3-Heights®
Image to PDF Converter
Service

Version 6.27.6

PDF/A
conform

pdftools

Contents

1 Introduction

1.1 Description

The 3-Heights® Image to PDF Converter Service converts raster image formats to PDF and PDF/A. PDF/A has been acknowledged world-wide as the ISO standard for long-term archiving since 2005. The Image to PDF Converter is used to convert images into a standardized format, for instance for electronic archiving or electronic data exchange.

It is also possible to include metadata from external sources. The Converter is characterized by a robust design, high throughput and accurate image reproduction. The optional OCR add-in makes output files searchable in full text mode.
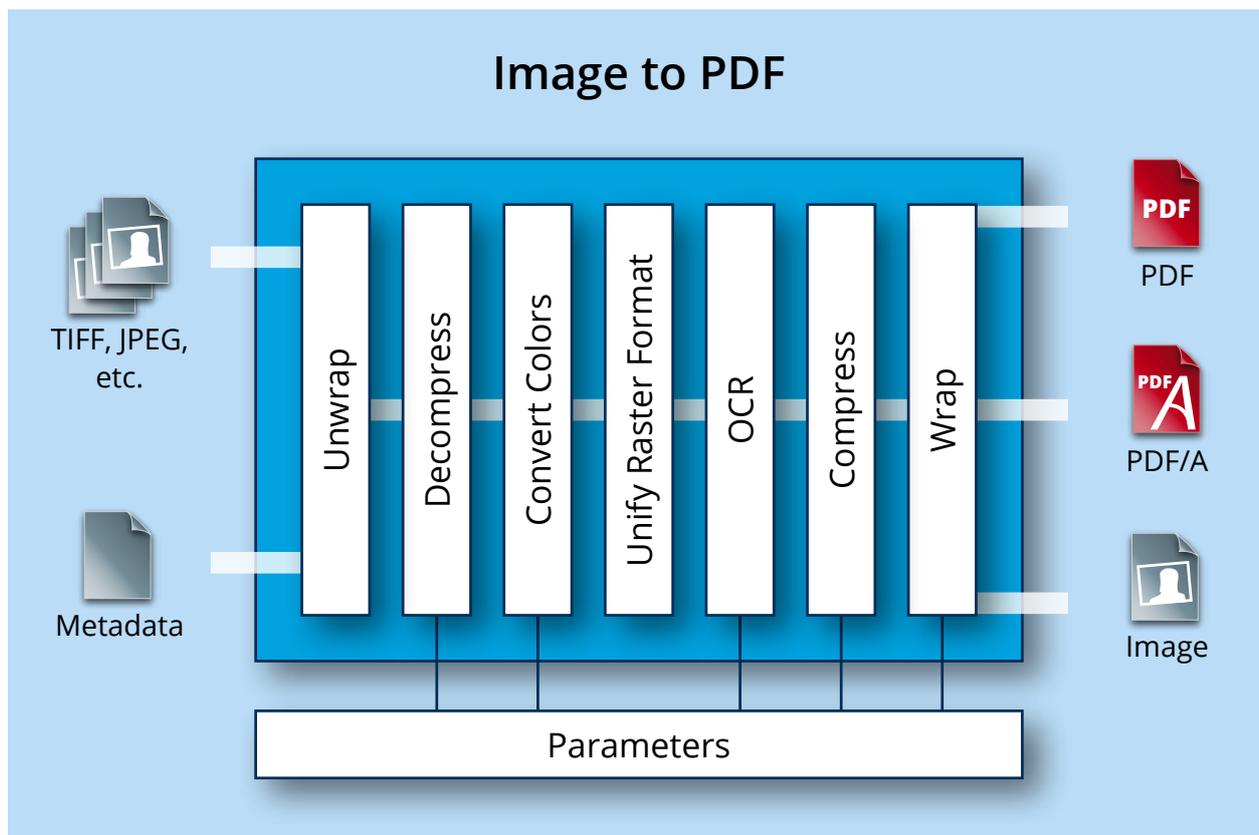
1.2 Functions

The 3-Heights® Image to PDF Converter Service converts raster image formats such as JPEG, TIFF or PNG to PDF or PDF/A. It can merge pages from various image files to form a single PDF and can also split multi-page image files into single-page PDF files. Further options include defining page size and resolution, image scaling and the inclusion of (external) metadata. Optical character recognition (OCR) is also available as an option.

1.2.1 Features

Image to PDF

- Conversion of single-page or multi-page raster images to PDF
- Set PDF conformance

- Automatic or selectable image compression, depending on the image type
- Automatic or selectable PDF page size
- Selectable page area
- Selectable image quality for lossy compression
- Set image position
- Set scaling
- Set standard resolution (DPI / X and Y coordinates)
- Set encryption and user access permissions
- Selectable and embeddable ICC color profile
- Define alternative text (tagging) and image language
- Set document attributes
- Optional JPEG image recompression
- Set image orientation (portrait or landscape)
- Optical character recognition (OCR)
- Embedding XMP metadata
- Support for image masks
- Support for mixed raster content (MRC)

Image to Image

- Split single-page or multi-page raster images into individual, single page images
- Merge multiple images to form one multi-page image
- Convert to an image format of the same color depth
- Modify TIFF image compression
- Set quality index for lossy image compression
- Create lossless JBIG2 images and lossy/lossless JPEG2000
- Set resolution and image dimensions

1.2.2 Formats

Input formats

- BMP (1, 2, 4, 8, 24 bit)
- GIF (2 to 8 bit)
- HEIC/HEIF
- JBIG2 (lossless compression)
- JPEG, JPEG2000 and JPEG-LS (grayscale, RGB)
- PBM and PNG (1 to 8, 24 bit)
- TIFF
  - Bitonal : uncompressed, CCITT G3, CCITT G3-2D, CCITT G4, LZW, ZIP, Packbits
  - Grayscale, RGB and CMYK: uncompressed, LZW, JPEG, JPEG (old), ZIP, Packbits

Output formats - Image to PDF Converter

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

Output formats - Image to Image Converter

- All input formats plus EPS

1.2.3 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)
    - TIFF V6
- Quality assurance: Isartor test suite

1.3 Service

The 3-Heights® Image to PDF Converter Service is a ready-to-use product that allows to install a Windows NT service process to automatically convert various types of images from watched folders into PDF files. Image to PDF Converter Service combines three programs in one executable.

1. A converting service that can be run on Windows platforms. The service can be started, paused, stopped via the Windows service control panel and reports to the application log of the Windows event log panel.
2. A command line interface to control the Image to PDF Converter Service. By means of this interface the service can be installed, started, stopped and deleted.
3. A converter query program which can be used to retrieve information about available conversion options such as file type, compression, dithering, color depths, etc.

1.4 Operating systems

The 3-Heights® Image to PDF Converter Service is available for the following operating systems:

- Windows Client 7+ | x86 and x64
- Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016, 2019, 2022 | x86 and x64

'+' indicates the minimum supported version.

2 Installation

2.1 Overview

The Image to PDF Converter Service is configured by the file `Img2PdfSvr.ini`, which needs to be located in the same directory as the executable `Img2PdfSvr.exe`. Before starting the service, the configuration file needs to be adjusted. The procedure to perform this step is described in Img2PdfSvr.ini configuration file.

Once configured, the service can be created, started, paused, continued, stopped, and deleted via the command line. To use the create and delete functions, administrator permissions are required. To start and stop the service, operator permissions are required.

When the service is running, it processes PDF documents that are copied or moved into watched folders.

They are then renamed and moved to the folder Jobs. The renaming gives the PDF a 16 character long timestamp to create unique job tickets. This ensures there are no conflicts with documents that have the same name.

2.2 Windows

The 3-Heights® Image to PDF Converter Service comes as an MSI installer.

