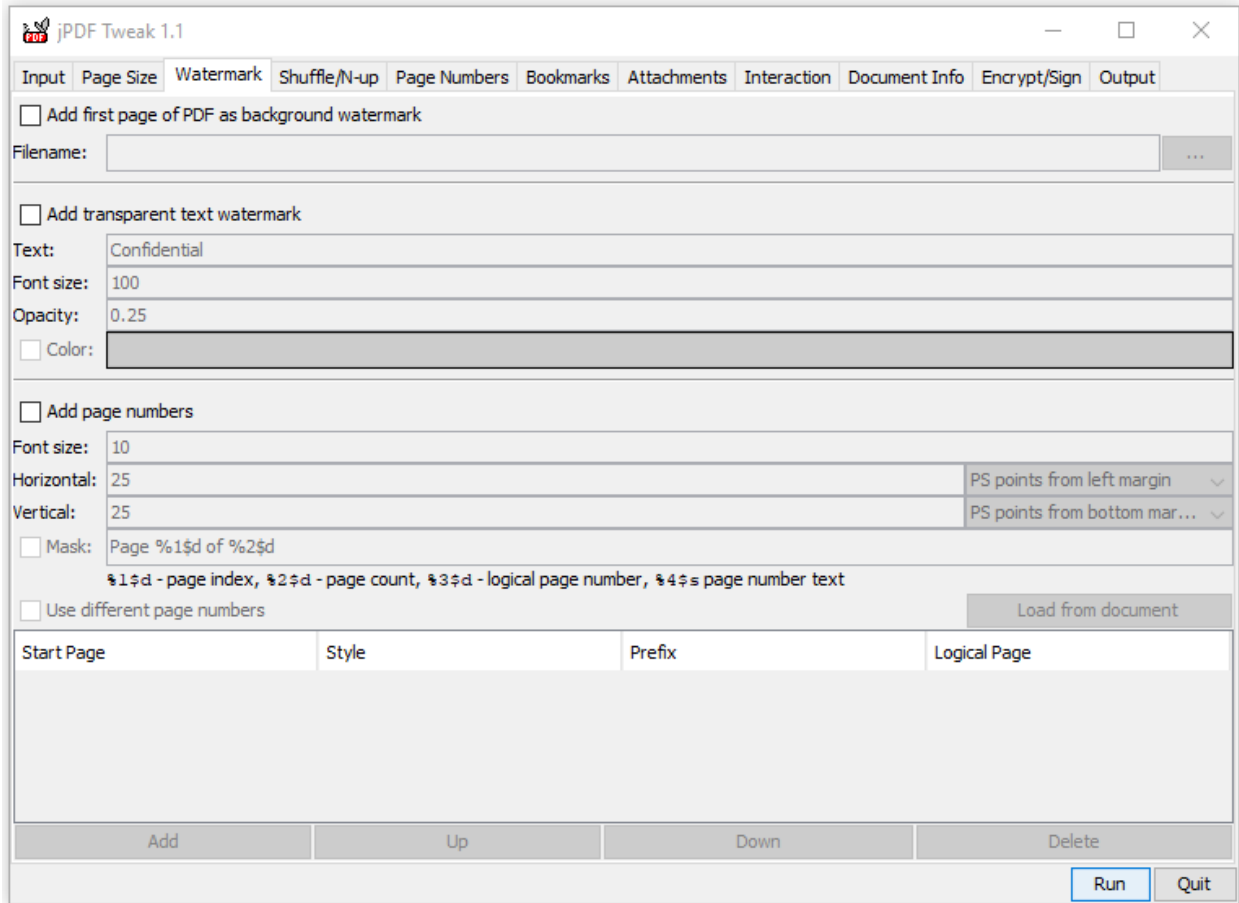
App1Item=jPDF Tweak
App1Exe= C:\ Program Files (x86)\jpdftweak-windows-x86-1.1\jpdftweak.jar
App1Arg=

Note: The above configuration launches the jPDF Tweak application in interactive mode. The source and output files must be manually selected on the jPDF Tweak input and output tabs, respectively.

