Installation Guide for

Multiflash for Windows

Infochem Computer Services Ltd

Version 6.1
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Installation

Introduction

This chapter contains information that will help you install and run Multiflash on a Windows system. Note that you may need to be logged on as an Administrator to carry out the installation.

System requirements

- Operating System: Microsoft Windows XP or more recent.
- Excel 97 or later is needed to export graphics to Excel.
- A Pentium-class processor.
- The files supplied require about 140Mb of free disk space.
- From Multiflash 6.0 onwards, Multiflash is issued with the software protection system used by other KBC products referred to as KBC SLM. It can use License files or USB keys.
- The RLM system is still supported in version 6.1 See “Installing the RLM software protection system” on page 7.
- The help system requires Microsoft Internet Explorer version 5 or higher.

Installing Multiflash

To install Multiflash on your computer run the Launch.exe program. From there you can run the Multiflash setup and the various licensing tools.

Setup installs Multiflash itself, the HELP system, databanks and sample problem setup files.

The software security tools are installed separately.

Interfaces for Excel and CAPE-OPEN will also be installed. Different versions of Multiflash can co-exist on your computer but they should be installed in different directories.

To install Multiflash from the download package, extract the ZIP file contents to the same directory and:

1. Run launch.exe

2. Click “Install Multiflash”
3. Click on the OK button. When Setup starts follow the instructions on your screen.
4. You will be prompted to enter the path to the directory where you want to install Multiflash. The default directory is C:\Program Files\KBC\MF61. If you have a previous version of Multiflash already installed it is strongly recommended that you install Version 6.1 in a separate directory. The default installation path on 64 bits systems will be C:\Program Files (x86)\KBC\MF61.
5. You are offered a choice of 3 types of installation.

   Typical: installs both the Multiflash program and the Excel interface.

   Custom: allows you to choose Multiflash, the Excel interface or the CAPE-OPEN interface, RLM license server, UniSim Design or Hysys Upstream support.

   Minimal: installs only the Multiflash program.

7. Setup will add a new item for Multiflash 6.0 to the Programs Menu on the Start button and will place a shortcut on the desktop.

A list of the files that are copied to your computer can be found in the file FILELIST.TXT in the installation directory.

All the Installed Manuals are available for access from the documentation menu option.

Depending on the installation option the start menu will have the following items:

- Mutliflash 6.1
  - Multiflash 6.1
  - Documentation
    - Excel Manual
    - Cape-Open Manual
    - Command reference Manual
    - Thermodynamic Models Manual
  - Utils
    - Register CAPE-OPEN dll
    - Unregister CAPE-OPEN dll (64bit)
    - X64 C runtime libraries

Installing the KBC SLM software protection

Starting with Multiflash 6.0, the software security system used by default is the same one used for other KBC products, for example, Petro-SIM.

For this system, KBC SLM, users can use license files, either local or in a network. The KBC SLM system also supports dongles, however these are not compatible with the old Infochem dongles.

For more information on how to use the KBC SLM system, please refer to section KBC SLM installation and management.

Installing the RLM software protection system

Multiflash 6.0 supports the software licensing system that uses license files as used in previous versions. The software licensing system developed by Reprise Software is called RLM (Reprise License Manager).

NOTE: If you are currently using the Multiflash USB dongle, please note that they are not supported anymore. If you would like a hardware key, ask for the USB key provided by the KBC SLM system.

Infochem has also developed software to make the licensing system easy to manage. This is the Multiflash license manager which can be used to configure RLM or to switch the license control to the USB dongle, for compatibility with versions prior to 6.0.

The RLM server can be installed from the Multiflash Launcher by clicking the text “RLM utilities”. The Multiflash license manager is also installed with the RLM utilities. More information on how to run and use the program is described in the section “KBC SLM installation and management” on page 22.

Setting the PATH

This operation is not done automatically by the Multiflash installer. These instructions are given here for reference in case you need to set up Multiflash to be available in the PATH, to be used in VBA scripts for example.

The directory where the Multiflash DLL file MFPVT32.dll is installed must be accessible to all programs that use the dll. This includes the Multiflash GUI interactive program and, optionally, Excel and the CAPE-OPEN interface.

To set the path for Windows use Control Panel and click on System. Select the Advanced tab and the Environment button. In the User variables section click on PATH and then Edit to add to existing settings or click on the New button to create a new user PATH variable. Set the PATH user variable with the Multiflash installation directory, typically “C:\Program Files\Infochem\MF60”.

