

User Manual



3-Heights™ PDF Analysis & Repair Service

Version 4.12.26.2



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1 Introduction

The 3-Heights™ PDF Analysis & Repair Service is a ready-to-use product that allows to install a Windows NT service process to automatically analyze and repair PDF documents from watched folders.

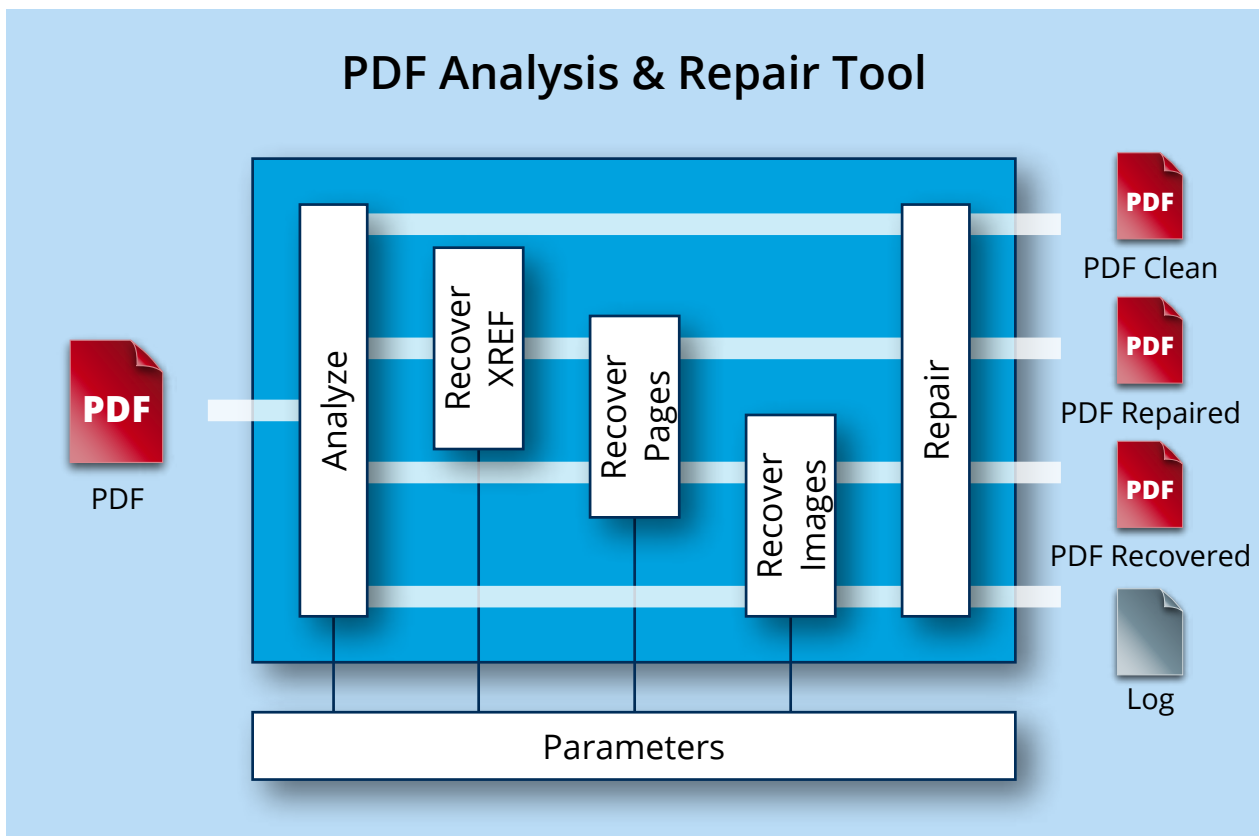
1.1 Description

The 3-Heights™ PDF Analysis & Repair Service tool is used to analyze, repair and restore the content of corrupt PDF documents.

Unfortunately, the number of corrupt PDF documents is incredibly huge. The cause is usually down to defective generating tools, converters and other influences such as attempts at manual editing, copying via FTP without correct settings, system crashes during PDF creation, network interruptions, defective copying on optical media, etc.

The result leads to an enormous loss of important information and to production downtimes caused by corrupt PDF documents.

The 3-Heights™ PDF Analysis & Repair Service analyzes PDF documents with regard to PDF specifications. Defective files are automatically repaired as far as possible and unreadable data is restored.



1.2 Functions

PDF Analysis & Repair Service is used to check and, where indicated, repair PDF documents. Users can determine customized profiles from a broad range of analysis and repair options. An exact and detailed description is issued for each reported error. The tool is also capable of reading and processing encrypted PDF files without any problems.

