MOSEK Licensing Guide

Release 10.0.29

MOSEK ApS

21 November 2022

Contents

Chapter 1

Introduction

The **MOSEK** Optimization Suite is a commercial product that requires a valid license. This guide explains how the licensing system works and how to install a license.

Are you only interested in quick, simplified instructions? Jump directly to Sec. 4.

Chapter 2

Contact Information

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Website	mosek.com	
Email		
	sales@mosek.com	Sales, pricing, and licensing
	support@mosek.com	Technical support, questions and bug reports
	info@mosek.com	Everything else.
Mailing Address		
	MOSEK ApS	
	Fruebjergvej 3	
	Symbion Science Park, Box 16	
	2100 Copenhagen O	
	Denmark	

You can get in touch with **MOSEK** using popular social media as well:

Blogger	https://blog.mosek.com/
Google Group	https://groups.google.com/forum/#!forum/mosek
Twitter	https://twitter.com/mosektw
Linkedin	https://www.linkedin.com/company/mosek-aps
Youtube	https://www.youtube.com/channel/UCvIyectEVLP31NXeD5mIbEw

In particular **Twitter** is used for news, updates and release announcements.

Chapter 3

License Agreement

3.1 MOSEK end-user license agreement

Before using the **MOSEK** software, please read the license agreement available in the distribution at `<MSKHOME>/mosek/10.0/mosek-eula.pdf` or on the **MOSEK** website https://mosek.com/products/license-agreement. By using **MOSEK** you agree to the terms of that license agreement.

3.2 Third party licenses

MOSEK uses some third-party open-source libraries. Their license details follow.

zlib

MOSEK uses the *zlib* library obtained from the zlib website. The license agreement for *zlib* is shown in Listing 3.1.

Listing 3.1: *zlib* license.

```
zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.7, May 2nd, 2012

Copyright (C) 1995-2012 Jean-loup Gailly and Mark Adler

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Jean-loup Gailly        Mark Adler
jloup@gzip.org          madler@alumni.caltech.edu
```

fplib

MOSEK uses the floating point formatting library developed by David M. Gay obtained from the netlib website. The license agreement for *fplib* is shown in Listing 3.2.

Listing 3.2: *fplib* license.

```
/****************************************************************
 *
 * The author of this software is David M. Gay.
 *
 * Copyright (c) 1991, 2000, 2001 by Lucent Technologies.
 *
 * Permission to use, copy, modify, and distribute this software for any
 * purpose without fee is hereby granted, provided that this entire notice
 * is included in all copies of any software which is or includes a copy
 * or modification of this software and in all copies of the supporting
 * documentation for such software.
 *
 * THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED
 * WARRANTY.  IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY
 * REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY
 * OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.
 *
 ***************************************************************/
```

{fmt}

MOSEK uses the formatting library *{fmt}* developed by Victor Zverovich obtained form github/fmt and distributed under the MIT license. The license agreement fot *{fmt}* is shown in Listing 3.3.

Listing 3.3: *{fmt}* license.

```
Copyright (c) 2012 - present, Victor Zverovich

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IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

Zstandard

MOSEK uses the *Zstandard* library developed by Facebook obtained from github/zstd. The license agreement for *Zstandard* is shown in Listing 3.4.

Listing 3.4: *Zstandard* license.

```
BSD License

For Zstandard software

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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
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SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

OpenSSL

MOSEK uses the LibReSSL library, which is build on *OpenSSL*. OpenSSL is included under the OpenSSL license, Listing 3.5, and the LibReSSL additions are licensed under the ISC license, Listing 3.6.

Listing 3.5: *OpenSSL* license

```
/* ====================================================================
Copyright (c) 1998-2011 The OpenSSL Project.  All rights reserved.

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modification, are permitted provided that the following conditions
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```
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OF THE POSSIBILITY OF SUCH DAMAGE.
====================================================================

This product includes cryptographic software written by Eric Young
(eay@cryptsoft.com).  This product includes software written by Tim
Hudson (tjh@cryptsoft.com).
```

Listing 3.6: *ISC* license

```
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Copyright (c) 2014-2015 Joel Sing <jsing@openbsd.org>
Copyright (c) 2014 Ted Unangst <tedu@openbsd.org>
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PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER
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PERFORMANCE OF THIS SOFTWARE.
```

mimalloc

MOSEK uses the *mimalloc* memory allocator library from github/mimalloc. The license agreement for *mimalloc* is shown in Listing 3.7.

Listing 3.7: *mimalloc* license.

```
MIT License

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OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

BLASFEO

MOSEK uses the *BLASFEO* linear algebra library developed by Gianluca Frison, obtained from github/blasfeo. The license agreement for *BLASFEO* is shown in Listing 3.8.

Listing 3.8: *blasfeo* license.

```
BLASFEO -- BLAS For Embedded Optimization.
Copyright (C) 2019 by Gianluca Frison.
Developed at IMTEK (University of Freiburg) under the supervision of Moritz Diehl.
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```

oneTBB

MOSEK uses the *oneTBB* parallelization library which is part of *oneAPI* developed by Intel, obtained from github/oneTBB, licensed under the Apache License 2.0. The license agreement for *oneTBB* can be found in https://github.com/oneapi-src/oneTBB/blob/master/LICENSE.txt .

Chapter 4

Quickstart

These are quickstart instructions for users who just want the most basic, working, easy and quick license setup and do not care about the more advanced configuration features.

4.1 I don't have a license file yet

Free licenses

- To obtain a **trial license** go to https://www.mosek.com/products/trial/
- To obtain a **personal academic license** go to https://www.mosek.com/products/academic-licenses/
- To obtain an **institutional academic license** go to https://www.mosek.com/products/academic-licenses/
- If you have a **custom license** go to https://www.mosek.com/license/request/custom/ and enter the code you received.

Commercial licenses

Assuming you purchased a product (https://www.mosek.com/sales/order/) you will obtain a license file from us. For a **floating license** or **server (node-locked) license** you will first have to follow Sec. 6 to determine the `hostname` and `hostid` of the designated machine. Contact us at **license@mosek.com**.

4.2 I have a license file

- Do you have a **trial license** or **personal academic license** or **server (node-locked) license** or **group license** or **custom license**? Go to Sec. 4.3.
- Do you have a **floating license** or **institutional academic license**? Go to Sec. 4.4.

4.3 Local

Put your license file in:

```
$HOME/mosek/mosek.lic              (Linux/OSX)
%USERPROFILE%\mosek\mosek.lic      (Windows)
```

In most cases that is:

```
/home/myusername/mosek/mosek.lic              (Linux)
/Users/myusername/mosek/mosek.lic             (OSX)
C:\Users\myusername\mosek\mosek.lic           (Windows)
```

If that folder does not exist (which it most likely does not if you are using **MOSEK** for the first time), then create it.

Restart any software using **MOSEK** (for example MATLAB, R, etc.) if you updated an existing license.

Need more options or are there issues? See Sec. 8.

4.4 Floating

- Start (or restart) the token server using the instructions in Sec. 7.
- On each user machine where you will run **MOSEK** do exactly the same as in Sec. 4.3.

Are there network issues? See Sec. 7.3.

Chapter 5

License system basics

The **MOSEK** Optimization Suite is licensed software which means a valid license is required. A license is provided by a license file that specifies:

- which features in **MOSEK** have been licensed (an example of a feature is the nonlinear extension `PTON`),
- how many copies of a feature can be used simultaneously,
- an expiration date of each feature,
- for floating licenses, the identifier of the server the license is tied to.

5.1 License Types

The license is managed by the FLEXlm (http://www.flexerasoftware.com/) license manager included in **MOSEK**. FLEXlm has two types of licenses:

- **floating**: license tied to a particular computer that acts as a *token server*. **MOSEK** can be used on any computer connected to the token server through the local area network (LAN). In particular **MOSEK** can be used on the token server itself. Setting up a floating license is described in Sec. 7.
- **server** (also known as **node-locked**): license tied to a particular computer that allows unlimited use of the licensed features on that particular machine. Setting up a server license is described in Sec. 8.

