LUSAS

Installation Guide

Installation Guide

LUSAS Version 21.0 : Issue 1

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Software Supply and Licensing

Availability

LUSAS software is available in 32-bit and 64-bit versions. By default LUSAS software is made available from a download area on the LUSAS website. By request, it can also be supplied on DVD. Access to a particular software product is controlled by codes supplied by the LUSAS licensing department. These codes give access to the software product(s) and purchased options that your organisation is licensed to use. The following licensing methods are available:

- ❑ **Network (or floating) licensing** is controlled by Sentinel license server software. Licences are locked to a USB Key that can be moved between license servers.
  The LUSAS license server needs to have access to a USB port. Please refer to the correct section in this Guide for your use.
- ❑ **Standalone licensing** is controlled by a USB Key that is inserted into a USB port on the computer.

It is mandatory on all operating systems that a user with FULL administration rights carries out the installation as set out below. Contact your IT department if you are unsure.

Notes

- This guide is written assuming installation is made to the default installation directory C:\Program Files (x86)\LUSAS210 or C:\Program Files\LUSAS210

- Steps described in this guide are numbered and lettered to assist with any support calls that you may make if problems are encountered.

- LUSAS uses Sentinel license manager software which is developed in the United States of America. As a result the U.S English spelling of 'license' and 'licensing' is generally used throughout this guide to match that used by the Sentinel license server software. LUSAS Modeller dialogs, general on-line help text, and LUSAS Configuration Utility pages in this Installation Guide

(that are created directly from the on-line help pages) may use the UK English spelling of 'licence'.

Installing LUSAS

The LUSAS Installation Procedure

The procedure described below relates to installing LUSAS software on 32-bit machines. A 64-bit version of LUSAS software can be installed in a similar way. See *Installing LUSAS on 64-bit machines* for details.

1. **Please do not insert any license protection devices (such as a USB Key) until instructed to do so**. These instructions will inform you of the right time to do so.

2. Exit any applications you are running, then depending upon your chosen installation method either:

   - Double-click the downloaded LUSAS setup executable, or,

   - Insert the installation DVD into the DVD drive on the computer. If the LUSAS installation does not start automatically, open Windows Explorer and run (double-click) the program **<DVDdrive>:\LUSAS_21.0-X.exe** on the installation DVD.

3. After a period of time whilst the LUSAS installation files are extracted, the welcome page of the install wizard for LUSAS Version 19 will appear. You may click the 'Check for updates' button (if available) to see if a more recent version of LUSAS is available. Otherwise, click the 'Next' button to proceed with the install.

4. The standard install page gives the location to which LUSAS will be installed.

   A standard install always delivers the full 32-bit version of LUSAS, into a pre-defined location. An 'Advanced' button allows the default installation folder to be changed by pressing the 'Change install button'. A 64-bit beta version of LUSAS is also installed by default if the target machine is running 64-bit Windows. A fully featured 64-bit version of LUSAS is not yet available, so the restricted 64-bit beta version should only be used if advised to do so by LUSAS Technical Support. This restricted version does not include geometry creation and editing tools, but does allow the creation and assignment of attributes, creation of loadcases, and carrying out results processing and design calculations. It is intended for use only in instances when memory

constraints affect the manipulation of very large models. More information on this capability is provided within the section titled 'Installing LUSAS on 64-bit machines' and in the LUSAS Modeller User Manual.

The installation will not overwrite any previous major versions of the software (e.g. Version 19.0 or 20.0) currently installed on the computer. By default LUSAS will install into the Program files (x86) directory and the Program files directory for 32 and 64-bit versions respectively.

5. If a lower 'dash' version of Version 21.0 is found, you will be asked if you wish to update. Note that when updating or uninstalling LUSAS any files in the Install directory created or altered by you will remain after the update or uninstall.

6. When ready to install, click **Install\Update** and wait whilst the installation files are copied.

7. Then configure LUSAS to run either a:

   ❑ **Standard licence**, which, if selected, completes the software installation process, and by default sets LUSAS Modeller as the default program for opening .mdl files. When choosing this option please continue at step 8 below.

   ❑ **Web evaluation licence**, which, if chosen will complete the installation process, but will require a user to register to access an evaluation licence when the software is first accessed. Choosing the 'Register for an evaluation' link will take you to a registration page. For more information on both options please continue at the section '**LUSAS Evaluation version'.**

8. On the LUSAS Configuration Settings dialog, choose the way that graphics are to be drawn to the screen.

9. On the next dialog displayed choose whether to inherit license details from a previous version, or to enter them manually. The former will only be available if the installation of a previous version has been detected.

10. If you chose to manually enter your license code(s), enter them on the Licensing dialog. For instructions on entering the license details, please refer to the appropriate section in this guide according to your license type:

    ❑ **Installing a Network (Floating) License**

    ❑ **Installing a Standalone USB Key License**

11 On completion, press the 'Finish' button and restart your system for the change made to LUSAS Version 21.0 to take effect. Please note that this step is mandatory, and unpredictable effects can occur if this step is omitted.

The LUSAS Configuration Utility

Once LUSAS is successfully installed, subsequent changes can be made to a LUSAS installation by using the LUSAS Configuration Utility. Running this differs according to the operating system in use:

- When running Windows 10, click **Start> All Apps> LUSAS 21.0> Configuration Utility**

- For a 64-bit installation browse for the **Configuration Utility x64** entry

The LUSAS Configuration Utility consists of a number of tabbed pages that are used to control the following:

- ❑ Licensing information for the computer
- ❑ Temporary file locations
- ❑ Memory usage settings for LUSAS Modeller and LUSAS Solver
- ❑ Whether hardware or software drivers are to be used to draw graphics
- ❑ Modeller settings (resetting of defaults and specifying locations of results files)
- ❑ Language settings to be used for the user interface.

Full details of its use are detailed in The LUSAS Configuration Utility section.

Changing the License Type

If your organisation changes its license type (i.e. USB Key or Network (Floating) license) at some point after installation, there is no need to reinstall LUSAS. Run the LUSAS Configuration Utility, and install the new license as described in the relevant section in this guide.

Using Multiple Standalone Licenses

LUSAS allows you to install several different standalone licenses and will automatically use the one for which a physical USB key is present. Using the LUSAS Configuration Utility, add any/all license codes which you may wish to use on a given computer into the Licensing page of the dialog. Before running LUSAS, ensure that only one of the physical USB Keys is inserted in the machine.

LUSAS Evaluation version

The LUSAS Evaluation version is functionally the same as a full licensed version but with the following restrictions:

- It only provides access to particular software options.

- It restricts the size of model that can be solved.

- Only linear analysis can be carried out.

- The licence has a time limit of 30 days.

Accessing the software

- Choosing the '**Web evaluation licence**' option during the installation will complete the installation, but you will be required to register for an evaluation licence and enter login details when you run LUSAS.

- Choosing the '**Register for an evaluation**' link during the installation / configuration will take you to a registration page at https://licences.lusas.com/register/ to allow you to enter the details required for you to use a time-limited evaluation licence. On completion of the registration form, press the 'Send Request' button. You will receive an email to confirm your registration, and after the confirmation link in this email is confirmed you will be taken to the LUSAS Licence Portal login page at https://licences.lusas.com/login. From here you can sign in to manage your account.

Note that when accessing the Licence portal as part of installing the software there will be no need to download the latest version from this portal unless your installed version is not up to date. If accessing this page as a result of installing LUSAS, close the page, and then click the 'Finish' button on the installation dialog to complete your installation, and access LUSAS from the Start menu.

