move™

Petroleum Experts

Installation Guide
Version 2019.1.0

Table of Contents

MOVE2019.1.0 SOFTWARE AND SUPPORTING DOCUMENTATION

Move2019.1.0 Software

Move2019.1.0 Software Installers for Move and Knowledge Base

Move2019.1.0/Windows64   Installers for Windows (64-bit)

License Manager Software

Petroleum Experts License Manager Software including documentation available as a separate download

Beginning with MOVE 2019, MOVE is licensed solely using the Petroleum Experts HARDLOCK License Manager. The FlexNet Activation licensing method has been removed from the software and licensing system. In summary:

- Support for FlexNet licensing manager has been removed from the software and licensing system.
- MOVE 2019 requires a HARDLOCK license and will not work with previous FlexNet License Manager installations.
- The MOVE 2019 installer installs a Windows Service (Petroleum Expert Licensing) that allows MOVE to communicate with the HARDLOCK License Manager, or a BITLOCK Licensing Dongle.
- Following the installation of MOVE 2019, the Setup HASP Bitlock Driver program needs to be run from the Petroleum Experts Licensing folder of the Windows Start menu. This installs the device driver for the BITLOCK Licensing dongle.

Move Link for Petrel Software Installers

MoveLinkforPetrel/Petrel 2017   MSI and PIP Installers for Petrel 2017
MoveLinkforPetrel/Petrel 2018   MSI and PIP Installers for Petrel 2018
MoveLinkforPetrel/Petrel 2019   MSI and PIP Installers for Petrel 2019

Move2019.1.0 Release Documentation

The following documents, Tutorials, and Knowledge Base are provided with Move2019.1.0

The Knowledge Base resource contains all the Move Help Pages, Tutorials, Monthly Features and release documentation presented in a single, offline, searchable entity, independent of Move.

The Knowledge application is now installed alongside MOVE via the installer.

- Move2019.1.0 Release Notes PDF
- Move2019.1.0 Installation Guide PDF
- Move2019.1.0 Tutorials
- Move2019.1.0 Tutorial Data Files
- Open Server User Guide PDF

SYSTEM REQUIREMENTS

Operating Systems

Please check to ensure you have at least the minimum specification before installing:

Windows (native)	Windows 64-bit OS releases only; latest tested and supported version - Windows 10.0.18362 1903 (May 2019 Update). Compatible with 64-bit versions of Windows 7 SP1, Windows 8, and Windows 8.1. MOVE is not supported on Windows XP, or Windows Vista.
	Windows requires .NET Framework 4.6. or higher.
Cloud (VM)	Microsoft Azure - for Move to function effectively it requires an Azure N-Series VDI optimised specification for or similar eg NCv3-series (Tesla V100 GPU), ND-series (Tesla P40 GPU) https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sizes-gpu
	Amazon EC2 - for Move to function effectively it requires an EC2 P3 VDI optimised specification for or similar eg p3.2xlarge (1 Tesla V100 GPU) , p3.8xlarge (4 Tesla V100 GPUs) https://aws.amazon.com/ec2/instance-types/p3/
	Google Cloud - for Move to function effectively setup your Compute Engine instance to add GPUs eg NVIDIA Tesla P100 Virtual Workstations: nvidia-tesla-p100-vws https://cloud.google.com/compute/docs/gpus/#gpu-virtual-workstations
	Schlumberger DELFI - MOVE is now provisionally supported in the DELFI COGNITIVE E&P ENVIRONMENT https://www.software.slb.com/delfi

Graphics Card

Move is a graphics intensive application and takes advantage of modern hardware GPUs in order to speed up 3D rendering. The more memory on the graphics card the better Move will handle larger 3D/2D Seismic files, DEMs and Image overlays.

Graphics Card minimum requirements (Notebook or Workstation)

- Minimum of 4GB of RAM, Graphics card drivers fully up to date, Pixel Shader 2.0 or later, OpenGL compatible

Notebook Graphics Card mid-range:

- NVIDIA with 4-6 GB RAM e.g. Quadro M4000M, M22000, P2000, P3000, P3200

Notebook Graphics Card high-end

- NVIDIA with 8-16 GB RAM e.g. Quadro P/M5000, P/M6000,M5500, P4000, P5000, P4200, P5200

Workstation Graphics Card mid-range

- NVIDIA with 4-8 GB RAM eg. Quadro M2000, M4000, M5000, P1000, P2000, P4000

Workstation Graphics Card high-end

- NVIDIA with 12-32 GB RAM e.g. Quadro K6000, M6000, P5000, P6000, GP100, GV100

Hardware

The following list is provided as a general guide only. If your system configuration is different and you are unsure of its capability then please email us: **edinburgh@petex.com** with your system details for further information. The hardware requirements greatly depend on the size of data sets you are using. If you are working with large data sets and utilising Move applications simultaneously then we would strongly suggest the following recommendations.

