

**The MOSEK installation manual.
Version 7.1 (Revision 63).**



www.mosek.com

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Chapter 1

Installation

This section describes how to install the MOSEK software. The packages available for download from the MOSEK homepage contain everything, including

- PDF documentation,
- the MOSEK library,
- the MOSEK command line tool,
- platform APIs, and
- the AMPL shell.

Hence, it is sufficient to download one package for each platform.

1.1 Windows installation

First, download the appropriate installation file from the MOSEK website. The relevant Windows installer file is one of the following

- `moseksetupsetwin32x86.msi` for Windows 32-bit x86,
- `moseksetupwin64x86.msi` for Windows 64-bit x86.

To install MOSEK you must have *administrative privileges*, or the installation will fail. After the installation you will be asked to reboot. This is required for changes in the environment to take effect.

1.1.1 Verifying the installation

The set-up can be tested by executing the MOSEK command line tool: Open a DOS box and type

```
mosek -f
```

If the set-up is correct, this will print MOSEK version information, host name, environment variables and other information.

1.1.2 Preparing to use Python

If you plan to use Python it is necessary to install the MOSEK Python interface for all versions of Python you expect to use.

The MOSEK/Python installer scripts are located platform dependant directories

```
mosek\7\tools\platform\<platform>\python\2\
```

and

```
mosek\7\tools\platform\<platform>\python\3\
```

for Python 2.5+ and Python 3+ respectively.

Open a DOS box, go to either the Python 2 or the Python 3 directory in the installation. Then run

```
python setup.py build --build-base c:\Users\You install --user
```

where c:\Users\You is replaced by your HOME directory or another directory writable by you. In case you have not administrator privileges, you may need to specify the option user

```
python setup.py install --user
```

Other options are available, for instance to select the destination folder, and can be listed by

```
python setup.py install --help
```

To test if MOSEK is available from Python, run

```
python -c "___import__('mosek').Env()"
```

If this runs without causing an exception, Python found the MOSEK module and libraries.

1.2 Linux/UNIX installation instructions

First, download the relevant binary package and save it to a directory where MOSEK should be installed. For Linux that would be one of the files

- `mosektoolslinux32x86.tar.bz2` for Linux on 32-bit x86, or
- `mosektoolslinux64x86.tar.bz2` for Linux on 64-bit x86.

Open a terminal, change to the directory where the downloaded package was saved, then unpack it, e.g., using

```
tar xvf mosektoolslinux64x86.tar.bz2
```

This will create a `mosek/7` directory containing the whole distribution.

In the following we assume that the platform is `linux64x86` and that MOSEK was unpacked in the user's home directory.

1.2.1 Environment set-up

The MOSEK command line tool can be used with its full path, e.g.

```
$HOME/mosek/7/tools/platform/linux64x86/bin/mosek -f
```

To use this without the full path, either

- set PATH environment variable

```
export PATH=$HOME/mosek/7/tools/platform/linux64x86/bin/:$PATH
```

e.g. in `~/.bashrc`, or

- create a link in a place that is already in the PATH; many Linux distributions include `~/bin`:

```
cd $HOME/bin
ln -s $HOME/mosek/7/tools/platform/linux64x86/bin/ .
```

1.2.2 Verifying the set-up

When the environment has been set up the next terminal that is opened will have the correct settings. The set-up can be tested by executing the MOSEK command line tool: Open a terminal and type

```
mosek -f
```

If the set-up is correct, this will print MOSEK version information, host name, environment variables and other information.

1.2.3 Preparing to use Python

If you plan to use Python it is necessary to install the MOSEK Python interface for all version of Python you expect to use.

The MOSEK/Python installer scripts are located platform dependant directories

```
mosek/7/tools/platform/linux64x86/python/2/
mosek/7/tools/platform/linux64x86/python/3/
```

for Python 2.5+ and Python 3+ respectively.

Open a terminal, go to either the Python 2 or the Python 3 directory in the installation. Then run

```
python setup.py install --user
```

To test if MOSEK is available from Python, run

```
python -c '...import__("mosek").Env()'
```

If this runs without causing an exception, Python found the MOSEK module and libraries.

