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1 Introduction

The 3-Heights® PDF Merge Split Shell is a component for splitting and merging the pages of PDF documents with useful additional functions.

In addition to its main functions of splitting and merging, the 3-Heights® PDF Merge Split Shell can also rotate pages, copy or add metadata and other document attributes such as document outlines (bookmark), form fields, color profiles for output devices and much more, as well as flattening form fields.

A special feature is the component's ability to process and create PDF/A conforming files.

1.1 Functions

The 3-Heights® PDF Merge Split Shell can operate on multiple input and output documents in one processing step.

1.1.1 Features

The 3-Heights® PDF Merge Split Shell comes with the following features:

- Merge different PDF documents or pages thereof to form a single PDF document
- Split a PDF document of many pages into a number of smaller PDF documents
- Process PDF/A documents: If all the input documents are PDF/A, then the output is PDF/A with automatically chosen version and conformance level (down-grade).
- Automatic PDF version upgrade when merging documents with differing PDF version. Merging PDF 1.x and PDF 2.0 is currently not supported.
- Rotate pages
- Flatten or remove form fields and annotations
- Copy the color profile for the output device (output intent)
- Copy document information and metadata (XMP)
- Add embedded files to a PDF document
- Optimize page resources when merging PDF documents
- Set passwords and permission flags
- Copy or remove outlines (bookmarks) and create custom outlines
- Merge or remove document structure information
- Remove named destinations
- Set document information entries (title, author, …)
- Write a linearized PDF (fast web view) (not PDF 2.0)
- Set the page mode and open action
- Split vertical or horizontal double pages into single pages

**Input Formats**

- PDF 1.x (PDF 1.0, …, PDF 1.7)
- PDF 2.0
- PDF/A-1, PDF/A-2, PDF/A-3

**Output Formats**

- PDF 1.x (PDF 1.0, …, PDF 1.7)
- PDF 2.0
- PDF/A-1, PDF/A-2, PDF/A-3

**Conformance**

Standards:

- ISO 32000-1 (PDF 1.7)
- ISO 32000-2 (PDF 2.0)
- ISO 19005-1 (PDF/A-1)
- ISO 19005-2 (PDF/A-2)
- ISO 19005-3 (PDF/A-3)

**1.2 Operating Systems**

The 3-Heights® PDF Merge Split Shell is available for the following operating systems:

- Windows Client 7+ | x86 and x64
- Linux:
  - Red Hat, CentOS, Oracle Linux 7+ | x64
  - Fedora 29+ | x64
  - Debian 8+ | x64
  - Other: Linux kernel 2.6+, GCC toolset 4.8+ | x64
- macOS 10.10+ | x64

‘+’ indicates the minimum supported version.
## 2 Installation

### 2.1 Windows

The 3-Heights® PDF Merge Split Shell comes as a ZIP archive or as an MSI installer.

The installation of the software requires the following steps.

1. You need administrator rights to install this software.
2. Log in to your download account at [http://www.pdf-tools.com](http://www.pdf-tools.com). Select the product "PDF Merge Split Shell". If you have no active downloads available or cannot log in, please contact pdfsales@pdf-tools.com for assistance.
   
   You will find different versions of the product available. We suggest to download the version, which is selected by default. A different version can be selected using the combo box.
   
   There is an MSI (*.msi) package and a ZIP (*.zip) archive available. The MSI (Microsoft Installer) package provides an installation routine that installs and uninstalls the product for you. The ZIP archive allows you to select and install everything manually.
   
   There is a 32 and a 64-bit version of the product available. While the 32-bit version runs on both, 32 and 64-bit platforms, the 64-bit version runs on 64-bit platforms only. The MSI installs the 64-bit version, whereas the ZIP archive contains both the 32-bit and the 64-bit version of the product. Therefore, on 32-bit systems, the ZIP archive must be used.
3. If you select an MSI package, start it and follow the steps in the installation routine.
4. If you are using the ZIP archive, do the following. Unzip the archive to a local folder, e.g. `C:\Program Files\PDF Tools AG`. This creates the following subdirectories:

<table>
<thead>
<tr>
<th>Subdirectory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bin</td>
<td>Contains the runtime executable binaries.</td>
</tr>
<tr>
<td>doc</td>
<td>Contains documentation.</td>
</tr>
</tbody>
</table>

5. (Optional) To easily use the 3-Heights® PDF Merge Split Shell from a shell, the directory needs to be included in the "Path" environment variable.
6. (Optional) Register your license key using the License Management.

### 2.1.1 How to set the Environment Variable “Path”

To set the environment variable "Path" on Windows, go to Start → Control Panel (classic view) → System → Advanced → Environment Variables.