1.2.1 Features

- Analyze and/or repair one or more PDF Documents
- Set analysis options, including:
 - Objects
 - Page tree
 - Content stream
- Set repair options, including:
 - Restore data streams
 - Restore fonts
 - Restore XRef table
 - Restore pages
 - Restore images if pages cannot be restored
- Display error description for every message, including:
 - Type (errors, warnings, information)
 - Error code
 - Text-based description
 - Page number
 - Number of events
- Write error messages to log file
- Read encrypted PDF files
- Encrypt restored file and set permission flags
- Set error level to identify whether errors, warnings or merely information occur
- Set reporting level to determine which messages should be issued (errors, warnings, information)
- Differentiate between “Repair” (corrects the errors in the document) and “Restore” (recreates the document based on the remaining legible information)

1.2.2 Formats

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

1.2.3 Compliance

Standards:

- ISO 32000-1 (PDF 1.7)
- ISO 32000-2 (PDF 2.0)

1.3 Operating Systems

The 3-Heights™ PDF Analysis & Repair Service is available for the following operating systems:

- Windows 7, 8, 8.1, 10 – 32 and 64 bit
- Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016 – 32 and 64 bit

2 Installation

2.1 Overview

The PDF Analysis & Repair Service is configured by the file PdfRepairSvr.ini, which needs to be located in the same directory as the executable pdfrepairsvr.exe. Before starting the service, the configuration file needs to be adjusted. How this is done is described in the chapter [Configuration File PdfRepairSvr.ini](#).

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 Time-stamp to create unique job tickets. This ensures there are no conflicts with documents that have the same name.

2.2 Windows

The 3-Heights™ PDF Analysis & Repair Service comes 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>. Select the product "PDF Analysis & Repair Service". 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. If another is required, it can be selected using the combo box.

The product comes as an MSI (Microsoft Installer) that provides an installation routine that installs and uninstalls the product for you.

The package installs the 64-bit version, which runs on 64-bit platforms only.

3. Start the MSI and follow the steps in the installation routine.

2.3 Uninstall

If you have used the MSI for the installation, go to Start → 3-Heights™ PDF Analysis & Repair Service... → Uninstall ...

2.4 Note about the Evaluation License

With the evaluation license the 3-Heights™ PDF Analysis & Repair Service automatically adds a watermark to the output files.

3 License Management

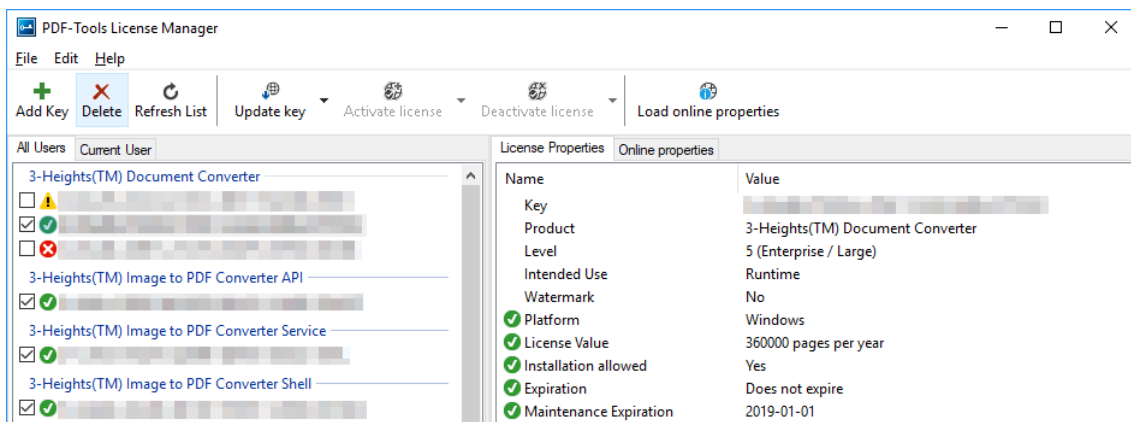
3.1 License Installation and Management

There are two possibilities to pass the license key to the application:

1. The license key is installed using the GUI tool (graphical user interface). This is the easiest way if the licenses are managed manually. It is only available on Windows.
2. The license key is installed using the shell tool. This is the preferred solution for automated license management.

3.1.1 Graphical License Manager Tool

The GUI tool LicenseManager.exe is located in the bin directory of the product kit (Windows only).



List all installed license keys

The license manager always shows a list of all installed license keys in the left pane of the window. This includes licenses of other PDF Tools products. The user can choose between:

- Licenses available for all users. Administrator rights are needed for modifications.
- Licenses available for the current user only.

Add and delete license keys

License keys can be added or deleted with the "Add Key" and "Delete" buttons in the toolbar.

- The "Add key" button installs the license key into the currently selected list.

Note: Services run by default under the LOCAL SERVICE user, not under the current user.

- The "Delete" button deletes the currently selected license keys.

Display the properties of a license

If a license is selected in the license list, its properties are displayed in the right pane of the window.

3.1.2 Command Line License Manager Tool

The command line license manager tool `licmgr` is available in the `bin\x86` and `bin\x64` directory.

Note: The command line tool `licmgr` is not included in Windows platform kits, as the GUI tool is the recommended tool for managing Licenses. A Windows `licmgr` shelltool is available on request.

A complete description of all commands and options can be obtained by running the program without parameters:

```
licmgr
```

List all installed license keys

```
licmgr list
```

The currently active license for a specific product is marked with a `*` on the left side.