To install the software, proceed as follows:

1. You need administrator rights to install this software.
2. Log in to your download account at `https://www.pdf-tools.com`. Select the product "Image to PDF Converter Service". If you have no active downloads available or cannot log in, please contact `pdfsales@pdf-tools.com` for assistance.
   You can find different versions of the product available. Download the version that is selected by default. You can select a different version.
   The product comes as an MSI (Microsoft Installer) package that provides an installation routine for installing and uninstalling the 3-Heights® Image to PDF Converter Service.
   The package installs the 64-bit version, which runs on 64-bit platforms only.
3. Start the MSI package and follow the steps in the installation routine.
4. Ensure the cache directory exists as described in Special directories.
5. Make sure your platform meets the requirements regarding fonts described in Fonts.
6. (Optional) Download and install the 3-Heights® OCR Enterprise Add-on, and the OCR Engine as described in the respective manuals:
   - 3-Heights® OCR Add-on for ABBYY FineReader Engine v10: `OcrAbbyy10.pdf`
   - 3-Heights® OCR Add-on for ABBYY FineReader Engine v11: `OcrAbbyy11.pdf`
   - 3-Heights® OCR Add-on for ABBYY FineReader Engine v12: `OcrAbbyy12.pdf`
   - 3-Heights® OCR Service: `OcrService.pdf` from the separate product kit.

2.3 Uninstall

If you have used the MSI for the installation, go to Start → 3-Heights® Image to PDF Converter Service… → Uninstall …

2.4 Color profiles

In PDF/A, using uncalibrated color spaces (DeviceGray, DeviceRGB, and DeviceCMYK) is prohibited because colors that are specified in this way cannot be reproduced reliably on multiple output devices. Therefore, when converting to PDF/A, a color profile has to be embedded.

If no color profiles are available, default profiles for both RGB and CMYK are generated on the fly by the 3-Heights® Image to PDF Converter Service.

2.4.1 Default color profiles

If no particular color profiles are set, default profiles are used. For device RGB colors, a color profile named `"sRGB Color Space Profile.icm"` and for device CMYK, a profile named `"USWebCoatedSWOP.icc"` are searched for in the following directories:

Windows

1. `%SystemRoot%\System32\spool\drivers\color`
2. directory `Icc`, which must be a direct subdirectory of where the `Img2PdfSvr.exe` resides.

2.4.2 Set other color profiles

Another color profile may be set using the `-oi` or `-cs` options.

2.4.3 Get other color profiles

Most systems have pre-installed color profiles available. For example, on Windows at `%SystemRoot%\system32\spool\drivers\color\`. Color profiles can also be downloaded from the links provided in the directory `bin\Icc\` or from the following websites:

- https://www.pdf-tools.com/public/downloads/resources/colorprofiles.zip
- https://www.color.org/srgbprofiles.html

2.5 Fonts

Fonts are required, if OCR is preformed and OCR text is added to a PDF document. Therefore, it is crucial, that the fonts available in the Font directories contain all characters required for the OCR text. For example, when recognizing Japanese OCR text, it is recommended to add the fonts "MS Mincho" or "MS Gothic" to the Font directories.

Note that on Windows, when a font is installed, it is by default installed only for a particular user. It is important to either install fonts for all users, or make sure the 3-Heights® Image to PDF Converter Service is run under that user and the user profile is loaded.

2.5.1 Font cache

A cache of all fonts in all Font directories is created. If fonts are added or removed from the font directories, the cache is updated automatically.

In order to achieve optimal performance, make sure that the cache directory is writable for the 3-Heights® Image to PDF Converter Service. Otherwise, the font cache cannot be updated and the font directories have to be scanned on each program startup.

The font cache is created in the subdirectory `<CacheDirectory>/Installed Fonts` of the Cache directory.

2.6 Note about the evaluation license

With the evaluation license, the 3-Heights® Image to PDF Converter Service automatically adds a watermark to the output files.

2.7 Special directories

2.7.1 Directory for temporary files

This directory for temporary files is used for data specific to one instance of a program. The data is not shared between different invocations and is deleted after termination of the program.

The directory is determined as follows. The product checks for the existence of environment variables in the following order and uses the first path found:

Windows

1. The path specified by the %TMP% environment variable
2. The path specified by the %TEMP% environment variable
3. The path specified by the %USERPROFILE% environment variable
4. The Windows directory

2.7.2 Cache directory

The cache directory is used for data that is persistent and shared between different invocations of a program. The actual caches are created in subdirectories. The content of this directory can safely be deleted to clean all caches.

This directory should be writable by the application; otherwise, caches cannot be created or updated and performance degrades significantly.

Windows

- If the user has a profile:
  `%LOCAL_APPDATA%\PDF Tools AG\Caches`
- If the user has no profile:
  `<TempDirectory>\PDF Tools AG\Caches`

where `<TempDirectory>` refers to the Directory for temporary files.

2.7.3 Font directories

The location of the font directories depends on the operating system. Font directories are traversed recursively in the order as specified below.

If two fonts with the same name are found, the latter one takes precedence, i.e. user fonts always take precedence over system fonts.

Windows

1. `%SystemRoot%\Fonts`
2. User fonts listed in the registry key `\HKEY_CURRENT_USER\Software\Microsoft\Windows NT\Cur-rentVersion\Fonts`. This includes user specific fonts from `C:\Users\<user>\AppData\Local\Mi-crosoft\Windows\Fonts` and app specific fonts from `C:\Program Files\WindowsApps`
3. `Fonts` directory, which must be a direct subdirectory of where `Img2PdfSvr.exe` resides.

3 License management

The 3-Heights® Image to PDF Converter Service requires a valid license in order to run correctly. If no license key is set or the license is not valid, then an error message is printed to the service log.

More information about license management is available in the license key technote.

4 Getting started

4.1 Configuration

Before starting the Image to PDF Converter Service for the first time, the file `Img2PdfSvr.ini` needs to be modified. Editing this file while the Image to PDF Converter Service is running has no impact. The service first needs to be stopped and restarted after the modification. When opening this file with a text editor, it looks like this:

```
[Img2PdfSvr]
AutoDelete=True
Threads=1
Thread1=-w C:\Img2PdfSvr
```

The meaning of these keys and values in this example is as follows:

`AutoDelete=True`   This option automatically deletes a PDF file after it is processed successfully. When set to `False`, the processed file is copied to the sub directory `Succeeded`.

`Threads=`   The given value stands for the total number of concurrent threads. Each thread can have its own assigned settings. One thread corresponds to one watched folder.

`Threads1=`   Sets the options such as name of watched folder and settings etc. for thread 1.

`-w C:\Img2PdfSvr`   (required) Creates a watched folder with the given name for this thread. The path must be an absolute path. Network mapped drive letters or relative paths or driver letters mapped via the `subst` command are not recognized, because the service process per default runs under the "LocalSystem" account. (The user can be changed as described in [Managing the service](#).)

This means that any image file that is moved or copied to the folder `C:\Img2PdfSvr` is processed by the service and converted to a PDF document.

> **Note:** Any string, such as a file name, that contains spaces must be enclosed in quotation marks. For example, if the watched folder contains spaces in its path, the entire path needs to be quoted: `-w "C:\A path\with spaces"`.

4.1.1 Retrieve information about available options and settings

A quick overview of all configuration options and service control commands that the 3-Heights® Image to PDF Converter Service supports can be output in the form of a usage message in the command line.

To display this information, open a Windows command line (`cmd.exe`) and then type:

```
Img2PdfSvr
```

(See also [Service control commands](#))

A short overview of all the options that can be configured in the `Img2PdfSvr.ini` is displayed when typing the following in a Windows command line:

```
Img2PdfSvr -i
```

(See also Options for image to PDF)

4.2 Managing the service

Once the configuration is done, the service can be started and controlled by executing `Img2PdfSvr.exe` on the command line. The path can be omitted if the `Img2PdfSvr.exe` is included in the %PATH% environment variable.