Obtaining Software Updates

A downloadable copy of latest version of LUSAS is always made available from a protected download page inside the User Area of the LUSAS website. Pages in the LUSAS User Area are for viewing by LUSAS clients only. We will supply the named LUSAS 'key' contact(s) within your company or organisation with the Username and Password required.

You can check for any software updates by viewing the password protected What's New page in the LUSAS User Area:

> http://www.lusas.com/protected/What_Is_New.html

The What's New page contains links to the protected software download page:

> http://www.lusas.com/protected/download/index.html

This page contains details of what to do to enable you to download a software update.

Installed Locations of Important Files

Please note that the main LUSAS installation folder will, by default, be installed into the C:\Program Files (x86) or C:\Program Files folder.

The following list gives the locations of the FEA.key file and other important files and folders:

Default 32-bit install directory: `C:\Program Files (x86)\LUSAS210\`

Default 64-bit install directory: `C:\Program Files\LUSAS210\`

Projects directory: `%UserProfile%\Documents\LUSAS210\`

FEA.key: `C:\ProgramData\LusaS210\`

32-bit Solver and other batch files: `C:\ProgramData\LusaS210\x86\`

64-bit Solver and other batch files: `C:\ProgramData\LusaS210\x64\`

Installing LUSAS on 64-bit machines

The 64-bit versions of LUSAS software are installed in the Program Files folder and share common components like licence files and help files with the 32-bit version of LUSAS if they are installed. Once installed, the menu item LUSAS Solver x64 will appear under Start Menu\All Programs\LUSAS 21.0.

The 64-bit configuration may be adjusted using the 64-bit Configuration Utility which will appear under Start Menu\All Programs\LUSAS 21.0.

Note that a fully featured 64-bit version of Modeller is not yet available, and the restricted 64-bit beta version of Modeller should only be used if advised to do so by LUSAS Technical Support.

The 64-bit beta version of LUSAS Modeller may be of use in instances when memory constraints affect the manipulation of very large models in the 32-bit Modeller. This restricted version does not include geometry creation and editing tools, but does allow the creation and assignment of attributes, creation of loadcases, and carrying out results processing and design calculations.

Notes:

- In order to use the 64-bit versions a 64-bit operating system must be installed

- The 64-bit version of LUSAS Solver is functionally the same as the 32-bit version.

- Models created in the 32-bit version of LUSAS Modeller can be solved in either the 32-bit or 64-bit version of LUSAS Solver.

- Results files from the 64-bit LUSAS Solver can be processed in either the 32-bit or the 64-bit version of LUSAS Modeller.

- The 64-bit beta version of LUSAS Modeller by default has no access to a geometry engine and, as a result, only allows for assignments to be made to the mesh (known within LUSAS as 'mesh only modelling') and carrying out results processing and design calculations for licences that support those.

- For general information relating to installing and configuring LUSAS software see the relevant sections of this guide.

Using 32-bit Modeller with 64-bit Solver

If 32-bit and 64-bit versions are both installed the default behaviour when requesting a solve is to follow the LUSAS Modeller version. So if LUSAS Modeller is 32-bit the Solver that is run will be 32-bit, and if LUSAS Modeller is 64-bit the Solver run will also be 64-bit. If you wish to always use a particular version of Solver you can set the version in the Model properties dialog.

For more information on using 32-bit and 64-bit versions see 'Using 32-bit and 64-bit Modeller and Solver' in the Modeller User Manual'

Silent Installs

LUSAS can be installed silently without displaying the install wizard. This can be useful if you wish to install LUSAS remotely or deliver it to a number of networked machines.

To install LUSAS silently the installer must be run with the `/Silent` command line option. This can be done from a command window like so:

1. Open a file explorer and navigate to the location of the LUSAS installer executable.

2. Type "cmd" into the address bar of the file explorer and press return

3. In the command window enter the name of the LUSAS installer executable and command line options like so:

   `LUSAS-21.0-0.exe /Silent LICENSE_COMMANDS="/q /i"`

   this will cause LUSAS to be silently installed on the local machine.

Some basic settings can be configured during a silent install by setting certain options on the command line as part of the LICENSE_COMMANDS property. Acceptable values are as follows:

`/q /i`   Tells the configuration dialog not to be displayed during install.

`/g=HARD`	Sets graphics acceleration to hardware acceleration OpenGL.
`/g=SOFT`	Sets graphics acceleration to advanced software OpenGL
`/g=STD`	Sets graphics acceleration to standard software OpenGL
`/d=<your key>`	Forces a single line to be set in the FEA.key file. Replace <your key> with the line you wish to add.

A typical command line would look like this:

```
LUSAS-21.0-0.exe  /Silent  LICENSE_COMMANDS="/q  /i  /g=HARD
/d=[SENTINELLM,MYSERVER,10139]"
```

This line would install LUSAS silently with hardware graphics acceleration and force a single key line in the FEA.key line for network licence 10139 on the server MYSERVER.

Installing a Network (Floating) License

Procedure

If you have purchased a network license, the following installation procedure applies.

1. Choosing a license server computer

The first step is to choose a license server computer. It doesn't matter whether LUSAS is (or will be) also installed on this computer. If you already have a Sentinel license server on your network to license other software, you may prefer to use it rather than create another one. Any computer on the network can be used as the license server and it should not be confused with a fileserver or a network authentication server. Note that a Sentinel server of version 9.8 or above is required for running LUSAS version 21.0 and above.

To discover whether or not you have a suitable Sentinel server running, install the LUSAS software on any client computer. Once installed, start the LUSAS Configuration Utility. Running this differs according to the operating system in use:

- When running Windows 10, click **Start> All Apps> LUSAS 21.0> Configuration Utility**

On the Licensing page press the **Add…** button and from the resulting dialog select **New licence from license code file**. On pressing **Next** there will be a pause whilst LUSAS scans your network for servers.

If suitable servers are found

Any license server computers that are subsequently shown are suitable for use with LUSAS. Choose one, insert the USB Key into the chosen license server and then enter the location of the license code file that you have been given. Note that the license server computer might or might not be the same machine as the client computer on which LUSAS is installed.

The option **Make this licence available to LUSAS on this (local) machine** adds the license to the server and makes the licence available to the PC from which LUSAS is run. When the Apply or OK button is pressed the license is added to the fea.key license file. This file is used by the LUSAS Configuration Utility to allow users to access available licenses. This file is not to be manually edited.

If no suitable servers are found

If no suitable servers were found, it will be necessary to install the Sentinel license server. Additionally, you may choose to designate a machine as a new LUSAS license server, even if an existing machine is suitable.

If out of date servers are found

LUSAS will report the name of any server that has been installed with a lower version than that required. These server computers are suitable for use with LUSAS, but only after their Sentinel software has been upgraded. To do this, please follow the instructions for installing the Sentinel software on the license server computer.

2. Installing (or upgrading) the Sentinel software

This step is not necessary if you chose to use an existing suitable server.

Install is carried out by following the steps listed below. Note all of these instructions must be undertaken by a user logged in with administrator access rights.

1. If you are installing from a DVD insert the LUSAS installation DVD in the DVD drive of the license server computer open the **<DVDdrive>:\Sentinel Server** folder. If you are installing from a download unzip the Sentinel Server zip file.

2. Double click on **Sentinel Server\setup.exe** to run the Sentinel server installer follow the on screen instructions.

3. Once the Sentinel server install has finished double click on the **Sentinel Server\LusasServerUtil.msi** to install the LUSAS server licence utilities

4. In order to add a licence to your server, insert your USB Key into the server computer and then open the Install Network Licence utility by doing one of the following.