Example:

```
>licmgr list
Local machine:
  Product Name:
    1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
    1-YYYYY-YYYYY-YYYYY-YYYYY-YYYYY-YYYYY-YYYYY
    * 1-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ
Current user:
```

Add and delete license keys

Install new license key:

```
licmgr store 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

Delete old license key:

```
licmgr delete 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

Both commands have the optional argument `-s` that defines the scope of the action:

g For all users

u Current user

Display the properties of a license

```
licmgr info 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

Properties that invalidate the license are marked with an X, properties that require attention are marked with an !. In that case an additional line with a comment is displayed.

Example:

```
>licmgr info 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
- Key:          1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
- Product:     Product Name
- Features:    Feature1,Feature2
- Intended use: Development
- Watermark:   No
- Platform:   Windows
- Installation: Yes
! Activation:  2018-05-07
               (The license has not yet been activated.)
- Expiration:  Does not expire
- Maintenance: 2019-04-27
```

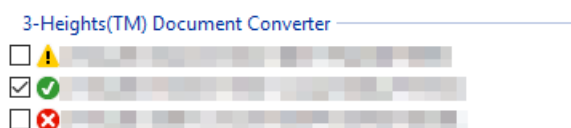
3.2 License Selection and Precedence

3.2.1 Selection

If multiple keys for the same product are installed in the same scope, only one of them can be active at the same time.

Installed keys that are not selected are not considered by the software!

In the Graphical User Interface use the check box on the left side of the license key to mark a license as selected.



With the Command Line Interface use the `select` subcommand:

```
licmgr select 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.2.2 Precedence

License keys are considered in the following order:

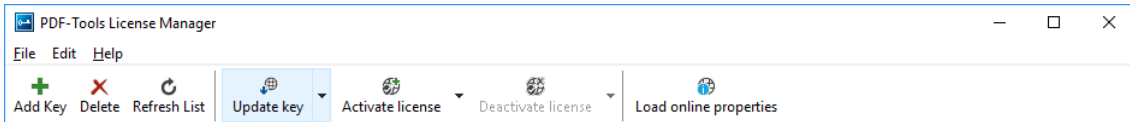
1. License key passed at runtime.
2. License selected for the current user
3. License selected for the current user ([legacy key format](#))
4. License selected for all users
5. License selected for all users ([legacy key format](#))

The first matching license is used, regardless whether it is valid or not.

3.3 Key Update

If a license property like the maintenance expiration date changes, the key can be update directly in the license manager.

In the Graphical User Interface select the license and press the button "Update Key" in the toolbar:



With the Command Line Interface use the update subcommand:

```
licmgr update 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.4 License activation

New licenses keys have to be activated (except for OEM licenses).

Note: Licenses that need activation have to be installed in the license manager and must not be passed to the component at runtime.

The license activation is tied to a specific computer. If the license is installed at user scope, the activation is also tied to that specific user. The same license key can be activated multiple times, if the license quantity is larger than 1.

Every license key includes a date, after which the license has to be activated, which is typically 10 days after the issuing date of the key. Prior to this date, the key can be used without activation and without any restrictions.

3.4.1 Activation

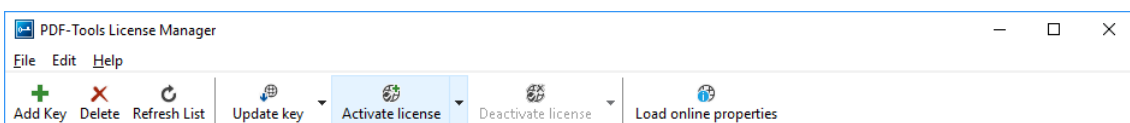
The License can be activated directly within the license manager. Every activation increases the activation count of the license by 1.

It is recommended to add a comment to the activation request which helps keeping track of all activations for a specific license key. In case of problems it also helps us providing support.

The comment is stored in the activation database as long as the license key remains activated. Upon deactivation it is deleted from the database immediately.

All activations and the corresponding comments can be examined using the **Load online properties** function of the license manager. The information is accessible to anyone with access to the license key.

In the Graphical User Interface select the license and press the button "Activate license" in the toolbar:



It is recommended to add a comment to the activation request by using the subsequent dialog box.

With the Command Line Interface use the `activate` subcommand:

```
licmgr activate 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

Note that the key has to be installed first.

