callas License Server

Table of Contents

1. Introduction

1.1 What is callas License Server?

callas License Server offers an alternative way to license callas products. Rather than authorizing a particular product to run on a specific (real or virtual) computer, it offers the opportunity to get licensing information from a central License Server. Additionally, the License Server offers both process-based and credit-based (time-based) licensing in a much more flexible way than traditional licensing models used by callas products.

callas License Server does not take away anything from alternative license models, it simply offers an alternative. callas License Server is a standalone application without any user interface. It is always run and configured from the command-line or through scripting.

The use of callas License Server makes additional usage models for the callas tools possible:

- It supports "load on demand" or "capacity on demand" models where callas tools are installed and run on new systems as they are needed.
- It supports "peak processing" by using both process-based and credit-based usage models. The combination of the two is ideal for environments where a certain baseline processing power is needed, but occasionally peaks occur that also have to be dealt with quickly.
- It supports "usage-based" payment. After the initial cost of the License Server, credit cartridges can be used to pay only for the time actually being used while processing PDF files.

   💡   Everything about the License Server here:

1.2 License Server versus other licensing models

The callas License Server is a *new* way to license callas software products, but it does not replace any of the traditional licensing models.

Hardware-based licensing

Traditionally, all callas software solutions use hardware-based licensing. This means that the software needs to be installed and activated on the machine (real or virtual) on which it is running. This activation binds the purchased license to the computer on which the software is used. This activation model requires:

- Several manual operations (for the CLI products: create a license request on the console terminal, request activation by email, move the received Activation.pdf back to the host, and use the console terminal again to complete the activation)
- Static hardware identifier (which does not work well in environments where this ID can change, e.g. Docker, Amazon AWS or Microsoft Azure)

It is worth mentioning that the callas License Server itself *always* uses this traditional hardware-based licensing for itself. To install and use a License Server, it *must* be activated.

License Server-based licensing

Starting mid 2019, all callas software solutions also support License Server-based licensing. The specific software versions supporting the License Server model are:

- pdfToolbox: version 10.2 and up
- pdfaPilot: version 8.2 and up
- pdfChip: version 2.1 and up

In this model, there is no requirement to activate software on the machine it is running. This allows machines to be brought online or used dynamically, without having to go through the (manual) activation process.

1.3 License Server in the cloud

When pdfToolbox is used in a run time container such as Docker it is difficult to activate it, since that would require to store activation information in the container image. But then the image cannot be used for additional instances (scalable cloud).

In such environments License Server in the cloud should be used.

Terms

License Server in the cloud has an internal database for all users. Each user has a Wallet in which her resources (Cartridges) are saved. The Wallet is referenced via a Wallet ID, that the user will receive when the first Cartridge is purchased. (Cartridges can be purchased from those partners where also regular pdfToolbox Licenses are available.)

The URL for License Server in the cloud is

licenseserver.callassoftware.com

Using License Server in the cloud

It is straightforward to use License Server in the cloud on command line or in the SDK.

The parameter to reference a License Server needs to specify the URL of License Server in the cloud and an additional parameter "lsmessage" needs to specify the Wallet ID.

Example

```
docker run callassoftware/pdftoolbox-cli ./pdfToolbox
--licenseserver=licenseserver.callassoftware.com
--lsmessage=<Wallet ID>
./"Create page images from all images.kfpx" ./ "Some.pdf"
```

Monitoring License Server in the cloud

In order to monitor what Cartridges are available for a Wallet ID and what Cartridges are currently in use the License Server in the cloud webinterface can be used. The License Server in the cloud URL has to be entered into the Browser URL input field

https://licenseserver.callassoftware.com

The Wallet identifier is then to be entered into the input field to display the information for that Wallet.

2. Installation, activation, deactivation, help

2.1 Installation

On Mac or Windows, the License Server is installed by double-clicking the setup application. On Linux, it is installed by downloading the installation archive and extracting it in a folder of your choice.

The License Server has no external dependencies, the complete application is contained in the folder where it is installed.

By default, the License Server will be installed in a folder named "callas License Server", with the name of the executable "licenseServer". The License Server has no user interface, you can only use it through command-line interaction (using terminal or command prompt), or through some sort of scripting.

2.2 Activation

Please note that the License Server itself has to be *always* activated and loaded with cartridges. Only after that the enabled callas product can run without activation.

Activating the License Server

The License Server can be activated using a purchased license. Trial licenses are not supported, but temporary (time-limited) licenses are available for test scenarios.

Requesting a permanent license

To request a permanent license for the License Server, use the "keycode" command.

PLEASE NOTE: If the license server data shall be installed in a non-default location, the --cachefolder option must be used.

> **ⓘ** After activation, the cache folder cannot be changed without deactivating the license server fist.

The specified cache folder must be writable for the license server. The proper selection of the cache folder is especially important if the license server shall run as a deamon without a user account. More information here.

```
licenseServer --keycode <name> <Company name> <path to License PDF>
OR
licenseServer --keycode  [--cachefolder=cachefolder] <name> <Company name> <path
to License PDF>


// Example
```

```
./licenseServer --keycode "David van Driessche" "Four Pees" "License.PDF"
```

The license server now outputs information you need to copy and paste into an email and send to the activation email address. The generated information contains all instructions to do this.

Activating using the activation email

Once you receive an email from the callas software activation server (this can take a few minutes), use the attached activation PDF to complete activation or as below

PLEASE NOTE: Since the information about the cache folder is included in the Activation.pdf no --cachefolder option is available for the --activate command

```
licenseServer --activate <path to Activation PDF>


// Example


./licenseServer --activate "Activation.PDF"
```

The License Server will confirm activation if you provided the correct path to a valid activation PDF. Remark that an activation PDF can only be used on the same system it was requested and that it is only valid for 48 hours after it has been requested.