Select "Path" and "Edit", then add the directory where `pdfsplmrg.exe` is located to the "Path" variable. If the environment variable "Path" does not exist, create it.
2.2 Linux and macOS

This section describes installation steps required on Linux or macOS.

Here is an overview of the files that come with the 3-Heights® PDF Merge Split Shell:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bin/x64/pdfsplmrg</td>
<td>This is the main executable.</td>
</tr>
<tr>
<td>doc/<em>.</em></td>
<td>Documentation</td>
</tr>
</tbody>
</table>

2.2.1 Linux

1. Unpack the archive in an installation directory, e.g. /opt/pdf-tools.com/
2. Verify that the GNU shared libraries required by the product are available on your system:

   ldd pdfsplmrg

In case the above reports any missing libraries you have three options:

a. Download an archive that is linked to a different version of the GNU shared libraries and verify whether they are available on your system. Use any version whose requirements are met. Note that this option is not available for all platforms.

b. Use your system's package manager to install the missing libraries. It usually suffices to install the package libstdc++6.

c. Use GNU shared libraries provided by PDF Tools AG:
   2. Download the GNU shared libraries for your platform.
3. Install the libraries manually according to your system's documentation. This typically involves copying them to your library directory, e.g. `/usr/lib` or `/usr/lib64`, and running `ldconfig`.

4. Verify that the GNU shared libraries required by the product are available on your system now.

3. Create a link to the executable from one of the standard executable directories, e.g.:

   ```bash
   ln -s /opt/pdf-tools.com/bin/x64/pdfsplmrg /usr/bin
   ```

4. Optionally register your license key using the [license manager](#).

### 2.3 Uninstall

If you have used the MSI for the installation, go to Start → 3-Heights® PDF Merge Split Shell… → Uninstall…

If you have used the ZIP file for the installation: In order to uninstall the product, undo all the steps done during installation.

### 2.4 Note about the Evaluation License

With the evaluation license the 3-Heights® PDF Merge Split Shell automatically adds a watermark to the output files.
3 License Management

The 3-Heights® PDF Merge Split Shell requires a valid license in order to run correctly. If no license key is set or the license is not valid, then the executable will fail and the return code will be set to 10.

More information about license management is available in the license key technote.
4 User’s Guide

The 3-Heights® PDF Merge Split Shell provides two executables:
- pdfsplmrg is used to split and combine pages from several input documents into several output documents.
- pdfsplitpage is used to split each page of a double-page document into two.

4.1 Shell pdfsplmrg

The pdfsplmrg tool uses a multiple-in/multiple-out architecture, thus allowing flexible and efficient merge and split operations. Merging and splitting is not confined to pages, but also affects resources (images, fonts, color spaces, etc.), form fields, outlines (bookmarks), tags, and more. Notably, these elements are merged correctly, when previously split from the same document.

4.1.1 Modes of Operation

The 3-Heights® PDF Merge Split Shell supports three modes of operation which are activated by means of the options -m, -s, and -c. If none of these options are specified then the merge mode is activated.

Merge Mode

In this mode one or several input documents are specified, each potentially with a page set -pg. The input documents are then merged in the order of appearance on the command line to the output document. This is the default mode of operation.

Example: Two documents are merged as:

```
pdfsplmrg in1.pdf in2.pdf out.pdf
```

Example: Merge all PDF documents as:

```
pdfsplmrg *.pdf out.pdf
```

Example: Input documents can be specified several times and pages can be selected with the -pg option.

```
```

Note: Merging PDF 1.x and PDF 2.0 is currently not supported and results in an exit code 4. Additionally, the following error message is printed:

```
* Error: Invalid compliance specified.
```
Split Mode

This mode is activated by specifying the `-s` option. In this mode one or several input documents are merged as in the Merge Mode. The resulting document is, however, split into chunks.

**Example:** A document is split into chunks of (at most) 5 pages as:

```
pdfsplmrg -s :5 in.pdf out.pdf
```

**Example:** A document is split according to its outlines (bookmarks) on the first level of the outline hierarchy:

```
pdfsplmrg -s o in.pdf out.pdf
```

**Example:** Two documents are first merged. The result is then split into chunks of (at most) 5 pages:

```
pdfsplmrg -s :5 in1.pdf in2.pdf out.pdf
```

**Example:** Input documents can be specified several times and pages can be selected with the `-pg` option.

```
pdfsplmrg -s :5 -pg 1-20 in1.pdf in2.pdf out.pdf
```

Collate Mode

This mode is activated by specifying the `-c` option. In this mode, input files are treated in one of two ways:

- If the option `-pc` is specified for an input file, then this input file is split into chunks. The m'th chunk will end up in the m'th output file.
- If a page set `-pg` (or no option) is specified for an input file, then the specified page set (or all pages) will end up in every output file.