PDFill PDF Tools – Collection of PDF split, merge, extraction and conversion tools.
https://www.pdfill.com/pdf_tools_free.html
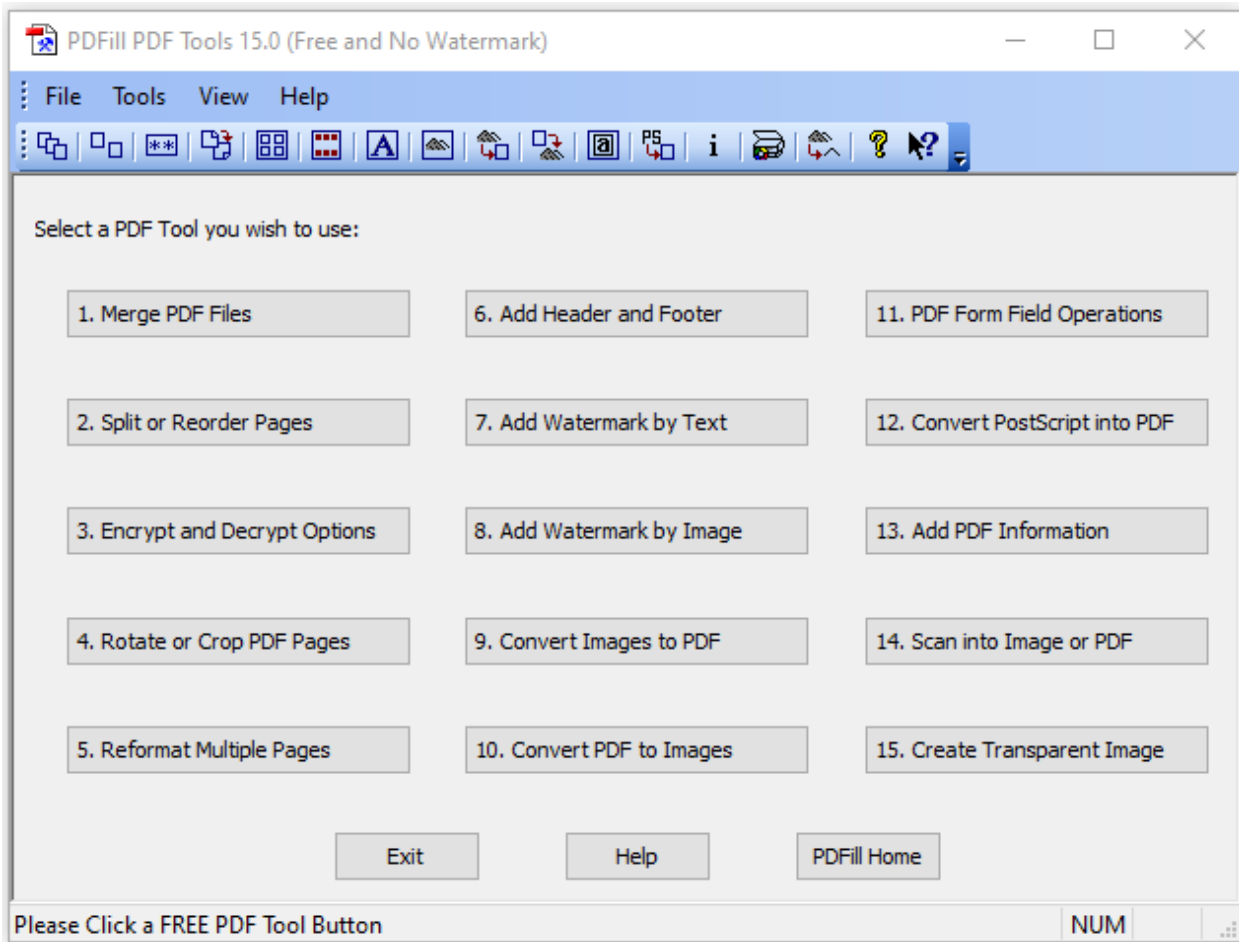
App1Item=1 - PDFill PDF Tools
App1Exe=C:\Program Files (x86)\PlotSoft\PDFill\PDFill_PDF_Tools.exe
App1Arg=