2.3 Deactivation

In order to be moved from one server to another for example, callas License Server supports deactivation. Please note that after deactivating, a new activation request for this license server serial number can be requested. But more important- ly, before a license server can be deactivated, **all cartridges installed on this license server must be uninstalled first.**

To deactivate the License Server, use the deactivate com- mand using the following syntax:

```
licenseServer --deactivate [--cachefolder=cachefolder] <activation code>


Example:


./licenseServer --deactivate 55XXXXXXXXXXHEU9R7DUTDAYYYYYYPA
```

Once the License Server has been deactivated, it can no longer be used on that machine unless it is [reactivated](#).

2.4 Getting help

Next to this documentation, the License Server also integrates basic help functionality. To access this, use the help command:

```
licenseServer --help
```

The License Server shows all supported commands:

```
Commands:
  licenseServer --command [options]

  -h  --help        show help
      --version     show version information
      --activate    activate license
  -k  --keycode     request activation code
      --deactivate  deactivate license
      --server      launch as a server
      --status      show server status
      --install     install cartridge
      --cartridge   request cartridge installation code
```

Getting help for a specific command

For each command, you can use the short or long version. You can also get more explanation for a specific command, by adding its name to the help command, as in:

```
licenseServer --help keycode
```

Replace "keycode" with the name of the command you want further information about. Another example and an important one, the --status command. It retrieves information about the status of a specific license server. It can also be used locally or remotely. If used local, the --cachefolder option must be used with the same value as during installation. Otherwise the IP address and the password must be provided for the running server.

```
$ ./licenseServer --status
```

```
Serialization:
License details:
  Product: callas License Server
  License: Time limited
  Activation code: 55XXXXXXXXXXXXXXXXXXXXR7DUTDACL894FLL4PA
  S/N: 200000481
  Expiration date: 2019-06-30
  Name: ulrich
  Company: callas
  EMail: u.frotscher@callassoftware.com
  Failover: yes
  Failover count: 3

Cartridge license details:
  Product: callas pdfToolbox CLI 10
  Activation code: XRXXXXXXXXXXXXXXXXXXXXXB86P7FDQE7ATLYEQDA
  S/N: 200000483
  License: Time limited
  Expiration date: 2019-06-30
  LS S/N: 200000481
  Name: ulrich
  Company: callas
  EMail: u.frotscher@callassoftware.com
  RunCount: 2
  Credits: 0
  Used Credits: 0
  PostPay: No

Cartridge license details:
  Product: callas pdfToolbox (Desktop) 10
  Activation code: 2SXXXXXXXXXXXXXXXXXXXXXQCABK7A3MB6764KTNS
  S/N: 200000487
  License: Time limited
  Expiration date: 2019-06-30
  LS S/N: 200000481
  Name: ulrich
  Company: callas
  EMail: u.frotscher@callassoftware.com
  RunCount: 2
  Credits: 0
  Used Credits: 0
  PostPay: No
```

```
Cartridge license details:
  Product: callas pdfToolbox CLI (Dispatcher) 10
  Activation code: V7XXXXXXXXXXXXXXXXXXXXXNY8C2LEHQ2CUHC6AS
  S/N: 200000514
  License: Full
  LS S/N: 200000481
  Name: ulrich
  Company: callas
  EMail: u.frotscher@callassoftware.com
  RunCount: 1
  Credits: 0
  Used Credits: 0
  PostPay: No

Locations
Server  55XXXXXXXXXXXXXXXXXXXXXR7DUTDACL894FLL4PA   callas License Server  /Users/
u.frotscher/Documents/_test/LSServer/Failover/1/License.txt
Cartridge  XRXXXXXXXXXXXXXXXXXXXXXB86P7FDQE7ATLYEQDA   callas pdfToolbox CLI
10   /Users/u.frotscher/Documents/_test/LSServer/Failover/1/Cartridges/200000483.
txt
Cartridge  2SXXXXXXXXXXXXXXXXXXXXXQCABK7A3MB6764KTNS   callas pdfToolbox (Desk-
top) 10  /Users/u.frotscher/Documents/_test/LSServer/Failover/1/Cartridges/
200000487.txt
Cartridge  V7XXXXXXXXXXXXXXXXXXXXXNY8C2LEHQ2CUHC6AS   callas pdfToolbox CLI (Dis-
patcher) 10   /Users/u.frotscher/Documents/_test/LSServer/Failover/1/Cartridges/
200000514.txt

Errors
    None

Cartridge summary:
Cartridge:
  Product: callas pdfToolbox CLI 10
  Product ID: 1000
  Runcount: 2
  Status: OK
Cartridge:
  Product: callas pdfToolbox CLI (Dispatcher) 10
  Product ID: 1012
  Runcount: 1
  Status: OK
Cartridge:
```

```
Product: callas pdfToolbox (Desktop) 10
Product ID: 1100
Runcount: 2
Status: OK
```

One last way to get help is to watch this video:

2.5 Preparing for failover

In the most simple configuration, the License Server is installed and activated on a single system. Other callas tools talk to this License Server to get permission to run.

Obviously, this makes this single system a single point of failure which is not acceptable in some environments. To remedy this, it is possible to run the License Server in *failover* mode.

Getting a suitable license

Running callas License Server in failover mode is only possible with a suitable license. The *user number* of the license you receive must be 3 (three) instead of 1 (one). If you don't have or are not sure you have a suitable license, please contact us:

https://www.callassoftware.com/en/contact

Installing License Server for failover

To work in failover mode, you will need to install and activate License Server on three different machines. Those machines will need to be on permanently, and will need to have a fixed IP address assigned to them.