> **Note:** It is essential that the executable `Img2PdfSvr.exe` and the configuration file `Img2PdfSvr.ini` be on a non-mapped drive.

> **Note:** To create or delete the service, administrator permissions are required.

1. To create the service, use the `-c` option.

```
Img2PdfSvr -c
```

After executing this command, the service is created. It is now visible in the "Computer Management" window under "Services". To open the "Computer Management" window, go to Start → Control Panel → Administrative Tools → Computer Management or simply right-click the icon "My Computer" on the desktop and select "manage". If the services is created correctly, it appears as "3-Heights® Image to PDF Converter Service" as shown in the image below.
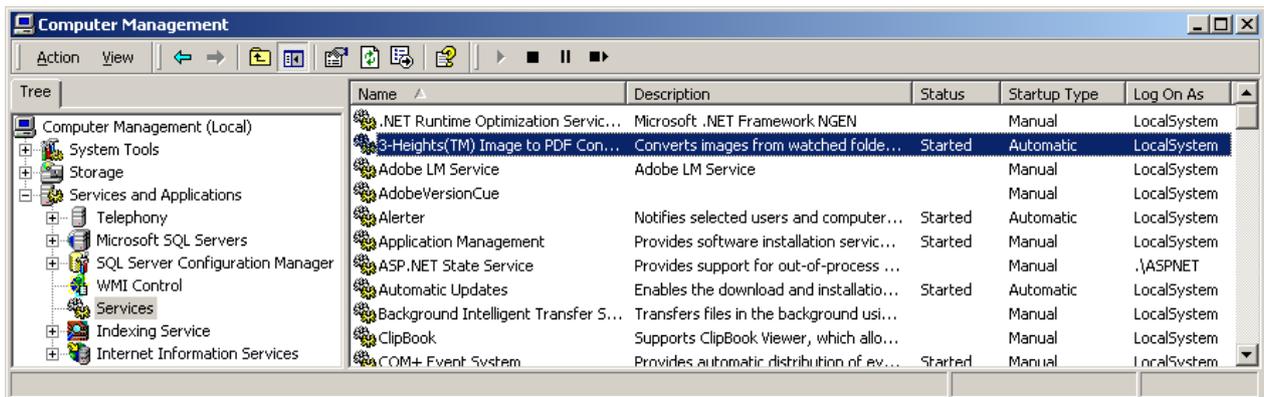
2. By default, the 3-Heights® Image to PDF Converter Service runs in the "LocalSystem" account. After the service has been created, the user can be changed.
   This is required in a situation where a network share is used as a watched folder and the process needs to run under a user with the appropriate access permission rights, since the account "LocalSystem" does not have any permissions on remote systems.
   To change the user, right-click the service in the Services window and select "Properties". Then change the user in the tab "Log On".

3. Once created, the service can be started with the option `-s`.

```
Img2PdfSvr -s
```

4. Now the 3-Heights® Image to PDF Converter Service is up and running, and files can be moved, copied or drag-and-dropped into the watched folder.

5. To stop the service, use the option `-t`.

```
Img2PdfSvr -t
```

To restart, use -s again.

6. To delete the service, use the option -d.

```
Img2PdfSvr -d
```

4.2.1 Service state diagram

The 3-Heights® Image to PDF Converter Service behaves as described in the state diagram below.

If "Stop" is called when the service is in the "Paused" state, the current job is aborted. This means the current page is finished processing, then the job is terminated.

If "Stop" is called when the service is the "Running" state, the current job (all pages) is finished. Then the service is stopped.
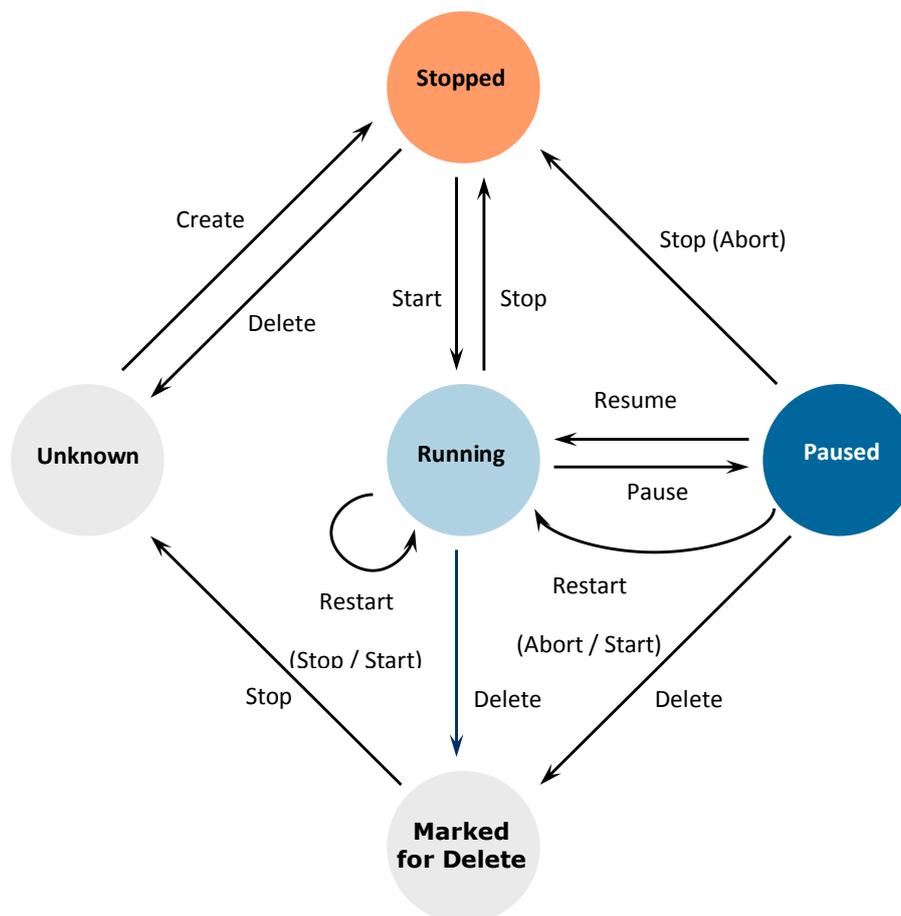
4.3 Using the service

Once the service is created and started, the watched folders configured in `Img2PdfSvr.ini` are created automatically. In each watched folder, the following subfolders are created:

- `Jobs`
- `InProgress`
- `Succeeded`

- `Failed`
- `PDFs` (for the `Img2PdfSvr`.)
- `Images` (for the `Img2ImgSvr`.)
- `Logs`

When a file is moved, copied, or drag-and-dropped into the configured watched folder, the service performs these tasks:

1. Each file is moved to the `Jobs` subfolder. While moving, the file is renamed by adding a 16 character long job-number prefix. This ensures a well-defined processing order and unique file names.
2. A worker-thread takes the file from the `Jobs` folder and moves it to `InProgress`. The file is then processed.
3. Depending on the outcome of the processing, the following is done:

   The file was processed successfully
   - The input file is moved to the `Succeeded` folder or it is deleted, depending on whether `AutoDelete` or `AutoDeleteAll` is set to `true` or `false` in the configuration file `Img2PdfSvr.ini`.
   - The converted file is stored in `PDFs` (for the `Img2PdfSvr`) or in `Images` (for the `Img2ImgSvr`).

   The file was not processed successfully
   - The input file is moved to the `Failed` folder or it is deleted, depending on whether `AutoDeleteALL` is set to `true` or `false` in the configuration file `Img2PdfSvr.ini`.
   - A log file is created in the `Logs` folder. The file name is the same as the input file with the extension substituted by `.txt`.

4. In any case, an entry in the log file of this thread is created.

4.4 Log files

There are two types of log files.

