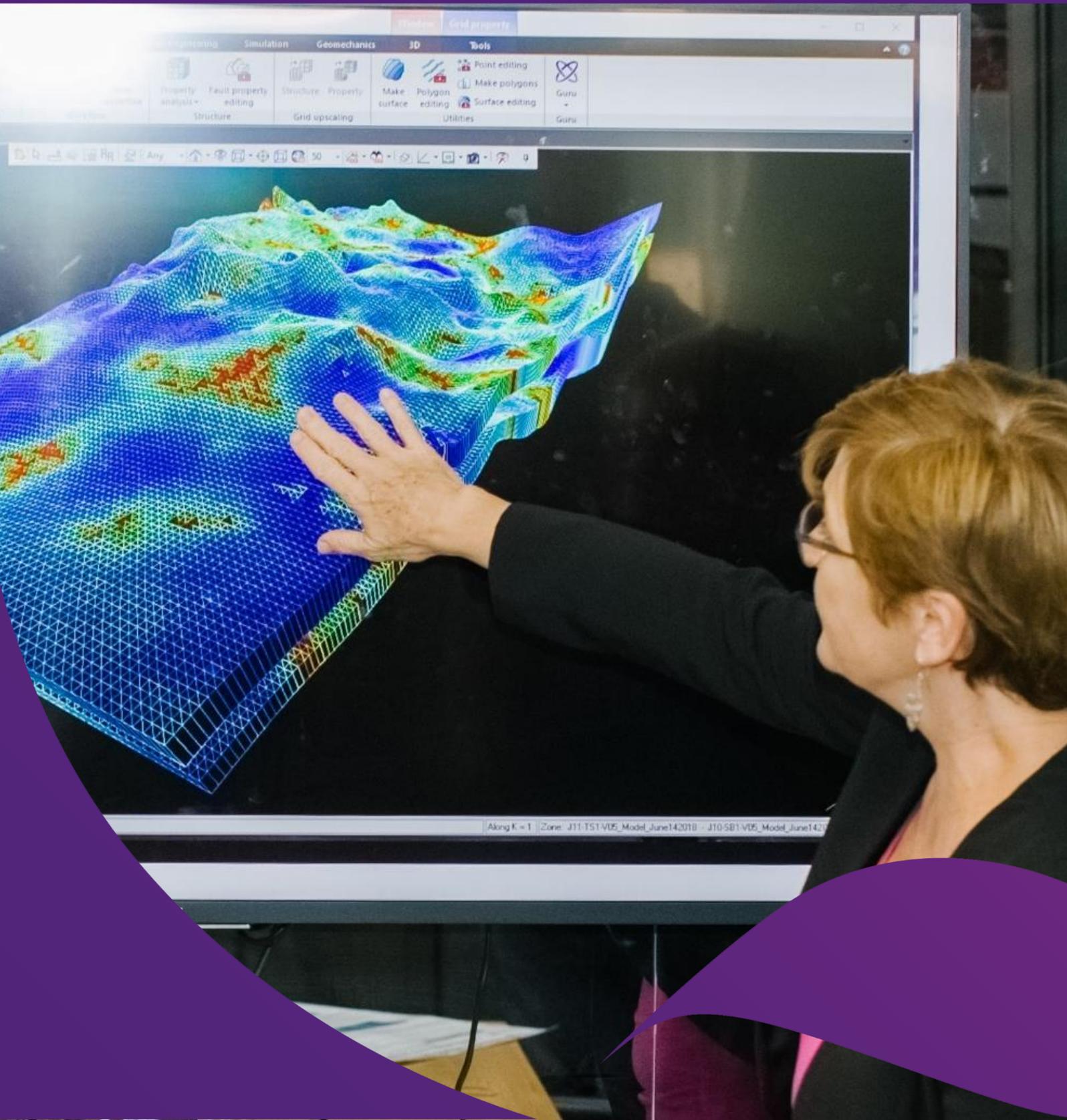


UQ Copula Plug-in: Installation Guide (Petrel 2017)



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Acknowledgements

The UQ Copula Plug-in for Petrel is an initiative of The University of Queensland Centre for Natural Gas. The plug-in makes new “research code” developed by the UQ Centre for Natural Gas more broadly available for use by industry professionals, by integrating it with widely-used modelling package, Petrel.