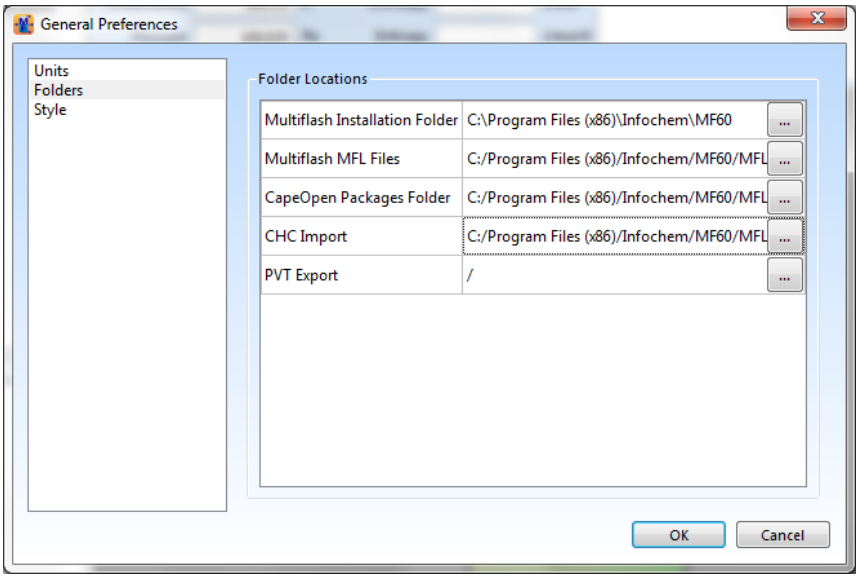
Databank path

Multiflash needs to use a number of data files which are listed below:

```
infodata.bin          databank for fluid components
infodata.idx          index for above
mflash.msg            displays for Multiflash GUI
mflash.mix            index for above
mflash.err            error message file
mflash.eix            index for above
dippr.bin             DIPPR databank (only if licensed))
dippr.idx             index for above (only if licensed)
infobips.bin          BIP databank (VLE)
```

```
Infobips.idx            BIP databank index (VLE)
infollbips.bin          BIP databank (LLE)
Infollbips.idx          BIP databank index (LLE)
```

These files are normally installed in the same directory as the Multiflash program. You can change the location where Multiflash looks for these files using the Tools/Preferences menu item in the Multiflash GUI. It displays the following dialog box



The entry for 'Multiflash Installation folder' is used to set the databank path.

The MFCONFIG.DAT configuration file

The file MFCONFIG.DAT is not supported from version 6.0.

The Multiflash log file

Multiflash version 6 and later no longer produce log files.

Running Multiflash

After following the steps described above you should check that Multiflash runs correctly. To start Multiflash double-click on the 'Multiflash 6.1' shortcut on your desktop or click on the Start button, select Multiflash 6.1 in the Programs Menu and click on the "Multiflash 6.1" item.

Multiflash Excel interface

The Multiflash version 6.1 Excel add-in is compatible with Excel 2016, 2013, 2010, 2007, 2003. For information on how to install the add-in see the *User Guide for Multiflash Excel Interface*.

Multiflash CAPE-OPEN interface

The Multiflash CAPE-OPEN interface implements versions 1.1 and 1.0 of the CAPE-OPEN Thermodynamics and Physical Properties specification. See the documentation for the *Multiflash 6.1 CAPE-OPEN Components*.

Multiflash MATLAB interface

The Matlab interface is no longer supported since Multiflash 6.0.

Removing Multiflash from your computer

To uninstall Multiflash:

1. If the Excel add-in is installed remove it as described in *User Guide for Multiflash Excel Interface*.
2. In Control Panel double-click on Add/Remove Programs.
3. Scroll down the list of programs to 'Multiflash 6.1' and select it.
4. Click on Add/Remove and when asked to confirm the deletion click on Yes if you wish to go ahead.
5. Information is stored in the Windows Registry under the key:

\HKEY_CURRENT_USER\Software\Infochem\Multiflash\Version 6.1

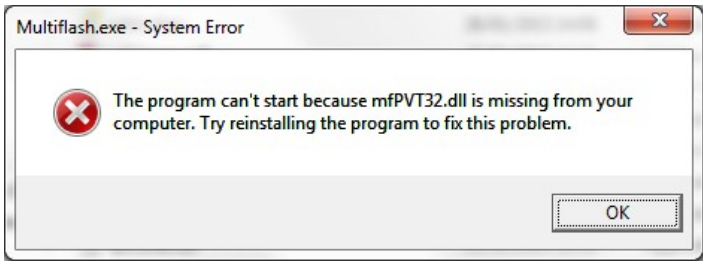
The uninstall procedure will remove any subkeys set at installation but the list of recently used files, default units *etc.* will not be removed. You may remove these keys but you should only attempt to do so if you are sure that you are competent to do it and understand the consequences of getting it wrong.

Installation Troubleshooting

This section discusses some problems that you might encounter and provides guidelines for dealing with them.

Starting the program

1. The program starts but one of the following message boxes appears



The dynamic link library MFPVT32.dll for the Multiflash software cannot be found. You should check that you have a file MFPVT32.dll in the installation directory or in a directory that is on the path. By default the Multiflash DLL, MFPVT32.dll

is installed in the installation directory. See the section “Setting the PATH” on page 7.

2. The program starts and displays a message box similar to the following:



   This means that one or more files (named in the message box) required to run Multiflash could not be found. You can click the Yes button to set (or reset) the directory. If the directory is correct you should check that the files referred to have not been accidentally deleted or renamed. I that has happened, a re-installation is necessary.

3. If the software protection system is not present or cannot be detected by Multiflash you will see the error messages such as “Security system not found – either not present or network server not running” or “Cannot initialise security system” or “Exceed maximum number of tries”.

   For the KBC SLM system,
   install the License tools and run the KBC license tester to check that license is correctly installed.

   For the RLM system:
   Run the Multiflash License manager to check if the RLM software is running. Also if the license server is in a network computer, make sure that the firewall of the license server is correctly installed.

   If you are using a network version of Multiflash check that the license server is running.

