Bentley®

OpenPaths™ EMME®

Installation Guide

May 2024

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Installing OpenPaths EMME

OpenPaths EMME is installed with the OpenPaths installer, available for download from the CONNECT Center (*https://softwaredownloads.bentley.com*). Make sure you are signed in to your Bentley account. For details on how to download the OpenPaths installer see OpenPaths *Installation Guide* on docs.bentley.com.

OpenPaths installation files for Windows are named according to their version, in the form **`Setup_OpenPaths_x64_`*`version`*`.exe`**. Once the OpenPaths installer is downloaded, double-click the file to launch the OpenPaths Setup wizard.

Selecting OpenPaths product edition

First, configure the OpenPaths Product Edition that will be run. OpenPaths is offered in two distinct licensing options: *OpenPaths Advanced* and *OpenPaths Ultimate*, which are summarized below.

	OpenPaths edition	
Application/Feature	**Advanced**	**Ultimate**
OpenPaths CUBE	X	X
OpenPaths EMME	X	X
OpenPaths AGENT		X
OpenPaths DYNAMEQ		X
OpenPaths CityPhi	X	X

To use EMME with features from OpenPaths AGENT and OpenPaths DYNAMEQ, make sure to select *OpenPaths Ultimate*. Depending on your commercial program and entitlements, additional term licensing fees may apply. Contact us with any questions.

Select the edition you wish to use and click *Next*.

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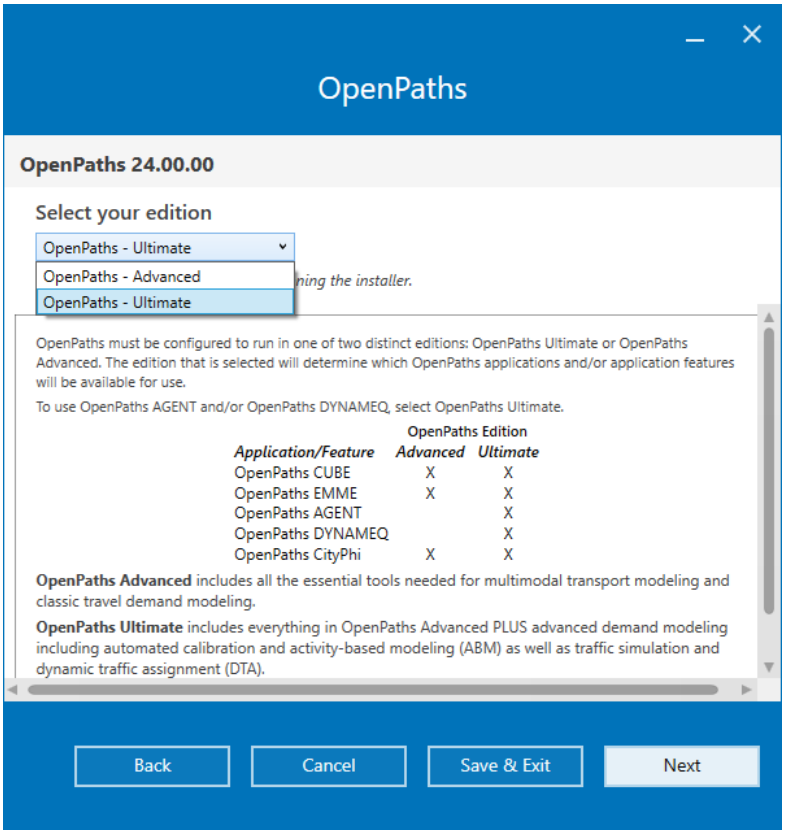

To install OpenPaths EMME, select it and any other application you wish to install. OpenPaths AGENT is also installed with OpenPaths EMME, however it is only accessible with OpenPaths Ultimate, as mentioned above.