Note that the `setup.py` installer copies the MOSEK libraries and modules. This means that, when installed, the MOSEK/Python module does not use `LD_LIBRARY_PATH` and the libraries located in the distro tree: If MOSEK is updated the `setup.py` must be run again.

1.3 Mac OS X installation

First, download the binary package `mosektoolsosx64x86.tar.bz2` and save it to a directory where MOSEK should be installed. In the following we assume that it is placed in the user's home directory.

Open a terminal (usually located in **Applications/Utilities**), go to the directory where the downloaded package was saved, then unpack it:

```
tar -xvf mosektoolsosx64x86.tar.bz2
```

This will create a `mosek/7` directory containing the whole distribution. In the following we will assume that the distribution was unpacked in the home directory of a user called "NAME" – you should replace `"/Users/NAME"` by the absolute path of the location of the users home directory.

1.3.1 Environment set-up

The MOSEK command line tool can be used with its full path, e.g.,

```
/mosek/7/tools/platform/linux64x86/bin/mosek -f
```

In recent OS X versions there is no reliable way for normal users to change the library search path. Instead we recommend that applications are linked such that they look for the MOSEK library in a path relative to the application binary rather than in the normal library search path. This linking procedure is described in the C API manual.

1.3.2 Preparing to use Python

If you plan to use Python it is necessary to install the MOSEK Python interface for all version of Python you expect to use.

The MOSEK/Python installer scripts are located platform dependant directories

```
mosek/7/tools/platform/<platform>/python/2/
mosek/7/tools/platform/<platform>/python/3/
```

for Python 2.5+ and Python 3+ respectively.

Open a terminal, go to either the Python 2 or the Python 3 directory in the installation. Then run

```
python setup.py install --user
```

To test if MOSEK is available from Python, run

```
python -c 'import_("mosek").Env()'
```

If this runs without causing an exception, Python found the MOSEK module.

Chapter 2

Obtaining and installing a license

MOSEK is licensed software and requires access to a license to run. Before proceeding it may be worthwhile to read Appendix A which provides an introduction to the MOSEK license system.

There are two methods for obtaining a license:

- A permanent license can be purchased and subsequently activated at mosek.com/activation/.
- Alternatively trial and academic licenses can be requested at the MOSEK website.

After a license file has been obtained step 1 below is required. In some cases step 2 may be required too.

2.1 Step 1: Installing the license file

The license file must be installed which means it must be saved to disk. On Windows save the license file to

```
%USERPROFILE%\mosek\mosek.lic
```

If the folder mosek in the home directory does not exist, then it should be created. On all UNIX like operating systems including MAC OSX save the license file to

```
$HOME/mosek/mosek.lic
```

MOSEK will automatically locate the license file if it is saved to this location. See Appendix D for details.

2.2 Step 2: Installing a token server

This step should be skipped for trial, personal academic, and server licenses since those license types do not require a token server. Hence, only floating licenses require installing a token server. For further instructions on how to install a token server see Appendix C.

Appendix A

License system basics

MOSEK is a licensed software which means a valid license must be available in order to use MOSEK. A license is a file and specifies:

- How many copies of MOSEK that can be use simultaneously.
- Which features in MOSEK that is licensed. An example of a feature is the nonlinear extension (PTON).

Several types of licenses exist for MOSEK:

- A floating license:

A *floating license* is tied to a particular computer acting as a *token server*. MOSEK can be used on any computer connected to the token server through the local area network. In particular MOSEK can be used on the computer acting as token server.

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. This implies that you cannot use more license tokens than you actually have at any given point in time.

The advantage of a floating license is:

- MOSEK can run on any computer connected via the network to the token server.
- An unlimited number users can share a limited number of MOSEK licenses.

- A server license:

A *server license* is tied to a particular computer and allows unlimited use of the licensed features on that particular computer.

