

25 November 2021

# ANSYS Motor-CAD Installation Instructions

## Contents

1. Software Installation.....	2
2. Running Motor-CAD for the first time .....	9
i. ActiveX Automation .....	9
ii. Verifying licence information.....	10
iii. Running Motor-CAD E-Magnetic Solver for first time .....	11
3. Troubleshooting .....	12
i. Licence problems .....	12
Appendix A: System Requirements.....	13
i. Minimum System Requirements.....	13
ii. Optimal system configuration .....	13
Appendix B: Changing the Licence Server .....	14
Appendix C: Using an Environment Variable.....	16

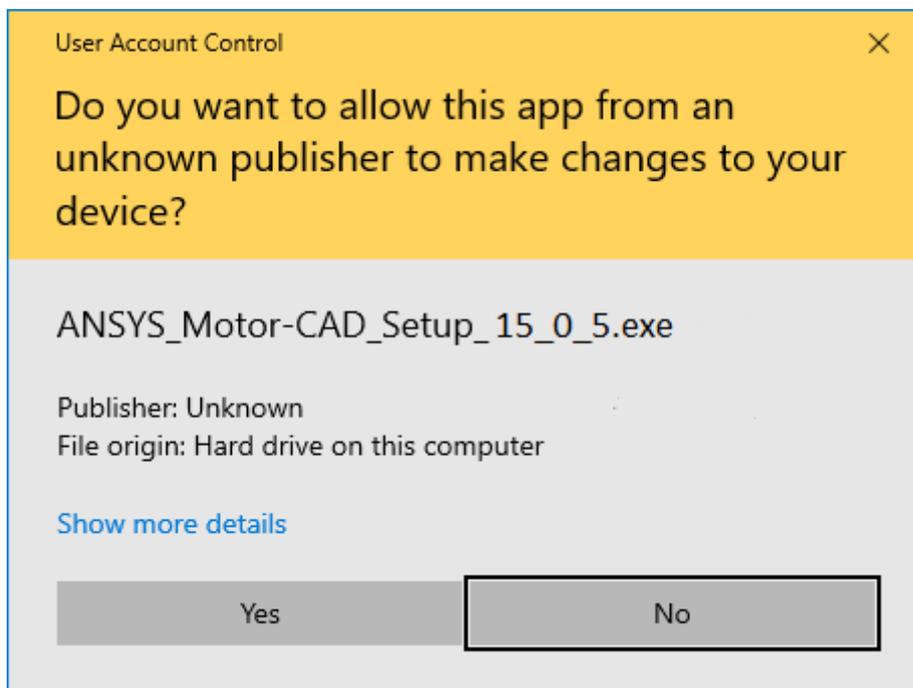
## 1. Software Installation

**Before installing Motor-CAD an ANSYS licence server should be installed.**

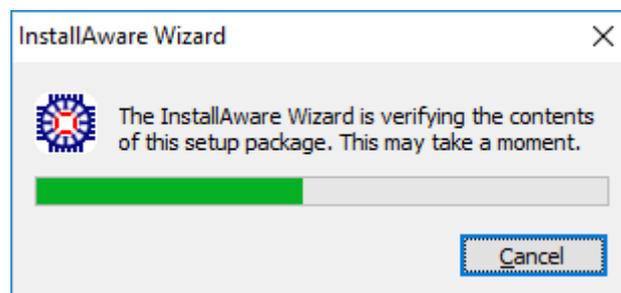
To install Motor-CAD the user must have Administrator rights for Windows. After Motor-CAD is run for the first time normal user rights become sufficient.

Motor-CAD is installed on a computer by running **ANSYS\_Motor-CAD\_Setup\_vxxxx.exe**.

If you get a warning click on **[Yes]** as shown below:

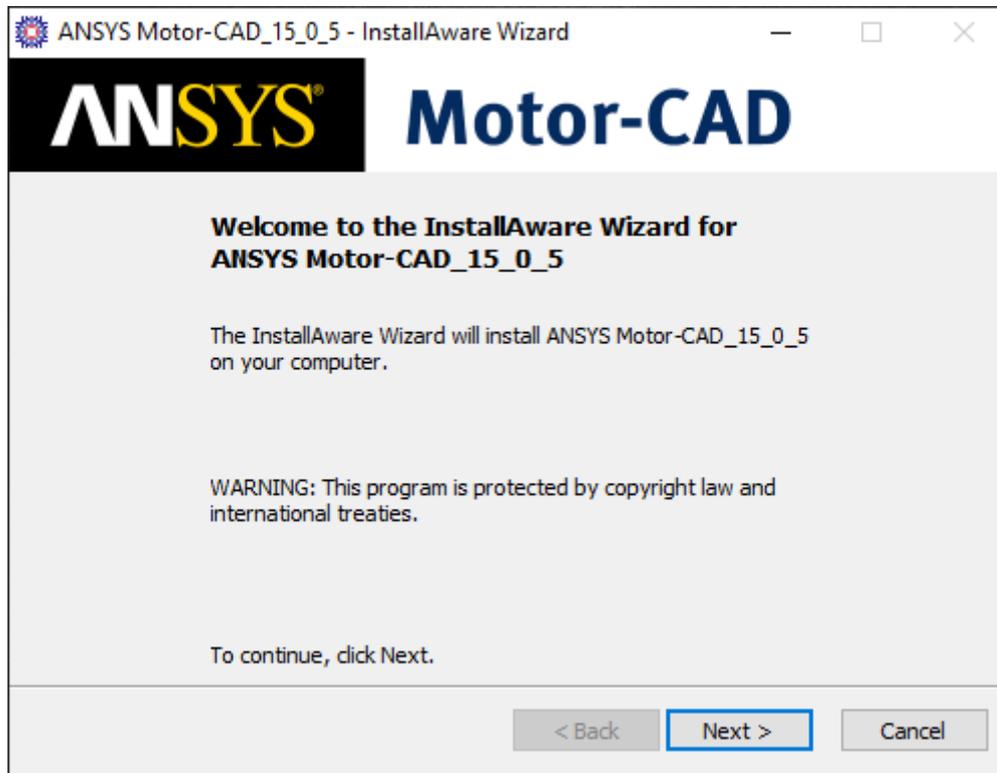


The installation sequence and screenshots are shown below:

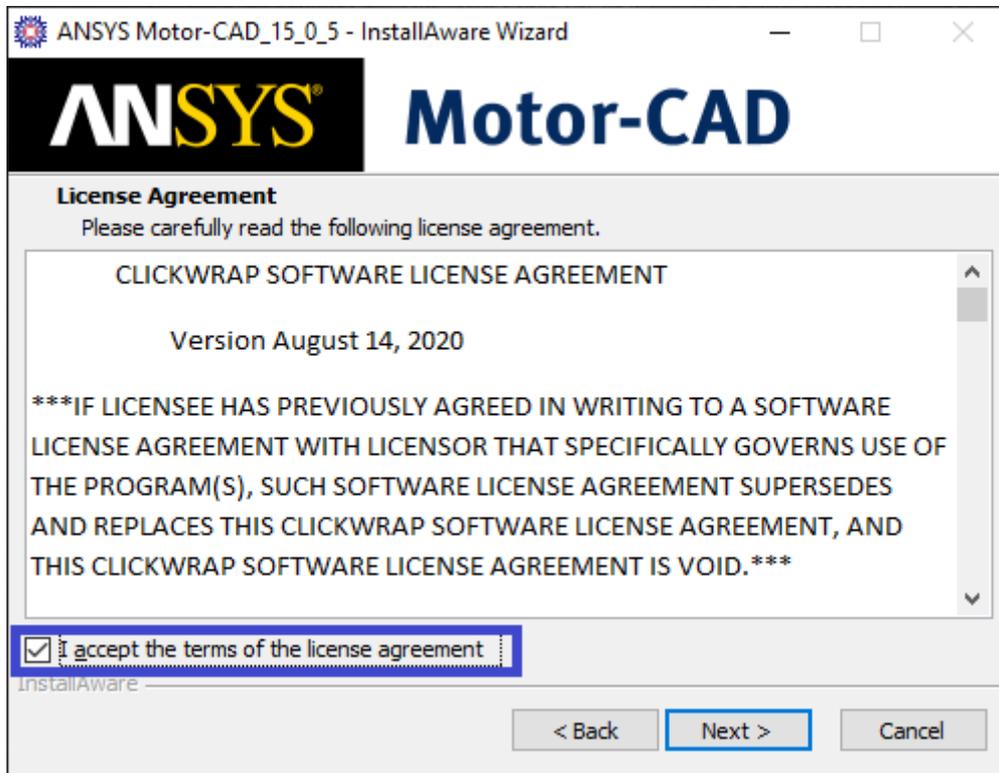


The installation may take about 5 minutes to prepare the installation wizard.