This article Failover restrictions explains what happens when License Server instances become unavailable (in a failure situation).

2.6 Using a cache folder

In some cases, it is necessary to override the default folder where License Server stores licensing and temporary information. callas License Server only supports using a different folder when this has been setup during activation.

If such a custom folder needs to be used, the same folder needs to be used for all of the following commands:

```
licenseServer --keycode --cachefolder=<path>  <user> <company> License.pdf
licenseServer --cartridge --cachefolder=<path> LicenseCartridge.pdf
licenseServer --server --cachefolder=<path>
```

Changing the cache folder location

Once the License Server and / or cartridges have been activated, the specified cache folder location cannot be changed. The only way to modify it, is to deactivate the cartridges and the License Server and then specify the new cache folder location during re-activation.

2.7 Migrate to a different location

Since version 1.1.008, there is an easier way to move the activation to a different location (different machine or different user account) including all activated Cartridges with much fewer steps.

Deactivate on old location

The License Server has to be stopped first.

To start the migration process, a CLI call with the following syntax has to be entered:

```
licenseServer --migrate [--cachefold-
er=cachefolder] <archive path>
```

When executing this call, an archive file will be created in the defined archive path and the LicenseServer and the Cartridges will become deactivated.

Now move this file to the new location.

Restore on new location

After moving the archive file to the new location, just use the following CLI command to restore the Cartridge and the License Server license.

```
licenseServer --restore [--cachefold-
er=cachefolder] <archive path>
```

Where "archive path" is the accessible and valid path to the archive file.

The output on the STDOUT has to be sent to the email address mentioned at the beginning of this output.
This will register the deactivation of the old License Server as well as the activation on the new location at the callas activation system and you will receive a reply email containing a new 'Activation.pdf'.

Store this "Activation.pdf" at a place which is accessible for the License Server and call the following command:

```
licenseServer --activate <activation>
```

Now the License Server and the Cartridges are activated and can be used for production again.

2.8 Update to a newer version

Updating the License Server is straightforward: The running version needs to be stopped first and thereafter the executable can exchanged with a newer version.

If you are using several instances of License Server in failover mode, you can update them one by one. That allows for uninterrupted processing since at any point in time there would be two instances running (in a setup with three instances).

Of course all parameters such as a cachefolder need to be used with the new version as well.

3. Working with cartridges

3.1 Cartridge types

Cartridges allow the License Server to give permission to other callas software applications to run. Each cartridge is linked to a specific callas software product. In an environment where you would like to use pdfToolbox and pdfChip, the License Server would need a cartridge for pdfToolbox and one for pdfChip. The License Server can have as many cartridges installed as required and those cartridges can be of different types.

This article describes the two types of cartridges supported.

Process cartridges

Process cartridges enable the License Server to allow a specific number of processes to run in parallel. The cartridge specifies *how many* parallel processes are allowed. Each callas software application that wants to process a PDF document requests permission to the License Server and will get permission to run if there are still unclaimed processes available.

Credit cartridges

Credit cartridges enable the License Server to allow an unlimited amount of parallel processes to run. Each time a callas software application asks permission to process a file, the License Server will grant permission. After the file has been processed, the License Server will subtract a number of credits from the available credits in the cartridge. One credit is subtracted per second of processing time.

3.2 Installing and uninstalling cartridges

Before installing cartridges, the License Server itself must be activated! See the article on [activating the License Server](#).

Cartridge license PDF

To install a cartridge, you need to obtain a License PDF for the process or credit cartridge you want. This is a PDF document; you can open it to see the details of the cartridge before you install it.

Installing a cartridge

Once you have the cartridge license PDF, use the following command to install it in a License Server (the --cartridge command can be used locally or remotely):

```
licenseServer --cartridge <Path to Cartridge License PDF>


// Example


licenseServer --cartridge "Cartridge License.PDF"
```

PLEASE NOTE:

Local:

If the --cartridge command is used locally, the --cachefolder option has to used with the same value that was used for the --keycode command.

Remote:

If the --cartridge command is used remotly on a running license server the --cachefolder must not be used, instead the --licensserver option must point to the running license server. If the remote license server was started with the --password

option the --password option must be used with the same value.

> 💡 If you use multiple License Servers for fail-over reasons, it is advisable to install all cartridges on one single License Server. They will synchronize the cartridge information amongst themselves automatically.

The license server now outputs information you need to copy and paste into an email and send to the activation email address. The generated information contains all instructions to do this. After receiving the resulting reply email from the callas activation server, activate the cartridge with the License Server as follows:

```
licenseServer --install <Path to Cartridge Activation PDF>


// Example


licenseServer --install "Cartridge Activation.pdf"
```

Please note: Since the information about the cache folder is included in the Activation Cartridge.pdf, no --cachefolder option is available for the --install command.

The License Server will confirm activation if you provided the correct path to a valid activation PDF. Remark that an activation PDF can only be used on the same system it was requested and that it is only valid for 48 hours after it has been requested.

> ℹ️ What if you want to upgrade only some of your processes to version 11 while leaving the rest to version 10?
>
> This is definitely possible. pdfToolbox 11 could use the version 11 Cartridge and pdfToolbox 10 would use the version 10 Licenses first and would fall back to the v.11 if there are no more v.10 Licenses available.

In other words: switching to 11 would not exclude the use of pdfToolbox 10.

Uninstalling cartridges

Cartridges can be uninstalled by using the --uninstall command.