   - When running Windows 10, click **Start> All Apps> LUSAS Server Utils> Install Network License**

5. You should already have the license code file, **usb<xxx_sn>.txt** - enter its location, press the OK button, and your license installation is complete.

6. After installation reboot the license server computer

3. Installing LUSAS software on all client computers

It will be necessary to install the **LUSAS Finite Element System** (but not the Sentinel license server) on each client computer, as only the licensing information is shared.

Once the license has been added to the server, all client computers need to be told about the license server. On each client computer in turn, start the LUSAS Configuration Utility. Running this differs according to the operating system in use:

- When running Windows 10, click **Start> All Apps> LUSAS 21.0> Configuration Utility**

On the Licensing page press the **Add…** button and from the resulting dialog select **Existing Network license**. On pressing **Next** there will be a pause whilst LUSAS scans your network for servers. Select the chosen server from the list. If licenses for multiple LUSAS products are available on that server, it will also be necessary to choose one of these.

The option **Make this licence available to LUSAS on this (local) machine** adds the license to the server and makes the licence available to the PC from which LUSAS is run. When the Apply or OK button is pressed the license is added to the fea.key license file. This file is used by the LUSAS Configuration Utility to allow users to access available licenses. This file is not to be manually edited.

Once licences have been added they will appear both on the Licensing page of the LUSAS Configuration Utility and be made available for selection on the Modeller Licence Selection dialog that can be set to always appear during startup of LUSAS.

License renewal

Please note that the process of renewing, upgrading or modifying a license first involves removing the existing license. Therefore you may receive an error message if one or more users have active LUSAS sessions when you attempt to renew the license. If you experience any problems renewing a license, it may be necessary to temporarily add the old license again, in order to keep users working whilst the problem is resolved.

Troubleshooting

The new licenses should become available to all client computers immediately. If this does not occur, it may be necessary to (re)start the Sentinel software on the server, or even to reboot the server computer.

If you have installed the Sentinel software using the LUSAS installation, this can be checked. This differs according to the operating system in use:

- When running Windows 10, click **Start> All Apps> LUSAS Server Utils> Install Network License** on the licence server, and press **Create report…**

In all cases, in the resulting text file, your server computer should be shown in the section **Output from lswhere**, and your license details should be shown in the section **Output from lsmon**. If this is not the case, you should try manually starting the license server.

If you chose to use an existing server, please refer to the Sentinel documentation appropriate to the version of Sentinel that was installed.

There is a known problem with the Sentinel license server when the server machine is rebooted with the USB key absent. In this circumstance the Sentinel server process is started, but does not respond to network broadcasts, and therefore cannot be seen by a search from other (client) machines. Subsequently inserting the USB Key appears to have no effect. To fix this problem, insert the USB Key and then either reboot the server again, or stop and re-start the license server process as described below.

(Re)starting the license server

This is done by going to the location of the installed license software, normally **C:\Program Files\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT** and running the program "**loadls.exe**". This program will allow you to stop and (re)start the license server process for the server machine. To stop any server processes already running, press **Remove**. To start the license server process press **Add**.

For further information on this particular subject please read the SentinelLM System Administrator's Guide html help which can be found here:

- When running Windows 10, click **Start> All Apps> LUSAS 21.0> Tools> Sentinel System Administrators Guide**

Contacting LUSAS Technical Support

If, after rebooting the license server, the LUSAS Configuration Utility on the client machine still cannot see the license server, please generate the following two reports, one from the server computer, and one from the client. These two reports can then be sent to LUSAS Technical Support for further assistance.

To generate the first report:

- When running Windows 10, from the server computer, run **Start> All Apps> LUSAS Server Utils> Install Network License** and press **Create report…**

Note, if you opted to use an existing server, the above link will not be present, because the LUSAS utilities have not been installed. In this instance, you will instead need to insert your LUSAS DVD into the server computer (or use the DVD image that you have created using the LUSAS download file) and, also at the server computer, double click on the file **<DVD drive>:\Sentinel Server\LusasServerUtil.msi** . This will launch the LUSAS utility, and you can then create a report as above.

To generate the second report:

From any client computer, run the LUSAS Configuration Utility and press **Create report…**.

Installing a Standalone USB Key License

Procedure

If you have purchased a USB Key license, the following installation procedure applies:

1. Before you install the LUSAS software

Ensure that the USB key is NOT inserted into the USB port of the computer until instructed to do. Remove the USB key if it has already been inserted.

2. Install the software

Install the LUSAS software as described on page 1.

3. Insert the USB Key

Once the license details page of the LUSAS installation is displayed, you may insert the supplied USB Key in any free USB port. Your operating system should recognise the device and (if necessary) will install the correct drivers. Note that it may do this each time you insert the USB key into a different port.

4. Enter the license code file

You should have the license code file, **usb<xxx_sn>.txt** as an email attachment. Where **<xxx>** is the license number and **sn** is the USB Key serial number. If you do not have a license code file, contact the LUSAS licensing department [licensing@lusas.com]

To install the license:

- Save the file you have been sent to any convenient folder

- In the license dialog that appears during the installation of LUSAS, or using the LUSAS Configuration Utility, on the Licensing tab press the **Add...** button.

- In the resulting dialog, choose **Standalone licence**, click **Next** and enter the location of the license code file and, if you wish, a name to identify the license, finally click **Finish** to add the license.

- Although the new license will be shown in the list, it will not be available for use until you press **Next>** during installation or **Apply** on the LUSAS Configuration Utility.

The license is added to the fea.key license file. This file is used by the LUSAS Configuration Utility to allow users to access available licenses. This file is not to be manually edited.

Changing the product type

For licences issued for, or after LUSAS Version 14.3 only: If your organisation has purchased more than one LUSAS product type, each will be attached to a different USB Key. LUSAS recommends that you enter all of the license code files onto all computers on which LUSAS is installed. Once this has been done, to choose a different LUSAS product exit LUSAS, remove the USB Key, insert a different USB Key, and start LUSAS again. LUSAS will use the product which matches the inserted USB key license options.

The LUSAS Configuration Utility

LUSAS Configuration Utility

The LUSAS Configuration Utility may be accessed after the software has been installed.

Running the utility differs according to the operating system is use:

- When running Windows 10, click **Start> All Apps> LUSAS 21.0> Configuration Utility**

The LUSAS Configuration Utility consists of several tabbed pages that are used to control the following:

- ❏ **Licensing** information for LUSAS on your computer.
- ❏ **Temporary Files** Shows the Windows virtual memory (page) file location(s), the Windows temporary files location, and the LUSAS Modeller and LUSAS Solver temporary file locations.
- ❏ **Memory Usage** Displays current settings for LUSAS Modeller and LUSAS Solver.
- ❏ **Graphics** Specify whether hardware or software drivers are to be used to draw your graphics to the screen.
- ❏ **Modeller Settings** Specify model file locations for LUSAS results and intermediate files.
- ❏ **Language** settings to be used for the user interface.

Notes

- In general, changes made to settings and values using the LUSAS Configuration Utility will not take effect until LUSAS is next run.
- Only Licensing and Graphics pages from the LUSAS configuration utility are displayed during the LUSAS installation process.