Click the **[Next]** button to proceed with the installation.

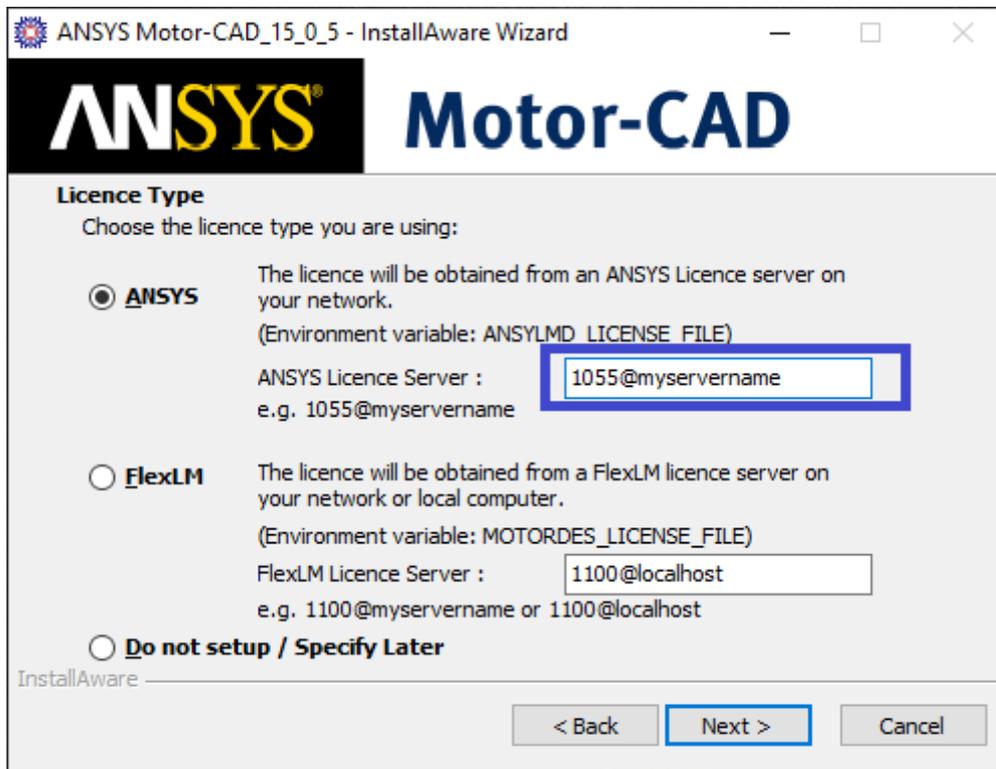


Please read the license agreement and then confirm your acceptance of the licence agreement terms by selecting the checkbox and click the **[Next]** button to proceed.



Enter the port and server where your ANSYS licence server is installed.

This should be provided by the person who has installed your licence server. The syntax of this is port@myServername.

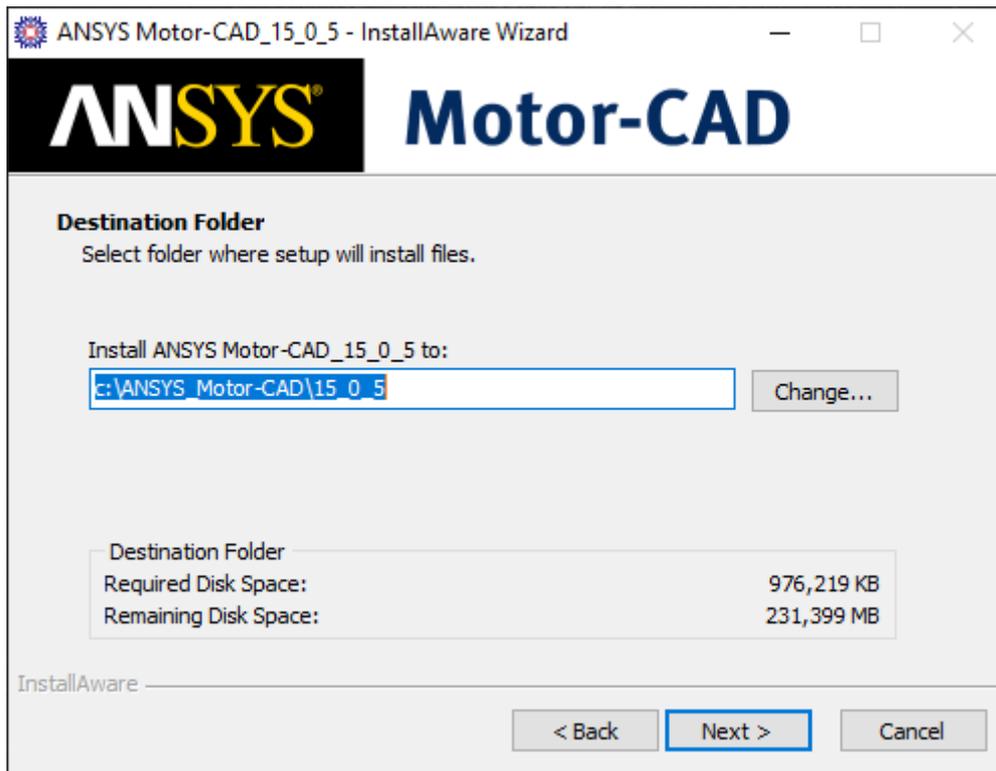


Click the **[Next]** button to proceed.

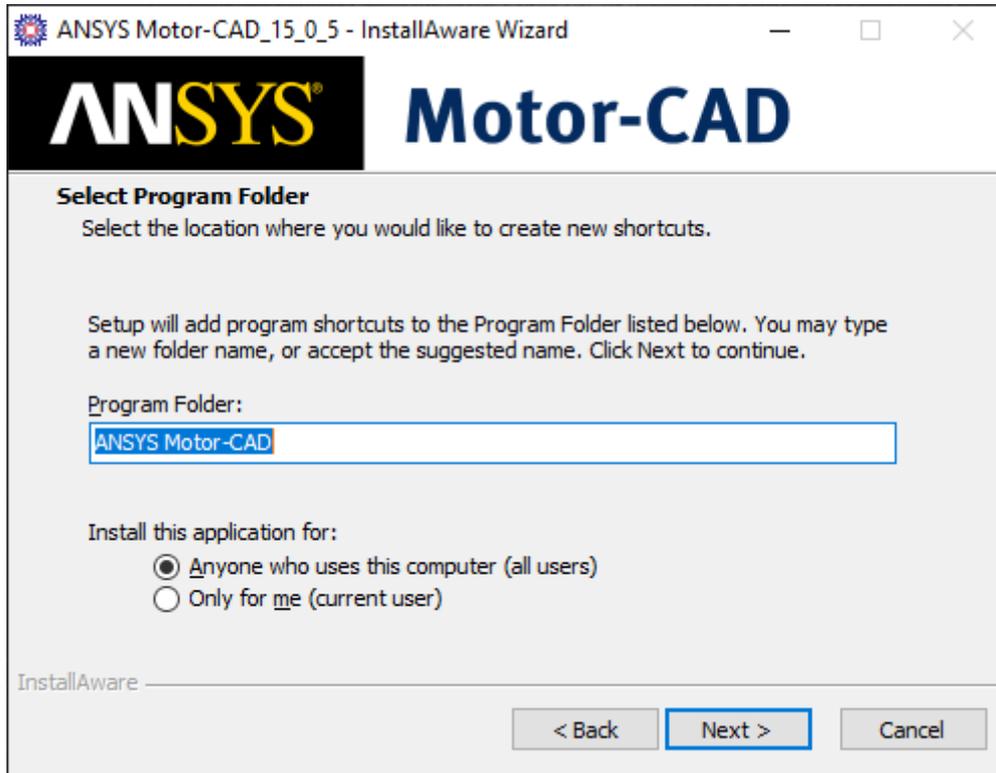
Please note that if there is a previous installation of ANSYS Motor-CAD, the previously set licensing settings will not be overridden, but they can be changed later. See appendix B after installation in order to reconfigure the licence settings.

