Technical Note

Technical Note: License keys

Installation, dynamic use, troubleshooting

Version 1.10

pdftools

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1 Overview

1.1 Purpose

This document acts as a guide to help with the following subjects:

- **Installation of license keys on a machine.**
- **License activation.**
- **Dynamically pass a license key to the product.**
- **Troubleshooting licensing problems.**

1.2 Introduction

With the release of version 4.0.1.0 (pre-release) PDF Tools AG introduces a new license management using license keys for its 3-Heights® and Classic product family.

With the release of version 4.10.26.0 (final release) PDF Tools AG introduces a major update to the license management, consisting of a new license key format and license activation.

All Pdftools products come with a license manager application that acts as a central hub to manage, inspect and activate the license keys of all products in a single place. The license manager is described in detail in Chapter 2.

Some special license types (mainly OEM licenses) allow or require passing the license key at runtime, so that no license manager is needed. This is described in Chapter 11.

1.3 Licensing scenarios

1.3.1 Standard licenses

Standard licenses are issued to the end user. The license keys have to be activated and thus must be installed in the license manager an cannot be passed at runtime.

1.3.2 OEM licenses

In an OEM scenario, the Pdftools component is part of a larger application. The use of the PDF Tools component in the application is transparent to the end user.

The OEM licenses are always issued to the manufacturer of the application, not to the end user. The license keys must not be installed in the license manager, but passed dynamically at runtime.

1.3.3 Evaluation licenses

Evaluation licenses don't have to be activated, they can be installed in the license manager or passed at runtime.

It is however recommended to use the evaluation key the same way as the license that you plan to buy later.

2 License installation and management

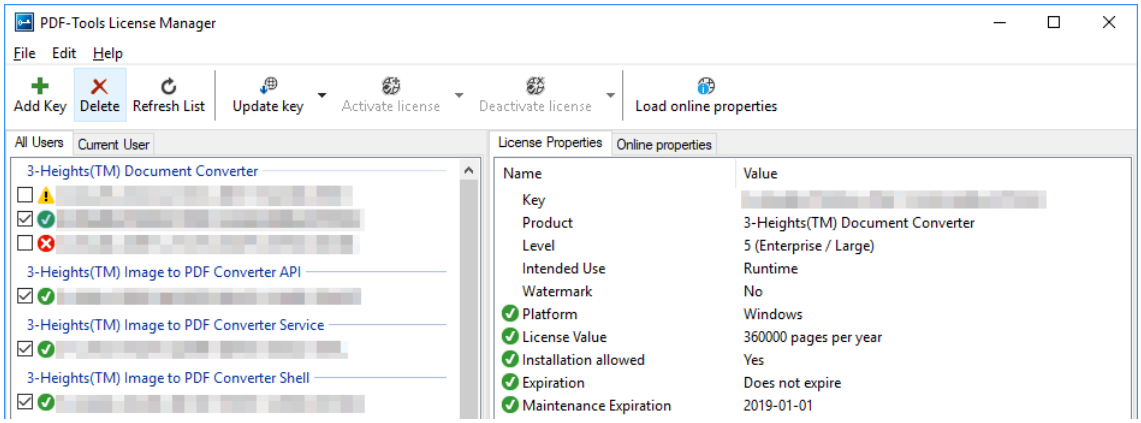
There are three possibilities to pass the license key to the product:

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 all non-Windows systems and for automated license management.
3. The license key is passed to the product at run-time with one of the following methods:
   - The property `LicenseKey` in newer APIs.
   - The method `SetLicenseKey` in older APIs.
   - The command line option `-lk` in command line tools.

   This is the preferred solution for OEM scenarios.

2.1 Graphical license manager tool

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



2.1.1 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 Pdftools products. The user can choose between:

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

2.1.2 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.

2.1.3 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.

2.2 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 in the Utilities & Tools section of your **My PDF Tools** customer account.

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

```
licmgr
```

2.2.1 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:
```

2.2.2 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

2.2.3 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-XXXXX
 - Key:          1-XXXXX-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
```

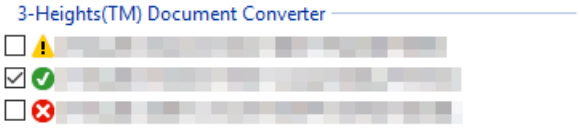
3 License selection and precedence

3.1 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-XXXXX
```

3.2 Precedence

License keys are considered in the following order:

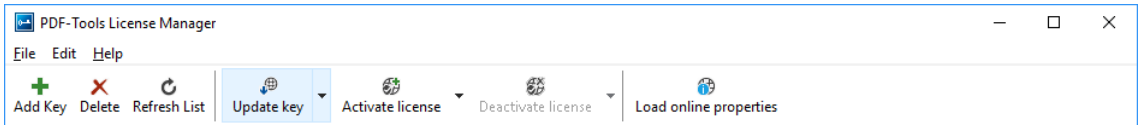
1. License key passed at runtime.
2. License selected for the current user
3. License selected for the current user (legacy key format)
4. License selected for all users
5. License selected for all users (legacy key format)

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

4 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-XXXXX
```

5 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.