4. If the version number programmed in your software protection device or license file is not compatible with the version of the software you have installed you will see the error message “The software version number is not compatible with your licence”.

5. If you have problems installing the software or if you get other error messages which you cannot understand please contact software support. Contact details are given in the section “Technical support” on page 12.

Help System

The Multiflash Help uses HTML. It can be accessed from the main Multiflash window and by clicking the help button . No other software is required.

Multiflash Licence options

Standard Software Components

The standard version of Multiflash includes:

Thermodynamic models:

Ideal gas, RK, RKS, RKS (API), PR, PR78, PSRK, ZJ and CPA (cubic plus Association) equations of state (EOS).

Ideal liquid, WilsonE, WilsonA, UNIQUAC, NRTL, Regular Solution and Flory-Huggins models.

Advanced RKS and PR EOS (which include options for fitting to the known vapour pressure, the Peneloux density correction and specialised mixing rules).

LK, LKP and BWRS equations of state

UNIFAC (original and Dortmund modification)

Pure solid freeze-out model

COSTALD liquid density model.

Hayden O'Connell model.

Transport property models:

Mixing rules for vapour and liquid viscosity and thermal conductivity and for surface tension.

The LBC, Pedersen, Pedersen (Heavy), Twu and Super TRAPP viscosity models.

The Super TRAPP and CLS thermal conductivity models.

The Linear Gradient Theory and Macleod-Sugden surface tension models.

Diffusivity models.

Databanks:

Infodata, Petroleum fractions correlations

Excel interface

The Multiflash XLL add-in for Microsoft Excel

Optional Components

The following options may be listed in your Windows package but will not be accessible unless they have been licensed from Infochem or our agents.

Models:

Gas hydrates and Hydrate nucleation model

Wax models

Asphaltene model

Corresponding states model (CSMA), including GERG-2008

PC-SAFT equation of state

IAPWS water model

Mercury model

CO_2 high-accuracy model

PVT Experiments and model tuning

Databanks:

DIPPR

CAPE-OPEN module

The Multiflash CAPE-OPEN COM module. This supports versions 1.0 and 1.1 of the CAPE-OPEN thermodynamics and physical properties specification. For more information on CAPE-OPEN see the CO-LaN website at www.colan.org .

Copy policy

Multiflash is not copy protected. You are free to make copies for backup purposes. However, you should remember that the licence permits you to use the program only on the number of PCs and for the number of users defined by that licence and this is controlled by the licensing system. Placing copies on additional PCs or passing copies on to other people is an infringement of the copyright of KBC Advanced Technologies plc. If you have a demonstration, evaluation or lease copy it must not be used after the expiry date.

Technical support

Multiflash includes online help via the Windows Help system. If you need further help you can contact us by e-mail, fax or telephone. The contact details are listed below.

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New Features and Changes in Version 6.1

Introduction

Multiflash version 6.1 provides many bug fixes resulting from the major restructuring done for version 6.0. There are also a number of important new features.

Installation

Version 6.1 is provided in two separate packages for 32 and 64bit versions of windows. Users may want to have both versions in separate places, and this makes it easier to accomplish that.

GUI

Right click functionality

Users can now right click on the flash result list to export all the values of a given calculation. This will avoid users having to do multiple copy/paste operations for each result.

Right clicking on a column of a result an extra menu option will be present to allow users to clone a fluid from the gas/liquid or water phase compositions.

PVT table viewer

An OLGA PVT table viewer is provided so that users can inspect the result of the OLGA table calculation. The main purpose is to check for discontinuities in the properties in the temperature / pressure grid.

Status bar

A status bar will inform the user of how many components are loaded, the type of model and which phases are enabled. Users will no longer need to open the models dialog to find which model is being used.

Plot windows

Plot windows re-introduce the capability of allowing users to change the aspect of the plot: change the shape and colour of the lines, change the legend used and add user defined data points to compare with model predictions.

Refrigerants model

Users can directly from the GUI select the refrigerant model and add refrigerants as required. No need to manually load MFL files.

Pure component data

Users can select which properties can be shown in the “extended properties” view.

PVT analysis

When performing characterisation, users have the possibility of displaying the regression curve to the GC analysis data.

PVT Experiments

Sample QC

Users can provide a tolerance to be used in the experimental data validation.

Regression

After regression of components properties the changes made to the parameters are accessible to users for inspection. Also users can see the result of a previous calculation.

Multistage flash

A multistage flash tool is included that allows users to calculate GOR, match GOR, by recombination with any gas, and water cuts.

PVT tables

OLGA PVT tables

New algorithm is in place to calculate the properties of non-exiting phases. The new algorithm ensures that the properties are continuous when extrapolated from the region of phases co-exit.

The OLGA PVT tables also includes a tool based on the inhibitor calculator to allow the user to add a temporary water analysis when calculating a PVT tables. Multiple PVT tables can then be generated with varying water contents

Models

Hydrates

Redesigned inhibitor dosage calculation tool. Users can input the composition of the inhibitor stream and Multiflash will determine how much of that stream needs to be added.

Mercury

Add missing BIPs for benzene and toluene with mercury for all supported models: PR, RKS and CPA.

RKSA-Info

With the re-introduction of the salt component model, the RKSA-info model is added to the possible list of models for hydrates.