Then select the folder where the Motor-CAD program and documentation are to be installed. It is recommended to use the default folder locations given to ensure Motor-CAD has sufficient access rights to be able to write out results files.

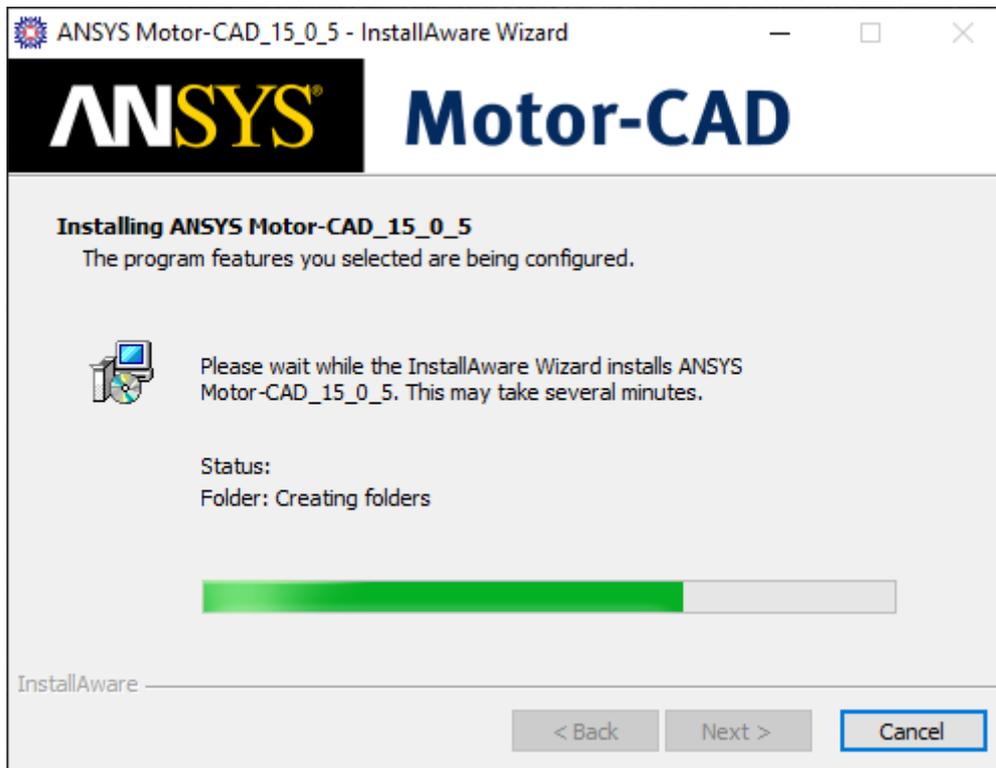
Click the **[Next]** button to proceed.



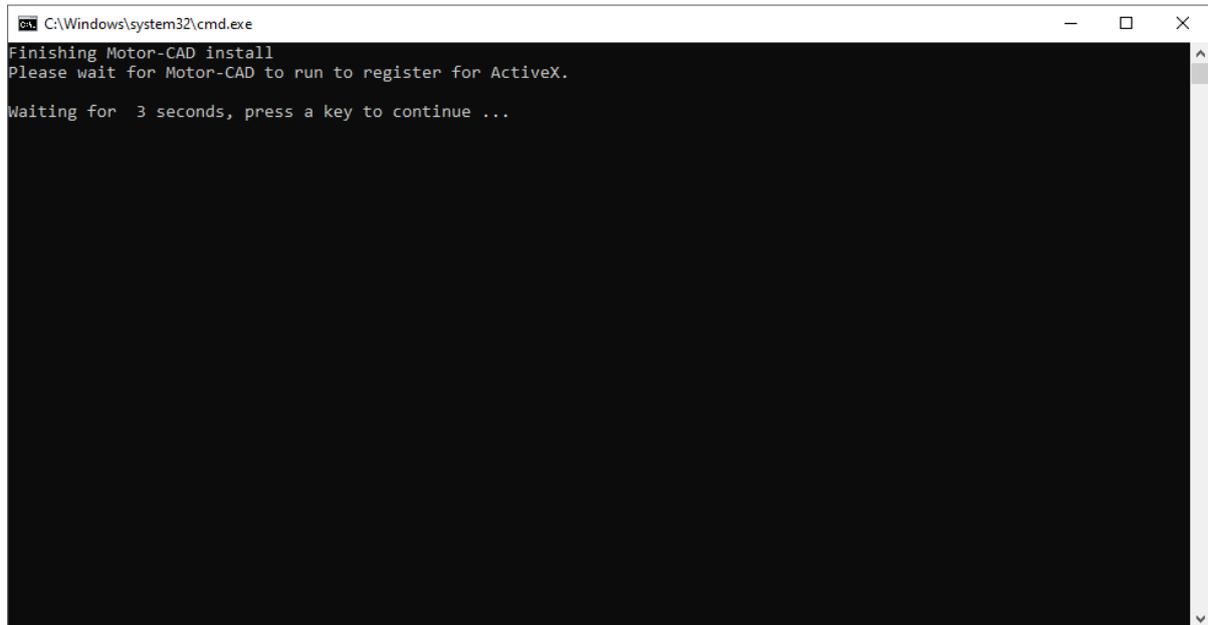
Click the **[Next]** button to proceed.



The installation may take several minutes to complete.

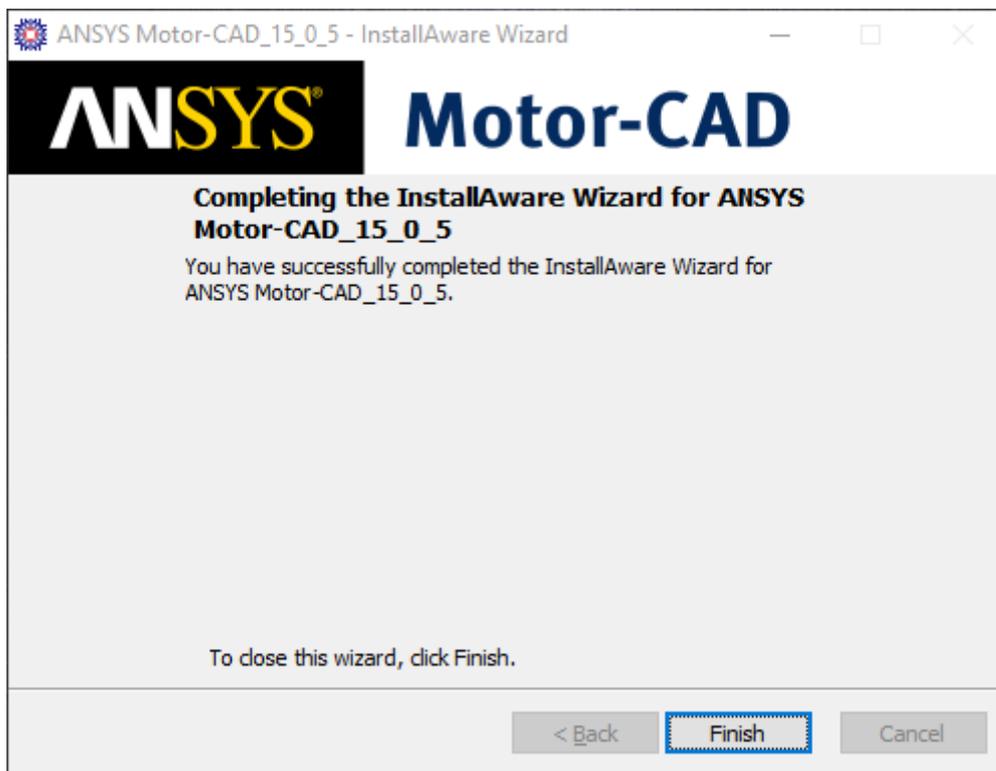


The installation will run a command line script as part of the installation:



The script will close itself after completing.

When the installation is successfully completed the below screenshot will be displayed. Click **[Finish]** to close the installation.