This command deletes the cartridge from the license server and outputs information that must be sent to [acti-vate@callassoftware.com](mailto:activate@callassoftware.com) in order to reset the activation counter. Only if the activation counter is reset, a new activation can be requested.

The --uninstall command requires the activation code for the cartridge to uninstall. The activation codes for all installed cartridges can be retrieved by using the --status command. Like some other call the --uninstall command can be used locally by providing the --cachfolder option or remotely by using the --licenserver and --password options.

```
$ ./licenseServer --uninstall --cachefolder=./1/ V7XXXXXXXXXXXXXXXXXXXXC-
NY8C2LEHQ2CUHC6AS
```

💡   Watch a video about 'Installing cartridges' here:

4. Using the License Server

4.1 Running the License Server

> ⚠️ If you intend to use License Server in failover mode,
> the content of this article doesn't apply to you.
> Please refer to the article on [using License Server in failover mode](#).

In order to be able to use the License Server, it has to be started. This is done using the "server" command as follows:

```
licenseserver --server
```

In order to run the license server the --cachefolder option must point to the cache folder that was specified during installation (--keycode command). The --server command has several options for setup of failover, logging, REST interface and remote installation of cartridges.

When using this command, the License Server starts listening for incoming connections on port 1400 (default). The port can be changed using the "port" option.

```
licenseserver --server --port=1444
```

Password

In order to disallow the remote installation and deinstallation of cartridges for everybody with access to the host, a password can be specified. If no password option is given, a default password is used and anyone who has a copy of the license server application and network access to the license server can --install and --uninstall cartridges remotely!

```
licenseserver --server [--password=password]
```

> 💡 Now that you have reached this article, you should
> also go through this Event video explaining every-
> thing about callas License Server

4.2 Using the License Server

In order to avoid having to activate a callas software product, you can use a reference to a running License Server in the call to that product. The License Server needs to be activated, it needs to be running and it needs to have valid cartridges installed.

The "licenseserver" option points the callas software product to the License Server so it can get permission to run your call.

```
./pdfToolbox --licenseserver=<ip or hostname of licenseserver> <other command-line parameters>
```

The parameter specifies the IP address of the License Server you want to use. Please note that all callas products also support DNS names for the --licenseserver option. Optionally, this can be followed with a colon and a port number. If you use the default License Server port (1400), the port doesn't have to be specified.

Support for 'configuration file' with defined IPs

There is a way to change all usages of our configurators if new or extra IPs are to be defined. It is possible using a 'global' configuration file.

This can be done by storing a "LicenserServer.txt" that contains IPs (and ports) at the same place where a "License.txt" would usually be searched. The system path for different Operating Systems are mentioned [here](#).

Please note:

The formatting of this "LicenserServer.txt" should be a single LicenseServer per line, like:

```
10.0.0.15:<valid port if required>
10.0.1.2
internalLS.callas.local
```

Important to note:

- If a LicenseServer.txt exists, a --licenseserver command is not necessary. If --licenseserver is defined nonetheless, these IPs will be tried first
- Needless to say that in order to initialise and use the LicenseServer, at least one --licenseserver option OR LicenseServer.txt is needed
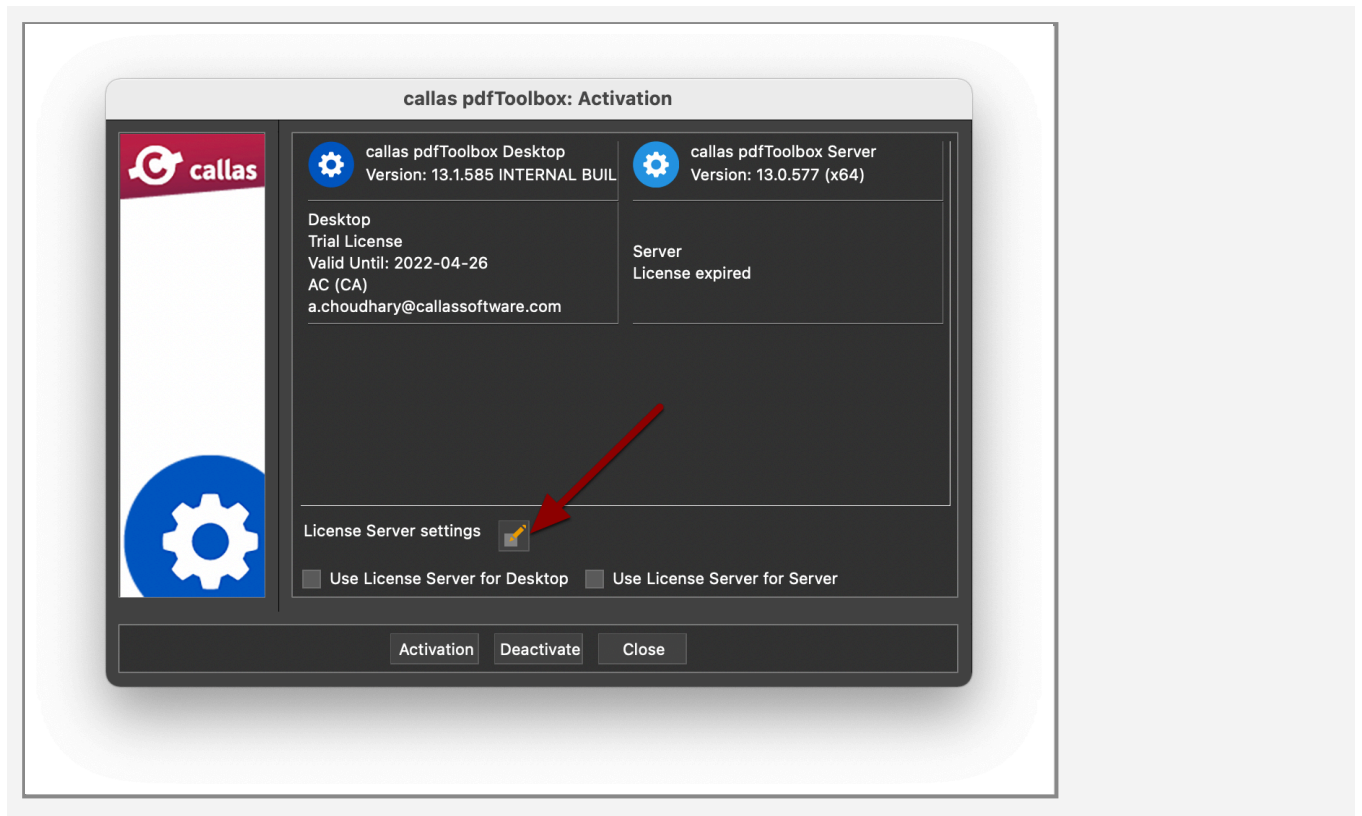
Using the License Server with Desktop products