- A trial license:

A *trial license* is not tied to any particular computer but is time limited. A trial license is fully-featured but must be only used for evaluation purposes.

- An academic free license:

An *academic free license* is not tied to any particular computer but is time limited. An academic license is fully-featured but it must be employed for academic research purposes only. See the license conditions for details.

The license is managed by the [FLEXlm](#) license manager included in MOSEK.

Appendix B

The host ID

B.1 What is a host ID

Purchased MOSEK license are tied to particular computer using a unique id of the computer called a *host ID*. Usually the host ID is identical to the MAC address of a network card. Therefore, the computer needs to be equipped with a network card. However, an actual network connection is not needed as MOSEK requires only a number encoded in the network card.

Alternatively a license can be tied to an ID in a dongle which is a small piece of hardware that is attached to a USB port. The advantage of using a dongle is that the dongle can be moved to another computer. A license can then be used at the office and at home for instance without the two locations being connected by a network.

Other kind of host ID may be required when the license has to be tied to virtual machines, as for instance machines running on cloud services. Additional information can be found on the official [license manager manual](#).

B.2 Obtaining the host ID

B.2.1 Windows

If you have purchased a USB dongle, first install the dongle software using the online instructions at mosek.com/support/dongle-installation/. To obtain the host ID:

- If you are using a dongle, then insert the dongle.
- In the start menu below All programs select **Mosek Optimization tools 7.1** and click on **Generate HOSTID**. MOSEK will display the hostname and the host ID and generate a `hostid.txt` file in the users home directory e.g

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

```

C:\Windows\system32\cmd.exe
Z:\mosekprj\brn-5-0\src\flexlminstall>echo off
lmutil lmhostid
-----
Hostname:
dublin
-----
HOST ID from network card MAC address:
lmutil - Copyright (c) 1989-2007 Macrovision Europe Ltd. and/or Macrovision Corp
oration. All Rights Reserved.
The FLEXnet host ID of this machine is "000c29ee0db4"
-----
HOSTID from dongle (if present):
lmutil - Copyright (c) 1989-2007 Macrovision Europe Ltd. and/or Macrovision Corp
oration. All Rights Reserved.
The FLEXnet host ID of this machine is ""
lmhostid: Missing Dongle Driver. <-112,501>
-----
*****
* The above output shows your HOSTNAME and HOSTID.
* MOSEK has also written a file containing the HOSTID and HOSTNAME to:
* "C:\Users\testuser\hostid.txt"
* Please send this file to license@mosek.com to receive your license.
*****
Press any key to continue . . .

```

- If the host ID is denoted as "ffffffff", then please execute the command `ipconfig /all > mac.txt` from the command line.
- Please send the `hostid.txt` file when the hostname or host ID is requested. Send also the file `mac.txt` as well if needed.

B.2.2 LINUX/UNIX/MAC OSX

To use the license manager, you must first install *Linux standard base 3.0*. This package is called *lsb-base* or *lsb* in most distributions.

B.2.2.1 Default (Ethernet address) host ID

If you did not purchase a dongle the `host ID` is obtained as follows:

```
<INSTALL_DIR>/mosek/7/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 machine is "00001a1a5a6a"

```

In this case the `host ID` is 00001a1a5a6a.

B.2.2.2 Dongle host ID

If you have purchased a USB dongle, then first install the dongle software. See the online installation instructions at mosek.com/support/dongle-installation/. Next insert the dongle and obtain the host ID using the command

```
<INSTALL_DIR>/mosek/7/tools/platform/<PLATFORM>/bin/lmutil lmhostid -flexid
```


B.2.2.3 HOSTNAME

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

```
hostname
```


Appendix C

Token server installation

C.1 Readme first

Only license files that includes one or more floating licenses require a token server. A token server is service on Windows or a daemon on UNIX that serves license tokens to MOSEK client programs via the LAN. Note that trial, personal academic and server licenses are **NOT** floating licenses and does not work with a token server.

A license file that contain floating licenses always starts with

```
SERVER hostname hostid port
```

Installing a license file without a SERVER line with a token server is NOT needed and is NOT possible.