It is recommended to add a comment to the activation request by using the `-c` or `-cd` option:

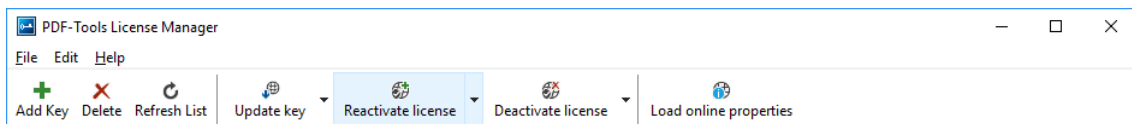
```
licmgr activate -cd 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX  
licmgr activate -c "custom comment" 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.4.2 Reactivation

The activation is tied to specific properties of the computer like the MAC address or host name. If one of these properties changes, the activation becomes invalid and the license has to be reactivated. A reactivation does **not** increase the activation count on the license.

The process for reactivation is the same as for the activation.

In the Graphical User Interface the button "Activate license" changes to "Reactivate license":



With the Command Line Interface the subcommand `activate` is used again:

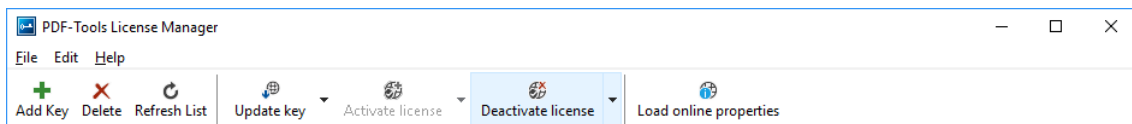
```
licmgr activate 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.4.3 Deactivation

To move a license to a different computer, it has to be deactivated first. Deactivation decreases the activation count of the license by 1.

The process for deactivation is similar to the activation process.

In the Graphical User Interface select the license and press the button "Deactivate license" in the toolbar:



With the Command Line Interface use the `deactivate` subcommand:

```
licmgr deactivate 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.5 Offline Usage

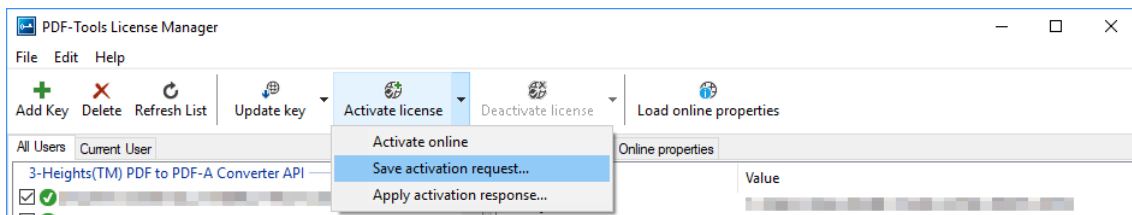
The following actions in the license manager need access to the internet:

- [License Activation](#)
- [License Reactivation](#)
- [License Deactivation](#)
- [Key Update](#)

On systems without internet access, a three step process can be used instead, using a form on the PDFTools website.

3.5.1 First Step: Create a Request File

In the Graphical User Interface select the license and use the dropdown menu on the right side of the button in the toolbar:



With the Command Line Interface use the `-fs` option to specify the destination path of the request file:

```
licmgr activate -fs activation_request.bin 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

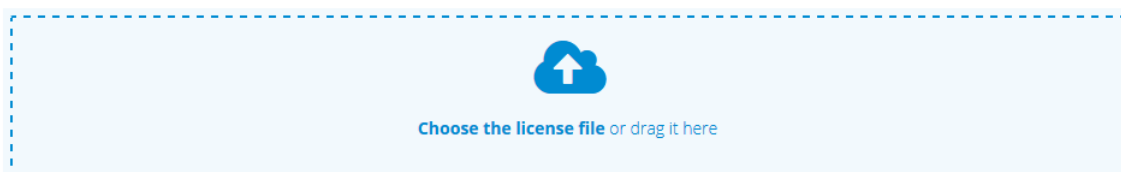
License Deactivation: When saving the deactivation request file, the license is **deactivated immediately** and cannot be used any further. It can however only be activated again after completing the deactivation on the website.

3.5.2 Second Step: Use Form on Website

Open the following website in a web browser: <http://www.pdf-tools.com/pdf20/en/mypdftools/licenses-kits/license-activation/> Upload the request by dragging it onto the marked area:

License activation (offline)

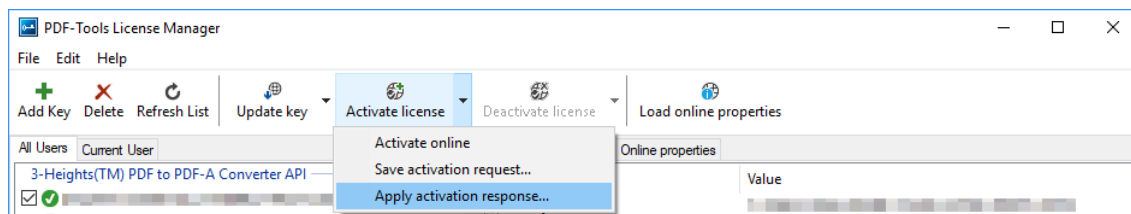
Upload your license request. For more information and instructions please check the manual of your product.



Upon success, the response will be downloaded automatically if necessary.