Note: The free PDFill PDF Tools (Free) app does not support command line and hence the source PDF document cannot be passed programmatically from PDFTK Builder. The source PDF file must be manually selected (or its path pasted) in the open file dialog of the selected tool.

Ghostscript – Postscript/PDF command line tool/DLL used by many third-party PDF tools for printing and manipulating PDF files (free)
https://ghostscript.com/download/gsdnld.html

PDF Shaper Free – Collection of tools to split, merge, watermark, sign, optimize, convert, encrypt and decrypt PDF documents, also insert and move pages, extract text and images (free for personal use).

http://www.pdfshaper.com/features.html
http://www.pdfshaper.com/download.html
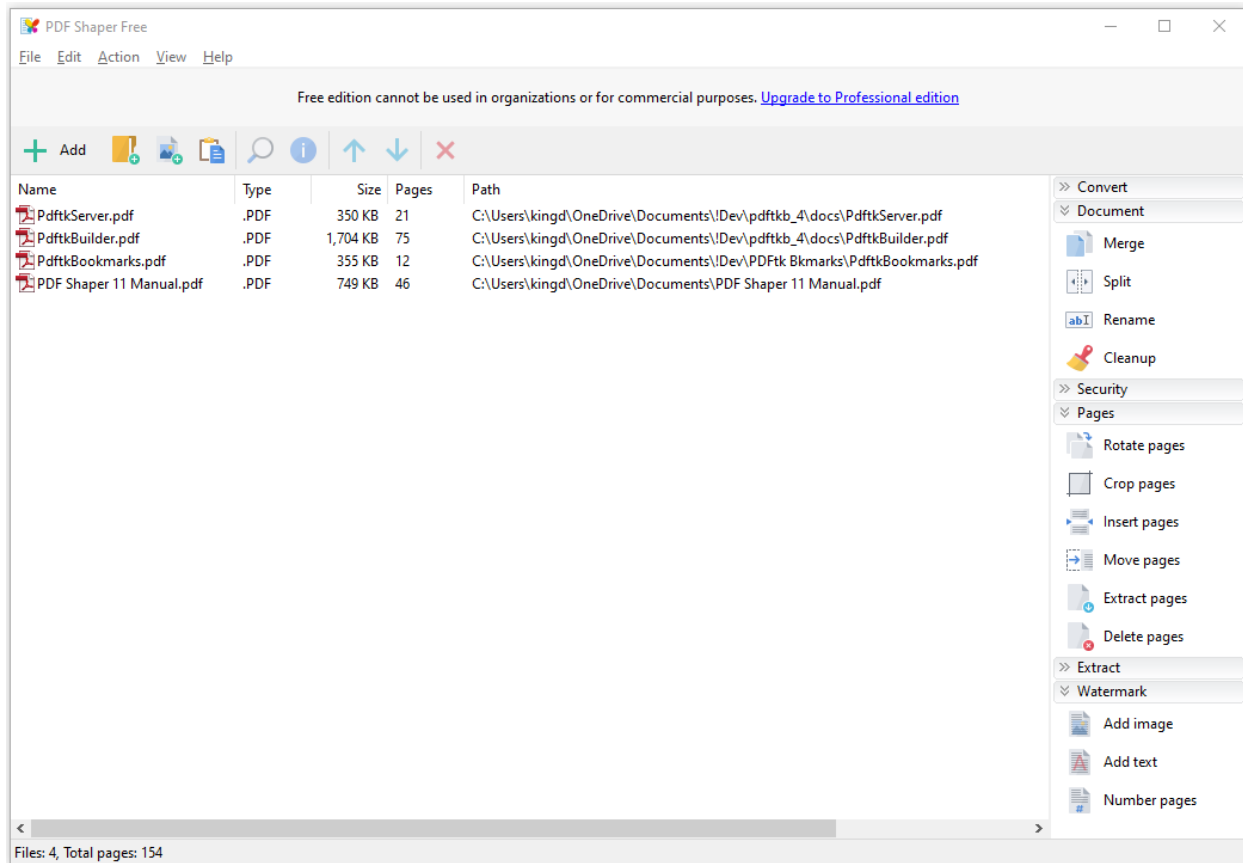
App1Item=1 – PDF Shaper Free
App1Exe= C:\Program Files (x86)\PDF Shaper Free\PDFShaper.exe
App1Arg=