C.2 Windows

In order to use a floating license you must:

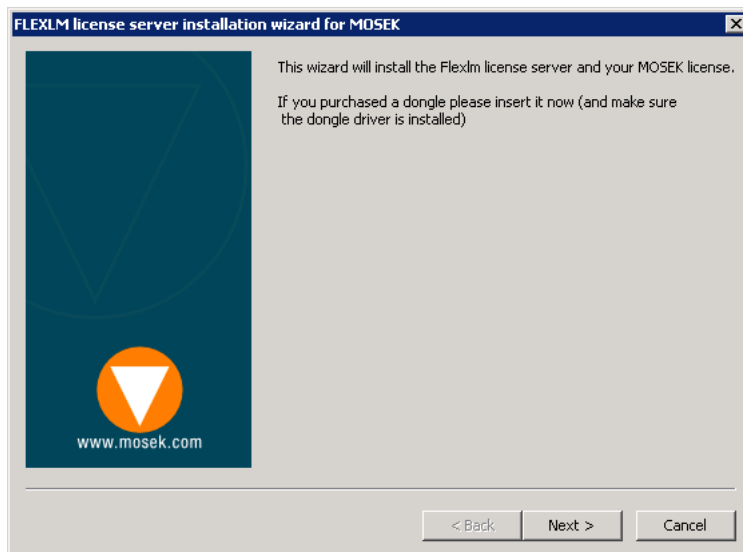
- Install the token server as described in Section [C.2.1](#).
- Configure each client to check out the license from the token server. Please note that this must be done for each computer and user who needs to check out a license from the token server. See [Appendix D](#) for details.

C.2.1 Token server installation

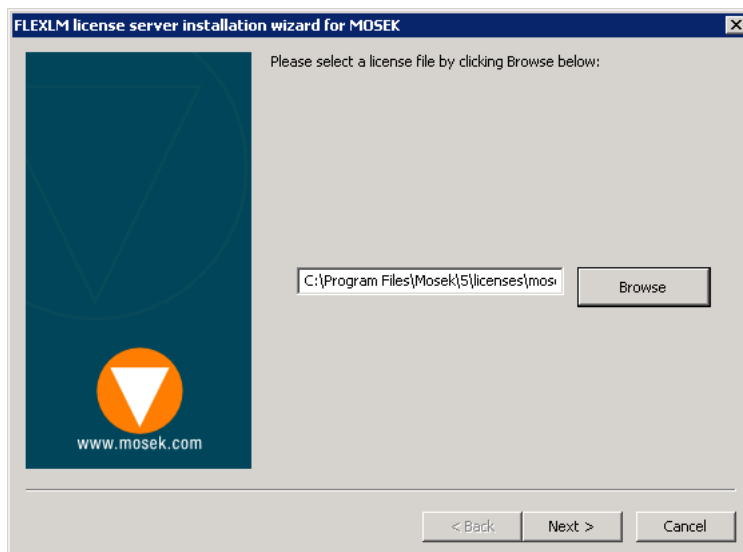
Please follow the steps below to install a purchased license or to restart the token server with an new license file. **Note:** Installing the token server will remove any existing MOSEK token server services.

- First make sure you have *administrative privileges*.

- Download the license file and store it on the local drive of the computer running the token server.
- *(Optional)*: If you have purchased a dongle, then insert it and install it using the online instructions at mosek.com/support/dongle-installation/.
- In the start menu select **Mosek Optimization tools 7.1** and click on **Install MOSEK token server** to start the license installation wizard.



- Click **Next**.
- Click **Browse** and select the license file.



- Click **Next** to install the token server.
- Click **Finish**.
- Finally, you will be asked to log out and log in again. All users on the token server must do so before they can run MOSEK.

You have now installed the token server. To enable users to check out a license from the token server please follow the instructions in Appendix D.

The above procedure describes how to install the token server using the MOSEK token server installation tool. Alternatively the FLEXlm installation tool `lmttools` may be used. For information about this tool and the many other options of FLEXlm please see License Administration Guide at <http://docs.mosek.com>.

