Version 1.0.419.0

Installation Manual

Index:

1. Introduction

This document describes the installation process for OpenMind.

2. Requirements

OpenMind requires the following dependency packages be installed before it can be properly used:

Requirement	***More details***
Windows Operating System 10 or higher	OpenMind is a Windows-based application
A minimum of 100 MB disk space dedicated to the installation folder	For the application packages and related artefacts
*.NET 8.X runtimes**	The application is built on top of recent .NET versions, and will be upgraded to run over the newer versions eventually
*ASP.NET Core Runtime 8.X**	ASP.NET Core Runtime is used for the integration OpenMind has against Python
*Microsoft Visual C++ Redistributable**	For the support of ZGY seismic format
*Python 3.10.X, tensorflow and tf2onnx packages**	Used by some of the AI-based horizon interpretation engines

Table 1: Dependency requirements for running OpenMind.

**These dependencies are also installed by the OpenMind installer, if necessary and by following the installer's instructions.*

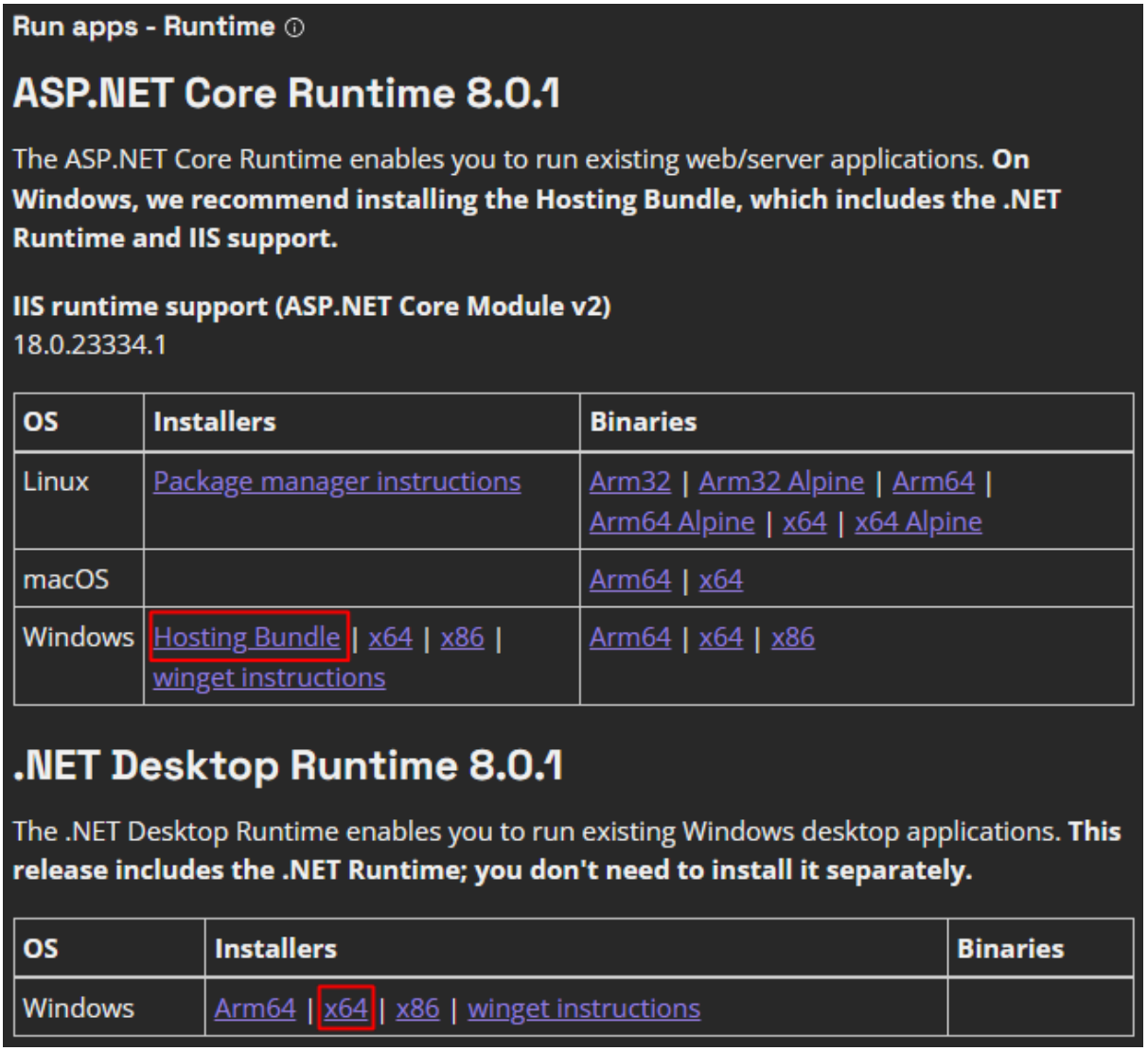
2.1 .NET 8.X Runtimes

OpenMind is built on top of .NET 8.X technology. As a consequence, a runtime environment for .NET 8 may be installed, in case it's not already installed.

OpenMind installer will attempt to install the required .NET runtimes as one of the installation steps. All that is required is to follow the instructions and accept the suggested installation options.

If the installation fails or is skipped, it is still possible to download the official .NET 8 runtime packages can be from:

https://dotnet.microsoft.com/en-us/download/dotnet/8.0



Run apps - Runtime ⓘ

ASP.NET Core Runtime 8.0.1

The ASP.NET Core Runtime enables you to run existing web/server applications. **On Windows, we recommend installing the Hosting Bundle, which includes the .NET Runtime and IIS support.**

IIS runtime support (ASP.NET Core Module v2)
18.0.23334.1

OS	Installers	Binaries
Linux	Package manager instructions	Arm32 | Arm32 Alpine | Arm64 | Arm64 Alpine | x64 | x64 Alpine
macOS		Arm64 | x64
Windows	Hosting Bundle | x64 | x86 | winget instructions	Arm64 | x64 | x86

.NET Desktop Runtime 8.0.1

The .NET Desktop Runtime enables you to run existing Windows desktop applications. **This release includes the .NET Runtime; you don't need to install it separately.**

OS	Installers	Binaries
Windows	Arm64 | x64 | x86 | winget instructions	

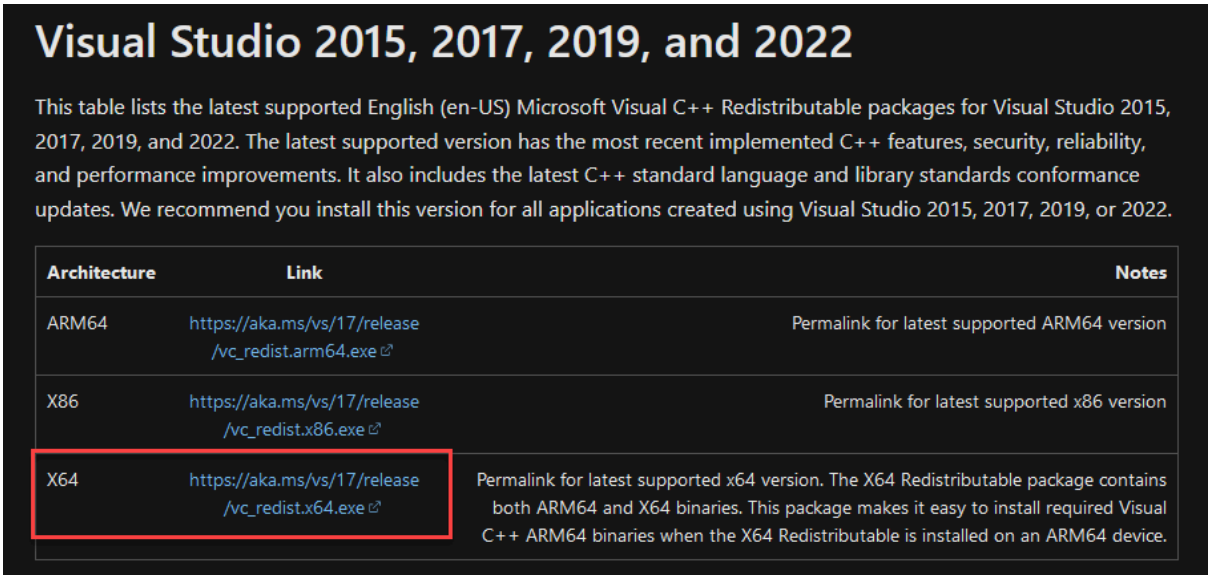
*Figure 1: Both **ASP.NET Core Runtime - Hosting Bundle** and **.NET Desktop Runtime x64** are installed by the OpenMind installer, if not previously installed.*

2.2 C++ Redistributable

The seismic ZGY importer in OpenMind is dependent on the ***Microsoft Visual C++ Redistributable*** package. In many occasions, this is already installed locally on the machine, due to its need by other applications. If that is not the case, the OpenMind installer will prompt the user to accept its installation as one of the steps in OpenMind's installation. As a last resource, a manual download and installation can also be executed.

Searching online can take one to the latest C++ Redistributable installer. Currently, it can be downloaded from the link below:

https://docs.microsoft.com/en-us/cpp/windows/latest-supported-vc-redist?view=msvc-170



Visual Studio 2015, 2017, 2019, and 2022

This table lists the latest supported English (en-US) Microsoft Visual C++ Redistributable packages for Visual Studio 2015, 2017, 2019, and 2022. The latest supported version has the most recent implemented C++ features, security, reliability, and performance improvements. It also includes the latest C++ standard language and library standards conformance updates. We recommend you install this version for all applications created using Visual Studio 2015, 2017, 2019, or 2022.

Architecture	Link	Notes
ARM64	https://aka.ms/vs/17/release/vc_redist.arm64.exe	Permalink for latest supported ARM64 version
X86	https://aka.ms/vs/17/release/vc_redist.x86.exe	Permalink for latest supported x86 version
X64	https://aka.ms/vs/17/release/vc_redist.x64.exe	Permalink for latest supported x64 version. The X64 Redistributable package contains both ARM64 and X64 binaries. This package makes it easy to install required Visual C++ ARM64 binaries when the X64 Redistributable is installed on an ARM64 device.

*Figure 2: Link to download of the **vc_redist_x64.exe** installer, which is required to be installed in case the machine does not have the **Visual C++ Redistributable** already installed from before.*

2.3 Proxy Server

If the installation of OpenMind needs to run behind a proxy server, then the following command line can be used to complete the installation:

OpenMind_v1.0.326.0.exe PROXY=http://user:pass@myproxy.com:8080

Where the **user** and **pass** represents a valid user login and password, which can access the proxy at location **myproxy.com:8080**.

In addition, a Trusted Host parameter can be set to define which online server can be used to download the required python installation packages:

OpenMind_v1.0.354.0.exe PROXY=http://user:pass@myproxy.com:8080 TRUSTED_HOST=pypi.python.org,files.pythonhosted.org,pypi.org

Notice that hosts must be separated by commas, when more than one will be used.

2.4 NVIDIA® CUDA®

If the machine in which OpenMind will be installed contains or has access to a ***NVIDIA®*** graphic card, it may be very beneficial to have the runtime for ***CUDA®*** also installed, as OpenMind can leverage on the graphic card to run the Machine Learning models significantly faster.

During the installation process, OpenMind installer will attempt to start the installation of the runtime automatically. The following steps will be then presented.

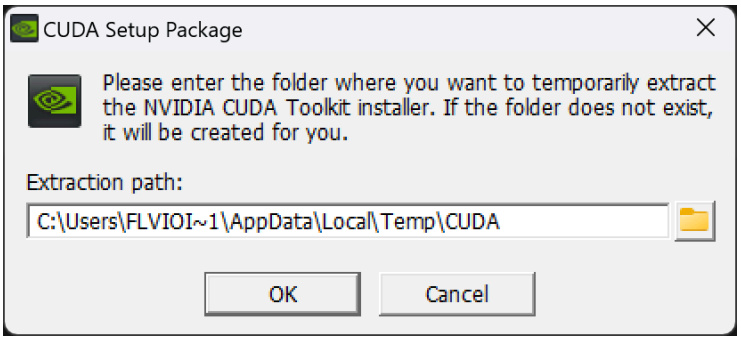


Figure 3: Accept or change the suggested installation extraction path

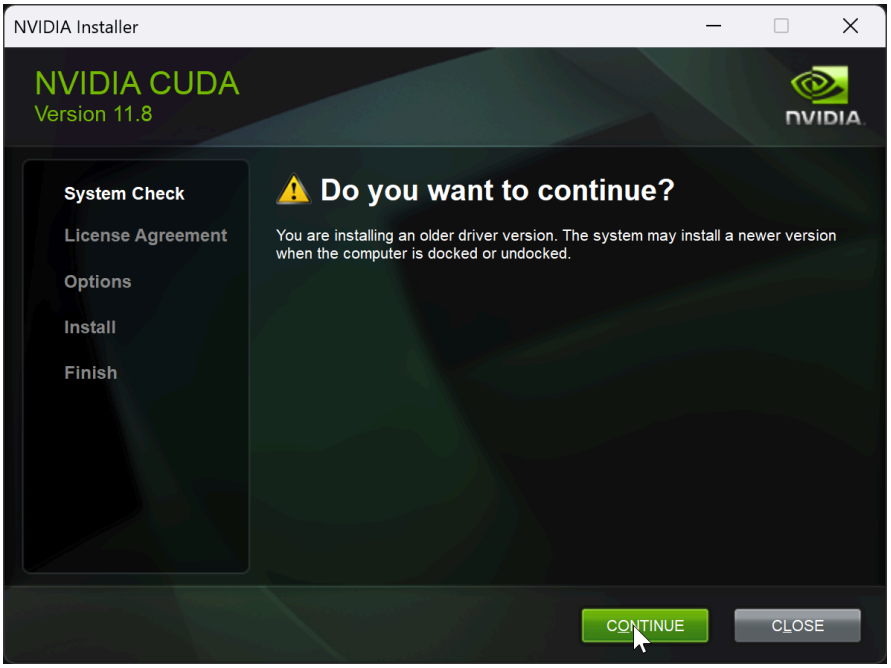


*Figure 4: The **CUDA®** version currently supported by OpenMind will be presented, click on **Continue.***

Figure 5: The license agreement needs to be accepted

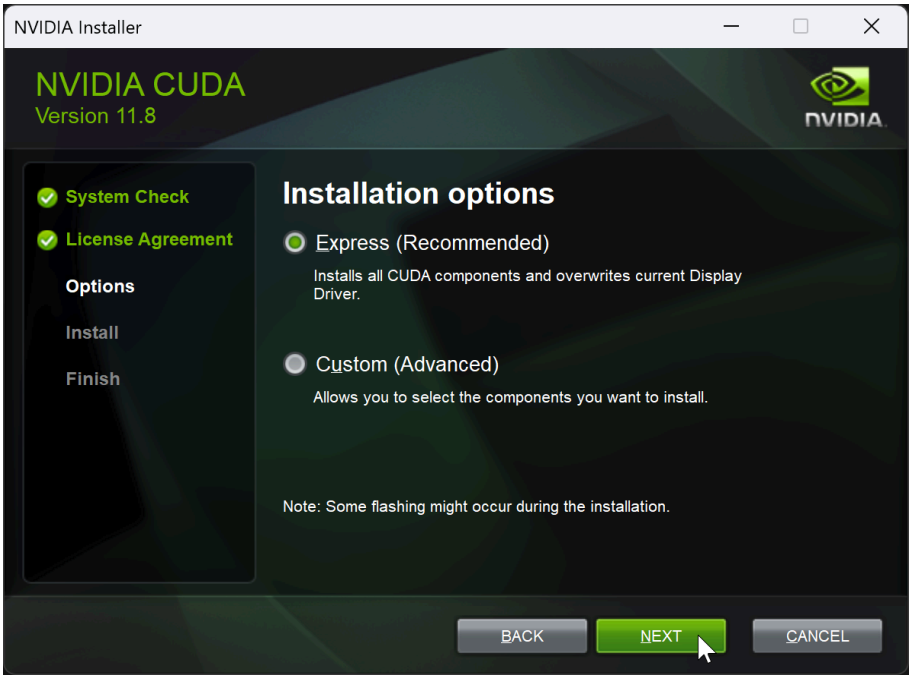


*Figure 6: Accept the Express (Recommended) option, and click on **Next***

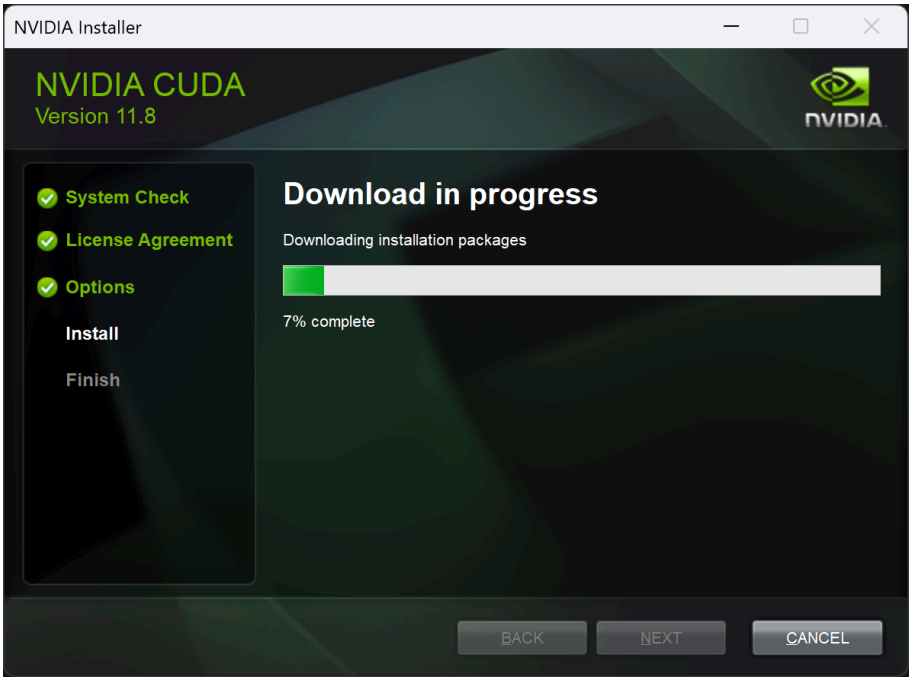


Figure 7: Downloading all installation packages may take a while

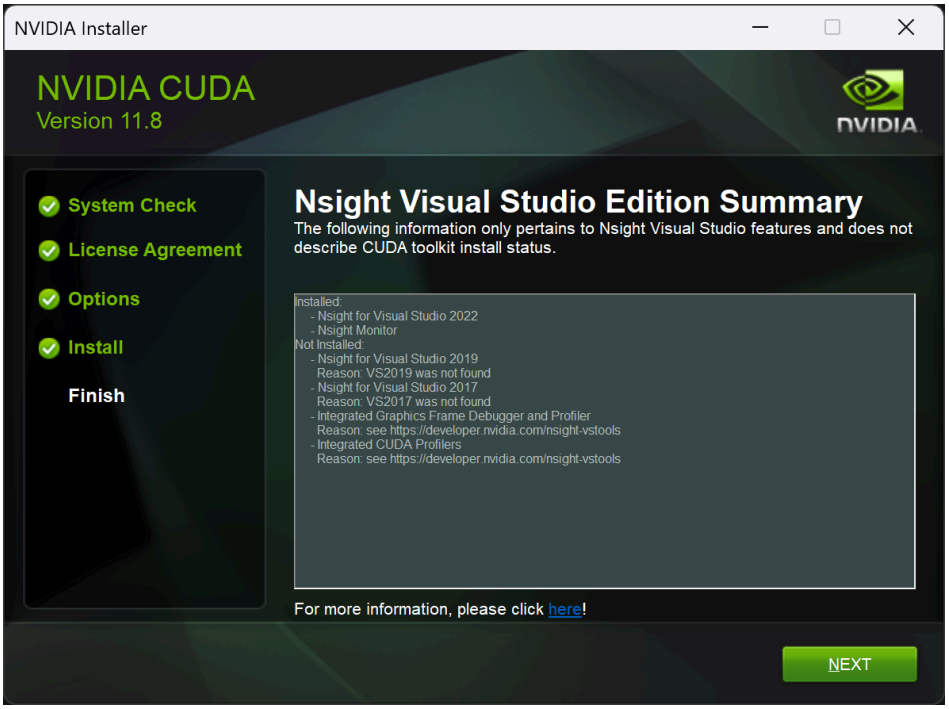


*Figure 8: A summary is presented. Click on **Next***

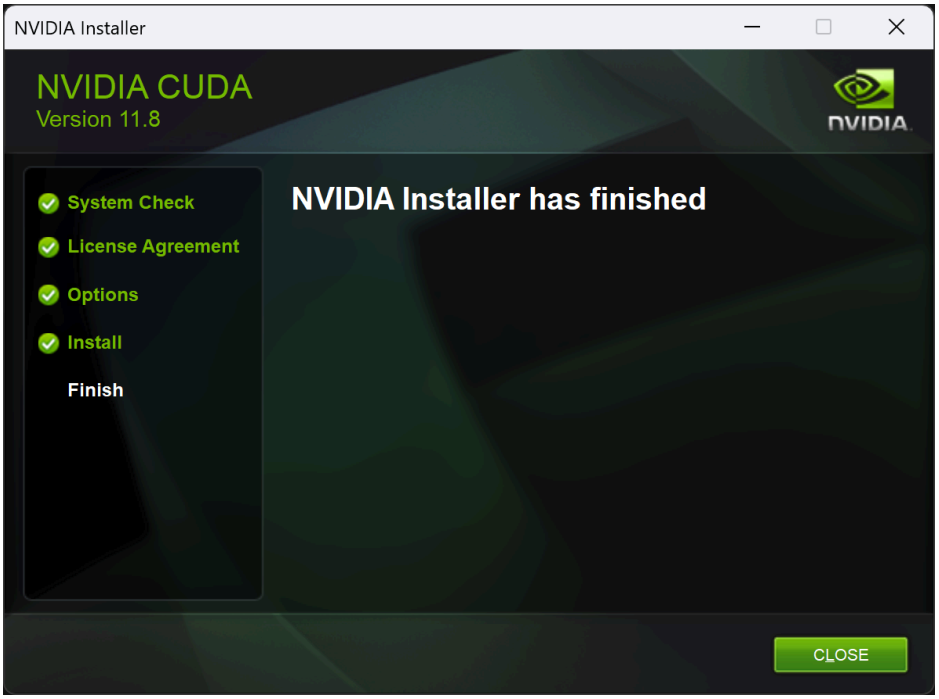


Figure 9: The installation is finished, and the installer can be closed

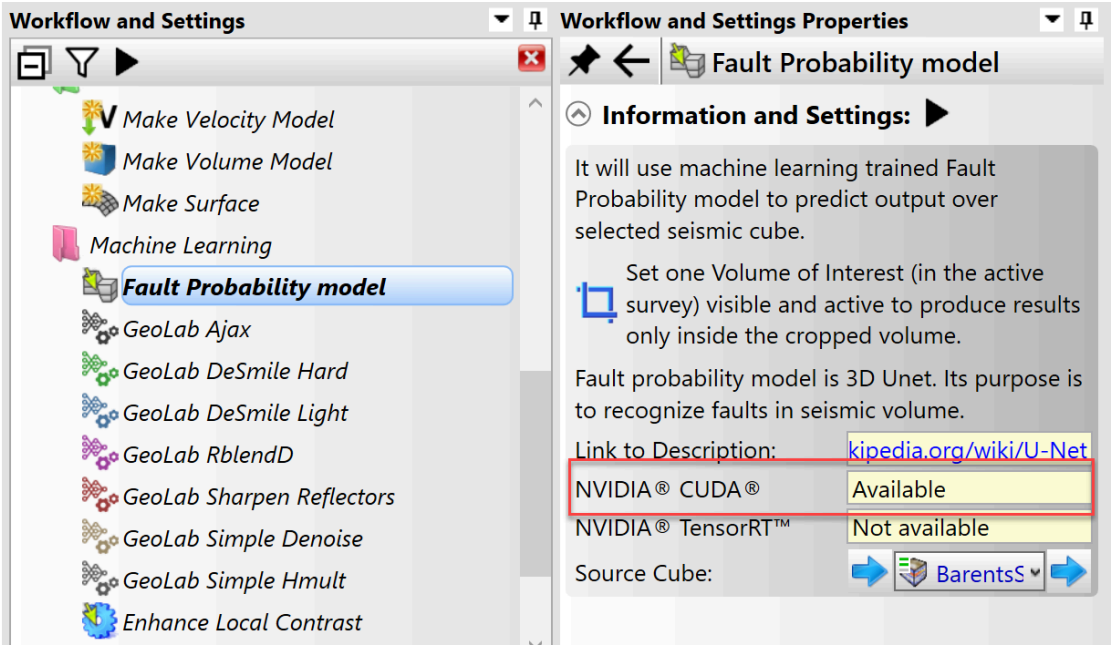


*Figure 10: Later on, after all installation steps from Section 3 are concluded, and the software is licensed, it will be possible to verify for each Machine Learning model if **NVIDIA® CUDA®** is available to be used. If it is, OpenMind will use the graphic card instead of running the models on the CPU.*

2.5 Hardware Specification

OpenMind in principle does not require any specific extra hardware than what is already described in the previous subsections. However, when used against large seismic datasets, it may be beneficial to use more powerful machines in order to obtain better performance.

Although hardware specification is dependent on several factors, not least where the data is located (locally or remotely), here are some points to serve as an initial guide:

- RAM memory: the more RAM memory available, the faster any software application will run. This can be even more relevant when multiple processing-intensive applications are running simultaneously. The recommendation is at least 16GB in RAM memory. If possible, 64GB or 128GB of RAM is preferable.
- Hard disk: at least 1TB in SSD disk is recommended. In the case of working with large datasets, it can be important to have extra disk capacity.
- Processor: Intel 7 or higher. OpenMind makes extensive use of parallelizing, so that the more available CPU processing cores, the better for overall performance.
- Graphic Card: a dedicated CUDA GPU can speed up significantly the Machine Learning models execution in OpenMind. A model like NVidia RTX A4500, or higher, would be beneficial not only for OpenMind, but also to other applications that may make use of GPU multi-core processing.

3. Installation steps

After downloading the .exe installation file, double click to start the installation.

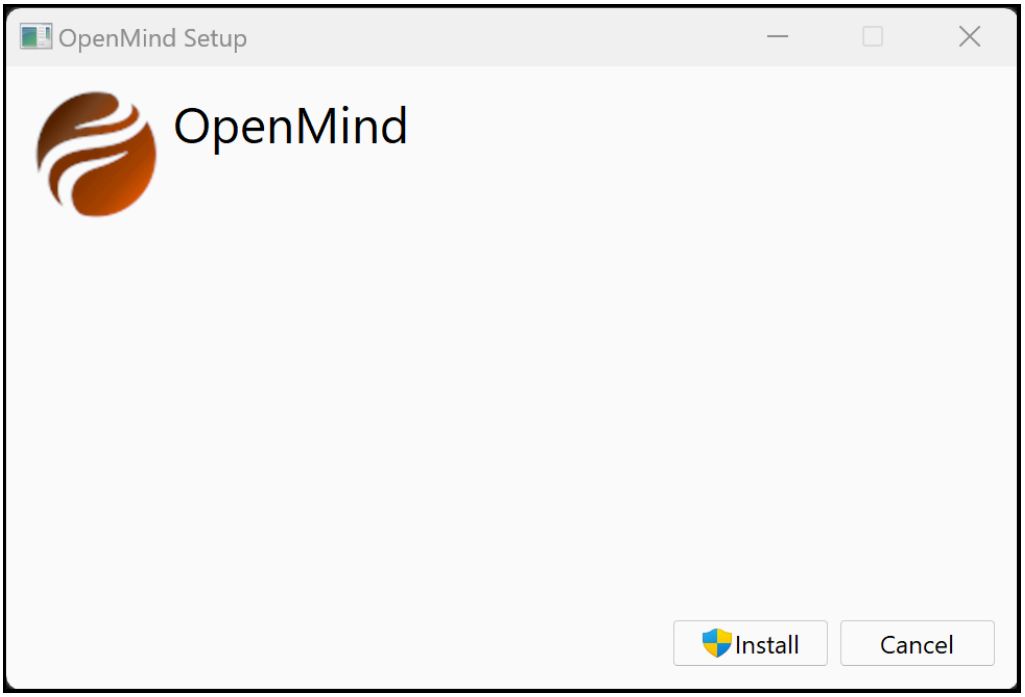


*Figure 11: Click on **Install.***

A check will then be run on the system, to verify if some of the dependencies are installed already. If not, accept all further instructions to install for example .NET, ASP.NET, or Python locally.

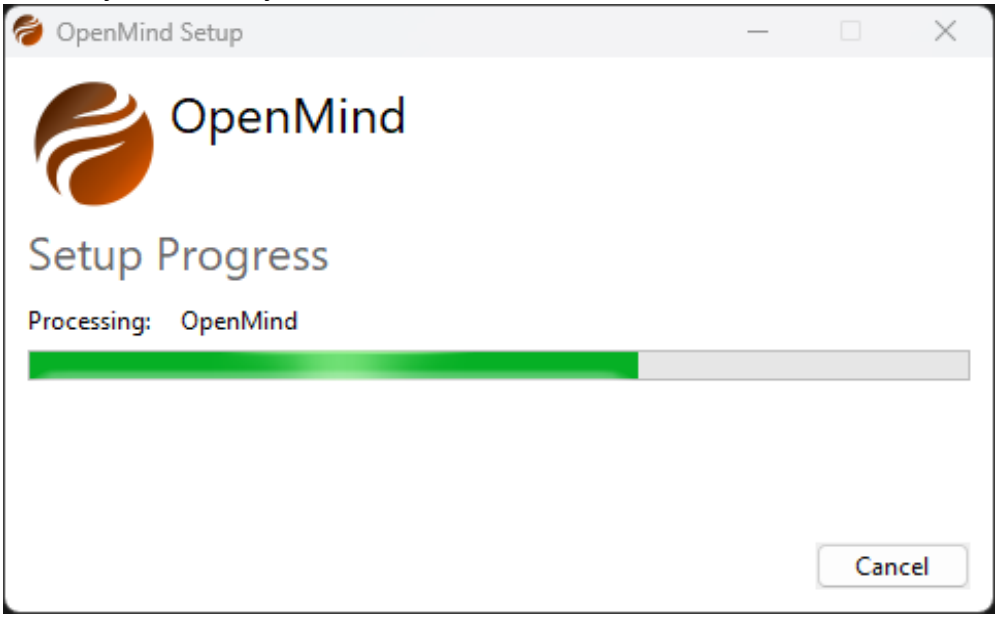


Figure 12: The installer first checks for dependencies already installed. Follow instructions if some extra packages are prompted for installation.

After dependencies are verified and installed, the installation can proceed.

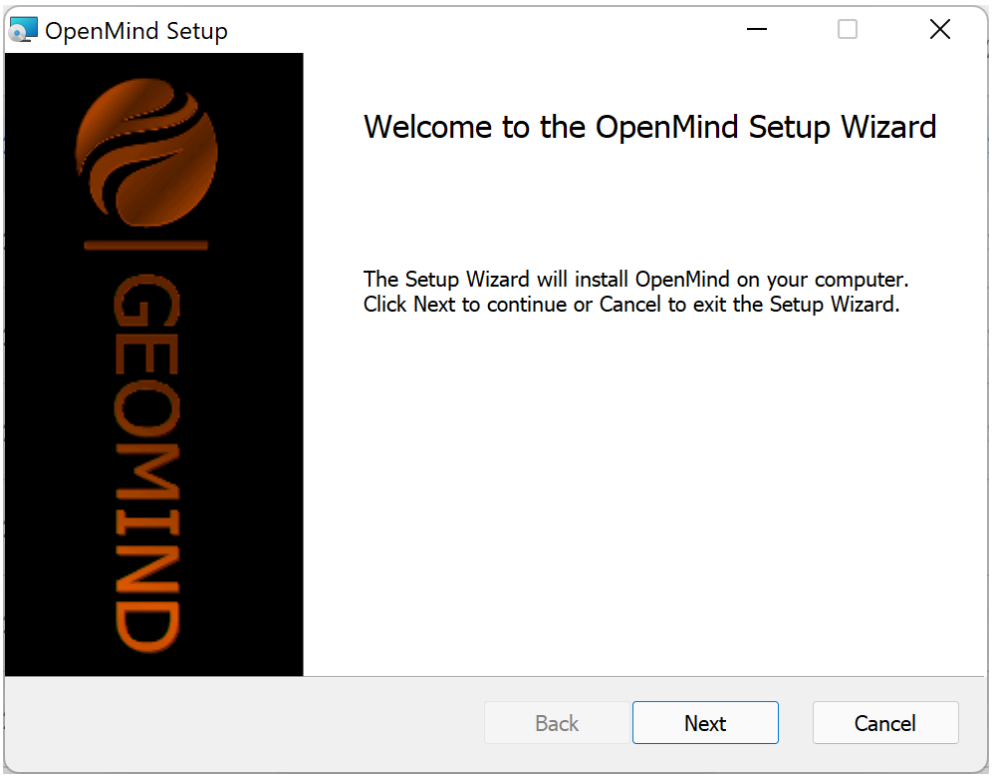


Figure 13: Welcome page: click on Next to proceed

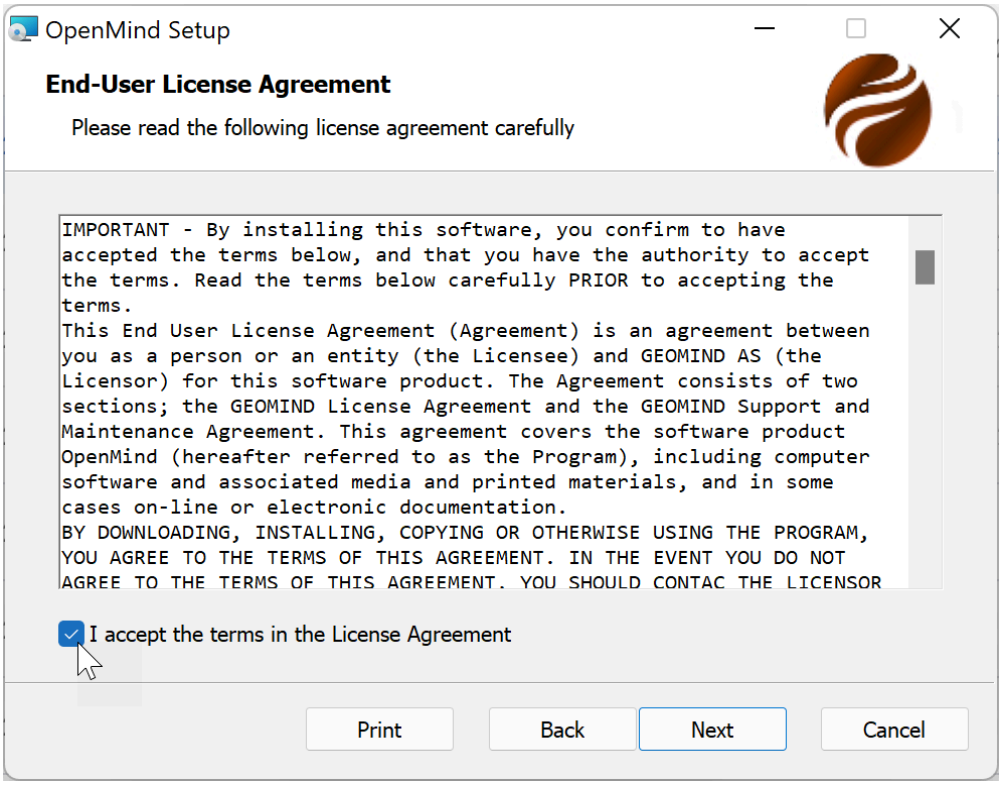


Figure 14: EULA acceptance required. Next to proceed with installation.

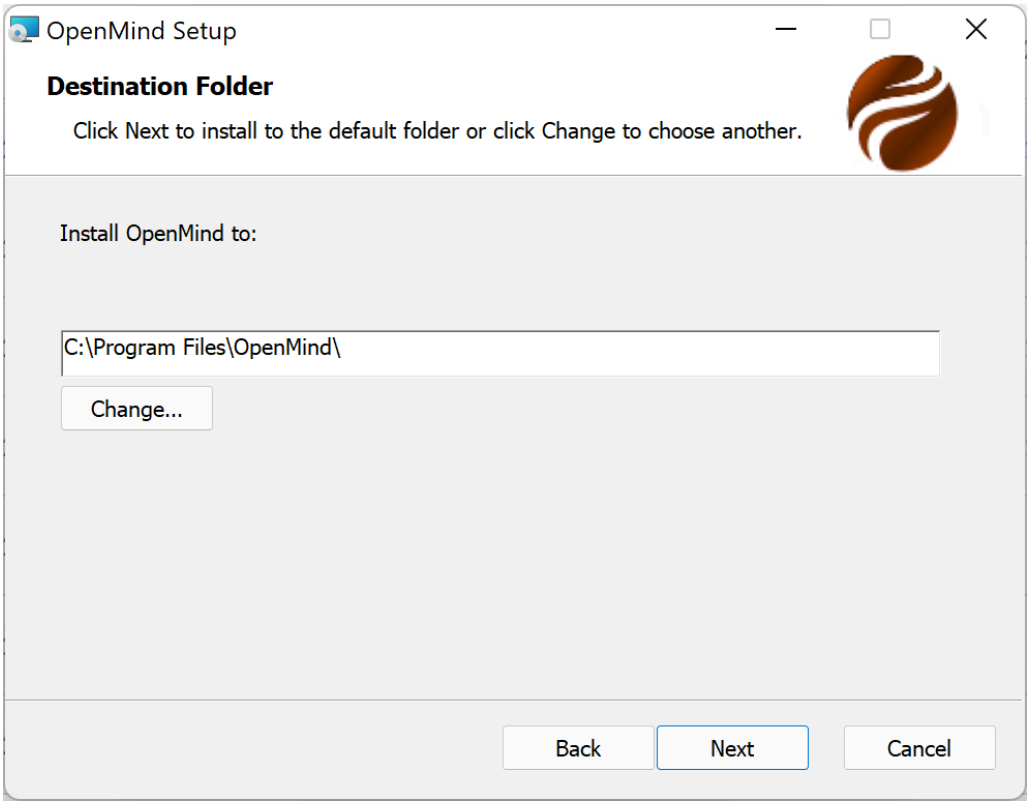


Figure 15: Selection of Installation folder: click on Next to proceed.

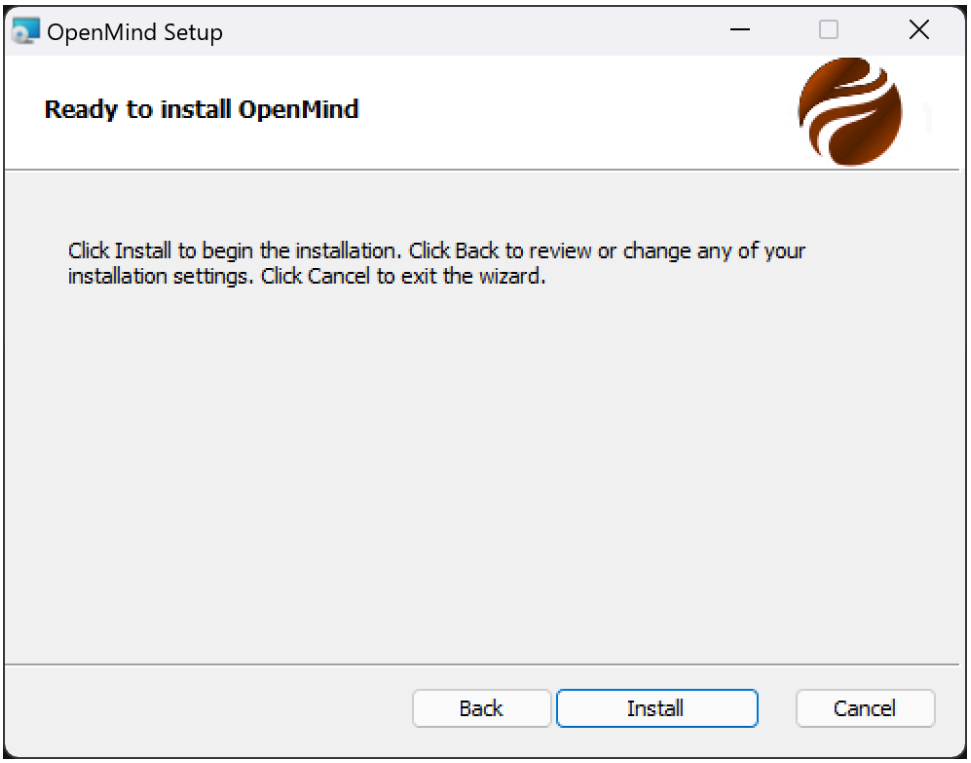


Figure 16: Install button is the next step.

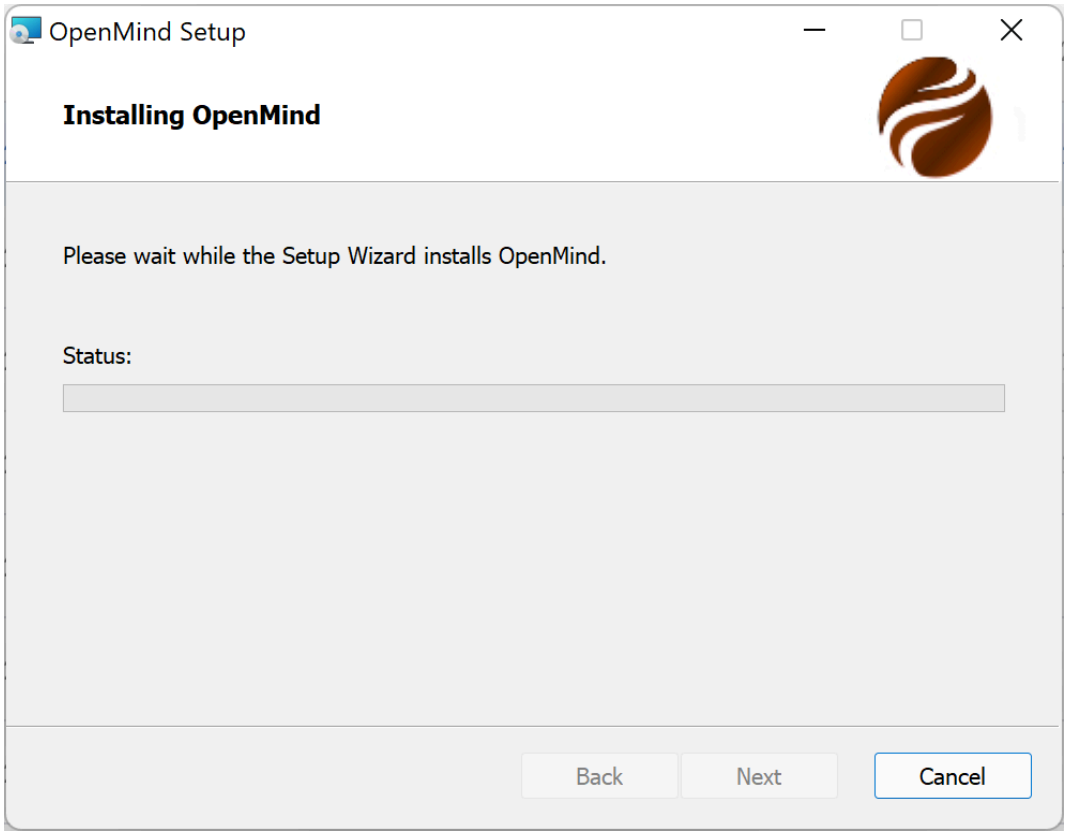


Figure 17: A Status bar indicates the progress of installation.

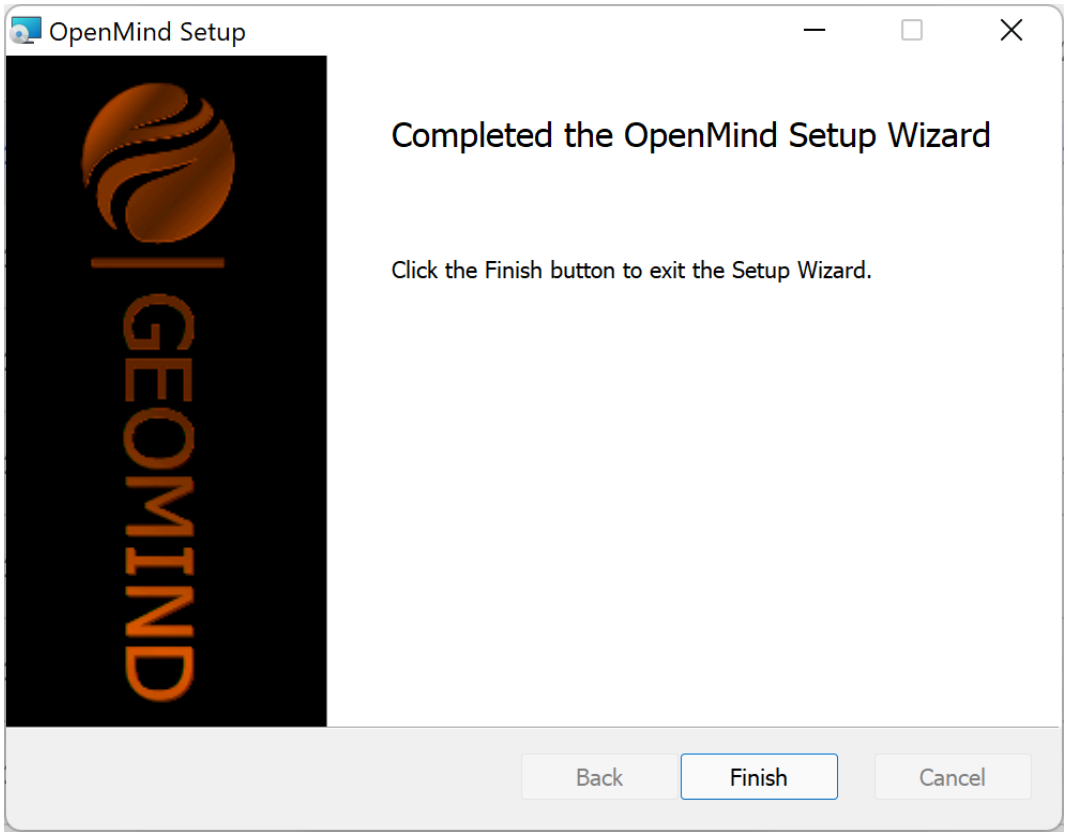


Figure 18: Click on Finish to conclude the installation.

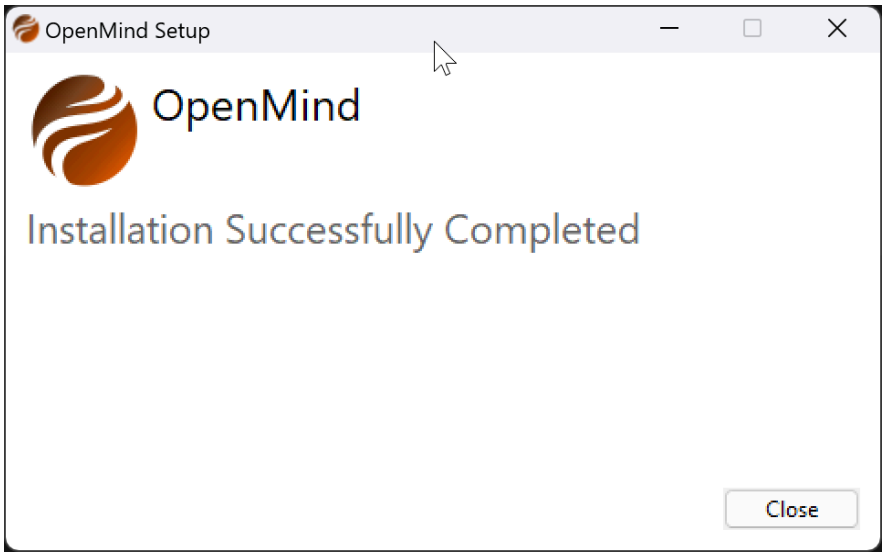


Figure 19: Installation is completed.

4. Licensing

Licenses for OpenMind are provided per user.

The program, however, can be used without licenses, with a limited set of functionalities made available. For example, loading seismic files and visualizing them on the 3D Window is allowed without a license.

In order to enable all OpenMind features, just one license module is required. The license will be provided by Geomind AS personnel, in the form of a **License Key**.

Access to the internet is required, when activating the license. Note that only license information is transferred to the online license server, in an encrypted way. No personal data is ever transmitted.

4.1 License activation

When OpenMind is started without a valid license, a License Management window pop-up will be presented to the user.

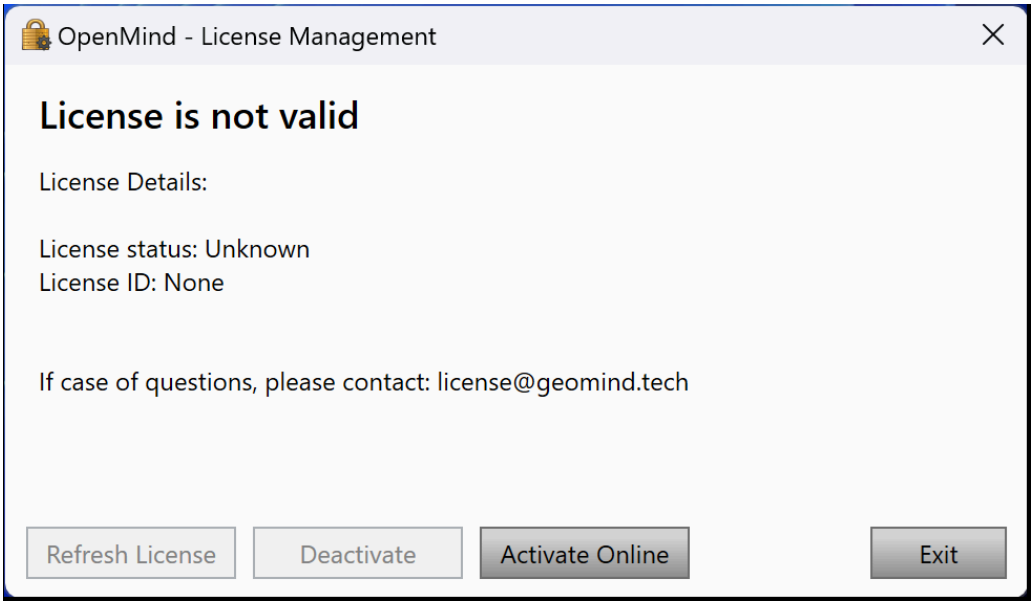


Figure 20: License Management pop-up, presented to the user when starting OpenMind without a valid license.

Click on the Activate Online button, in order to proceed with the activation.

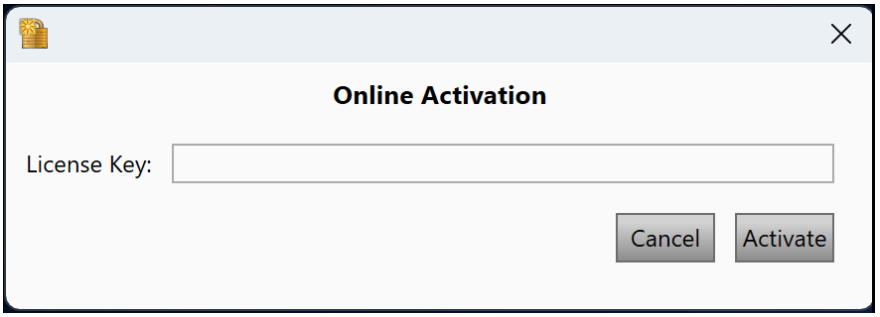


Figure 21: The Online Activation pop-up window.

Use the **License Key** provided by Geomind AS, in order to activate the license. Please contact at support@geomind.tech, in case you need license details.

The License Key may look something like this:

012ABC-345EDF-678ABC-901ABC-234DEF-V3

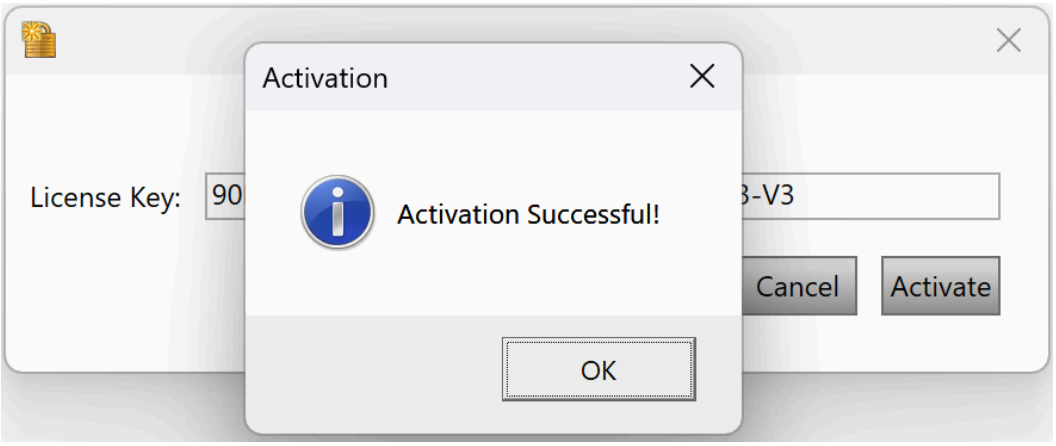


Figure 22: Successful activation pop-up window.

After clicking on the Activate button, and upon a check on the validity of the license details, a confirmation of successful activation pop-up window will appear.

5. Document history

Date	***Details***	***Editor - Title***
2022-06-22	Initiated document	Flávio Ivan - CTO
2022-06-22	Added details for installer for version 0.1.0.2364 with Python v0.0.5.dev1	Flávio Ivan - CTO
2022-08-16	Added details for installer for version 0.1.0.2418 with Python v0.0.5.dev2 Added information about C++ Redistributable system requirement, as it is required when not previously installed by other applications.	Flávio Ivan - CTO
2022-08-23	Added details for installer for version 0.1.0.2422 with Python v0.0.5.dev2	Flávio Ivan - CTO
2022-09-30	Added details for installer for version 0.1.0.2465 with Python v0.0.5.dev2	Flávio Ivan - CTO
2022-11-09	Added details for installer for version 0.1.0.2503 with Python v0.0.5.dev5	Flávio Ivan - CTO
2023-02-01	Added details for installer for version 0.1.0.2588	Flávio Ivan - CTO
2023-03-23	Updated details for version 0.1.0.2637	Flávio Ivan - CTO
2023-03-30	Updated details for version 0.1.2645.0	Flávio Ivan - CTO
2023-09-28	Updated details for version 0.1.2822.0, including updated to .NET 7 version, instead of .NET 6	Flávio Ivan - CTO
2023-10-12	Updated details for version 1.0.0.0	Flávio Ivan - CTO
2023-12-16	Hardware recommendations session added	Flávio Ivan - CTO
2024-02-08	Updated to version 1.0.116.0	Flávio Ivan - CTO
2024-03-06	Updated to version 1.0.139.0	Flávio Ivan - CTO
2024-04-03	Updated to version 1.0.162.0	Flávio Ivan - CTO
2024-05-29	Updated to version 1.0.209.0	Flávio Ivan - CTO
2024-05-31	Added information regarding *CUDA®* installation details	Flávio Ivan - CTO
2024-08-06	Updated to version 1.0.293.0	Flávio Ivan - CTO

2024-09-10	Added details regarding new way of activating license. Also updated proxy installation details.	Flávio Ivan - CTO
2024-12-04	Updated to version 1.0.419.0	Flávio Ivan - CTO