Once the License Server is activated and running with a valid cartridge for pdfToolbox/pdfaPilot Desktop installed, you can run your Desktop and Server products without activating a hardware bound license to it. Simply go to callas pdfToolbox > About callas pdfToolbox
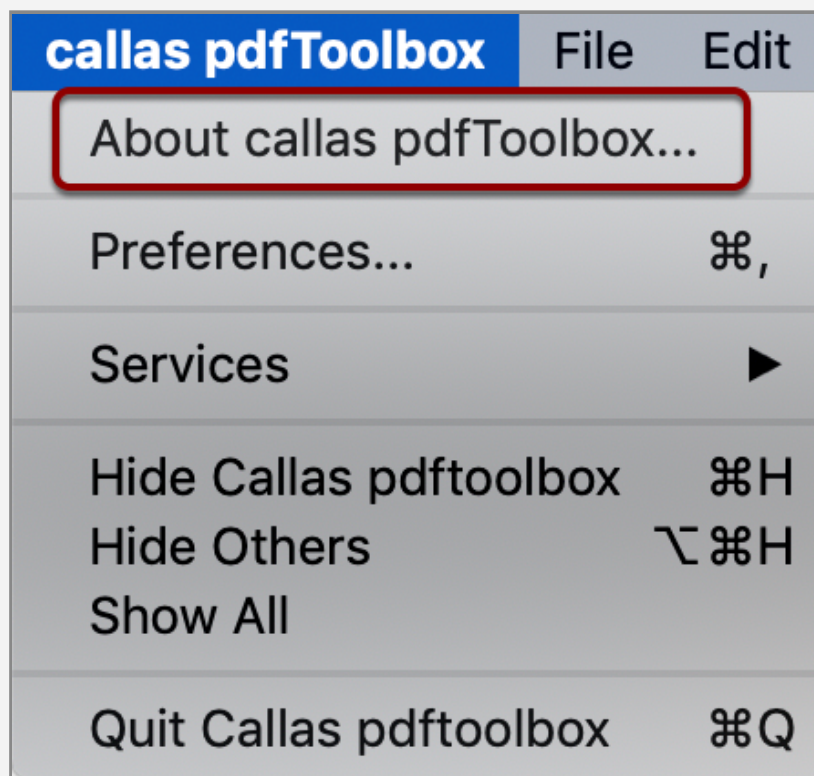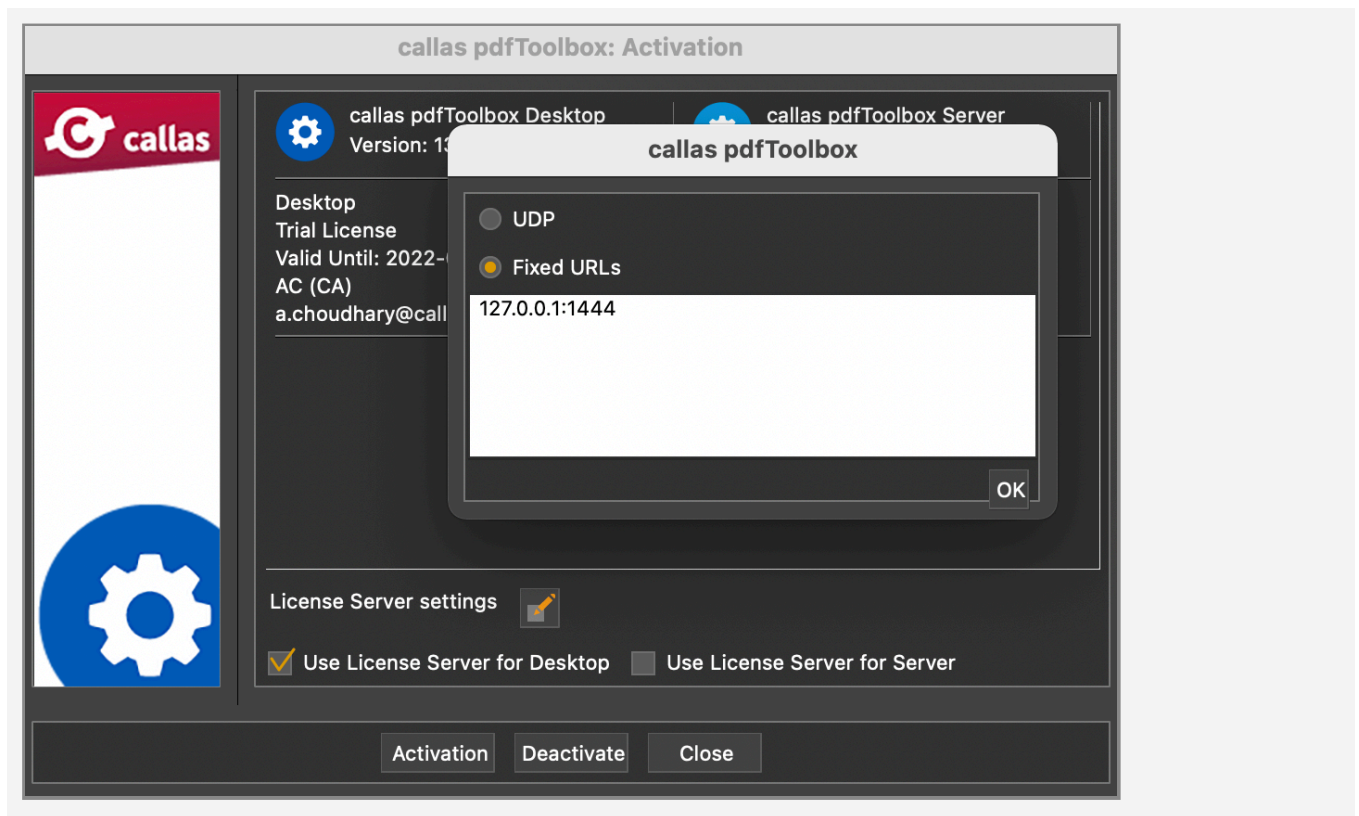
ℹ   Alternatively, you can also go to callas pdfToolbox >
     Help > About callas pdfToolbox.