Note: The source file cannot be passed programmatically to the PDF Shaper Free app. The source and output files must be manually selected within the application.

PDF Arranger – Small python-gtk application for merging PDF documents and rotating, cropping, and rearranging their pages using an interactive and intuitive graphical interface. It is a frontend for pikepdf and is a fork of PDF-Shuffler.

Note: Visual interfaces like those in PDF Arranger and PDF-Shuffler work best when the PDF documents are relatively small. The visual paradigm can become slow and unwieldy when dealing with large numbers of pages or files.)

https://github.com/pdfarranger/pdfarranger
https://github.com/pdfarranger/pdfarranger/releases
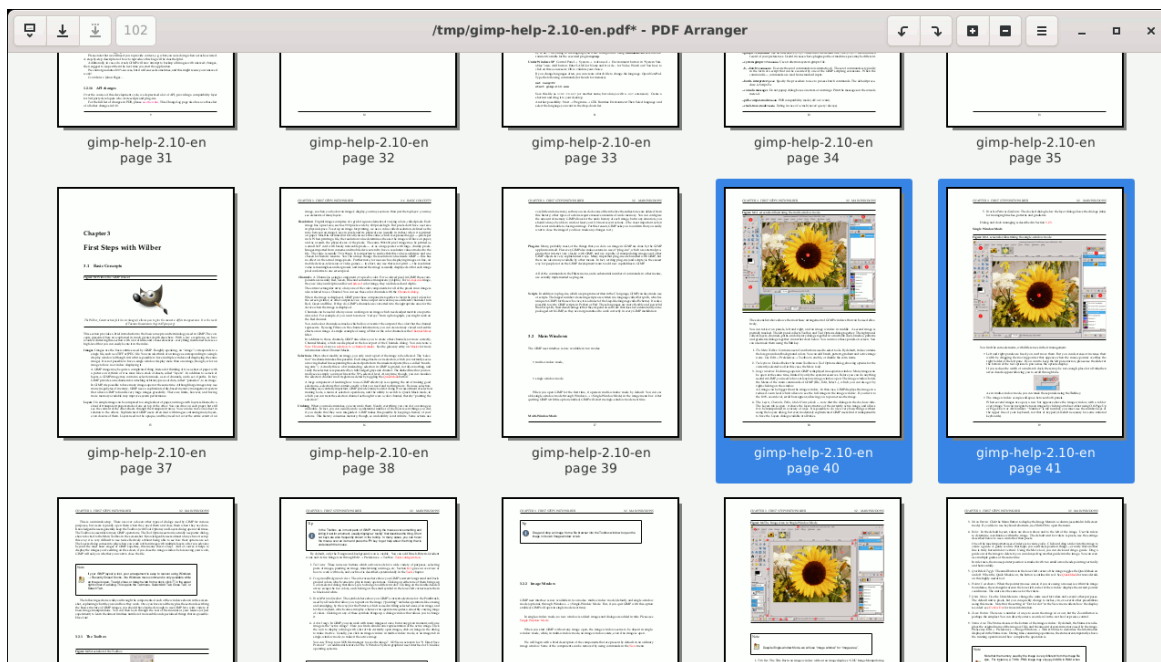
Tool Bar Icons (Left to Right): Open, Save, Save As, Number of Pages, Rotate Left, Rotate Right, Zoom In, Zoom Out, Main Menu (Main Menu: Import, New Window, Save, Save As…, Export >, Undo, Redo, Edit >, Select >, Zoom In, Zoom Out, Edit Properties, About, Quit)