**Example:** A document is split into chunks of (at most) 5 pages as:

```
pdfsplmrg -c -pc :5 in.pdf out.pdf
```

**Example:** A document is split according to its outlines (bookmarks) on the first level of the outline hierarchy:

```
pdfsplmrg -c -pc o in.pdf out.pdf
```

The two examples above result in the same output files as the first two examples in Split Mode.

**Example:** A first document is split into 5-page chunks. Each of these chunks is merged with a second document into a separate output file:

```
pdfsplmrg -c -pc :5 in1.pdf in2.pdf out.pdf
```
Example: A title document is merged with each of the outlines of another document:

```
pdfsplmrg -c title.pdf -pc o in.pdf out.pdf
```

Example: The first page of a title document is merged with a 2-page chunk of a first document and a 5-page chunk of a second document:

```
```

4.2 Shell pdfsplitpage

The `pdfsplitpage` tool takes one input document and splits every page that exceeds the given dimension (either height or width) into two pages.

Example: Split all pages that are wider than 210 mm (the paper width of A4) into two pages:

```
pdfsplitsplitpage -w 595 input.pdf output.pdf
```

Note that the units of all dimensions given to `-w` and `-h` must be specified in PDF points (1 in/72).

**Note:** If you plan to use both `pdfsplmrg` and `pdfsplitpage`, then you should use `pdfsplmrg` first and `pdfsplitpage` second.

4.3 Return Codes

All return codes other than 0 indicate an error in the processing.

<table>
<thead>
<tr>
<th>Return Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Success.</td>
</tr>
<tr>
<td>1</td>
<td>Couldn’t open input file.</td>
</tr>
<tr>
<td>2</td>
<td>PDF output file could not be created.</td>
</tr>
<tr>
<td>3</td>
<td>Error with given options, e.g. too many parameters.</td>
</tr>
<tr>
<td>4</td>
<td>Generic processing error.</td>
</tr>
<tr>
<td>10</td>
<td>License error, e.g. invalid license key.</td>
</tr>
</tbody>
</table>
5 Interface Reference

Switches are options that are provided with the command to define how the document should be processed. Switches can occur in two forms: As stand-alone option, such as `-ow` (optimize for fast web view) or they may require a parameter, such as `-pw password` (set password to read encrypted input document).

Switches are parsed from left to right. If the same switch is applied multiple times the last set value is applied.

5.1 Shell pdfsplmrg

Input File Names

Wildcards characters "*" and "?" are permitted and expand into a set of input files.

Note: If options for input files precede an input file name with wildcards then these options will only be applied to the first file in the set.

Output File Names

The last parameter of the command line should always be the output document. When splitting, several output files are created. For numbering the output files a `printf` format mechanism is used. For example:

```
out%3.2d.pdf
```

specifies a number with field width 3 and precision 2. If the output file name contains no `%` character, then an automatic number is generated.

The argument supplied to the format is always an integer number (the page number). Therefore, you can use `d` (for decimal), `x` (for hexadecimal), `u` (unsigned decimal), or `o` (octal). Specifying `s` (char string) will result in a crash, because the page number will not be a valid string address.


5.1.1 Mode Selection Options

- **-m Merge Mode**

  ```
  Merge Mode  -m
  ```

  Activate the Merge Mode. This is the default mode.

- **-s Split Mode**

  ```
  Split Mode  -s <spec>
  ```

  Activate the Split Mode. This option requires a parameter `<spec>` which can be either of the two following:
: n  This indicates that the document should be split into n-page sized chunks. For example: \texttt{-s 5} specifies a chunk size of 5 pages. The last chunk has less than n pages if the total number of pages is not a multiple of n.

o  This indicates that the document should be split according to the document outlines (bookmarks). Only the first level in the outline hierarchy is honored. If the document has no outlines then it is regarded as one contiguous chunk.

If several input files are given then these are merged before splitting.

\texttt{-c  \textit{Collate Mode}}

Collate Mode \texttt{-c}

Activate the \textit{Collate Mode}.

5.1.2 \textbf{General Options}

\texttt{@\langle filename\rangle  \textit{Use a Control File}}

Use a Control File \texttt{@\langle filename\rangle}

Read the parameters from a control file. This is particularly useful for long commands, as usually shells have a limited length of a command. Each option and file name is to be written on a new line in the control file. Use double quotes around strings containing blanks.