The log file per thread   Each thread (watched folder) has a log file. The log file resides in the same directory as the `Img2PdfSvr.exe` executable and the `Img2PdfSvr.ini` configuration file. It is named `Img2PdfSvr-log-‹n›.txt`, where the number of the log file ‹n› is increased whenever the service is re-started. The log file is locked by the service as long as the service is running.

- The log file contains general messages (including a timestamp that is not shown here) such as:

```
- [1] Worker thread for directory C:\Img2PdfSvr\Folder started.
```

- Error messages such as:

```
* Error 0 while opening file C:\Img2PdfSvr\Folder\InProgress\Job-...
```

The error log file per document   For each document that is not processed successfully, an error log file is created. The log file is written to the `Logs` subfolder and has the same file name as the input document, with extension `.txt`. There is no error log available if a document cannot be opened (e.g. it is not an appropriate document type).

5 User guide

5.1 Using the Image to PDF Converter Service

When the service is created and started, watched folders are created. When an image file is placed into a watched folder, the service performs these actions:

1. Take the file, give it a unique file name by adding a conversion job number prefix, and move it to the `Jobs/` subfolder.
2. When a job is converted successfully, the image file is either deleted or moved to the `Succeeded/` folder depending on whether `AutoDelete` is set to `True` or `False` in the configuration file.
3. The converted PDF file is stored in the `PDFs/` folder.
4. When a job fails to convert, e.g. when the file is not a valid or supported file format, the file is copied to the `Failed/` folder or deleted according to the `AutoDelete` setting. There is a log file created for every job where an error occurred. The log file is in the `Failed/` folder and has the same name as the document which failed to convert.

These four subfolders are created automatically, and used by the PDF Converter Service. Three of them are hidden folders (all except `PDFs/`) and should not be modified, nor should any files be copied into any of them directly.

5.2 Output file name

The generated PDF file are copied to the `PDFs/` subfolder, which resides within the watched folder. The output file name is automatically generated and comprises the original file name and a job-number prefix. For example:

`\PDFs\Job-01C57E37-3ED94B7A_mydocument.pdf`

5.3 Single-page or multi-page images

If the input image file is a multi-page file (e.g. a TIFF), a multi-page PDF file is generated.

5.4 Job control files

Instead of copying or moving the actual file into a watched folder, a job control file can be used. A job control file is a text file (file extension .txt) that contains the name of one or multiple files (one file name per line). Copying such a job control file into a watched folder has a similar effect as copying the actual file. This has the following benefits:

- Multiple input files can be merged into one output file.
- Files don't need to be physically copied, which improves the speed and lowers network traffic (especially for large files).
- Individual configuration options can be set per file (overwriting the default of the watched folder). The following switches are not supported in the control file: `-w`, `-wd`, `-p`
  The following switches are only valid when set before the first input file: `-cl`, `-oi`, `-o`, `-p`, `-u`

5.4.1 Example of a control file

The following lines show what a control text file looks like.

- The first line indicates the resulting PDF document should conform to PDF/A-1a.
- The second and third lines add a 20 points white border and fit the image on the page.

- The fourth line adds an alternative text for the first image. It is set to "Sailing boat at sunset"
- The fifth line adds the image `boat1.jpg` according to the previously configuration.

The second image is handled in a similar way, but has a different alternate text.

```
-cl pdfa-1a
-f
-sb 20
-aa "Sailing boat at sunset"
C:\images\boat1.jpg
-aa "Sailing boat in harbor"
C:\images\boat2.jpg
```

6 Interface reference

6.1 Service control commands

These options are used to control the service. The create and delete functions require administrator rights. The start and stop functions require operator rights.

6.1.1 `-a` Pause service

Pause service `-a`

This option pauses the service.

```
Img2PdfSvr -a
```

6.1.2 `-c` Create service

Create service `-c`

The 3-Heights® Image to PDF Converter Service is created using the `-c` option.

```
Img2PdfSvr -c
```

> **Important:** It is essential that `Img2PdfSvr.exe` is on a non-mapped drive.

6.1.3 `-d` Delete service

Delete service `-d`

The 3-Heights® Image to PDF Converter Service can be deleted with the `-d` option. It is best used after the service has already been stopped.

```
Img2PdfSvr -d
```

6.1.4 `-i` List the usage

List the usage `-i`

The `-i` option lists the current version and date of the service along with all available settings.

```
Img2PdfSvr -i
```

6.1.5 -o Continue service

Continue service -o

This option resumes the service.

```
Img2PdfSvr -o
```

6.1.6 -q Query current status of service

Query current status of service -q

This option returns the current status of the service.

```
Img2PdfSvr -q
The service starts automatically during system startup.
The service is stopped.
[Img2PdfSvr] QueryService: The operation completed successfully.
```

6.1.7 -s Start service

Start service -s

Once created, the 3-Heights® Image to PDF Converter Service can be started with the -s option.

```
Img2PdfSvr -s
```

6.1.8 -t Stop service

Stop service -t

To stop the service, use the -t option.

```
Img2PdfSvr -t
```

If "stop" is called while the service is "running", the current job (all pages) will be finished, after that the service is stopped.

If the service was "paused" before calling "stop", the current page will be finished processing. After that page, the job is aborted.

6.1.9 -x Run as executable

Run as executable -x

With this option, the Image to PDF Converter Service runs as an executable instead of as a Windows Service. It provides the same functionality as long as the executable is "running".

```
Img2PdfSvr -x
```

6.2 Supported codecs

The following table lists the capabilities that the different codecs that are supported by the 3-Heights® Image to PDF Converter Service. Other capabilities not listed here are not supported.

Codec capabilities

Codec	Bits per Pixel	Gray	Indexed	Quality	Compression
TIFF	1,2,3,4,8,24[1]	Yes	Yes	Yes	Raw, Flate, LZW, JPEG, Group3, Group3_2D, Group4
JPEG	8, 24	Yes	No	Yes	JPEG (lossy only)
BMP	1, 2, 4, 8, 24[1]	Yes	Yes	No	Raw
GIF	2-8	Yes	Yes	No	LZW
PNG	1-8, 24	Yes	Yes	No	Flate
JBIG2	1	Yes	No	No	JBIG2 (lossless only)
JPEG2000	8, 24	Yes	Yes	Yes	JPEG2000 (lossless: Q = 100)[2]
PBM	1-8, 24	Yes	No	No	Raw

Codec   The **Co**mpression/**Dec**ompression type.

Bits per pixel   The supported values for bits per pixel. 1 = bitonal, 8 = 256 colors/grayscales, 24 = True Color

Gray   This format supports grayscale.

Indexed   This format supports indexed colors.

Quality   This format supports the setting of a quality parameter.

Compression   Supported compression types.

---

[1] For palette creation: The number of palette entries is equal to $2^{BitsPerPixel}$ where BitsPerPixel is smaller or equal to 8. This means it is possible to create a 3 bits per pixel TIFF or BMP, but the palette size is equal as for 4 bits. However the 3 bits per pixel image will compress better than the 4 bits per pixel image.

[2] To create lossless JPEG2000 images, set the quality parameter to 100. For values <100, a lossy compression algorithm is applied.

6.3 Configuration options

6.3.1 Img2PdfSvr.ini configuration file

The `Img2PdfSvr.ini` configuration file defines the setting for the watched folders. It is read on starting the service.

`[Img2PdfSvr]`	Required	
`AutoDelete=...`	Optional	`true` or `false`
`AutoDeleteAll=...`	Optional	`true` or `false`
`LogPath=...`	Optional	Either a path like `C:\mypath\log` or the keyword `EventLog`
`PollingInterval=...`	Optional	Value in milliseconds, default `1000`
`JobPrefix=...`	Optional	`true` or `false`
`LogLevel=...`	Optional	`0` or `1`
`Threads=n`	Required	The number of threads
`Thread1=-w ...`	Required	Options for the first thread
`Thread2=-w ...`		Options for the second thread
`Threadn=...`		There must be exactly as many threads as defined in `Threads=n`.