CPA, RKSA, PRA, PR78A

A new extrapolation procedure for the ‘a’ parameter for advanced EoS is implemented. This solves discontinuities found for heat capacities of the liquid at constant pressure.

Databanks

Infodata

New component added: refrigerant R1233ZD(E).

Salt compoent can now be loaded as sodium chloride.

DIPPR

Version 2016 is distributed with version 6.1 of Multiflash.

New Features and Changes in Version 6.0

Introduction

Version 6.0 marks a milestone in Multiflash. This version was redesigned to provide a modern look and feel as well as user friendly as possible. Apart from the visual change and the new features and functionalities, the new version includes the results of general maintenance and improvements in numerical methods over the previous version, as well as performance enhancements. Specific features are described below.

GUI

Complete rewrite and modernisation of the GUI. Make it easier to use and more user friendly:

- Tools are organized by sections in a tabbed toolbar
- Possibility of opening multiple fluids at the same time
- simplify phase envelope dialog to have options close to the plot being calculated
- quick model selection from a predefined list
- wizard like selection for PVT Analysis input
- PVT Lab Tests for modelling and tuning PVT experiments
- Sample QC for PVT fluid data quality checking
- Mud Numeric Cleaning for mud removal from reservoir fluid
- Same Pseudos for multiple fluid characterisation
- add "saturate with water" tool
- add "inhibitor dosage" tool
- water cut option removed from PVT analysis

PVT Experiments

PVT Lab Tests

This new functionality, PVT Lab Tests provides the capability of simulating CME, CVD, DLE and Multistage Separator tests. All the input data can be used for model tuning.

Sample QC:

Sample quality check includes the mass balance check, property experimental values cross check, and the Hoffman plots to check gas phase compositions.

Mud Numeric Cleaning

Numerical methods are designed to establish the composition of the clean reservoir fluid based on the contaminated fluid and the level of mud contamination in samples. This is achieved by performing molar, mass and volume balances on the original reservoir fluid with single carbon number (SCN) fractions.

Same Pseudos

This feature enables you to characterize multiple reservoir fluid with the same set of pseudo-components. This can be very useful, for example, when you are processing multiple fluids simultaneously.

Models

Viscosity Model

A new Pedersen variant viscosity model for heavy oils is available in Multiflash 6.0. This new model is based on extrapolation of the corresponding states viscosity model to be applicable to simulate heavy oil viscosities up to 8,000 mPa·s. Even though the simulated heavy oil viscosities may deviate from the experimental data by a factor of 2 – 3, it is much more straightforward to tune up the model to get an almost perfect match of measured viscosity data as compared to other published viscosity models.

Performance Enhancement

All models were modified to reduce memory used by the Multiflash DLL as well as the relevant process/flow simulators.

Volume Shift Parameters

The volume shift parameters of all components calculated by cubic EoS can now be inspected in the GUI for CPA as well as RKS and PR.

BIPs

The BIPs of THF and water with CPA model was corrected in this version of Multiflash.

Mercury Model with Salts

The mercury models based on RKS and PR were extended to handle mixtures with salts.

MFL files

The command processor was improved to make loading of MFL files more efficient. This also allows to export MFL files from fluids defined via Multiflash API calls.

PVT Tables

OLGA tables

Improved calculations of thermal conductivity of wax phase for gas condensate systems

PIPESIM

Correct issues regarding viscosity model of gas phase that was not being read correctly

PROSPER

Improve calculations of GOR and CGR for conditions where gas phase or liquid phase does not exist

Security

Dropped support for Infochem Dongles. Users that wish to have the license tied to a dongle should use KBC SLM ones.

Match

Almost all of match procedures have been superseded by the PVT Lab tests tool.

Exceptions are asphaltenes and wax matching which are now moved to asphaltene and wax tabs respectively

Asphaltene matching now allows for more than 2 asphaltene onset points and more than 1 bubble point to be used

Viscosity models now have separate model parameters that are directly related to the models instead of the reference viscosity.

Import

PVT-SIM import tool can be used to convert both CTM and CHC files into MFL files. If the Pedersen viscosity tuning parameters are present in CHC/CTM files, they will be imported to Multiflash to make the viscosity models to be consistent with the ones in PVT-SIM.

Characterisation

The way naming the pseudocomponents in the fluid characterisation was modified. For example C6-C10, C10-C12 now becomes C6-C10, C11-C12. However, its properties remain essentially the same that should have no effect on flash calculations.

Flash

Several corrections for fixed phase fraction flashes and PT flashes, making the Multiflash engine more stable

Possibility to calculate the mixture critical point

Improve phase envelope for solids in particular where hydrate I and hydrate II are present.

Improve calculations in fluids containing wax to improve the accuracy and speed

Third party applications

Multiflash 6.0 includes an export tool to save the fluid information in a format that can be read by previous versions of Multiflash. This is useful to be able to use fluid models that were tuned to PVT experiments in process or flow simulators that still have a previous version of Multiflash included.

Known Issues:

With the re-design of Multiflash there are a few features that are not yet present in version 6.0.

Here is a list of the know issues for version 6.0:

- Stream types management is not included in this release
- Inhibitor calculator does not do "salt component" calculations
- Units for BIPS of activity models are not handled yet: always show J/mol
- MFL files with "include" statements will not work properly in the GUI. They will work in Excel Add in with no issues.
- Not all pure component properties are shown in the pure components table.
- Reid vapour pressure is not included
- It is not possible to customise the plots (example, delete lines, rename series, change colour, etc.)