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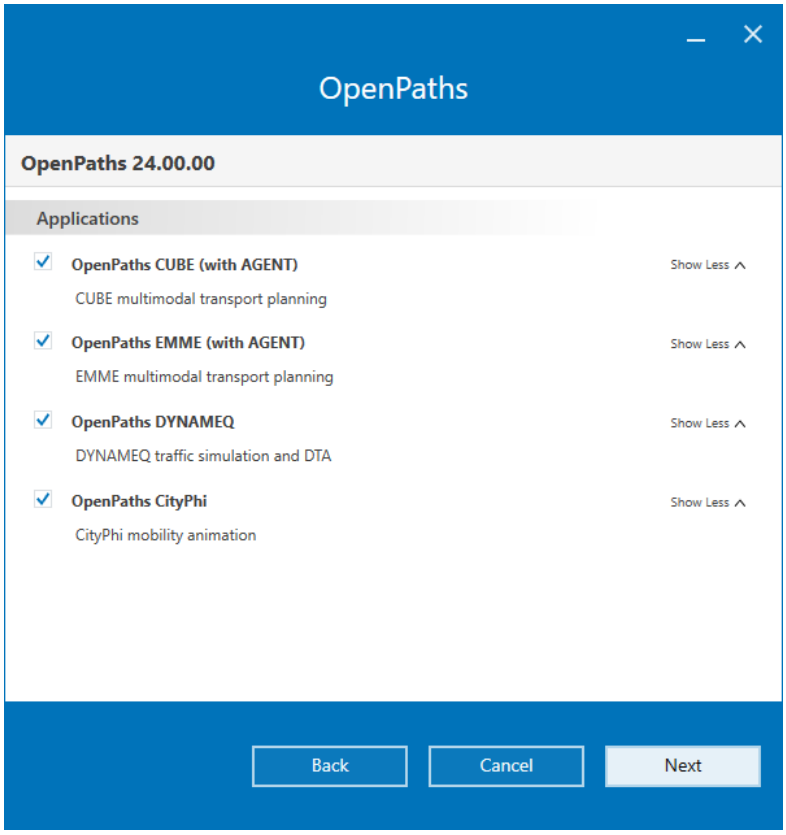

It is possible to configure the EMME installation to exempt EMME services from Windows Defender anti-virus and file monitoring services. See *Anti-virus and file monitoring programs* for more details.

Continue with the OpenPaths Setup wizard.

Specify the installation folder for OpenPaths. The default installation folder is **`C:\Program Files\Bentley\OpenPaths`**. EMME will be installed in a subfolder of the specified installation folder, that is, **`C:\Program Files\Bentley\OpenPaths\EMME version`**.

Note that the user **must have administrator privileges** on the computer on which OpenPaths EMME will be installed.

The Setup wizard can be stopped at any time by clicking the *Cancel* button.

Environment variables

Because multiple versions of EMME may be installed on the same system, OpenPaths EMME uses the `EMMEPATH` environment variable to determine the current operating environment for OpenPaths EMME. After installation, the following changes are made to environment variables:

- Sets the `EMMEPATH` environment variable to the **install destination folder**; the default is **`C:\Program Files\Bentley\OpenPaths\EMME version`** (also accessible from the OpenPaths EMME *system parameter* *`%EMMEPATH%`*).
- Adds **`%EMMEPATH%\programs`** (where `%EMMEPATH%` is the contents of the `EMMEPATH` environment variable) to current `PATH` definition in order to access the **EMME** procedure and other related utilities.

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Changing OpenPaths product edition

To change OpenPaths editions, from Advanced to Ultimate or vice-versa:

1. Rerun the downloaded OpenPaths installer.
2. Click *Modify* and select the desired edition.
   a. Click *Save & Exit* to save the edition and quit the installer
   b. Click *Next* to select OpenPaths applications (not already installed)

⚠ Note that changing OpenPaths product editions will change your license level and may limit your access to the installed applications, depending on the edition selected. To ensure that all features and updates associated with your new license are properly applied, you must restart all running OpenPaths applications, including but not limited to CubeCacheServer, LegacyLicenseUtility, etc.

It is suggested to save any unsaved work before proceeding with the restart to prevent any data loss.

Installing OpenPaths offline

To install OpenPaths offline, you must first create a deployment image, which can then be used to install OpenPaths applications with the same configuration on multiple machines. The installation configuration includes the installation location, features and so on. Once created, you will be able to double-click the **`Setup_OpenPaths_x64_version.exe`** file available in the deployment image to install the application with the set configuration without the need of an internet connection for component downloads. The deployment image folder can also be moved to a shared location so that all users of the organization can directly execute the installation from there; the administrator can use this shared location in the Software Distribution System for installation of the product.

The OpenPaths installer will also install the CONNECTION Client and the Legacy License Utility.