Example:

```
[Img2PdfSvr]
AutoDelete=true
LogPath=EventLog
JobPrefix=false
Threads=3
Thread1=-w C:\Img2PdfSvr\PDF
Thread2=-w C:\Img2PdfSvr\PDF
Thread3=-w C:\Img2PdfSvr\PDFA-1b -cl pdfa-1b -oi
"C:\WINNT\system32\spool\drivers\color\sRGB Color Space Profile.icm"
```

Compression types

The following compression types can be set:

Value	Compression
0	raw
1	JPEG
2	Flate (ZIP)
3	LZW
4	CCITT Fax Group 3
5	CCITT Fax Group 3 2D
6	CCITT Fax Group 4
7	JBIG2 (Supported in PDF 1.4 or later)
8	JPEG2000 (Supported in PDF 1.5 or later, not supported in PDF/A-1)

Autodelete of successfully processed files

When a job succeeded, the image file is moved from the `Jobs` folder to the `Succeeded` folder. To automatically delete the image files, the value `AutoDelete` can be set to True in the `Img2PdfSvr.ini` file. When set to `false`, the files remain in the folders `Succeeded` and `Failed`.

```
[Img2PdfSvr]
AutoDelete=true
```

To delete failed documents as well, use the following setting:

```
[Img2PdfSvr]
AutoDeleteAll=true
```

Job number prefix

Every time a document is copied from the watched folder to the `Jobs` subfolder, it is renamed by adding a 21 character prefix containing a timestamp of the form `Job-‹8 digits›-‹8 digits›_`. For example

`Job-01C61DD4-E72E1BCE_`

Note: When `JobPrefix=false` then the incoming documents must have unique file names.

The job number prefix ensures that several documents with the same name can correctly be processed. Adding the prefix can be prevented with the following line in the configuration file:

```
[Img2PdfSvr]
JobPrefix=false
```

Logpath

Log messages created by the service are by default written to the `log` subdirectory. To alter the directory, add a line similar as shown below to the configuration file:

```
[Img2PdfSvr]
LogPath=C:\path\log
```

Messages created by the service can be added to the system's application event log instead of written to a log file. This is achieved by adding the following line to the configuration file:

```
[Img2PdfSvr]
LogPath=EventLog
```

The system's application log event then logs messages similar as shown below:

- CreateService: The operation completed successfully.
- StartService: The operation completed successfully.

> **Note:** The messages are only fully accessible while the service is created.

Otherwise, a message as shown below is displayed:

- The description for Event ID (1) in Source (`Img2PdfSvr`) cannot be found. The local computer may not have the necessary registry information or message DLL files to display messages from a remote computer. The following information is part of the event: DeleteService: The operation completed successfully.

Polling interval

The polling interval defines the time in milliseconds that the polling thread pauses between two polls. The time passing until the same watched folder is polled again (maximum pick-up time) is: The value of `PollingInterval` plus the actual time it takes to poll all watched folders. The higher the polling interval, the lower the network traffic, and the longer it takes until documents are picked up.

Suggested values for the polling intervals are 1000 to 10000 milliseconds.

```
[Img2PdfSvr]
PollingInterval=5000
```

6.3.2 Img2ImgSvr.ini configuration file

Generic settings (AutoDelete, JobPrefix, etc.) are similar to the Image to PDF Service described above.

```
[Img2PdfSvr]
PollingInterval=2000
JobPrefix=false
Threads=3
Thread1=-w C:\Img2ImgSvr\ToTiff -e .tif
Thread2=-w C:\Img2ImgSvr\ToJpeg -e .jpg -s
Thread3=-w C:\Img2ImgSvr\ToJpeg -e .jpg -s
```

If multiple threads have the same configuration, then the corresponding watched folder has multiple worker threads. In order to get the best performance, one should use as many worker threads as CPUs are available.

Compression types: TIFF only

The following compression types can be set for converting TIFF files.

Value	Compression
0	raw
1	JPEG
2	Flate (ZIP)
3	LZW
4	CCITT Fax Group3
5	CCITT Fax Group3 2D
6	CCITT Fax Group 4
9	CCITT TIFFJPEG

Compression types 7 (Jbig) and 8 (JPEG2000) are not applicable for TIFF.

6.3.3 -w Set the watched folder

Set the watched folder   -w

Use the -w option to define the path of the watched folder. This path should not contain mapped drives, since other users (such as LocalSystem) do not recognize them. This parameter must always be the first parameter of a thread.

```
-w C:\output\watchedfolder
```

> **Note:** The service supports path lengths including file name of up to 258 characters. This includes the 21 characters of the job ticket. If a file name exceeds this value, its file name is truncated at the end of the file name and before the file extension. Therefore, watched folder names should be kept reasonably short.

Important: Watched folders are not to be shared between different services, such as Image to PDF and Image to Image.

6.3.4 -wd Set the drop in folder

Set the drop in folder   -wd

By default, the drop in folder is equal to the folder defined as watched folder using the `-w` option. If the input files should be taken from a different folder, this can be configured using `-wd`. All folders created by service, including the output folder, are at the directory defined by `-w`.

```
-wd C:\SomePath\DropIn
```

6.3.5 `-wfi` Ignore files with certain extensions

Ignore files with certain extensions `-wfi ‹exts›`

By default, the service tries to process all files dropped into the drop-in folder, regardless of the extension. With this option, files with certain file extensions can be ignored.

Example: Ignore temporary files.

```
-wfi .temp.tmp
```

6.3.6 `-wfs` Process only files with certain extensions

Process only files with certain extensions   `-wfs ‹exts›`

By default, the service tries to process all files dropped into the drop directory, regardless of the extension. With this option, the processing can be restricted to a set of known file extensions.

Example: Restrict the processing to JPEG and PNG files.

```
-wfs .jpeg.jpg.png
```

6.4 Options for image to PDF

This section describes the options that are specific to the 3-Heights® Image-to-PDF Service (Img2PdfSvr).

6.4.1 `-a` Adjust the page size to the size of the image

Adjust the page size to the size of the image   `-a`

Adjust the pages of the PDF document to the size of the image. This disables `-c` and `-f`.

6.4.2 `-aa` Set alternate text

Set alternate text `-aa ‹alt›`

To create a document that conforms to PDF/A-2a, an image must have an alternate text. The `-aa` option sets this alternate text. This option is only relevant in combination with PDF/A-2a. The default text is `"Imported image"`.

Example: Set the conformance to PDF/A-2a and set the alternative text for the image to `"some text"`

```
-cl pdfa-2a -aa "some text"
```

6.4.3 `-al` Set language for alternate text

Set language for alternate text `-al ‹lang›`

Set the language for the alternate text that is set using the -aa option.

The default language is US-EN. Other languages can be set using the corresponding abbreviations, e.g. DE (German), FR (French), etc.

Example: Set the conformance to PDF/A-2a, set the alternative text to `"Beschreibung"` and the language to German

```
-cl pdfa-2a -aa "Beschreibung" -al DE
```

6.4.4 `-ao` Adjust page orientation

Adjust page orientation `-ao`

When set, every page of the PDF is oriented in such a way that the longer side length of the input image conforms with the longer side length of the corresponding page.

Example: Fit input TIFF (multipage) to PDF with A5 pages. Adjust orientation of every PDF page to corresponding input TIFF page

```
-ao -f -sp 420 595
```

6.4.5 `-b` Set bits per pixel

Set bits per pixel `-b ‹n›`

Set the color depth. Available: Bitonal: 1. When using 1 bit per pixel, it is suggested to set a suitable dithering algorithm (-h option).

Example: Convert to bitonal and use LZW compression

```
-b 1 -fb 3
```

6.4.6 `-bc` Set crop box

Set crop box `-bc ‹x› ‹y› ‹w› ‹h›`

Set the crop box. It takes four parameters: x-position, y-position, width and height. All values are in PDF points (A4 = 595 x 842 points).