Context Menu: Delete, Cut, Copy, Paste After, Paste Special >, Select >, Rotate Left, Rotate Right, Page Format, Crop White Borders, Duplicate Reverse Order, Split Page, Insert Blank Page, Export >

App1Item=1 – PDF Arranger
App1Exe=C:\Users\...\pdfarranger\pdfarranger.exe
App1Arg=%PDFIN%

PDFsam Basic – Java app to split, merge, and interleave PDF files; rotate and extract pages.
https://pdfsam.org/
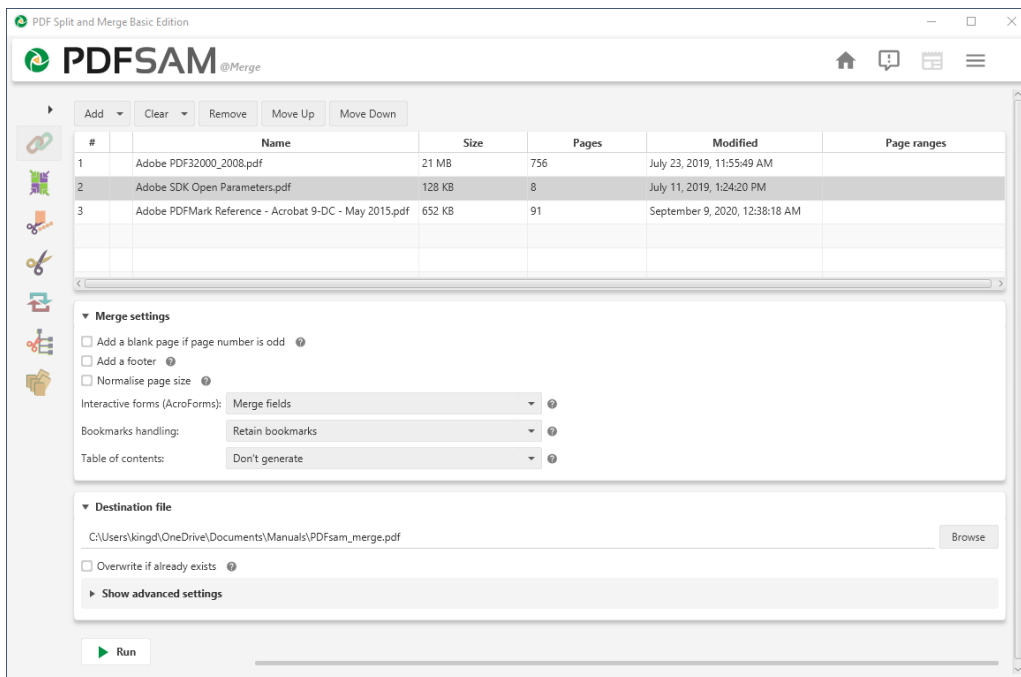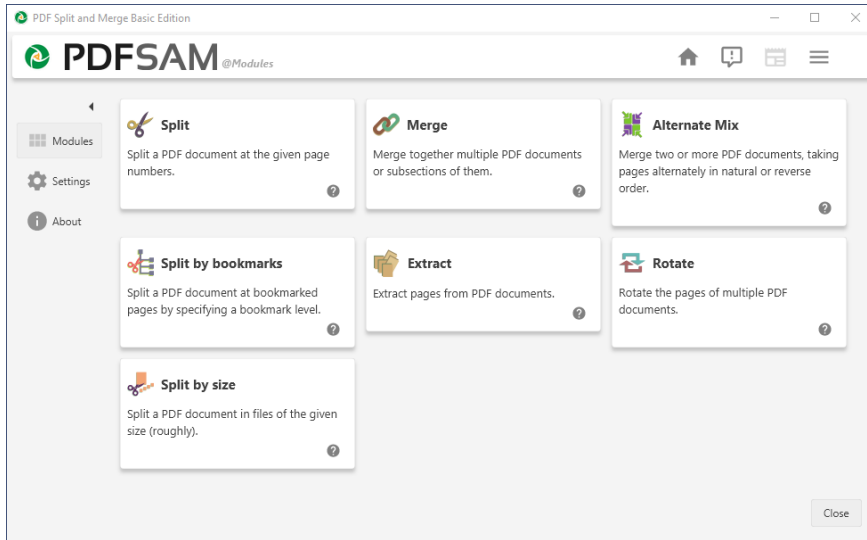
App1Item=1 – PDFsam Basic
App1Exe= C:\Program Files\PDFsam Basic\pdfsam.exe
App1Arg=