For more on creating a deployment image for OpenPaths applications, consult the OpenPaths *Installation Guide* on docs.bentley.com.

Installing OpenPaths EMME in silent mode

It is possible to install/uninstall OpenPaths EMME in silent mode.

ⓘ The instructions in this section assume that a deployment image of the OpenPaths product installer has been created and the deployment image includes OpenPaths EMME. Otherwise, the OpenPaths EMME installer is not accessible. See *Offline installation — Using a deployment image* in the OpenPaths *Installation Guide* on docs.bentley.com.

1. To launch the OpenPaths EMME installer in silent mode enter the following command in a command prompt window:

   `"<path_to_file>/Setup_EMME_x64_version.exe" /S`

   The installation procedure will be launched silently and OpenPaths EMME will be installed with the following defaults:
   - Previous versions of OpenPaths EMME will be kept.

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- A shortcut to OpenPaths EMME will be created and placed on the desktop.
- OpenPaths EMME will be installed in the **C:\Program Files\Bentley\OpenPaths *version*\EMME** directory.

2. To override any of these defaults, one or all of the options below can be specified:

/removeallversions	to remove all OpenPaths EMME versions
/noshortcut	to avoid installing a shortcut on the desktop
/set_system_python	to register OpenPaths EMME Python as the system Python 3.11
/set_windows_defender_exclusion	to add an exclusion for OpenPaths EMME in Windows Defender
/uninstall	to uninstall the version
/L=*log_directory*	to move the OpenPaths EMME installation log file to the specified directory
/D=*installation_directory*	to install OpenPaths EMME in the specified directory

The options can be specified in any order, except for the installation directory (/D=) option, which must be specified last. Also, the specified directory must not be enclosed in quotation marks (").

Note that by installing the OpenPaths EMME software in silent mode, the user is implicitly bound by the terms of the End User License Agreement (EULA). A copy of the EULA can be found in the installation directory, once the installation is complete.

To uninstall OpenPaths EMME in silent mode:

- In a command prompt window, enter the following command in a command prompt window.

```
"%EMMEPATH%/Uninstall-EMME.exe" /S
```

The uninstall procedure will be launched silently and OpenPaths EMME will be uninstalled, removing all files required by OpenPaths EMME. The uninstall procedure will leave files in the installation folder if they were not part of the installation procedure.

To remove all remaining files from the installation folder and/or to create a log of the uninstall procedure, use the corresponding option(s) with the above command:

/remove_remaining_files	to uninstall remaining files and folders
/L=*log_directory*	to create an OpenPaths EMME uninstallation log file in the specified directory

Anti-virus and file monitoring programs

Certain anti-virus, automated backup and other real-time monitoring services, like spyware and search indexers, may utilize system resources while EMME is running to access EMME files, including the EMME database and other related files. This may result in issues including slower performance and/or operations that cannot complete.

Configuring exclusions for directories containing EMME data for any real-time monitoring service running on your system will help to maximize performance and improve stability.

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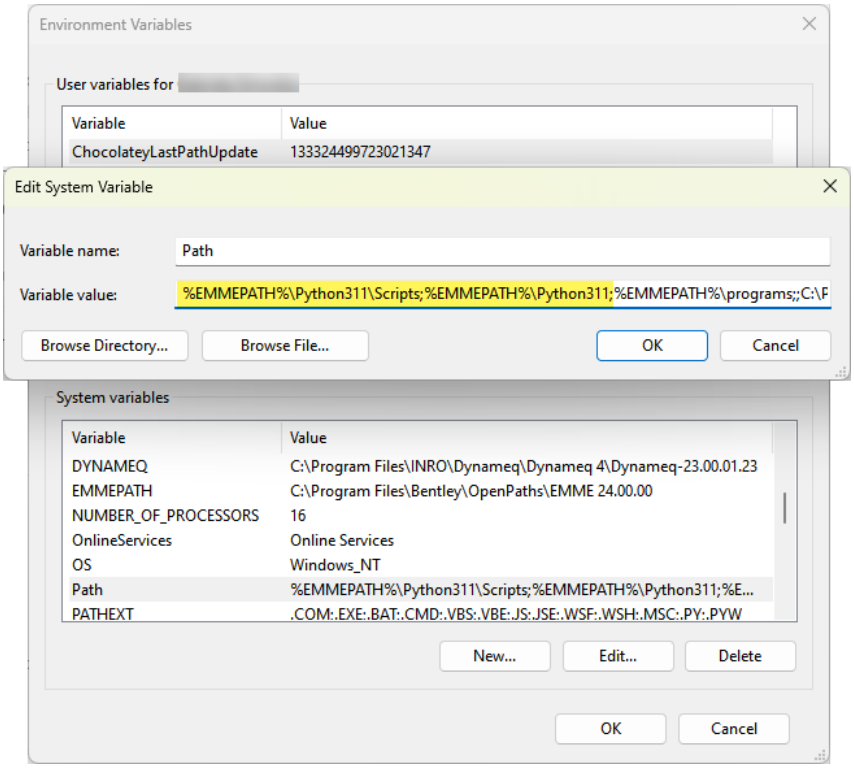
Set EMME Python as system Python