C.2.2 Verifying that the license system works

In the start menu select **Mosek Optimization tools 7.1** and click on **Test license system**. The message

```
*****
A license was checked out correctly.
*****
```

will appear if the license system works correctly. If the license does not check out correctly please contact MOSEK support at support@mosek.com. Please include the error messages in your email.

C.2.3 Controlling port usage and firewall access

The MOSEK token server installation automatically creates exceptions for the programs

- `lmgrd.exe` and
- `MOSEKLM.exe`

in the "Windows firewall". This is required to access the license server from a remote computer. For other firewalls than the standard "Windows firewall" manual configuration may be required.

The token server consists of two daemons

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

each of which needs an open port in the firewall. To specify which port number each service should use you must change the license file. The first two lines in a standard MOSEK license files looks like this:

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

To instruct `lmgrd.exe` to use port 27000 and `MOSEKLM.exe` to use port 3084 change the first two lines of the license file to:

```
SERVER my_server 123456789ABC 27000
VENDOR MOSEKLM port=3084
```

After changing the license file reboot your computer for the changes to take effect and configure your firewall to allow access to the chosen port numbers which in this case are 27000 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 27000
```

on the client computer(s). You will get an error message similar to this:

```
Connecting To birkende...Could not open connection to the host,
on port 27000: Connect failed
```

if the port is not open.

Also see the License Administration Guide at <http://docs.mosek.com> for more information.

C.3 LINUX / UNIX

To use a floating MOSEK license you must:

- Install LSB 3.0 or later on the server if not already installed. This package is called 'lsb-base' or 'lsb' in most linux distributions.
- Install the token server (Section C.3.1).
- Configure each client to check out the license from the token server. Please note that this must be done for each computer and user who needs to check out a license from the token server. See Appendix D for details.

C.3.1 Token server installation

This section discusses how to install the token server on LINUX / UNIX. Two files are required to run the token server:

- `lmgrd`: The token server daemon executed by the user.
- `MOSEKLM`: A daemon started by `lmgrd`.

These files can be found in:

```
<INSTALL.DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
```

To start the token server run the following commands:

```
cd <INSTALL.DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
./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. If the token server was started successfully the `lmgrd.log` file will look similar to this:

```
cat lmgrd.log
15:03:09 (lmgrd) -----
15:03:09 (lmgrd)   Please Note:
15:03:09 (lmgrd)
15:03:09 (lmgrd)   This log is intended for debug purposes only.
15:03:09 (lmgrd)   In order to capture accurate license
15:03:09 (lmgrd)   usage data into an organized repository,
15:03:09 (lmgrd)   please enable report logging. Use Macrovision's
15:03:09 (lmgrd)   software license administration solution,
15:03:09 (lmgrd)   FLEXnet Manager, to readily gain visibility
15:03:09 (lmgrd)   into license usage data and to create
15:03:09 (lmgrd)   insightful reports on critical information like
15:03:09 (lmgrd)   license availability and usage. FLEXnet Manager
15:03:09 (lmgrd)   can be fully automated to run these reports on
15:03:09 (lmgrd)   schedule and can be used to track license
15:03:09 (lmgrd)   servers and usage across a heterogeneous
15:03:09 (lmgrd)   network of servers including Windows NT, Linux
15:03:09 (lmgrd)   and UNIX. Contact Macrovision at
15:03:09 (lmgrd)   www.macrovision.com for more details on how to
15:03:09 (lmgrd)   obtain an evaluation copy of FLEXnet Manager
15:03:09 (lmgrd)   for your enterprise.
15:03:09 (lmgrd) -----
15:03:09 (lmgrd)
15:03:09 (lmgrd) FLEXnet Licensing (v11.4.0.0 build 31341) started on kolding (linux) (5/14/2007)
15:03:09 (lmgrd) Copyright (c) 1988-2006 Macrovision Europe Ltd. and/or Macrovision Corporation. All Rights
Reserved.
15:03:09 (lmgrd) US Patents 5,390,297 and 5,671,412.
15:03:09 (lmgrd) World Wide Web: http://www.macrovision.com
15:03:09 (lmgrd) License file(s): /home/sandvik/kolding.lic
15:03:09 (lmgrd) lmgrd tcp-port 27000
15:03:09 (lmgrd) Starting vendor daemons ...
15:03:09 (lmgrd) Started MOSEKLM (internet tcp-port 44950 pid 23251)
15:03:09 (MOSEKLM) FLEXnet Licensing version v11.4.0.0 build 31341
15:03:09 (MOSEKLM) Server started on kolding for:      PTS
15:03:09 (MOSEKLM) PTOC      PTON      PTOM
15:03:09 (lmgrd) MOSEKLM using TCP-port 44950
```