\textbf{Example:}  Control file control.txt

\begin{verbatim}
-g0
-od
"First Document.pdf"
"Second Document.pdf"
"Another Document.pdf"
"Output Document.pdf"
\end{verbatim}

\textbf{Example:}  A command using a control file:

\begin{verbatim}
pdfsplmrg @control.txt
\end{verbatim}
Add a file to each output document's embedded files. The file is embedded as-is. Embedding files is not allowed for PDF/A-1 and is restricted to PDF/A conforming files for PDF/A-2. When using the option -aea and the output document is PDF/A-3, then the embedded file is associated with an object of the output document, i.e. it is an associated file. Otherwise this option has no effect.

Note: Several files can be embedded by using the -aa option multiple times. The options -aen, -aea, -aer, -aem, -aes, and -aed, if given, always apply to the preceding option -ae.

Parameters:

- **<file>** The path (or URL) to the file to be embedded.
- **<name>** The name used for the embedded file. This name is presented to the user when viewing the list of embedded files. Default: `<file>`’s name with the path removed.
- **<n>** The object to associate the embedded file with. -1 for none, 0 for document, number greater than 0 for respective page. Default: -1.
- **<rel>** The relationship of the embedded file to the object associate. (Ignored, if `<n>` is -1.) Allowed values are "Source", "Data", "Alternative", "Supplement", and "Unspecified". Default: "Unspecified".
- **<mime>** Mime-type of the embedded file. Common values other than the default are "application/pdf", "application/xml", or "application/msword". Default: "application/octet-stream".
- **<desc>** A description of the embedded file. This is presented to the user when viewing the list of embedded files.
- **<date>** The modify date of the file in ISO 8601 format as described in the [W3C note](https://www.w3.org/TR/NOTE-datetime):

  - `<YYYY>` year
  - `<MM>` month
  - `<DD>` day
  - `<hh>` hour
  - `<mm>` minute
  - `<ss>` second
  - `<TZD>` time zone designator (Z or +<hh>:<mm> or -<hh>:<mm>)

  Example: 2016-07-16T19:30+01:00

  Default: The modify date of the file on the file system or current time, if not available.
Example: Add an embedded file.

```
pdfsplmrg -aa "C:\path\to\file.txt" -aan "My File.txt" input.pdf output.pdf
```

Example: Add an associated file to a PDF/A-3.

```
pdfsplmrg -aa "C:\path\to\file.doc" -aaa 0 -aar "Source" ^
-aam "application/msword" inPDFA3.pdf outPDFA3.pdf
```

- `-ca` **Copy Associated Files**

```
Copy Associated Files -ca
```

If this option is set then associated files in an input document are copied to the output document.

- `-cm` **Copy XMP Metadata from PDF Document**

```
Copy XMP Metadata from PDF Document -cm <file>
```

Specify a document from which the XMP metadata (if present) is copied to each output document.

- `-co` **Copy Output Intent from PDF Document**

```
Copy Output Intent from PDF Document -co <file>
```

Specify a document from which the output intent (if present) is copied to each output document.

- `-cv` **Copy Viewer Properties from PDF Document**

```
Copy Viewer Properties from PDF Document -cv <file>
```

Specify a document from which viewer properties are copies. These include: PageLayout, PageMode, OpenActions, and PieceInfo.

- `-fa` **Flatten Annotations**

```
Flatten Annotations -fa
```

Set the option to flatten all annotations.

Flattening means that the potentially interactive annotations are drawn as non-interactive graphic elements onto the page. The aim is that the document looks the same, but is not interactive anymore.

**Note:** Note that this option does not flatten form fields, signature appearances and links, even though technically these are annotations as well. Use `-ff` and `-fs` to flatten form fields and signature appearances.
-ff  Flatten Form Fields

<table>
<thead>
<tr>
<th>Flatten Form Fields  -ff</th>
</tr>
</thead>
</table>

If this option is set then form fields annotations and annotations of unsigned signature appearances are removed and flattened. If this option is set then form fields annotations and annotations of unsigned signature appearances are removed and flattened. Flattening means that the potentially interactive form fields are drawn as non-interactive graphic elements onto the page. The aim is that the document looks the same, but is not interactive anymore. Note that setting this option implies the option -sf.

-fs  Flatten Signature Appearances

<table>
<thead>
<tr>
<th>Flatten Signature Appearances  -fs</th>
</tr>
</thead>
</table>

If this option is set then appearances of signatures are flattened. A digital signature consists of two parts:
- A cryptographic part that includes a hash value based on the content of the document that is being signed. If the document is modified at a later time, the computed hash value is no longer correct and the signature becomes invalid, i.e. the validation will fail and will report that the document has been modified since the signature has been applied.
- An optional visual appearance on a page of the PDF document. The signature appearance can be useful to indicate the presence of a digital signature by a particular signer.