EMME is distributed with Python 3.11 and is installed in **`%EMMEPATH%/Python311`**. This provides a dedicated Python installation for Modeller which guarantees that the system is properly configured immediately after installation.

It is possible to set the EMME Python as the system Python. To do this, you must edit the Path system environment variables to include **`%EMMEPATH%/Python311`** and **`%EMMEPATH%/Python311/Scripts`**.

- Press **Windows**+**Pause/Break** to open the *Systems* page
- Click *Advanced system settings*
- In the *System Variables* window, scroll to `Path` and click *Edit*.
- Add the path to the Python executable and its **`Scripts`** subfolder (**`%EMMEPATH%/Python311`** and **`%EMMEPATH%/Python311/Scripts`**) to the beginning of the definition, as shown in the image below.
- Click OK to save the changes.



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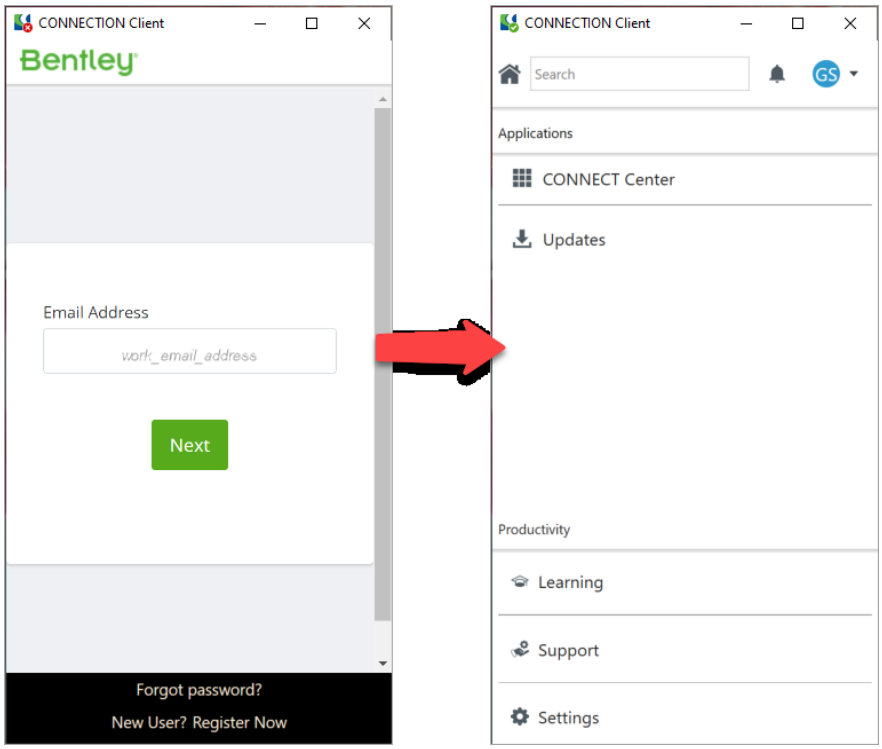
Activate OpenPaths licenses

The CONNECTION Client is your gateway to Bentley's licensing, cloud services, portals and analytics. By signing into the CONNECTION Client, you can: find your company's projects, track your time, explore analytics, download software updates, receive relevant notifications, and access other features available to you as a Bentley user.

The CONNECTION Client is installed with OpenPaths EMME. Once CONNECTION Client is installed, application shortcuts will also be added to the Windows *Start* menu.