3.5.3 Third Step: Apply the Response File

In the Graphical User Interface select the license and use the dropdown menu on right side of the button in the toolbar:



With the Command Line Interface use the `-fl` option to specify the source path of the response file:

```
licmgr activate -fl activation_response.bin 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

3.6 License Key Versions

As of 2018 all new keys will have the format 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX. Legacy keys with the old format 0-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX are still accepted for a limited time period.

For compatibility reasons, old and new version keys can be installed side by side and one key of each version can be selected at the same time. In that case, the software always uses the new version.

3.7 License Key Storage

Depending on the platform the license management system uses different stores for the license keys.

3.7.1 Windows

The license keys are stored in the registry:

- "HKLM\Software\PDF Tools AG" (for all users)
- "HKCU\Software\PDF Tools AG" (for the current user)

3.8 Troubleshooting

3.8.1 License key cannot be installed

The license key cannot be installed in the license manager application. The error message is: "Invalid license format."

Possible causes:

- The license manager application is an older version that only supports the [legacy key format](#).

Solution

Use a current version of the license manager application or use a license key in the legacy key format if available.

3.8.2 License is not visible in license manager

The license key was successfully installed previously but is not visible in the license manager anymore. The software is still working correctly.

Possible causes:

- The license manager application is an older version that only supports the [legacy key format](#).

Solution

Use a current version of the license manager application.

3.8.3 License is not found at runtime

The license is not found at runtime by the software. The error message is: "No license key was set."

Possible causes:

- The license key is actually missing (not installed).
- The license key is installed but not selected in the license manager.
- The application is an older version that only supports the [legacy key format](#), while the license key has the new license format.

Solution

Install and select a valid license key that is compatible with the installed version of the software or use a newer version of the software. The new license key format is supported starting with version 4.10.26.1

For compatibility reasons, one license key of each format can be selected at the same time.

3.8.4 Eval watermark is displayed where it should not

The software prints an evaluation watermark onto the output document, even if the installed license is a productive one.

Possible causes:

- There is an evaluation license key selected for the **current user**, that takes precedence over the key for **all users**.

Note: The software might be run under a different user than the license manager application.

- An evaluation license key that is passed at runtime takes precedence over those selected in the license manager.
- There is an evaluation license key selected with a [newer license format](#) that takes precedence over the key in the older format.
- The software was not restarted after changing the license key from an evaluation key to a productive one.

Solution

Disable or remove all evaluation license in all scopes, check that no evaluation key is passed at runtime and restart the software.

3.8.5 Activation is not recognized

The license is installed and activated in the license manager, but the software does not recognize it as activated.

The error message is: "The license has not been activated."

Possible causes:

- There is an unregistered license key selected for the **current user**, that takes precedence over the key for **all users**. This leads to an error even if the same license is registered for all users.

Note: The software might be run under a different user than the license manager application.

- A license key that is passed at runtime takes precedence over those selected in the license manager. This leads to an error even if the same license is registered in the license manager.

Note: Licenses that need activation have to be installed in the license manager and must not be passed to the component at runtime.

- The software was not restarted after activating the license.

Solution

Disable, remove or activate all unregistered licenses in all scopes, check that no key is passed at runtime and restart the software.

3.8.6 Activation is invalidated too often

The license activation is invalidated regularly, for no obvious reason.

Possible causes:

- The MAC address used for computing the machine fingerprint is not static. This may happen e.g. for virtual network adapters with dynamic MAC address (VPN, Juniper, ...).

Solution

Update to a newer version (≥ 4.12) of the PDF Tools product, deactivate the license key using the new license manager and activate it again. After that, an improved fingerprinting algorithm is used.

Deactivation and activation have to be **executed separately**, a reactivation of the license in one step does not change the fingerprinting algorithm and thus does not solve the problem.

Note: After this procedure, older products might not recognize the activation as valid anymore. Reactivating the license using an old license manager will revert the activation to the old fingerprinting algorithm.

As an alternative, remove any virtual network adapter with a dynamic MAC address.

3.8.7 Connection to the licensing service fails

The license activation/deactivation/update fails because the license manager cannot reach the licensing server.

The error message depends on the platform and the exact error condition.

Possible causes:

- The computer is not connected to the internet.
- The connection is blocked by a corporate firewall.

Solution

Make sure that the computer is connected to the internet and that the host `www.pdf-tools.com` is reachable on port 443 (HTTPS).

If this is not possible, try [Offline Usage](#) instead.

3.8.8 Offline usage fails due to a request/response mismatch

The offline license activation/deactivation/update fails because the response file does not match the request file.

The error message is: "Mismatch between request and response."

Possible causes:

- The response file is applied to a different machine than the request file was created.
- The response file is applied to a different user than the request file was created.
- The response file was applied to a specific user while the request was created for all users, or vice versa.
- The response file is applied to the wrong license key.
- Another request file has been created between creating the request file and applying the response file.
- The license key was updated between creating the request file and applying the response file.
- The license key was removed and re-added between creating the request file and applying the response file.

Solution

Delete any old request and response files to make sure they are not used by accident.

Retry the entire process as outlined in [chapter 3.5](#) and refrain from making any other license-related actions between creating the request file and applying the response file.

Make sure that the response file is applied to exactly the same license key in exactly the same location (machine, all users or specific user) where the request file was created.

4 Getting Started

4.1 Configuration

Before starting the PDF Analysis & Repair Service for the first time, the file PdfRepairSvr.ini needs to be modified. Editing this file while the PDF Analysis & Repair 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:

```
[PdfRepairSvr]
AutoDelete=True
Threads=2
Thread1=-w C:\PdfRepairSvr\Analyze -a
Thread2=-w C:\PdfRepairSvr\Repair
```

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 will be 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:\pdfrepairsvr\Analyze 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 chapter [Managing the Service](#).)

-a (Option) "Analyze only" option.

This means that any PDF document that is moved or copied to the folder C:\ProductBinary\Analyze or C:\pdfrepairsvr\Repair will be processed by the service. One thread only analyzes, the other also repairs or recovers documents.

Note: Any string, such as a file name, that contains spaces must be enclosed in quotation marks. E.g. 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 over all configuration options and service control commands that the 3-Heights™ PDF Analysis & Repair Service supports can be output in the form of a usage message on the command line.

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

```
pdfrepairsvr
```

(See also [Service Control Commands](#).)

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

```
pdfrepairsvr -i
```

(See also [Configuration Options](#).)

4.2 Managing the Service

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

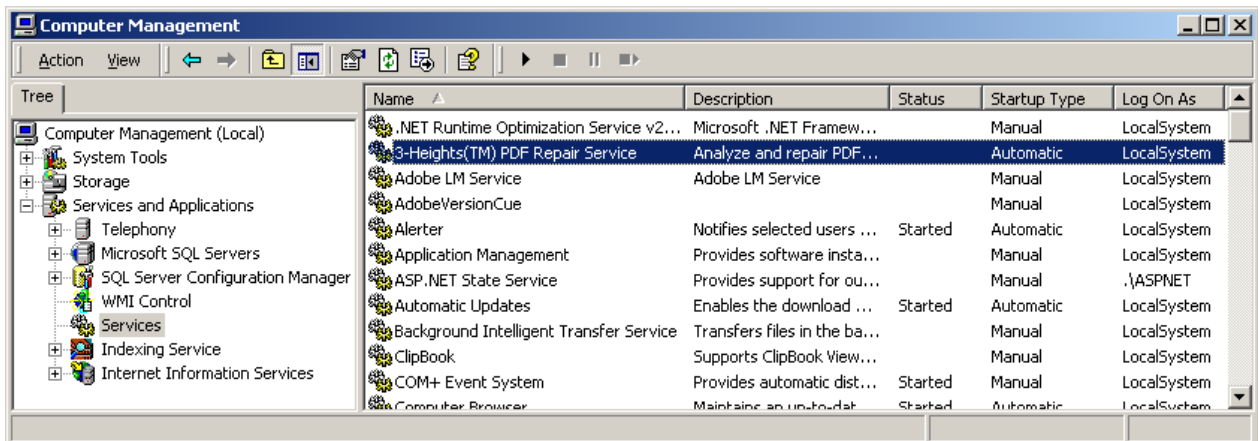
Note: It is essential that the executable `pdfrepairsvr.exe` and the configuration file `PdfRepairSvr.ini` be on a non-mapped drive.

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

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

```
pdfrepairsvr -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 was created correctly it appears as “3-Heights™ PDF Analysis & Repair Service” as shown in the image below.



2. By default, the 3-Heights™ PDF Analysis & Repair Service runs in the “LocalSystem” account. After the service has been created, the user can be changed.

This will be 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. After its creation, the service can be started with the option `-s`.

```
pdfrepairsvr -s
```

- Now the 3-Heights™ PDF Analysis & Repair Service is up and running, and files can be moved, copied or drag-and-dropped into the watched folder.
- To stop the service, use the option `-t`.

```
pdfrepairsvr -t
```

To restart use `-s` again.

- To delete the service use the option `-d`.