The plug-in for Petrel and this installation guide was prepared for The University of Queensland Centre for Natural Gas by Petrotechnical Data Systems. Lead researcher for the project, Dr Sebastian Hörning from the UQ Centre for Natural Gas, provided additional material and support.

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Disclosure

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For more information about the Centre’s activities and governance see natural-gas.centre.uq.edu.au

Disclaimer

Use of the plug-in is at the user’s own risk, and is subject to the Terms of Use. If you have not read, are not covered by, or do not agree with those Terms of Use, do not install or use the plug-in. The UQ Centre for Natural Gas is not affiliated with Schlumberger, nor is the organisation or plug-in endorsed by them. The screenshots featured are of the 2019 edition of Petrel and there may be slight variances in layout.

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1 Document overview

This document describes the procedure for installing the UQ Copula Plug-in, allowing the user to access this tool in the Petrel® 2017 E&P software platform. The UQ Copula Plug-in is used to generate conditional random fields. After analysing the input data, a theoretical copula model is fitted to the data using a maximum likelihood approach. A sequential copula-based simulation approach is subsequently used to generate conditional realisations.

1.1 System requirements

Users are required to have Petrel 2017.x installed to run the UQ product. Please be advised that the Petrel platform only runs on Microsoft Windows operating systems (Windows 7 or higher).

1.2 Files required

To install the UQ Copula Plug-in, locate the installer **CopulaWorkflow2017.pip**.

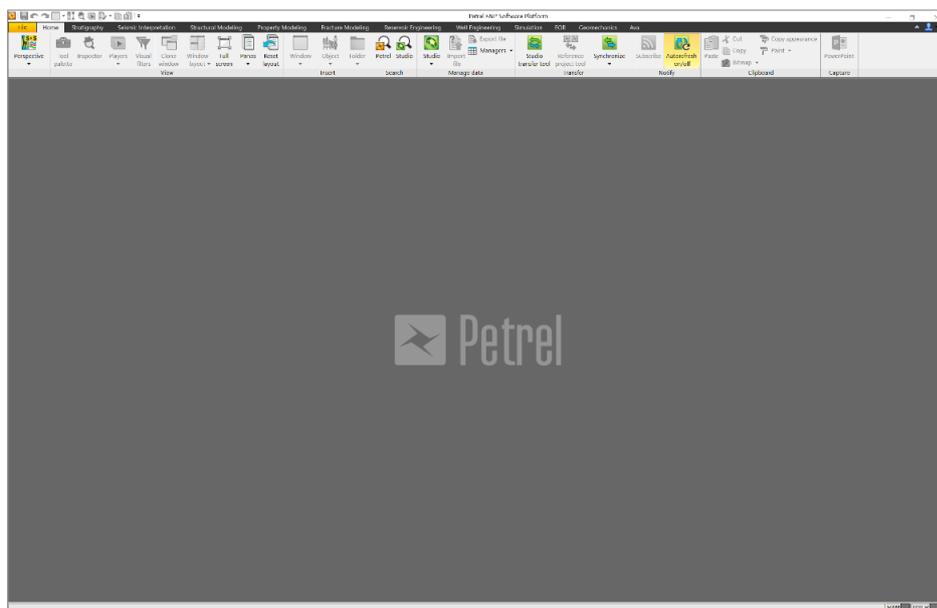
2 Installation process

In some organisations, IT administrator permissions are required to install plug-ins. Check if IT administrator permissions are required and arrange this assistance if needed.

If you have the necessary permissions, follow the installation process outlined below. An installation wizard will guide you during this process.