Once installation is completed, sign in with your Bentley Account profile.



You are ready to run/activate OpenPaths EMME.

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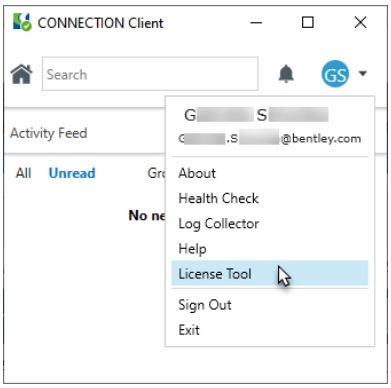
Bentley Licensing Tool

The **Bentley Licensing Tool**, installed with the CONNECTION Client, provides activation functions and information for products utilizing Subscription Entitlement Service such as OpenPaths EMME.

To open the Bentley Licensing Tool, select *License Tool* from the CONNECTION Client dropdown menu or select *CONNECTION Client* → *Bentley Licensing Tool* from the Windows *Start* menu.



The Bentley Licensing Tool has three tabs:

- *Entitlements*: lists the products using Subscription Entitlement Service (SES); products appear in the Entitlements list if they have communicated with Bentley before.
- *Checkout License*: enables product licenses to be locked to the computer for extended use apart from an Internet connection.
- *Product Status*: lists more information about a product

For a complete list and description of the contents of the Bentley Licensing Tool tabs, see *Bentley Licensing Tool* on the Bentley Communities Wiki.

Activating OpenPaths

There are three ways to activate OpenPaths:

- **Activate via Product Use or Run OpenPaths EMME**

  Run OpenPaths EMME for the first time and CONNECTION Client will check with the license server to determine if it has access to OpenPaths EMME via an OpenPaths Advanced or an OpenPaths Ultimate entitlement.

  ⓘ Note that an OpenPaths Ultimate entitlement is required to have access to OpenPaths AGENT.

  If you have product entitlement, OpenPaths EMME will run. You can check the status under *Entitlement* Tab of Bentley Licensing Tool and look at the *Access* column. All products with '*Allowed*' status will now run.

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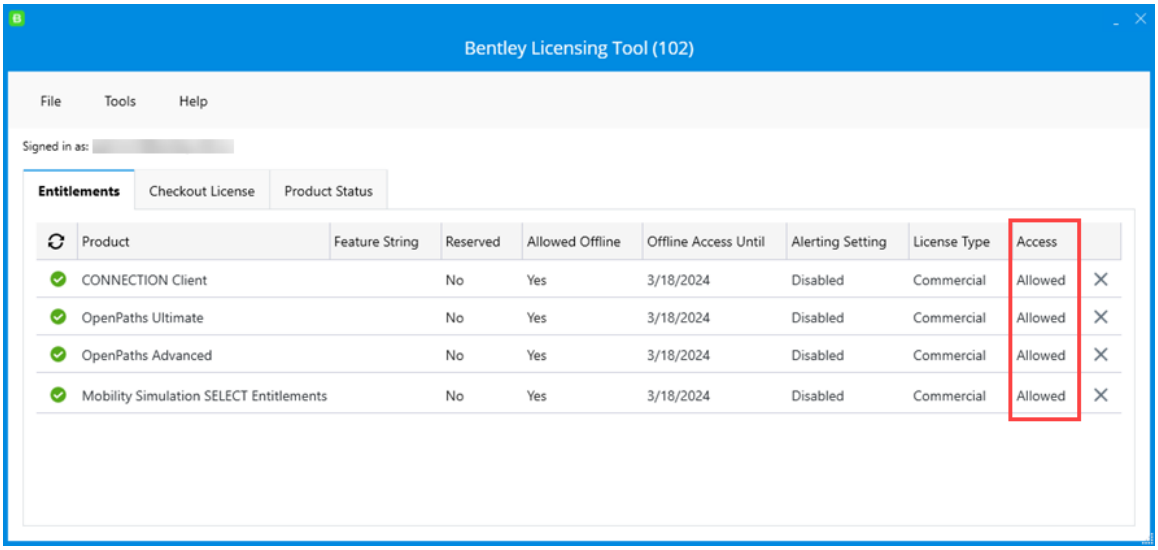
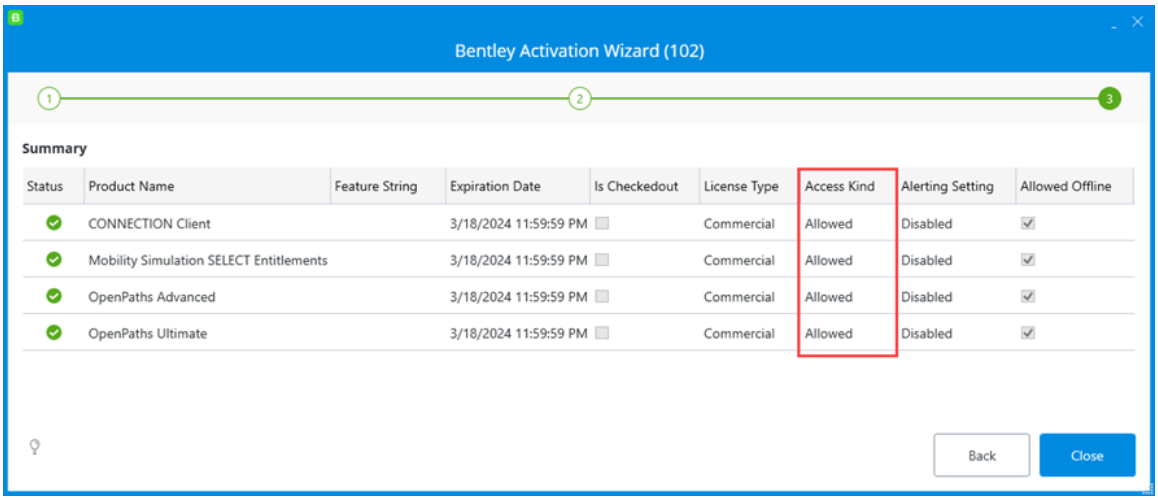