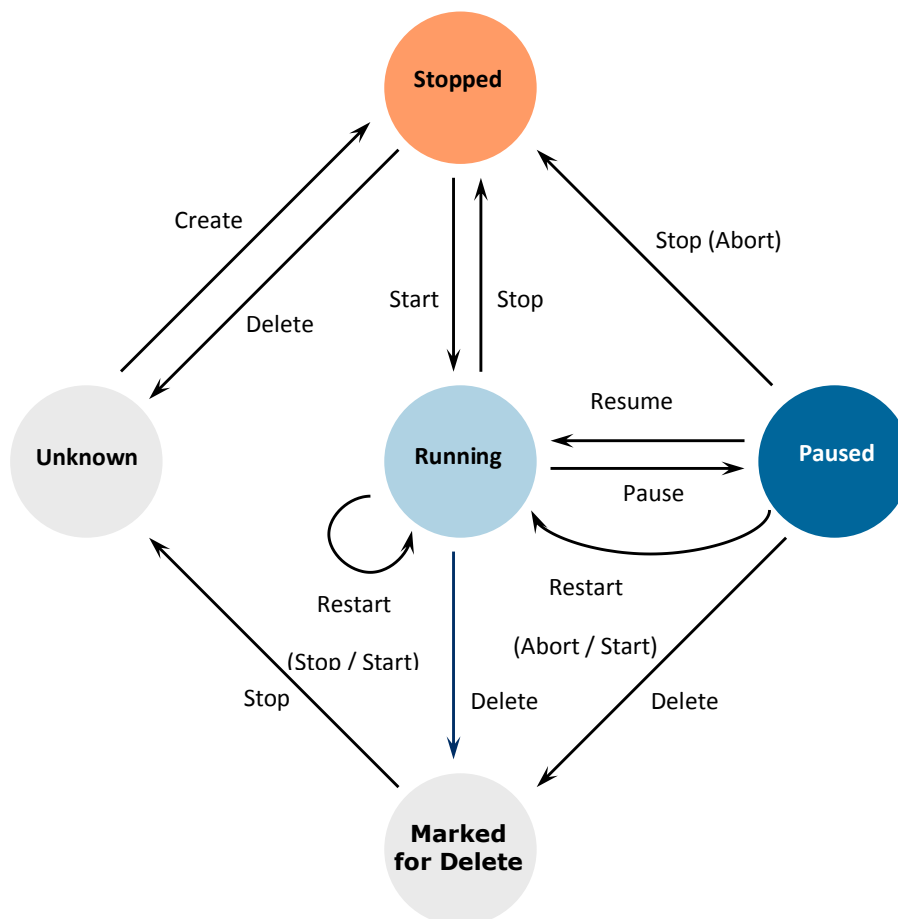
```
pdfrepairsvr -d
```

4.2.1 State Diagram of the Service

The 3-Heights™ PDF Analysis & Repair Service behaves as described in the state diagram below:

If “Stop” is called when the service is in the state “Paused”, 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 state “Running”, 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 PdfRepairSvr.ini are created automatically. In each watched folder, the following sub-folders are created:

- Jobs
- InProgress
- Succeeded
- Failed
- Recovered
- Repaired
- Logs

When a file is moved, copied, or drag-and-dropped into the configured watched folder, the service will do the following:

1. Each file is moved to the sub folder Jobs. 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 folder Jobs 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 folder Succeeded or it is deleted, depending on whether `AutoDelete` or `AutoDeleteAll` is set to `true` or `false` in the configuration file PdfRepairSvr.ini.
- Repaired documents are stored in Repaired, recovered documents in Recovered.

The file was not processed successfully

- The input file is moved to the folder Failed or it is deleted, depending on whether `AutoDeleteALL` is set to `true` or `false` in the configuration file PdfRepairSvr.ini.

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 executable pdfrepairsvr.exe and the configuration file PdfRepairSvr.ini. It is named PdfRepairSvr-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 time stamp that is not shown here) such as:

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

- Error messages such as:

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

There are three types of messages: Information, Warnings, and Errors. They are labeled with the corresponding letters "I", "W" and "E".

Here is an example of how a log file could look like:

```
Open file.
```

Analyze Objects.

0x00418018 - W - The generation 0 of reference doesn't match with the generation 1 of the object.

0x80410028 - E - The "endobj" keyword is missing.

Analyze Pages.

0x80410016 - E - The file is corrupt and cannot be repaired. The file can possibly be recovered.

Save output file.

Close file.

5 InterfaceReference

5.1 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.

5.1.1 -a Pause Service

```
Pause Service -a
```

This option pauses the service.

```
pdfrepairsvr -a
```

5.1.2 -c Create Service

```
Create Service -c
```

The 3-Heights™ PDF Analysis & Repair Service is created using the option -c.

```
pdfrepairsvr -c
```

Important: It is essential that pdfrepairsvr.exe is on a non-mapped drive.

5.1.3 -d Delete Service

```
Delete Service -d
```

The 3-Heights™ PDF Analysis & Repair Service can be deleted with the option -d. It is best used after the service has already been stopped.

```
pdfrepairsvr -d
```

5.1.4 -i List the Usage

```
List the Usage -i
```

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

```
pdfrepairsvr -i
```

5.1.5 -o Continue Service

```
Continue Service -o
```

This option resumes the service.

```
pdfrepairsvr -o
```

5.1.6 -q Query Current Status of Service

```
Query Current Status of Service -q
```

This option returns the current status of the service.

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

5.1.7 -s Start Service

```
Start Service -s
```

Once created, the 3-Heights™ PDF Analysis & Repair Service can be started with the option -s.

```
pdfrepairsvr -s
```

5.1.8 -t Stop Service

```
Stop Service -t
```

To stop the service, use the option -t.

```
pdfrepairsvr -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.

5.1.9 -x Run as Executable

```
Run as Executable -x
```


With this option, the PDF Analysis & Repair Service runs as an executable instead of as a Windows Service. It provides the same functionality as long as the executable is “running”.