5.1 Activation

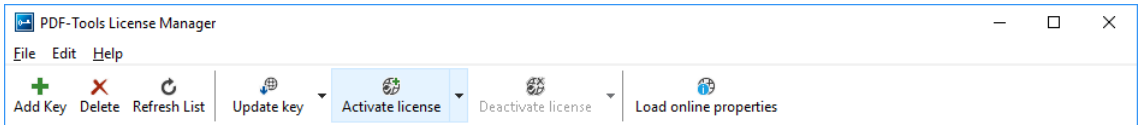
The License can be activated directly within the license manager. Every activation increases the activation count of the license by 1.

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-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:

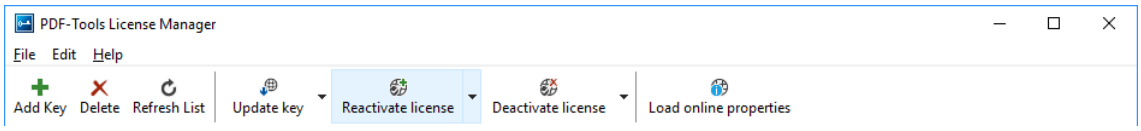
```
licmgr activate -cd 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
licmgr activate -c "custom comment" 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

5.2 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:

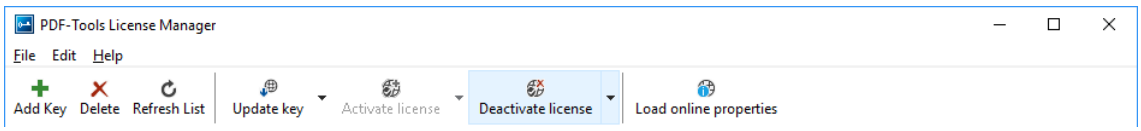
```
licmgr activate 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

5.3 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:

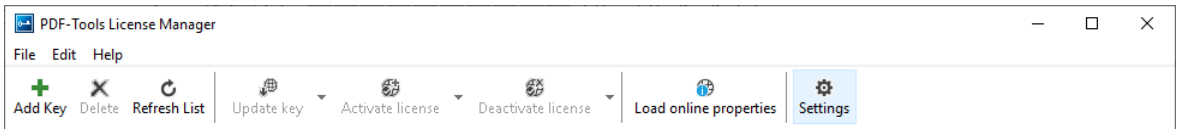
```
licmgr deactivate 1-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

6 Proxy setting

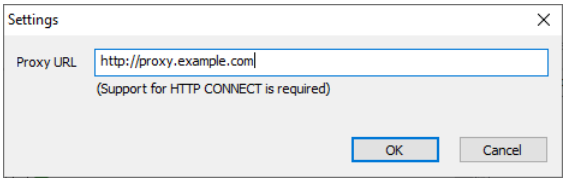
A proxy URL can be configured for computers that cannot access the internet without a web proxy.

> **Note:** The proxy must allow connections via HTTP CONNECT to the server `http://license.pdf-tools.com:443`.

In the graphical user interface press the button “Settings” in the toolbar:



and enter the proxy URL in the respective field:



7 Offline usage

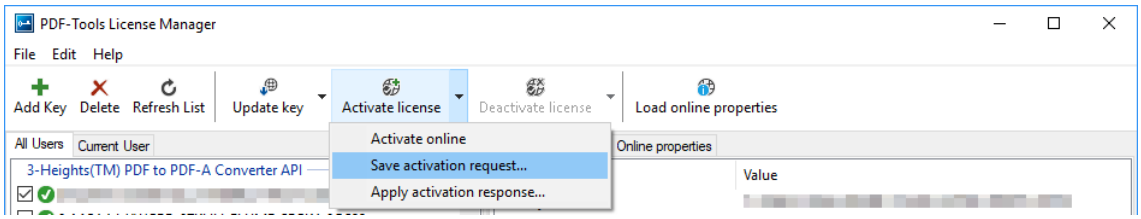
The following actions in the license manager need access to the internet:

- 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.

7.1 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:



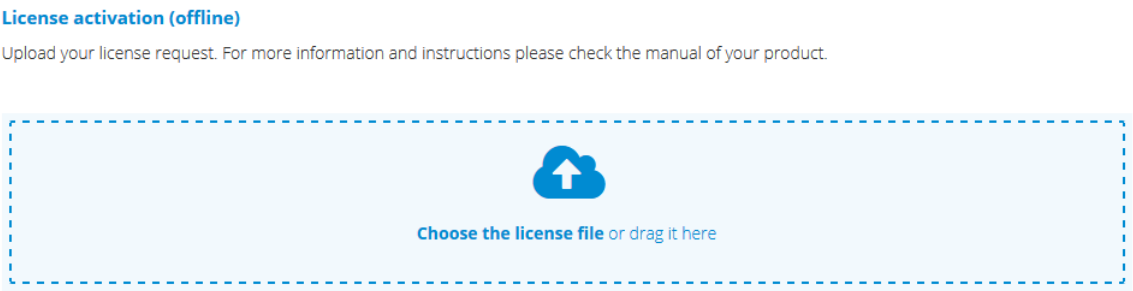
With the command line interface use the `-fs` option to specify the destination path of the request file:

```
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.

7.2 Second step: Use form on website

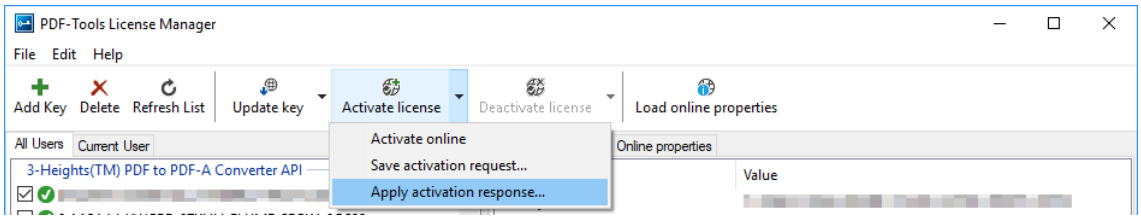
Open the following website in a web browser: http://www.pdf-tools.com/en/mypdftools/licenses-kits/license-activation/ Upload the request by dragging it onto the marked area:



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

7.3 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
```

8 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.

9 License key storage

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

9.1 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)

9.2 macOS

The license keys are stored in the file system:

- `/Library/Application Support/PDF Tools AG` (for all users)
- `~/Library/Application Support/PDF Tools AG` (for the current user)

9.3 Unix/Linux

The license keys are stored in the file system:

- `/etc/opt/pdf-tools` (for all users)
- `~/.pdf-tools` (for the current user)

> **Note:** The user, group and permissions of those directories are set solely by the license manager tool. It may be necessary to change permissions to make the licenses readable for all users. Example:
>
> ```
> chmod -R go+rx /etc/opt/pdf-tools
> ```

10 Troubleshooting

10.1 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.

10.2 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.

10.3 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.
- The software was not restarted after registering the license.

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.

10.4 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.

10.5 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.

10.6 Activation is invalidated too often

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

Possible causes:

- One of the properties used to calculate the system fingerprint is changing frequently.

Solution Update to a newer version of the Pdftools product, deactivate the license key using the new license manager and activate it again. After that, an imporved 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.

10.7 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 `license.pdf-tools.com` is reachable on port 443 (HTTPS).

If this is not possible, try Offline usage instead.

10.8 The licensing service returns a HTTP error 301

The license activation/deactivation/update fails because the licensing server returns a HTTP error 301.

The error message is: `"The licensing server returned an error: 301 Moved Permanently."`

Possible causes:

- The license manager is too old. Until version 4.11.17.0 the license manager was using an unencrypted HTTP connection, which is no longer supported by the licensing server.

Solution

Update to a newer version (at least 4.11.18.0).

If this is not possible, try Offline usage instead.

10.9 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 as 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 7 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.

11 Dynamic use

Instead of installing a key, the key can also be passed to the product upon startup.

> **Note:** This is only possible with licenses that don't have to be activated.

11.1 Shell tools

In shell tools, the license key can usually be specified using the option `-lk ‹key›`.

Example: The PDF to PDF/A Converter Shell tool

```
pdf2pdf -lk X-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX input.pdf output.pdf
```

11.2 API

The properties `LicenseKey` and `LicenseIsValid` can be used to dynamically pass the key to the API and test its validity. The license key should be registered before using any other methods of the API are called and is required once at the beginning only.

Example: The PDF to PDF/A Converter API (C/C++)

```
Pdf2PdfInitialize();         // Initialize must be called first

Pdf2PdfSetLicenseKey("X-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX");

if (!Pdf2PdfGetLicenseIsValid())
{
    printf("No valid license key found.\n");
    return 1;
}
```

12 Contact

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