Licensing
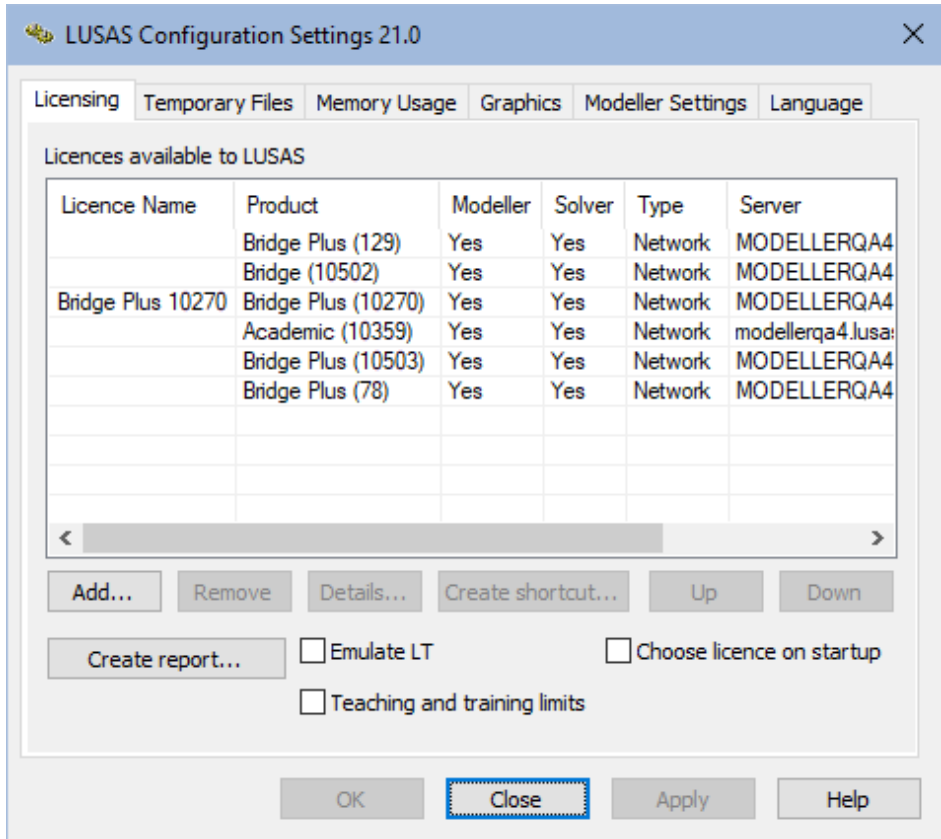
This page of the **LUSAS Configuration Utility** is like the main LUSAS licence selection dialog that can be chosen to be displayed on startup of LUSAS. This licensing page lists all software products that are available for selection, whether the license key includes access to the LUSAS Modeller or the LUSAS Solver application, basic details of the licence type, server name, and the number of days left until expiry. It allows for adding additional LUSAS licences, removing licences and for listing details of those already added.

Invalid licences (those that have either expired or already been completely taken by others prior to the display of the dialog) are greyed out. Licences expiring within 14 days are displayed in red.

The licence selection dialog is always displayed on start-up of LUSAS unless it has been disabled by unchecking the **Choose licence on startup option**, or unless only one licence has been made available to LUSAS.

In summary:

- Use the Licensing page of the Config Utility to add licences to the list of those available and to perform administrative tasks.

- Use the Modeller licence selection dialog to allow users to select a particular licence for use.

Licence order and usage

The order of the licence types listed on the Licensing tab of the LUSAS Configuration Utility follows the order of the keys present in the fea.key license file. If the display of the LUSAS licence selection dialog has been disabled the first licence in the list will be used in preference to all others (if valid and available) otherwise the next licence name in the list will be used, and so on. As licences are used the number of licences available for others to use is updated accordingly.

❑ Network and Standalone licences may be added using the Add License Wizard which can be accessed by clicking on the **Add…** button.
❑ Selected licences can be removed by using the **Remove** button.
❑ Use the **Up** and **Down** buttons to re-order licence types. Changes made to the order of licence types using this dialog will also be made automatically to the fea.key license file.

Licence details

❑ By selecting a licence and then selecting the **Details...** button additional information such as the licence version, Key ID and actual licence expiry date can be viewed.
❑ If the licence is greyed out (and therefore disabled) the errors that occurred on validating the licence will be displayed.

Creating shortcuts

❑ The **Create shortcut...** button provides the means to tie a licence type to a shortcut used to run **Modeller** or **Solver** and with the choice to **Emulate LT** or use **Teaching and Training limits**. It enables LUSAS Modeller or LUSAS Solver to run using a specific licence each time (if that licence is available and valid).

Example of shortcut created:

<LUSAS Installation folder>\Programs\lusas_m.exe
LICNAM=[SENTINELLM,TECHNICAL01,6274(6270)]

Create Report

❑ Generates a text file with a name of your choosing. This file lists licence key and server information for sending to LUSAS Technical Support for assistance if problems are met in getting the licence server software to run correctly.

Emulating LT Behaviour

❑ When **Emulate LT** is selected it causes a reduced set of menu options for'a 'L'te' version to be used instead of those displayed and used by a standard or plus version.

Teaching and training limits

❑ When **Teaching and training limits** is selected no licence is taken. LUSAS can be used as normal but with the restricted model size, node, element and loadcase limits of the Teaching and Training version.

Choose licence on startup

❑ When **Choose licence on startup** is selected it causes the LUSAS licence selection dialog to appear each time LUSAS is run. It does not appear if only one licence has been made available in the configuration utility.

Add Licence Wizard
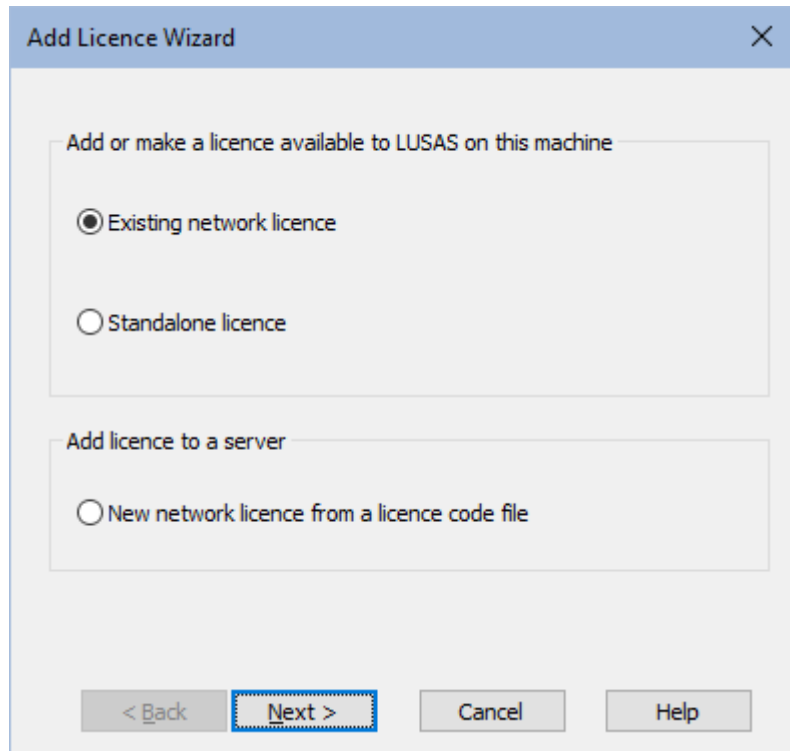
Selecting the **Add...** button on the Licencing page of the **LUSAS Configuration Utility** provides the means to add or make licences available to LUSAS on the machine on which you are working.

- ❑ Dialogs to add or make available existing network or standalone licences may be accessed.
- ❑ New network licences may also be added to any server on your network.