PDFtk Bookmarks Editor – free, graphical user interface (GUI) for updating PDF bookmarks using the Windows version of the PDF Toolkit (PDFtk) command line tool, PDFtk Server.
https://sourceforge.net/projects/pdftk-bookmarks-editor/files/
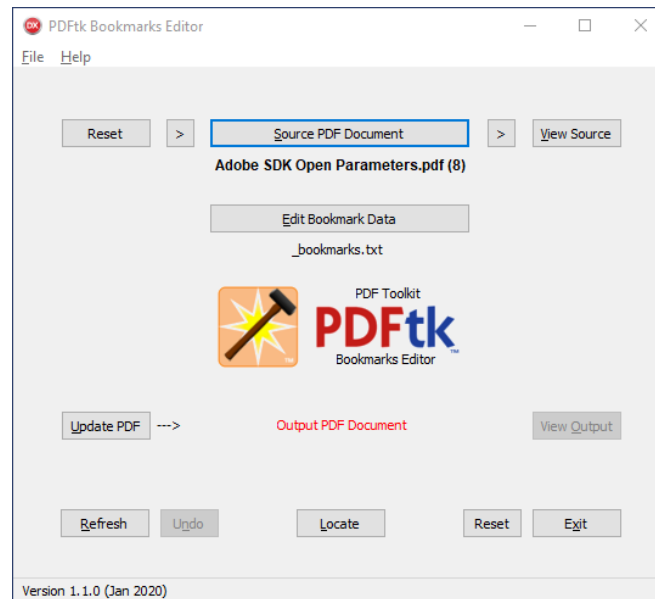
The source PDF can be selected via drag and drop or via the *Source PDF Document* button. The program will then automatically perform a PDFtk *dump_data* operation to extract any existing bookmark data to a text file which the user can then edit to add, delete or modify bookmarks. After editing and saving the bookmark data, the PDF can be updated via a PDFtk *update_info* command by clicking on the *Update PDF* button. The edited bookmark data is saved in a text file with the extension _bookmarks.txt along with the updated output PDF file.

App1Item=1 – PDFtk Bookmarks
App1Exe=C:\Util\PDFtk Bookmarks Editor\PDFtkBookmarks.exe
App1Arg=%PDFIN%

Gimposition – Adobe Reader can print PDF files in n-up and booklet formats. Gimposition is an alternative tool specifically for reformatting PDF files 2 pages per sheet (2-up) or as booklet.
http://www.noliturbare.com/pdf-tols/simple-imposition

App1Item=1 – Gimposition
App1Exe=C:\Users\User01\Downloads\gimposition\Gimpose.exe
App1Arg=

Note: leave App1Arg blank since Gimposition does not support command line arguments.

i2PDF – Convert a collection of images (e.g., scanned pages) to a multi-page PDF document.
https://freeshell.de/~luis/i2pdf/