KBC SLM installation and management

Instructions

The KBC SLM licensing system help can be accessed online:

http://www.petro-sim.com/php/pmwiki/pub/web/SpecialTopic.LicenseTOC.html

The KBC SLM license tools can be installed from the Multiflash launcher by clicking the “Stand alone Drivers” button.

RLM license system installation and management

Introduction

To run Multiflash using a RLM license file, the RLM server has to be installed in the machine where Multiflash will be running, or it can be installed on a machine over any network computer that will act as a license server.

More information is available in the RLM End user manual: http://www.reprisesoftware.com/RLM_Enduser.html

Installing the RLM license server

The RLM system can be installed from the Launcher by clicking “RLM utilities”.

The Multiflash license manager is always installed as part of the license server.

To de-select the installation the RLM server a custom Setup as shown below should be selected during the installation. Please note that Multiflash needs to access a license server on either a local machine or a machine over a network.

Setting up the windows Firewall

If the RLM server is going to be installed in a central machine that will act as a license server some changes are required in the firewall configuration as follows.

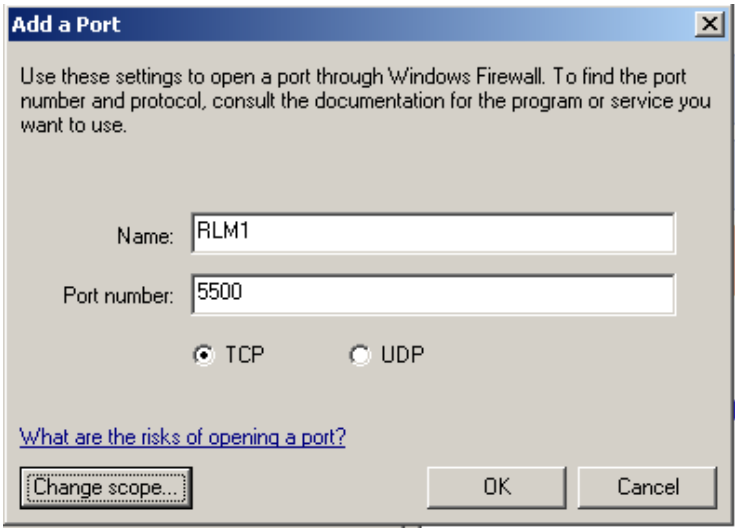
The ports required to be opened are TCP ports and the following default ones used by the RLM license server are:

- 5500
- 5054

- 5053

To add an exception to the firewall, go to the Control Panel, open the “Security center” and click “Windows firewall” link at the bottom of the window.

When the windows firewall utility runs, click the exceptions tab and then click “Add port”

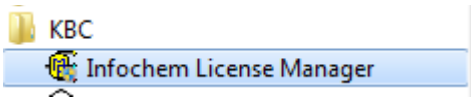


Click “OK”.

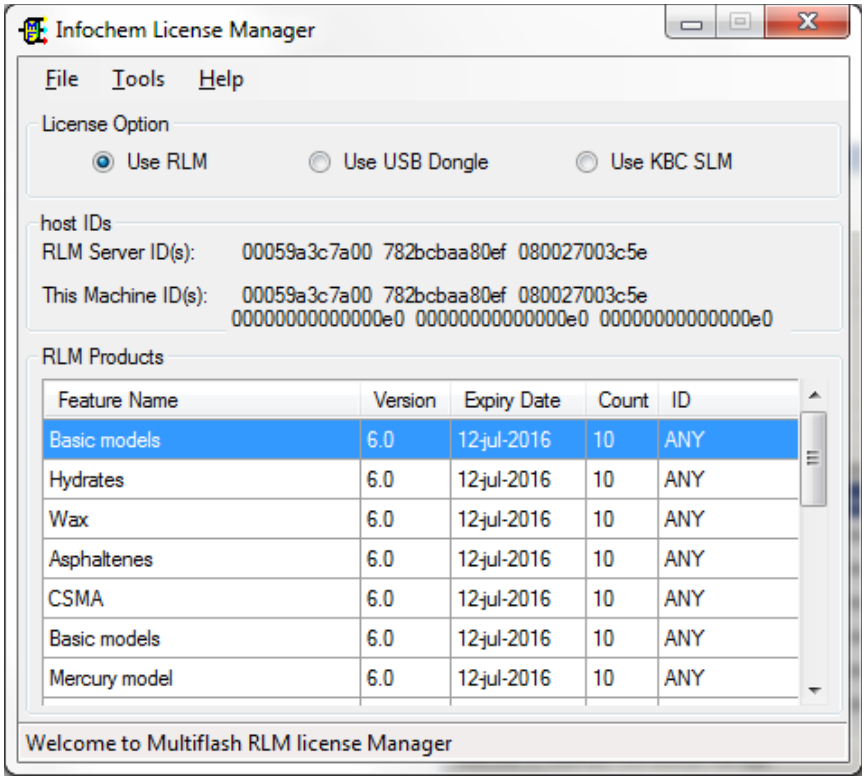
Repeat the procedure for the remaining ports; all of them are TCP ports.