The crop box is a rectangle, defining the visible region of the page. When the page is displayed or printed, its contents are to be clipped (cropped) to this rectangle and then imposed on the output medium in some implementation-defined manner.

Example: The following command creates an image with a crop box that is positioned 50 points from the left border, 100 points from the bottom, is 150 points wide and 200 points high

```
-bc 50 100 150 200
```

If no crop box is set, the crop box is equal to the media box.

6.4.7 `-c` Center images

Center images `-c`

Center the images on the pages horizontally and vertically. This disables -a.

6.4.8 `-cl` Set conformance level

Set conformance level `-cl ‹level›`

Set the PDF conformance level. Supported conformance levels are:

pdf1.x   Regular PDF versions 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

pdf2.0   Regular PDF version 2.0

pdfa-1b   PDF/A-1b format

pdfa-1a   PDF/A 1a format (accessibility)

pdfa-2b   PDF/A 2b format

pdfa-2u   PDF/A 2u format (Unicode)

pdfa-2a   PDF/A 2a format (accessibility)

pdfa-3b   PDF/A 3b format

pdfa-3u   PDF/A 3u format (Unicode)

pdfa-3a   PDF/A 3a format (accessibility)

The default is pdf1.7.

Example: To create a document that conforms to PDF/A-1b, use a setting like this:

```
-cl pdfa-2b
```

> **Note:** To create PDF/A compatible documents, it may be required to provide a color profile. The color profile is then embedded in the PDF/A document. (See -cs and -oi switches)

Selecting a PDF/A conformance level automatically generates the XML metadata and other requirements to meet the PDF/A specification. If JPEG2000 images are to be converted to PDF/A and the JPEG2000 compression is to be retained, a PDF/A-2 or PDF/A-3 conformance level must be selected.

6.4.9 `-cs` Color space profile

Color space profile   `-cs`

Set a color profile for embedding in the output PDF. The color profile provided here is used directly for the image's color space in the output PDF. See also `-oi` for setting the PDF's output intent.

At maximum three profiles (one RGB profile, one CMYK profile, and one Gray profile) can be set by using at most one `-oi` switch and/or at most three `-cs` switches.

Example: Set a color profile for all RGB images in the PDF.

```
-cs "C:\Windows\system32\spool\drivers\color\sRGB Color Space Profile.icm"
```

6.4.10 `-d` Set resolution in DPI

Set resolution in DPI   `-d ‹dpi›`

Set the default resolution in dots per inch (DPI) if not provided from the image. The default is 96. If the resolution is given by the image, then this option does not have any effect. Basically, the `-d` switch changes the amount of dots per inch by changing the size of the image in the PDF document. The size of the raster image in pixel is not changed.

Example: Set the resolution to 150 DPI.

```
-d 150
```

6.4.11 `-f` Fit the image size to the page size

Fit the image size to the page size   `-f`

Scale the image to fit on the page dimensions. This disables `-a`.

6.4.12 `-fb` Bitonal image compression

Bitonal image compression   `-fb ‹compr›`

Set the bitonal image compression. Default is 6 (CCITT Fax Group 4). See Compression types for possible codecs.

Example: Set the compression for bitonal images to CCITT Fax Group 3

```
-fb 4
```

6.4.13 -fc Color / Grayscale image compression

Color / Grayscale image compression -fc ‹compr›

Set the color / gray image compression. Default is 1 (JPEG). See Compression types for possible codecs.

Example: Set the compression for color images to JPEG2000

```
-fc 8
```

6.4.14 -h Dithering mode

Dithering mode -h ‹mode›

Set the dithering mode. Allowed values are:

Dithering mode

Value	Description
0	No dithering
1	(Default) Floyd-Steinberg
2	Halftone block
3	Halftone continuous
4	G3 Optimized
5	G4 Optimized
6	Atkinson dithering is very fast and produces images that can be compressed really well with reasonably good image quality.

Dithering provides a better image quality, especially for 1 bit images, at the cost of a larger file size.

Example: Convert image to bitonal, use dithering mode halftone continuous and use jbig2 compression

```
-h 3 -b 1 -fb 7
```

6.4.15 `-fi` Indexed image compression

> **Indexed image compression** `-fi ‹compr›`

Set the indexed image compression. Default is 2 (Flate). See Compression types for possible codecs.

Example: Set the compression for indexed images to LZW

```
-fi 3
```

6.4.16 `-fr` Recompress JPEG streams

> **Recompress JPEG streams** `-fr`

Re-compress JPEG streams. This is useful for JPEG streams that cannot be read by certain (older) PDF viewing applications.

6.4.17 `-fu` Unpack indexed images

> **Unpack indexed images** `-fu`

This switch instructs the converter to unpack images with bits per sample of less than 8 to exactly 8 bits.

6.4.18 `-o` Owner password

> **Owner password** `-o ‹owner›`

The owner password is required to change the security settings of the document. To apply permission flags, an owner password must be set. Permission flags are set with the -p switch.

Example: Encrypt a document and set the owner password to ‹owner›.

```
-o owner
```

6.4.19 `-oi` Set output intent

> **Set output intent** `-oi ‹profile›`

The output intent holds the output color profile. Setting the output intent is generally only recommended for images intended for a particular CMYK output device. In other cases, the option -cs should be used.

Color profiles are usually provided with the OS. On Windows for example they can be found at `C:\Windows\System32\spool\drivers\color`.

Alternatively profiles can be found here:

- https://www.pdf-tools.com/public/downloads/resources/colorprofiles.zip
- https://www.color.org/srgbprofiles.html
- https://www.adobe.com/support/downloads/iccprofiles/iccprofiles_win.html

> **Note:** Most color profiles are copyrighted, therefore you should read the license agreements on the above links before using the color profiles.

Example: Set the output intent to a specific profile that exists on the system.

```
-oi "C:\Windows\system32\spool\drivers\color\USWebCoatedSWOP.icc"
```

6.4.20 `-or` Set image orientation

Set image orientation	`-or ‹n›`

Set the orientation of the image. Available orientations are:

Value	Description	Transformation
0 (Default)	inherent	Undefined
1	top-left	Untransformed
2	top-right	Horizontal flip
3	bottom-right	Rotation by 180°
4	bottom-left	Vertical flip
5	left-top	Rotation by 90° clockwise followed by horizontal flip
6	right-top	Rotation by 90° clockwise
7	right-bottom	Rotation by 90° clockwise followed by vertical flip
8	left-bottom	Rotation by 90° counter-clockwise

6.4.21 `-ow` Optimize for the Web

Optimize for the Web	`-ow`

Add linearization tags to the document. A linearized document has a slightly larger file size than a non-linearized file, and provides the following features (among others):

- When a document is opened through a PDF viewing application plugin for an Internet browser, the first page can be viewed without downloading the entire PDF file.
- When another page is requested by the user, the page is displayed as quickly as possible and incrementally as data arrives, without downloading the entire PDF file.

6.4.22 -p Permission flags

<table>
<tr><td>**Permission flags**   -p ‹flags›</td></tr>
</table>

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

Permission flags

Value	Description
0	Allow nothing (no permissions are granted)
4	Allow printing (low resolution)
8	Allow change of the document
16	Allow content copying or extraction
32	allow annotations
256	Allow filling of form fields
512	Support disabilities
1024	Allow document assembly
2048	Allow high quality printing

Any combination of permissions can be granted by adding up their values.

Example: The following command sets the owner password to "owner" and the permission flags to allow "printing in low resolution" 4 and "allow form filling" 256.

```
-o owner -p 260
```

Example: "High quality printing" 2048 requires the standard printing flag 4 to be set too.

```
-o owner -p 2052
```

For further information about the permission flags, see PDF Reference 1.7 Section 3.5.2.