## 2. Running Motor-CAD for the first time

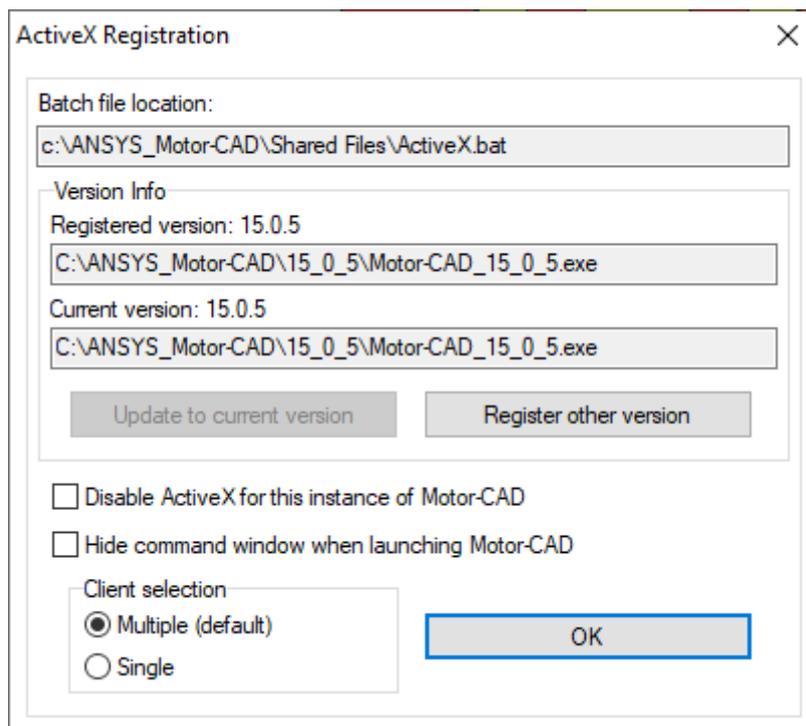
### i. ActiveX Automation

Motor-CAD's ActiveX server must be registered to enable the use of ActiveX automation.

If this is the first version of Motor-CAD to be installed a computer, it must be restarted in order to complete the ActiveX registration. This is because Motor-CAD updates the registry for ActiveX, and Windows does not reread the associated registry settings until Windows is restarted.

If there are previous versions of Motor-CAD already installed, the latest version will automatically register itself for ActiveX when it is first run.

The registration of Motor-CAD's ActiveX server can be confirmed by checking the information available from **Defaults->ActiveX Registration**:

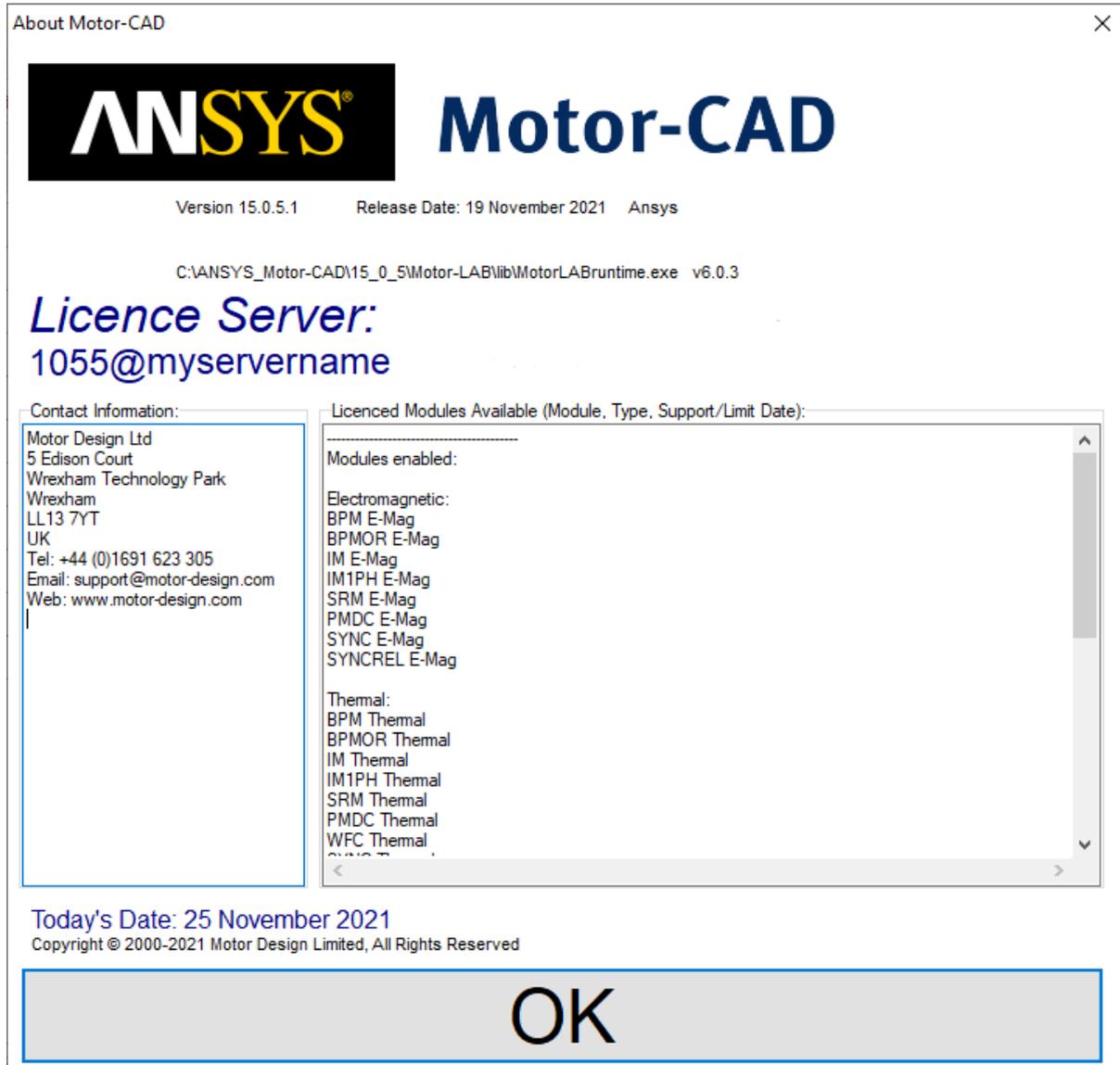


The screenshot shows the 'ActiveX Registration' dialog box. It contains the following fields and options:

- Batch file location:** c:\ANSYS\_Motor-CAD\Shared Files\ActiveX.bat
- Version Info:**
  - Registered version: 15.0.5
  - C:\ANSYS\_Motor-CAD\15\_0\_5\Motor-CAD\_15\_0\_5.exe
  - Current version: 15.0.5
  - C:\ANSYS\_Motor-CAD\15\_0\_5\Motor-CAD\_15\_0\_5.exe
- Buttons: Update to current version, Register other version
- Options:
  - Disable ActiveX for this instance of Motor-CAD
  - Hide command window when launching Motor-CAD
- Client selection:**
  - Multiple (default)
  - Single
- OK button

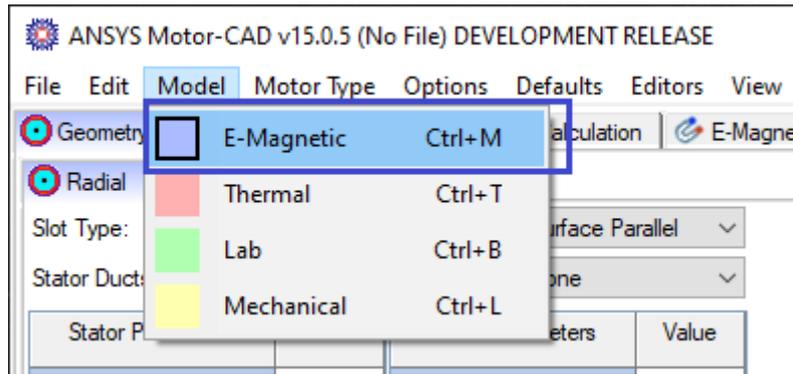
## ii. Verifying licence information

When Motor-CAD is run it will checkout the licence from the licence server. The licence information in Motor-CAD can be viewed by from the **Help->About...** pull down menu in Motor-CAD. A typical example of the screen displayed is shown below:

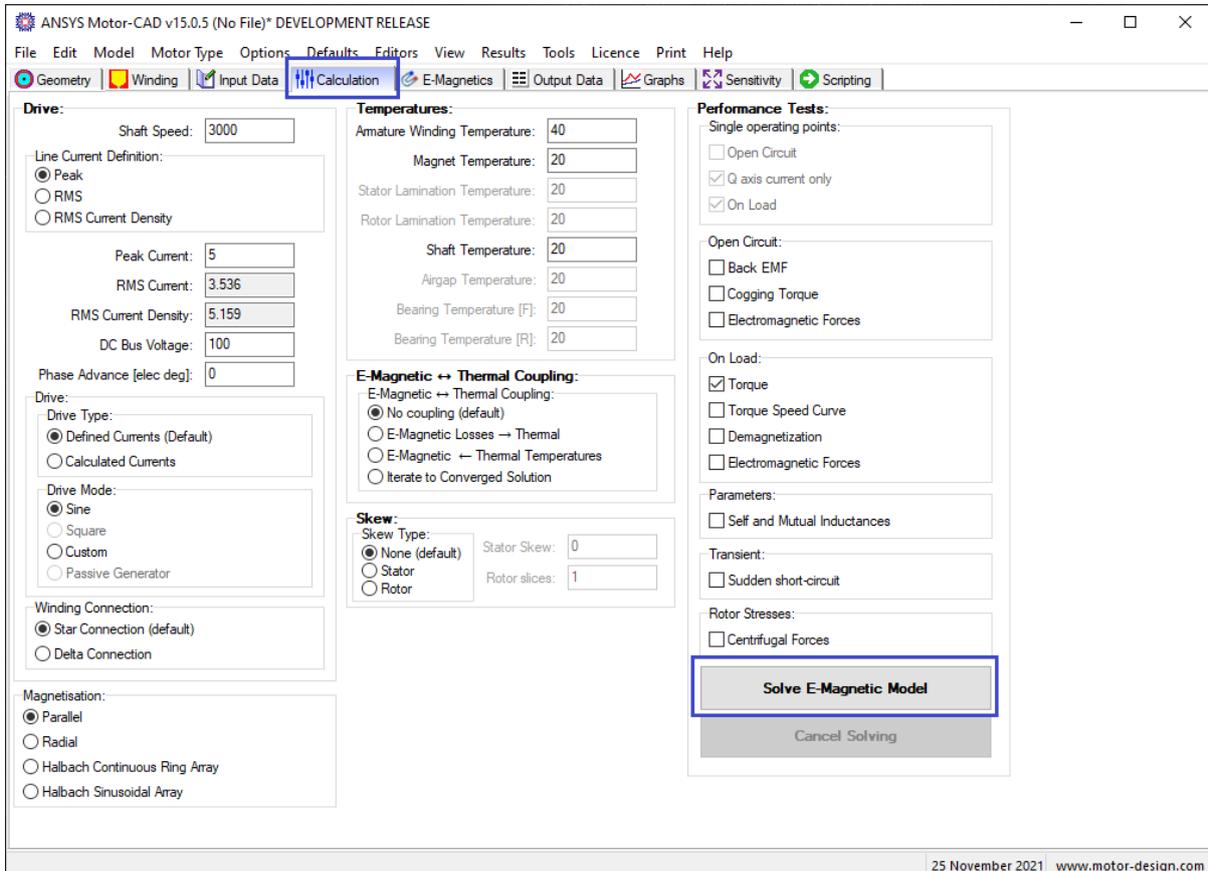


### iii. Running Motor-CAD E-Magnetic Solver for first time

The Motor-CAD FEA module writes results files to the hard disk. To check that there is no problem writing these files to the hard disk run the E-Magnetic FEA solver. First, make sure that Motor-CAD is in the Magnetic context by selecting **Model -> E-Magnetic** (the background of tabs will become blue to show that E-Magnetic context is selected):



Then navigate to the **Calculation** tab and click the solve button shown below.

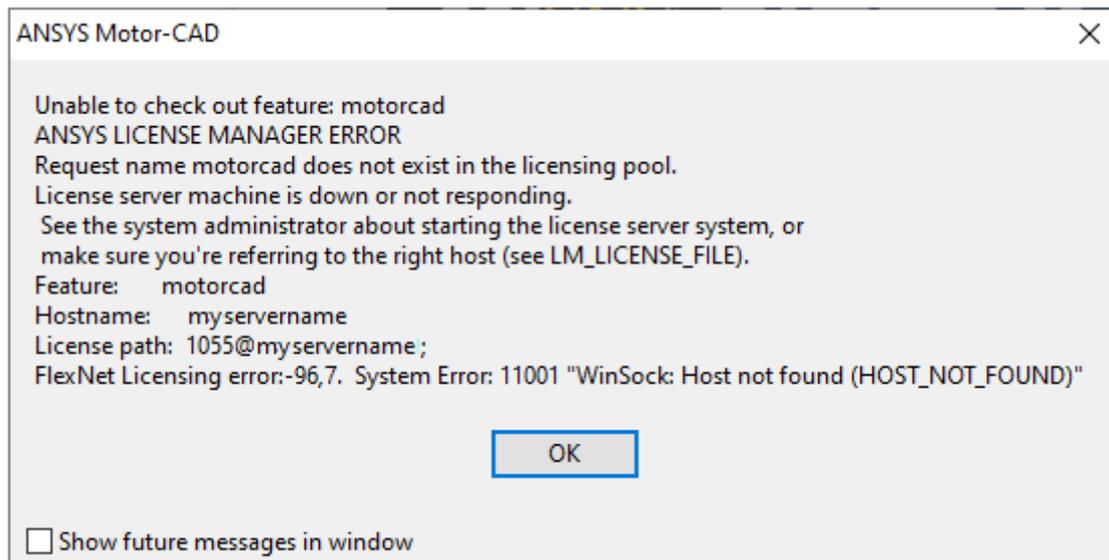


If an error occurs then check that the user has read/write access to the folder  
 C:\ANSYS\_Motor-CAD\xx\_x\_x\FEResultsData\

### 3. Troubleshooting

#### i. Licence problems

If the licence server cannot be found, then an error message such as the following will display:



Please refer to Appendix B for information on how to reconfigure the licensing.

## Appendix A: System Requirements

### i. Minimum System Requirements

The following Operating Systems are supported:

- Windows 7 (64 bit)
- Windows 8 (64 bit)
- Windows 10 (64 bit)

Processor: Intel i7 2GHz or equivalent

At least 2GB of memory

At least 1GB of hard disk space

Minimum screen resolution of 1024 x 768 with at least 256 colours

Microsoft compatible mouse

Note: Motor-CAD does not support large fonts in Windows.

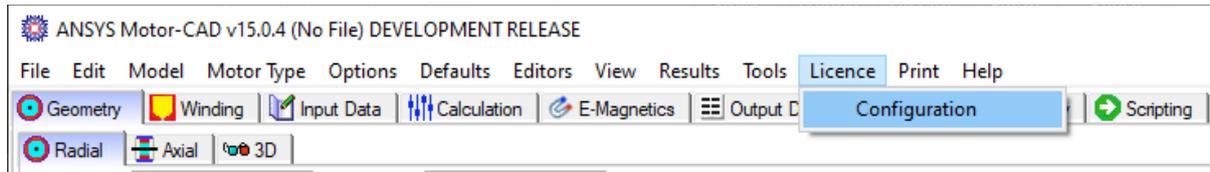
### ii. Optimal system configuration

For optimal configuration of Motor-CAD there are a few different considerations:

- Motor-CAD BPM Lab will make use of multiple threads in order to build the motor model. To allow this to be done 12 to 16 hardware cores/threads is recommended. There is not any increase in performance with more than 16 cores.
- All other machine and calculation types will benefit from a high clock speed as they use single-threaded calculations.
- Installing Motor-CAD and running models from an SSD drive will allow Motor-CAD to run more quickly due to quicker file access. It is recommended to run models from a local drive as the results files are saved relative to the model file.