Using the Multiflash License Manager

To run the license manager go to the start menu and select the License Manager in the KBC program group. The tool can be used to manage RLM licenses or to switch to other licensing systems.



The following window will be activated.



The “licence option” on the form informs you if you are using the RLM, USB dongle (for versions prior to 6.0) and KBC SLM (for versions after 4.2) as a means of licence control. By default KBC SLM is to be used.

The “host IDs” shows the IDS of the local machine and the RLM server machine. As shown in the figure, by default the RLM server is running in the local machine.

The “RLM products” shows what Multiflash features are available under the current Multiflash RLM license. Nothing will be shown if the Multiflash license file is not available or the Use dongle option is selected. A list of the information shown by the “RLM products” is as follows:

- Feature name: the features available under the current Multiflash license.
- Version: the maximum valid version of Multiflash that can be run with the current license.
- Expiry date: the date that the features will be no longer available.
- Count: the number of licenses available.
- ID: the ID of the computer that can run Multiflash with the features controlled by the license.

Activating Multiflash with a new license file

In order to issue a Multiflash license file for a designated computer, some information such as the MAC address of the computer is required by Infochem.

To copy the relevant information to the clipboard just run the Multiflash license manager, click "**Tools->Copy Host ID to Clipboard**" and the following dialog box will pop up.



Click OK button to copy the information to Clipboard and then paste into an email or a .doc file and send it to software@kbcat.com.

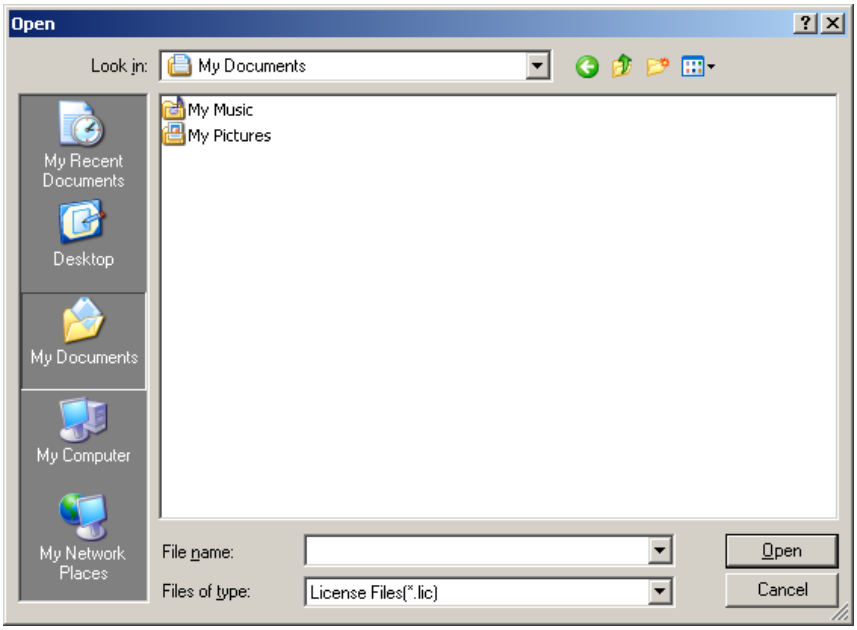
The following is an example after it is pasted into a file.

```
Local Machine:    0022191c89e1
```

Based on the MAC address of the computer or a network server, the Multiflash license file will be issued depending on the type of license.

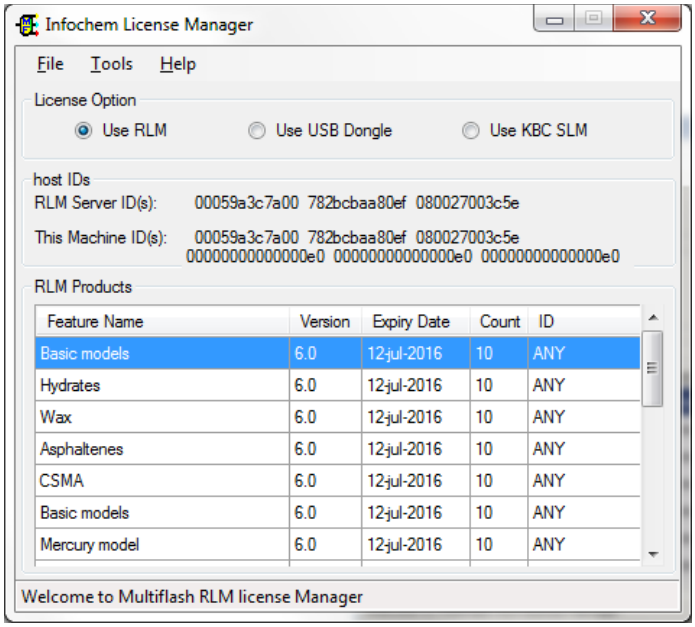
To install a new license file the RLM server needs to be running on the computer or on a network server.

Click "**File->Open License file**" and select the license file that was sent to by Infochem.



Please note that the file extension of the license file must be .lic, otherwise the RLM server will not recognise it.

As soon as you load the license file, the Multiflash License Manager will update the displayed information with the new features.



The information displayed in the example shows what features are available under the Multiflash license and Multiflash is ready for use.