Once a new window pops up, you can click on the checkbox
'Use License Server'.

Then click on the 'License Server settings' edit button in or-
der to define your IP to use License Server via the desktop
product.

License server details in 'LicenseServer.json'

A "licenseserver.json" can alternatively be placed manually in User-Preferences OR AllUser-Preferences OR Program-folder, which defines if a license server is available over UDP or IP (in case of the latter, over which IPs it is available). The format of 'LicenseServer.json' is as follows:

```
{
    "use": true,
    "udp": false,
    "fixed": true,
    "url": ["10.0.0.25", "xx.x.x.xx", ...]
}
```

While looking for pdfToolbox, it checks for License.txt but if a LicenseServer.json exists, the keys are searched there while overwriting the original application settings.
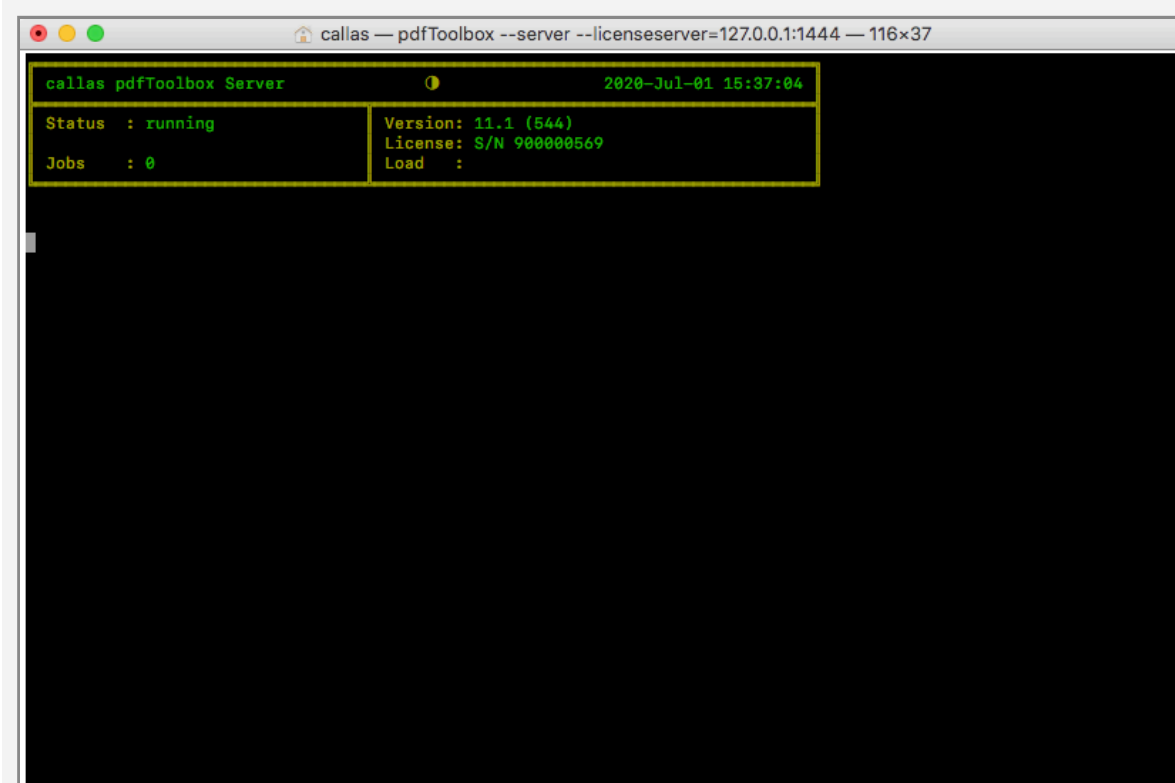
Using the License Server with pdfToolbox/

pdfaPilot Server/CLI

- Start the server via the CLI with: pdftoolbox --server --licenseserver='URL'

```
/Applications/callas pdfToolbox Server 13/cli/pdfToolbox --server --licenseserv-
er="127.0.0.1:1444"
```

This would open the status window:

- With "Connect with remote server" or "Start a server" the jobs should be visible and can be started.