Moreover, note that:

- **institutional academic** licenses are floating licenses.
- **trial**, **group** and **personal academic** licenses behave as server licenses, except that they are not tied to a specific computer but can be used on any machine where the license file is present.

For floating, server and institutional academic licenses some computer-dependent information must be provided:

- `hostname`: the name that identifies the computer in the network,
- `hostid`: a unique computer identifier (typically its MAC address).

Instructions for obtaining hostname and hostid can be found in Sec. 6.

5.2 The License File

A license file is a plain text file that can be opened for inspection using any plain text editor (such as `vim` or `emacs` on Linux, or `notepad` on Windows). It is sometimes useful to inspect the file to check the expiration date, the activated features and computer information.

Listing 5.1: An example of license file for a floating license.

```
SERVER hulk f4ed3061a731
VENDOR MOSEKLM
FEATURE PTS MOSEKLM 9.0 12-dec-2018 3

[ ... ]

FEATURE PTON MOSEKLM 9.0 26-feb-2017 2

[ ... ]
```

Listing 5.1 shows an extract of a license file for a floating license. We can see that:

- the token server is `hulk` with hostid `f4ed3061a731`,
- the `PTS` feature for **MOSEK** version 9 expires on 12-dec-2018 and the number of `PTS` tokens is 3,
- the `PTON` feature for **MOSEK** version 9 expires on 26-feb-2017 and the number of `PTON` tokens is 2.

Perhaps somewhat confusingly server (node-locked) licenses do not contain the `SERVER` line, but the hostid is part of the feature description. A server (node-locked) license does not work and CANNOT be used with a token server.

5.3 Versions

MOSEK version 10 requires a license file with version at least 10. In general the version of the license must be at least as large as the version of **MOSEK**. Only the major version number matters.

In general the token server binaries should be as new as the newest client contacting the token server. If that is not case issues can be expected.

Chapter 6

Hostname and Hostid

The `hostname` and `hostid` are the two basic computer identifiers used in **MOSEK** license files. The `hostname` is just the standard host name and `hostid` is usually identical to the MAC address of a network card.

Command line

The easiest way to obtain `hostname` and `hostid` is to open the shell, go to the directory with **MOSEK** binaries (`<MSKHOME>/mosek/10.0/tools/platform/<PLATFORM>/bin/`) and run the command

```
mosek -f
```

It will produce output similar to

```
MOSEK Version 8.1.0.23 (Build date: 2017-8-24 15:37:04)
Copyright (c) MOSEK ApS, Denmark. WWW: mosek.com
Platform: Linux/64-X86

FlexLM
 Version                  : 11.14
 Hostname                 : myoptserver
 Host ID                  : "b083fa34ad2c"
 License path             : /home/mosekuser/mosek/mosek.lic

Operating system variables
 LD_LIBRARY_PATH          :

*** No input file specfied. No optimization is performed.

Return code - 0  [MSK_RES_OK]
```

Python

If you only installed **MOSEK** in Python (via Conda, Pip or otherwise) then you can get the same output by running the following code. Note, however, that for floating licenses you will still have to download the full **MOSEK** distribution package to obtain the license server binaries.

```
import mosek, sys

env = mosek.Env()
env.set_Stream(mosek.streamtype.log, sys.stdout.write)
env.echointro(1)
```

Other ways

If you cannot run **MOSEK** at this point, other methods to obtain the `hostname` and `hostid` are outlined below.

6.1 The Hostname

To obtain the host name open a shell and execute the command:

```
hostname
```

6.2 The Host ID

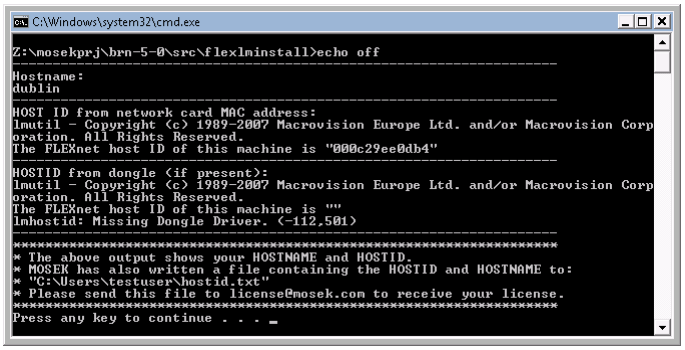
A purchased **MOSEK** license is tied to a particular computer via a unique identifier called a *host ID*. Usually the host ID is identical to the MAC address of a network card. Therefore, the machine needs to be equipped with a network card. However, an actual network connection is not needed as the licensing system requires only the number encoded in the network card.

Important: Please follow the instructions below, and NOT use the shell command `hostid`.

6.2.1 Windows: How to get the Host ID

In the Start Menu under All Programs select *Mosek Optimization Tools* 10.0 and click on **Generate HOSTID**. **MOSEK** will display the hostname and the host ID and generate a file named `hostid.txt` in the user's home directory e.g

```
%UserProfile%\hostid.txt
```



Please provide the `hostid.txt` file whenever the host ID is requested.

6.2.2 Linux: How to get the Host ID

To use the license manager the *Linux standard base 3.0* must be installed. This package is called `lsb-base` or `lsb` in most Linux distributions.

The host ID is obtained as follows:

```
<MSKHOME>/mosek/10.0/tools/platform/<PLATFORM>/bin/lmutil lmhostid
```

An example output is

```
lmutil - Copyright (c) 1989-2006 Macrovision Europe Ltd.
and/or Macrovision Corporation. All Rights Reserved.
The FLEXnet host ID of this computer is "00001a1a5a6a";
```

In this case `hostid` is `00001a1a5a6a`.

Troubleshooting

If you get an error similar to:

```
./lmutil: No such file or directory
```

then most likely the Linux Standard Base `lsb` package is not installed.

6.2.3 macOS: How to get the Host ID

The host ID is obtained as follows:

```
<MSKHOME>/mosek/10.0/tools/platform/<PLATFORM>/bin/lmutil lmhostid
```

An example output is

```
lmutil - Copyright (c) 1989-2006 Macrovision Europe Ltd.
and/or Macrovision Corporation. All Rights Reserved.
The FLEXnet host ID of this computer is "00001a1a5a6a";
```

In this case `hostid` is `00001a1a5a6a`.

Chapter 7

Floating license setup

A **floating license** is tied to a particular computer acting as a *token server*. A token server is a *service* on Windows and a *daemon* on UNIX that serves license tokens to **MOSEK** client programs over the LAN.

You may think of the token server as a computer with a bag of license tokens. Whenever a client computer starts using **MOSEK**, a license token is requested from the token server, and when **MOSEK** completes it sends back the license token to the token server. The following diagram Fig. 7.1 conveys the overall idea.

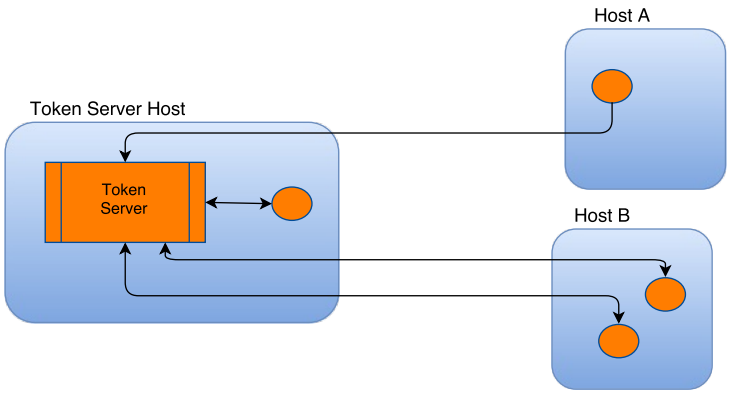


Fig. 7.1: General floating license scheme: any **MOSEK** instances that can connect to the token server can get a valid license.

This implies that you cannot use more license tokens than is available at any given point in time. Moreover, **MOSEK** can be used on any computer connected to the token server through the local area network. In particular **MOSEK** can also be used on the computer acting as token server.

A license file that contains at least one floating license always starts with

```
SERVER hostname hostid port
```

Observe that

- installing a license file without a `SERVER` line with a token server is *NOT* needed and is *NOT* possible.
- at most one token server can be running on any given machine.