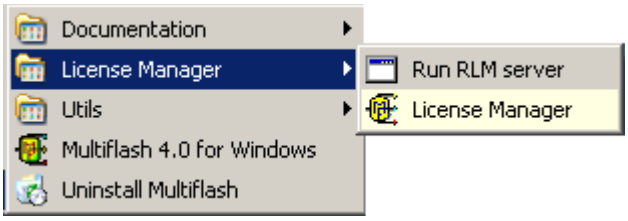
Using a centralized license server

If a centralised license server over a network is used to manage all the licenses, it can be easily achieved with RLM. For Multiflash, this kind of license is referred to as a Multiflash network license.

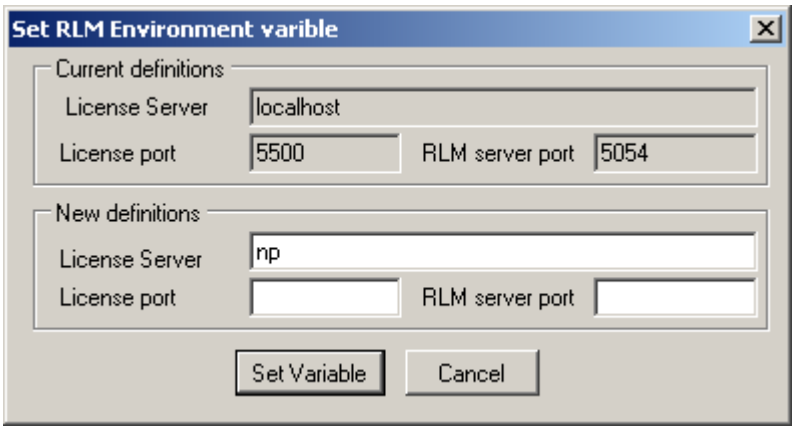
On the **server** machine, launch the Multiflash installation as usual but use the Custom Setup option and select both “License Server” and the “Multiflash License Manager” only. Make sure that ports **5054**, **5053** and **5500** are available and open on the **server** machine.

On the **client** machine that is used to run Multiflash, install Multiflash as usual. During the installation, use Custom Setup option to de-select the “License server” option as the license server is already installed on a centralized server over a network. After installation of Multiflash, an environmental variable must be set so that the Multiflash RLM license server knows where to obtain the Multiflash license.

To set the environmental variable on the client computer with Multiflash, launch the Multiflash License Manager from the start menu and select the License Manager as follows on the client computer.

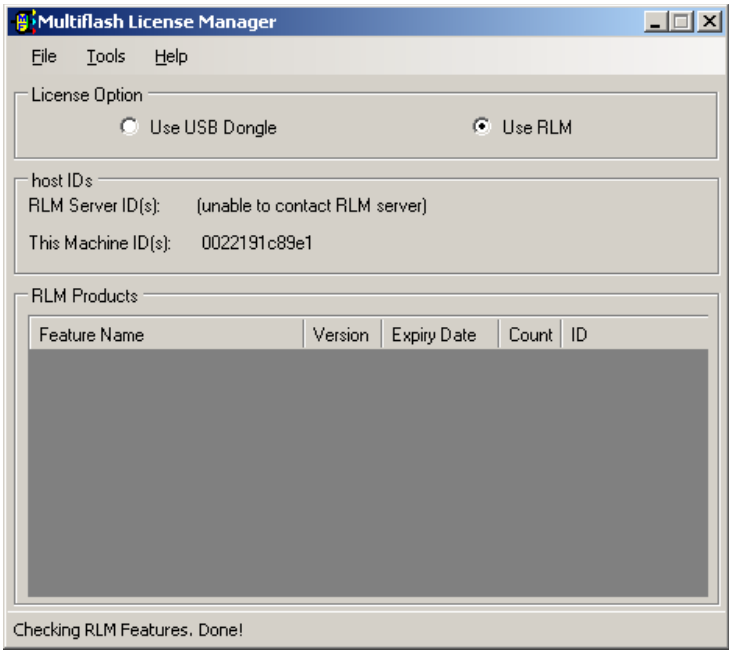


After the Multiflash License Manager is opened, select the **Tools-> set license host** option from the menu options. The following form will be activated.

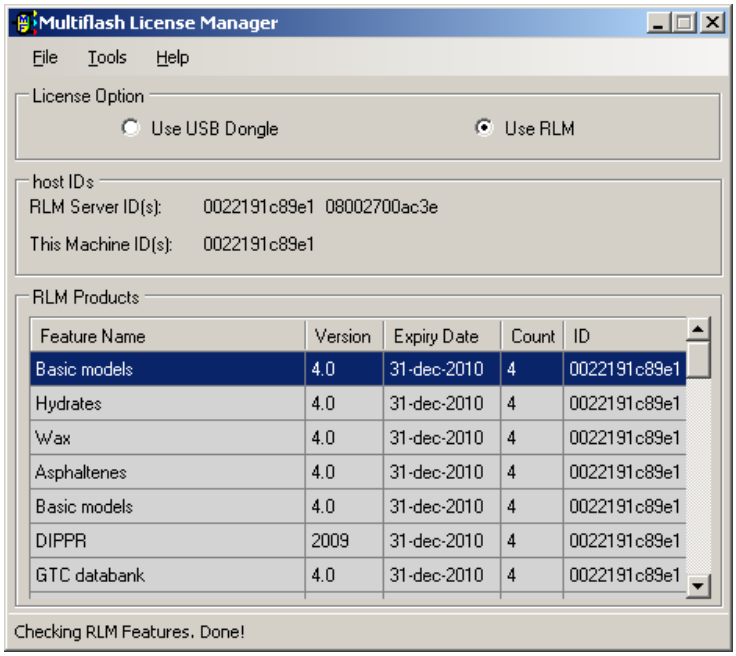


It shows that the current server is "localhost" (local computer) and uses the default ports. To change the license server, type the remote server name or IP address in the text box for License Server and the available port numbers for the License port and the RLM server port. Then click "**Set Variable**" button to apply the change. The example shown on the form, the remote server "np" is going to be set as the new license server.