Briss – Java app for visually cropping PDF files
https://sourceforge.net/projects/briss/

Xpdf Tools – Command line tools for converting and extracting data from PDF files
https://www.xpdfreader.com/about.html
https://www.xpdfreader.com/download.html

The open source Xpdf toolkit includes the following PDF command line tools:
- pdftotext: converts PDF to text
- pdftops: converts PDF to PostScript
- pdftoppm: converts PDF pages to netpbm (PPM/PGM/PBM) image files
- pdftopng: converts PDF pages to PNG image files
- pdftohtml: converts PDF to HTML
- pdfinfo: extracts PDF metadata
- pdfimages: extracts raw images from PDF files
- pdffonts: lists fonts used in PDF files
- pdfdetach: extracts attached files from PDF files

MuPDF – consists of software library, command line tools (mutools), and viewer (mupdf-gl)
https://mupdf.com/index.html
https://mupdf.com/downloads/index.html
https://mupdf.com/docs/index.html

qpdf – a C++ library and set of command line tools for manipulating PDF files; e.g.to encrypt, linearize, compress, split, merge PDF files and to facilitate editing of content of PDF files.
http://qpdf.sourceforge.net/
https://sourceforge.net/projects/qpdf/
http://qpdf.sourceforge.net/files/qpdf-manual.html

Coherent PDF Command Line Tools (cpdf) – commercial command line tool similar to PDFtk Server but with more features and maintained (free for personal, non-commercial use)
http://community.coherentpdf.com/ *(for personal use)*
https://www.coherentpdf.com/ *(for business and institutional customers)*
https://github.com/coherentgraphics/cpdf-binaries
https://github.com/johnwhitington/cpdf-source

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Related Article: Gizmo's Freeware – Best Free PDF Tools

The following article has a good list of free PDF tools:
http://www.techsupportalert.com/content/best-free-pdf-tools.htm

Appendix F, Other GUIs for PDFtk

PDFtk Free & Pro (for Windows) – Steward & Lee
**https://www.pdflabs.com/tools/pdftk-the-pdf-toolkit/**
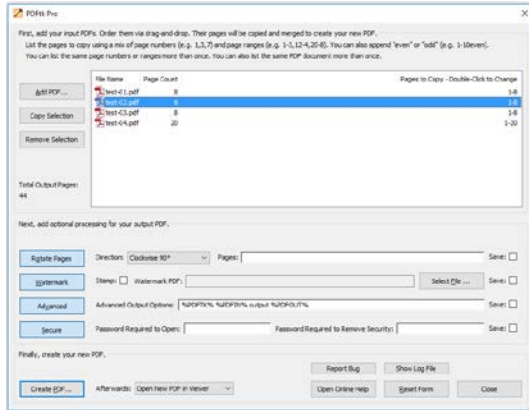
The above screenshot depicts the PDFtk Pro product (paid). Both PDFtk Free and Pro support split and merge; however, the Rotate Pages, Watermark, Advanced, and Secure functions are disabled in the free version. PDFtk Free and Pro are closed source and are distributed with the current version of the free, open source command line tool, PDFtk Server v2.02, 24 Jul 2013.

PDF Chain (for Linux) – Martin Singer
http://pdfchain.sourceforge.net/
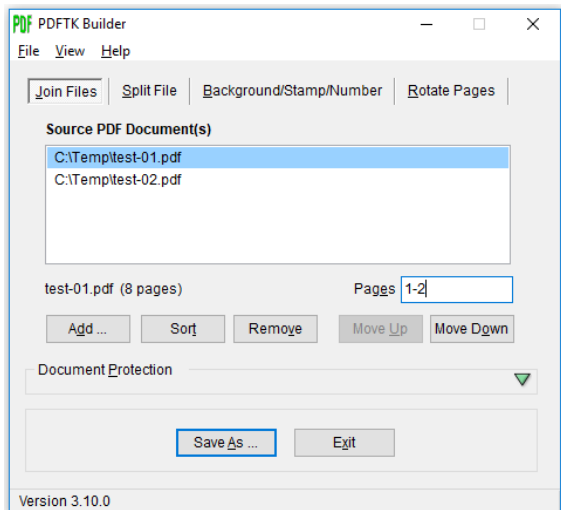**https://sourceforge.net/projects/pdfchain/**