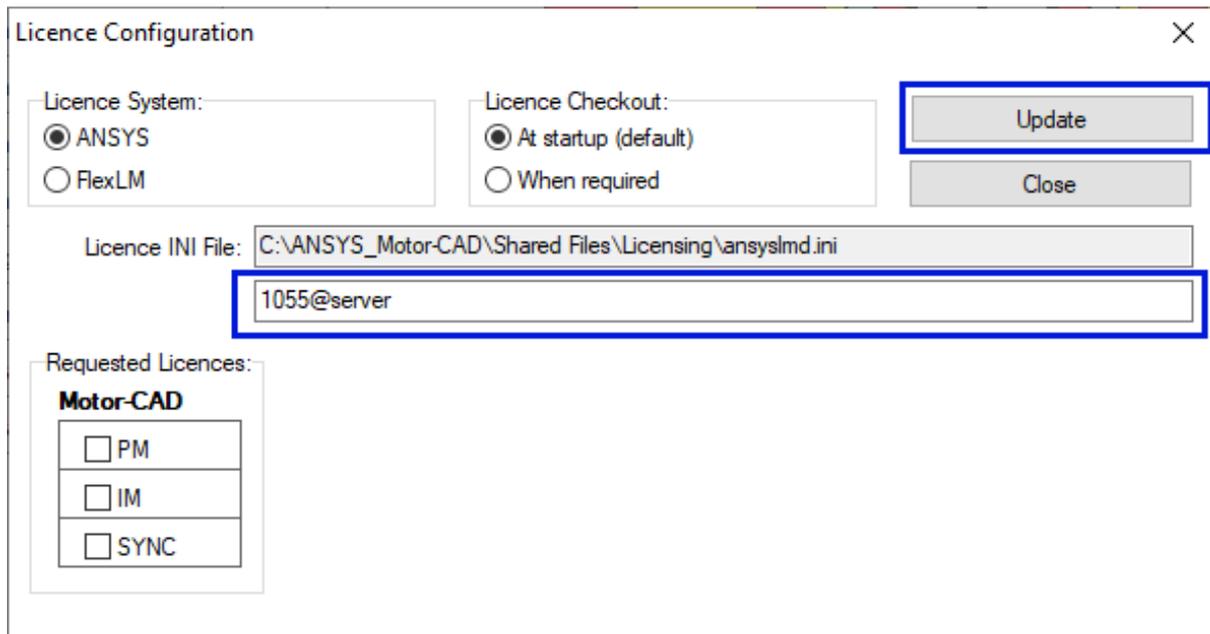
## Appendix B: Changing the Licence Server

By default, Motor-CAD uses a file called `ansyslmd.ini` in a predefined location to find the licence server. The server being used can be changed directly in the Motor-CAD interface. Select **Licence->Configuration** from the pull-down menu in Motor-CAD:

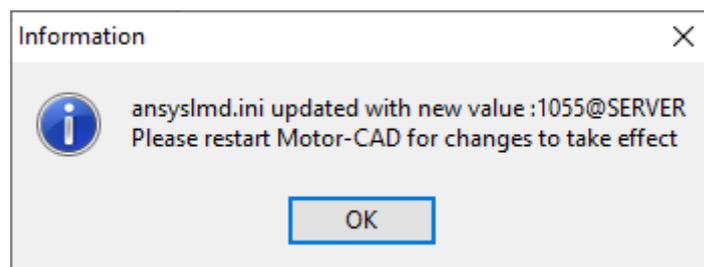


The Licence configuration window shows the location of the `ansyslmd.ini` file, and the server currently in use.

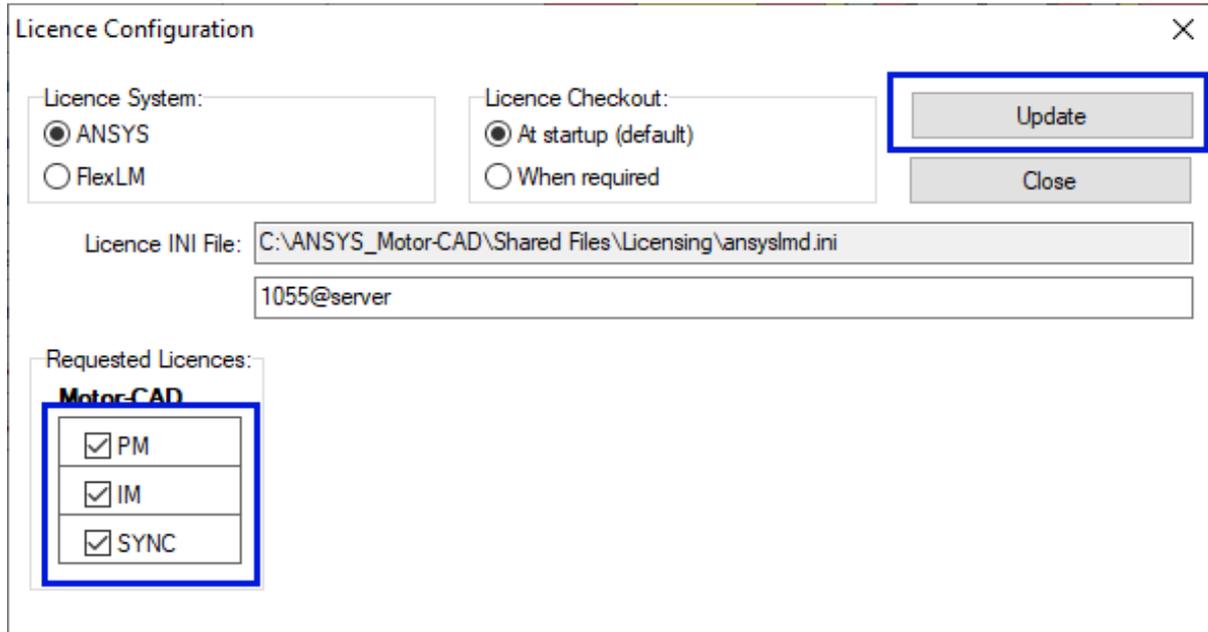
To change the licence server, change the Server line to the correct information, and click **[Update]** as shown below.



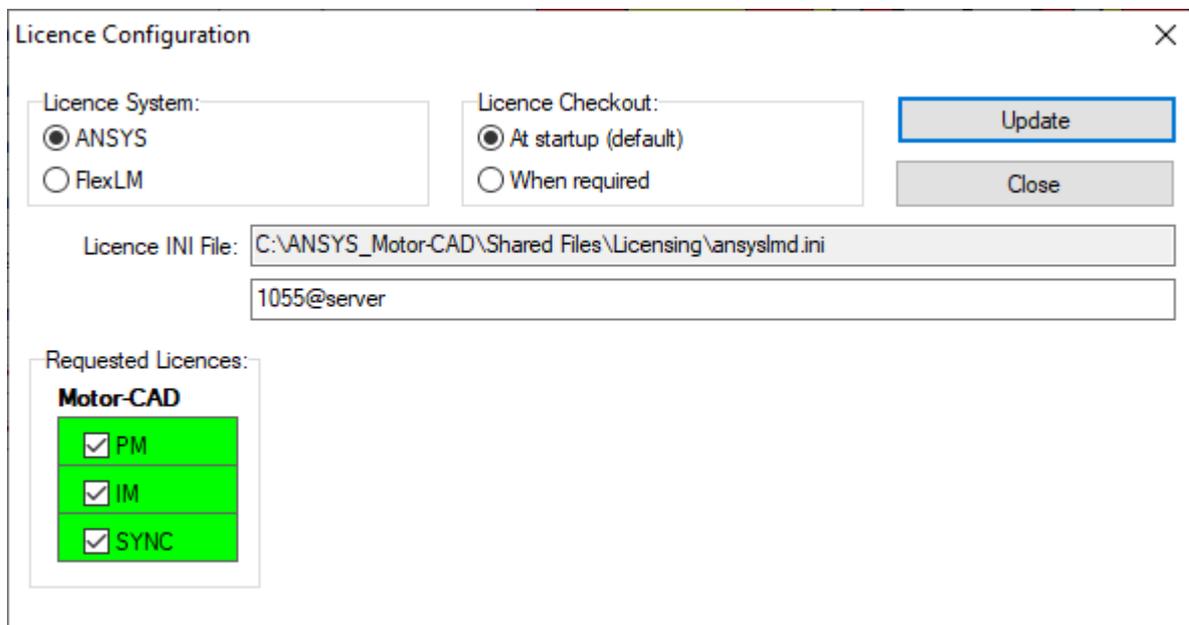
Motor-CAD now needs to be restarted in order for any changes to take effect:



After restarting Motor-CAD now go back to the licence configuration page are select the licences you wish to use by selecting the checkboxes as shown below then clicking on **[Update]**



If the selected licences have been checked out then boxes will be highlighted in green. If a selected licence cannot be checked out then it will be highlighted in red.