Processing the PDF with 3-Heights® PDF Merge Split Shell breaks the signature, and therefore the cryptographic part needs to be removed. In general, the visual appearance is regarded as worthless without the cryptographic part, it is removed by default. The visual appearance can be preserved by setting -fs.

-gf  Generate Separate Forms

<table>
<thead>
<tr>
<th>Generate Separate Forms  -gf</th>
</tr>
</thead>
</table>

If this option is set form fields of different input files are not merged. This means that fields are renamed if the output document already contains a field of the same name. Usually this is the intent when merging documents. Note that this option has no effect, if either the option -ff or -sf are set.

-go  Generate Outlines

<table>
<thead>
<tr>
<th>Generate Outlines  -go</th>
</tr>
</thead>
</table>

If this option is set then an outline item (bookmark) is generated in the output document for each input document. The name of the outline item is generated as follows: If the input document has a title in its information directory then this title is used, otherwise the filename of the input document is used. Note that you can override the name of the outline item with -ot.

Unless the option -so is set, all outline items present in an input document are copied to the output document and placed as child elements of this input document's outline item.

---

1 Up to version 4.5.14.0 of the 3-Heights® PDF Merge Split Shell the option -ff also flattened signed signature appearances. In newer versions the option -fs must be used to get the same result.
-id  Set Value in the Document Information Dictionary

Set Value in the Document Information Dictionary  -id  \ensuremath{\langle\text{key}\rangle}  \langle\text{value}\rangle

Set the value of a document information dictionary entry \ensuremath{\langle\text{key}\rangle} in each output document. Popular entries specified in the PDF Reference 1.7 are "Title", "Author", "Subject", "Creator" (sometimes referred to as Application), and "Producer" (sometimes referred to as PDF Creator). If the entry already exists then the previous entry is overwritten. If the key corresponds to a standard metadata key then the XMP metadata is updated accordingly.

Example: Overwrite the default producer:

\begin{verbatim}
pdfsplmrg -id Producer "MyProgram 1.2" input.pdf output.pdf
\end{verbatim}

-lk  Set License Key

Set License Key  -lk  \ensuremath{\langle\text{key}\rangle}

Pass a license key to the application at runtime instead of using one that is installed on the system.

\begin{verbatim}
pdfsplmrg -lk X-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX ...
\end{verbatim}

This is required in an OEM scenario only.

-o  Owner Password

Owner Password  -o  \ensuremath{\langle\text{owner}\rangle}

The owner password is required to change the security settings of the document. In order to apply permission flags, an owner password must be set. Permission flags are set with the switch \texttt{-p}.

Example: Encrypt a document and set the owner password to \ensuremath{\langle\text{owner}\rangle}.

\begin{verbatim}
pdfsplmrg -o owner input.pdf output.pdf
\end{verbatim}

-oad  Set an Open Action

Set an Open Action  -oad  \ensuremath{\langle\text{page}\rangle}  \langle\text{mode}\rangle  \langle\text{par1}\rangle  \langle\text{par2}\rangle  \langle\text{par3}\rangle  \langle\text{par4}\rangle

Set a "PDF OpenAction Destination" for each output document. This option has at most 6 parameters.

\begin{itemize}
  \item \texttt{\langle\text{page}\rangle} The target page number. (Required)
  \item \texttt{\langle\text{mode}\rangle} The name of the destination mode. (Required)
  \item \texttt{\langle\text{par1}\rangle} \langle\text{par2}\rangle \langle\text{par3}\rangle \langle\text{par4}\rangle Further parameters, all numerical values. (Optional)
\end{itemize}
<table>
<thead>
<tr>
<th>mode</th>
<th>par1</th>
<th>par2</th>
<th>par3</th>
<th>par4</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ</td>
<td>left</td>
<td>top</td>
<td>zoom</td>
<td></td>
<td>The upper left corner of the view is positioned at the coordinate (left, top) with the given zoom factor.</td>
</tr>
<tr>
<td>Fit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The view is such that the whole page is visible.</td>
</tr>
<tr>
<td>FitH</td>
<td>top</td>
<td></td>
<td></td>
<td></td>
<td>The view is top-aligned with top and shows the whole page width.</td>
</tr>
<tr>
<td>FitV</td>
<td>left</td>
<td></td>
<td></td>
<td></td>
<td>The view is left-aligned with left and shows the whole page height.</td>
</tr>
<tr>
<td>FitR</td>
<td>left</td>
<td>bottom</td>
<td>right</td>
<td>top</td>
<td>The view contains the rectangle specified the two coordinates (left, bottom) and (right, bottom).</td>
</tr>
<tr>
<td>FitB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The view is such that the pages bounding box is visible.</td>
</tr>
<tr>
<td>FitBH</td>
<td>top</td>
<td></td>
<td></td>
<td></td>
<td>The view is top-aligned with top and shows the whole width of the page's bounding box.</td>
</tr>
<tr>
<td>FitBV</td>
<td>left</td>
<td></td>
<td></td>
<td></td>
<td>The view is left-aligned with left and shows the whole height of the page's bounding box.</td>
</tr>
</tbody>
</table>