Notes

Choosing to add an existing network licence to a machine or to add a new licence to a server involves a search of available network licences. Depending upon the number of licences and machines on a network this may take some time to complete.

Adding New Network Licence Details

If you are installing a new network licence for the first time your network licence keys are supplied to you by LUSAS in a text file.

- Select the server to which you wish to add a new network licence.
- Select the ⟨...⟩ button to browse to the location of the Licence Code text file supplied for your LUSAS software installation.
- The option to make this licence available to LUSAS on this (local) machine is enabled by default. If unchecked, the licence is only added to the server.
- Entering a licence name is optional.

Notes

- A server name or IP Address of a known server can be manually entered if not discovered when the dialog was first initialised.

- If you are getting communication errors relating to a server and you suspect a clash of port numbers, you may wish to communicate with a particular server on a different port. In this case, the port number can be entered in the server combo, separating the server name from the port with a colon. You must also alter the port on which the server in question is listening. This is done by running Administrative tools on the server machine and differs according to the operating system in use:

  - When running Windows 10, on the server machine click Start> All Apps and browse for Administrative Tools

Once accessed:

1. Double click **Services**, locate **Sentinel RMS Development Kit License Manager** and double click it.

2. Click **Stop**

3. Enter **-PORT <your port number>** in the start parameters text box.

4. Click **Start**

Adding Standalone Licence Details

Standalone licence key codes are provided in a text file. This file is normally sent by email to a named LUSAS contact within your organisation.
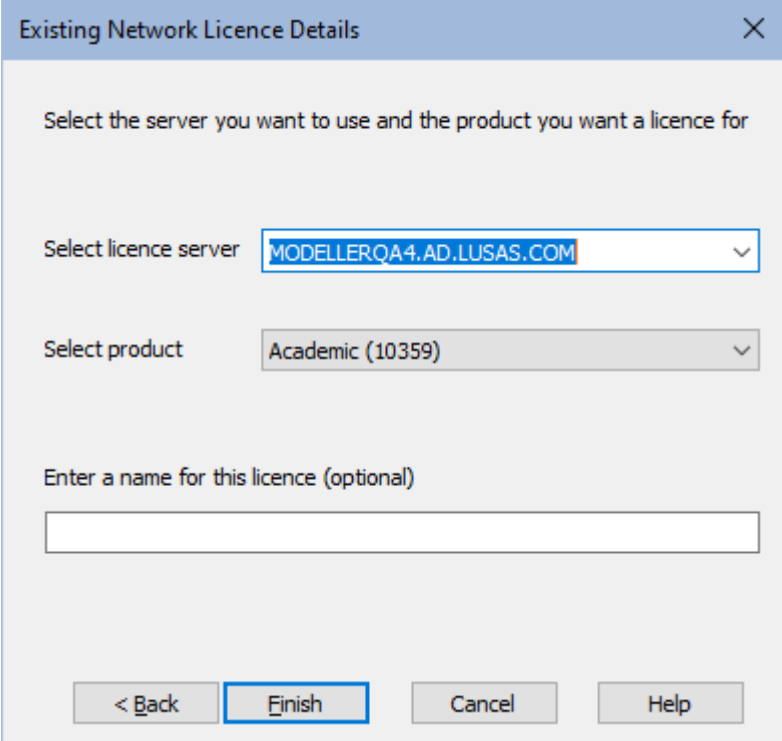
- Select the ![...] button to browse to the location of the Licence Code text file supplied for your LUSAS software installation.
- Entering a name for this licence is optional.

Using Existing Network Licence Details

Your network may already have a number of servers that have LUSAS licences installed. If so, use the Existing Network Licence Details dialog if you wish to make one of these licences available to LUSAS on your machine.

- Select the licence server that contains the list of available products that you wish to choose from.
- Select the product that you wish to make available for use on your machine.
- Entering a licence name is optional.

Notes

- A server name or IP Address of a known server can be manually entered if not discovered when the dialog was first initialised.
- If you are getting communication errors relating to a server and you suspect a clash of port numbers, you may wish to communicate with a particular server

on a different port. In this case, the port number can be entered in the server combo, separating the server name from the port with a colon. You must also alter the port on which the server in question is listening. This is done by running Administrative tools on the server machine and differs according to the operating system in use:

- When running Windows 10, on the server machine click Start> All Apps and browse for Administrative Tools

Once accessed:

1. Double click **Services**, locate **Sentinel RMS Development Kit License Manager** and double click it.

2. Click **Stop**

3. Enter **-PORT <your port number>** in the start parameters text box.

4. Click **Start**

Temporary Files

This page of the **LUSAS Configuration Utilit**y shows the Windows virtual memory (page) file location(s), the Windows temporary files location, and the LUSAS Modeller and LUSAS Solver temporary file locations.
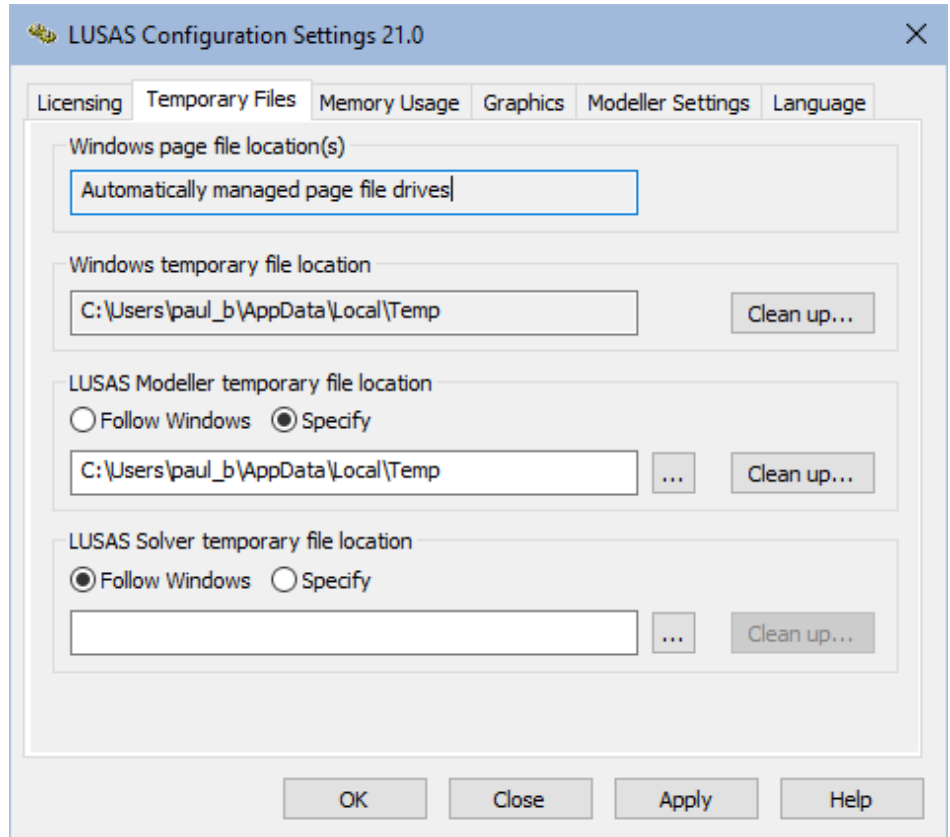

- By default, LUSAS Modeller and LUSAS Solver store temporary files in the same folder as Windows, but it is suggested you specify an alternative folder, e.g. C:\Temp
- Enter the folder names which LUSAS Modeller and LUSAS Solver should use to store temporary files, e.g. C:\Temp
- Use the browse buttons (...) to see a list of available drives, and to easily locate your chosen folder(s).
- Press the **Clean up** buttons to remove old temporary files from your hard disk. This will make more disk space available to LUSAS. Each button acts only on the folder to which it is adjacent.

For further information please see the following pages in the LUSAS User Area of the LUSAS website:

- Advice on where to locate temporary files

- How to relocate Windows temporary files

- How LUSAS uses your PC resources

Disk Clean Up

Pressing the **Clean up** button on the Temporary File Information page of the **LUSAS Configuration Utility** allows you to remove old temporary files from your hard disk.
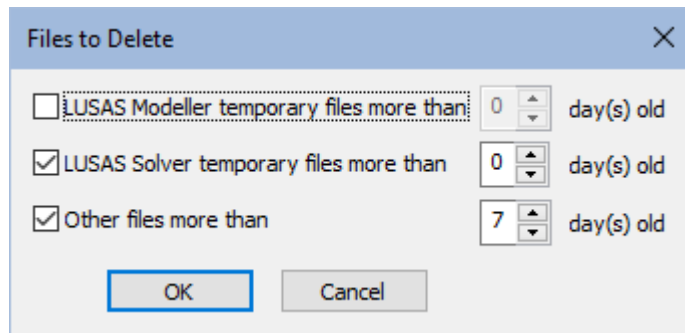

You may delete temporary files that were created by LUSAS Modeller, LUSAS Solver, and/or all other programs. In each case, you may choose the age in days of files to be deleted. 0 days will delete all files; 1 day will delete files created yesterday or earlier; and so on.

Memory Usage Information

This page of the **LUSAS configuration utility** shows the physical memory (RAM) installed in your computer, and also how much of it is in use.

It also shows the paged (disk) memory which is available for use as virtual memory and how much of it is in use.

Additionally, the amount of memory allocated by the currently selected version of LUSAS Solver is shown. You may change this latter amount by using the **Modify Solver memory allocations** button.
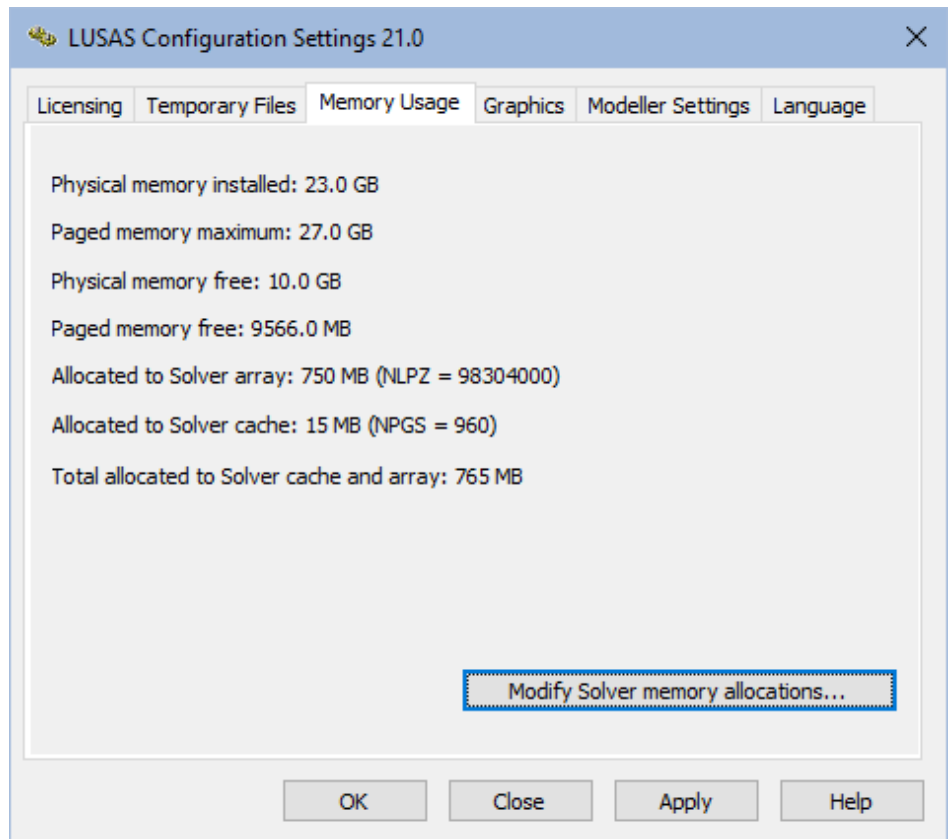
Modify Memory Usage

Pressing the **Modify Solver memory allocations** button on the Memory Usage of the **LUSAS Configuration Utility** page presents this page which lets you specify the amount of memory which LUSAS Solver should use and values of related system parameters.


- ❑ **NLPZ** determines the size of the LUSAS memory in which all the LUSAS calculations are performed
- ❑ **NPGS** specifies the maximum number of data records allowed in the LUSAS data cache
- ❑ **MXELGP** specifies the maximum number of elements in a group.

It is generally recommended that the memory allocation settings for Solver are not changed from their installation default settings.

Owing to the wide range of hardware configurations available and the difference in magnitude between different LUSAS analyses, it is impossible to identify a single set of optimum values for all users. Advice should be sought from LUSAS technical support (support@lusas.com) if you intend to make changes to your PC's memory usage settings.

Graphics

This page of the **LUSAS Configuration Utility** allows you to choose the way that your graphics are drawn to the screen. This is in addition to the hardware acceleration choices that are available from the troubleshooting pages of the advanced display properties in some Windows operating systems that allow you to manually control the level of hardware acceleration and performance of your graphics hardware.
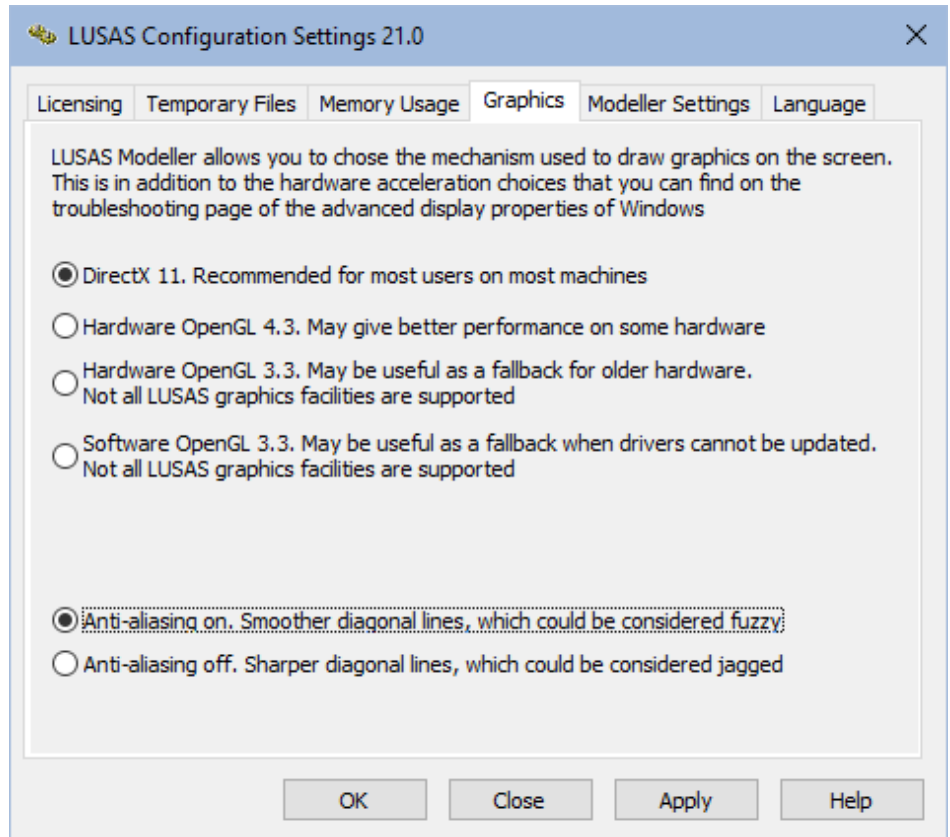

The choices on the LUSAS Graphics page are:

❑ **DirectX 11** Recommended for most users on most machines.

❑ **Hardware OpenGL 4.3** May give better performance than DirectX on some hardware.

❑ **Hardware OpenGL 3.3** May be useful as a fallback for older hardware. Not all the latest LUSAS graphics facilities are supported.

❑ **Software OpenGL 3.3** May be useful as a fallback when drivers cannot be updated. Not all the latest LUSAS graphics facilities are supported.

If problems exist with using a specific driver, contact LUSAS technical support and use a fallback driver if possible until the issue can be resolved.
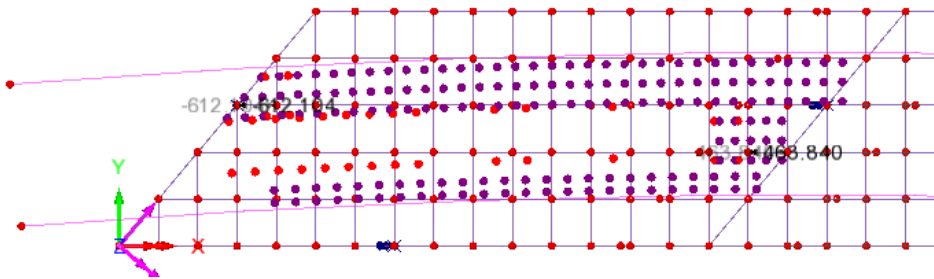
Anti-aliasing

❑ **Anti-aliasing on.** This gives the appearance of smoother diagonal lines, which could be considered fuzzy when compared to the anti-aliasing off option.

❑ **Anti-aliasing off.** This provides sharper diagonal lines, which could be considered jagged but clearer when compared to the anti-aliasing on option.

Anti-aliasing can also be turned on and off within Modeller by accessing the 'View properties' dialog, selecting the 'Screen' tab, and checking (ticking) the 'Anti-alias' check box on or off.
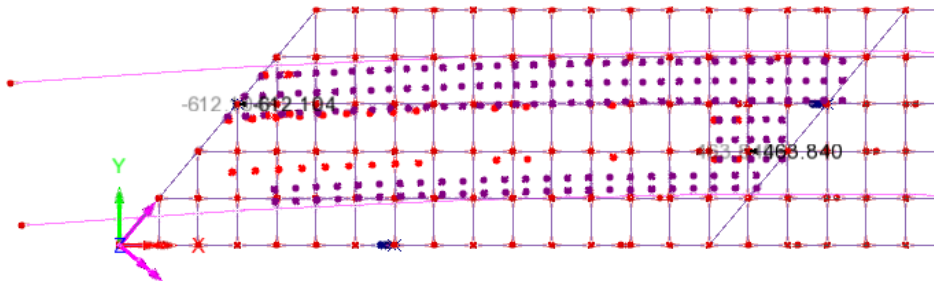

Anti-aliasing on

Anti-aliasing off

Notes:

- Graphics acceleration settings in LUSAS work within the limits of the Windows hardware settings. For maximum graphics acceleration set the Windows hardware settings to 'Full'.

- Problems can occasionally be encountered due to the Hardware OpenGL drivers being used to control the graphics display. If this happens, you should ensure that your graphic card drivers are the latest stable version as provided by the graphic card's manufacturer. Visit the manufacturer's web site to download any updated drivers and restart Modeller to test. If updating your graphics drivers does not solve the problem, software graphics acceleration will have to be used. Run the LUSAS Configuration Utility and select the 'Software OpenGL' driver option on the Graphics tab to do this.

- If you are installing LUSAS (or changing the graphics settings in the Configuration Utility) via Remote Desktop you will need to set the 'Software OpenGL driver' option.

Modeller Settings

This page of the **LUSAS Configuration Utility** allows you to reinstate any Modeller warnings that you previously chose to stop the display of, reset the stated default Modeller settings for the current user, and control where LUSAS results and intermediate files are written to.
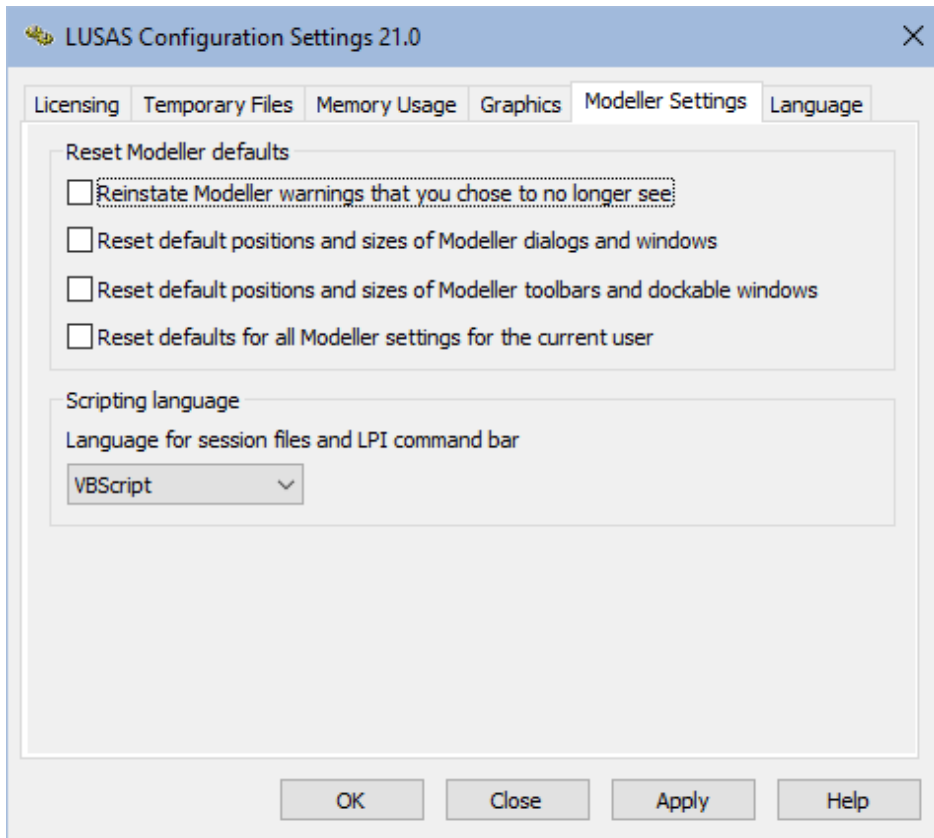
Reset Modeller defaults

The following Modeller defaults can be reset on this page:

- ❑ Reinstate Modeller warnings that you chose to no longer see
- ❑ Reset default positions and sizes of Modeller dialogs and windows
- ❑ Reset default positions and sizes of Modeller toolbars and dockable windows
- ❑ Reset defaults for all Modeller settings for the current user

Scripting language

As used for session files and by the LUSAS Programmable Interface (LPI) command bar. Choices are:

- ❑ **VBScript** - Microsoft provides a scripting engine for VBScript as part of Windows, so it is installed on users' machines by default. LUSAS recommends using Microsoft VBScript.
- ❑ **Python** - This is not part of Windows and is not installed on users' machines by default. The ability to create Python session files is provided for the use of expert Python programmers.

Python notes

- Python can be downloaded from http://www.python.org/downloads/windows.

- Neither Microsoft nor Python's standard library provide a Python ActiveX scripting engine so if this scripting choice is required it is also necessary to install the pywin32 package 'Python for Win32 (pywin32) extensions (2022)' available from https://github.com/mhammond/pywin32. Note that this does not have the same level of development and support as Python's standard library.

- Installation instructions for 'Python for Win32 (pywin32) extensions (2022)' are available at http://www.lusas.com/user_area/download/Using Python with LUSAS Modeller.pdf along with two Python scripts to test that, when installed, Python is working correctly with LUSAS Modeller.

Language

This page of the **LUSAS Configuration Utility** allows you to select the language you want the user interface of the LUSAS application to use the <u>next time it is started</u>.
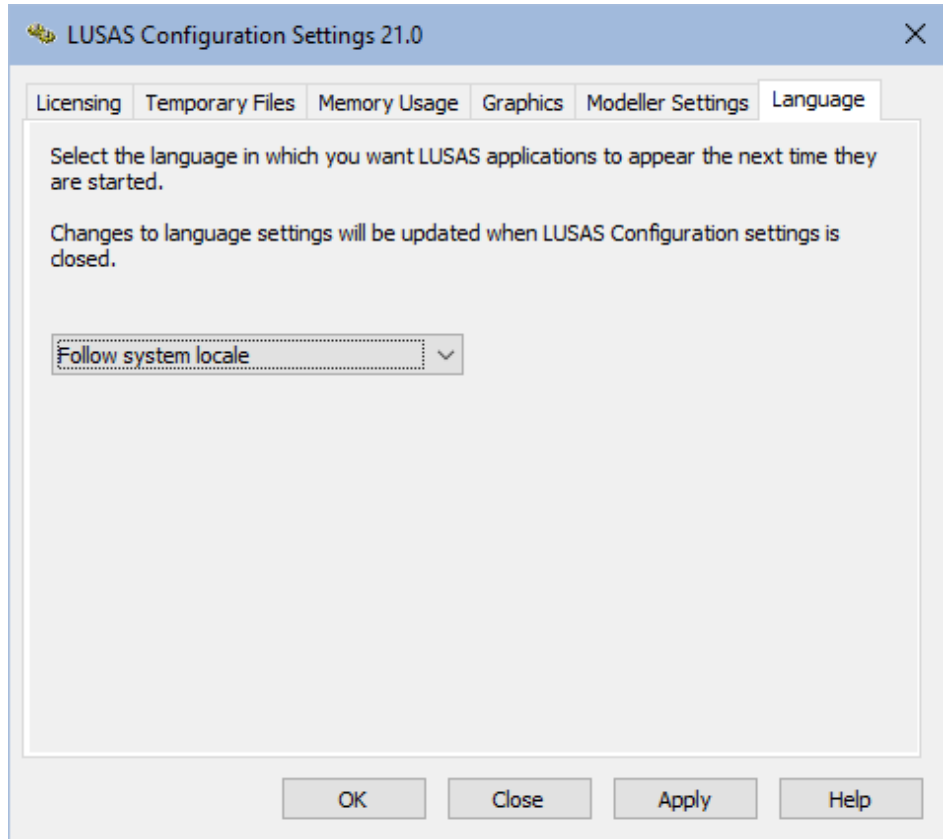
Current language options are:

- ❑ **Follow system locale**
- ❑ **English (United States)**
- ❑ **Chinese (Simplified) China)**

The default setting is 'Follow system locale' which in most cases defaults to English (United States). However, if the system local (also known as "Language for non-Unicode programs") is set to Chinese, then Chinese (Simplified) China) will be used.

In addition to changing your language settings for LUSAS use you will also have to ensure the correct regional language settings are specified and the appropriate character sets are installed on your PC.

Potential Installation and Running Errors

If you experience problems after installing a valid LUSAS license when trying to run the software, check the error file LusasM_*.err (which is located in your startup folder) and any LUSAS Solver text output files (<jobname>.out) (which are located in your working folder.) An explanation of the common errors that may be encountered can be found at http://www.lusas.com/support/licence_key.html

If you encounter continued problems, please contact LUSAS Technical Support, [support@lusas.com] attaching the most recent LusasM_*.err file and a description of the licensing option which you are using, along with any other error messages you are obtaining. It is also requested that you run the LUSAS Configuration Utility and press **Create report…** and attach the report created to your email.

Information on problems with a particular license can be retrieved selecting a greyed-out license on the licensing page of the LUSAS Configuration Utility, or on the Modeller licence selection dialog, and pressing the Details button. The errors displayed can be copied and pasted for sending to LUSAS Technical Support,

Network (Floating) license installation error messages

If you are experiencing problems with installing or using the network license, full explanations of messages and fixes are given on the LUSAS website http://www.lusas.com/support/error/sentinellm_errors.html

See Contacting LUSAS Technical Support for details of how to create reports for sending to LUSAS Technical Support.

If you do not have a local DNS running on your network

If you do not have a local DNS (domain name service) running on your network you may have problems accessing machines in your network by name.

One example of this would be if you are using your Internet Service Provider's (ISP's) DNS servers to resolve machines outside your office but they also try to resolve your internal machine name and fail.

The situation will become more common as more ISP's use an advertising technique called DNS hijacking - this is where a user types a name in a browser and is either unsure of the exact site or spells it wrong. The ISP will then takes them to a different page often offering some sort of advertising or connection information (if on a hotspot). An unfortunate side effect is that, if a local machine does not have a cached reference to another local machine, it will ask the DNS for the address. If no local DNS is found/setup it will request the information from the ISP's DNS, and this will return its own address instead of the real local machine. The solution is to either install a DNS program or apply a workaround.

Installing a DNS program

If you do not have a Windows Server operating system running (which would have DNS) you would need to obtain and install a DNS program to run on one of your Windows machines. BIND is probably the most frequently used (http://www.isc.org/software/bind/). After installing the DNS server give that machine a static IP address, then specify that DNS server first in your router settings.

To create a static IP address you only need to create a reservation in your router. You can then enter that IP address in the LUSAS Configuration Utility program when you select "Add a new license"

Workaround without installing a DNS program

A workaround, without having to install a DNS program, is to use the IP Address and not the machine name in the LUSAS Configuration Utility program. If the Sentinel license server is on a machine which obtains its IP from DHCP then the server's IP address should be set and reserved in DHCP. This will ensure the server always has the same IP address. Use this IP address in the LUSAS Configuration Utility program.

Problems with Hardware Graphics Drivers

Problems can occasionally be encountered due to the Hardware OpenGL drivers being used to control the graphics display. This will only occur when the LUSAS Hardware OpenGL driver option is also selected on the LUSAS Configuration Utility. If this happens, you should ensure that your graphic card drivers are the latest stable version as provided by the graphic card's manufacturer. Visit the manufacturer's web site to download any updated drivers and restart Modeller to test.

If updating your graphics drivers does not solve the problem, software graphics acceleration will have to be used. Run the LUSAS Configuration Utility and select the Advanced software OpenGL drivers option on the Graphics tab to do this.

Computer hangs on reboot when USB Key inserted into USB Hub

When using a USB Key inserted into a USB Hub if the computer fails to reboot remove the USB Key from the USB Hub and insert directly into a USB port on the computer.

LUSAS