The token server consists of two daemons

- `lmgrd`: The token server daemon running as a service,
- `moseklm`: A daemon started by `lmgrd`.

The following subsections guide through the setup of a token server on Windows, Linux and macOS.

7.1 Windows: Token server setup

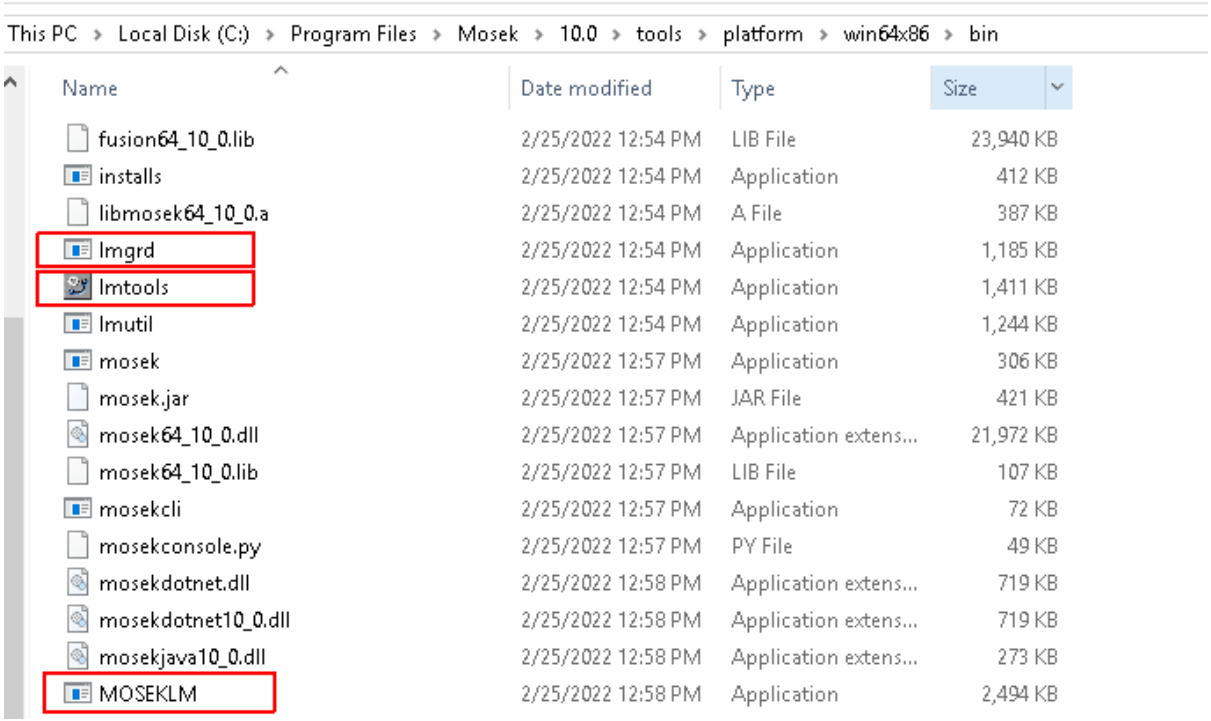
Below is a step-by-step guide for installing a token server on Windows and setting it to run as a service.

Prerequisites and locating the files

- Make sure you have **administrative privileges**.
- Locate the `bin` folder of your **MOSEK** installation, that is

  `<MSKHOME>\mosek\10.0\tools\platform\<PLATFORM>\bin\`

  where `<PLATFORM>` is the platform you are working on. That folder contains the files `lmgrd.exe` and `MOSEKLM.exe` required by the license system.

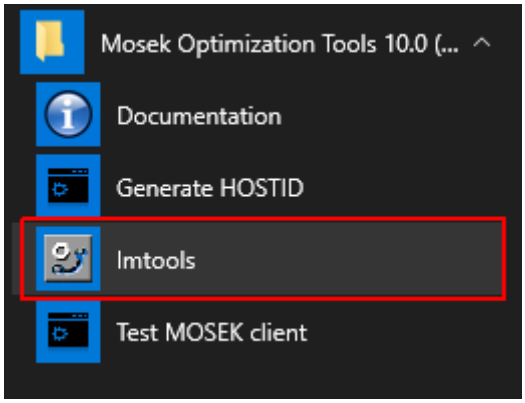


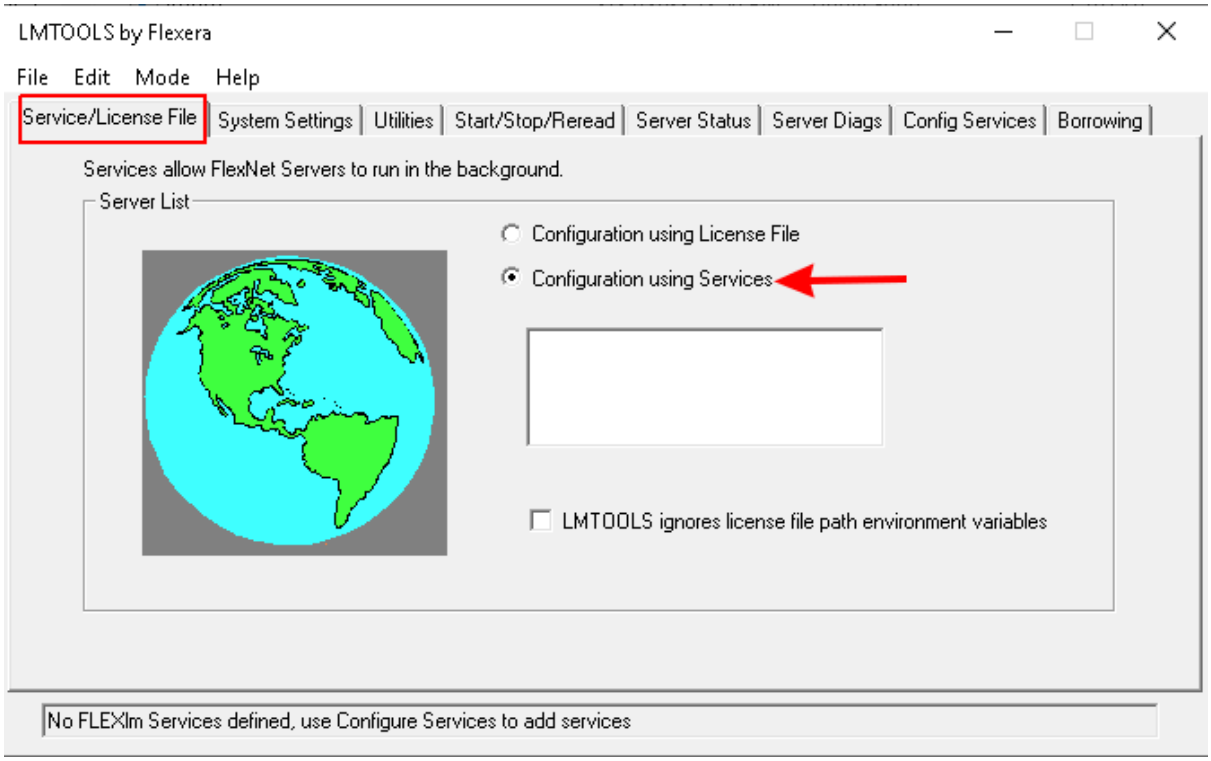
- Download the license file and store it on the local drive.