4.3 Using License Server in failover mode

In failover mode, License Server typically runs on three different systems. The way you work with License Server in this case is slightly different than the simple use case where it's running on a single system. (The failover count is part of the license for the license server and must be specified during the purchase of the license server)

Please note: pdfToolbox 10.2 and higher have support for license server. Fail over mode is only available in pdfToolbox 10.2 (508) and higher.

Launching License Server

In failover mode, each License Server needs to be aware of the other License Servers involved. Assuming the three License Servers are installed on systems with IP addresses <IP1>, <IP2> and <IP3>, they would be launched on each system as:

```
On LicenseServer 1:
licenseServer --server --licenseserver=<IP2>  --licenseserver=<IP3>
On LicenseServer 2:
licenseServer --server --licenseserver=<IP1>  --licenseserver=<IP3>
On LicenseServer 3:
licenseServer --server --licenseserver=<IP1>  --licenseserver=<IP2>
```

PLEASE NOTE: It is possible to run multiple license servers on the same computer with different ports and cache folder settings.

Using License Server

In failover mode, whenever a callas tool, such as pdfToolbox, requires a license, it should refer to all three license servers while doing so:

```
pdfToolbox --licenseserver=<IP1> --licenseserver=<IP2> --licenseserver=<IP3> <fur-
ther command line>
```

Failover restrictions

In failover mode, one (1) License Server can fail and other software will still continue to work and receive valid licenses. As soon as two (2) License Servers fail, the remaining License Server will refuse to distribute licenses.

4.4 Using the License Server in a Dispatcher environment

The License Server provides a means to store licenses in a centralized repository. It can make sense to combine this with distributed processing organized from a centralized entity. This entity can be a [callas pdfToolbox Dispatcher](#) or [callas pdfaPilot Dispatcher](#) (Dispatcher). You should read the linked article if you are not familiar with Satellite, Dispatcher and Client in a distributed processing environment in order to understand this article.

The Dispatcher needs to be activated as usual, however, in a License Server environment this could be done using the License Server. This requires a special Run Count cartridge for the Dispatcher (the Dispatcher cannot be used with Credits) on that License Server; pricing is the same as for a regular Dispatcher license. The Dispatcher would then be started using the --licenseserver command, same as any other instance that wants us activate itself using the License Server.

When a Satellite is started and connected to the Dispatcher it should at the same time use the --licenseserver option to also connect to the License Server. Since a Satellite is not started per job but rather runs in listening mode this call would not use any of the Cartridge assets (Run Count or Credits) on the License Server. But when then a job is submitted from a Client via the Dispatcher to the Satellite it would use these assets in the same way as a "normal" pdfToolbox instance would do.

There is no need to use the --licenseserver option in a call to the Dispatcher on a Client, however if that option is present it is also passed to the Satellite and consolidated with the License Server list that was established when the Satellite was started.

4.5 Using a license from the license server

pdfToolbox 10.2 and higher have support for license server. Fail over mode is only available in pdfToolbox 10.2 (508) and higher.

License server access is initiated by the --licenseserver option. Since pdfToolbox 10.2 (508) multiple --licenseserver options can be used for failover mode. The license from the first license server that provides a license is used by pdfToolbox. If the --licenseserver option is given local licenses are ignored.

The --licenseserver option takes an IP number or hostname and a port separated by a colon. If the port is omitted, the default port 1400 is used.

License type

There are two types of cartridges available: Runcount or processes and Credits.

Process cartridges set the number of parallel process that are allowed to run concurrently.

Credit cartridges are based on processing time without the limitation of the number of parallel processes.

If process and credit cartridges are installed the license server tries to use a license from process cartridge first and in case no process cartridge license is available it tries to use a credit based license. By using the --licensetype option the license type can be set to a specific cartridge type.

> **ⓘ** What if you want to upgrade only some of your processes to version 11 while leaving the rest to version 10?
>
> This is definitely possible. pdfToolbox 11 could use the version 11 Cartridge and pdfToolbox 10 would use the version 10 Licenses first and would fall back

to the v.11 if there are no more v.10 Licenses avail-
able.

In other words: switching to 11 would not exclude
the use of pdfToolbox 10.

Timeouts

The pdftoolbox with --licenserver option tries to get a license
from all specified license servers for 60 seconds before giving
up. This time out can be modified by the --timeout_licens-
eserver option.

Message

There is an option to specify a message string that is written
to the REST interface and log files on the license server side.
This message can be set by using the --message option.

```
$ ./pdfToolbox --help

[...]
    --licensetype              Use only specific license type on license server
                                   all (default)
                                   credits
                                   runcount
    --timeout_licenseserver    Time interval in seconds before search for avail-
able license is cancelled, if < 0: wait forever, default: 60)
    --licenseserver            Use a callas license server instead of local li-
cense

                               Syntax: --licenseserver=<IP Adress>:<PORT>
[...]
```

4.6 Logging with License Server

The License Server has two logging facilities:

Logging to console and Log files.

Logging to console

The first is logging to the console. The amount of information that is written to the console can be set by the --verbosity parameter.

```
licenseServer --server [--verbosity=<level>]
```

The different level of reporting can be set as below:

Level	Value
0	None
1	Base
2	Errors
3	Warnings (Default)
4	Log
5	Debug

Log files

The license server writes all sessions to a log files located in a "Logs" folder inside the cache folder. A new log file is created every day with file name of the form <YEAR>-<MONTH>-<DAY>.log (e.g. 2019-06-06.log).

Note that log file generation can be suppressed if the --logverbosity=0 option is used.