- **Activate via Activation Wizard**

  This step is helpful for users who are not sure of their OpenPaths product entitlements. Through this wizard, users can add any Bentley application or product and check if their administrator has assigned the entitlement to the respective user. The status can be checked as above. If the status is *Allowed*, the user can use the product. If the access is *Denied*, users need to contact their License Administrator for access. Detailed instructions are available on the *Bentley Communities Wiki*.



- **Activate via Internet for offline machines**

  First, the License Administrator needs to checkout a license from their organization via the CONNECT Center and export a `*.belic` file. Details on checking out license are *here*. When licenses are checked out, the `*.belic` files need to be copied/transferred to the offline machine. On the offline machine, user needs to install CONNECTION Client first and then open Bentley Licensing Tool. Next, go to *File* menu and import the file(s). Detailed instructions on how to import files are found on the *Bentley Communities Wiki*.

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Checking out a license for offline or reserved use

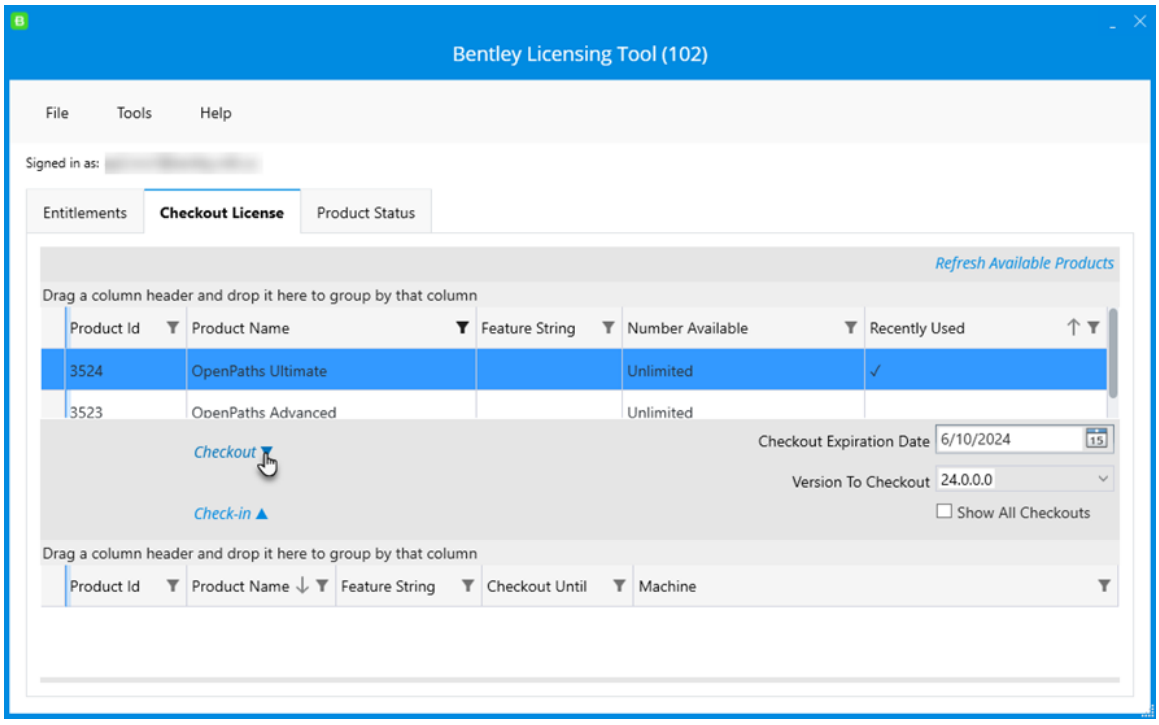
For extended offline scenarios it is possible to reserve, or check out, licenses for uninterrupted scheduled or automated model runs.