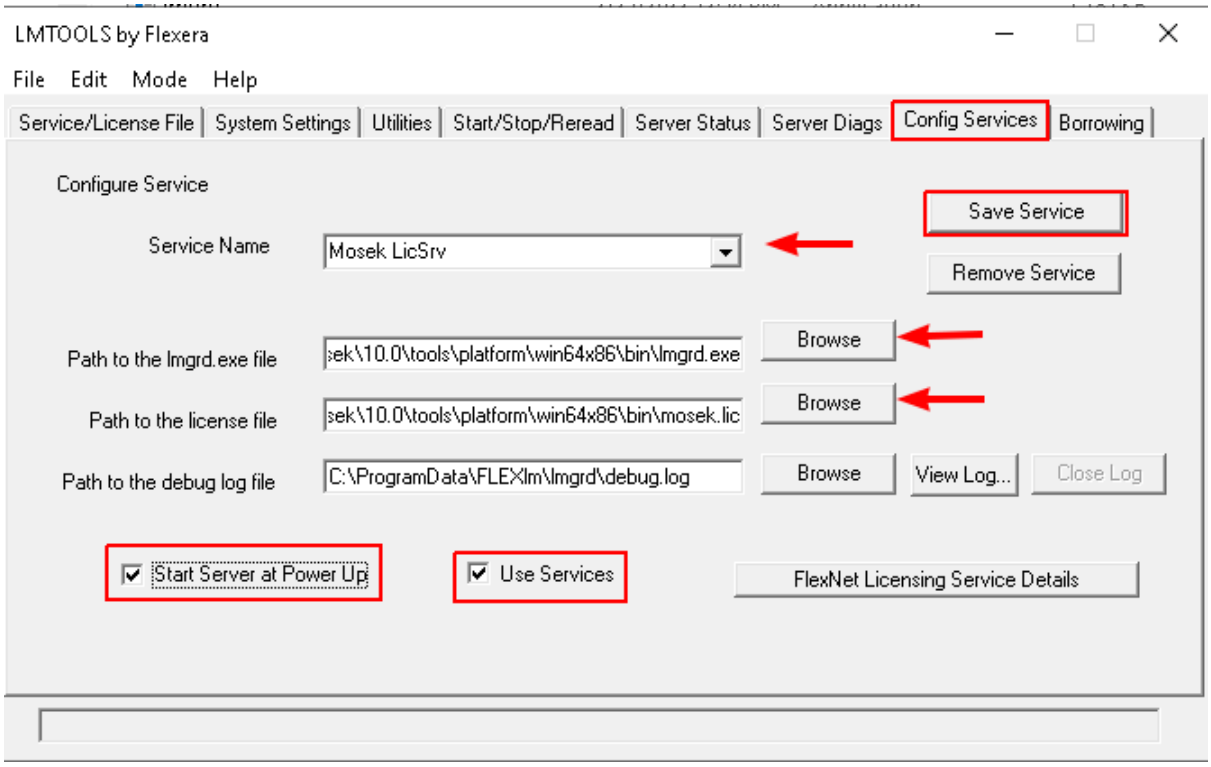
> **Warning:** To avoid issues with service permissions, it is recommended to keep the license file in the same `bin` folder as above. Alternatively, you can keep all the license-related files in a separate folder; in this case it must contain the license file and the files `lmgrd.exe` and `MOSEKLM.exe` from the `bin` folder above.

Installation of the service

- Locate and start the program `lmtools`. You can find it in the same `bin` folder as above and also in the **MOSEK** Start Menu if **MOSEK** was installed with the MSI installer.
- In the **Service/License file** TAB select **Configuration using Services**.
- Go to the **Config Services** TAB.
  - In *Service name* input your chosen name for the service.
  - In *Path to the lmgrd.exe file* navigate to the previously located `lmgrd.exe` file in the `bin` folder of the **MOSEK** installation (or another location if you moved it).
  - In *Path to the license file* navigate to the location of your **MOSEK** license file.


Mosek Optimization Tools 10.0 (...
Documentation
Generate HOSTID
lmtools
Test MOSEK client


LMTOOLS by Flexera
File Edit Mode Help
Service/License File
System Settings
Utilities
Start/Stop/Reread
Server Status
Server Diags
Config Services
Borrowing
Services allow FlexNet Servers to run in the background.
Server List
Configuration using License File
Configuration using Services
LMTOOLS ignores license file path environment variables
No FLEXlm Services defined, use Configure Services to add services



  - Tick the box *Use Services* and then tick the box *Start server at Power Up*.
  - Click *Save Service* and confirm that you want to save the service.

- Go to the **Start/Stop/Reread** TAB.
  - Choose your service from the list and click *Start Server*.
  - You should see the message *Server start successful* in the status line at the bottom.

Checking that startup succeeded

To get a quick overview of the server start go to the **Config Services** TAB and click *View log*. A log file from a successful start should look similarly to:

```
9:49:15 (lmgrd) -----------------------------------------------
9:49:15 (lmgrd)   Please Note:
9:49:15 (lmgrd)
9:49:15 (lmgrd)   This log is intended for debug purposes only.

.....

9:49:15 (lmgrd)
9:49:15 (lmgrd) -----------------------------------------------
9:49:15 (lmgrd)
9:49:15 (lmgrd)
9:49:15 (lmgrd) Server's System Date and Time: Mon Feb 28 2022 09:49:15 CET
9:49:15 (lmgrd) SLOG: Summary LOG statistics is enabled.
9:49:15 (lmgrd) FlexNet Licensing (v11.18.3.0 build 283040 x64_lsb) started on␣
↪hostname (linux) (2/28/2022)
9:49:15 (lmgrd) Copyright (c) 1988-2021 Flexera. All Rights Reserved.
9:49:15 (lmgrd) World Wide Web:  http://www.flexerasoftware.com
9:49:15 (lmgrd) License file(s): /home/username/mosek/mosek-floating.lic
```

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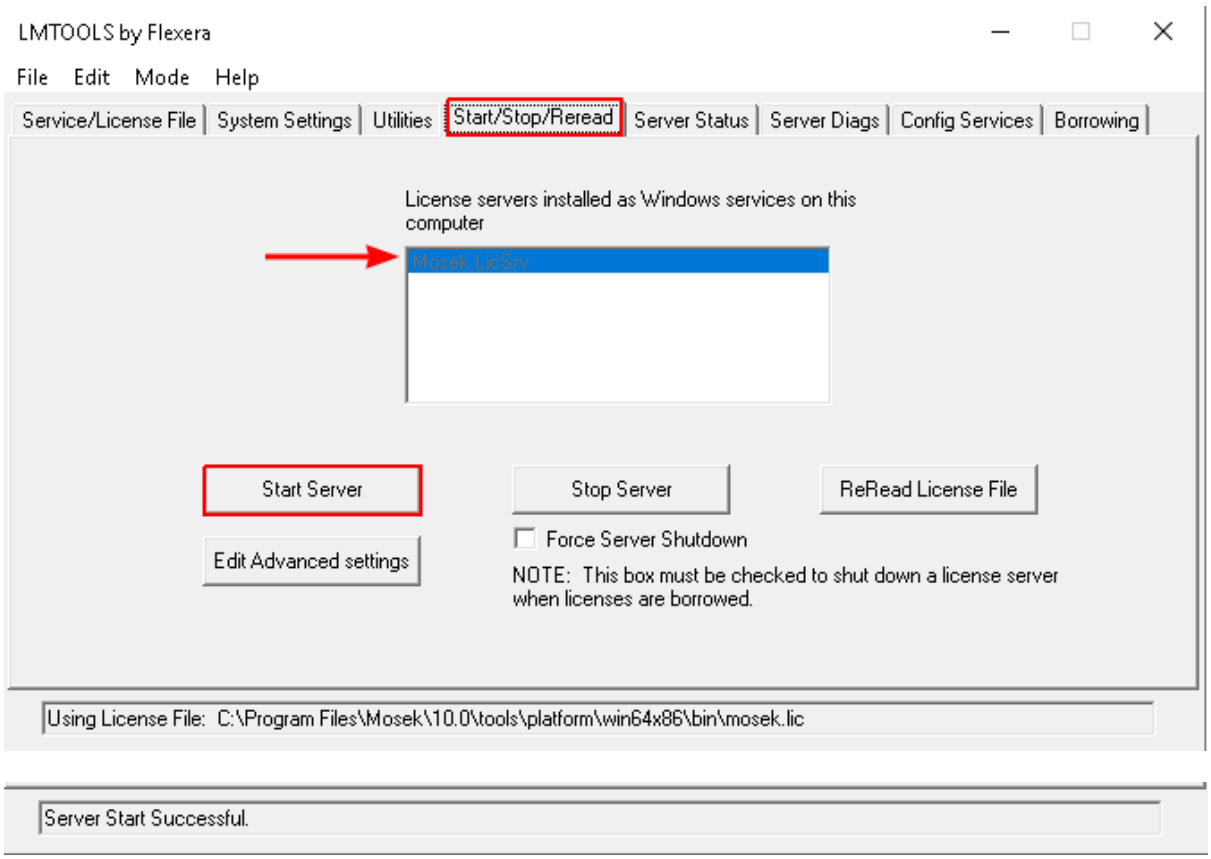