In this case `lmgrd` is running on port 27000 and `MOSEKLM` is running on port 44950.

C.3.2 Verifying that the license system works

Run the commands

```
cd <INSTALL_DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
./msktestlic
```

The message

```
*****
A license was checked out correctly.
*****
```

appears on successful license checkout.

C.3.3 Starting lmgrd on boot

For security reasons `lmgrd` should not run as root. To start `lmgrd` at boot time we recommend that you add the following command to your startup script:

```
su username -c "umask 022; lmgrd -c path.to.license.file -l lmgrd.log"
#   Where:
#   username:  is a normal, non-root, non-privileged user
#
#   lmgrd: is the complete path and file name to the lmgrd binary
#
#   path.to.license.file:  is the complete path and file name to
#                           the license file
#
#   log:       is the complete path and file name to the debug log file
```

C.3.4 Accessing the token server through a firewall

The token server consists of two daemons

- `lmgrd`: The token server daemons,
- `MOSEKLM`: A demon started by `lmgrd`

Both needs an open port in the firewall. To specify which port number each daemon should use you must change the license file. The first two lines in a standard MOSEK license file look like:

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

To instruct `lmgrd` to use port 27000 and `MOSEKLM` to use port 3084 change the first two lines of the license file to:

```
SERVER my_server 123456789ABC 27000
VENDOR MOSEKLM port=3084
```

Restart the token server and configure your firewall to allow access to the chosen port numbers which in this case are 27000 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 27000
```

on the client computer(s). You will get an error message similar to

```
Connecting To birkende...Could not open connection to the host,
on port 27000: Connect failed
```

if the port is *not* open. If open `telnet` will connect with no error message.

See also the License Administration Guide at docs.mosek.com for more information.

C.4 MAC OSX

To use a floating MOSEK license you must:

- Install the token server (Section C.4.1).
- Configure each client to check out the license from the token server. See Appendix D for details.

C.4.1 Token server installation

This section discusses how to install the token server on MAC OS X. Two files are required to run the token server:

- `lmgrd`: The token server daemon executed by the user.
- `MOSEKLM`: A daemon started by `lmgrd`.

These files can be found in:

```
<INSTALL_DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
```

To start the token server run the following commands:

```
cd <INSTALL_DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
./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. If the token server was started successfully the `lmgrd.log` file will look similar to this:

```
cat lmgrd.log
15:03:09 (lmgrd) -----
15:03:09 (lmgrd)   Please Note:
15:03:09 (lmgrd)
15:03:09 (lmgrd)   This log is intended for debug purposes only.
15:03:09 (lmgrd)   In order to capture accurate license
15:03:09 (lmgrd)   usage data into an organized repository,
15:03:09 (lmgrd)   please enable report logging. Use Macrovision's
15:03:09 (lmgrd)   software license administration solution,
15:03:09 (lmgrd)   FLEXnet Manager, to readily gain visibility
15:03:09 (lmgrd)   into license usage data and to create
15:03:09 (lmgrd)   insightful reports on critical information like
15:03:09 (lmgrd)   license availability and usage. FLEXnet Manager
15:03:09 (lmgrd)   can be fully automated to run these reports on
15:03:09 (lmgrd)   schedule and can be used to track license
15:03:09 (lmgrd)   servers and usage across a heterogeneous
15:03:09 (lmgrd)   network of servers including Windows NT, Linux
15:03:09 (lmgrd)   and UNIX. Contact Macrovision at
15:03:09 (lmgrd)   www.macrovision.com for more details on how to
15:03:09 (lmgrd)   obtain an evaluation copy of FLEXnet Manager
15:03:09 (lmgrd)   for your enterprise.
15:03:09 (lmgrd) -----
15:03:09 (lmgrd)
15:03:09 (lmgrd)
```

```

15:03:09 (lmgrd) FLEXnet Licensing (v11.4.0.0 build 31341) started on kolding (linux) (5/14/2007)
15:03:09 (lmgrd) Copyright (c) 1988-2006 Macrovision Europe Ltd. and/or Macrovision Corporation. All Rights
Reserved.
15:03:09 (lmgrd) US Patents 5,390,297 and 5,671,412.
15:03:09 (lmgrd) World Wide Web: http://www.macrovision.com
15:03:09 (lmgrd) License file(s): /home/sandvik/kolding.lic
15:03:09 (lmgrd) lmgrd tcp-port 27000
15:03:09 (lmgrd) Starting vendor daemons ...
15:03:09 (lmgrd) Started MOSEKLM (internet tcp-port 44950 pid 23251)
15:03:09 (MOSEKLM) FLEXnet Licensing version v11.4.0.0 build 31341
15:03:09 (MOSEKLM) Server started on kolding for: PTS
15:03:09 (MOSEKLM) PTOC PTON PTOM
15:03:09 (lmgrd) MOSEKLM using TCP-port 44950

```

In this case `lmgrd` is running on port 27000 and `MOSEKLM` is running on port 44950.

C.4.2 Verifying that the license system works

Run the commands

```

cd <INSTALL_DIR>/mosek/7/tools/platform/<PLATFORM>/bin/
./msktestlic

```

The message

```

*****
A license was checked out correctly.
*****

```

appears on successful license checkout.

C.4.3 Accessing the token server through a firewall

The token server consists of two daemons

- `lmgrd`: The token server daemons,
- `MOSEKLM`: A demon started by `lmgrd`

Both needs an open port in the firewall. To specify which port number each daemon should use you must change the license file. The first two lines in a standard MOSEK license file look like:

```

SERVER my_server 123456789ABC
VENDOR MOSEKLM

```

To instruct `lmgrd` to use port 27000 and `MOSEKLM` to use port 3084 change the first two lines of the license file to:

```

SERVER my_server 123456789ABC 27000
VENDOR MOSEKLM port=3084

```

Restart the token server and configure your firewall to allow access to the chosen port numbers which in this case are 27000 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 27000
```

on the client computer(s). You will get an error message similar to

```
Connecting To birkende...Could not open connection to the host,  
on port 27000: Connect failed
```

if the port is *not* open. If open `telnet` will connect with no error message.

See also the License Administration Guide at docs.mosek.com for more information.

Appendix D

License checkout

D.1 The default method

If the operating system variable

```
MOSEKLM_LICENSE_FILE
```

is not defined, then MOSEK will automatically use the license file

```
%USERPROFILE%\mosek\mosek.lic
```

on Windows and

```
$HOME/mosek/mosek.lic
```

on all other systems.

If the first lines in the license file looks like

```
SERVER hostname hostid port  
USE_SERVER
```

then license is floating license and MOSEK will contact the token server with name hostname at port for the license.

D.2 Using the OS variable MOSEKLM_LICENSE_FILE

If MOSEKLM_LICENSE_FILE is defined, then MOSEK will read the file specified by that operating system variable. Some examples for setting MOSEKLM_LICENSE_FILE are

```
x:\shared\mosek\mosek.lic
```

or

```
27000@myserver
```

where 27000@myserver implies MOSEK will contact the token server at the computer myserver at port 27000 for a license. See also the License Administration Guide at docs.mosek.com for more

information.

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