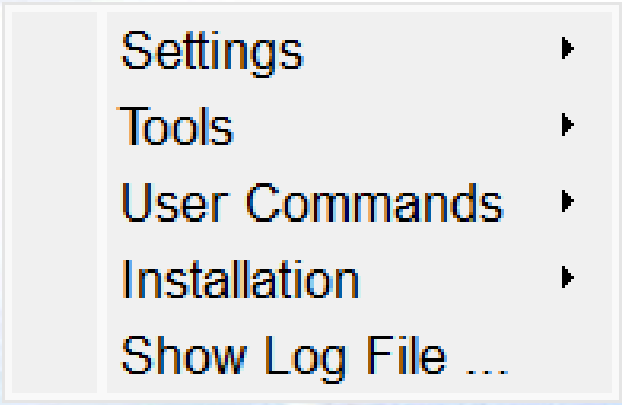
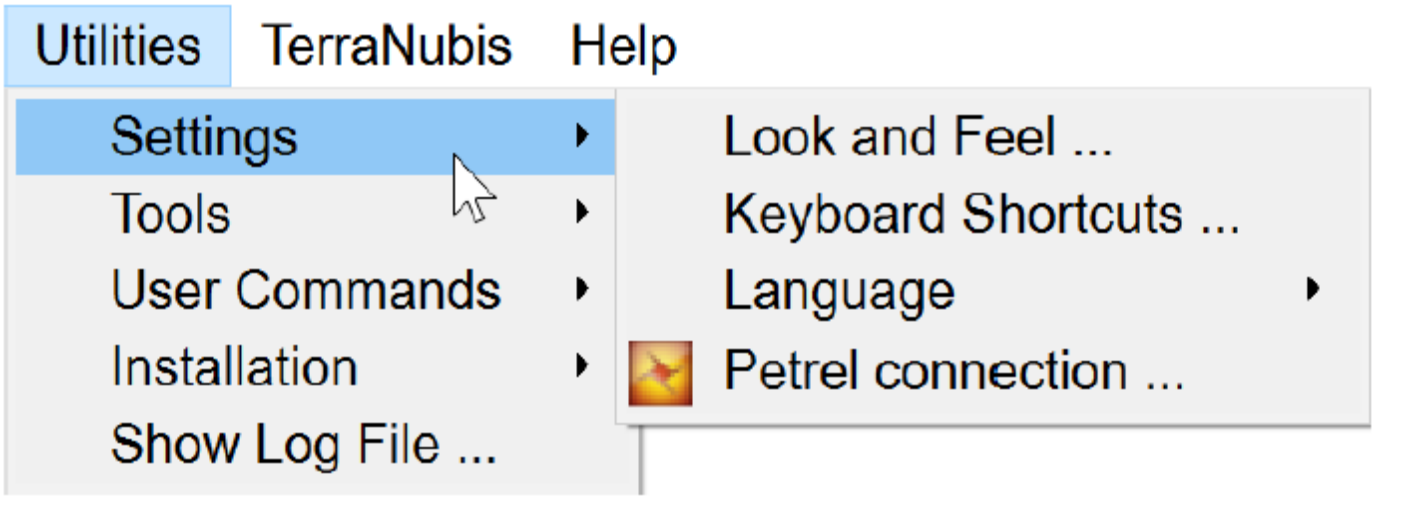
9 Utilities

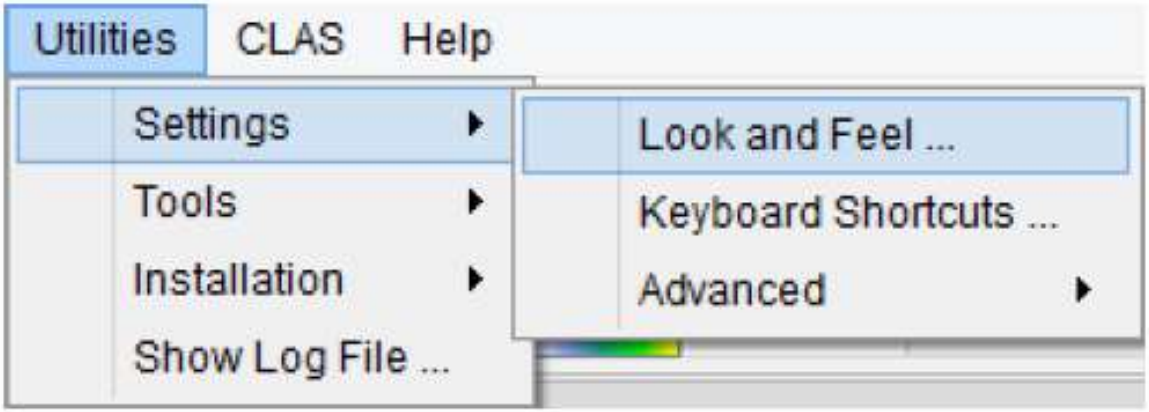


9.1设置

The settings for *Fonts*, *Mouse*, *Keyboard*, etc., can be changed from *Utilities* > *Settings* >



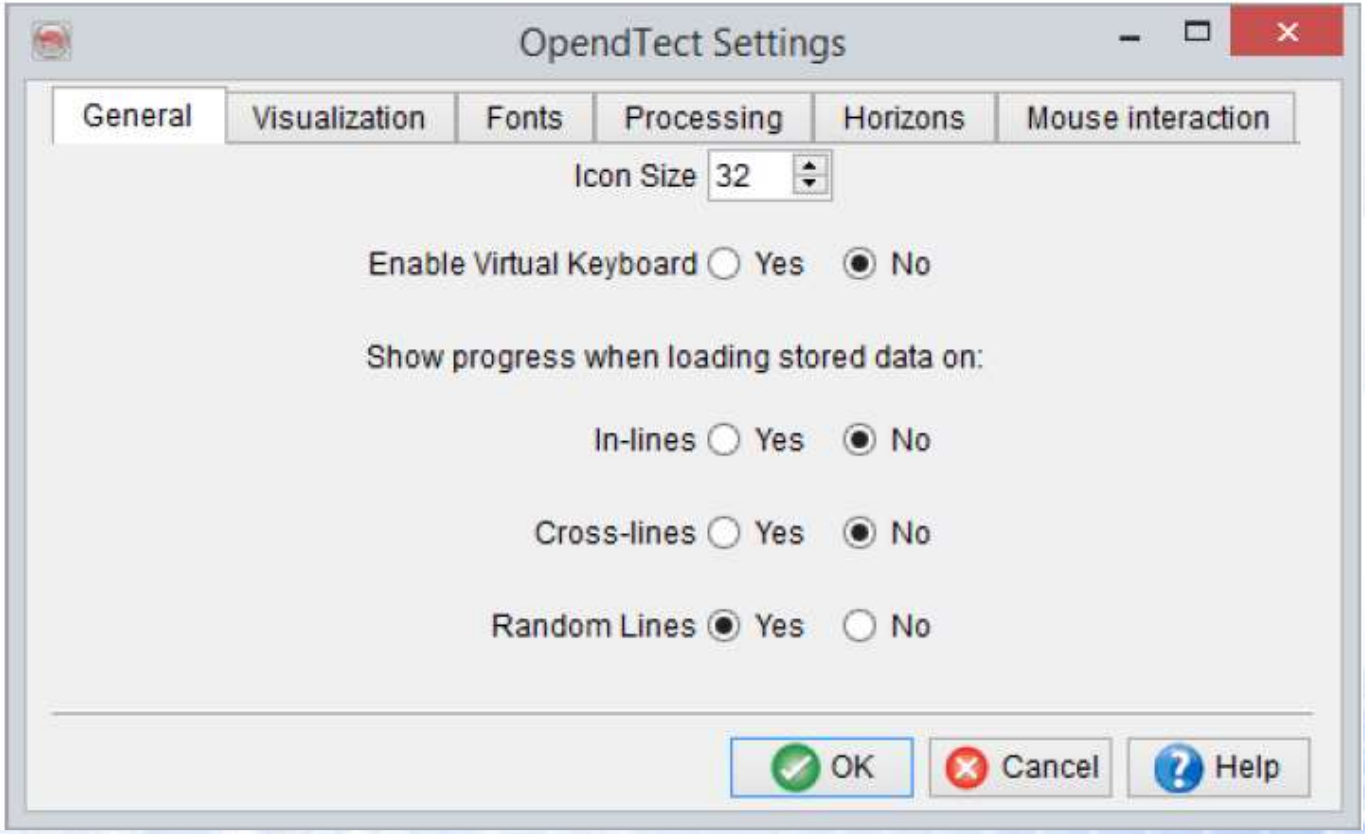
9.1.1 Look and feel



This option brings up an interface containing several tabs for defining various settings in OpendTect:

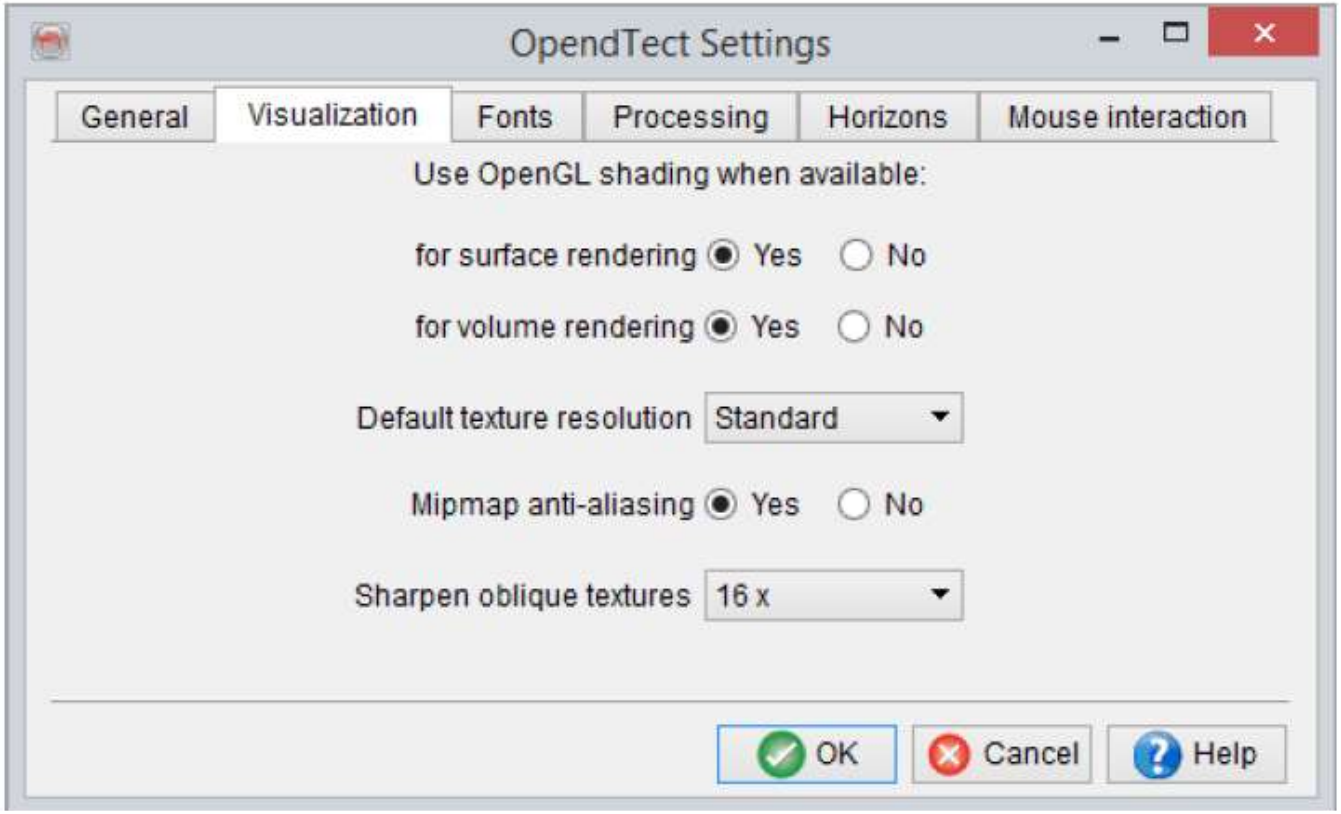
These are explained in detail below:

General



Default Icon Size is 32. For systems with smaller screens (esp. laptops) it may be useful to reduce this value to 28 or even 24. In combination with reduction of Font size, this can prevent windows be 'oversized' for the screen.

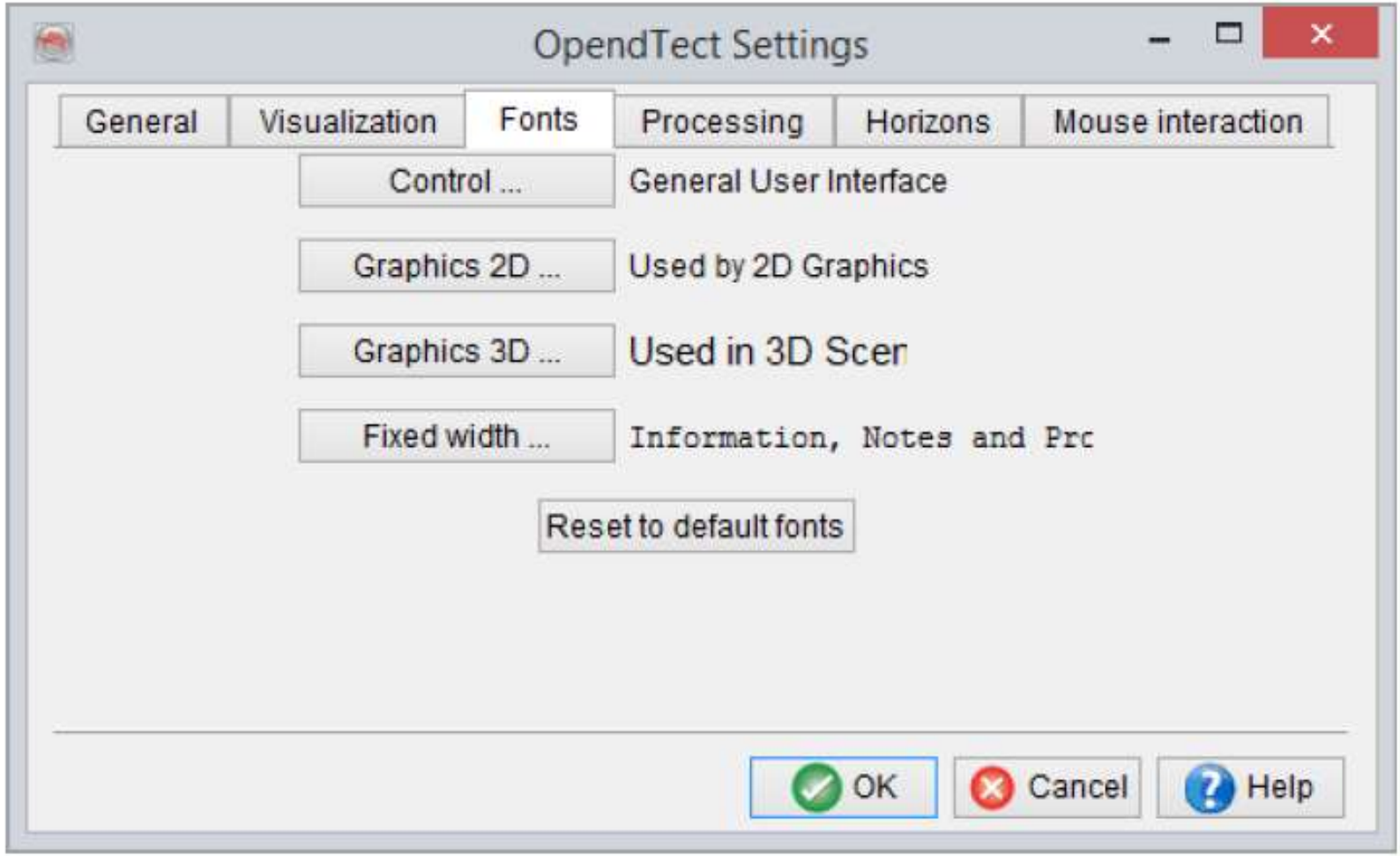
Visualization



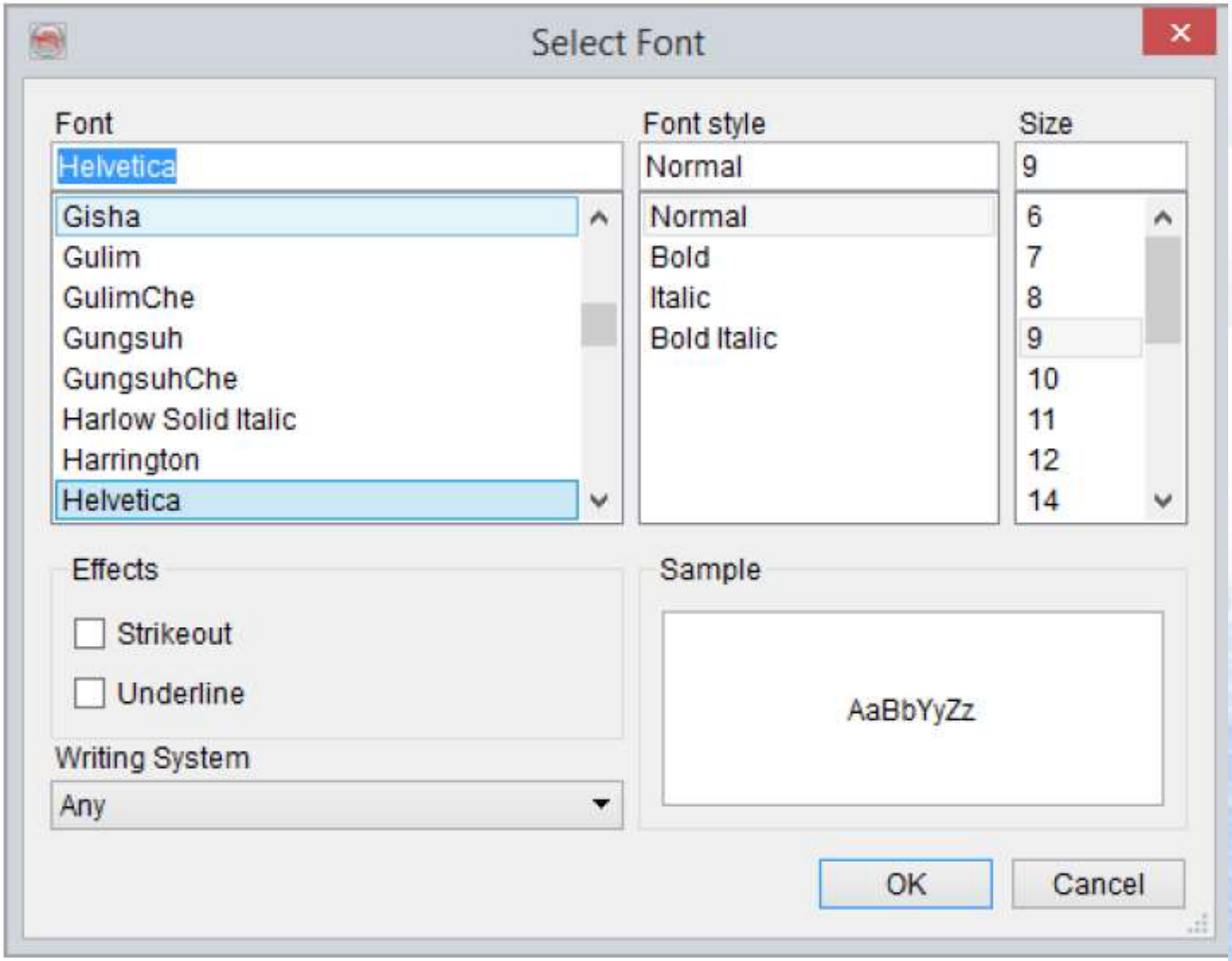
In the visualization tab , you may choose for OpenGL shading, also for volume rendering, or switch off this option.You may also define the texture resolution factor to one of these three settings:

Users facing data visualization issues may significantly improve their results by turning off the shading and setting the resolution to Standard.

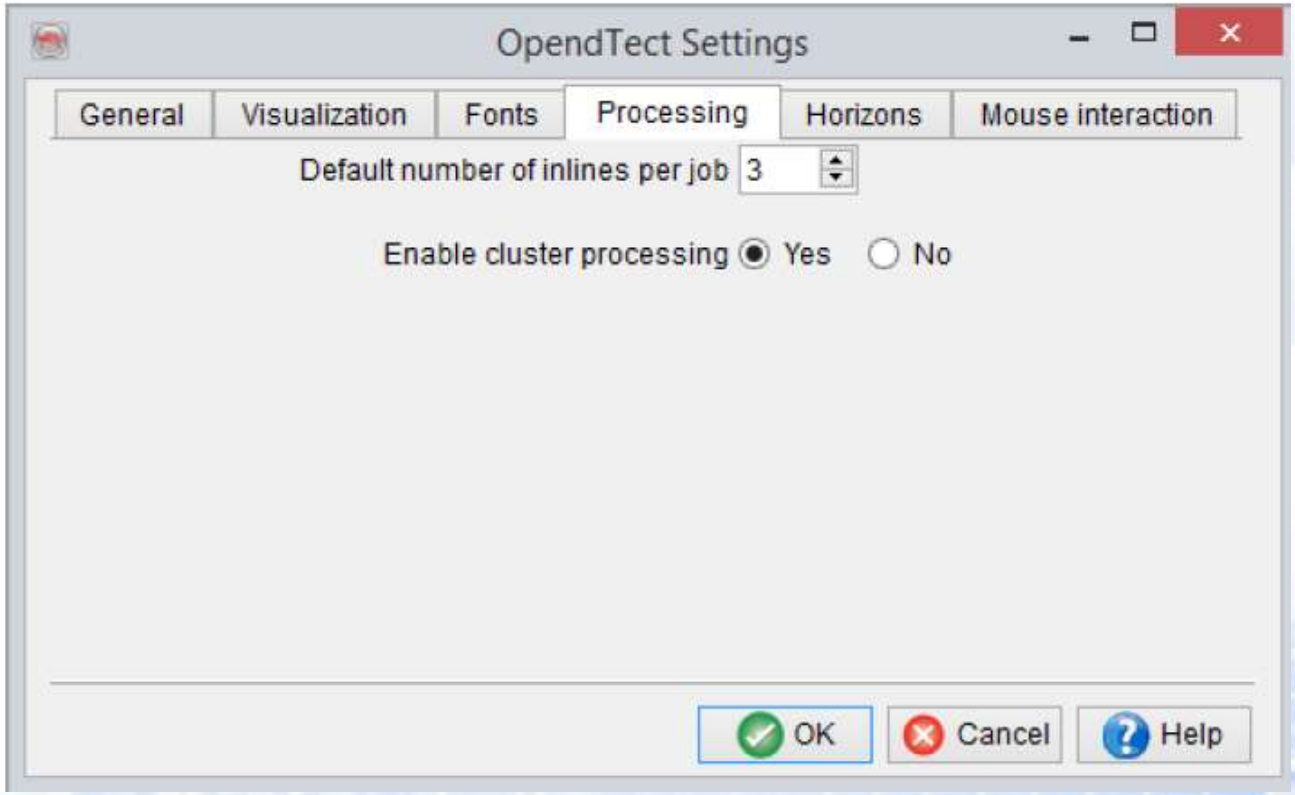
Fonts


OpendTect Settings
General
Visualization
Fonts
Processing
Horizons
Mouse interaction
Control ...
General User Interface
Graphics 2D ...
Used by 2D Graphics
Graphics 3D ...
Used in 3D Scer
Fixed width ...
Information, Notes and Prc
Reset to default fonts
OK
Cancel
Help

Clicking on any of the listed buttons brings up a standard font definition window:

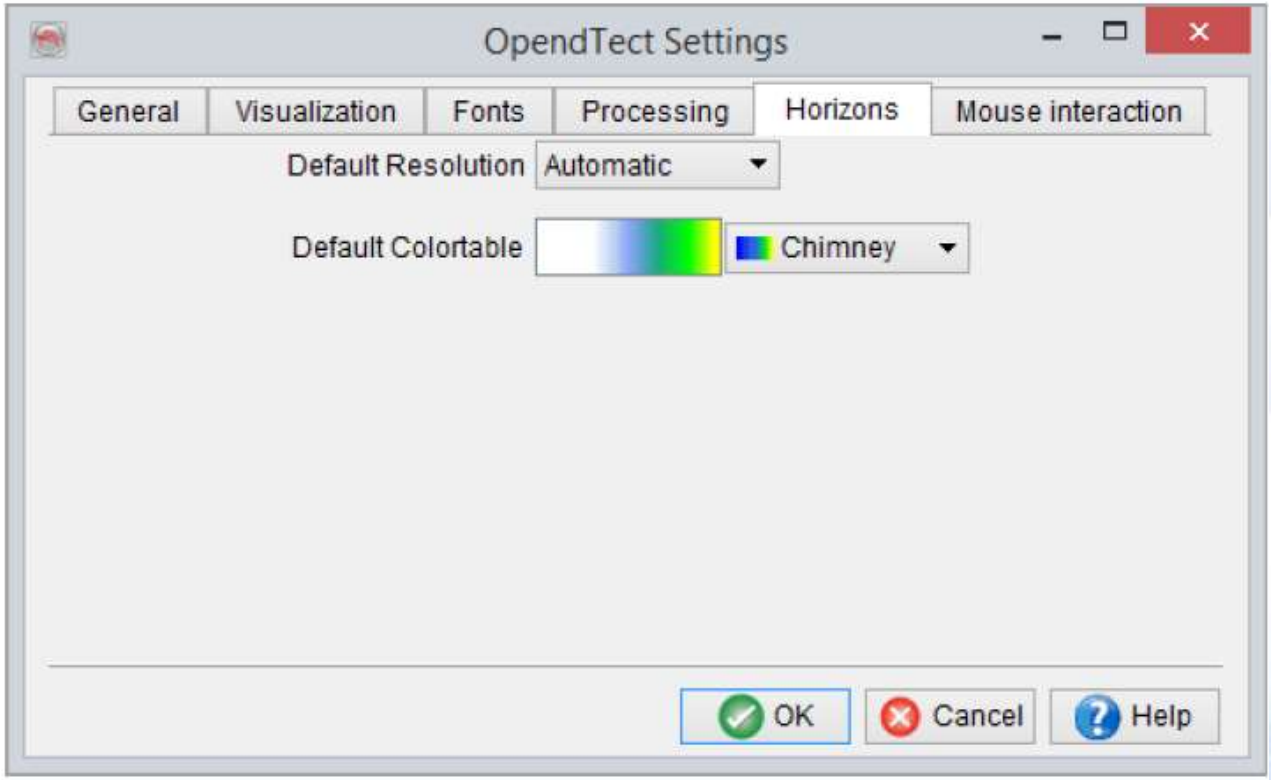


Processing



Please see the following sections for full details of Batch Processing and Cluster Processing.

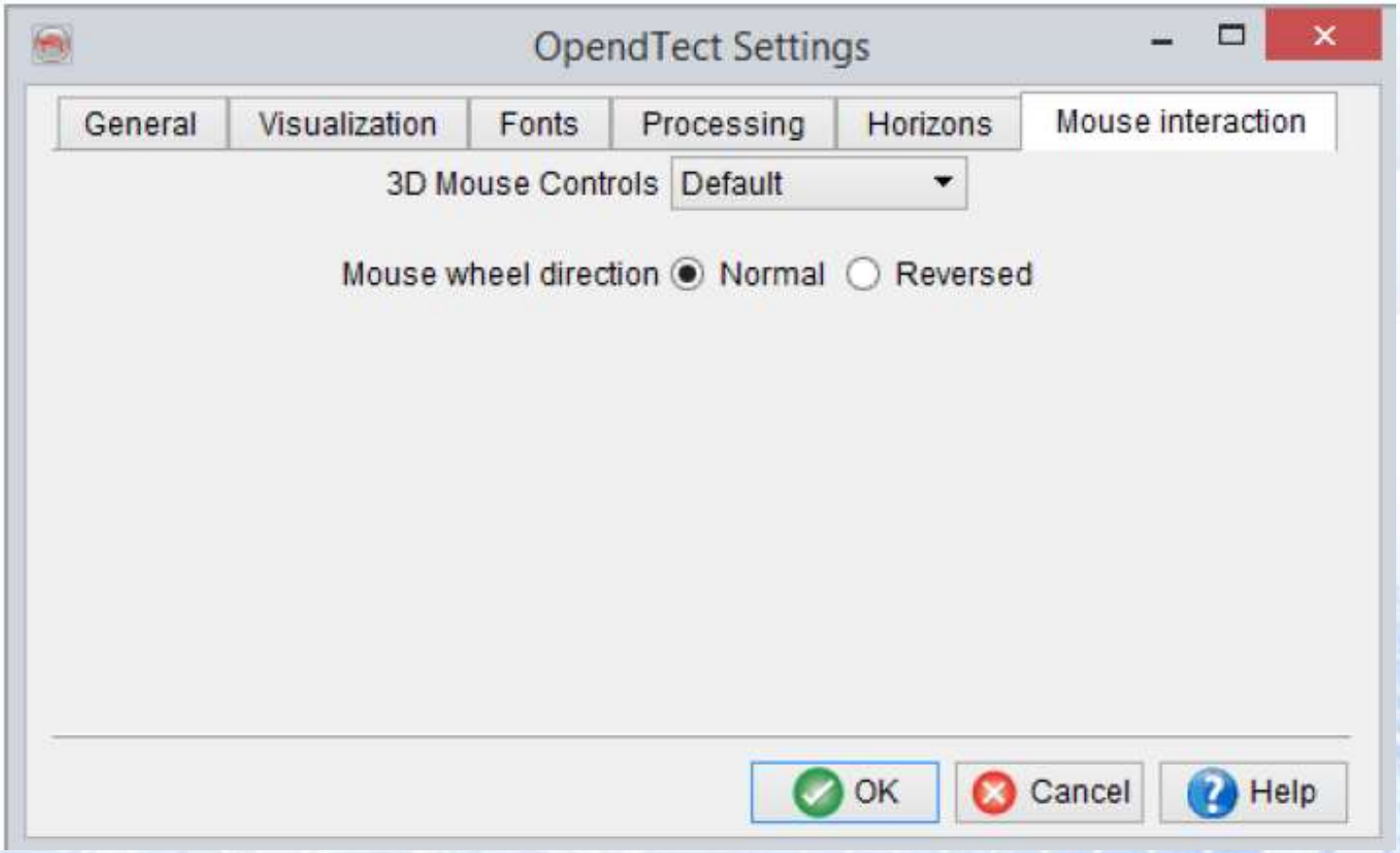
Horizons



Using this option, one may set both the default resolution and default colortable for horizons. This is an especially helpful option for orientation in the early stages of a project when many horizons are loaded.

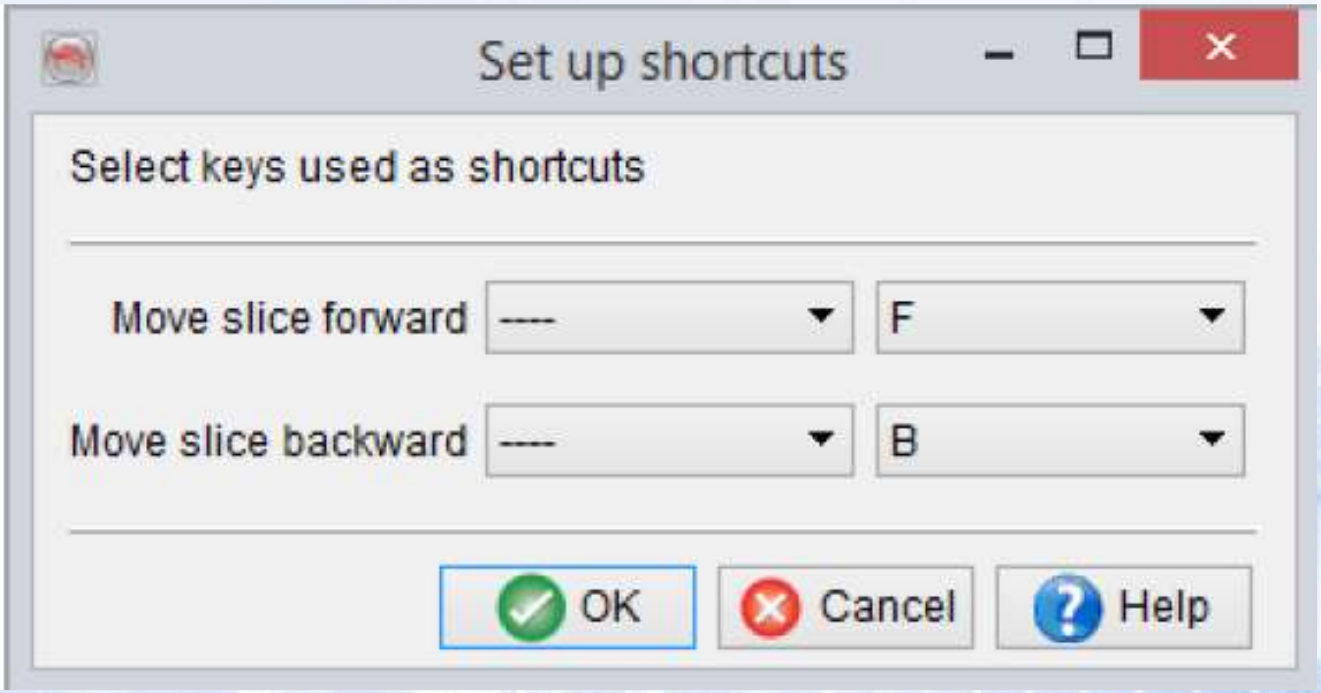
As with many of the other settings, a restart is required to apply these defaults.

The mouse buttons can be set differently. System administrators can implement user-defined mouse button actions.

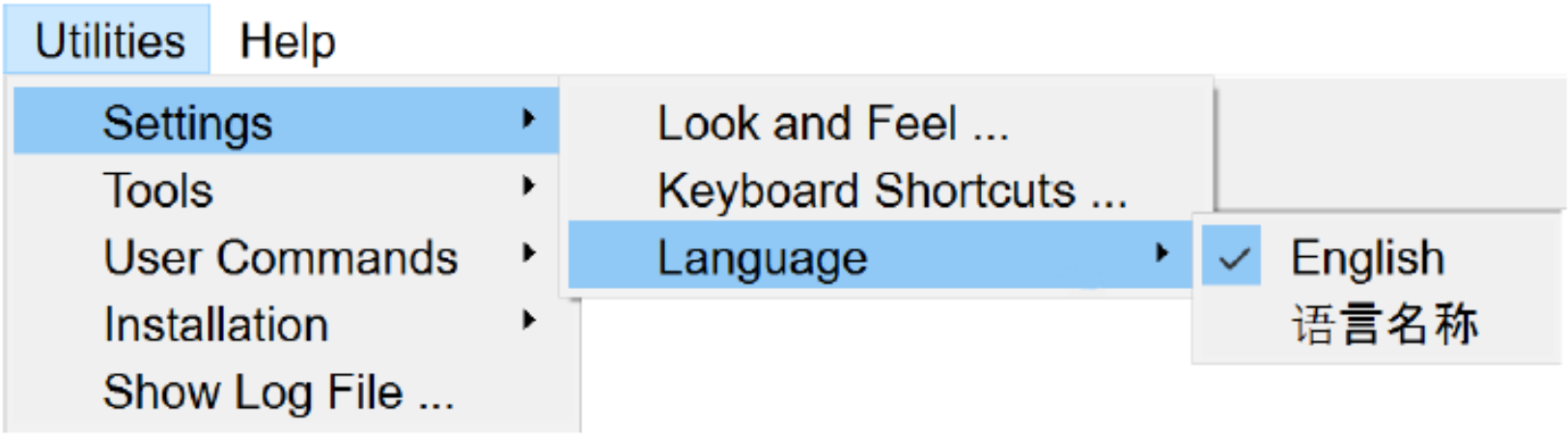


9.1.2快捷键

The user can define his/her own keyboard shortcuts to move a slice forward/backward. The user can use one key (set the first key to no-button) or a combination of control or shift key, plus another key which can be selected from a long list.



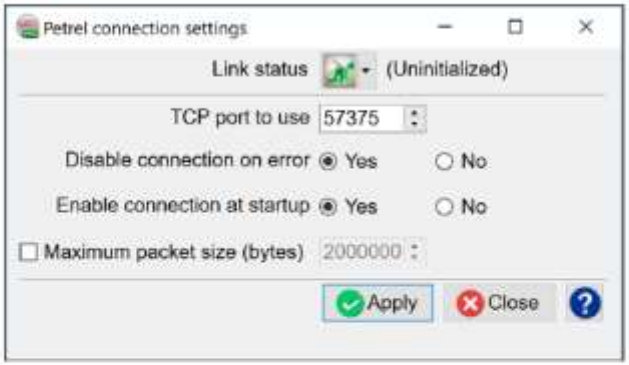
9.1.3 Language



The language settings contain two options: English or Chinese.

9.1.4 Petrel Connection

Petrel connection settings* can be set/modified by clicking on PetrelDirect status button  (located in the lower right corner of the main OpendTect window).



Link status: the icon shows the status of connection to Petrel* and can be clicked on to change it:

 - disabled (click on it to Enable connection)

 - uninitialized (connection is enabled, i.e. will be activated once PetrelDirect is used; click on it to Initialize now or use drop-down menu next to it to Disable connection)

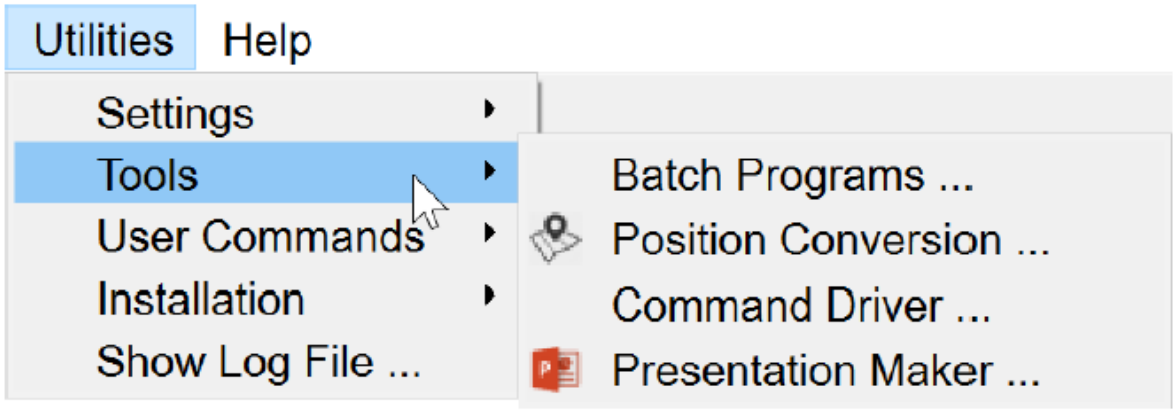
 - active (click on it to Disable connection)

TCP port to use: TCP port number must be the same as the port number specified on the Petrel* side. The default value of 57375 should work in most cases.

The default value of TCP port can be changed using DTECT_PETREL_PORT environment variable. In doubt consult your system administrator.

*is a mark of Schlumberger.

9.2 Tools


Utilities
Help
Settings
Tools
User Commands
Installation
Show Log File ...
Batch Programs ...
Position Conversion ...
Command Driver ...
Presentation Maker ...

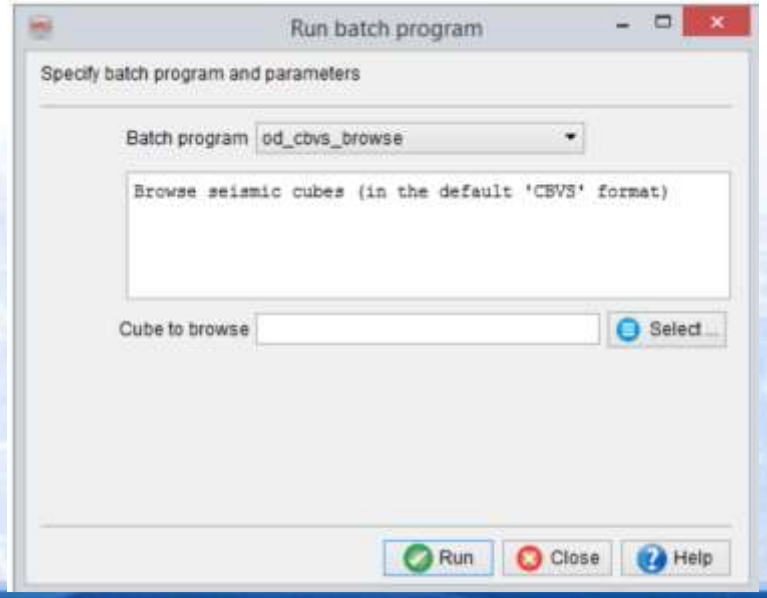
9.2.1 Batch Programs

To run the batch program go to: *Utilities* > *Tools* > *Batch programs*

Choose the batch program you need to run, the available are: cbvs_browse, cbvs_dump, lmhostid, glxinfo, ivfileviewer. The text box will show comments and details.

If *another OpendTect batch program is chosen*, fill in the required and (if needed) the optional parameters (indicated by the square brackets "[ ]").

The batch program will start in a new xterm window. For example, if a batch program is *cbvs_browse* like shown below, the cube to browse should be selected to run a batch program.

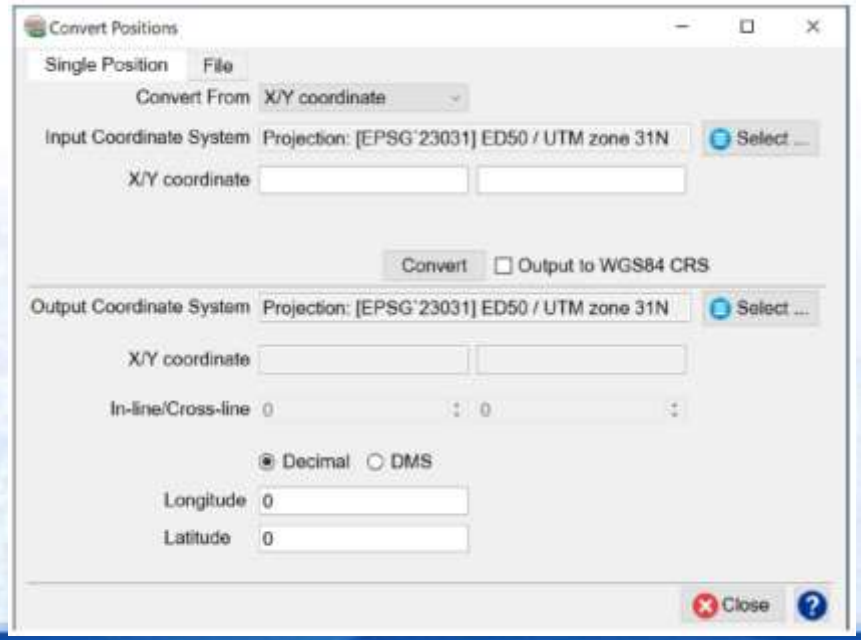


9.2.2 Position Conversion

Position Conversion is a utility that can be used to convert the position pairs or coordinate system. The user specifies an X/Y coordinate, or In-line/Cross-line, or Latitude/Longitude pairs, then presses *Convert* to obtain different position pairs or to convert to a different X/Y coordinate system.

This utility can be launched either from Utility >Tools > Position Conversion, or from Survey selection menu (Survey > Select/Setup > icon).

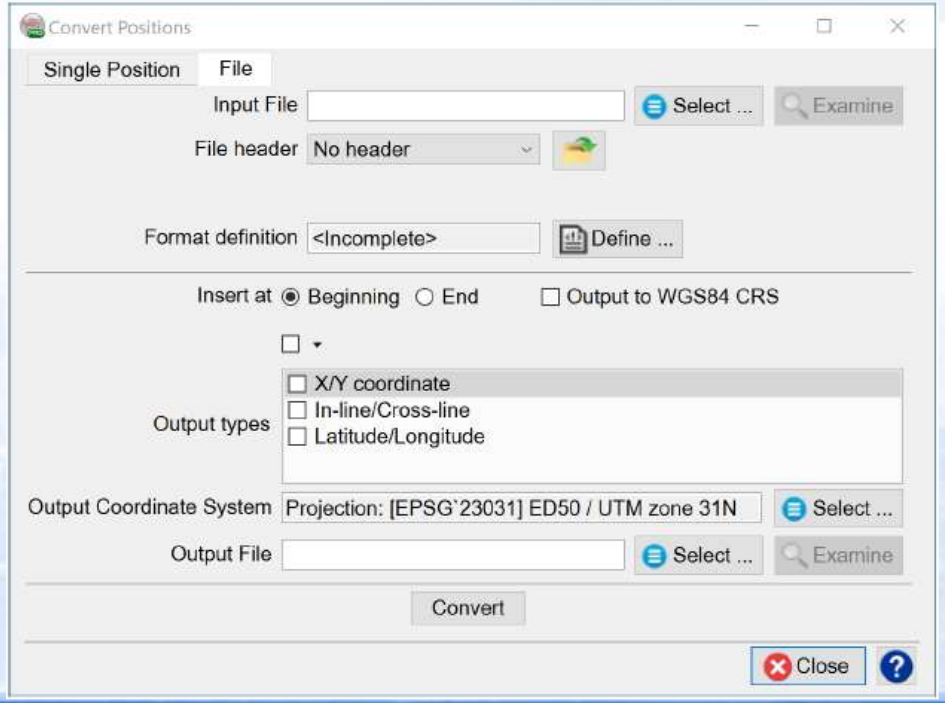
In the position conversion window, there are two modes available: *Single Position* or *File*.



In the Single Position mode, the following conversions are supported:

- X/Y coordinates to In-line/Cross-line and vice versa
- X/Y coordinate to Latitude/Longitude and vice versa
- X/Y coordinate CRS1 to X/Y coordinate CRS2

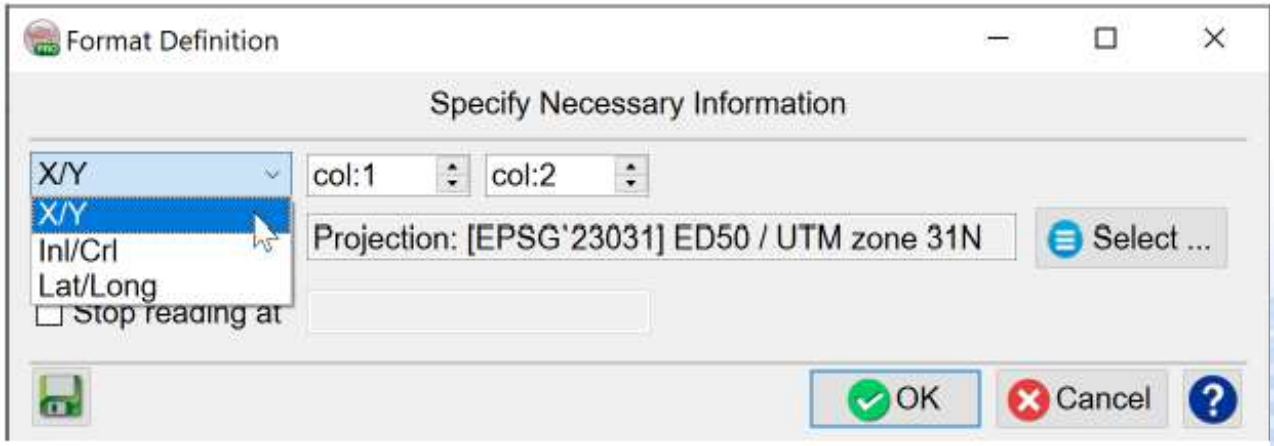
For Latitude and Longitude, output can either be in Decimal or Decimal-Minute-Second (DMS).



In *File* mode, the user browses the input file, defines the file's format and creates a new output file. By specifying the output types (X/Y coordinate, In-line/Cross-line, Latitude/Longitude), the coordinate system to convert to, the output file, and pressing the *Convert* button. The desired conversion is written to an output file.

Input fields are not allowed to use '!' symbol in their name.

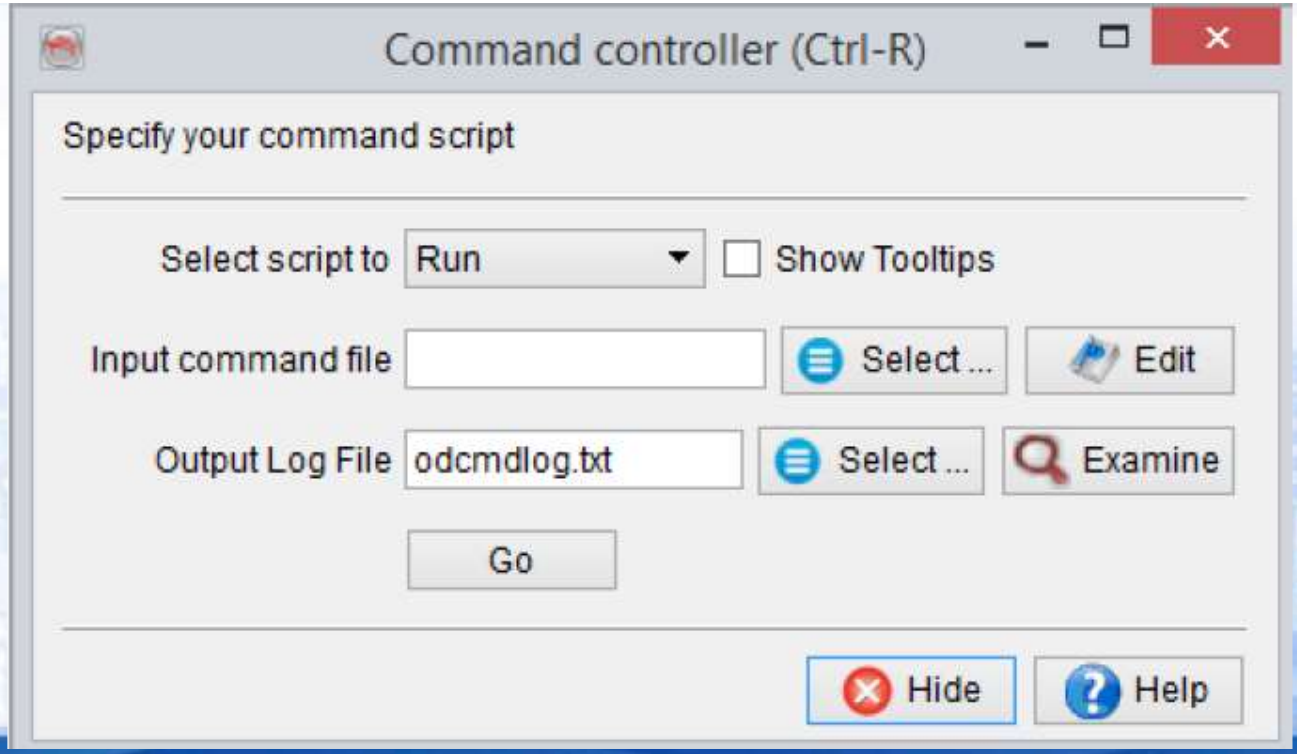
The user should be able to select which columns are e.g.: X/Y. The output should be identical to the input file (header and all data columns) and just add columns for new values.



The *Format Definition* can specify which row holds values for conversion. The rest of the values in the file will be kept the same in the output file.

9.2.3 Command Driver

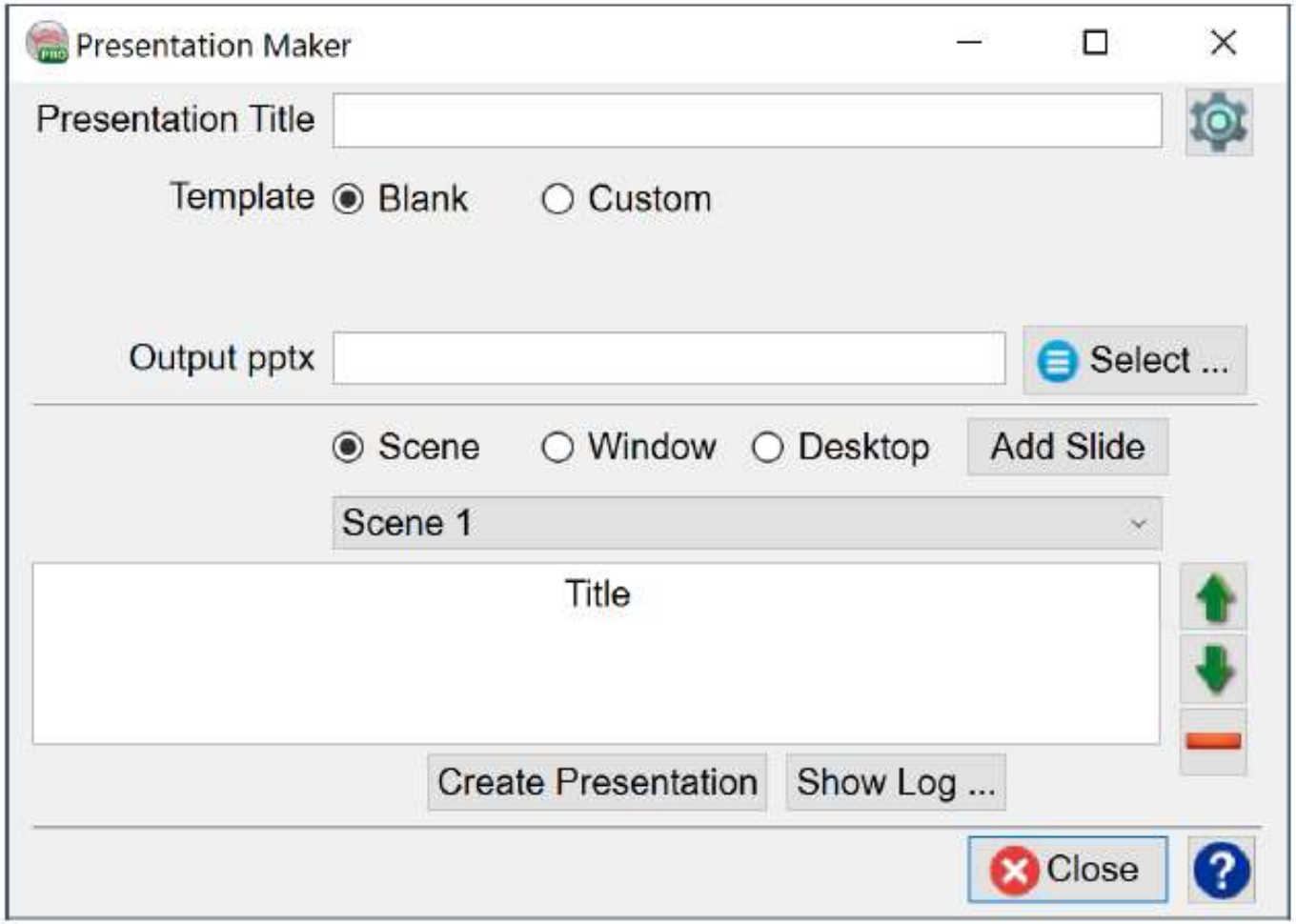
The *Command Driver* offers automated control of the current OpendTect application from a command script. The command script is a replacement for a series of keyboard and mouse interactions performed by the user. It can be used to automate parts of the workflow, and helps to speed up executing repetitive tasks or giving automated demonstrations in OpendTect.



The Command Driver was created as a tool to make automated testing of the OpendTect releases possible. That means it is not optimized for usage as a scripting tool. It is clear, however, that power users have been starting to use the Command Driver tool for this purpose.

The list of available commands, their syntax, and semantics can be found in the Command Driver Manual.

9.2.4 Presentation Maker Plugin



Introduction

Python-pptx is a Python library for creating and updating PowerPoint (.pptx files). The OpendTect 'Presentation Maker' plugin uses this library to create a PowerPoint presentation from scene, window or desktop screenshots.

Miniconda3

OpendTect 6.6 comes with a basic Python environment (Miniconda3). This basic Python environment includes python-pptx. This package needs to be installed to use the Presentation Maker out of the box. The additional Python environments Math Kernel Library (MKL) and/or Cuda10 can also be installed. These packages also include python-pptx. Therefore it is no longer needed to install Python separately. Of course this is still possible and might be what you want.

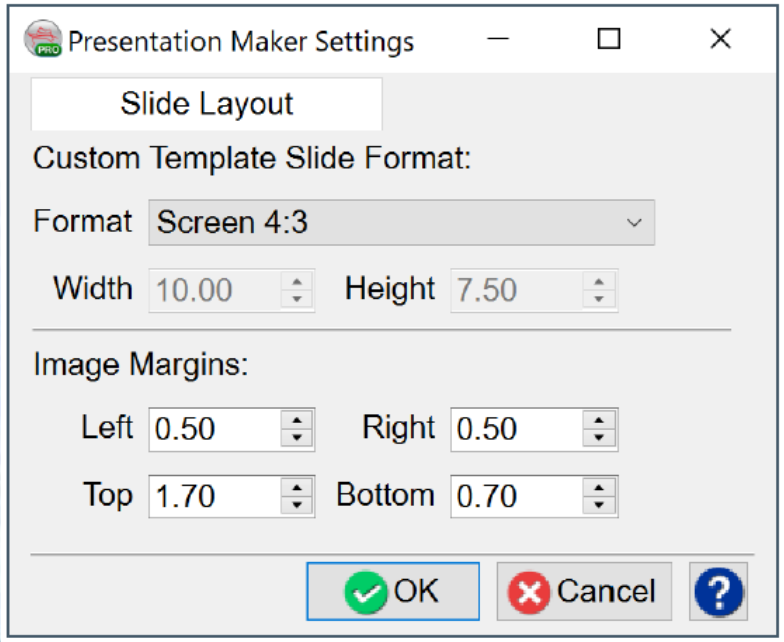
How to make the presentation

A presentation can be made in 2 different styles, as a blank presentation or by using a custom template (master) PowerPoint presentation. When you use a blank option, the template which is part of the python-pptx installation will be used and all slides will have a whit background. When you choose the custom option, you need to select an existing PowerPoint presentation. The plugin expects a PowerPoint file (a pptx file, not apotx!) with 2 slides. The first slide should be the title slide, i.e. a slide with the 'Title Slide' layout. The second slide should be a regular slide with 'Title and Content' layout. New slides will use the layout of the 2nd slide. Click on the settings icon to specify the slide format and the image margins.

Three different images can be added as slides: Scene, Window or Desktop.

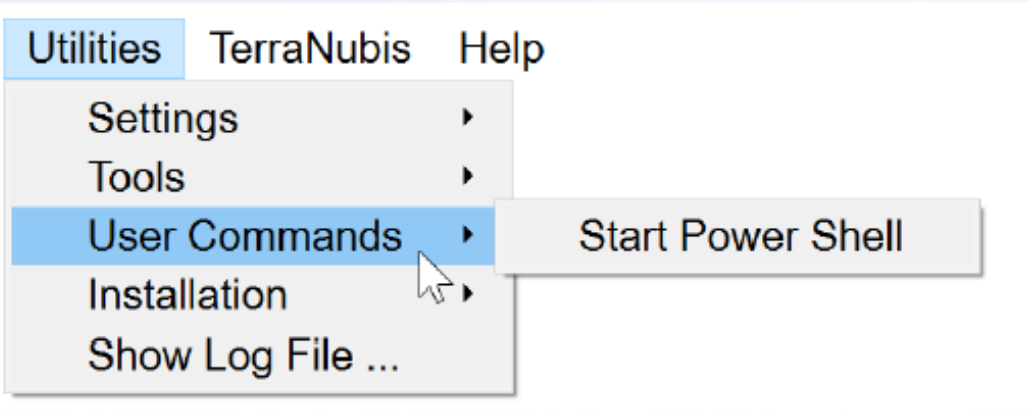
- Scene: the scene will be captured in an image. if you have multiple scenes, choose the scene you'd like to add. The name of the selected tree item will be the name of the slide.
- Window: image of the selected window will be added. Note that windows on top of the selected window will also be captured in the image.
- Desktop: an image of the full desktop will be added.

The Settings can be adjusted by using the window that pops up on clicking the Settings icon :



9.3 User Commands

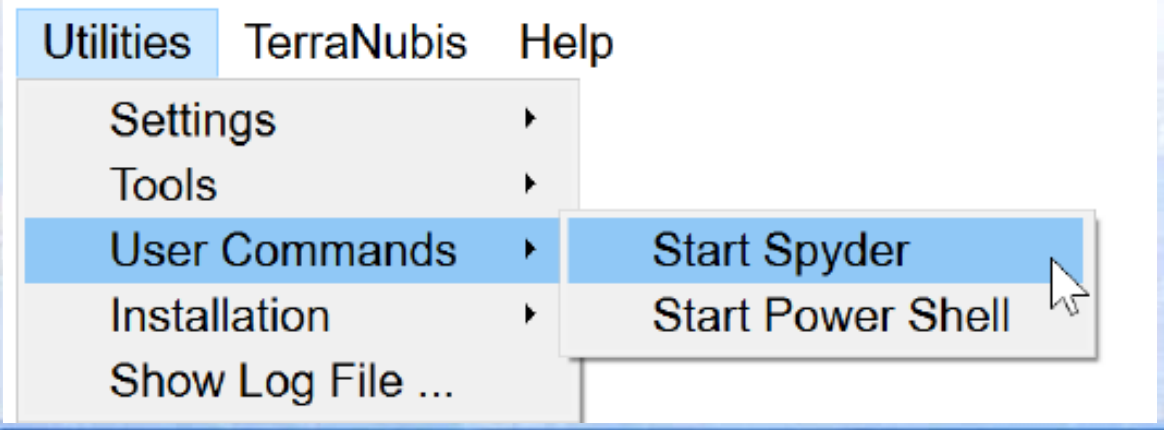
Without a Python environment installed and setup, there is no option available here and you will see this:



PowerShell is a more advanced version of *Command Prompt*. It is not only an interface but also a scripting language that is used to carry out administrative tasks more easily.

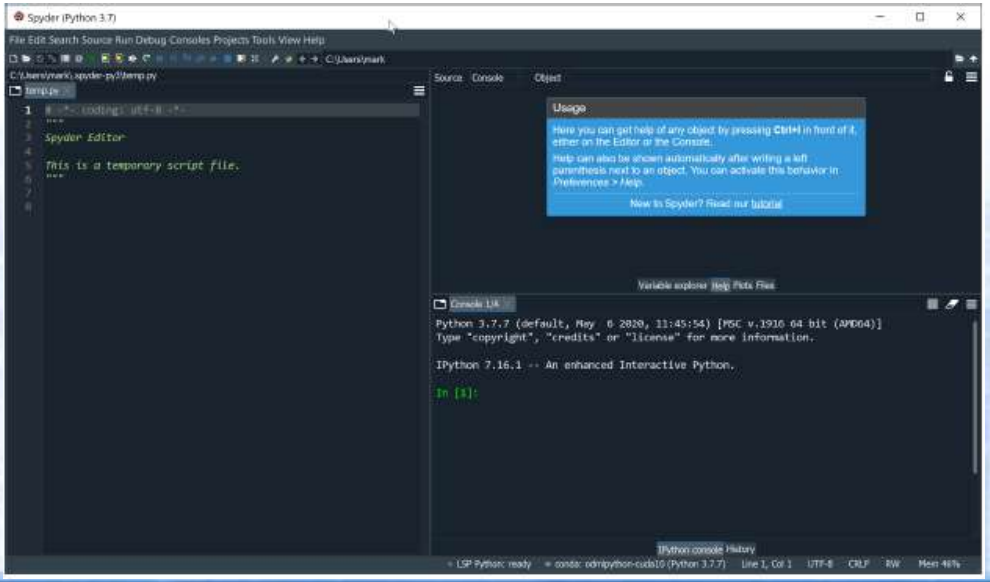
For details of how to setup the Python environment, please refer to Python Settings, Data Flow and Data Management

Once you have installed and set up an appropriate Python environment, you will see the respective item in the User Commands menu:

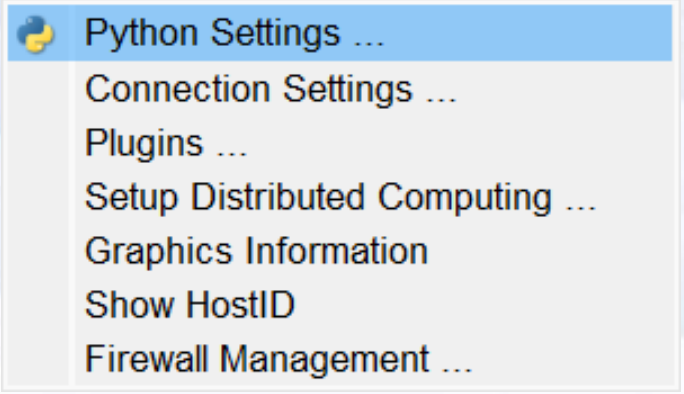


The selected editor can also be started/accessed from the icon which gets added to the main OpendTect toolbar:

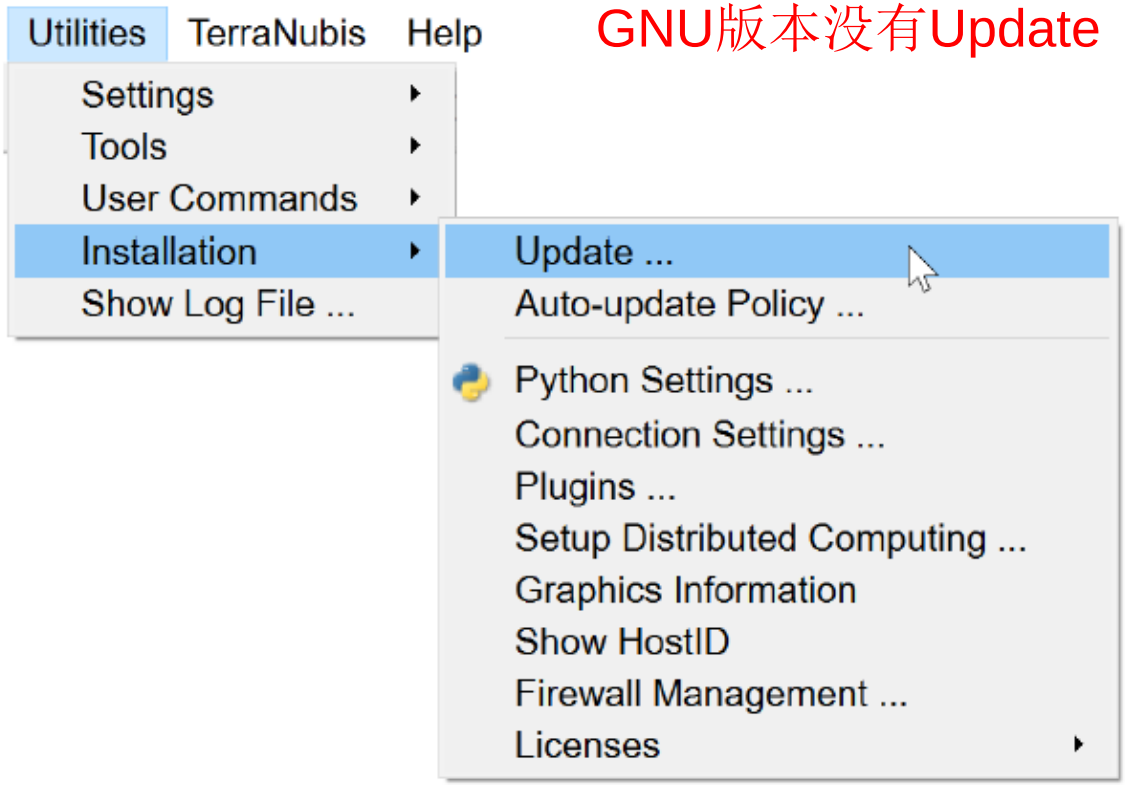
Each of the particular editors have their own documentation and tutorials available via their respective interfaces. In this case, Spyder, the following window will be launched:



9.4 Installation



9.4.1 Update (Installation Manager)

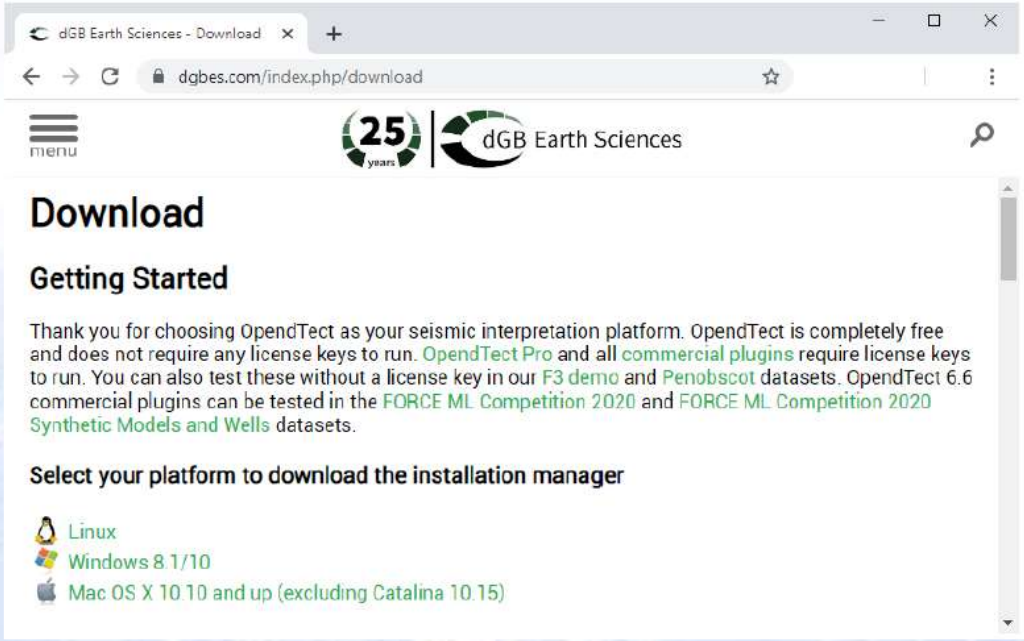


GNU版本没有Update

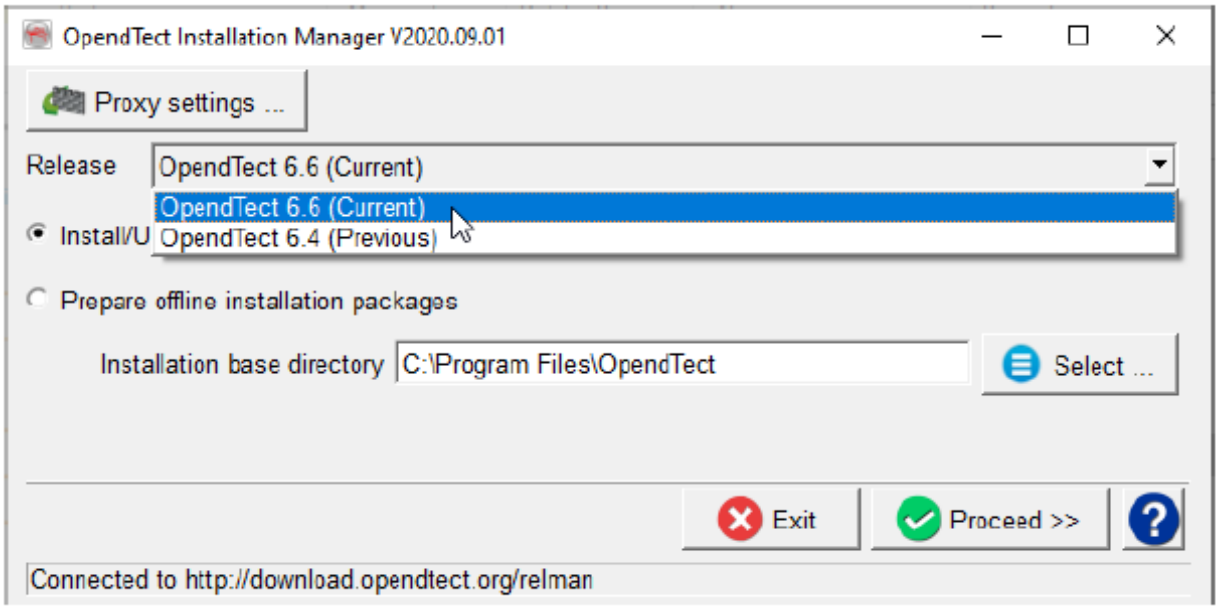
Some improvements in the installation manager:

- Removing individual packages is now supported
- Windows program feature to update or uninstall OpendTect
- Improvements to proxy handling

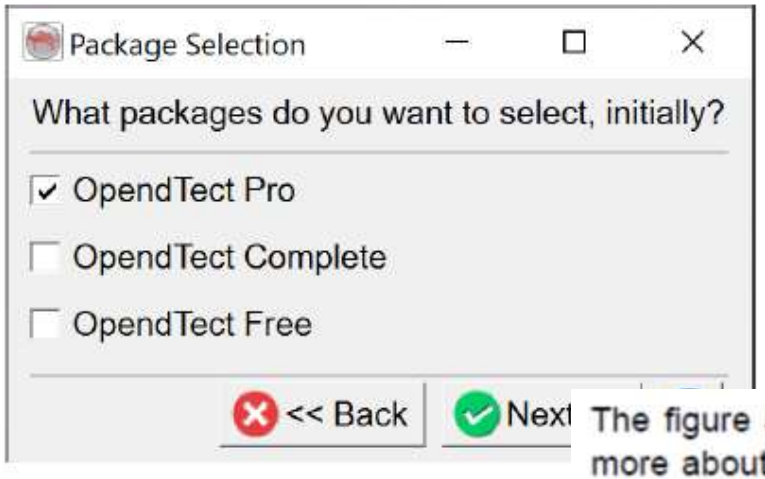
The Installation Manager is available for download via the appropriate platform link on the download page of the dGB Earth Sciences website.



The installation manager is a wizard to install/upgrade the existing OpendTect (Current / Previous) releases. The release type field is used to select the release that is needed to be installed/upgraded. The installer gives you the choices as seen below:



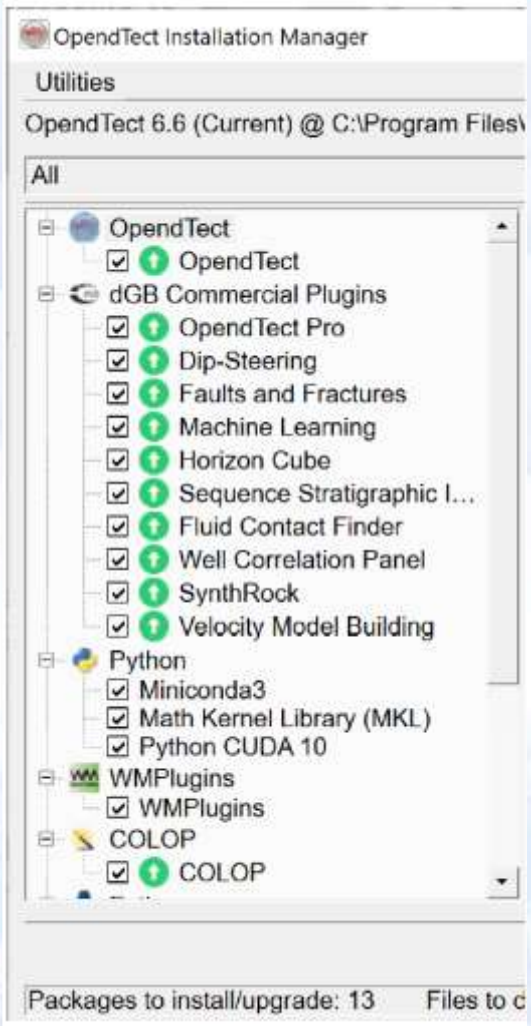
The information following in this section deals with online installation or upgrade. For creating offline installation packages, please see Offline Installation Offline Installation



The figure above suggests to select the package type: OpendTect Pro. To read more about OpendTect packages type, please refer to our web-page of licensing types.

The OpendTect Installation Manager identifies the platform on which it is running. This information is then anonymized prior to it being sent to OpendTect. We use this anonymous data solely for the purpose of getting a picture of OpendTect usage and thus improving our support capabilities.

To facilitate using Python with OpendTect, it is possible to install a pre-formatted Python ecosystem based on Miniconda3, with virtual environments setup to run the machine learning plugins workflow.



A GPU enabled environment will also be provided to take full advantage of the GPU processing capabilities of the Python package Tensorflow.

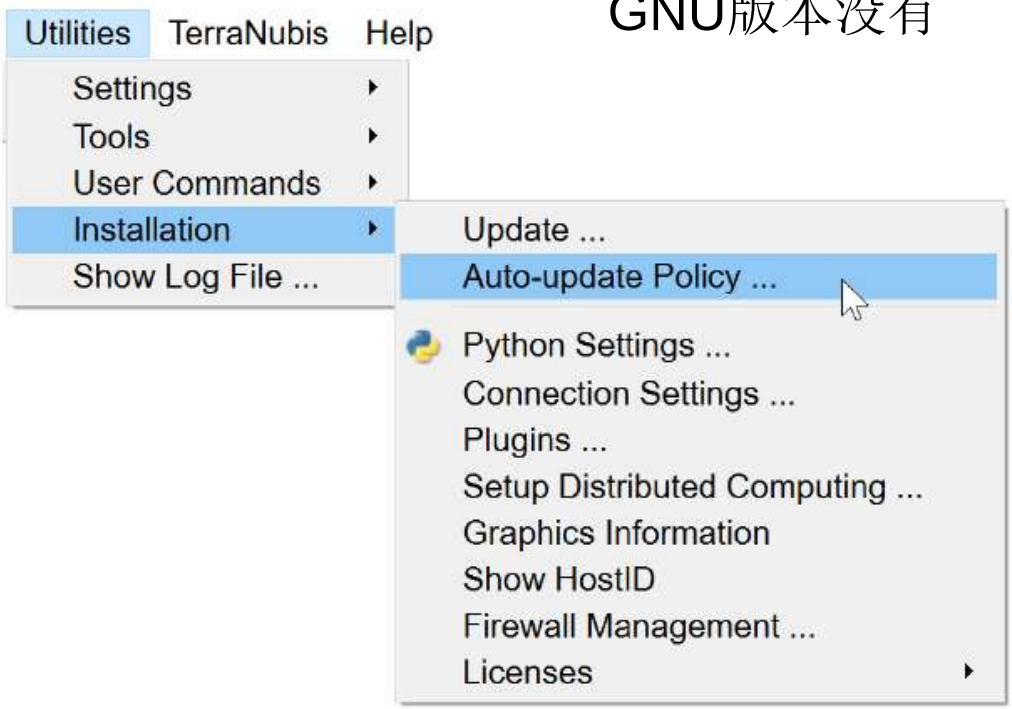
Two virtual environments will be provided with the Machine Learning plugin:

- A CPU-only (fallback) environment
- A GPU enabled environment (requires an NVIDIA GPU)

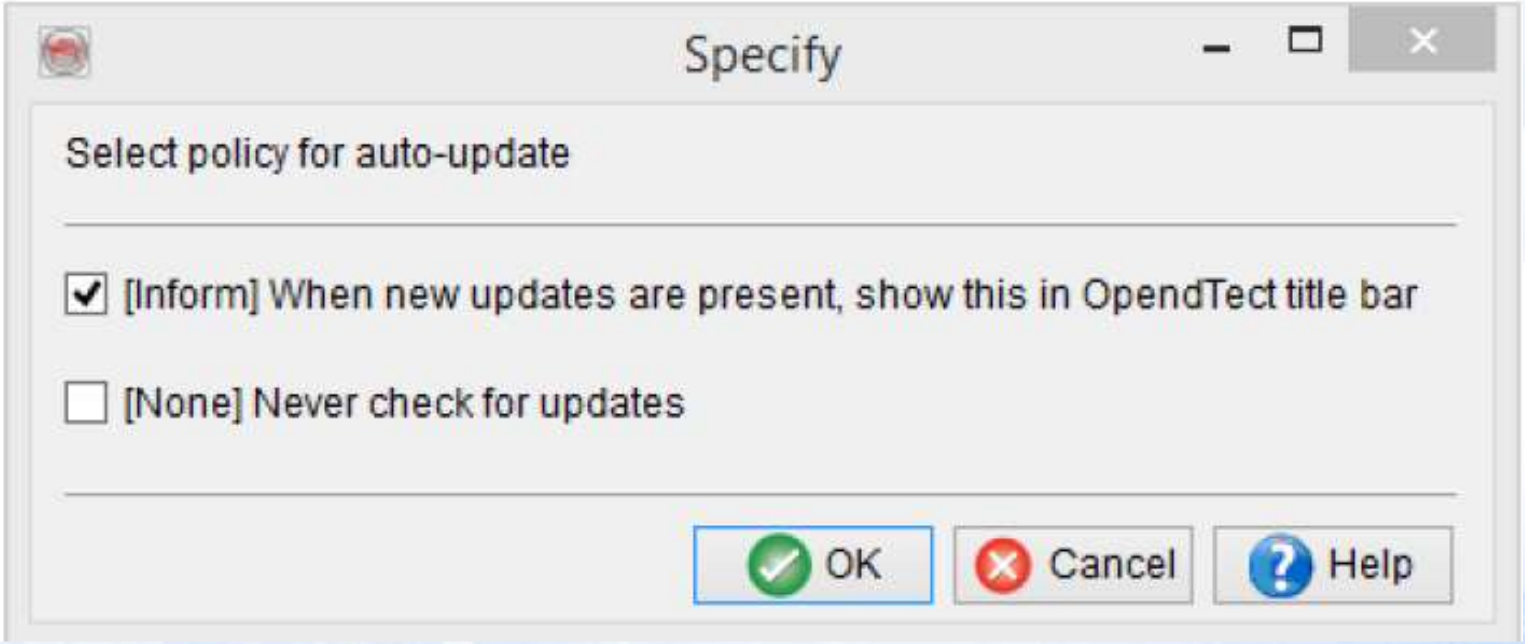
Both will be available on Windows and Linux but not on Mac-OS (not supported by Tensorflow)

9.4.2 Auto-Update Policy

GNU版本没有

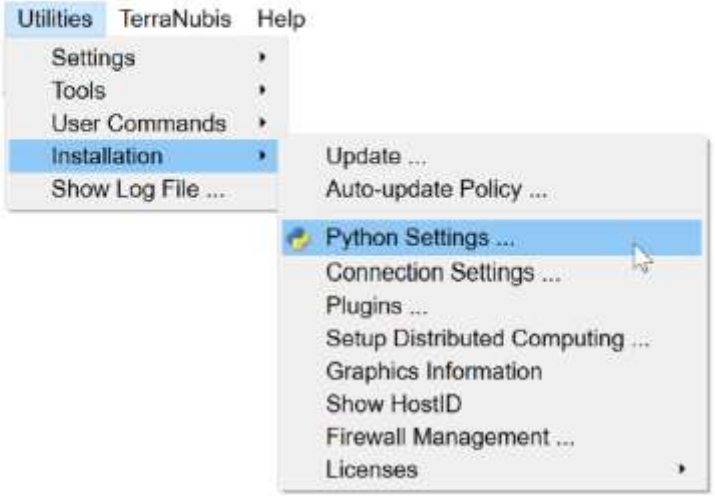


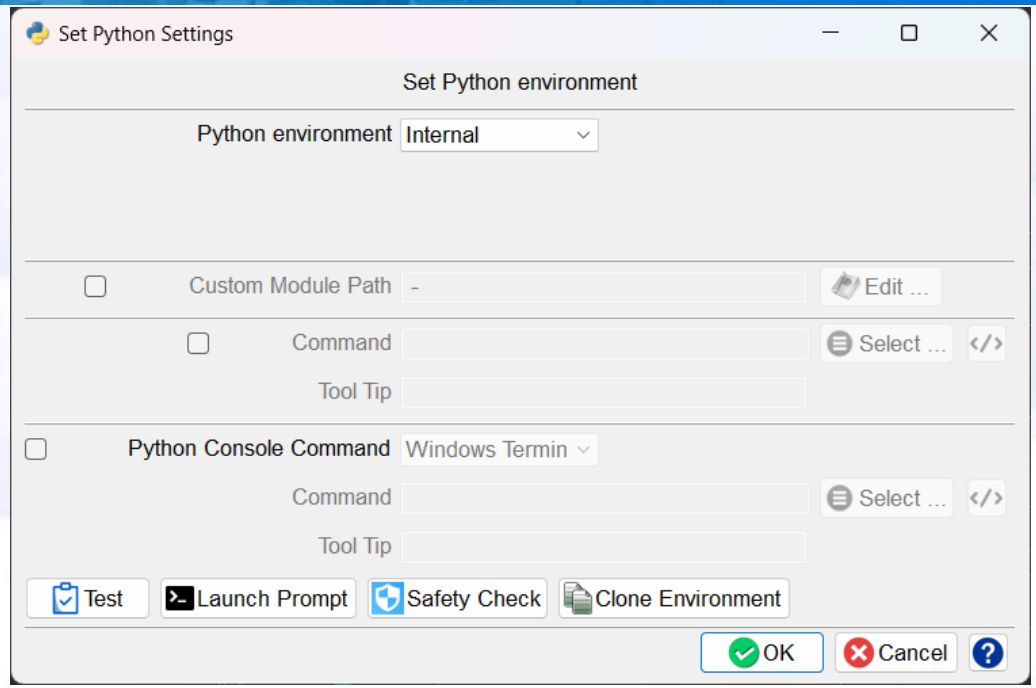
The auto-update policy can be defined and changed by a user. By default the option is set to *[Inform]* when the updates are available. On Windows, this can be changed to *[None] Never check for updates* should you prefer.



On Linux, there are two additional options - *[Manager]* and *[Auto]*:

9.4.3 Python Settings, Data Flow and Data Management





建议使用Linux
我的Windows系统下，打开这个，没响应
主要是为了机器学习功能

OpendTect Machine Learning comes with its own Miniconda Python environment. Users who prefer to work in a private Python environment can change the **Python environment** here. If a **Custom** environment is selected you need to specify the root of the environment. The **Virtual environment**: odmlpython-cuda10 runs models on the GPU; odmlpython-cpu-mkl runs on the CPU. Computations on a GPU are many factors faster than computations on a CPU. If the GPU in your environment is too small for certain jobs to run you can switch virtual environments to CPU usage.

The **Custom Module Path** is the path for Python developers in which they develop private Machine Learning Models in this environment. All models in the given directory, which are named: '**mlmodel**….” will appear in the UI of the Machine Learning Control Center and can thus be applied to other data sets.

When the Python ecosystem has been installed, the link between OpendTect and Python can be set up and customized through a dedicated settings dialog in the OpendTect utilities menu (above image).

The default Python environment will point to the Python packages installed using the installation manager, if they have been installed.

Three options are available: 选择3种Python环境：

1. **Internal**(default option) if the environments provided by the installer are installed.
2. **System** installation of Python
3. **Custom** if a user has their own Python environment installed:
   - For advanced users who have their own Python environment or which are using a distribution of Python such as anaconda, the Python settings can be altered to have OpendTect to use it directly instead of the Python distribution provided with OpendTect.

建议选这种

- The user must ensure that the selected “Custom” environment contains all the Python modules required by the OpendTect Machine Learning plugin. These are specified in the plugin’s documentation.

- The user can add the path of its Python source code, to locally installed Python modules in the “Custom Module Path”. Such that it becomes accessible to extend the capabilities of the Machine Learning plugin by adding new custom models to train on. This path will be added to the PYTHONPATH of Python environments launched by OpendTect. The default location is under ($HOME, or $HOME/.od).

- The **Edit** button allow easy editing of the file without leaving OpendTect.

Test

This testing tool option, checks if OpendTect can run Python commands and retrieve their output. It shows a list of the installed modules for the selected setup.

The user can also launch a terminal/ console prompt with the selected environment activated. Such window can be launched anywhere in OpendTect using the short-key CTRL-T.

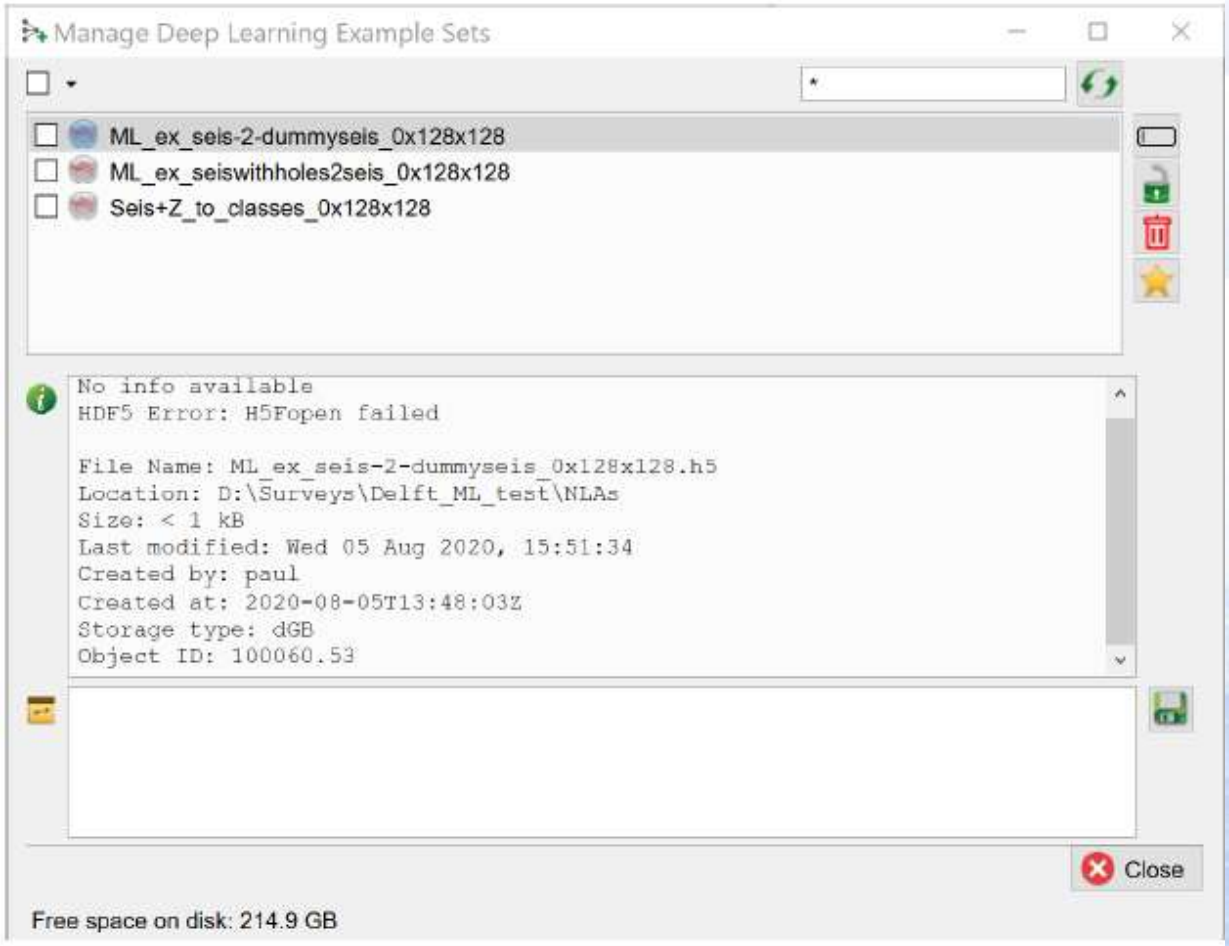
The **Python IDE Command** is the Python editor you wish to use. You can launch the IDE using the specified **Command**, Optionally with some **Arguments** from a **Python Command Window**. Alternatively, you can add an **icon** to your plugin tool-bar by pressing the corresponding icon in this window. In this case the **Spyder icon** with Spyder **Tool Tip** is added to the icon toolbar, as seen in the image below:

Pressing this icon from the toolbar will launch Spyder with the correct settings. The Python environment can be tested with the **Test icon**.

The general flow of a Machine Learning workflow is as follows:

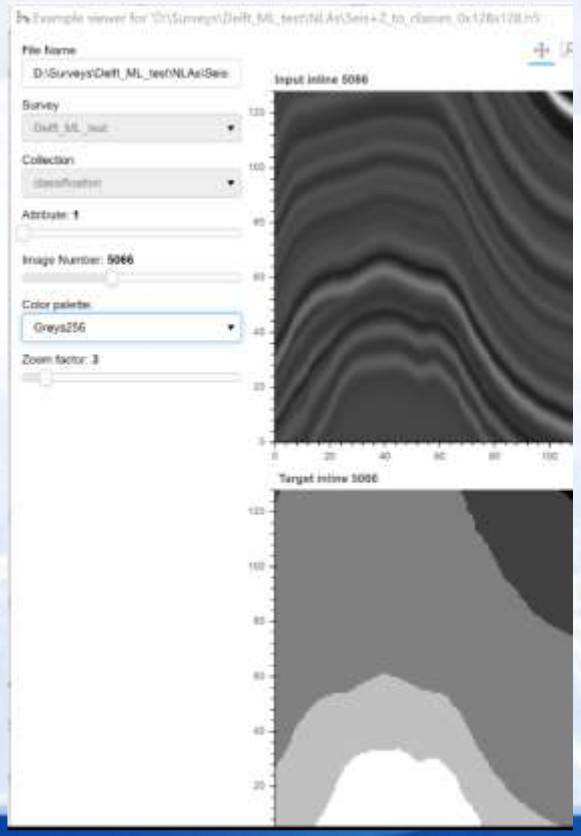
1. Based on the data you have and the problem you want to solve: **Select a workflow** from the control center
2. **Create a Training Set**. Construction starts with a selection of the Target (output) feature. Next you select the input features and the dimensions of the input features. Training Sets can be constructed from real data over multiple surveys or from synthetic data (SynthRock). Training Sets selection files can be saved, restored and edited. Training Sets themselves are stored in hdf5 format. These files can be managed from the **Manage Machine Learning icon**.
3. **Select a Model**. Depending on the workflow the plugin supports Machine Learning Models from **Scikit Learn** and/or from **Keras (TensorFlow)**. Set the **Training Parameters** and train the model. A Test Set to monitor Overfitting is automatically split off from the Training Set by the software. Models are also stored in hdf5 format and can be managed from the **Manage Machine Learning icon**.
4. Monitor training. This is done in a **log file** that outputs information about the loss and accuracy of the model for both Training and Test Sets. **Keras** models are also monitored graphically in **TensorBoard**, which is started in your default browser when training starts. Models can be trained from scratch (**New**), continued from a stored model (**Restore**) and continued from a trained model with new data (**Transfer**). In Transfer training the convolutional parts of a deep learning model are not updated to safe time. Only the weights of the last layer are updated with the new training examples.
5. **Apply** the trained model. Select the input data set(s) on which the trained models will be applied.

Training Sets can be **managed** in the "Machine Learning Deep Example Sets" window that is launched from all windows with a "Manage Example Sets" icon next to a Select button. The "Machine Learning Deep Example Sets" window pops up.



In this window you can use the corresponding icons in the ribbon on the right to rename, lock, remove and set defaults. The info box in the middle gives detailed information on the file. Personal textual information can be added in the bottom field. Press the save button to save this information with the file.

Example data sets can be viewed with an **hdf5** viewer that is launched from all windows with the "View Example Sets" icon next to the "Manage Example Sets" icon. The "View Example Sets" viewer pops up.



The hdf5 viewer is a **2D viewer** that allows you to inspect 2D and 3D input - and target images. Use the sliders to select the input **attribute** (typically 1, but more are possible) and the **input** image to view. In the case of 3D images (3D cubelets) you can slide through the selected cubelet in the inline, crossline and Z directions with 3 additional sliders.

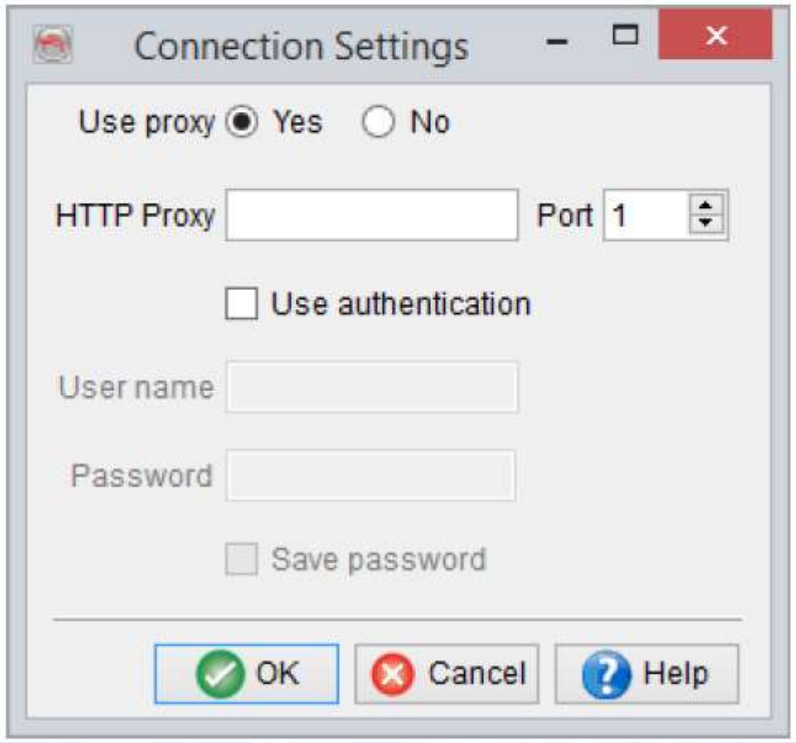
The display can be changed by changing the **color palette** and the **zoom factor**.

Note, the hdf5 viewer is developed in Bokeh, a Python library for interactive displays. The icons above the image are standard **Bokeh plot icons** to control zoom, pan, reset etc.

The **Bokeh server icons** in the ribbon on the right-hand side of the viewer can be used to start, stop and restart the Bokeh server in case something goes wrong. The Bokeh server is a separate process that is started by OpendTect. Information about this process is given in the log file that can be inspected by pressing the corresponding icon.

9.4.4 Connection Settings

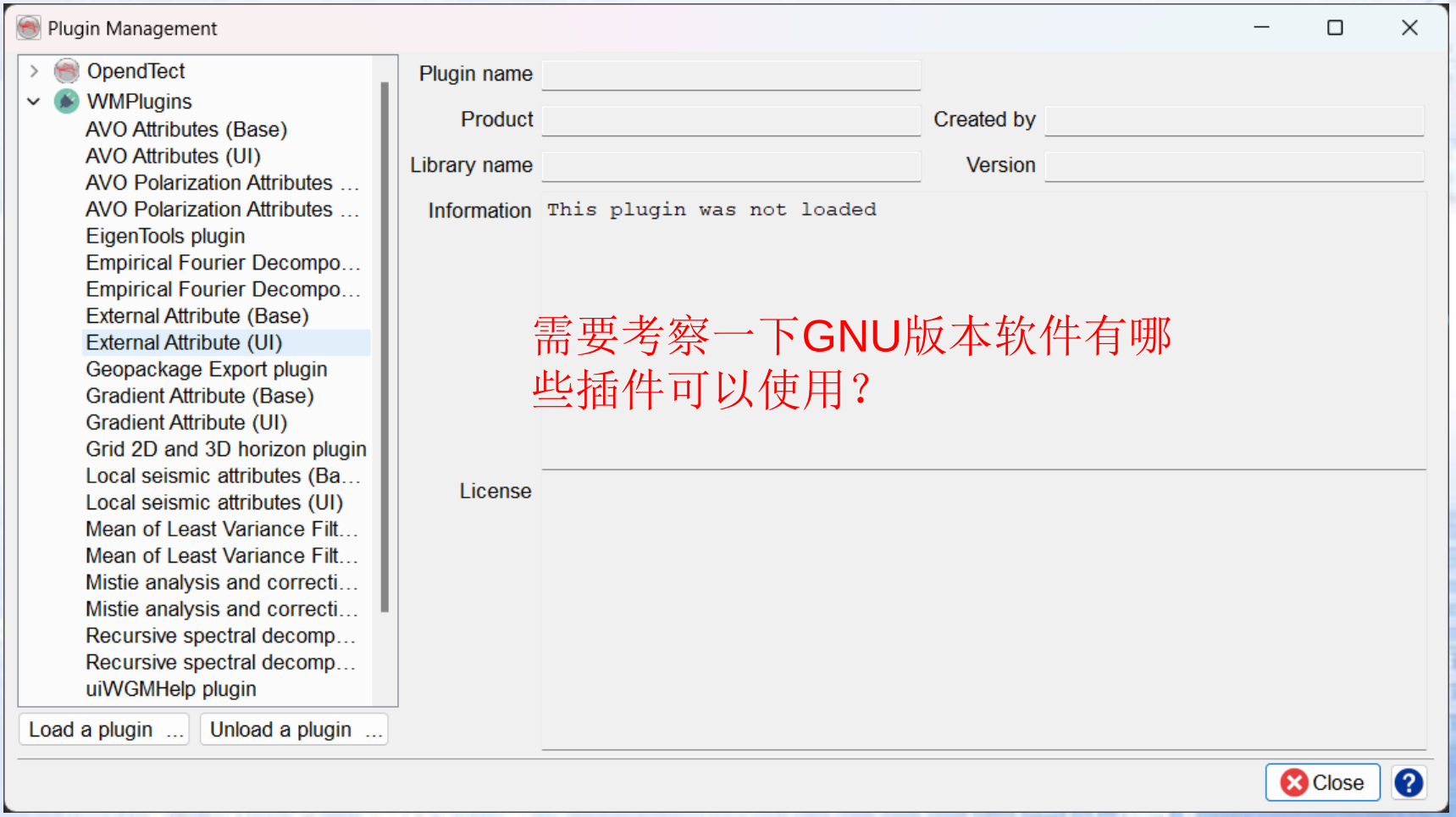
To enter the proxy information, the correct proxy server information must be added in the *Connection Settings* before running the installation. This is done in the following dialog. This dialog is also available directly through the Installation Manager on clicking the *Proxy Settings* button.



输入代理 信息

9.4.5 Plugins

The plugins window lists all the available plugins and the plugins that are currently not into OpendTect. It also provides relevant information about the plugin and the license.



需要考察一下GNU版本软件有哪些插件可以使用？

Developers might want to use the option "Load a plugin" to manually load their plugin. The developers documentation describes how to add a plugin to the automatic loading procedure.

In OpendTect, there are several commercial plugins available. Each plugin adds extra functionality to OpendTect. To load a new plugin, browse to the appropriate file. More information on plugin design is available in the *Programmer manual*.

In general most plugins are loaded automatically at startup, based on the chosen options:

看样子是Pro用户可获取的插件

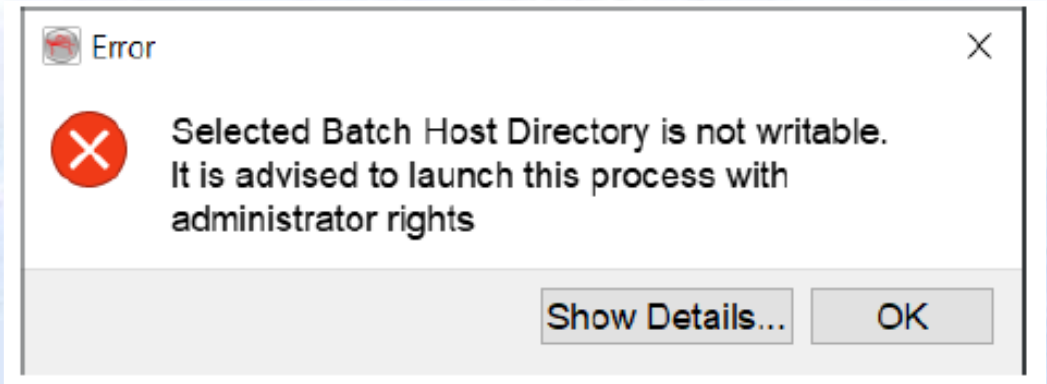
If you choose to toggle off the option "Show this dialog at startup" all plugins will be loaded at startup. It is recommend to install only the plugins for which you do have a license and to load them all automatically at startup.

9.4.6 Setup Distributed Computing

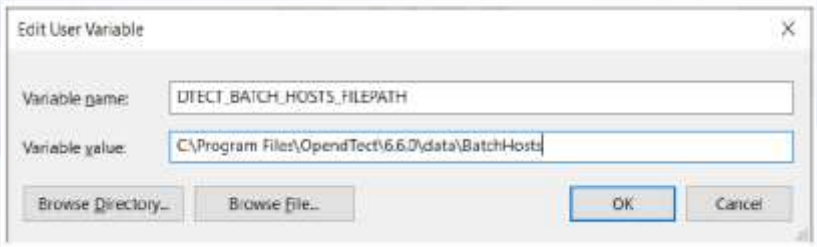
In order to utilize OpendTect's capability for Distributed Computing, a *BatchHosts* file must be created and used. This file contains the list of remote machines (*host machines* or *nodes*) and some relevant details about these machines and the path to the Survey Data Root. OpendTect will use this file to communicate to the remote hosts and launch processes remotely on them. Follow the example format (shown below) to add the list of remote machines and their details in the respective fields.

In order to minimize complications, the Setup Distributed Computing tool (formerly known as Setup Batch Processing tool) can be used to create a tailor-made BatchHosts file (via Utilities > Installation > Setup Distributed Computing...).

As default OpendTect will try to create a new or edit the existing BatchHosts file in it's 6.6.0/data directory. If this directory is not writable OpendTect will advise to launch this process with administrator rights:



It is also possible to use a custom BatchHosts filepath by setting environment variable DTECT_BATCH_HOSTS_FILEPATH:



设置环境变量
DTECT_BATCH_HOSTS_FILEPATH

BatchHosts file: This field is not editable in the User Interface.

IP address: IP address of the node machine(s). If the background of this field is in red then there is a problem with the resolving of the hostname into the IP address.

Hostname: Hostname of the node machine(s). If the background of this field is in red then there is a problem with the resolving of the hostname.

Display name: Free-text field. Text entered here appears in the Distributed Computing Processing window.

Platform: Select platform type, the options are: Linux (64 bits), Windows (32 bits), Windows (64 bits) and Mac OS X.

Survey data root: Location of the survey (the path to the survey data root folder from the host machine)

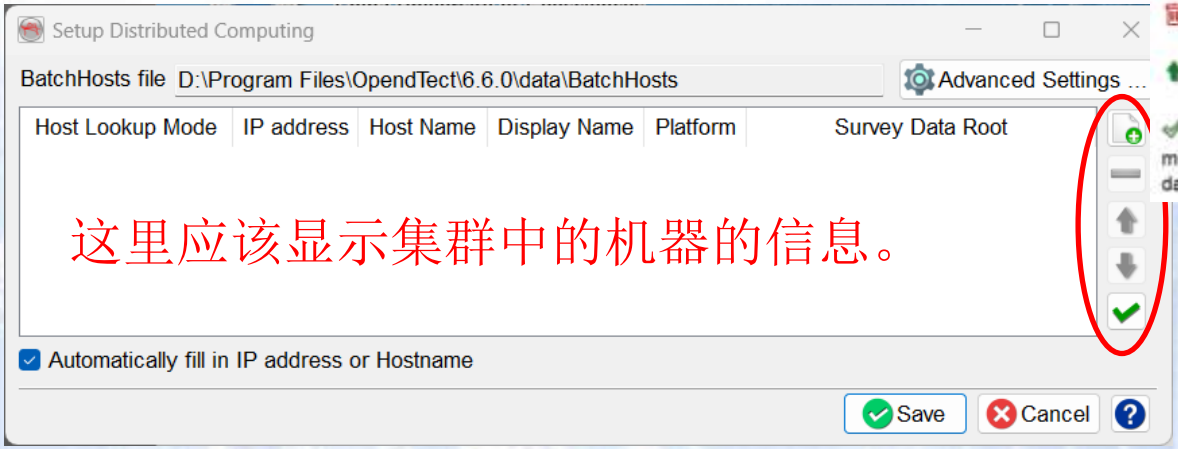
Description of icons:

Add new host.

Remove selected host.

Move host up or down.

Test hosts. Will perform tests to ensure that the server and nodes can communicate to the necessary extent to perform the MMP. (ie: can the nodes find the data root folder and read/write into it)

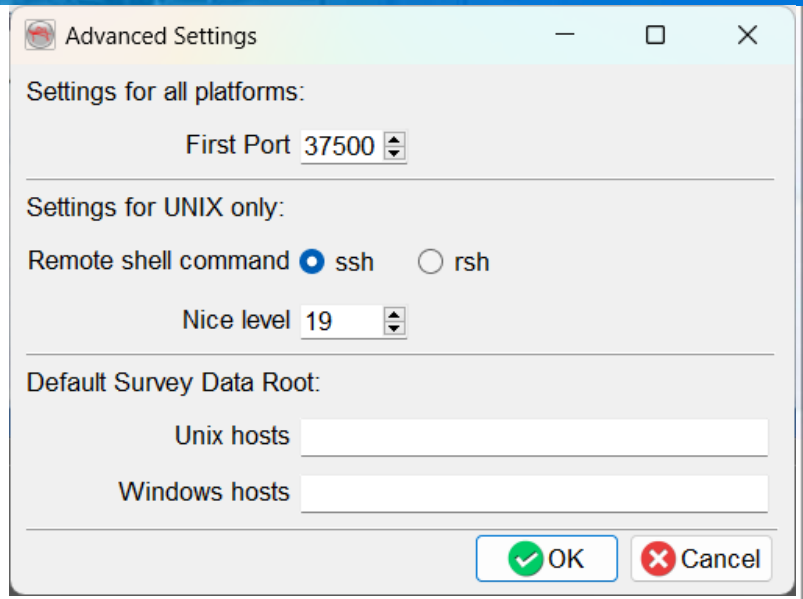


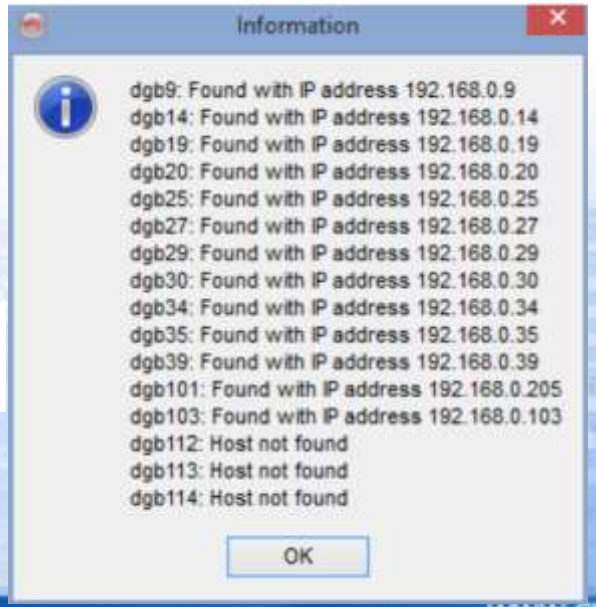
这里应该显示集群中的机器的信息。

这里应该用于编辑
BatchHosts文件内容

Advanced Settings:

- Here you may change the first port value (in the case that it is blocked or in use). By default this first TCP port is 37500. We advise to open up to 5 ports, e.g. 37500-37504.
- Linux users may decide to change the remote shell command from the default ssh to rsh.
- When setting to ssh it is required that the user who is running OpendTect is able to login to the other nodes without a password. This can be done by setting up public key authentication between the nodes. We will not go into detail of how to do this. In short this is done by generating the SSH key on the machine you are using to start the jobs, the public key then needs to be uploaded to the nodes and added to the user's .ssh/authorized_keys file.
- The Nice level sets the priority on the host machines, 19 being nicest and 1 being least nice).
- Finally, the Default Data Root can be set per platform.





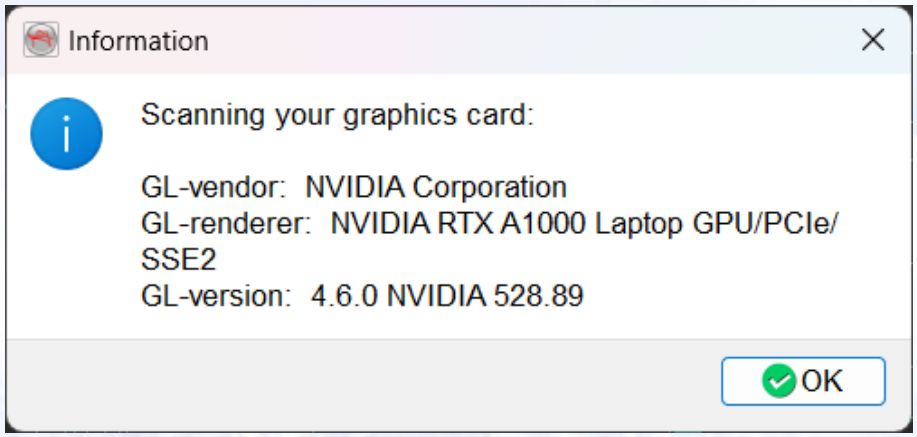
For more information on this topic, please refer to OpendTect's Youtube Channel where you may find the webinar: Distributed Computing Processing Setup.

Youtube上有设置并行计算处理环境的视频

9.4.7 Graphics Information

This will pop up a window showing all the information that OpendTect can gather about your GPU.

You may want to refer to the System Requirements information in the OpendTect Administrator's Manual for comparison and advice.



Laptops with an Intel CPU usually come with two integrated graphic cards. The default card at start-up would most likely be Intel HD graphics. OpendTect however will have the best performance when using the Nvidia GPU. Therefore that one should be used instead.

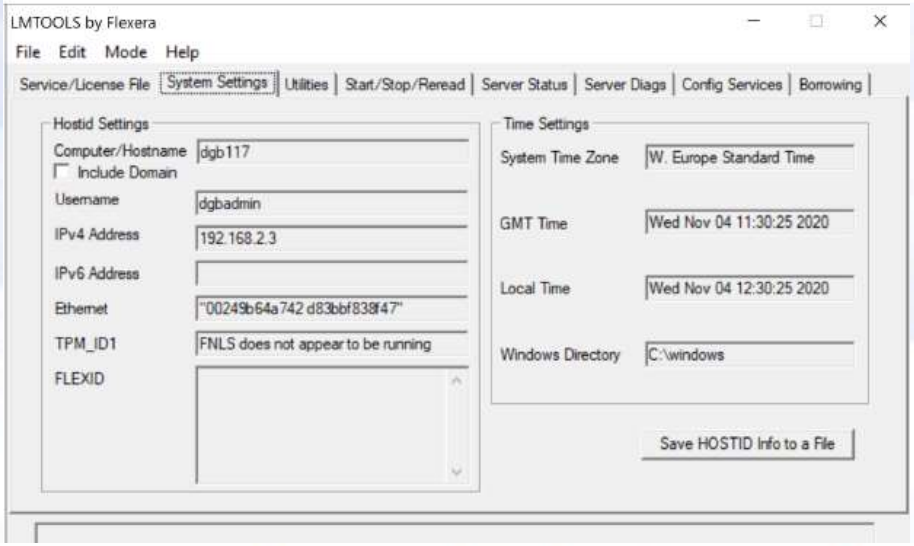
Please follow these instructions in the Administrator's Manual for setting up the Nvidia card as the preferred GPU for OpendTect.

9.4.8 Show HostID

This option scans your system, and lists relevant Host information (HostID, Name, Operating System, User Name).

This information can be copied using the icon.

Additionally, on Windows, accessing the HostID of the machine can be done via the LM Tools (available via the Start Menu or directly from ..\OpendTect\6.6.0\bin\win64\lm.dgb\lmtools.exe):



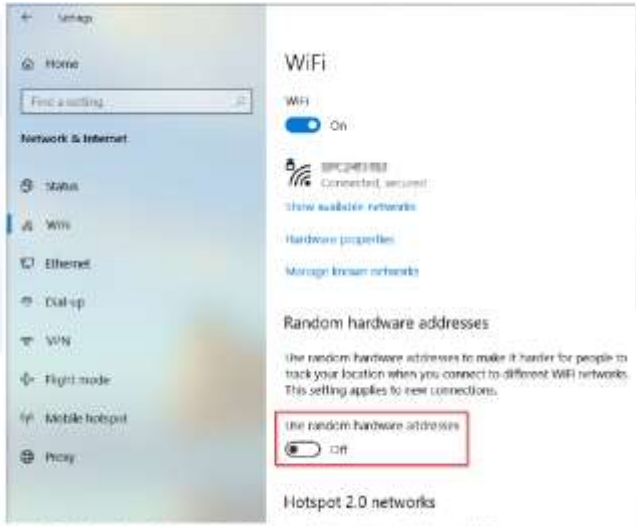


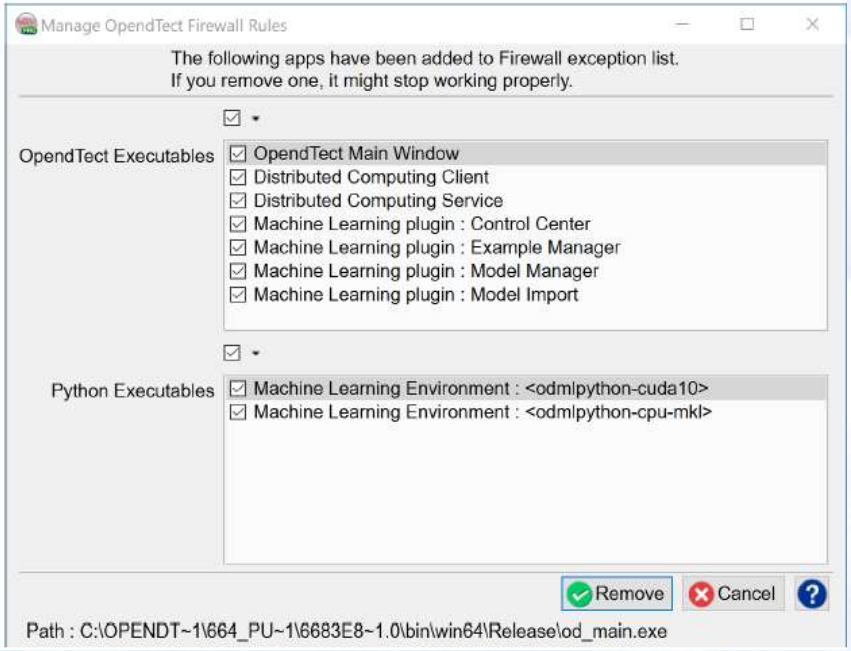
Figure: Random hardware addresses option in Windows Settings > Network & Internet > WiFi

The option 'Save HOSTID Info to a file' will simply save the information displayed above into a .txt file for reference.

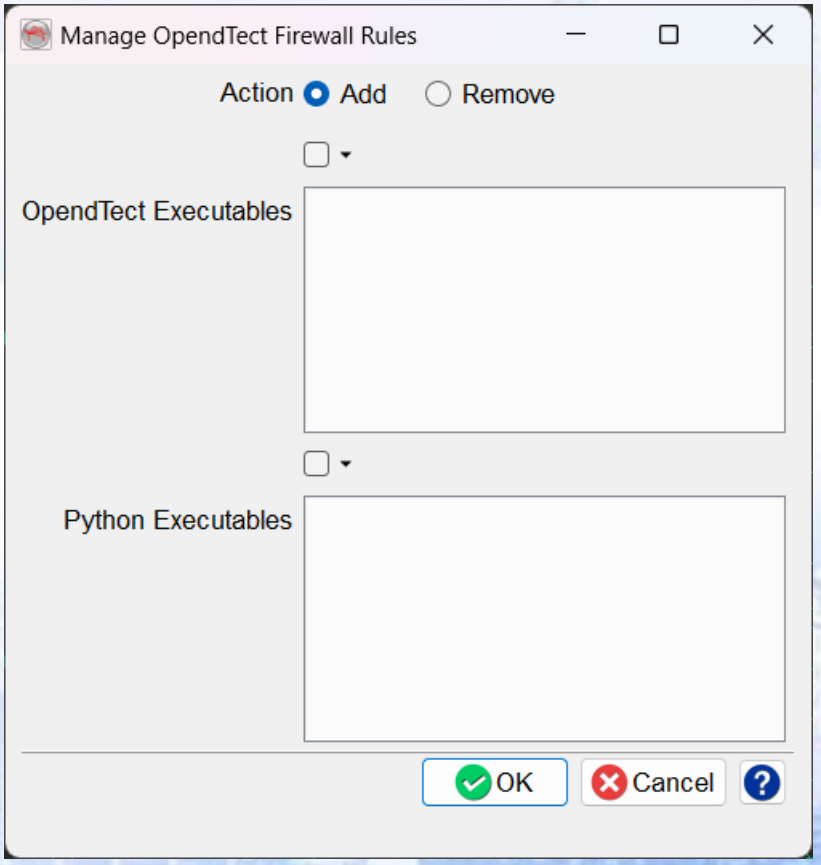
Note: On some Windows 10 and 11 systems there is an option Random hardware addresses in Windows Settings > Network & Internet > WiFi . Please make sure that the *Use random hardware addresses* option is toggled off when using the Show HostID utility and supplying us with the information needed for generating the license. Also this option should be toggled off when using the OpendTect license that you received back. When a random HostID is supplied to us we can not guarantee that the generated OpendTect license will keep working. Therefore we ask you to supply us with a HostID that will not change.

9.4.9 Firewall Management

This will launch a simple window wherein you may add, edit or remove firewall exceptions for both OpendTect and the Python executables:

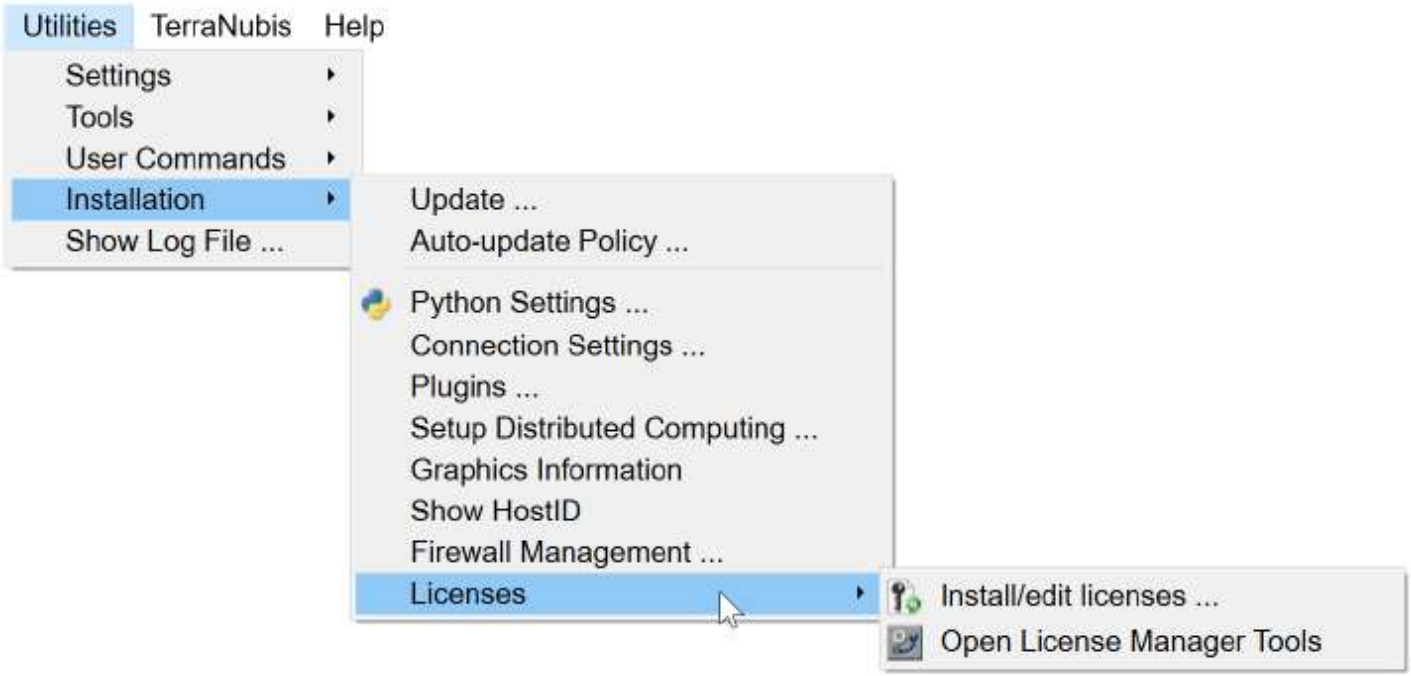


手册截图

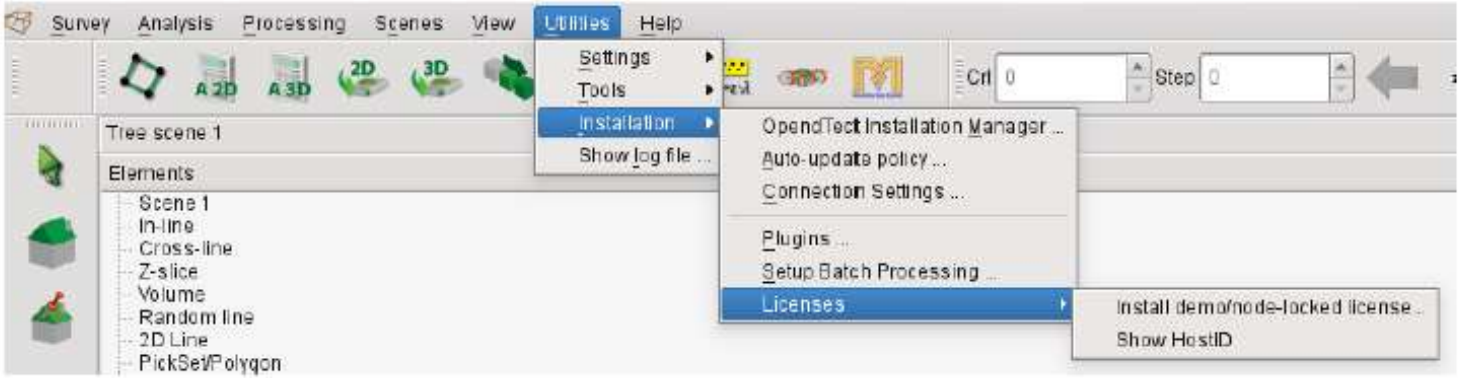


9.4.10 Licenses

Under *Utilities* > *Installation* > *Licenses* you will see two sets of options, differing per platform:



License options under Windows



License options under Linux

For information about floating or server-based licenses, please refer to the flexnet installation guide page

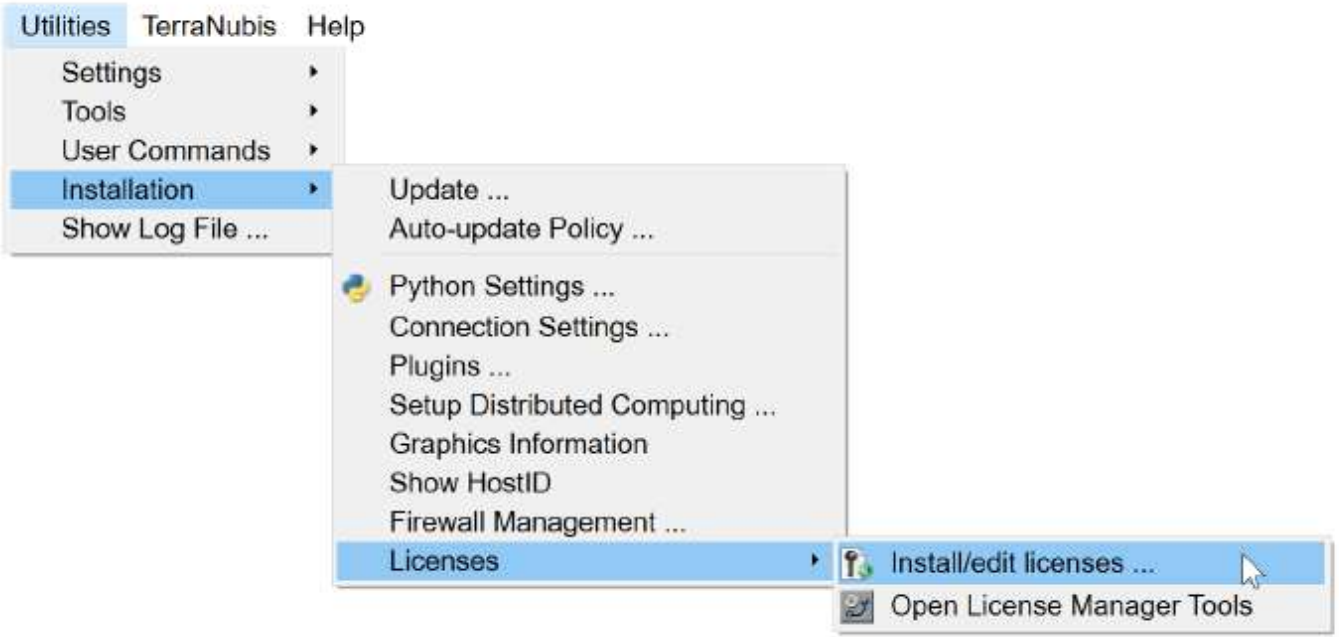
For more general information about OpendTect licensing options, please see the support licenses page

A more complete explanation of OpendTect license Installation can be found in the License Installation Webinar, available on OpendTect's Youtube Channel.

9.4.10.1 Install or Edit licenses

Pro用户需要合理设置许可证

Plugins to OpendTect can be run either by using a license server or by using demo (evaluation) licenses. This second case is case called "node-locked license installation".



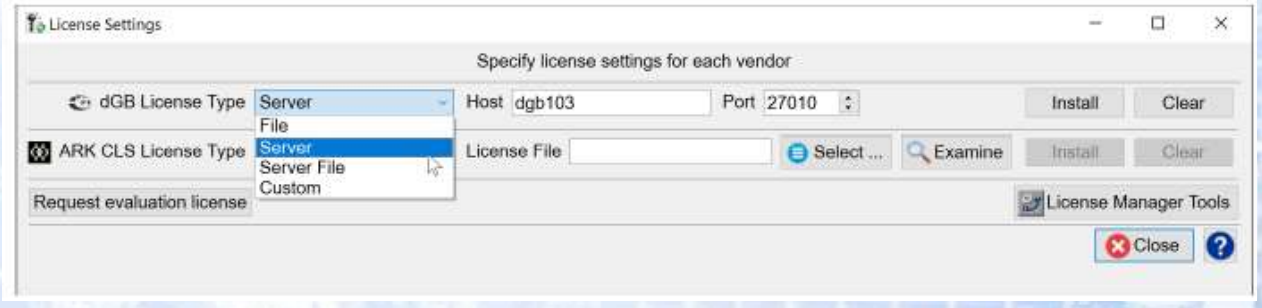
This will bring up the following window which you can use to point OpendTect to the license file:

Here you can:

- Specify the **License Type**:

  File (Node-locked):

Server:



- **Select** the location of the license file
- **Examine** the license file:

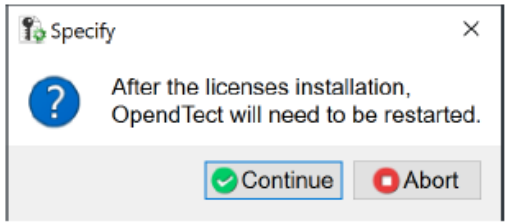
C:\Licenses\DGB\DGB117\dgb117_dgb.lic

File

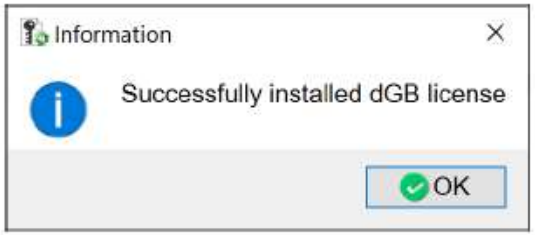
```
# -
# FlexNet 11
# License features for OpendTect plugins distributed by dGB
# $Date: 2021/05/17 12:46:14 $
#
# http://opendtect.org/lic/doc/flexnet_installation_guide.html
# -

FEATURE dTect dgbld 2022.07 17-jul-2022 uncounted
HOSTID=d83bbf838f47 \
        SIGN="000C AD45 3FF7 C38F 32C0 5169 E18E BA00 0375 86E0
AD97 \
        1E2A D6CE 1A37 4668"
# OpendTect PRO
FEATURE dTectPRO dgbld 2022.07 17-jul-2022 uncounted \
        HOSTID=d83bbf838f47 SIGN="0009 37E6 87DF 374D 5B21 EE43
76DF \
        D200 84D9 3677 3E50 E9C3 084F ACE0 3E0E"
# Dip-Steering
FEATURE dTectDS dgbld 2022.07 17-jul-2022 uncounted \
        HOSTID=d83bbf838f47 SIGN="00B9 E255 EBC5 19F1 2995 B4BD
3415 \
        D200 F28C E021 B641 CF67 5846 9D3A 54E1"
# Faults and Fractures
FEATURE dTectFLT dgbld 2022.07 17-jul-2022 uncounted \
        HOSTID=d83bbf838f47 SIGN="00EF CEFC 7975 0511 1F2D 460E
C0B8 \
```

Close Reload

- **Install** the license file. On pressing **Install**, you will see a prompt warning that a restart will be necessary:

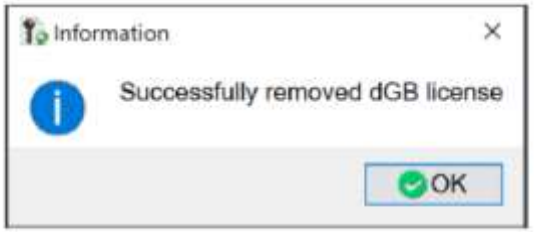


Pressing *Continue* will complete the installation of the license file and bring up this window:



Pressing *Continue* again will restart OpendTect.

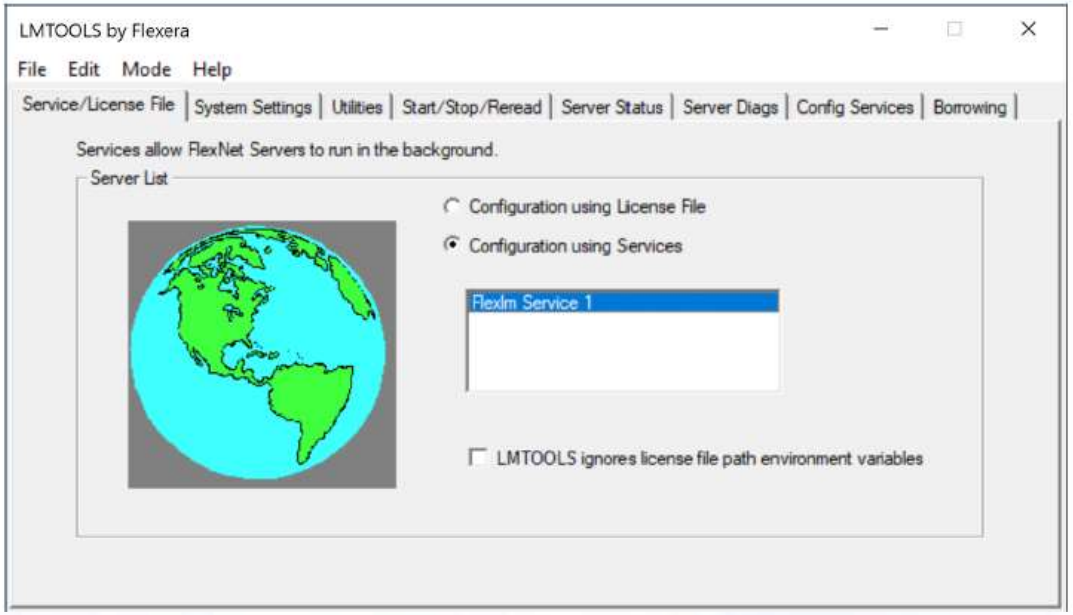
Pressing *Continue* will complete the clearing of the license file and bring up this window:



Pressing *Continue* again will restart OpendTect.

In addition to the core functionality, you may click '*Request Evaluation License*' to bring you to the contact page of the dGB website where you can request an evaluation license and/or request a quote.

And, for Windows users only, you may access the '*License Manager Tools*' button to pop up the Flexera LM Tools window:



Please note: The method of clearing licenses via *OpendTect License Settings* will clear the registry entries from the User's profile but not from the System.

So it will clear licenses installed via *OpendTect License Settings* or licenses installed using DGBLD_LICENSE_FILE as a User (environment) Variable but not if DGBLD_LICENSE_FILE is set as a System Variable.

If DGBLD_LICENSE_FILE is set as a System Variable, it is necessary to use *LMTools* via *Install/Edit Licenses* and, on the *Config Services* tab, use *Remove Service*.

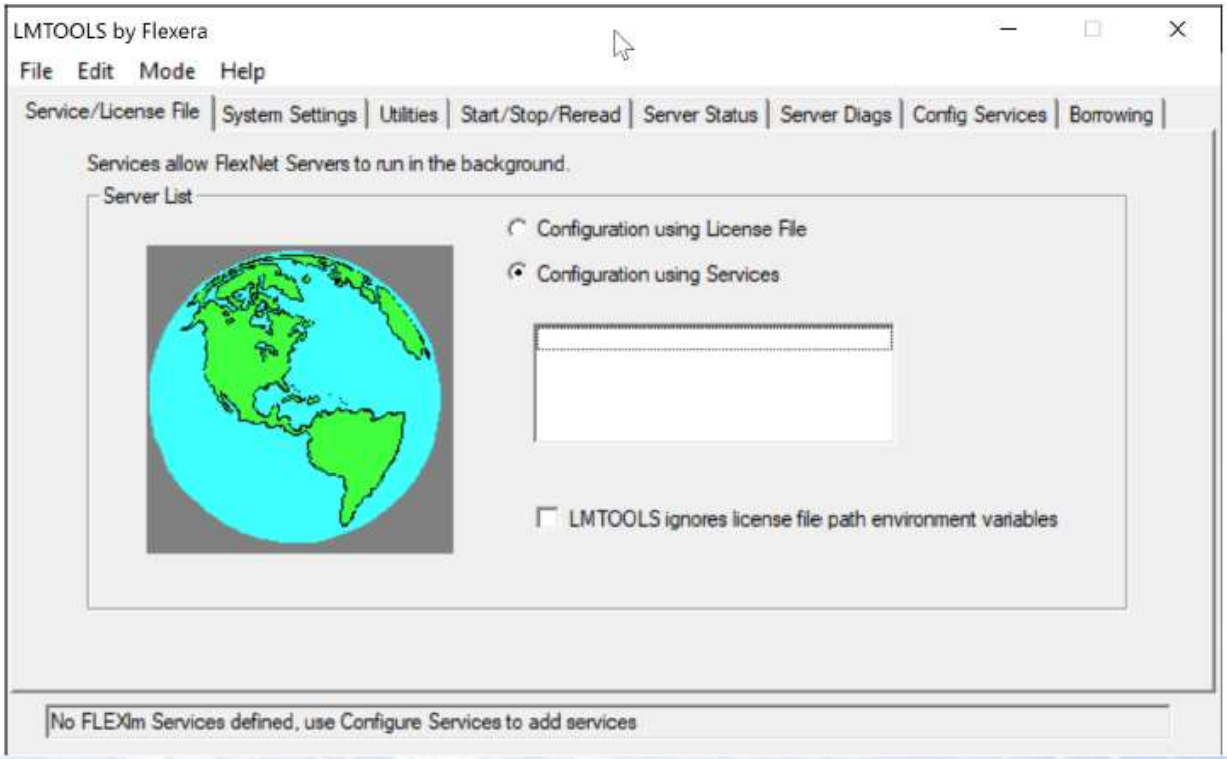
This will clear the System Variable and the registry setting.

9.4.10.2 Open License Manager Tools

This will open the Flexera License Manager Tools (LMTools).

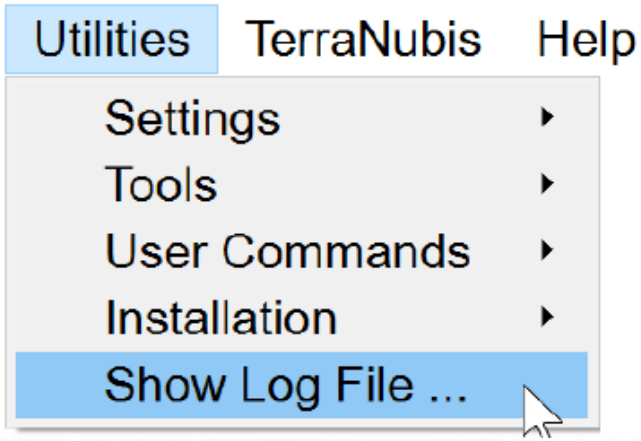
Please refer to the OpendTect Administrator's Manual for more information.

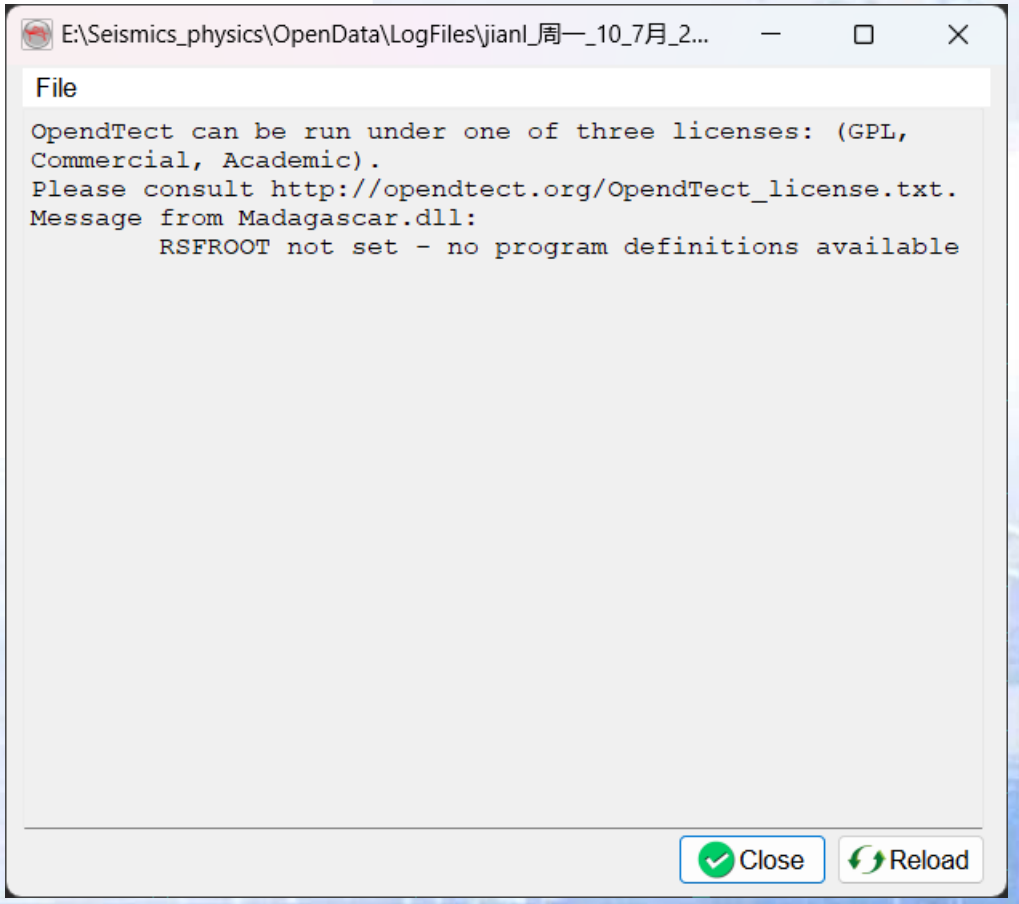
Note: This is a Windows-only application.



9.5 Show Log File

The user can check the log file from *Utilities* > *Show log file*. This will show the log of low traffic signals e.g. warning messages if a plugin (or license) is not properly loaded.





查看成功加载的插件或许可证