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```
9:49:15 (lmgrd) lmgrd tcp-port 27007
9:49:15 (lmgrd) (@lmgrd-SLOG@) ===============================================
9:49:15 (lmgrd) (@lmgrd-SLOG@) === LMGRD ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Start-Date: Mon Feb 28 2022 09:49:15 CET
9:49:15 (lmgrd) (@lmgrd-SLOG@) PID: 2147425
9:49:15 (lmgrd) (@lmgrd-SLOG@) LMGRD Version: v11.18.3.0 build 283040 x64_lsb ( build␣
↪283040 (ipv6))
9:49:15 (lmgrd) (@lmgrd-SLOG@)
9:49:15 (lmgrd) (@lmgrd-SLOG@) === Network Info ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Listening port: 27007
9:49:15 (lmgrd) (@lmgrd-SLOG@)
9:49:15 (lmgrd) (@lmgrd-SLOG@) === Startup Info ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Server Configuration: Single Server
9:49:15 (lmgrd) (@lmgrd-SLOG@) Command-line options used at LS startup: -c /home/
↪username/mosek/mosek-floating.lic
9:49:15 (lmgrd) (@lmgrd-SLOG@) License file(s) used:  /home/username/mosek/mosek-
↪floating.lic
9:49:15 (lmgrd) (@lmgrd-SLOG@) ===============================================
9:49:15 (lmgrd) Starting vendor daemons ...
9:49:15 (lmgrd) Started MOSEKLM (internet tcp_port 36867 pid 2147427)
9:49:15 (MOSEKLM) FlexNet Licensing version v11.18.3.0 build 283040 x64_lsb
9:49:15 (MOSEKLM) SLOG: Summary LOG statistics is enabled.
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT1
9:49:15 (MOSEKLM) SLOG: VM Status: 0
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT5
9:49:15 (MOSEKLM) SLOG: TPM Status: 0
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT6
9:49:15 (MOSEKLM) Server started on hostname for:        PTS
```

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```
9:49:15 (MOSEKLM) PTON
9:49:15 (MOSEKLM) EXTERNAL FILTERS are OFF
9:49:15 (lmgrd) MOSEKLM using TCP-port 36867
9:49:15 (MOSEKLM) SLOG: Statistics Log Frequency is 240 minute(s).
9:49:15 (MOSEKLM) SLOG: TS update poll interval is 600 seconds.
9:49:15 (MOSEKLM) SLOG: Activation borrow reclaim percentage is 0.
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) ================================================
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Vendor Daemon ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Vendor daemon: MOSEKLM
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Start-Date: Mon Feb 28 2022 09:49:15 CET
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) PID: 2147427
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) VD Version: v11.18.3.0 build 283040 x64_lsb (␣
↪build 283040 (ipv6))
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Startup/Restart Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Options file used: None
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is vendor daemon a CVD: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is FlexNet Licensing Service installed and␣
↪compatible: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) FlexNet Licensing Service Version: -NA-
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is TS accessed: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) TS access time: -NA-
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Number of VD restarts since LS startup: 0
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Network Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Listening port: 36867
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Daemon select timeout (in seconds): 1
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Host Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Host used in license file: hostname
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) HostID node-locked in license file: b47acd81a33c
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) HostID of the License Server: "b47acd81a33c␣
↪b47acd81a33d"
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Running on Hypervisor: Not determined - treat as␣
↪Physical
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) ================================================
9:49:15 (MOSEKLM) TCP_NODELAY NOT enabled
9:49:15 (MOSEKLM) Listener Thread: running
9:49:15 (MOSEKLM) Starting diagnostics port listener thread (DPLT)
9:49:15 (MOSEKLM) Starting diagnostics output thread (DRQT)
```

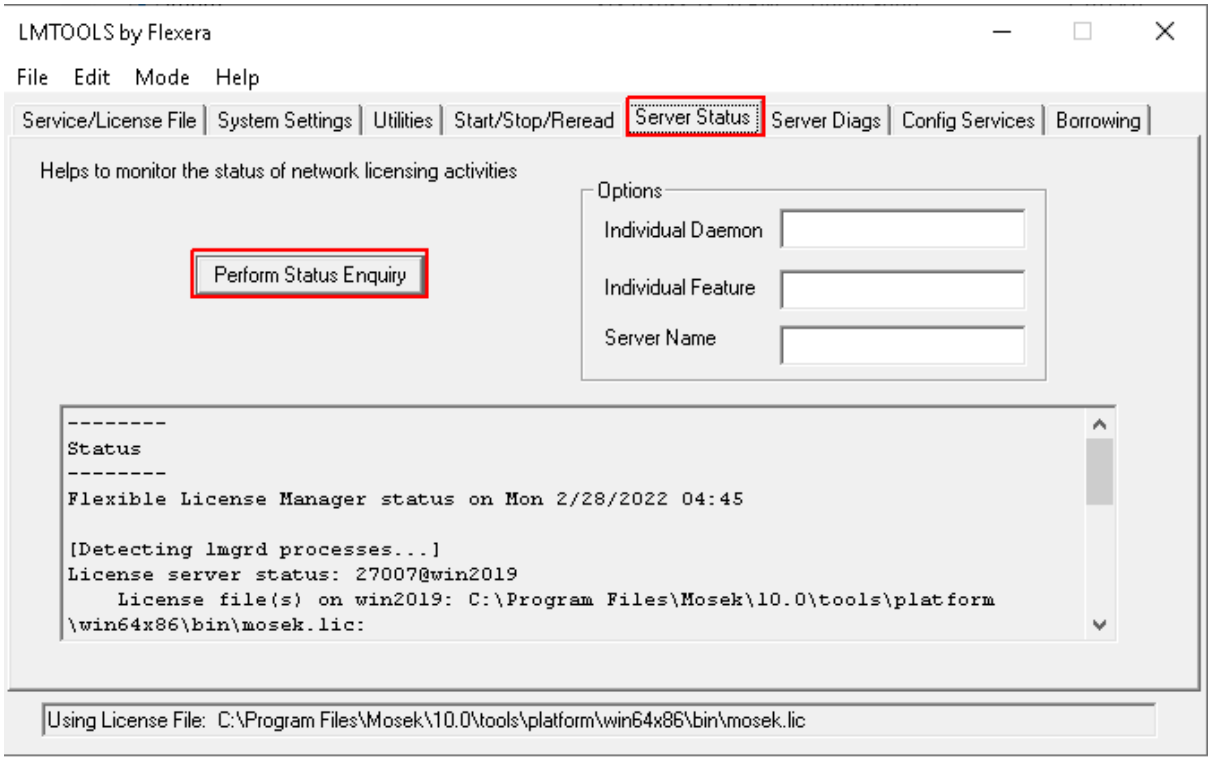
In particular, the major information contained in the file is:

- the port `lmgrd` is running on (in this case `27007`, the default port used by **MOSEK**),
- the port `MOSEKLM` is running on (in this case `36867`, by default a value assigned dynamically at startup),
- the path to the license file that was used,
- the hostname and hostid of the machine,
- the licensed part IDs (in this case `PTS` and `PTON`)

If the log file indicates errors consult Sec. 10.2.

Testing the Token Server

In order to verify that the token server is running, go to the **Server Status** TAB and click *Perform Status Enquiry*.



The result for a successfully running token server should be similar to the one below:

```
lmutil - Copyright (c) 1989-2021 Flexera. All Rights Reserved.
Flexible License Manager status on Mon 2/28/2022 10:09

License server status: 27007@hostname
    License file(s) on hostname: /home/username/mosek/mosek-floating.lic:

    hostname: license server UP (MASTER) v11.18.3

Vendor daemon status (on hostname):

   MOSEKLM: UP v11.18.3
Feature usage info:

Users of PTS:  (Total of 5 licenses issued;  Total of 0 licenses in use)

Users of PTON:  (Total of 5 licenses issued;  Total of 0 licenses in use)
```

Troubleshooting

If the server won't start, or the client can't check out the license first check Sec. 10.2. It covers most typical issues. Always consult the log file `lmrgd.log` of the server.

If that doesn't help please contact **MOSEK** support at support@mosek.com. Please include the client error messages and the server log file `lmgrd.log`. See Sec. 10.4.

7.2 Linux, macOS: Token server setup

Below is a step-by-step guide to starting the token server on Linux and macOS. The same instructions can also be applied to start the token server on Windows from the command line, although for most Windows users the approach from Sec. 7.1, which installs the token server as a service, is preferable.

Prerequisites and locating the files

On Linux *Linux Standard Base* (LSB) 3.0 or later must be installed in order for token server to work. The LSB package is called `lsb-base` or `lsb` in most Linux distributions.

The programs `lmgrd` and `MOSEKLM` required for installation can be found the `bin` folder inside the **MOSEK** installation, that is:

```
<MSKHOME>/mosek/10.0/tools/platform/<PLATFORM>/bin/
```

where `<PLATFORM>` is the platform you are working on.

Starting the token server

To start the token server open the terminal, go to the `bin` folder of the **MOSEK** installation mentioned above and run:

```
./lmgrd -c PATH_TO_LICENSE -l lmgrd.log
```

where `PATH_TO_LICENSE` is the path to your license file. The token server will save a log file in the location given by the `-l` command line parameter.

Checking that startup succeeded

If the token server was started successfully the `lmgrd.log` file will look similar to this

```
9:49:15 (lmgrd) -----------------------------------------------
9:49:15 (lmgrd)   Please Note:
9:49:15 (lmgrd)
9:49:15 (lmgrd)   This log is intended for debug purposes only.

.....

9:49:15 (lmgrd)
9:49:15 (lmgrd) -----------------------------------------------
9:49:15 (lmgrd)
9:49:15 (lmgrd)
9:49:15 (lmgrd) Server's System Date and Time: Mon Feb 28 2022 09:49:15 CET
9:49:15 (lmgrd) SLOG: Summary LOG statistics is enabled.
9:49:15 (lmgrd) FlexNet Licensing (v11.18.3.0 build 283040 x64_lsb) started on␣
↪hostname (linux) (2/28/2022)
9:49:15 (lmgrd) Copyright (c) 1988-2021 Flexera. All Rights Reserved.
9:49:15 (lmgrd) World Wide Web:  http://www.flexerasoftware.com
9:49:15 (lmgrd) License file(s): /home/username/mosek/mosek-floating.lic
9:49:15 (lmgrd) lmgrd tcp-port 27007
9:49:15 (lmgrd) (@lmgrd-SLOG@) ===============================================
9:49:15 (lmgrd) (@lmgrd-SLOG@) === LMGRD ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Start-Date: Mon Feb 28 2022 09:49:15 CET
```

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```
9:49:15 (lmgrd) (@lmgrd-SLOG@) PID: 2147425
9:49:15 (lmgrd) (@lmgrd-SLOG@) LMGRD Version: v11.18.3.0 build 283040 x64_lsb ( build␣
↪283040 (ipv6))
9:49:15 (lmgrd) (@lmgrd-SLOG@)
9:49:15 (lmgrd) (@lmgrd-SLOG@) === Network Info ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Listening port: 27007
9:49:15 (lmgrd) (@lmgrd-SLOG@)
9:49:15 (lmgrd) (@lmgrd-SLOG@) === Startup Info ===
9:49:15 (lmgrd) (@lmgrd-SLOG@) Server Configuration: Single Server
9:49:15 (lmgrd) (@lmgrd-SLOG@) Command-line options used at LS startup: -c /home/
↪username/mosek/mosek-floating.lic
9:49:15 (lmgrd) (@lmgrd-SLOG@) License file(s) used:  /home/username/mosek/mosek-
↪floating.lic
9:49:15 (lmgrd) (@lmgrd-SLOG@) ================================================
9:49:15 (lmgrd) Starting vendor daemons ...
9:49:15 (lmgrd) Started MOSEKLM (internet tcp_port 36867 pid 2147427)
9:49:15 (MOSEKLM) FlexNet Licensing version v11.18.3.0 build 283040 x64_lsb
9:49:15 (MOSEKLM) SLOG: Summary LOG statistics is enabled.
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT1
9:49:15 (MOSEKLM) SLOG: VM Status: 0
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT5
9:49:15 (MOSEKLM) SLOG: TPM Status: 0
9:49:15 (MOSEKLM) SLOG: FNPLS-INTERNAL-CKPT6
9:49:15 (MOSEKLM) Server started on hostname for:        PTS
9:49:15 (MOSEKLM) PTON
9:49:15 (MOSEKLM) EXTERNAL FILTERS are OFF
9:49:15 (lmgrd) MOSEKLM using TCP-port 36867
9:49:15 (MOSEKLM) SLOG: Statistics Log Frequency is 240 minute(s).
9:49:15 (MOSEKLM) SLOG: TS update poll interval is 600 seconds.
9:49:15 (MOSEKLM) SLOG: Activation borrow reclaim percentage is 0.
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) ============================================
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Vendor Daemon ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Vendor daemon: MOSEKLM
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Start-Date: Mon Feb 28 2022 09:49:15 CET
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) PID: 2147427
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) VD Version: v11.18.3.0 build 283040 x64_lsb (␣
↪build 283040 (ipv6))
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Startup/Restart Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Options file used: None
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is vendor daemon a CVD: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is FlexNet Licensing Service installed and␣
↪compatible: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) FlexNet Licensing Service Version: -NA-
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Is TS accessed: No
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) TS access time: -NA-
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Number of VD restarts since LS startup: 0
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Network Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Listening port: 36867
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Daemon select timeout (in seconds): 1
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@)
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) === Host Info ===
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Host used in license file: hostname
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) HostID node-locked in license file: b47acd81a33c
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) HostID of the License Server: "b47acd81a33c␣
↪b47acd81a33d"
```

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```
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) Running on Hypervisor: Not determined - treat as␣
↪Physical
9:49:15 (MOSEKLM) (@MOSEKLM-SLOG@) ===============================================
9:49:15 (MOSEKLM) TCP_NODELAY NOT enabled
9:49:15 (MOSEKLM) Listener Thread: running
9:49:15 (MOSEKLM) Starting diagnostics port listener thread (DPLT)
9:49:15 (MOSEKLM) Starting diagnostics output thread (DRQT)
```

In particular, the major information contained in the file is:

- the port `lmgrd` is running on (in this case `27007`, the default port used by **MOSEK**),
- the port `MOSEKLM` is running on (in this case `36867`, by default a value assigned dynamically at startup),
- the path to the license file that was used,
- the hostname and hostid of the machine,
- the licensed part IDs (in this case `PTS` and `PTON`)

If the log file indicates errors consult Sec. 10.2.

Testing the Token Server

In order to verify that the token server is running, go to the `bin` folder of the **MOSEK** installation mentioned above and run:

```
./lmutil lmstat -c 27007@127.0.0.1 -a
```

(if necessary replace `27007` with your port number). The result for a successfully running token server should be similar to the one below:

```
lmutil - Copyright (c) 1989-2021 Flexera. All Rights Reserved.
Flexible License Manager status on Mon 2/28/2022 10:09

License server status: 27007@hostname
    License file(s) on hostname: /home/username/mosek/mosek-floating.lic:

    hostname: license server UP (MASTER) v11.18.3

Vendor daemon status (on hostname):

   MOSEKLM: UP v11.18.3
Feature usage info:

Users of PTS:  (Total of 5 licenses issued;  Total of 0 licenses in use)

Users of PTON:  (Total of 5 licenses issued;  Total of 0 licenses in use)
```

Troubleshooting

If the server won't start, or the client can't check out the license first check Sec. 10.2. It covers most typical issues. Always consult the log file `lmrgd.log` of the server.

If that doesn't help please contact **MOSEK** support at support@mosek.com. Please include the client error messages and the server log file `lmgrd.log`. See Sec. 10.4.

If on Linux you get an error similar to:

```
./lmgrd: No such file or directory
```

then most likely the Linux Standard Base `lsb` package is not installed.

Starting lmgrd on boot

To start the license server automatically on boot add the above procedure to your system's startup scripts. Details vary depending on the operating system. Note that for security reasons `lmgrd` should not run as root, therefore we recommend a construction such as:

```
su USERNAME -c "umask 022; LMGRD -c PATH_TO_LICENSE_FILE -l PATH_TO_LOG_FILE"
```

where

- `USERNAME` is a normal, non-root, non-privileged user,
- `LMGRD` is the complete path to the `lmgrd` binary,
- `PATH_TO_LICENSE_FILE` is the complete path to the license file,
- `PATH_TO_LOG_FILE` is the complete path to the debug log file.

7.3 Changing default ports and firewall and antivirus issues

The token server consists of two daemons

- `lmgrd`: The token server daemon. By default it listens on port *27007*.
- `MOSEKLM`: A demon started by `lmgrd`. Opens its own port; its number can vary between runs unless explicitly specified (see below).

Both need an open port in the firewall if a **MOSEK** client should be able to check out a license license token. To specify explicitly which port number each daemon should use you must change the license file. The first two lines in a standard **MOSEK** floating license file look like

```
SERVER my_server 123456789ABC 27007
VENDOR MOSEKLM
```

To instruct `lmgrd` to use port *27008* and `MOSEKLM` to use port *3084* instead, change the first two lines of the license file to:

```
SERVER my_server 123456789ABC 27008
VENDOR MOSEKLM port=3084
```

Restart the token server and configure your firewall to allow access to the chosen port numbers, in this case `27008` and `3084`.

Finally, it is a good idea to check if the port is open by using the `telnet` command as follows

```
telnet my_server 27008
```

on the client computer(s). If you get an error message similar to

```
Connecting to my_server...Could not open connection to the host,
on port 27008: Connect failed
```

then the port is *not* open. See also the License Administration Guide for more information.

Note that antivirus software can have a similar effect and also block connections, even from the same machine. In this case instruct the software to allow connections through the two ports you specify explicitly in the license file as shown above.

7.4 License Checkout Overhead

In FLEXlm version `11.13.1.2` and higher users may experience an overhead of a few tenths of a second when checking out the license token the first time. This is mainly due to additional checks the FLEXlm performs to detect virtual machines. Unfortunately it is an issue whose fixing is beyond the scope for **MOSEK**. FLEXlm is working on a solution to the issue.

Note that if the **MOSEK** environment is reused and license caching is turned on, then the issue will only be noticed for the first optimization. Please contact support@mosek.com to obtain more information if needed.

Chapter 8

Client setup

This section describes setting up client machines.

8.1 With a local license file

Default setup

The preferred option is to place the license file `mosek.lic` in the directory `mosek` in the user's home directory. That means

```
$HOME/mosek/mosek.lic
%USERPROFILE%\mosek\mosek.lic
```

on UNIX systems and Windows, respectively. If no other configuration options are set (see below) this is the default location where **MOSEK** looks for a license. This works for all types of licenses. If the license file contains a floating license, the client will use the information in that file to find and contact a token server.

Environment variable

Alternatively, the path to the license file may be set by the environment variable `MOSEKLM_LICENSE_FILE`, for example:

```
MOSEKLM_LICENSE_FILE=/home/user/licenses/mosek.lic
MOSEKLM_LICENSE_FILE=c:\users\mylogin\licenses\mosek.lic
```

Command line options

From the **MOSEK** command line the path to the license file can be set with the option `-l`.

From an API

In the Optimizer API and Fusion API the path to the license file can be set with the method `putlicensepath` of the environment or Model, respectively, before first optimization.

8.2 Without a local license file

Another method to check out a license from a floating license token server is to set the environment variable `MOSEKLM_LICENSE_FILE` in one of the following formats

```
MOSEKLM_LICENSE_FILE=@hostname
MOSEKLM_LICENSE_FILE=port@hostname
```

where `hostname` is the name of the token server machine and `port` is the port on which `MOSEKLM` is listening. Then the client **MOSEK** application will contact the server directly and the possible overhead for opening and reading the license file is eliminated. Observe a potential firewall may block access to the token server.

The same format can be used in conjunction with the command line `-l` option and in the `putlicensepath` method as mentioned in the previous section.

8.3 Testing and debugging

In either case the client configuration can be tested by running the program `msktestlic`.

If any errors related to licensing appear, then go through the error messages and look for a line containing the path to the license file, for example:

```
License path: /home/someplace/mosek/mosek.lic
```

or:

```
License cannot be located. The default search path is ':/home/someplace/mosek/mosek.
↪lic:'
```

This is the *actual* location where this instance of **MOSEK** was trying to locate the license. If it does not correspond to your expectations then go through the setup again or check that this location contains the correct file.

Chapter 9

License in a Cloud Computing Environment

The token server may be deployed in a cloud environment. The main challenge in deploying a token server in the cloud is to guarantee that the `hostid` (in this case the MAC address) stays unchanged when the instance running the token server is stopped.

In the following section we discuss one possible deployment strategy on Amazon EC2.

9.1 Example: Token server in Amazon EC2

The license will be bound to a MAC address. In the most basic Amazon EC2 instance setup the MAC address may change when the instance is stopped and later started again. Below we describe how to work around this.

In Amazon EC2 a MAC address is a persistent resource associated with an Elastic Network Interface (ENI). To keep the MAC address constant we advise creating an ENI that can then be associated with the Amazon EC2 instance acting as a token server. The ENI can later be moved to another instance within the same subnet if the token server needs to be moved to another instance.

Creating a token server Amazon EC2 instance

1. Create an ENI in the subnet into which you wish to launch the token server. Please consult the Amazon EC2 documentation for how to create an ENI.
2. Create a new instance in the same subnet as the ENI. When configuring the network interface select the newly created ENI as a network interface.
3. Launch the instance.
4. *(optional)* If the machine needs a public IP address then create an Elastic IP (EIP) and associate it with the instance after launch. It is not possible to have an automatically assigned public IP addresses when using an ENI in Amazon EC2.
5. Install **MOSEK** on the instance.
6. Retrieve the MAC address associated with the ENI, e.g by inspecting the ENI in the AWS Management Console or by logging into the instance and following the instructions in Sec. 6.
7. Contact support@mosek.com with the relevant MAC address to obtain a valid license file.
8. Make sure the security group associated with the instance running the token server allows for incoming traffic to the token server. Allow for inbound TCP traffic on the ports your token server is listening as shown in Sec. 7.3
9. Install the token server as described in Sec. 7.

Chapter 10

Licensing FAQ

10.1 General questions

10.1.1 How do I know what version/expiry/hostid/port I have in my license file?

The license file is a plain text file. Open it in any text editor and follow Sec. 5.2.

10.1.2 Can I edit the license file?

You can change the hostname, port number(s), add an `OPTIONS` section and edit comments. Any other edits (in particular changing the hostid) will invalidate the license file.

10.1.3 Can I reserve some of my floating tokens to a specific IP/username/group?

To reserve a certain number license features for a particular user or IP address, you must create an additional options file and use the `RESERVE` option. For details see FLEXnet license administration guide. For example, to reserve one `PTS` token for user `username` make an options file `res.opt` with content

```
RESERVE 1 PTS USER username
```

and add the following to your license file:

```
VENDOR MOSEKLM OPTIONS=res.opt
```

10.1.4 Can I check out licenses from more than one location?

You can concatenate multiple license search paths (local or remote) with the operating system's path separator. **MOSEK** will then sequentially try to check out a license from all these locations until one is available. For example

```
MOSEKLM_LICENSE_FILE=/home/user/licenses/mosek.lic:27007@licensehost        (Linux/
↪OSX)
MOSEKLM_LICENSE_FILE=c:\users\mylogin\licenses\mosek.lic;27007@licensehost  (Windows)
```

10.1.5 Can I use more than one hostid?

Yes, for a server license. In exceptional situations we can generate a server license file with a list of MAC addresses as hostid. At least one of them has to be active at any time for **MOSEK** to work. For a floating license we can use only a single hostid.