```
pdfrepairsvr -x
```

5.2 Configuration Options

Analyzing and repairing or recovering PDF documents is a complex task. To increase the processing speed, certain analyze and recovery options can be disabled.

5.2.1 Configuration File PdfRepairSvr.ini

The PdfRepairSvr.ini configuration file defines the setting for the watched folders. It is read upon starting the service.

[PdfRepairSvr]	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:

```
[PdfRepairSvr]
AutoDelete=true
LogPath=EventLog
JobPrefix=false
Threads=2
Thread1=-w C:\PdfRepairSvr\Analyze -a
Thread2=-w C:\PdfRepairSvr\Repair
```

Autodelete of Successfully Processed Files

When a repair job succeeded, the PDF document will be moved from the folder `Jobs` to the folder `Repaired` or `Recovered`. To automatically delete the input file after it has been successfully repaired or recovered, the value `AutoDelete` can be set to `true` in the control file `PdfRepairSvr.ini`. The documents which cannot be repaired nor recovered are still copied to the subfolder `Failed`.

```
[PdfRepairSvr]
AutoDelete=true
```

To delete failed documents as well use the following setting:

```
[PdfRepairSvr]
AutoDeleteAll=true
```

Job Number Prefix

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

`Job-01C61DD4-E72E1BCE_`

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:

```
[PdfRepairSvr]
JobPrefix=false
```

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

Logpath

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

```
[PdfRepairSvr]
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:

```
[PdfRepairSvr]
LogPath=EventLog
```

The system's application log event will then log 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 (pdfrepairsvr) 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.

```
[PdfRepairSvr]
PollingInterval=5000
```

5.2.2 -a Analyze Only

```
Analyze Only -a
```

When using this option, the processed input files are only analyzed and a log file is generated. There is no output created.

5.2.3 -b Set the Rebuild Options

```
Set the Rebuild Options -b <n>
```

This options controls what parts of the PDF are to be repaired. Available options are:

- 1 Rebuild streams.
- 2 Rebuild fonts.
- 4 Convert CFF fonts to Type1 fonts.

If 4 is applied, the compressed fonts are decompressed, this can potentially lead to an increase of the file size. CFF fonts can be converted to Type1 fonts only if fonts are rebuilt, i.e. 4 can be used together with 2 only.

If multiple options are to be selected, add the values.

Example: Repair the file and rebuild all

```
-b 7
```

5.2.4 -dp Do Not Recover Pages

```
Do Not Recover Pages -dp
```

If pages are not part of the page tree (loose pages), they will be recovered and added at the end of the document. If the option `-dp` is selected, loose pages will not be recovered and will be left out of the recovered document.

5.2.5 `-dx` Do Not Repair Cross-Reference Table

Do Not Repair Cross-Reference Table `-dx`

With this option a corrupt XREF table will not be repaired or recovered. This option is useful if it is taking too long to process a document, since repairing the cross-reference table is very time consuming.

5.2.6 `-p` Read an Encrypted PDF File

Read an Encrypted PDF File `-p <password>`

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 `-p` 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:

```
-p mypassword
```

When a PDF is encrypted with a user password and the password is not provided or is incorrect, the 3-Heights™ PDF Analysis & Repair Service cannot read and process the file. Instead it will generate the following error message:

```
Password wasn't correct.
```

5.2.7 `-w` Specify the Path to the Root Directory

Specify the Path to the Root Directory `-w <dir>`

This option sets the path to the root directory.

Note: This parameter must always be the first parameter of a thread.

Parameter:

`<dir>` The given path should not contain mapped drives, since other users (such as LocalSystem) do not recognize them.

Example:

```
-w C:\pdfrepairsrv\Root
```

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. It is therefore suggested that watched folder names are kept reasonably short.

5.2.8 -wd Specify the Drop Path

Specify the Drop Path `-wd <dir>`

This option sets the path of the drop directory. If this option is not set, then the drop directory equals the root directory `-w`. The drop directory is the watched folder, where input files are picked up and processed by the service.

Parameter:

`<dir>` The drop directory can be at any existing (network-) location with the following conditions:

- The directory exists (it is not automatically created unlike the root directory).
- The user under which the service runs has access permissions to this directory.

Example:

```
-wd C:\Path\DropFilesInHere
```

5.2.9 -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
```

5.2.10 -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 PDF and FDF files.

```
-wfs .pdf.fdf
```

6 Troubleshooting

6.1 The Repair Time Takes Too Long

Try excluding the cross-reference table (switch [-dx](#)). This will speed up the repair time.

6.2 The File Cannot Be Repaired

If the switch [-dx](#) has been selected and the cross-reference table is corrupt, the file cannot be repaired. Ensure the switch [-dx](#) is not set.

7 Version History

7.1 Changes in Version 4.12

No functional changes.

7.2 Changes in Version 4.11

- **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** treatment of the DocumentID. In contrast to the InstanceID the DocumentID of the output document is inherited from the input document.

7.3 Changes in Version 4.10

- **Improved** robustness against corrupt embedded font files.
- **Improved** robustness against corrupt input PDF documents.

7.4 Changes in Version 4.9

- **Improved** support for recovering certain corruption types.
- **Improved** support for and robustness against corrupt input PDF documents.
- **Improved** repair of embedded font programs that are corrupt.
- **New** support for OpenType font collections in installed font collection.
- **Improved** metadata generation for standard PDF properties.

7.5 Changes in Version 4.8

- **Added** repair functionality for TrueType font programs whose glyphs are not ordered correctly.

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