If the license server is not available because it is off-line or the ports specified are not open, the license information will be not displayed on the Multiflash License Manager window as shown below and the Multiflash software, therefore, is not able to run.



If the license server is available, the Multiflash license manager will display the license information similar to the following:



Note that the server and the client host IDs are different as the type of Multiflash license is a network license.

When the license server is on a remote computer, there are some operations that cannot be done:

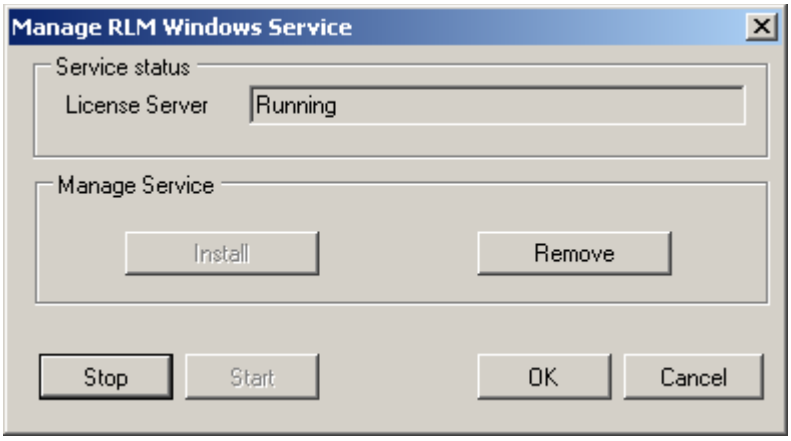
- Open a license file.
- Manage windows service.

However you can send a re-read command to the server to re-load all the necessary license files via **Tools -> Reload license server**.

Managing the RLM windows service

The Reprise license manager is recommended to be installed as a windows service. In this way the RLM license server starts running automatically with Microsoft Windows.

The Windows service is automatically installed with Multiflash if the “License server” option is selected. In order to check the status of the windows service, click “**Tools->Manage Windows Service**” in the Multiflash License Manager window.



In this case it says that the service is running. The operations you can perform are:

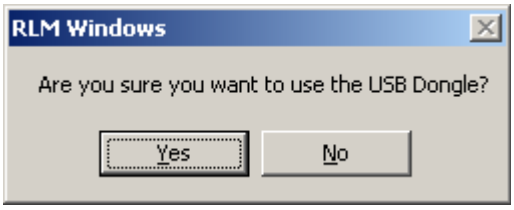
- Stop and Start the service: useful to stop and start the license server, particularly when Multiflash was re-installed.
- Install/remove: can be used to remove the service if the RLM license server is no longer needed.

Note that administrator rights are needed in order to manage the windows service in Windows XP. In the case of Windows Vista and 7, the Multiflash License manager has to be run as administrator.

Switch between RLM and other systems

If you still use an USB/parallel dongle as the means of license control with Multiflash, or want to switch to the KBC SLM, the Multiflash license manager may be used to stop the Multiflash RLM license server so that the time for launching Multiflash is not affected by the search of the RLM license server

To change the license control to the USB dongle or KBC SLM, launch the Multiflash License manager and click the "**Use USB Dongle**" option. You will be asked for the confirmation by clicking the "Yes" or "No" button.



If the "Yes" button is clicked, no information for the RLM Products will be displayed and the RLM license server is not allowed.

When switching to KBC SLM, there will be no prompt to change to that system.

Documentation

Introduction

The Multiflash installation package contains all the documentation for the software. The main documents for most users are the User Guide and the Excel Interface Manual. Other documentation is intended for developers wishing to interface Multiflash to other applications.

All the files are in PDF format. If you do not already have the Acrobat Reader installed you see the section “Acrobat Reader” on page 32.

Acrobat Reader

Introduction

The latest version of the Acrobat reader can be downloaded from the Adobe website
http://www.adobe.com/products/acrobat/main.html

System requirements:

The system requirements for Acrobat Reader XI are:

- Windows with Intel® Pentium® processor
- 1.3GHz or faster processor
- Microsoft® Windows® XP with Service Pack 3 for 32 bit or Service Pack 2 for 64 bit; Windows Server® 2003 R2 (32 bit and 64 bit); Windows Server 2008 or 2008 R2 (32 bit and 64 bit); Windows 7 (32 bit and 64 bit); Windows 8 or 8.1 (32 bit and 64 bit)
- 256MB of RAM (512MB recommended)
- 320MB of available hard-disk space
- 1024x768 screen resolution
- Internet Explorer 7, 8, 9, 10 or 11; Firefox Extended Support Release; Chrome