Workstation/Desktop

For example, Dell Precision 5820, 7820, 7920

Specification	Recommended Minimum	Recommended Ideal
CPU	Intel i5 quad-core	Intel i7 /Xeon E5 4C/6C/8C/12C
Memory	8 GB	16-128 GB+

Laptop/Notebook

For example Dell Precision 5 5530 15", 7530 15", 7730 17"

Specification	Recommended Minimum	Recommended Ideal
CPU	Intel i5 4C	Intel i7/i9 4C/6C
Memory	8 GB	8-64 GB+

Screen/Monitor

- Minimum screen resolution is a single monitor/screen with 1920 x 1080 pixels (full HD 1080p)
- Move is a graphics intensive application supporting multiple simultaneous views of your data model, and we recommend as much screen space as you can afford in order to maximise your experience and attention to detail.
- Move will support dual monitors which are recommended at 30" in size and above.
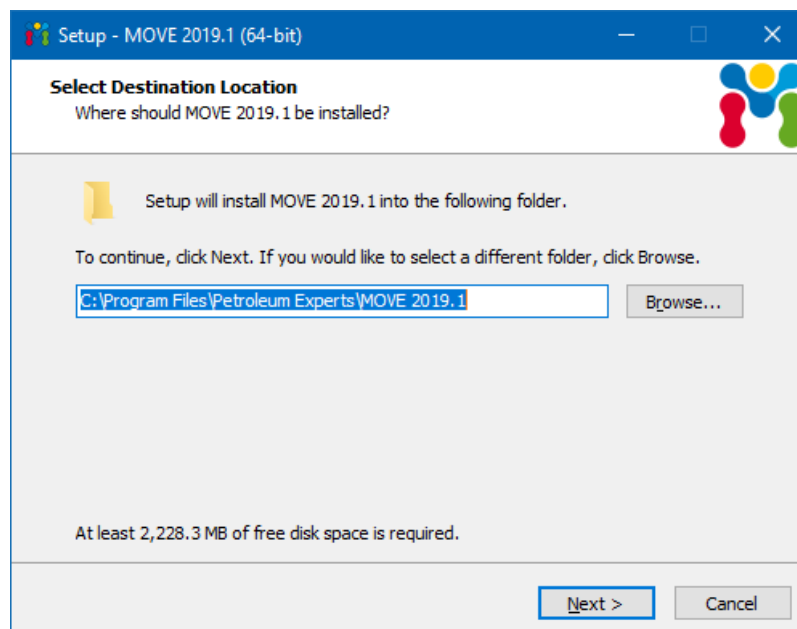
INSTALLING MOVE

Installing on Windows

It is recommend that you should be a Windows Power user/ Administrator or have UAC (user access control) elevated to administrator to install on Windows.

Move2019.1.0 requires .NET Framework 4.6.

- **Desktop** - .NET Framework 4.6 comes pre-installed with Windows 10 first version and all versions thereafter. Can be downloaded for Windows 8.1, 8 and 7.
- **Server** - .NET Framework 4.6 comes pre-installed with Windows Server 2016 and all versions thereafter. Can be downloaded for Windows Server 2012 R2, 2012, 2008 R2 SP1, 2008 SP2.

To begin the installation process you must **browse** to the installer file, for example:

`:\Move2019.1.0\Windows64\move_2019.1.0_windows_64-bit.exe`

Installation Folder

Select the folder in which you wish to install Move. You may select your own location by clicking **Choose** or by typing the explicit location in the input box. By default it is:

`C:\Program Files\Petroleum Experts\Move2019.1.0`

Uninstalling Move on Windows

Please use the **Control Panel** to uninstall Move.

Using Windows Remote Desktop

When connecting to a remote system using Microsoft's Remote Desktop Services you may experience issues when using larger models. This is due to limitations with the software OpenGL driver that is used when using the remote connection. There are several ways to work around such issues:

Use another remote display application that uses the hardware capabilities of the host machine.

Start Move on the host machine **BEFORE** connecting to it. This requires physical access to the host system.

Use the alternate software OpenGL drivers provided with Move. These are located in the bin/mesa3d folder inside the location where Move was installed. When Move senses that it is running remotely then it will prompt the user that the software drivers are being copied into the bin folder and being utilised. See notes below:

Cloud and Virtual machine usage additional notes:

Clients can use Move via remote or cloud solutions or technologies e.g. HP RGS, VMware vSphere, Citrix Xen, Microsoft Azure, OpenText Exceed, or Windows Server 2016 DDA/Remote FX.

You must ensure for the best experience that the remote machine or technology has dedicated or a virtual GPU resource that will enable 3D graphics, OpenGL, and GPU capability. The Azure Cloud (N-Series), or Windows Server 2016 DDA/Remote FX capability both provide GPU solutions.

You can run Move on the Windows Server environment using basic RDS/RDP technology, however Move will fall-back to "software" rendering for OpenGL or GPU code. This is satisfactory to a degree, however will be much slower that "native" or managed "virtual/cloud" solutions, with 2D or 3D Seismic rendering being especially very limited.

The number of choices for deployment to the cloud or a virtual environment is really client preference, and we cannot recommend one solution over another. We also cannot test Move in all end-user virtual environments due to sheer number of possible software and hardware configurations, however we can assist with any problems you may come across when the environment or solution is being tested prior to production.

3D PDF Animations

On machines without Adobe Flash Player installed, the 2D animation controls in the 3D PDF output fail to function. Flash is NOT required for viewing the 3D content files, only the 2D Section Animations. Install Flash Player software to resolve this issue.

The Acrobat Player error message links to here:

https://helpx.adobe.com/acrobat/using/flash-player-needed-acrobat-reader.html

MOVE LINK FOR PETREL V2019.1.0

The Move Link for Petrel* provides a means for Petrel users to share and transfer data with Petreoleum Experts Move product.

Once installed, the Link allows the Petrel user to specify objects within the input tree to send across to Move. Once in Move, it is then possible to perform model building, editing and analysis or utilise functionality within the modelling modules to perform restoration, validation, balancing, Fault Analysis, Stress Analysis, Geomechanical Modelling, Fracture Modelling and Fault Response Modelling on the transferred objects (if licenses for these modules have been purchased and are available).

*Mark of Schlumberger

System Requirements

Software

To use the Move Link for Petrel (version 2019.1.0), users are required to have a valid licence of:

- Petroleum Experts Move application 2019.1.0 (Move2019.1.0)
- Schlumberger's Petrel seismic to simulation software version 2018.x, 2017.x, or 2016.x
- Move Link for Petrel version 2019.1.0 from Petroleum Experts. For clarification on compatibility please email **edinburgh@petex.com**.

Operating System

Petrel is a Windows only product and therefore the Move Link for Petrel will only be available where all products are running on Windows. See the Move system requirements and the Petrel software system requirements for details.

Installation

Move Link for Petrel can be either be installed using the Ocean Plugin Manager, or directly using the provided msi installer package files.

To install using the Plugin manager.

- Access the Ocean Plugin Manager… (when using the ribbon interface this is accessed via the File -> Options menu, and in the Classic User interface via the Help menu)
- Select Install plugin.
- Browse to the appropriate pip fie on the installation disk(see table below).
- Close down Petrel.
- When Petrel is restarted, the Move Link icon will be visible (If using the ribbon interface, this will be in a new MVE group in the Home tab, and when using the classic interface, as a tool button in the File Actions toolbar.

It is recommended that the plugin is installed using administrator privileges.

Move Version	Petrel Version	Move Link for Petrel Version (via pip or msi)
Move2019.1.0 (64-bit)	2019.x (64-bit)	MoveLink2018forPetrel2019.pip
Move2019.1.0 (64-bit)	2018.x (64-bit)	MoveLink2018forPetrel2018.pip
Move2019.1.0 (64-bit)	2017.x (64-bit)	MoveLink2018forPetrel2017.pip

MOVE LINK FOR OPENWORKS R5000

The Move Link for OpenWorks R5000 provides a means for Landmark OpenWorks users to share and transfer data with Petroleum Experts Move Application of the Move Suite.

The Link allows the Move user to directly import objects within an OpenWorks R5000 database via the input tree to send them across to Move. Once in Move, it is then possible to perform model building, editing and analysis or utilise functionality within the modelling modules to perform restoration, validation, balancing, Geomechanical Modelling, Fracture Modelling and Sediment Modelling on the transferred objects (if licenses for these modules have been purchased and are available).

Software

To use the Move Link for OpenWorks R5000, users are required to have a licence of:

- Move Link for OpenWorks R5000 software from Petroleum Experts.
- Move software from version Move2019.1.0 from Petroleum Experts.
- Windows - Landmark OpenWorks software from version 5000.10.5 back.
- Oracle software version 11g onwards.

For clarification on compatibility please email: **edinburgh@petex.com**.

Operating System

Please check to ensure you have at least the minimum specification before installing:

Windows	Microsoft Windows Windows 7 (64-bit).

Installation (client)

The Link will work whether running Move from the same machine as OpenWorks is installed on or alternatively from a client machine on the network that can see the OpenWorks and Oracle installations.

Linux Move clients should ensure that Oracle and OpenWorks installations are on your PATH and LD_LIBRARY_PATH and visible on the network. Optionally on Linux you can install a local client of Oracle software.

Windows clients MUST install Oracle client and OpenWorks client software before you run Move. See the installation guides from these products for more information. Petroleum Experts do not supply Oracle or Landmark OpenWorks clients; these can be obtained as part of your own OpenWorks installation - contact your own local OpenWorks administrator. Some environment variables that need to be set or will help set-up include:

- OWHOME, OW_ORACLE_USER OW_HOME_DIR

CONTACTING PETROLEUM EXPERTS

Contact Details

Edinburgh Office
Petroleum Experts Ltd.
Petex House, 10 Logie Mill
Edinburgh, EH7 4HG, UK
www.petex.com/products/move-suite/

T: +44 (0) 131 474 7030
F: +44 (0) 131 474 7031
Email : edinburgh@petex.com

Houston Office
Petroleum Experts Inc. US
757 North Eldridge Parkway, Suite 510
Houston, Texas
77079
USA

T: +1 281 531 1121
F: +1 281 531 0810
Email : houston@petex.com