In the table above, left and right are x-coordinates, bottom and top are y-coordinates in PDF user space. The units are PDF points (A4 = 595x842 points, Letter = 612x792 points). The parameter zoom is a zoom factor.

Example: Add an open action destination such that the PDF is opened at the top of the first page (assuming that the page size is A4) in “fit width”-mode:

```
pdfsplmrg -oad 1 FitH 842 input.pdf output.pdf
```

- od Optimize Resources

Find and merge redundant resources from different input files. Equal fonts, images and color spaces are detected. By activating this feature, much smaller output files are created, if similar files are merged. The merging process takes, however, more time and memory resources.

- ow Optimize for the Web

Find and merge redundant resources from different input files. Equal fonts, images and color spaces are detected. By activating this feature, much smaller output files are created, if similar files are merged. The merging process takes, however, more time and memory resources.
Linearize the PDF output file, i.e. optimize file for fast web access.

The 3-Heights® PDF Merge Split Shell does not support linearization of PDF 2.0 documents. For such documents, processing fails. In order to automatically disable linearization for PDF 2.0 use `-owa`.

A linearized document has a slightly larger file size than a non-linearized file and provides the following main features:

- When a document is opened in a PDF viewer of a web browser, the first page can be viewed without downloading the entire PDF file. In contrast, a non-linearized PDF file must be downloaded completely before the first page can be displayed.
- When another page is requested by the user, that page is displayed as quickly as possible and incrementally as data arrives, without downloading the entire PDF file.

The above applies only if the PDF viewer supports fast viewing of linearized PDFs.

Note: In order to make use of a linearized PDF file, the PDF must reside as a “file” on the web-server. It must not be streamed.

When enabling this option, then no PDF objects will be stored in object streams in the output PDF. For certain input documents this can lead to a significant increase of file size.

**-owa** Automaticall Optimize for the Web

Automatically decide whether to linearize the PDF output file for fast web access.

Applying linearization can lead to a large increase in file size for certain documents. Enabling this option lets the 3-Heights® PDF Merge Split Shell automatically apply linearization or refrain from doing so based on the estimated file size increase.

Also, with this option enabled, PDF 2.0 documents are automatically excluded from linearization.

See also `-ow` for more information for linearized PDFs.

Note: When `-owa` is given, then the option `-ow` has no effect.

**-p** Permission Flags

```
Permission Flags  -p <flags>
```
This option sets the permission flags. It is only usable when producing encrypted documents. I.e. at least an owner password must be set with -o, and additionally a user password can be set with -u. When omitting the option -p then all permissions are granted. The permissions that can be granted are listed below.

### Permission Flags

<table>
<thead>
<tr>
<th>Flag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>allow printing (low resolution)</td>
</tr>
<tr>
<td>m</td>
<td>allow changing the document</td>
</tr>
<tr>
<td>c</td>
<td>allow content copying or extraction</td>
</tr>
<tr>
<td>o</td>
<td>allow commenting</td>
</tr>
<tr>
<td>f</td>
<td>allow filling of form fields</td>
</tr>
<tr>
<td>s</td>
<td>allow content extraction for accessibility</td>
</tr>
<tr>
<td>a</td>
<td>allow document assembly</td>
</tr>
<tr>
<td>d</td>
<td>allow high quality printing</td>
</tr>
<tr>
<td>⌀</td>
<td>allow nothing (no permissions are granted)</td>
</tr>
</tbody>
</table>

The actual `<flags>` given to this option is a string that contains one or several of the permission flags above.

**Note:** The value ⌀ cannot be combined with any other permission flags.

**Example:** The following command sets the owner password to "owner" and the permission flags to "allow printing in low resolution" and "allow form filling".

```
pdfsplmrg -o owner -p pf input.pdf output.pdf
```

**Example:** "High quality printing" requires the standard printing flag to be set too.

```
pdfsplmrg -o owner -p pd input.pdf output.pdf
```

For further information about the permission flags, see [PDF Reference 1.7](#) Section 3.5.2.