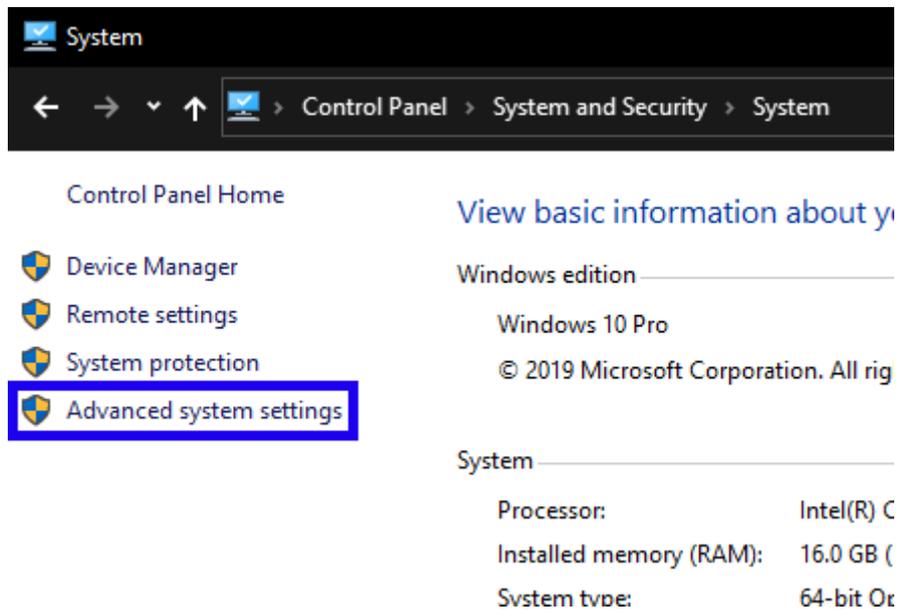
Motor-CAD is now ready to be used.

## Appendix C: Using an Environment Variable

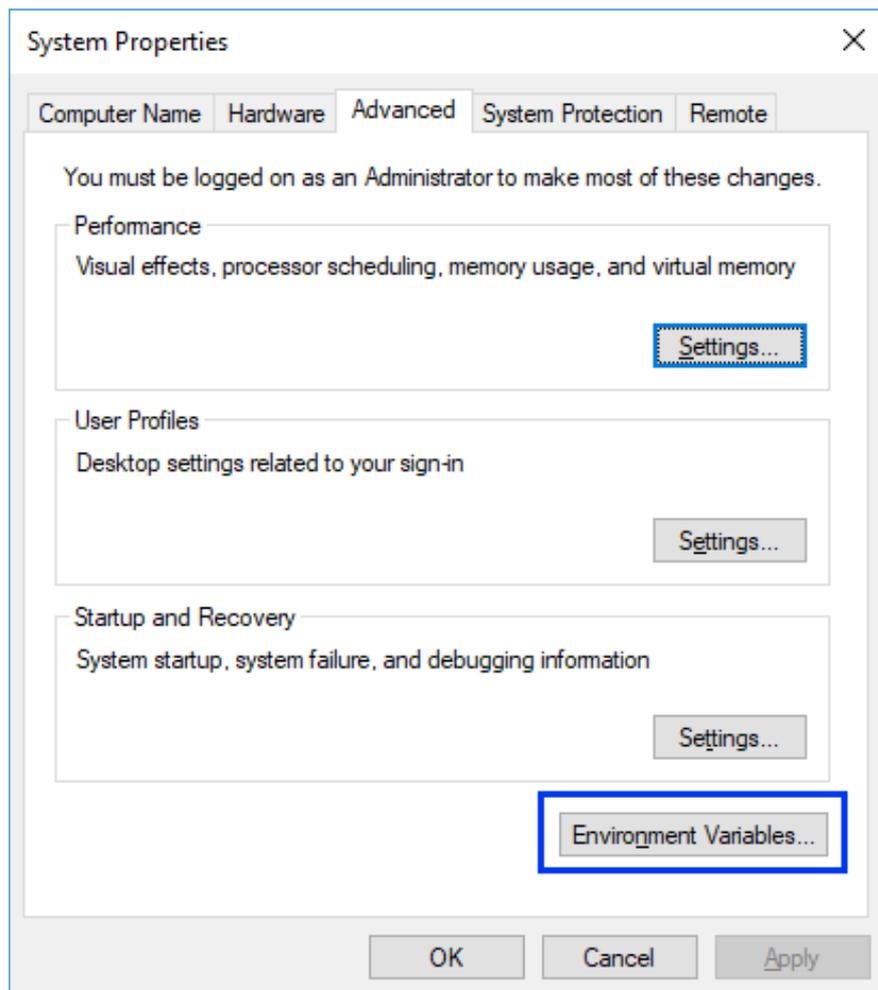
As an alternative to the `ansyslmd.ini` file, a windows environment variable **ANSYSLMD\_LICENSE\_FILE** can be used to point to the licence server.

If the environment variable is used it is prioritised over the `ansyslmd.ini` detailed in the previous section.

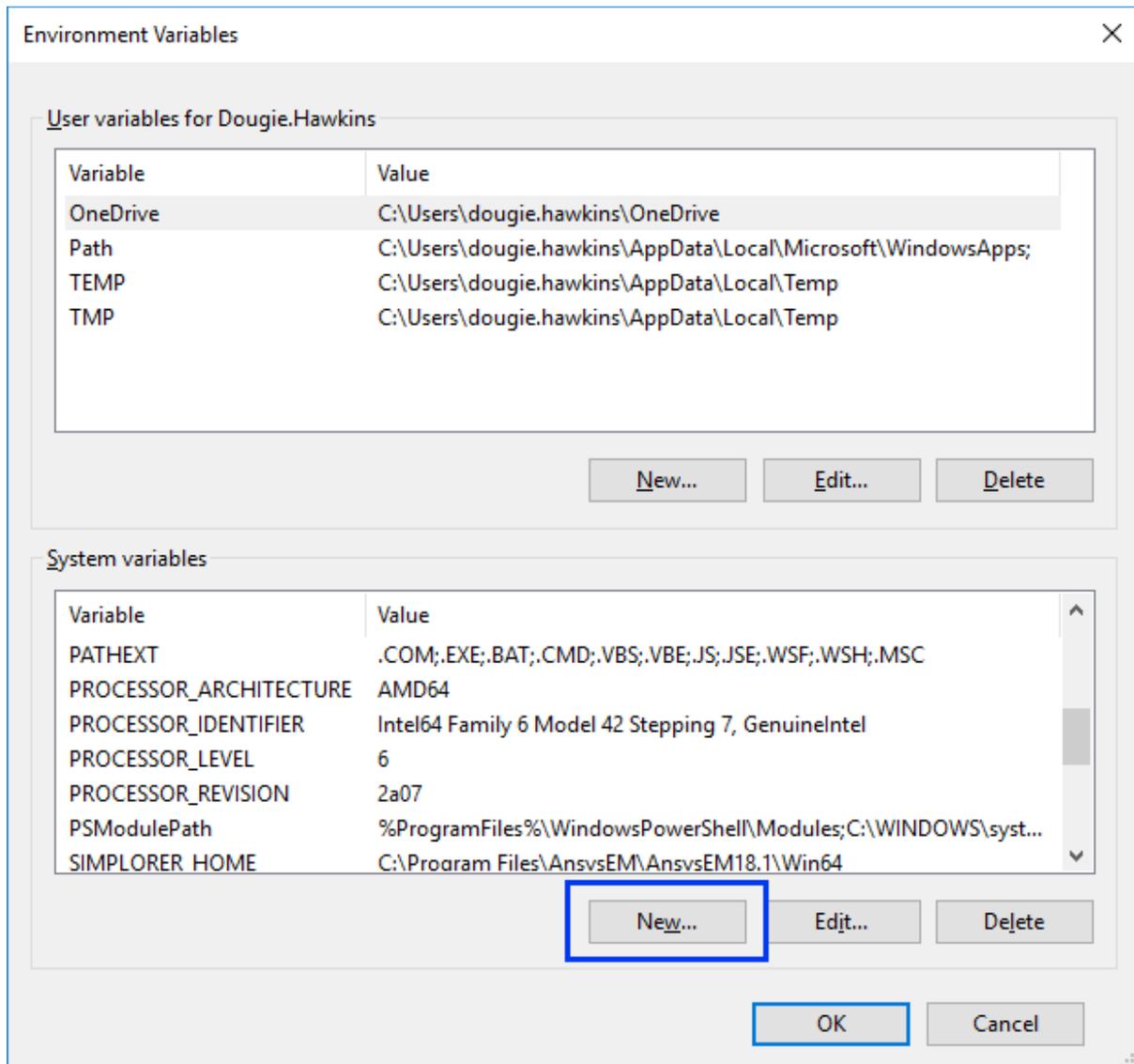
To set up the windows environment variable from windows system control panel select the **Advanced System Settings** as shown below:



Now click the **environment variables** button:

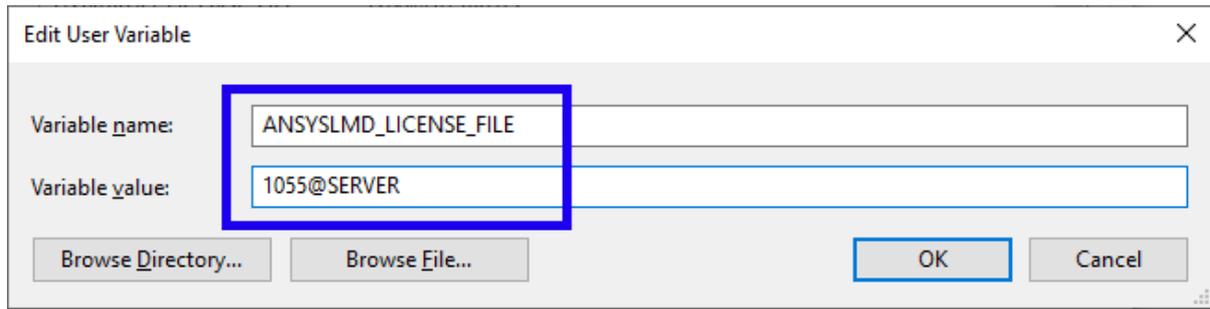


Add a new environment variable entry by clicking on **New**:

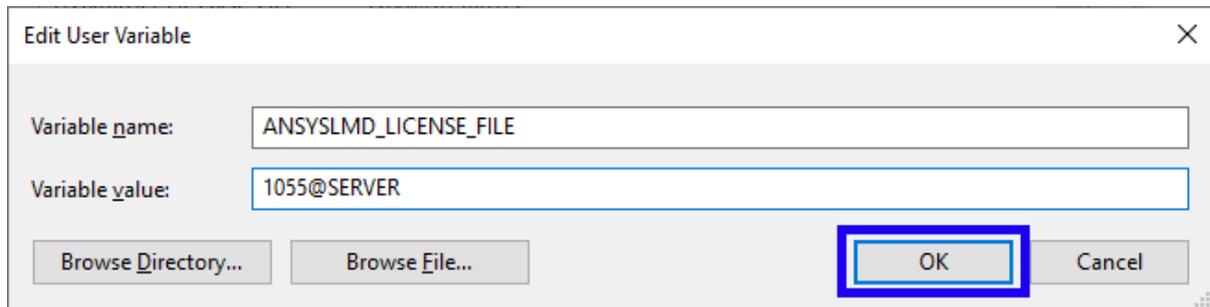


Then add the **ANSYSLMD\_LICENSE\_FILE** variable.

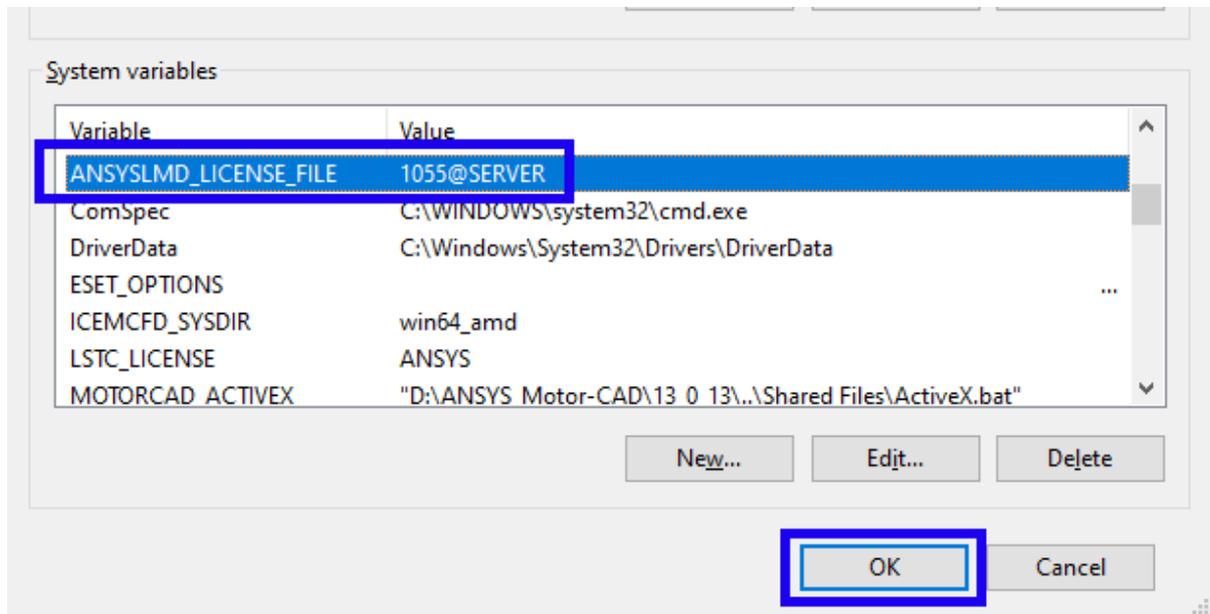
The value field needs to have point to the licence server computer. The example shown below shows the server name as SERVER, using port 1055 (the definition is PORT@SERVER).



Now click on **OK** to add this new system variable:



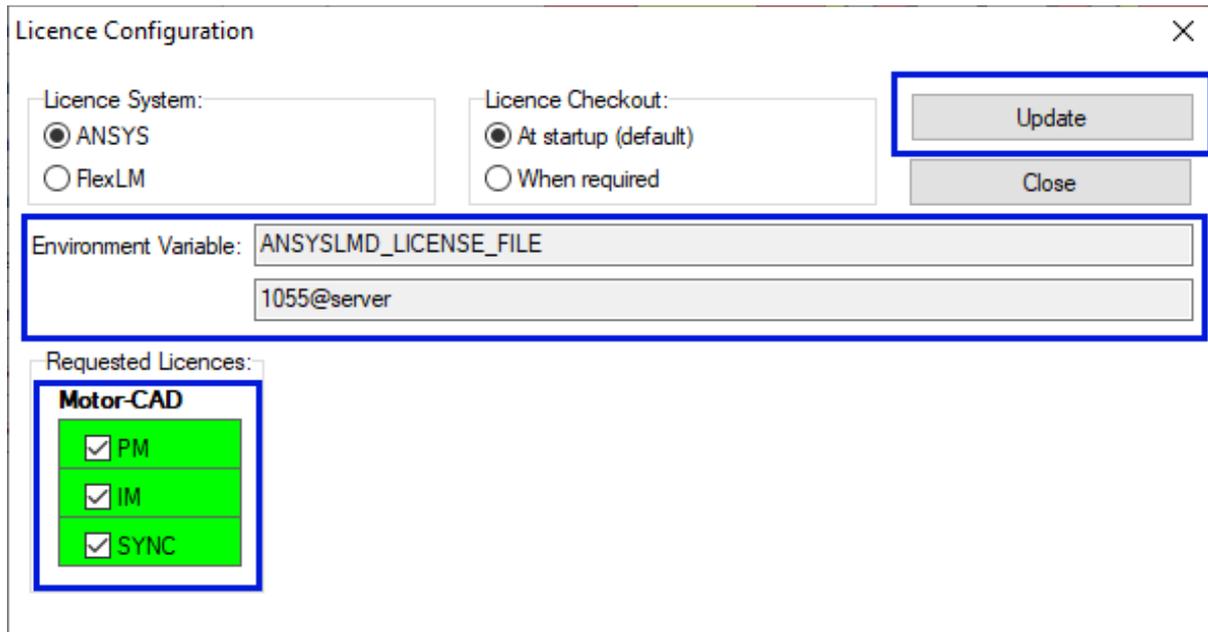
The environment variable should now be shown in the table as shown below. Now click on **OK** to confirm the changes.



The System properties window, and any open copies of Motor-CAD be closed for the changes to be finalised.

After doing this then start Motor-CAD from the windows start menu.

Now select the licences for modules that you wish to use from the Licence Configuration page (**Menu->Licence->Configuration**) and click on the [**Update**] button.



The configuration page shows that Motor-CAD is using the **ANSYSLMD\_LICENSE\_FILE** environment variable, and the port and server in use.

Licences that are available and have been checked out will be highlighted in lime and any modules unavailable will be highlighted in red.

Now click the **OK** button to use Motor-CAD with the enabled licences.

Motor-CAD is now ready to be used.



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