

Version 1.0.419.0

Installation Manual



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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
<i>Python 3.10.X, tensorflow and tf2onnx packages</i> *	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

OSInstallersBinariesLinuxPackage manager instructionsArm32 | Arm32 Alpine | Arm64 |
Arm64 Alpine | x64 | x64 AlpinemacOSArm64 | x64WindowsHosting Bundle | x64 | x86 |
winget instructionsArm64 | 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 versior
X86	https://aka.ms/vs/17/release /vc_redist.x86.exe ಬಿ	Permalink for latest supported x86 versior
X64	https://aka.ms/vs/17/release /vc_redist.x64.exe ೭	Permalink for latest supported x64 version. The X64 Redistributable package contains both ARM64 and X64 binaries. This package makes it easy to install required Visua 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.

CUD/	A Setup Package X			
Please enter the folder where you want to temporarily extract the NVIDIA CUDA Toolkit installer. If the folder does not exist, it will be created for you.				
	tion path:			
C:\Users\FLVIOI~1\AppData\Local\Temp\CUDA				
OK Cancel				

Figure 3: Accept or change the suggested installation extraction path

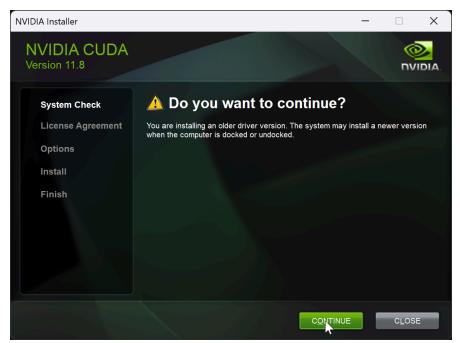


Figure 4: The CUDA® version currently supported by OpenMind will be presented, click on Continue.



Figure 5: The license agreement needs to be accepted



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



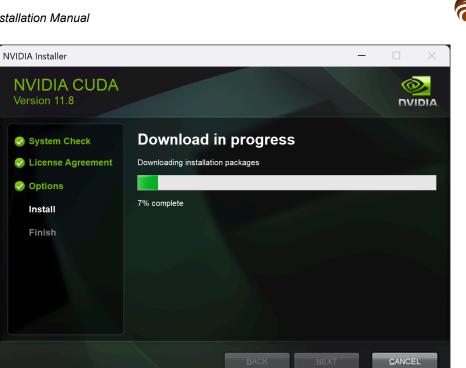


Figure 7: Downloading all installation packages may take a while

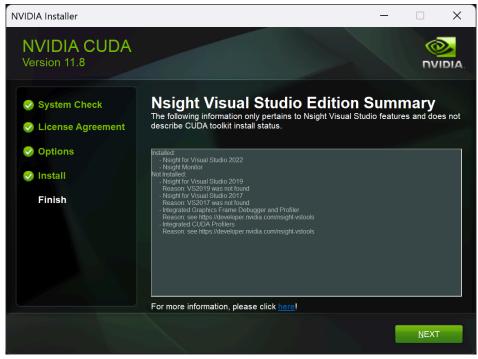


Figure 8: A summary is presented. Click on Next

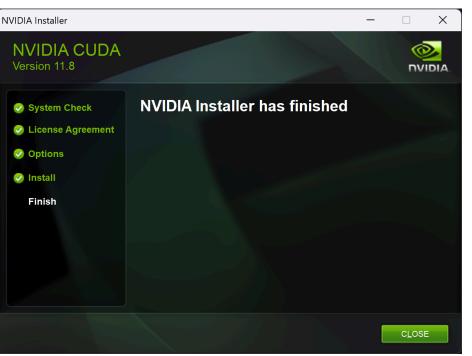


Figure 9: The installation is finished, and the installer can be closed

Workflow and Settings 🔹 🗜	Workflow and Settings Properties • 4
	🖈 🗲 🍋 Fault Probability model
Make Velocity Model	Information and Settings:
🅙 Make Volume Model	It will use machine learning trained Fault
ake Surface	Probability model to predict output over
📕 Machine Learning	selected seismic cube.
Fault Probability model	Set one Volume of Interest (in the active
🗞 GeoLab Ajax	survey) visible and active to produce results only inside the cropped volume.
🧞 GeoLab DeSmile Hard	Fault probability model is 3D Unet. Its purpose is
🇞 GeoLab DeSmile Light	to recognize faults in seismic volume.
🇞 GeoLab RblendD	Link to Description: kipedia.org/wiki/U-Net
🇞 GeoLab Sharpen Reflectors	NVIDIA® CUDA® Available
🧞 GeoLab Simple Denoise	NVIDIA® TensorRT™ Not available
GeoLab Simple Hmult	Source Cube:
Sentance Local Contrast	

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.

OpenMind Setup	_		×
OpenMind			
[🐤 Install	Cano	cel

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.

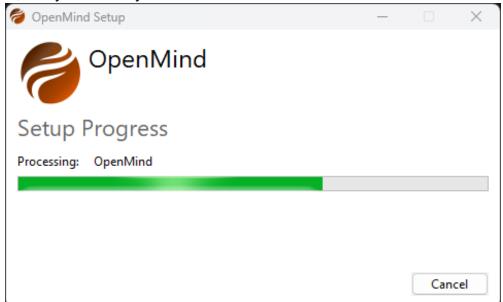


Figure 12: The installer first checks for dependencies already installed. Follow instructions if some extra packages are prompted for installation.



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

OpenMind Setup			—		<
C	Welcome to t	he Open№	lind Setu	ıp Wizard	
GEOMIND	The Setup Wizard v Click Next to contin	<i>i</i> ll install Open le or Cancel to	Mind on your exit the Setu	computer. ıp Wizard.	
	В	ack [Vext	Cancel	

Figure 13: Welcome page: click on Next to proceed

OpenMind Setup	×
End-User License Agreement	
Please read the following license agreement carefully	
<pre>IMPORTANT - By installing this software, you confirm to have accepted the terms below, and that you have the authority to accept the terms. Read the terms below carefully PRIOR to accepting the terms. This End User License Agreement (Agreement) is an agreement between you as a person or an entity (the Licensee) and GEOMIND AS (the Licensor) for this software product. The Agreement consists of two sections; the GEOMIND License Agreement and the GEOMIND Support and Maintenance Agreement. This agreement covers the software product OpenMind (hereafter referred to as the Program), including computer software and associated media and printed materials, and in some cases on-line or electronic documentation. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING THE PROGRAM, YOU AGREE TO THE TERMS OF THIS AGREEMENT. IN THE EVENT YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT. YOU SHOULD CONTAC THE LICENSOF</pre>	
Print Back Next C	ancel

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





OpenMind Setup		_		×
Destination Folder			P	
Click Next to install to the default folder or	click Change to o	choose another.	0	
Install OpenMind to:				
C:\Program Files\OpenMind\				
Change				
	Back	Next	Cance	el

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

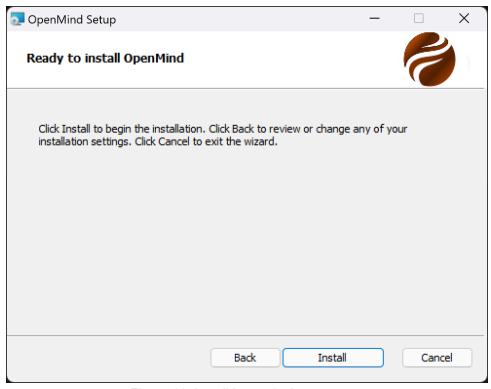


Figure 16: Install button is the next step.



OpenMind Setup		_	×
Installing OpenMind			1
Please wait while the Setup Wizard installs O	penMind.		
Status:			
	Back	Next	Cancel

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



Figure 18: Click on Finish to conclude the installation.



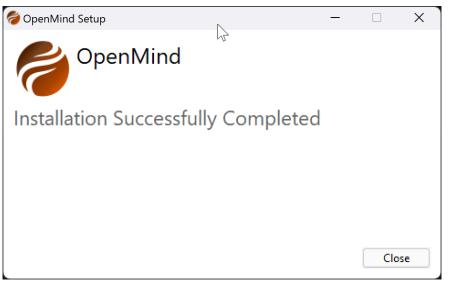


Figure 19: Installation is completed.



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.

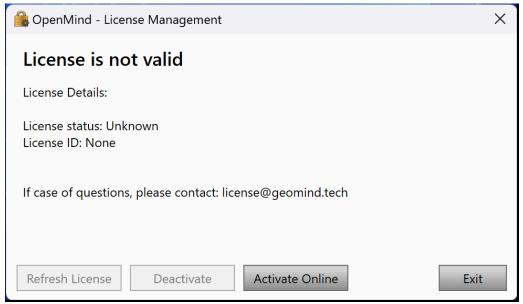


Figure 20: License Management pop-up, presented to the user when starting OpenMind without a valid license.

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



		>	<
	Online Activation		
License Key:			
		Cancel Activate	

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

		Activation		\times		×
License Key:	90		Activation Successful!		3-V3 Cancel	Activate
			ОК			

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