### -pm Set Page Mode

Set a page mode for each output document. This option has one parameter, a numerical value, to select the page mode.
### Value | Page Mode
---|---
0  | Use None
1  | UseOutlines
2  | UseThumbs
3  | FullScreen
4  | UseOC
5  | UseAttachments

(See Table 3.25 in the PDF Reference 1.7 for more information on page modes.)

- **sf**  Remove Interactive Form Fields

<table>
<thead>
<tr>
<th>Remove Interactive Form Fields</th>
<th>-sf</th>
</tr>
</thead>
</table>

Do not copy interactive form fields. See also `-ff`.

- **sg**  Remove Optional Content Configuration

<table>
<thead>
<tr>
<th>Remove Optional Content Configuration</th>
<th>-sg</th>
</tr>
</thead>
</table>

By default, compatible optional content groups (layers) are merged when merging input documents. Specifically, the current configuration of optional content is compared with the input document. If it is found to be the same then the optional content groups are assumed to be the same in the input and the output document and merging takes place. If they are different then optional content groups are assumed to be distinct and they are simply added. By specifying this option, the above mechanism is deactivated and no configuration of optional content groups is copied to the output document.

- **sl**  Remove Logical Structure

<table>
<thead>
<tr>
<th>Remove Logical Structure</th>
<th>-sl</th>
</tr>
</thead>
</table>

By default, logical structure information is copied. If only some of the input documents contain such information, then this option can be used to discard any logical structure information in order to create smaller output files and gain some speed up. This option must not be specified for PDF/A level A conformance.

- **sn**  Remove Named Destinations

<table>
<thead>
<tr>
<th>Remove Named Destinations</th>
<th>-sn</th>
</tr>
</thead>
</table>

If this property is set, all named destinations of the input document are removed and all internal named destinations are converted to regular destinations.
Use this option with care: If a document is split into multiple documents with the intention of merging the pieces back together at a later time, this option should not be used. The reason is that links between the pieces will not work after the merge.

**Note:** Even if this option is set the output document might contain named destinations. This is because the PDF Merge Split Shell needs to create named destinations under some circumstances in order to preserve links.

- **so** Remove Outlines

If this option is set then no outlines (bookmarks) are copied to the output documents.

- **u** User Password

Set the user password of the document. If a document which has a user password is opened for any purpose (such as viewing, printing, editing), either the user or the owner password must be provided.

Someone who knows the user password is able to open and read the document. Someone who knows the owner password is able to open, read and modify (e.g. change passwords) the document. A PDF document can have none, either, or both passwords.

**Example:** Encrypt a document with a user and an owner password.

```
pdfsplmrg -u userpassword -o ownerpassword input.pdf output.pdf
```

- **v** Verbese Mode

This option turns on the verbose mode.

In the verbose mode, file actions and copy actions are written to the standard output.

### 5.1.3 Options for Input Documents

- **ot** Outline Title

This option only has significance if **go** is used. This option overrides the automatic name for a generated outline by the name given in *name*. 
### -pc  Split Specification in Collate Mode

**Split Specification in Collate Mode** -pc <spec>

In **Collate Mode**, an input document can be split into several chunks by using this option.

The parameter `<spec>` must have either of the following forms:

- `:n` This indicates that the document should be split into `n`-sized chunks. For example: `-pc :5` specifies a chunk size of 5 pages. If the total number of pages is not a multiple of `<n>` then the last chunk has less than `<n>` pages.

- `o` This indicates that the document should be split according to the document outlines (bookmarks). Only the first level in the outline hierarchy is honored. If the document has no outlines then it is regarded as one contiguous chunk.

### -pg  Page Set

**Page Set** -pg <pageset>

By default, an input document is copied to the output document(s) in its entirety. This option allows specifying a set of pages to be copied. This option can be used in all three modes of operation but it cannot be combined with the `-pc` option.

The `<pageset>` is a comma-separated list of page ranges, each of which has the form `<n> - <m>` or `<n>`, where `<n>` and `<m>` are page numbers of the input document. The parameter `<pageset>` must not contain spaces.

**Example:** Copy pages 3, 4, 5, 2, 6, 7, and 8 from `input.pdf` to `output.pdf`:

```
pdfsplmrg -pg 3-5,2,6-8 input.pdf output.pdf
```

### -pw  Read an Encrypted PDF File

**Read an Encrypted PDF File** -pw <pwd>

When the input PDF file is encrypted and has a user password set (the password to open the PDF), the password can be provided as parameter of the switch `-pw`.