10.1.6 My machine has many network interfaces and I get a long list of `hostids`. Which one should I use?

Ideally choose the MAC address of some permanent physical device (network card) that is expected to be permanently associated with the machine. Avoid MAC addresses of temporary/virtual devices/interfaces which can easily disappear, rendering the license file invalid.

10.1.7 Is it possible to use MOSEK with a floating license on a machine detached from the LAN(WAN)?

Yes. It is possible to use the `lmborrow` functionality. See the FLEXnet license administration guide.

10.1.8 Is it possible to host a token server in the cloud?

Yes, but you will have to create a (small) instance with a permanent MAC address to be used as `hostid`. An example is described in Sec. 9.

10.1.9 Do you have a complete licensing guide that covers all of FLEXlm options?

The ultimate guide is at FLEXnet license administration guide.

10.1.10 I know the hostid of the license server, but what about the clients?

The clients, that is machines on which **MOSEK** optimizations will actually be performed, can be arbitrary, as long as they can connect to the license server to check out a token. The floating license restricts only the physical machine for the token server.

10.1.11 What does MOSEK use to verify the license?

Only the license file. There is no external communication whatsoever.

10.1.12 When does MOSEK return the floating license token?

By default at the end of the session/process or when the **MOSEK** environment is deleted. This reduces the checkout overhead if one process runs multiple optimizations. However, this is completely customizable. For example, you can return the token after each optimization or upon calling a dedicated method. Your API's manual has instructions on how to do it in the section *Technical guidelines* / *The license system*.

10.2 Floating license issues

10.2.1 The `lmutil` and `lmgrd` will not start on Linux: `No such file or directory`.

If you run a command from the licensing system and get this error:

```
user@hostname:~/path_to_mosek$ ./lmutil
./lmutil: No such file or directory
```

then most likely you are missing the Linux Standard Base (LSB) package. LSB version at least 3 is required. On Ubuntu the latest version of LSB can be installed with the command `apt-get install lsb`.

10.2.2 I get the error `Vendor daemon is too old.`

You are running an older license server (for example, from version 7) and tried to connect to it with a much more recent client (for example, from version 9). The `lmgrd` license server must be at least as new as all the clients who attempt to connect to it. Use the license server distributed with the most recent version of the clients in use. We occasionally update the FLEXlm binaries inside **MOSEK** and then an incompatibility with older license servers may occur.

10.2.3 The license server will not start.

Always check the server's log file `lmgrd.log`. It will explain the source of the problem. Typical issues are:

- **Wrong hostname:**

```
11:55:03 (lmgrd) "HOSTNAME_REAL": Not a valid server hostname, exiting.
11:55:03 (lmgrd) Valid license server system hosts are: "HOSTNAME_LICFILE"
```

  The hostname in the license file is not the actual hostname of the computer. Either you are running the license server on the wrong machine, or using a wrong file or something changed on the machine and you should contact us for a new license file.

- **Wrong hostid:**

```
8:46:36 (MOSEKLM) (@MOSEKLM-SLOG@) HostID node-locked in license file:␣
↪a6321bc7ff3f
8:46:36 (MOSEKLM) (@MOSEKLM-SLOG@) HostID of the License Server: "af638abf82aa␣
↪127c4da8f212"
8:46:36 (MOSEKLM) No valid hostids, exiting
8:46:36 (MOSEKLM) EXITING DUE TO SIGNAL 25 Exit reason 2
8:46:41 (lmgrd) MOSEKLM exited with status 25 (Invalid host)
```

  The hostid in the license file does not correspond to actual hardware. Either you are running the license server on the wrong machine, or using a wrong file or something changed on the machine (perhaps a network interface was removed) and you should contact us for a new license file.

- **Incorrect or unreadable license file**, for example:

```
18:54:46 (MOSEKLM) Invalid license key (inconsistent authentication code)
```

  It is possible that you invalidated the file by editing hostname or hostid or that you downloaded/saved it incorrectly. See Sec. 5.2 for how a floating license file should look. You should revert to the original file (if applicable) or contact us for a new license file, attaching the current one.

- **Could not open port:**

```
18:52:12 (lmgrd) Failed to open the TCP port number in the license.
```

  The token server or vendor daemon could not open a port. Possibly it is already open by another process, or there are firewall issues. In either case consult Sec. 7.3 for a solution. Terminate any `lmgrd` or `MOSEKLM` processes running.

- **Invalid License File**, on Unix:

```
18:54:46 (lmgrd) Server's System Date and Time: Mon Jun 21 2021 18:45:01 CET
18:54:46 (lmgrd) Invalid License File
```

  Can appear if the license file has permissions other than 644. Change the license file's permissions to 644.

- **Hostname not in network database:**

```
11:55:03 (lmgrd) Unknown Hostname: HOSTNAME_LICFILE
specified in the license file is not available in the local network database
11:55:03 (lmgrd) EXITING DUE TO SIGNAL 33 Exit reason 1
```

A rare error appearing on MAC where `lmgrd` exits almost immediately. The solution is to edit the file `/etc/hosts` in your system and add a line with the IP address and hostname of your machine.

10.2.4 The client cannot connect to the license server or license checkout times out.

The following symptoms can indicate firewall issues:

- The client cannot connect to the license server. The error is `MOSEK cannot connect to the license server` or `Operation now in progress`.
- The client cannot connect to the license server from a remote machine, but everything works when the client runs on the same machine as the server.
- License checkout times out after about 60 seconds with message `Timeout: operation now in progress`.

First make sure that the license server is up and running and that the `lmgrd.log` file did not indicate any errors (see previous question). Assuming that, consult Sec. 7.3, fix *both ports* described in that section (the token server port and the vendor port) to your preferred values, make sure they are open in the firewall and/or antivirus software, restart the license server and try again.

This happens typically in networks with tight security settings. Occasionally antivirus software can trigger this problem.

10.2.5 I cannot check out a token even though there should be more available.

Most likely there are processes/users who checked out a license but never returned it. The `lmgrd.log` log file on the license server will contain the history of license ckeckouts and checkins which may be used to identify the culprit.

10.2.6 The floating license worked previously and now suddenly stopped.

The most typical reasons for this are:

- The token server was terminated.
- The `hostid` of the license server changed.
- Something changed in the network configuration, for example there are new firewall or antivirus settings preventing the connection.
- The server was restarted and now uses a different port or different vendor port.
- You are trying to check out too many tokens.

Consult the error message reported by the **MOSEK** client for more information. Make sure that the license server is up and running and that the `lmgrd.log` file did not indicate any errors (see previous questions).

If the symptoms resemble Sec. 10.2.4, which indicates firewall issues, then consult Sec. 7.3, fix *both ports* described in that section (the token server port and the vendor port) to your preferred values, make sure they are open in the firewall and/or antivirus software, restart the license server and try again.

If the reason is a change in `hostid` contact us for a new license file.

10.3 Local file issues

10.3.1 The Optimization Toolbox for Matlab or Rmosek says license has expired although I downloaded a new one.

After you put the license file in the right place restart Matlab or R. It caches the license. If that doesn't help **MOSEK** probably uses another license path than you first thought. See next question.

10.3.2 MOSEK says there is no license file or that it expired.

If you are sure that your license file is valid and in the right place, then it is possible that your system is configured to expect the license file elsewhere than you thought. Search for the `mosek.lic` file on the disk and see if there is one in another location. Remove any old expired licenses found.

Go through the error or diagnostic message you received from **MOSEK** and look for lines such as:

```
License path: /home/someplace/mosek/mosek.lic
```

or:

```
License cannot be located. The default search path is ':/home/someplace/mosek/mosek.
↪lic:'
```

This is the *actual* location where this instance of **MOSEK** was trying to locate the license. If it does not correspond to your expectations then go through the setup again or check that this location contains the correct file.

10.4 Need more help

10.4.1 I tried all of the above but it doesn't help.

Send us an email and attach as much as possible of the following data:

- description of the problem,
- the license file,
- the token server log file `lmgrd.log` or its part relevant to the issue (for floating licenses),
- the exact error message reported by the **MOSEK** client, or the output from `mosekdiag`, `mosektestlic`, `mosek -f` or other relevant diagnostic tool.
- **MOSEK** version, operating system, which interface you are using.

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