# MOSEK Release notes

*Release 11.0.0(BETA)*

MOSEK ApS

06 November 2024

# Contents

# Chapter 1

# Supported platforms

Below are the **minimal requirements** for various **MOSEK** interfaces and operating systems. In some cases using **MOSEK** with older versions of the software will be possible, but is neither actively supported nor tested.

### Operating systems

Table 1.1: Operating systems

| Platform | Minimal OS version | Specific library dependencies |
|---|---|---|
| linux64x86 | RHEL 8, Ubuntu 20.04 or compatible | `GLIBC 2.17`, `GLIBCXX 3.4.21` |
| win64x86 | Windows 10, Server 2016 | |
| linuxaarch64 | Ubuntu 20.04 or compatible | `GLIBC 2.29`, `GLIBCXX 3.4.26` |
| osxaarch64 | macOS 11 | |

### Optimizer API and Fusion API

Table 1.2: Optimizer API and Fusion API (where available).

| Platform | C | C++(Fusion) | Java | .NET | .NET Core | Python | Julia | Rust |
|---|---|---|---|---|---|---|---|---|
| linux64x86 | Yes | C++11 | 1.8 | – | netstandard2.0 | 3.9-3.13 | 1.6 | 1.59 |
| win64x86 | Yes | C++11 | 1.8 | 4.5 | netstandard2.0 | 3.9-3.13 | 1.6 | 1.59 |
| linuxaarch64 | Yes | C++11 | 1.8 | – | netstandard2.0 | 3.9-3.13 | 1.6 | 1.59 |
| osxaarch64 | Yes | C++11 | 17 | – | netstandard2.0 | 3.9-3.13 | 1.6 | 1.59 |

### API for MATLAB, Rmosek and other MOSEK tools

Table 1.3: Other APIs and tools.

| Platform | API for MATLAB | Rmosek | OptServer | OptServerLight | lmgrd | Toolbox (old) |
|---|---|---|---|---|---|---|
| linux64x86 | R2021a | 3.6 | Yes | Yes | Yes | R2019b |
| win64x86 | R2021a | 3.6 | – | Yes | Yes | R2019b |
| linuxaarch64 | – | – | – | Yes | Yes | – |
| osxaarch64 | R2023b | 4.1 | – | Yes | Yes | R2022b |

### Other distribution channels

- `pip` package. https://pypi.org/project/Mosek/
- NuGet package. https://www.nuget.org/packages/Mosek/
- Julia package. https://github.com/MOSEK/Mosek.jl
- Rust package. https://lib.rs/crates/mosek

### Other remarks

- Numpy is required in Python Fusion.

# Chapter 2

# Major changes

Specific information regarding particular APIs, parameters and portability of code from version 10 can be found in the section *Interface changes* towards the end of the respective manual. This section lists general changes throughout **MOSEK**.

## 2.1 Release notes for 11.0

### 2.1.1 New features

#### Mixed-integer optimizer

- Major performance improvement of the mixed-integer optimizer.
- Restarts can now be initiated at any point during the solution process if the solver estimates the remaining search space to be large (`MSK_IPAR_MIO_MAX_NUM_RESTARTS`).
- If a problem can be split into independent components the solver can exploit this structure by solving them in parallel (`MSK_IPAR_MIO_INDEPENDENT_BLOCK_LEVEL`).
- Improved separator for clique cuts
- Enhanced large neighborhood search heuristics and new rounding heuristics
- Increased presolve speed, particularly for large problems

#### New API for MATLAB

- A new **MOSEK** API for MATLAB, which supports linear and conic problems and their mixed-integer versions.
- The new API has a convenient syntax and allows for building the optimization problem in chunks in an intuitive way.
- See https://docs.mosek.com/11.0/matlabapi/index.html

#### Optimizers

- The interior-point optimizer can exploit folding for linear problems to reduce problem size.

#### Interface

- Introduced an option to write the dual of the current problem to a file (command-line tool, Optimizer API).

#### Platform support

- Python support is now 3.9-3.13.

#### Licensing

- FLEXlm is at version 11.19.6. Upgrade of floating license servers is required to use clients from **MOSEK** 10.1 or older.

### 2.1.2 Deprecations

- Conic constraints restricted to $x \in \mathcal{K}$ for a variable $x$ are deprecated and will be removed in a future major version. Use affine conic constraints instead. This affects mainly the Optimizer API.
- The OPF file format for conic problems is deprecated in favor of PTF.
- The old **MOSEK** Optimization Toolbox for MATLAB remains supported, but will eventually be phased out and replaced by the new API.

### 2.1.3 Removed features

#### Platform support

- Dropped support for `osx64x86` (Apple Intel).
- Dropped support for `win32x86` (Windows 32bit).
- Dropped the `conda` package. Use `pip` instead.

# Chapter 3

# Bug fixes

### 11.0.0(BETA)

- First beta release.