### 5.2 Shell pdfsplitpage

#### 5.2.1 -h  Set the Page Height Threshold

**Set the Page Height Threshold** -h <height>

Pages in the input document that are taller than `<height>` are split into two consecutive pages in the output document.
Parameter:

`height`  The threshold height in PDF points (1 PDF point = 1/72 inch)

When combining this option with `-w` and a page exceeds both the threshold height and the threshold width, then the page is split only into two pages according to `-w` and a warning is printed.

### 5.2.2 -lk  Set License Key

<table>
<thead>
<tr>
<th>Set License Key</th>
<th>-lk  <code>key</code></th>
</tr>
</thead>
</table>

Pass a license key to the application at runtime instead of using one that is installed on the system.

```
pdfsplitpage -lk X-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX ...
```

This is required in an OEM scenario only.

### 5.2.3 -pw  Read an Encrypted PDF File

<table>
<thead>
<tr>
<th>Read an Encrypted PDF File</th>
<th>-pw  <code>password</code></th>
</tr>
</thead>
</table>

A PDF document that has a user password (the password to open the document) can only be processed when either the user or the owner password is provided. The password can be provided using the option `-pw` followed by the password.

**Example:** The input PDF document is encrypted with a user password. Either the user or the owner password of the input PDF is “mypassword”. The command to process such an encrypted file is:

```
pdfsplitpage -pw mypassword input.pdf output.pdf
```

When a PDF is encrypted with a user password and the password is not provided or is incorrect, the 3-Heights® PDF Merge Split Shell cannot read and process the file. Instead it will generate the following error message:

```
Password wasn’t correct.
```

### 5.2.4 -w  Set Page Width Threshold

<table>
<thead>
<tr>
<th>Set Page Width Threshold</th>
<th>-w  <code>width</code></th>
</tr>
</thead>
</table>

Pages in the input document that are wider than `width` are split into two consecutive pages in the output document.

Parameter:

`width`  The threshold width in PDF points (1 PDF point = 1/72 inch)

When combining this option with `-h` and a page exceeds both the threshold height and the threshold width, then the page is split only into two pages according to `-w` and a warning is printed.
6 Version History

6.1 Changes in Versions 6.19–6.23
- Update license agreement to version 2.9

6.2 Changes in Versions 6.13–6.18
No functional changes.

6.3 Changes in Versions 6.1–6.12
No functional changes.

6.4 Changes in Version 5

6.5 Changes in Version 4.12
- New support for encryption according to PDF 2.0 (revision 6, replaces deprecated revision 5).
- New HTTP proxy setting in the GUI license manager.

Shell pdfsplmrg
- New option -owa to automatically choose whether to linearize the output document or not.
- New options -o, -u, -p for encrypting output PDFs with a user password and/or an owner password and specifying permission flags.

Shell pdfsplitpage
No functional changes.

6.6 Changes in Version 4.11
- New support for the creation of appearance streams for free text annotations that contain rich text content.
- New support for reading and writing PDF 2.0 documents.
- **New** support for the creation of output files larger than 10GB (not PDF/A-1).
- **New** optimization of output file size for documents that contain structure information.

**Shell pdfsplmrg**

- **New** treatment of the DocumentID. In contrast to the InstanceID the DocumentID of the output document is inherited from the input document when copying a single document.

**Shell pdfsplitpage**

No functional changes.

### 6.7 Changes in Version 4.10

- **Changed** the behavior when copying outlines. The outline structure in the output file now always matches the outline structure in the input file, regardless of the order in which pages are copied.
- **Improved** repairation of corrupt form fields.
- **New** support for writing PDF objects into object streams. Most objects that are contained in object streams in the input document are now also stored in object streams in the output document. When enabling linearization, however, no objects are stored in object streams.
- **Improved** robustness against corrupt input PDF documents.

### 6.8 Changes in Version 4.9

- **Improved** support for and robustness against corrupt input PDF documents.
- **Improved** repair of embedded font programs that are corrupt.
- **Improved** metadata generation for standard PDF properties.

**Shell pdfsplmrg**

The tool allows adding of embedded or associated files by means of the following new options:

- **New** option - ae
- **New** option - aea
- **New** option - aed
- **New** option - aem
- **New** option - aen
- **New** option - aer
- **New** option - aes

### 6.9 Changes in Version 4.8

- **New** warning issued if input page range is outside of the input document’s pages.
- **Improved** creation of annotation appearances to use less memory and processing time.
- **Added** repair functionality for TrueType font programs whose glyphs are not ordered correctly.
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