



## MOSEK Installation Guide

*Release 10.0.29*

MOSEK ApS

21 November 2022

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# Chapter 1

## Introduction

This guide describes how to install the **MOSEK** Optimization Suite.

In general **MOSEK** Optimization Suite must be installed on any computer where **MOSEK** is used and this is called a *client installation*.

In addition if a *floating license* is employed then a license token server must be set up, either on the client computer or on another computer. Note that trial licenses and academic licenses are NOT floating licenses so they do not require a token server.

## Chapter 2

# Contact Information

Phone	+45 7174 9373	
Website	<a href="http://mosek.com">mosek.com</a>	
Email		
	<a href="mailto:sales@mosek.com">sales@mosek.com</a>	Sales, pricing, and licensing
	<a href="mailto:support@mosek.com">support@mosek.com</a>	Technical support, questions and bug reports
	<a href="mailto:info@mosek.com">info@mosek.com</a>	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:

<b>Blogger</b>	<a href="https://blog.mosek.com/">https://blog.mosek.com/</a>
<b>Google Group</b>	<a href="https://groups.google.com/forum/#!forum/mosek">https://groups.google.com/forum/#!forum/mosek</a>
<b>Twitter</b>	<a href="https://twitter.com/mosektw">https://twitter.com/mosektw</a>
<b>Linkedin</b>	<a href="https://www.linkedin.com/company/mosek-aps">https://www.linkedin.com/company/mosek-aps</a>
<b>Youtube</b>	<a href="https://www.youtube.com/channel/UCvIyectEVLp31NXeD5mIbEw">https://www.youtube.com/channel/UCvIyectEVLp31NXeD5mIbEw</a>

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 from [github/fmt](#) and distributed under the MIT license. The license agreement for *{fmt}* is shown in [Listing 3.3](#).

Listing 3.3: *{fmt}* license.

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

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COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
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](https://github.com/facebook/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
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
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
are met:

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   notice, this list of conditions and the following disclaimer.

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   notice, this list of conditions and the following disclaimer in
```

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=====

This product includes cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)). This product includes software written by Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).

Listing 3.6: ISC license

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Copyright (c) 2014-2015 Joel Sing <[jsing@openbsd.org](mailto:jsing@openbsd.org)>  
Copyright (c) 2014 Ted Unangst <[tedu@openbsd.org](mailto:tedu@openbsd.org)>  
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```
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DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.
```

### *mimalloc*

**MOSEK** uses the *mimalloc* memory allocator library from [github/mimalloc](https://github.com/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
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```

### *BLASFEO*

**MOSEK** uses the *BLASFEO* linear algebra library developed by Gianluca Frison, obtained from [github/blasfeo](https://github.com/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.
All rights reserved.

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```

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### ***oneTBB***

**MOSEK** uses the *oneTBB* parallelization library which is part of *oneAPI* developed by Intel, obtained from [github/oneTBB](https://github.com/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

## Installation

### 4.1 External channels

**MOSEK** client can be installed from the following package managers and repositories:

- Anaconda for Python (<https://anaconda.org/MOSEK/mosek>):

```
conda install -c mosek mosek
```

- PIP for Python (<https://pypi.org/project/Mosek/>):

```
pip install Mosek
```

- Nuget.org for .NET Core (<https://www.nuget.org/packages/Mosek/>)

```
dotnet add package Mosek
```

Note that this only installs the client package. If you need the floating license server or the OptServer you still need to download the full distribution as described below.

### 4.2 General setup

This section describes how to install **MOSEK** from the full distribution packages downloaded from our website.

#### 4.2.1 Linux

1. Download the Linux 64bit x86 or Linux ARM64 **MOSEK** Optimization Suite distribution from <https://mosek.com/downloads/> and unpack it into a chosen directory.
2. Optionally add the path

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

to the OS variable PATH, where <MSKHOME> is the directory where **MOSEK** was installed and <PLATFORM> is linux64x86 or linuxaarch64 depending on the version of **MOSEK** installed.

### 4.2.2 macOS

1. Download the MAC OS 64bit x86 or MAC OS ARM64 **MOSEK** Optimization Suite distribution from <https://mosek.com/downloads/> and unpack it into a chosen directory.
2. Run the command

```
python <MSKHOME>/mosek/10.0/tools/platform/<PLATFORM>/bin/install.py
```

where <MSKHOME> is the directory where **MOSEK** was installed and <PLATFORM> is **osx64x86** or **osxaarch64** depending on the version of **MOSEK** installed. This will set up the appropriate shared objects required when using **MOSEK**.

3. Optionally add the path

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

to the OS variable PATH, where <MSKHOME> is the directory where **MOSEK** was installed and <PLATFORM> is **osx64x86** or **osxaarch64** depending on the version of **MOSEK** installed.

4. Troubleshooting:

- **Missing otool.** If running the `install.py` script produces errors such as:

```
xcrun: error: invalid active developer path (/Library/Developer/
↳ CommandLineTools), missing xcrun at: /Library/Developer/CommandLineTools/
↳ usr/bin/xcrun
...
CalledProcessError: Command '['otool', '-L', '/users/username/mosek/10.0/
↳ tools/platform/osx64x86/bin/MOSEKLM']' returned non-zero exit status 1
```

then you need to install the command line tools, in particular `otool`. Depending on the OS version, this should be possible with one of the commands:

```
xcode-select --install
xcode-select --switch /Library/Developer/CommandLineTools
```

- **Security exception in MacOS 10.15 (Catalina).** If an attempt to run **MOSEK** on Mac OS 10.15 (Catalina) and later produces security exceptions (`developer cannot be verified` and similar) then use `xattr` to remove the quarantine attribute from all **MOSEK** executables and binaries. This can be done in one go with

```
xattr -dr com.apple.quarantine mosek
```

where `mosek` is the folder which contains the full **MOSEK** installation or **MOSEK** binaries. See <https://themosekblog.blogspot.com/2019/12/macOS-1015-catalina-mosek-installation.html> for more information. If that does not help, use the system settings to allow running arbitrary unverified applications.

### 4.2.3 Windows, MSI installer

1. Make the right choice between the 32bit and 64bit versions. In most cases it is recommend to use the 64bit version.
2. Download the Windows 32bit x86 or Windows 64bit x86 **MOSEK** Optimization Suite MSI installer from <https://mosek.com/downloads/>.
3. Run the installer to complete the installation.
4. Check that the path

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

was added to the OS variable PATH, where <MSKHOME> is the directory where **MOSEK** was installed and <PLATFORM> is **win64x86** or **win32x86** depending on the version of **MOSEK** installed. This is necessary for Windows to locate the **MOSEK** shared libraries.

#### 4.2.4 Windows, Manual installation

1. Make the right choice between the 32bit and 64bit versions. In most cases it is recommend to use the 64bit version though.
2. Download the Windows 32bit x86 or Windows 64bit x86 **MOSEK** Optimization Suite distribution from <https://mosek.com/downloads/> and unpack it into a chosen directory.
3. Add the path

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

to the OS variable `PATH`, where `<MSKHOME>` is the directory where **MOSEK** was installed and `<PLATFORM>` is `win64x86` or `win32x86` depending on the version of **MOSEK** installed. This is necessary for Windows to locate the **MOSEK** shared libraries, especially if **MOSEK** is to be used e.g. from command line or MATLAB.

### 4.3 Setting up the License

Regardless of the method of installation, **MOSEK** requires a license file to run.

#### Token server setup

If you are using a floating license with a token server then follow the instructions in the [Licensing Guide](#). This step is NOT required for trial and personal academic licenses in particular.

#### Client setup

In practice the license is contained in a file called

```
mosek.lic
```

which should typically be saved to a file called

<code>%USERPROFILE%\mosek\mosek.lic</code>	(Windows)
<code>\$HOME/mosek/mosek.lic</code>	(Linux, MacOS)

If the folder `mosek` in the home directory does not exists, then it should be created. The license can be tested with the program `msktestlic`. For further information about the license system, and other non-standard ways of setting up the license, please consult the [License Guide](#).

### 4.4 Finishing up

---

#### Important:

- See the [Licensing Guide](#) if you need more advanced help setting up the license.
  - For most languages and interfaces some additional steps are required. Please follow the instructions in the relevant interface documentation available from <https://mosek.com/documentation/>.
-