4.7 Retrieving status of callas License Server using REST interface

The license server listens on two ports: the first one for license requests, already described in one of the previous [articles](#).

The second port is used for the REST interface. The default port for this purpose is 1401 it can be changed by using the --api-port option. If no --api-port option is given and the main port was set using the --port option the license server uses the next port (--port +1) for the API port.

The license server provides one REST interface that provides information about the current status of the license server, the cartridges, the failover network and information about running sessions.

The license server provides an HTML status page that uses the /status/data.json interface internally:

```
<HOSTNAME>:<API_PORT>/status/index.html
```

Internally used JSON interface:

```
<HOSTNAME>:<API_PORT>/status/data.json
```

Example:

```
{
    "cartridges": [
        {
            "product_id": 1000,
            "major_version": 0,
            "product": "callas pdfToolbox CLI",
            "runcount": 0,
            "credits": 100000,
            "postpay": false,
            "statistic": {
                "licenses": {
                    "runcount": 0,
                    "credits": 0,
                    "failed": 0
                },
                "used_credits": 2155,
                "remaining_credits": 97845,
                "runcount_in_use": 0,
                "sessions_dropped": 0
            },
            "locations": []
        },
        {
            "product_id": 1000,
            "major_version": 10,
            "product": "callas pdfToolbox CLI",
            "runcount": 8,
            "credits": 0,
            "postpay": false,
            "statistic": {
                "licenses": {
                    "runcount": 32398,
                    "credits": 0,
                    "failed": 5
                },
                "used_credits": 0,
                "remaining_credits": 0,
                "runcount_in_use": 3,
```

```
                    "sessions_dropped": 5490
            },
            "locations": [
                {
                    "server_id":
 "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
                    "serial_number": 200000512,
                    "runcount": 8,
                    "credits": 0,
                    "postpay": false
                },
                {
                    "server_id":
 "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
                    "serial_number": 200000556,
                    "runcount": 0,
                    "credits": 100000,
                    "postpay": false
                }
            ]
        }
    ],
    "sessions": [
        {
            "server_id": "6FC347863C741C475FB3511AF0B9452FA1011F4ADDED5BE7322405",
            "session_id": 7603,
            "status": "finished",
            "host": "ip-172-31-xx-xx",
            "ip_address": "52.59.xxx.xxx",
            "started": "2019-06-27T11:48:08Z",
            "message": "hello AWS world",
            "licenses": []
        },
        {
            "server_id": "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
            "session_id": 19472,
            "status": "running",
            "host": "ws-linux-cabs",
            "ip_address": "90.187.xx.xx",
            "started": "2019-06-27T11:48:02Z",
            "message": "",
            "licenses": [
                {
```

```
                    "product_id": 1000,
                    "major_version": 10,
                    "product": "callas pdfToolbox CLI",
                    "type": "runcount"
                }
            ]
        },
        {
            "server_id": "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
            "session_id": 19473,
            "status": "running",
            "host": "ws-linux-cabs",
            "ip_address": "90.187.xx.xx",
            "started": "2019-06-27T11:48:02Z",
            "message": "",
            "licenses": [
                {
                    "product_id": 1000,
                    "major_version": 10,
                    "product": "callas pdfToolbox CLI",
                    "type": "runcount"
                }
            ]
        },
        {
            "server_id": "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
            "session_id": 19477,
            "status": "running",
            "host": "ws-linux-cabs",
            "ip_address": "90.187.xx.xx",
            "started": "2019-06-27T11:48:07Z",
            "message": "",
            "licenses": [
                {
                    "product_id": 1000,
                    "major_version": 10,
                    "product": "callas pdfToolbox CLI",
                    "type": "runcount"
                }
            ]
        },
        {
            "server_id": "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
```

```
            "session_id": 19478,
            "status": "running",
            "host": "iPro.callas.local",
            "ip_address": "90.187.xx.xx",
            "started": "2019-06-27T11:48:09Z",
            "message": "",
            "licenses": []
        }
    ],
    "servers": [
        {
            "server_id": "FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134",
            "status": "running",
            "serial_number": "200000510",
            "version": "1.0.7",
            "hostname": "ip-172-31-xx-xx",
            "ip_address": "172.31.xx.xx",
            "port": 1400,
            "platform": "Ubuntu 18.04.2 LTS Linux x86_64 4.15.0-1040-aws",
            "started": "2019-06-26T17:04:40Z",
            "coordinator":
"FAB348C4CD3C14E974730F83A0BFE4705428A9683880C967C9F2134"
        },
        {
            "server_id": "2FE184D50FA29586ECF93185526FDC38CB40004FD464412A8FFDBFD",
            "status": "running",
            "serial_number": "200000510",
            "version": "1.0.7",
            "hostname": "213.160.xx.xx",
            "ip_address": "213.160.xx.xx",
            "port": 1400,
            "platform": "Linux Mint 19 Tara x86_64 4.15.0-20-generic",
            "started": "2019-06-26T18:59:46+02:00"
        },
        {
            "server_id": "6FC347863C741C475FB3511AF0B9452FA1011F4ADDED5BE7322405",
            "status": "running",
            "serial_number": "200000510",
            "version": "1.0.7",
            "hostname": "srv-testing.callassoftware.com",
            "ip_address": "213.160.xx.xx",
            "port": 1400,
            "platform": "Debian GNU/Linux 9.9 stretch x86_64 4.9.0-9-amd64",
```

```
        "started": "2019-06-26T18:57:48+02:00"
    }
  ]
}
```

💡 In case you find any problems in retrieving the status, please write to us at support@callassoftware.com

You can also watch a short video about REST interface below: