Geoteric 2024.1 AI Servers Install Guide

Contents

1. Introduction

Geoteric has the option for including Geoteric AI Horizons and Geoteric AI Faults when enabled with the appropriate licenses.

Geoteric AI Horizons and Geoteric AI Faults are CPU and GPU intense processes therefore it is recommended that these new processes are hosted on a separate server machine.

Please see the Custom Installations section below for the information required for your specific hardware configuration. For example, whether installing onto one machine or running the AI servers on a separate server machine or whether installing only Geoteric AI Faults or only Geoteric AI Horizons, or whether both are installed.

2. Prior to Installation

Whilst the Geoteric AI Server installation should take care of all items listed below, it is recommended to check.

Uninstall earlier versions of Geoteric AI Faults and the Geoteric Process Manager:

1. Geoteric Process Manager (it was included with installations from Geoteric 2022.2.1 onwards and it must be removed)

2. Geoteric AI Faults Server for all earlier versions

3. Geoteric 2023.x or earlier versions

It is highly recommended that you remove all related environmental variables associated with Geoteric AI Faults and the Geoteric Process Manager before installing Geoteric 2024.1.

- These include GEOTERIC_PROCESS_MANAGER_URL, and GEOTERIC_PROCESS_MANAGER_PORT

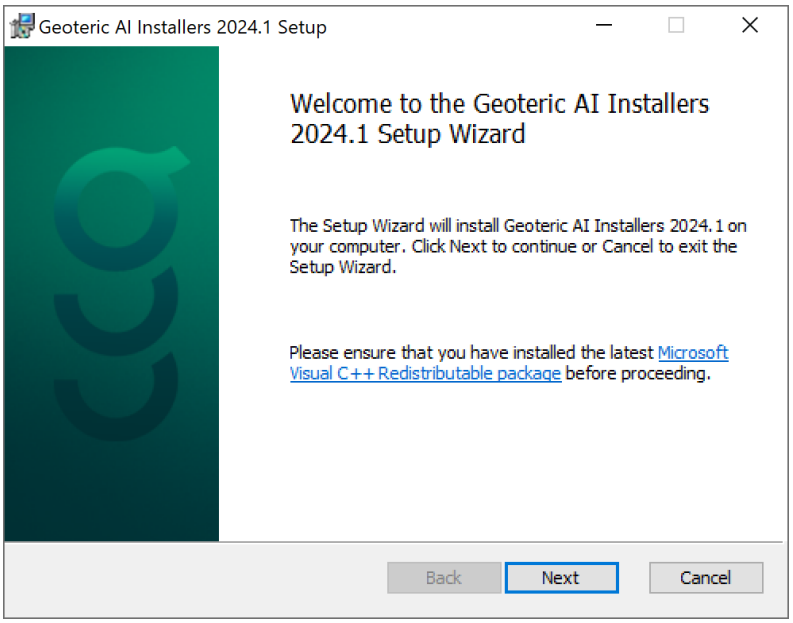
3. Install Geoteric Desktop

Please see the “Geoteric 2024_1 Classic Installation Guide” and install Geoteric 2024.1 prior to installation of the AI servers.

4. Install Geoteric AI Servers

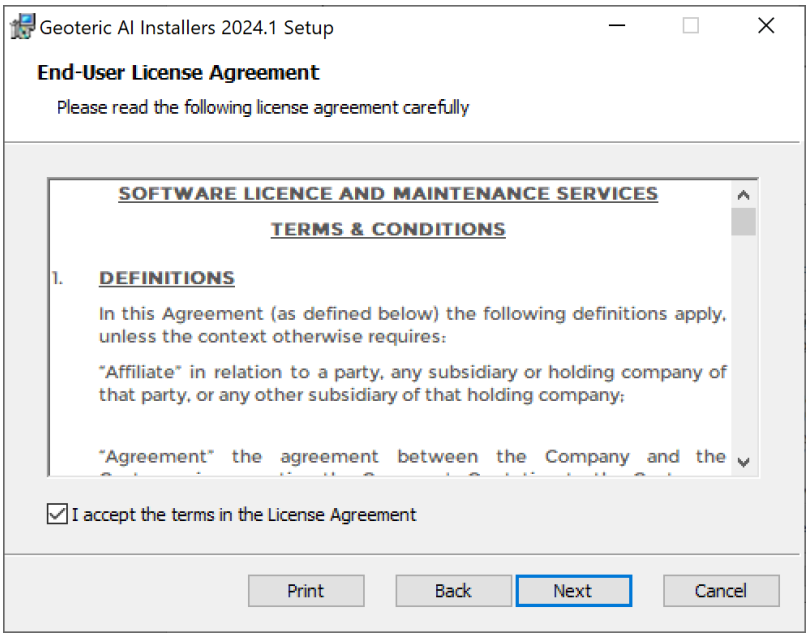
Download and unzip the Windows Geoteric AI Installer.

Double click the Geoteric-ai-installer-2024.1.msi to begin the installation wizard.

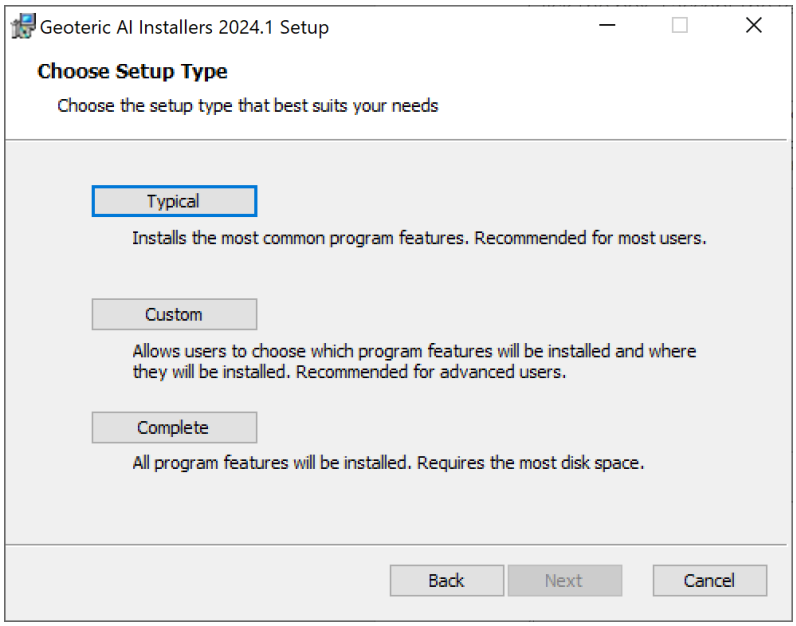


Note that administrator privileges will be required to install.

Click “Next” for the License Agreement.

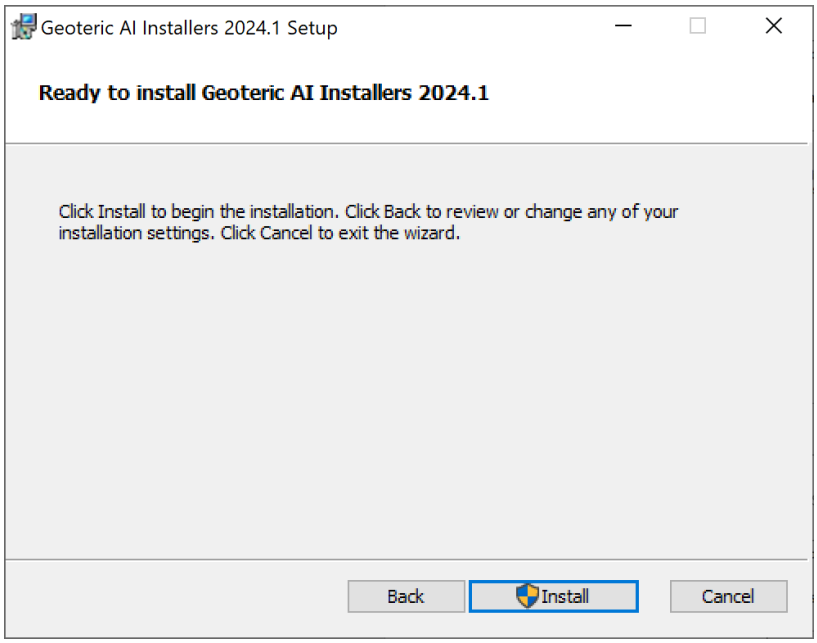


Click the box "I accept the terms in the License Agreement" to agree to the license terms.

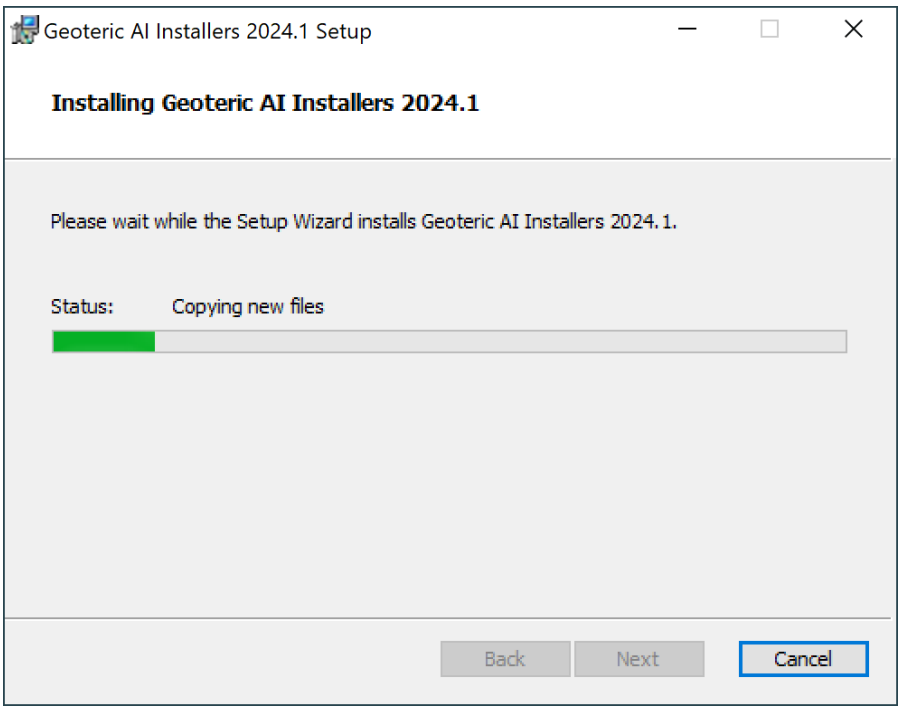


Select either Typical, Custom or Complete to install.

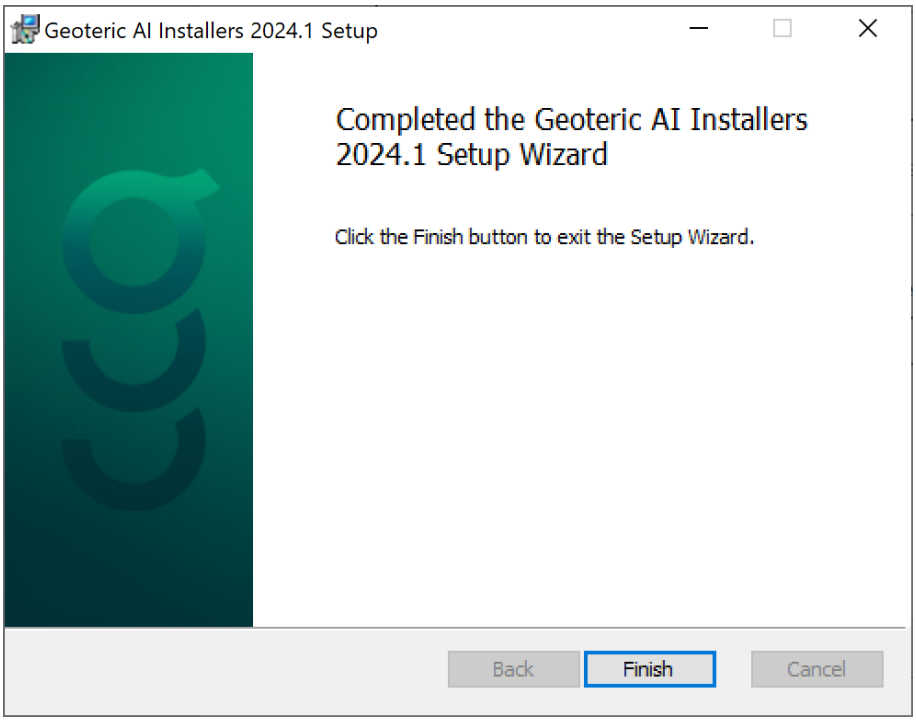
Note that there are differences between the installation of Typical and Complete options. Please see the "Custom installations" and the "typical or complete installation" sections for more details.



Select Install to begin the installation.



You will see the progress of the installation as files are copied.

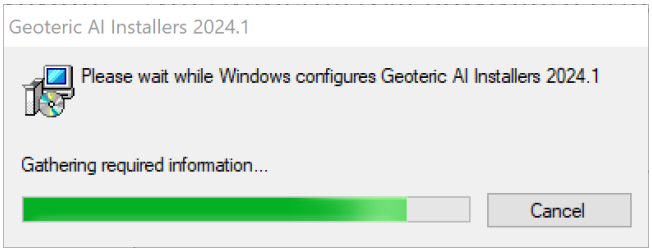


Click "Finish" to complete the installation.

5. Uninstall

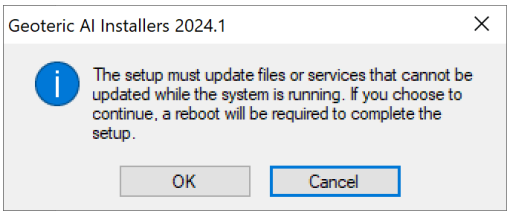
Note that administrator privileges will be required to uninstall.

To uninstall, go into the Control Panel > Programs and Features and select "Geoteric AI Installers 2024.1", and then uninstall it from the program list.

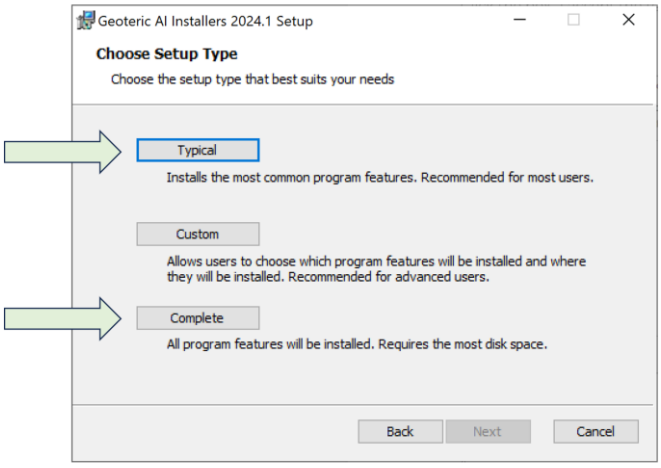


The following dialog states that a reboot is required, however selecting OK to continue will not always require such a reboot. The uninstall will complete successfully regardless of reboot or not.

Geoteric AI Servers will be uninstalled after the progress bar completes.



6. Typical or Complete Installation?



Complete Option for Installation

The option “Complete” includes installation of the Process Manager.

Only one Geoteric Process Manager can be licensed and running for an organisation.

Do not use “Complete” on every machine in the company. Such a situation will result in the very first client machine which starts the process to take the process manager license and all other client machines will fail to start Geoteric AI Faults.

When there are more than one client machines running AI Faults it will be necessary to use the option “Typical” or “Custom” on all those machines.

When installing onto a local machine, when no other client machine will require the licenses, you can choose “Complete”. This would be suitable in a situation where there is only one license for Geoteric AI Fault and it has been installed onto a dedicated high specification workstation. This installation option will include the Process Manager. All processing and license allocation will be managed by that one machine.

When installing onto a remote server which is to host the management of licensing, use “Complete” or “Custom” to ensure that the Process Manager has been installed and will be managed by that machine, with all client machines referencing this server in their environment variables (see later section for more details on this).

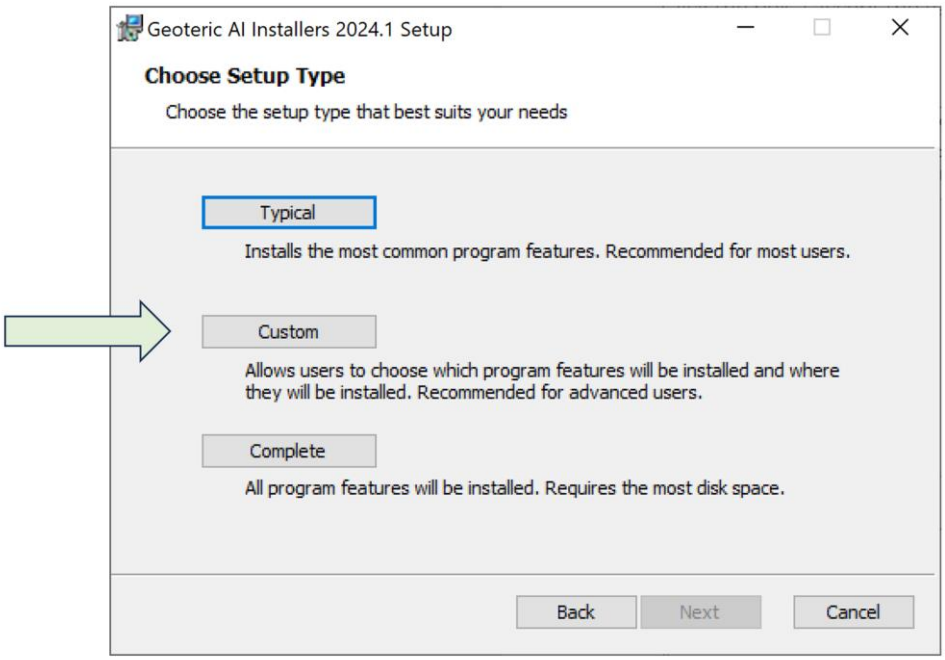
Typical

The option “Typical” does NOT include installation of the Process Manager.

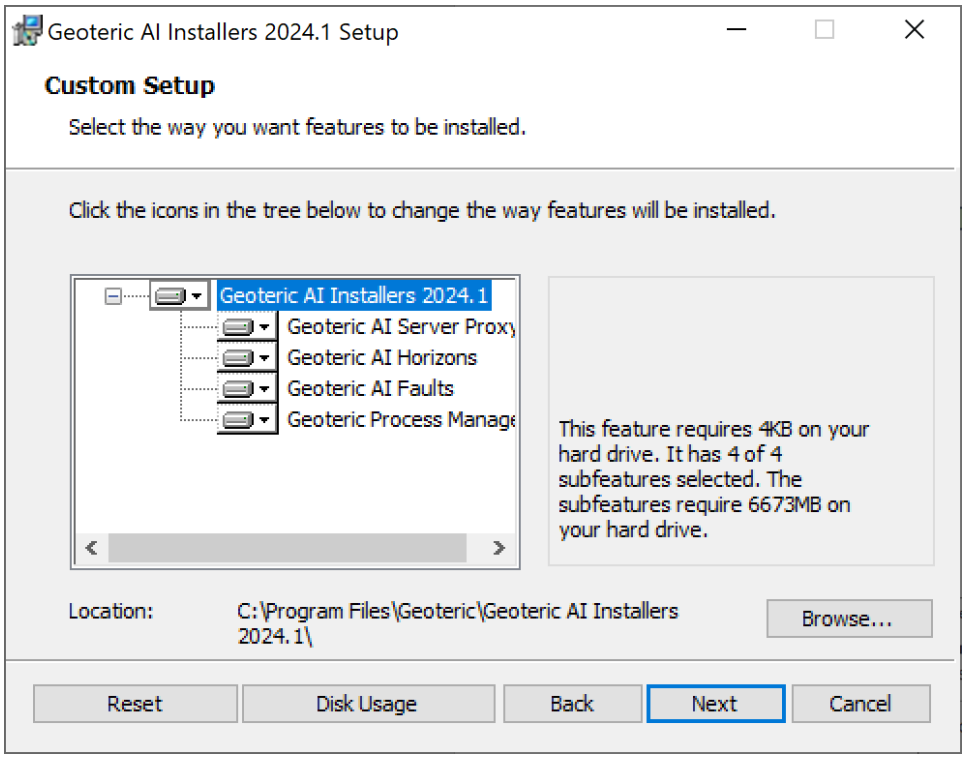
Use “Typical” on every machine in the company. Every client machine will reference a remote server via environment variables. That remote server will have the Process Manager installed and will manage the licensing for Geoteric AI Faults.

7. Custom Installations

Choose the “Custom” installation when you only wish to install one of either Geoteric AI Faults or Geoteric AI Horizons or you want to install Geoteric AI Faults locally.



On the following screen you can select the relevant items for installation depending on your local or remote server situation.



Options:

- On a remote machine, Geoteric AI Horizons will require the Geoteric AI Server Proxy
- On a remote machine, Geoteric AI Faults will require the Geoteric AI Server Proxy and the Process Manager
- On a remote machine, both Geoteric AI Faults and Geoteric AI Horizons installed together will require the Geoteric AI Server Proxy and the Process Manager
- On a local machine Geoteric AI Faults will require the Process Manager if this will be a standalone machine. The Geoteric Process Manager should be installed on a separate remote server machine if more than one client machines with to run Geoteric AI Faults.
- It is not recommended to install Geoteric AI Horizons onto a local machine.

8. Geoteric AI Faults - Local or Remote

Geoteric AI Faults requires an advanced GPU because Geoteric AI Faults is a very GPU intensive process. Please see the recommended specifications for details.

Prior to Geoteric 2023.1: Geoteric AI Faults could only be installed and run on the same machine as Geoteric Desktop. Since Geoteric 2023.1 there have been more options for installation onto remote servers.

Since Geoteric 2023.1, Geoteric AI Faults has these options:

- **Geoteric AI Faults - Local** or
- **Geoteric AI Faults - Remote** in a shared server configuration

Moving Geoteric AI Faults processing to a remote machine has some benefits including:

- Freeing up hardware resources on the Geoteric Desktop workstation allowing Geoteric Desktop to use these resources for other processing and 3D visualisation
- Removing the need for expensive Graphics cards in every Geoteric Desktop workstation - this expensive resource can now be made available to multiple users from a single server

It is recommended to contact the Geoteric Customer Support team, who will be happy to walk-through the installation with you.

9. Environmental Variables

One environmental variable parameter must be set manually. This must be set to the IP address or hostname and port of the remote machine.

GEOTERIC_AI_PROXY_URL = hostname:port or host_ip:port

If an additional and different remote machine is used for Geoteric AI Faults then this environment variable must be set to the IP address of the AI Faults remote machine.

GEOTERIC_AI_FAULTS_PROXY_URL = hostname:port or host_ip:port

There are a number of environment variables which are created automatically during the installation for the Geoteric AI Servers, as listed below.

FFALTD_LICENSE_FILE

GEOTERIC_AI_FAULTS_INSTALL_DIR

GEOTERIC_AI_FAULTS_LOCAL_URL

GEOTERIC_AI_FAULTS_PORT

GEOTERIC_PROCESS_MANAGER_URL

GEOTERIC_PROCESS_MANAGER_DB_PATH

GEOTERIC_AI_PROXY_PORT

GEOTERIC_AI_HORIZONS_SERVER_PORT

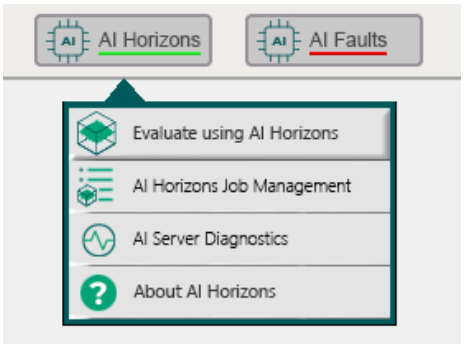
If you encounter any issues, please check that you have the relevant variables set to the correct parameter on the local and remote machines.

10. Verification and Diagnostics

AI Server Proxy Diagnostics Page

To verify that the installation has been successful review the AI Server Proxy Diagnostics page. This html web browser page can be reached in one of two ways.

Either select the AI Horizons drop down menu and then select the **AI Server Diagnostics** option which will open a new web browser tab. This option requires an AI Horizons license.



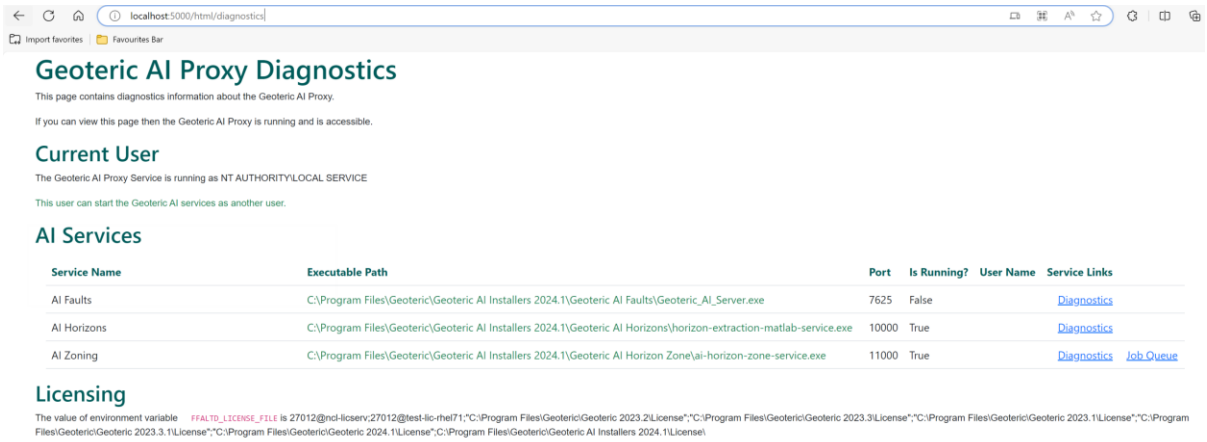
Or from a web browser, running on any machine on the same network as the Geoteric Server (for example your Geoteric Desktop workstation), type in the following URL, substituting your Geoteric Server name URL where you see <GEOTERIC_AI_PROXY_URL> below, and substitute the Port number into <GEOTERIC_AI_PROXY_PORT>:

<GEOTERIC_AI_PROXY_URL>:<GEOTERIC_AI_PROXY_PORT>/html/diagnostics

For example, when running on a local machine, using 5000 as the port number, use the following:

http://localhost:5000/html/diagnostics

An example of the diagnostics page is shown below.



From within this page it is possible to see the services and their executable path, on what port they are running, and whether they are running (true) or not running (false) and links to more detailed diagnostics pages.

AI Faults Diagnostics Page

Within the AI Server Diagnostics page (as described above) you will find a link to the AI Faults Diagnostics page.

Alternatively you can go directly to the page by typing the text into a web browser as shown below. This is the method to use when you do not have an AI Horizons license to enable the direct link from within the software. This will give you the diagnostics and relevant information such as the GPU information and environmental variables.

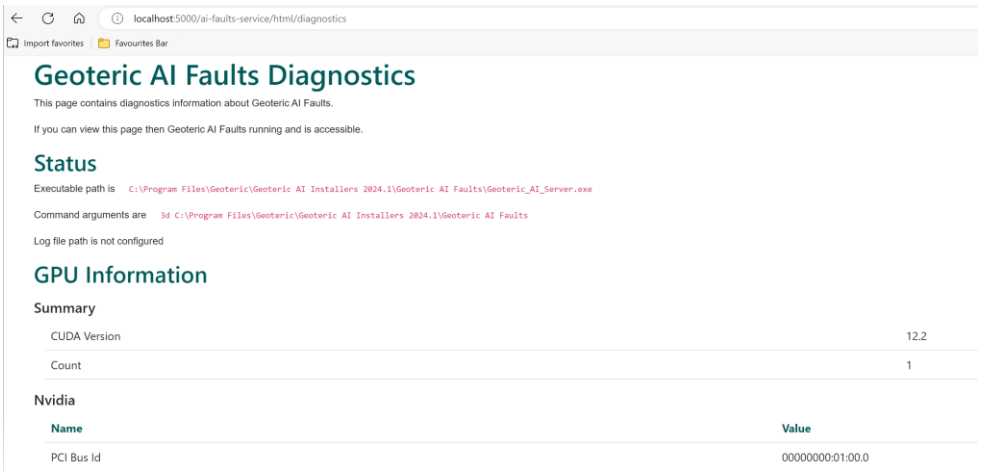
From a web browser, running on any machine on the same network as the Geoteric Server (for example your Geoteric Desktop workstation), type in the following URL, substituting your Geoteric Server name URL where you see <GEOTERIC_AI_PROXY_URL> below, and substitute the Port number into <GEOTERIC_AI_PROXY_PORT>:

<GEOTERIC_AI_PROXY_URL>:<GEOTERIC_AI_PROXY_PORT>/ai-faults-service/html/diagnostics

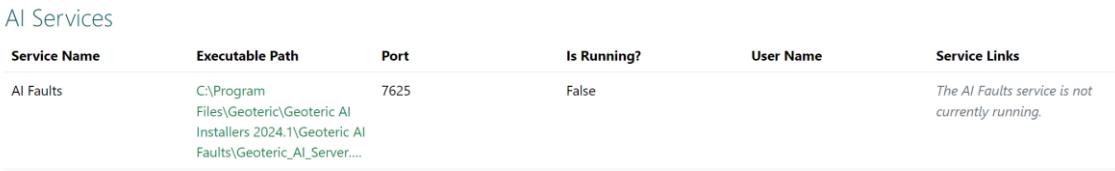
For example, when running on a local machine, using 5000 as the port number, use the following:

http://localhost:5000/ai-faults-service/html/diagnostics

An example of the AI Faults diagnostics page is shown below.



If the AI Faults server has not been started from with the software, the AI Server Diagnostics page will give a message as shown below “The AI Faults service is not currently running”. Attempting to go directly to the AI Faults diagnostics page will give an error message “This page isn’t working right now”. In this case, start the service and try again.



AI Horizons Diagnostics Page

Within the AI Server Diagnostics page (as described above) you will find a link to the AI Horizons Diagnostics page.

Alternatively you can go directly to the page by typing the text into a web browser as shown below. This will give you the diagnostics and relevant information such as the Port number and log file location.

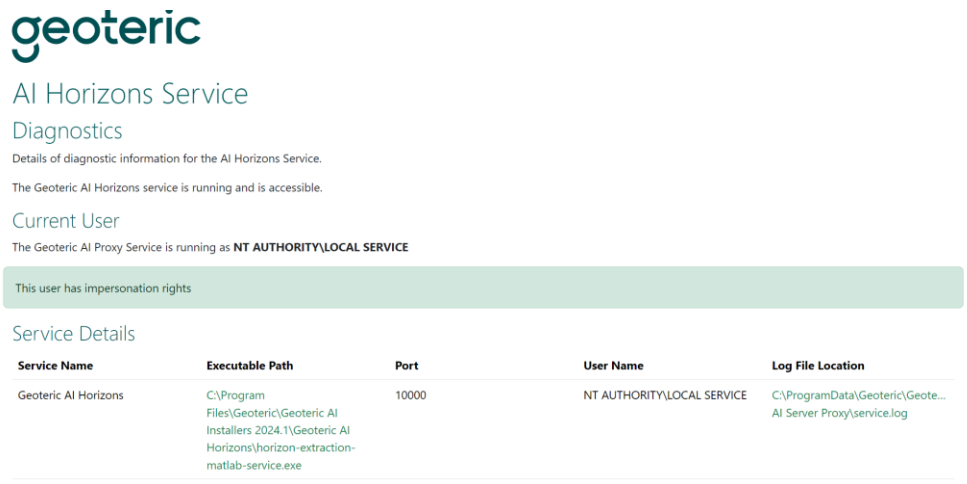
From a web browser, running on any machine on the same network as the Geoteric Server (for example your Geoteric Desktop workstation), type in the following URL, substituting your Geoteric Server name URL where you see <GEOTERIC_AI_PROXY_URL> below, and substitute the Port number into <GEOTERIC_AI_PROXY_PORT>:

<GEOTERIC_AI_PROXY_URL>:<GEOTERIC_AI_PROXY_PORT>/ai-horizon-service/html/diagnostics

For example, when running on a local machine, using 5000 as the port number, use the following:

http://localhost:5000/ai-horizon-service/html/diagnostics

An example of the AI Horizons diagnostics page is shown below.



AI Zoning Diagnostics Page

Within the AI Server Diagnostics page (as described above) you will find a link to the AI Zoning Diagnostics page.

Alternatively you can go directly to the page by typing the text into a web browser as shown below. This will give you the diagnostics and relevant information such as the current user, licenses and environmental variables.

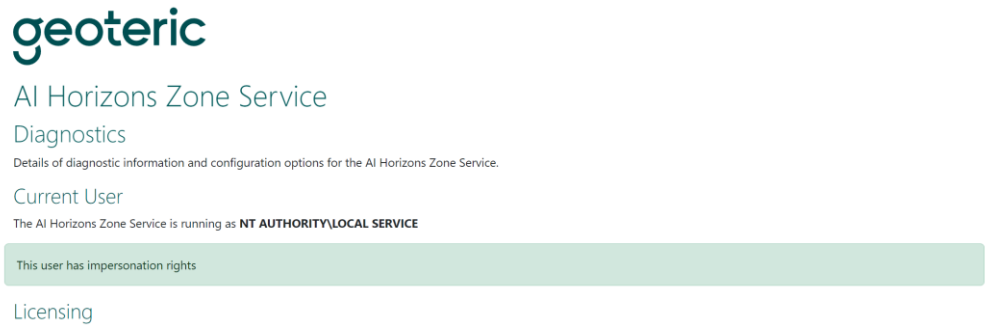
From a web browser, running on any machine on the same network as the Geoteric Server (for example your Geoteric Desktop workstation), type in the following URL, substituting your Geoteric Server name URL where you see <GEOTERIC_AI_PROXY_URL> below, and substitute the Port number into <GEOTERIC_AI_PROXY_PORT>:

<GEOTERIC_AI_PROXY_URL>:<GEOTERIC_AI_PROXY_PORT>/ai-horizon-zone-service/html/diagnostics

For example, when running on a local machine, using 5000 as the port number, use the following:

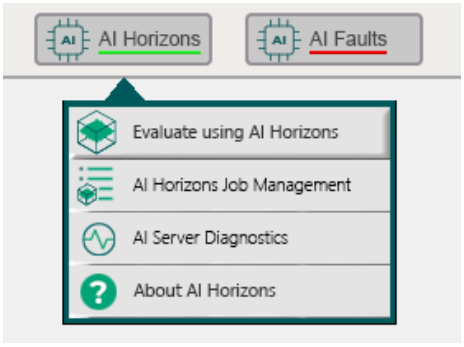
http://localhost:5000 /ai-horizon-zone-service/html/diagnostics

An example of the AI Zoning diagnostics page is shown below.

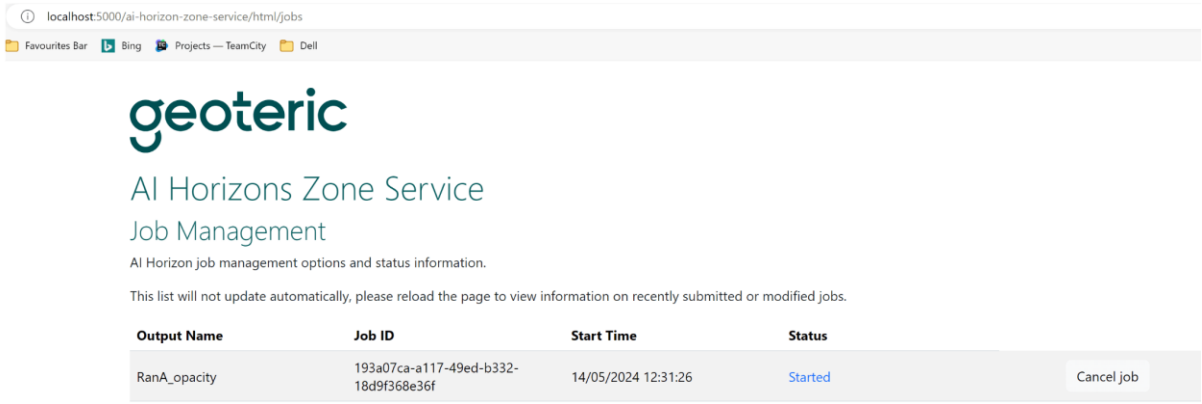


11. AI Horizons Job Management

When sending a number of AI Horizons runs to a server, the queue can be interrogated by going to the AI Horizons drop down menu and selecting the AI Server Diagnostics option.



The list of items already completed can be viewed, and the list of items queued to run. A started job or a queued job can be cancelled.



Alternatively you can go directly to the page by typing the text into a web browser as shown below. From a web browser, running on any machine on the same network as the Geoteric Server (for example your Geoteric Desktop workstation), type in the following URL, substituting your Geoteric Server name URL where you see <GEOTERIC_AI_PROXY_URL> below, and substitute the Port number into <GEOTERIC_AI_PROXY_PORT>:

<GEOTERIC_AI_PROXY_URL>:<GEOTERIC_AI_PROXY_PORT> /ai-horizon-zone-service/html/jobs

For example, when running on a local machine, using 5000 as the port number, use the following:

http://localhost:5000/ai-horizon-zone-service/html/jobs

12. Hibernation issues

We recommend that hibernation is switched off for all machines which run the AI Horizons processing. If hibernation is switched on, AI Horizons or AI Faults will fail.

To prevent a Windows machine from hibernating, follow these steps

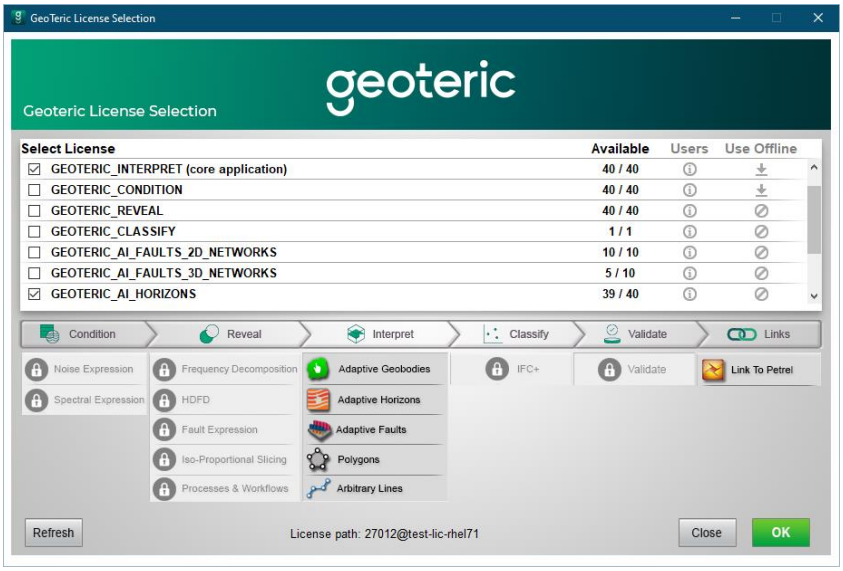
Press Windows key + X.
Select Command Prompt (Admin).
On the Command Prompt window, type powercfg.exe /hibernate off.
Press Enter.
Type exit, and then press Enter to close the Command Prompt window.

13. License Selection

Once Geoteric AI Servers have been installed, start Geoteric Desktop on your local workstation.

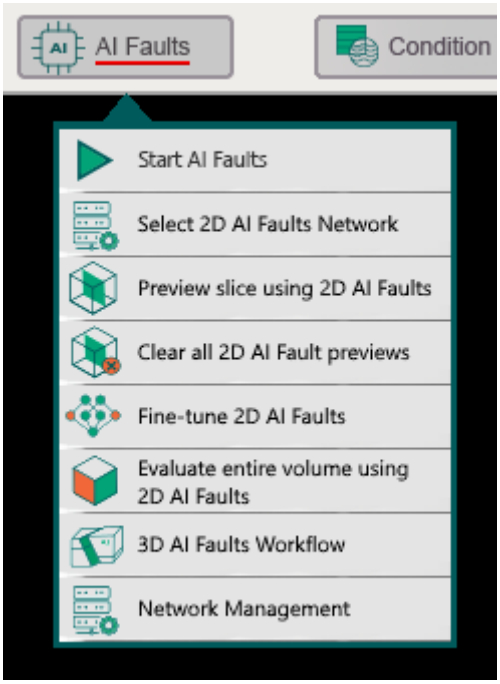
Select the GEOTERIC_AI_FAULTS_3D_NETWORKS (or GEOTERIC_AI_FAULTS_2D_NETWORKS) license on start-up for the Geoteric AI Faults functionality.

Select the GEOTERIC_AI_HORIZONS license on start-up for the Geoteric AI Horizons functionality.

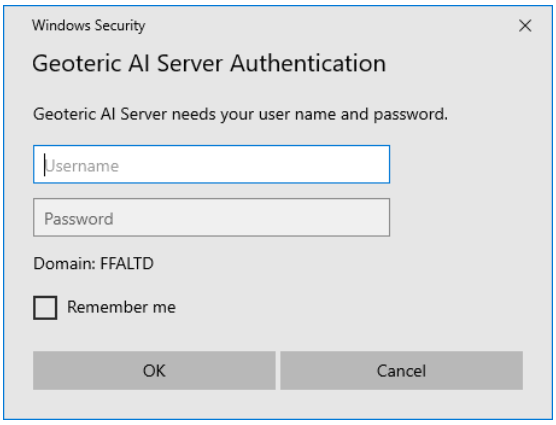


On the main Geoteric 3D viewer, you should now see two new menus for Geoteric AI Faults and Geoteric AI Horizons. The AI Faults icon will have a red underline to show that the service will need to be started. The AI Horizons icon will have a green underline to show that the service is started. The service should be automatically started and will not need to be started or stopped, if correctly configured and installed and the relevant licenses chosen.

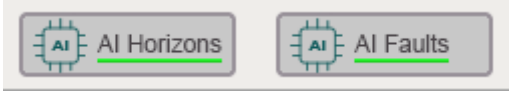
In the AI Faults menu, select Start AI Faults.



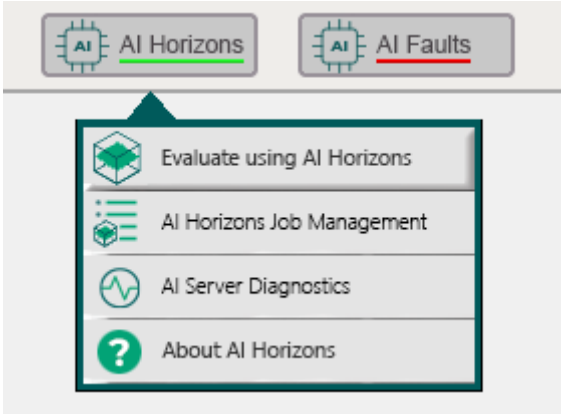
You will be prompted to log in to the Geoteric AI Faults server. It is essential that the user account used to start Geoteric AI Faults has sufficient permissions to write to the project files on the Geoteric Desktop workstation.



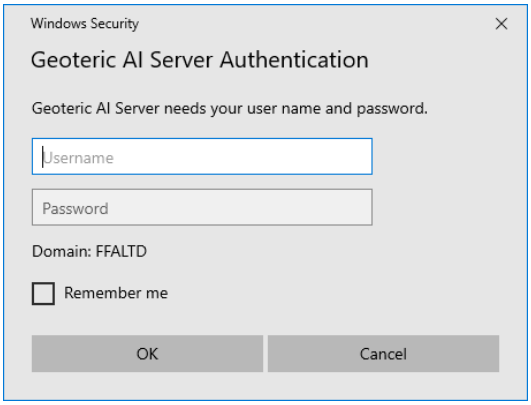
After a short delay, the AI Faults menu will switch to a green indicator showing that the connection has been successful, and Geoteric AI Faults is ready to receive requests.



In the AI Horizons menu, select Evaluate using AI Horizons.



You will be prompted to log in to the AI Horizons server. It is essential that the user account used to start AI Horizons has sufficient permissions to write to the project files on the Geoteric Desktop workstation.



After a short delay, the AI Horizons user interface will appear which will enable you to run AI Horizons

14. Opening a Project – Universal Naming Convention (UNC) Project Path Directory

UNC is Universal Naming Convention

FQDN is the Fully Qualified Domain Name

IP is the Internet Protocol

For the AI Horizons to link correctly to the server, the project must be opened using UNC project path directory.

UNC is Universal Naming Convention paths, which are used to access network resources. It is a standard for identifying servers, printers and other resources in a network. They have the following format:

- A server or host name, which is prefaced by \\
- The path (disk and directories) within the computer is separated with a single slash or backslash.
- The server name can be a NetBIOS machine name or an IP/FQDN address.
- Examples:
    - \\myMachine\MyProjects\Project1
    - \\ipaddress\SharedProjects\Project1

If you attempt to run Geoteric AI Horizons or Geoteric AI Faults using a project referenced by a local path (C:\MyProjects\Project for example) the request will be refused and a message will ask you to use UNC paths.

15. Silent Installation

If the installer is to be installed silently with a custom installation option, open a command prompt and navigate to the location of the AI installer. The following command will install everything in the AI installer. Remove any item/s that are not required by deleting from the ADDLOCAL components.

msiexec /i geoteric-ai-installer-2024.1.msi
ADDLOCAL=ProxyFeature,AIHorizonsFeature,AIFaultsFeature,ProcessManagerFeature

For example, if the Proxy and the AI Horizons are not required locally delete the ProxyFeature and the AI HorizonsFeature from the list.