PDF Chain is a free, open source PDFtk GUI for Linux. It supports PDFtk Server v2.02.
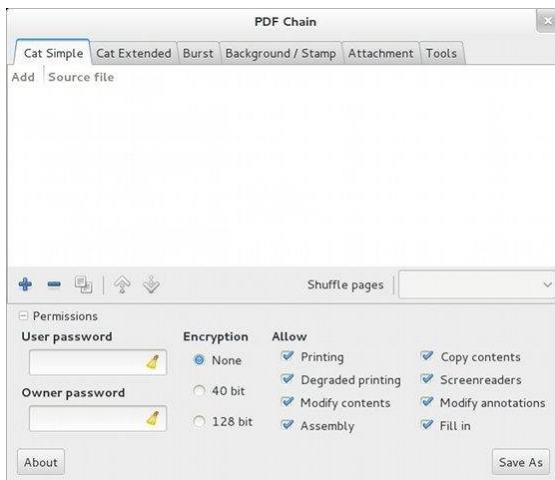
The following three programs use PDFtk 1.41 (Nov 2006) and are not fully compatible with PDFtk versions 1.45 (Dec 2012) or later due to changes in PDFtk's syntax for rotating pages.
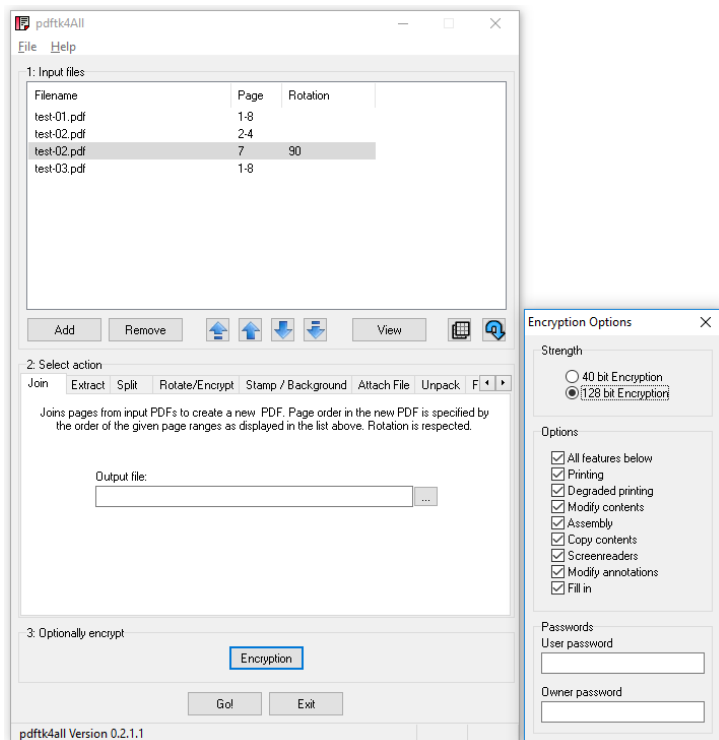
PDFTK Builder (Original) – Angus Johnson
http://angusj.com/pdftkb/

Pdftk4All – Marten Veerman
https://sourceforge.net/projects/pdftk4all/

The following program mimics Angus Johnson's PDFTK Builder forms and functions but uses PyPDF2 (and Poppler tools as a backup) rather than the PDFtk command line tool.

PyPDF Builder (cross-platform GUI) – Thomas Schmitt
https://github.com/mrgnth/PyPDF-Builder/