6.4.23 -pg Page range

<table>
<tr><td>**Page range**   -pg ‹first› ‹last›</td></tr>
</table>

If not all pages should be printed, the page range can be defined using the -pg switch. Use 1 for the first page. Use -1 for the last page.

```
-pg 1 1
```

Example: Convert all but the first page

```
-pg 2 -1
```

6.4.24 `-q` Set image quality

Set image quality   `-q ‹quality›`

Some image compression algorithms such as JPEG or JPEG2000 support lossy compression. The quality index can be controlled using the `-q` option. The lowest quality index is `1`; the highest is `100`. The default value is `80`. If the quality is set to `100`, JPEG2000 images are compressed lossless.

Example: Set the image quality to `100`, use JPEG2000 with lossless compression for color images:

```
-fc 8 -q 100
```

6.4.25 `-sb` Set border size

Set border size   `-sb ‹n›`

Define the width of a white border around the image in pages of the PDF document. The units are points (1 point = 1/72 inch). The default is 0 points. The border does not increase the dimensions of the page set by the `-sp` option.

Example: Set the width of the border to 20 points

```
-sb 20
```

6.4.26 `-sp` Set page dimensions

Set page dimensions   `-sp ‹w› ‹h›`

Set the dimensions of the pages of the PDF document in points (1 point = 1/72 inch). The default is A4 (595 x 842 points). It disables the `-a` option.

Example: Create "Letter" sized PDF pages

```
-sp 612 792
```

6.4.27 `-u` User password

> **User password**   `-u ‹user›`

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

A user who knows the user password is able to open and read the document. A user 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

```
-u userpassword -o ownerpassword
```

6.5 Options for image to image

This section describes the options that are specific to the 3-Heights® Image-to-Image Service (Img2ImgSvr).

6.5.1 `-cb` Bitonal image compression

> **Bitonal image compression**   `-cb ‹compr›`

Set the bitonal image compression. Default is 6 (CCITT Fax Group 4). See Compression types: TIFF only for possible codecs.

Example: Set the compression for bitonal images to CCITT Fax Group 3.

```
-cb 4
```

6.5.2 `-cc` Color / Grayscale image compression

> **Color / Grayscale image compression**   `-cc ‹compr›`

Set the color / gray image compression. Default is 9 (TIFFJPEG). See Compression types: TIFF only for possible codecs.

Example: Set the compression for color images to JPEG

```
-cc 1
```

6.5.3 `-ci` Indexed image compression

> **Indexed image compression**   `-ci ‹compr›`

Set the indexed image compression. Default is 3 (LZW). See [Compression types: TIFF only](#) for possible codecs.

Example: Set the compression for indexed images to Flate

```
-ci 2
```

6.5.4 `-d` Set resolution

Set resolution `-d ‹dpi›`

Set the resolution of the output image in dots per inch (DPI). The width and the height remain constant. Furthermore, if the `-r` option is set, true_width and true_height are constant, whereas the width and the height are changed. This latter case results in a re-sampling of the image. For more information about the behavior, see [Specification of resolution and image dimensions](#).

Example: Set the resolution of output file to 300 DPI and let true_width and true_height be constant

```
-d 300 -r
```

6.5.5 `-dd` Set default resolution

Set default resolution `-dd ‹dpi›`

Set the default resolution of the input image in dots per inch (DPI). It is only effective where the input image has no resolution stated. Default 96 DPI.

Example: Set the default resolution of input file to 72 DPI

```
-dd 72
```

6.5.6 `-e` Specify image type/extension

Specify image type/extension `-e`

The image type of the output file can be specified using the `-e` switch. The output image format is defined by its extension. There is a list of supported extensions and the corresponding file type:

Extension	File Format
`.tif .tiff`	Tagged Image File Format
`.jpg .jpe .jpeg`	Joint Photographic Expert Group (JPEG)

`.png`	Portable Network Graphics
`.gif`	Graphics Interchange Format
`.bmp`	Window Bitmap
`.jb2`	Joint Bi-level Image Experts Group
`.jp2`	JPEG2000
`.jpx`	Extended JPEG2000
`.pmb` `.pgm` `.pnm` `.ppm`	Portable Bitmap File Format
`.eps`	Encapsulated PostScript (output only)

If the extension is not set, the default extension `.tif` is selected.

Example: Set file extension to .gif, i.e. set file type to GIF

```
-e .gif
```

6.5.7 `-fu` Unpack indexed images

Unpack indexed images	`-fu`

This switch instructs the converter to unpack images with bits per sample of less than 8 to exactly 8 bits.

6.5.8 `-hp` Set height

Set height	`-hp ‹height›`

Set the height in pixels of the output image. The width is calculated respecting proportions. If the width is set too (see -wp), the height is omitted. For more information about the behavior, see Specification of resolution and image dimensions.

Example: Set height of output file to 1800 pixels

```
-hp 1800
```

6.5.9 `-ht` Set true height

Set true height	`-ht ‹true_height›`

Set the true_height in mm of output image. The true_width is calculated respecting proportions. If the true_width is set too (see -wt), the true_height is omitted. For more information about the behavior, see Specification of resolution and image dimensions.

Example: Set true_height of output file to 500 mm and let the resolution be constant

```
-ht 500 -r
```

6.5.10 `-pg` Page range

Page range `-pg ‹first› ‹last›`

If not all pages should be converted, the page range can be defined using the `-pg` switch. Use `1` for the first page, use `-1` for the last page.

Example: Convert the first page only

```
-pg 1 1
```

Example: Convert all but the first page to jpg

```
-pg 2 -1 -s
```

6.5.11 `-q` Set image quality

Set image quality `-q ‹quality›`

Set the quality index for lossy compression such as JPEG. Allowed values are `1` (lowest) to `100` (highest). Default is `80`.

Example: Set the image quality to 50

```
-q 50
```

A quality index of 100 means lossless compression if the format supports it (JPEG2000).

6.5.12 `-r` Allow re-sampling

Allow re-sampling   `-r`

Forces re-sampling where only the resolution (see `-d`) or only the true_width/true_height (see `-wt`, `-ht`) is set. For more information about the behavior, see Specification of resolution and image dimensions.

Example: Set resolution of output to 72 DPI, let true_width and true_height be constant

```
-r -d 72
```

6.5.13 `-s` Split multi-page input to single-page output

> **Split multi-page input to single-page output**   `-s`

Split a multiple-page input file (e.g. a 5-page TIFF file) into single-page output files (e.g. 5 separate TIFF files).

6.5.14 `-t` Transform colors from CMYK to RGB

> **Transform colors from CMYK to RGB**   `-t`

Apply a color conversion and convert CMYK to RGB.

6.5.15 `-wp` Set width

> **Set width**   `-wp ‹width›`

Set the width in pixels of the output image. The height is calculated respecting proportions. If the height is set too (see `-hp`), the height is omitted. For more information about the behavior, see Specification of resolution and image dimensions.

Example: Set width of output file to 1500 pixels and resolution to 300 DPI

```
-wp 1500 -d 300
```

6.5.16 `-wt` Set true width

> **Set true width**   `-wt ‹true_width›`

Set the true_width in mm of output image. The true_height is calculated respecting proportions. If the true_height is set too (see `-ht`), the true_height is omitted. For more information about the behavior, see Specification of resolution and image dimensions.

Example: Set true_width of output file to 500 mm and width to 1000 pixels

```
-wt 500 -wp 1000
```

6.6 OCR

In order to make use of OCR, an OCR engine must be installed. The OCR engine is provided as part of a separate product: The 3-Heights® OCR Enterprise Add-on.

The recommended options (besides `-ocr`, `-ocl` and `-ocp`) are:

- For scanned documents: `-oca -ocri -occs`
- For born-digital documents: none

6.6.1 `-ocb` Convert images to bitonal before OCR recognition

> **Convert images to bitonal before OCR recognition**   `-ocb`

Specify whether the images should be converted to bitonal (black and white) before OCR recognition.

Enabling this feature can improve the memory consumption of the OCR process.

