

FEFLOW License Installation

1. General Introduction

The FEFLOW license is based on the DHI License Management software. Licenses require a dongle (hardware lock) and a license key. Without a valid license, FEFLOW can be run in demo mode. In demo mode, all DHI FEFLOW-related tutorial and example models can be opened, and new models can be saved and run up to a model size of maximum 5 slices with 2000 nodes each. For fully-unstructured meshes a total number of 10,000 nodes is applied.

In Viewer mode, FEFLOW model and results files can be opened. All visualization and post-processing options are available.

The following information describes the steps for a license installation in Linux. For the installation of FEFLOW 7.1 can be conducted with using either the DEB packages or RPM packages available in the MIKE Powered by DHI website.

2. Download Linux Packages for FEFLOW

The FEFLOW installation packages are accessible from the Linux Download section in our website.

Mandatory Packages

- FEFLOW progs
- FEFLOW lm
- FEFLOW icc
- FEFLOW qt
- FEFLOW pestutilities

Programming Interface Package

- FEFLOW ifm

Examples, Tools and Benchmarks

- FEFLOW exercise
- FEFLOW data tools
- FEFLOW tutorial
- FEFLOW examples
- FEFLOW benchmarks

3. Installing FEFLOW Linux Packages

The easiest manner to install all the packages is to locate them under the same directory and then simply use the following commands in the Linux Terminal.

For Ubuntu: `sudo dpkg -i *.deb`

For CentOS: `sudo yum install *.rpm`

4. Starting the DHI License Management Tool

The Network License Manager NetLM has to be initiated before we install the license information and run FEFLOW 7.1. The administrator is located in the FEFLOW installation folder `/opt/feflow/bin`. In the Terminal you can start the NetLM with one line. As response, the Terminal will display information about the version of the NetLM.

```
root@ubuntu: /home/cvi
root@ubuntu:/home/cvi# sudo /opt/feflow/bin/netlm
Network License Manager 5.1.8, (c) 1992-2015, DHI-WASY GmbH
All rights reserved.
root@ubuntu:/home/cvi#
```

Starting the DHI License tool from Terminal

5. Verifying Operation of DHI License Tool

There are several manners to check if an application is running under certain Linux operating system. Below we have chosen one of the most common option. The resulting message will provide information about the PID of NetLM.

```
root@ubuntu: /home/cvi
root@ubuntu:/home/cvi# ps aux | grep -i netlm
root      7210  0.0  0.2 22304 2988 ?        S    02:21   0:00 /opt/feflow/bin/netlm
root      7252  0.0  0.0 21296   924 pts/17   S+   02:24   0:00 grep --color=auto -i netlm
root@ubuntu:/home/cvi#
```

Verify if license tool is already running

6. Start the License Manager Control (LMC)

This tool is only available in Linux and is FEFLOW specific. All the license-related operations are carried out in the License Manager Control (LMC). LMC will helps us to establish connection to a local host or a license server, install the license information and verify the availability of FEFLOW licenses and more.

LMC is located in the FEFLOW installation folder `/opt/feflow/bin` and can be started with the following command:

```
root@ubuntu: /home/cvi
root@ubuntu:/home/cvi# sudo /opt/feflow/bin/lmc
Network License Manager Control 5.18, (c) 1992-2018, DHI-WASY GmbH
All Rights reserved.
Connection to license server on 'deber1-wasydc2.dhi-wasy.de', port 1800 is open
lmc>
```

Starting LMC in Terminal

- **License Operations with LMC**

The operation of LMC is based on a list of different commands followed by their correspondent argument. In order to get an overview of all the available commands, you can simply type a question mark in the Terminal.

```
lmc> ?
Available commands: (* for root, + for administrators only!)
?          add+    admin*  avail   cd       check
close     commands connect delete+ domain  disable+
enable+   exit    help    hostid  kc+     kill+
load+     merge+ node    port    quit    rehash+
reset+    shutdown+ start+  status  su      version
who
lmc>
```

Check available commands in LMC

7. Connect to a License server or Local Host

Prior to establish a connection between the FEFLOW client and the license server (or also local host), a proper DHI FEFLOW dongle has to be plugged.

Being LMC already started in the previous step, a connection can be established by using the keyword connect followed by the name of the license server.

```
root@ubuntu: /home/cvi
lmc> connect localhost
Connection to license server on 'localhost', port 1800 is open
lmc>
```

Connect to a License server or Local Host

In this case, the computer used for the FEFLOW calculation has plugged a dongle and contains a valid license sheet. This configuration is valid for both personal and corporate licenses.

If the license type is corporate/network, this can be installed in a license server allowing that multiple users can access to it via NetLM. The license server can be based on either Windows or Linux systems. The principle for the connection is exactly the same for the personal license, the keyword connect and the name of the license server. Below an example how to establish a connection to a server named "netlm".

```
root@ubuntu: /home/cvi
lmc> connect netlm
Connection to license server on 'deber1-wasydc2.dhi-wasy.de', port 1800 is open
lmc>
```

Connect to an external server

8. Check License Availability

Once the connection to a license server (either local host or external) has been established, you can check the availability of licenses for FEFLOW 7.1 or any other product. The keyword for this operation is av and this will display all the available products under the HOST-ID.

```
root@ubuntu: /home/cvi
lmc> av
*** Currently no licenses available! ***
lmc>
```

Check license availability

9. Add a New License

A new license sheet can be added directly from the Terminal using LMC or via the FEFLOW graphical interface. For details about this second option, please refer to the Windows installation.

The keyword **add** is used to enter a new license definition. LMC will prompt a set of different questions, whose answers are located in the FEFLOW license sheet provided by DHI.

```
root@ubuntu: /home/cvi
lmc> add
Are you sure to add a license for server hostid '1803659519'? [y/n]: y
Vendor [WASY]:
License type [FLOAT|NODE] [FLOAT]:
Application [feflow]:
Version ["7.1"]:
Expiration date [unlimited]:
Number of licenses [4]: 5
Keycode [81A99EDFE140950E61C692DB]: ADMSLFDA1287FAFA8UIFK3FDDA
Options [FMH3]:
Licensee ["DHI WASY"]:
```

Adding a new license with LMC

10. Closing the License Manager Control

After the license information has been installed, you can close LMC by using the keyword quit.

```
root@ubuntu: /home/cvi
lmc> quit
root@ubuntu: /home/cvi#
```

Closing connection with LMC

11. Start FEFLOW Graphical Interface

In Terminal run *feflow71q* to start the graphical interface version of FEFLOW 7.1.

```
root@ubuntu: /home/cvi
root@ubuntu: /home/cvi# feflow71q
```

Start FEFLOW graphical interface from Terminal

12. Selecting the License

In the FEFLOW 7.1 graphical interface you can go to the menu **Tools -> License** to open the DHI License Management tool. The license sheet previously entered via LMC in the Terminal should be listed in the section Available Licenses. As last step of the Linux installation, you can click on the license, click on button **Apply** and **Close**.