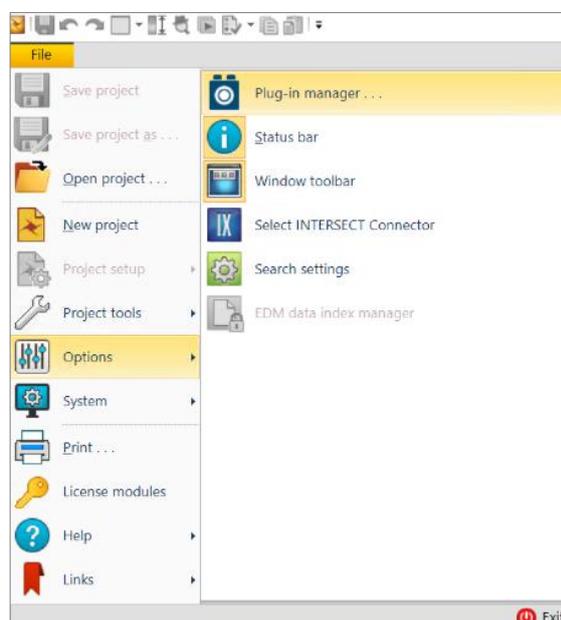
2.1 Open Petrel 2017.x

Proceed to open Petrel 2017.x. There is no need to load an existing project.

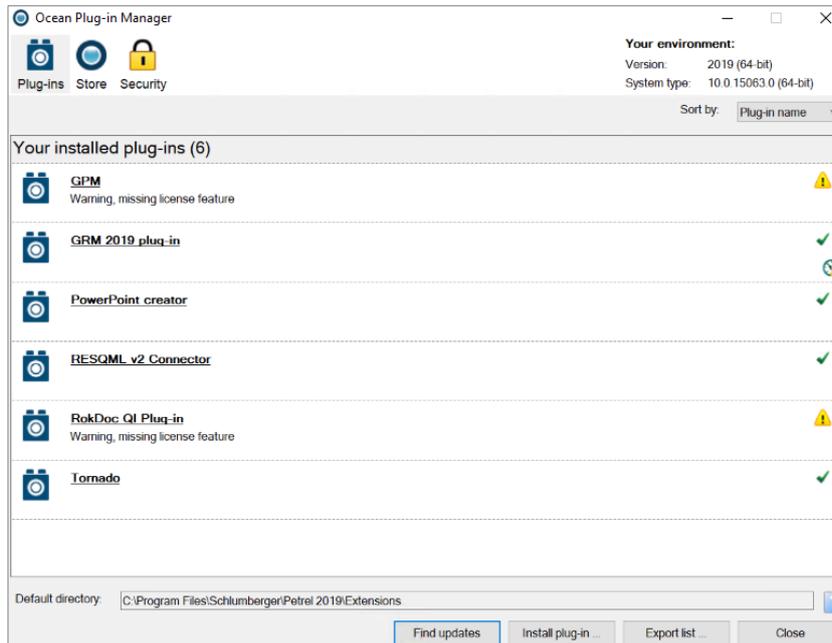


2.2 Open plug-in manager and install plug-in

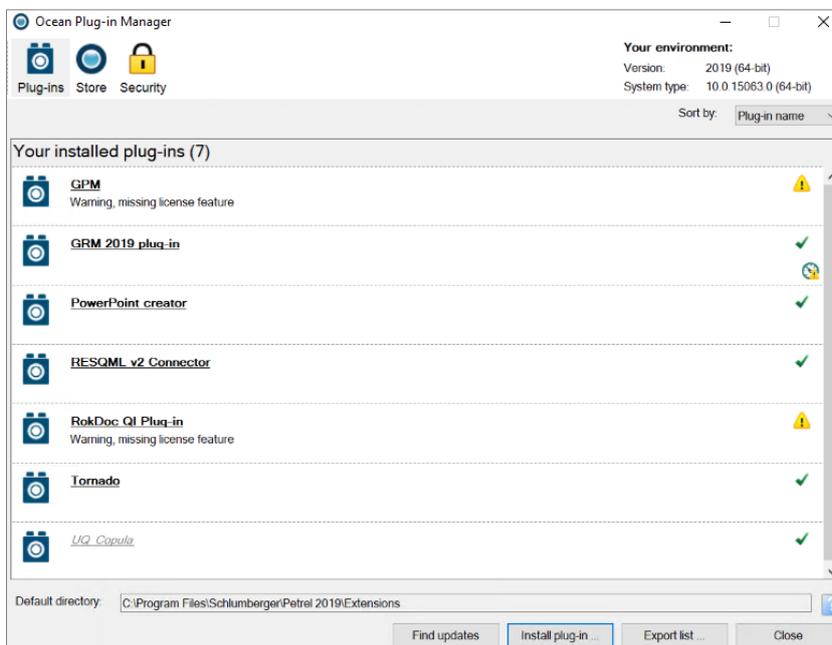
Through the File menu, select Options and then the Plug-in manager.



Use the 'Install plug-in' option at the bottom of the Plug-in manager and locate the .pip file.

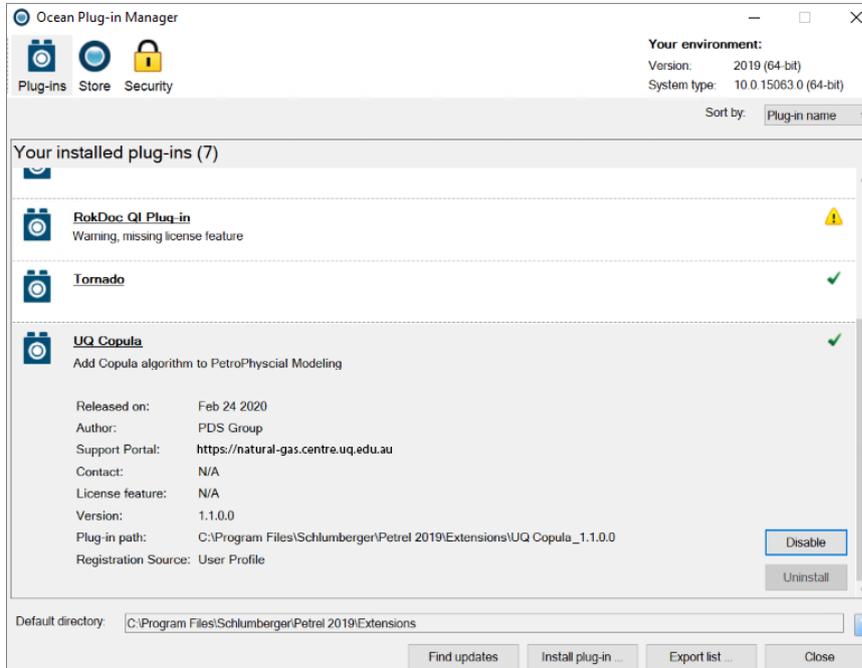


Once the install is complete the plug-in will be listed as available in the PLUG-in manager (in italics), however you will not be able to launch the plug-in until Petrel is restarted.



2.3 Restart Petrel

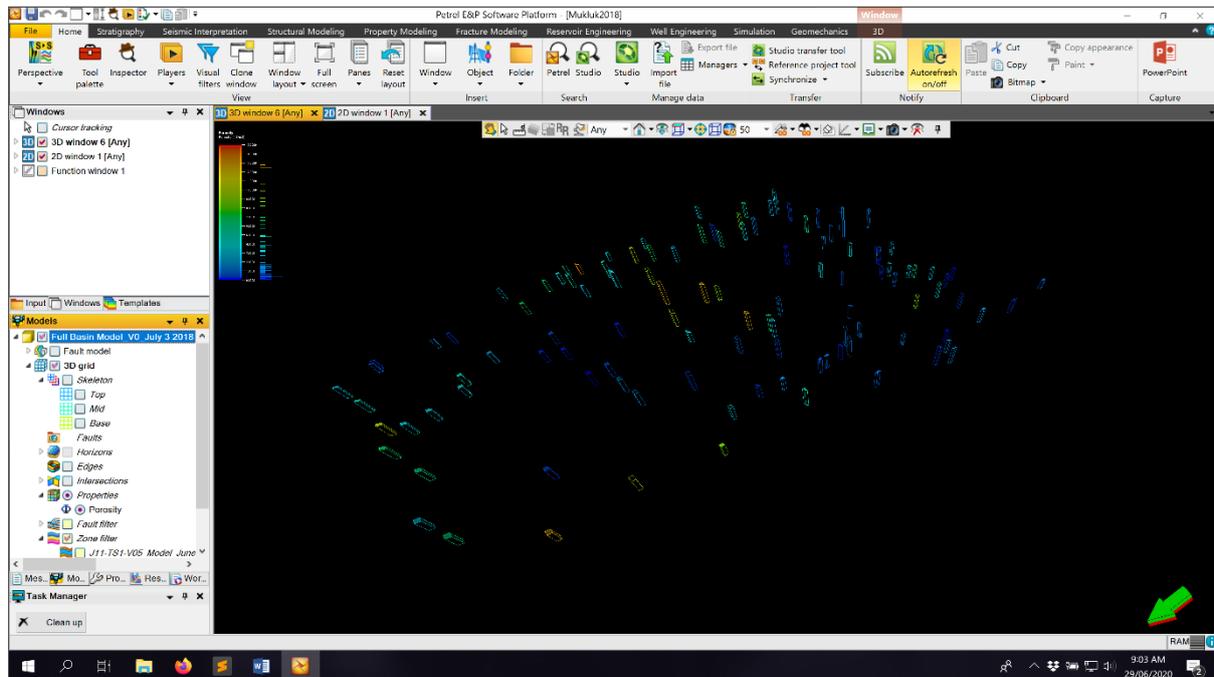
Following a restart of the Petrel application, the plug-in will appear in the Plug-in manager list, accompanied by options to Disable and Uninstall the plug-in, as shown below.



2.4 Check plug-in operability

The successful installation of the plug-in can be tested using one of the test projects provided, which contains some sample input data in the form of upscaled cells in a 3D model.

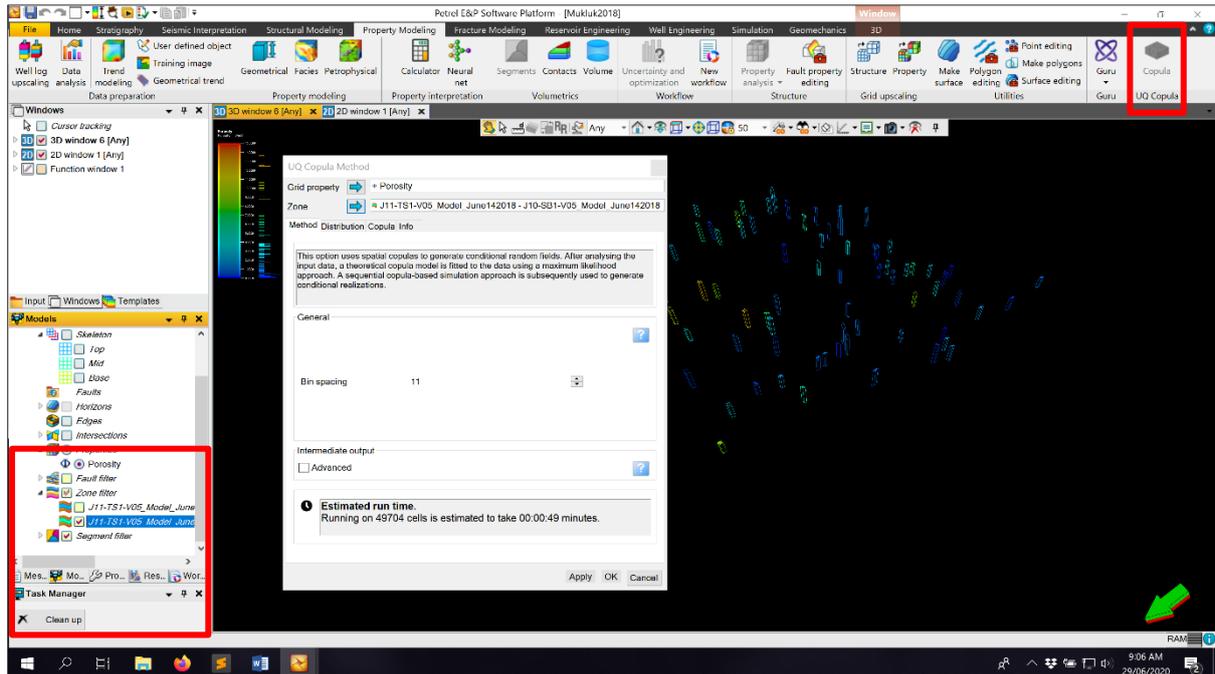
Proceed to open the following test project: **Mukluk2017.pet**



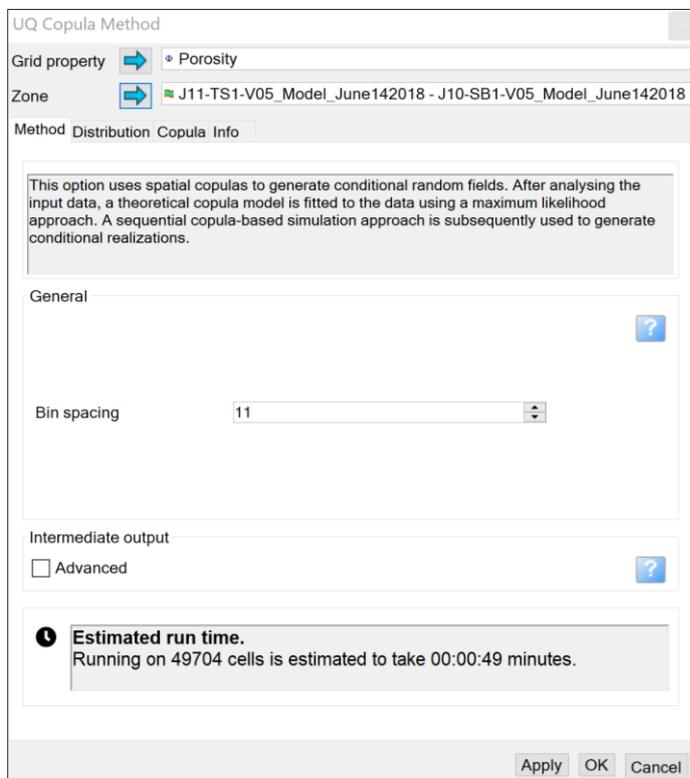
If the installation process has been successful, the plug-in will be available in a number of places within Petrel.

Please follow the next steps to check the success of the installation.

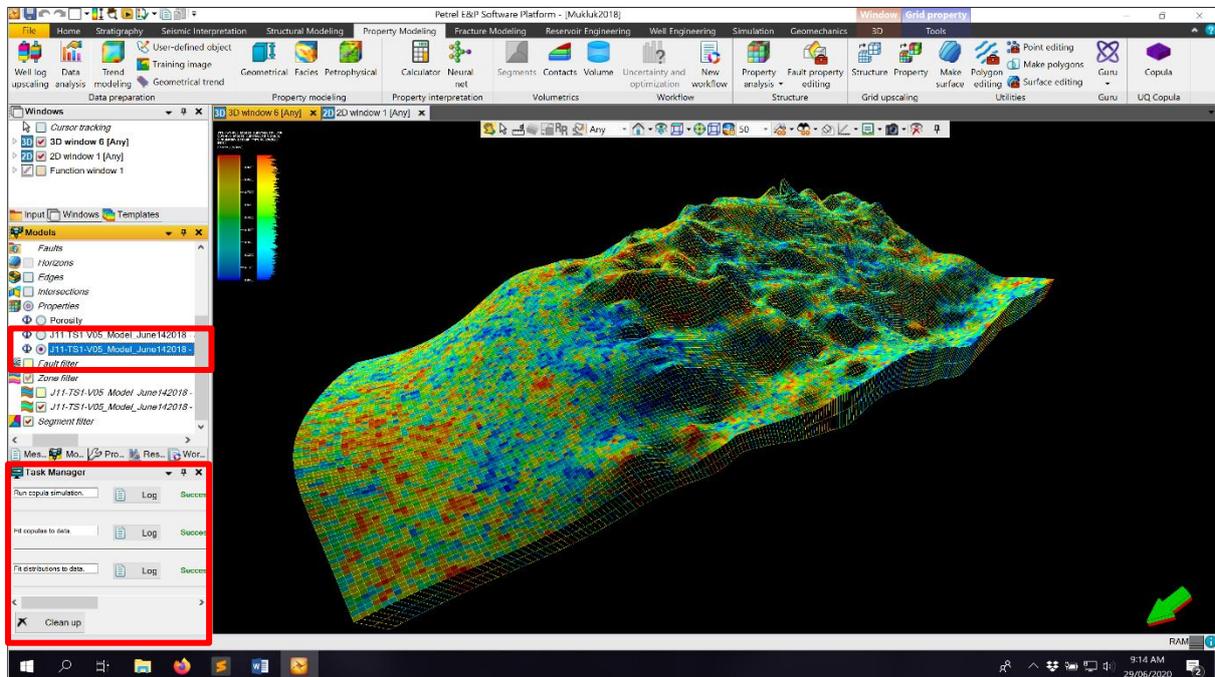
Go to the Property modelling tab in the Petrel ribbon. Click on the Copula icon and launch the plug-in.



Supply the inputs as shown below. Select the Apply or OK buttons to execute the simulation.



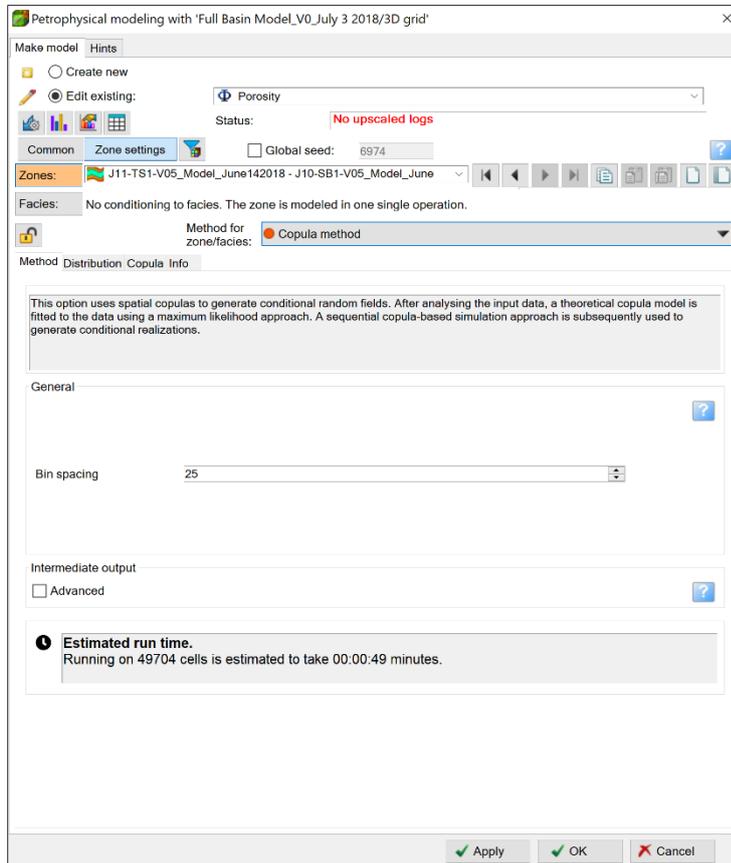
After approximately two minutes the results will be published as two 3D properties in the 3D grid.



Progress can be monitored using the Task Manager, which is visible at the bottom left part of Petrel.

2.5 Check plug-in operability (Optional)

The algorithm is also available as a method for zone/facies modelling in the Petrel “Petrophysical modelling” dialogue. Note that if you do not have a licence for Petrophysical modelling, you will not be able to access the plug-in in that mode, for the purposes of checking the installation.





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