6.6.2 `-ocbc` Embed barcodes

> **Embed barcodes**   `-ocbc`

Embed the recognized barcodes in the XMP metadata.

6.6.3 `-occs` Correct skew angle

> **Correct skew angle**   `-occs`

Correct the skew angle of images.

This option has only an effect if the required information is provided by the OCR engine, which depends on the type and settings of the engine.

This option may change the appearance of the page and is only recommended for simple scanned documents that consist of a single image.

Using the option for digital-born documents may destroy the page layout.

6.6.4 `-ocd` Resolution for OCR recognition

> **Resolution for OCR recognition**   `-ocd ‹n›`

Re-sample images to target resolution before they are sent to the OCR engine. If no value is set, images are re-sampled to 300 DPI for OCR, which is the preferred resolution for most OCR engines.

6.6.5 `-ocl` Set OCR language

> **Set OCR language**   `-ocl ‹languages›`

To optimize the performance of the OCR engine, it can be given hints what languages are used. The default language of the Abbyy FineReader 11 OCR Engine is English. This switch can only be used if the switch `-ocr` is set. This setting depends on the OCR engine.

The following switch set the languages to English and German:

```
-ocr service -ocl "English, German"
```

See also documentation for the 3-Heights® OCR Add-on.

6.6.6 `-ocp` Set OCR parameters

Set OCR parameters `-ocp ‹params›`

Using this switch, OCR engine specific parameters (key/value pairs) can be set to optimize the performance.

The following switch sets a predefined profile (i.e. a configuration setting), which is optimized for creating electronic archives with high accuracy:

```
-ocp "PredefinedProfile = DocumentArchiving_Accuracy"
```

See also documentation for the 3-Heights® OCR Add-on.

6.6.7 `-ocr` Load OCR engine

Load OCR engine `-ocr ‹name›`

If a PDF document has to be made fully text searchable, even if the text is part of a raster image, then the images that are contained in the PDF document must be run through an OCR engine. With this switch, the user can select an OCR engine, e.g. `Abbyy11`, and instruct the tool to embed the recognized text as a hidden layer on top of the image. If the add-in is not found or the engine cannot be initialized (because it is not installed or the license key is not valid), then an error message is issued.

If the switch `-ocr` is not used, no OCR is applied.

Example: The following switch sets the OCR engine to the OCR Service

```
-ocr service
```

See also documentation for the 3-Heights® OCR Add-on.

6.6.8 `-ocri` Reembed pre-processed image

Reembed pre-processed image `-ocri`

This option currently requires the `-occs` to be set.

The OCR engine deskews and denoises the input image before recognizing the characters. This option controls whether the 3-Heights® Image to PDF Converter Service should use the pre-processed image or keep the original image.

This option has only an effect, if the pre-processed image is provided by the OCR engine, which depends on the type and settings of the engine.

If this option is set, the resulting image may have a different color space, compression and size.

Since this option currently requires `-occs`, it is recommended only for simple scanned documents.

6.6.9 `-oct` Threshold resolution for OCR

Threshold resolution for OCR `-oct ‹n›`

Only images with a higher resolution than the threshold are re-sampled before OCR. The default is 400 DPI. If set to -1, no re-sampling is applied.

Example: Re-sample all images with a resolution of more than 300 DPI to 300 DPI:

```
-ocd 300 -oct 1
```

Example: Re-sample all images with a resolution of 400 DPI or more to 300 DPI (default):

```
-ocd 300 -oct 400
```

Example: Do not re-sample:

```
-oct -1
```

> **Compatibility note:** Initially, this switch was called `-ocD` and then renamed to `-oct` to avoid confusions with the switch `-ocd`.

6.7 Specification of resolution and image dimensions

The three image dimensions (resolution, true_width and width) depend on each other. They have to satisfy the following relation (the same is true for the height and the true_height):

$$\text{resolution} = \frac{\text{width}}{\text{true\_width}}.$$

If the width (see `-wp`) and the height (see `-hp`) are set at the same time, the height is omitted due to priority of width. Equivalently, true_width has priority to true_height. All transformations are done respecting image proportions. The option `-r` (allow_resampling) can be used to force in certain situations to perform a re-sampling. The table below enlists the possible parameter combinations and shows the behavior of the Image to Image Converter Service.

Options				Properties of Output Image
-d	**-wp/-hp**	**-wt/-ht**	**-r**	
not set	not set	not set	set/not set	no changes
not set	set	not set	set/not set	true_width/true_height constant, resolution modified
not set	set	set	set/not set	resolution modified
not set	not set	set	set	true_width/true_height constant, width/height modified

not set	not set	set	not set	width/height constant, true_width/true_height modified
set	not set	not set	set	true_width/true_height constant, width/height modified
set	not set	not set	not set	width/height constant, true_width/true_height modified
set	set	not set	set/not set	true_width/true_height modfied
set	not set	set	set/not set	width/height modified
set	set	set	set/not set	width/height and true_width/true_height have priority over resolution

7 Troubleshooting

7.1 Output

7.1.1 Poor image quality

Increase the DPI value for a higher resolution. This is done with the -d switch. If using a lossy compression type such as JPEG, increase the quality using the -q switch and a parameter higher than 80.

7.1.2 Content is missing

This can happen when the -s switch is used to set dimensions that have a different ratio than the original dimensions. To automatically make the page fit the new dimensions, use the -f switch.

7.1.3 Colors are gone

The -fb switch sets the bits per pixel. JPEG 8 bit is always grayscale, since indexed colors are not supported for this format. For TIFF and GIF, the indexed colors need to be enabled if 8 bit is selected. This is done with the -fi switch.

7.2 Service

7.2.1 Watched folders not created

Most commonly, this happens when the user under which the service is running does not have write permissions to create the watched folder. By default, the service starts under the user LocalSystem. Make sure this user has the required access permissions or use a dedicated user.

8 Version history

8.1 Changes in versions 6.19–6.27

- **Update** license agreement to version 2.9

8.2 Changes in versions 6.13–6.18

- **New** supported image format HEIC/HEIF.

8.3 Changes in versions 6.1–6.12

- **Improved** search algorithm for installed fonts: User fonts under Windows are now also taken into account.

8.4 Changes in version 5

- **New** additional supported operating system: Windows Server 2019.

8.5 Changes in version 4.12

- **New** OCR plugin `"abbyy12"` for the ABBYY FineReader 12 engine.
- **Improved** reading and recovery of corrupt TIFF images.
- **New** HTTP proxy setting in the GUI license manager.

Service Img2PdfSvr

- **Changed** behavior, option set page dimension `-sp` disables option adjust page `-a`.

8.6 Changes in version 4.11

- **New** support for reading and writing PDF 2.0 documents.
- **Improved** font subsetting of CFF and OpenType fonts.
- **Improved** repair of corrupt image streams.

8.7 Changes in version 4.10

Service Img2PdfSvr

- **New** option `-ao`: Adjust page orientation.

Service `Img2ImgSvr`

- **New** option `-pg first last`: If not all pages should be converted, the page range can be defined explicitly.

8.8 Changes in version 4.9

- **Improved** metadata generation for standard PDF properties.
- **New** option `-h`: Set the dithering algorithm.
- **New** option `-b`: Set the color depth. Available: Bi-tonal: 1. When using 1 bit per pixel, it is suggested to set a suitable dithering algorithm.

8.9 Changes in version 4.8

Service `Img2ImgSvr`

- **New** option `-hp` to set the height of the image in pixel.
- **New** option `-ht` to set the true height of the image in mm.
- **New** option `-wp` to set the width of the image in pixel.
- **New** option `-wt` to set the true width of the image in mm.
- **New** option `-r` to force resampling.
- **New** option `-dd` to set the resolution of input image, if input image has none.
- **Changed** option `-d`, no re-sampling performed when set only.

9 Licensing, copyright, and contact

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