To checkout a license, select the *Checkout License* tab of the *Bentley Licensing Tool*.

The top pane provides a list of licenses. Although it shows two rows by default, the window can be made taller by dragging the window handle in the lower right corner. Additionally, columns can be filtered by clicking the filter icon.

To check out a license:

1. Select it in the top pane.
2. Specify an expiration date using the calendar icon located along the right edge.
3. Select a valid version from the list or manually enter the four part version number corresponding to the version of your product.



4. Click the *Checkout* button.

   The bottom pane displays a list of licenses locked to the computer.

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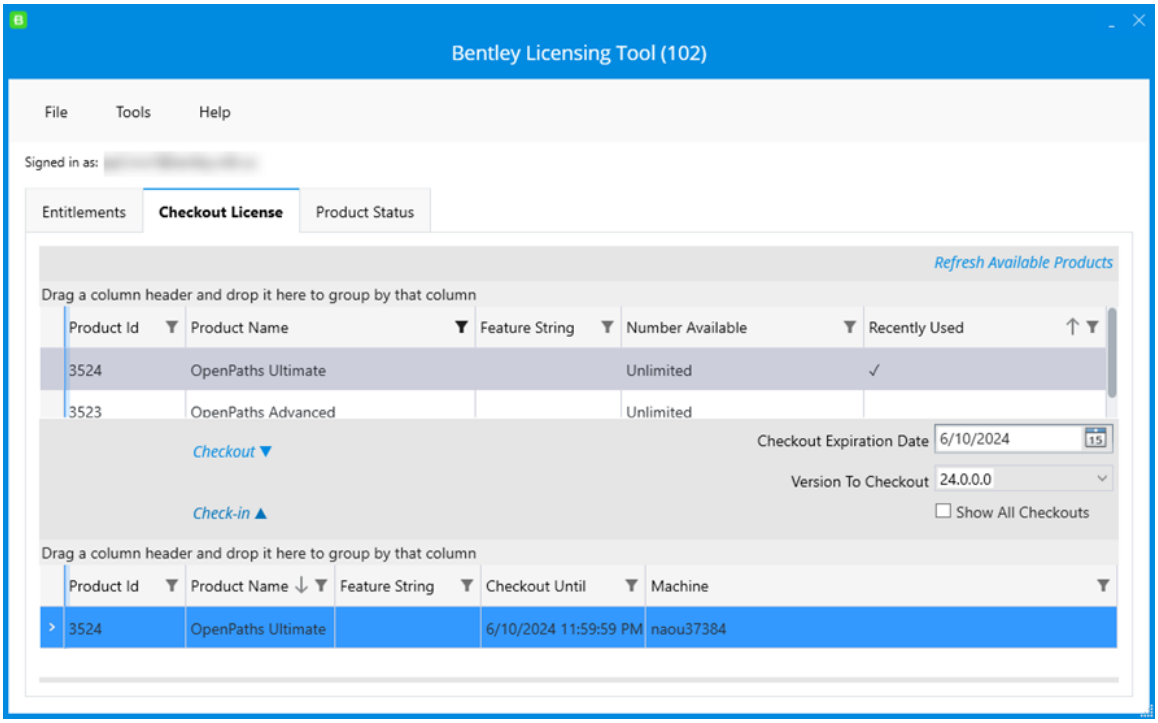

To return the license:

- To return a license prior to the expiration date, select it in the bottom pane, and click the *Check-in* button above.

For more on license checkouts refer to the *Bentley Communities Wiki*.

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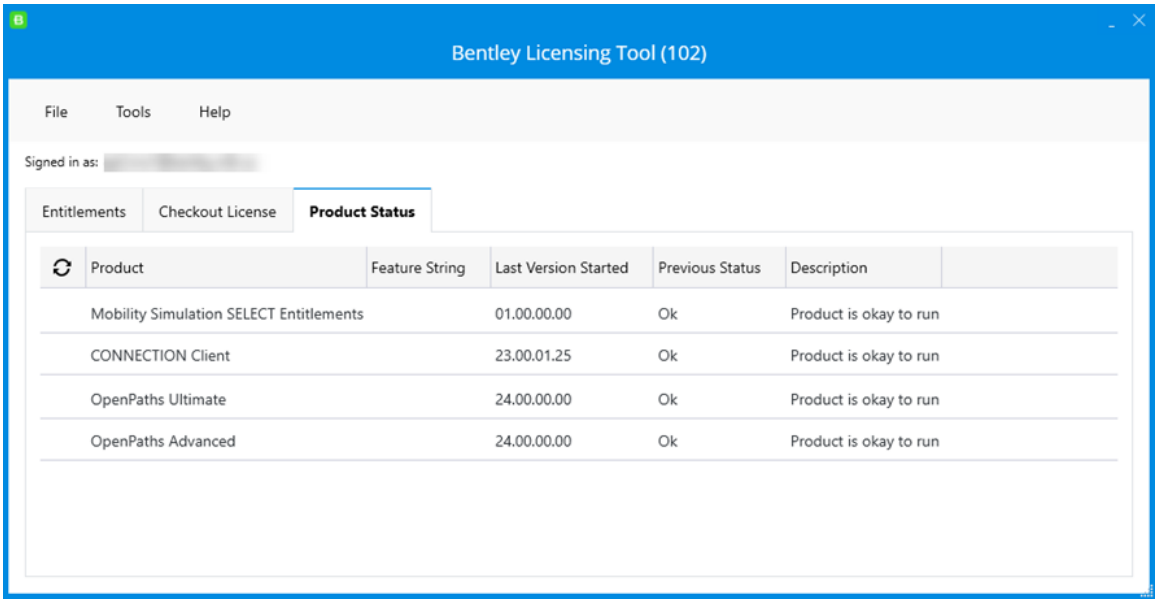
Checking status of OpenPaths licenses

The *Product Status* tab of the Bentley Licensing Tool status for all Bentley applications, including OpenPaths.

Please refer to the *Bentley Licensing Tool* page on the Bentley Communities Wiki for a description of the columns.



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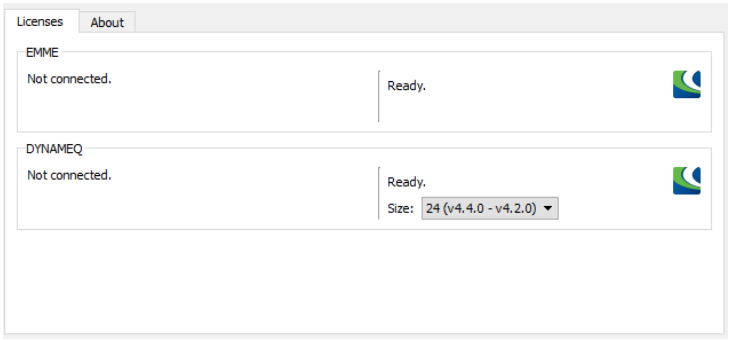
Using pre-CONNECT versions of EMME

The **Legacy License Utility** (LLU) is a system tray application that enables pre-CONNECT versions of EMME (v.4.6.2 to 4.1.2) and DYNAMEQ (v.4.4.0 to 3.0.0) to work with Bentley Subscription Entitlement Service (SES) . The LLU is installed together with EMME.

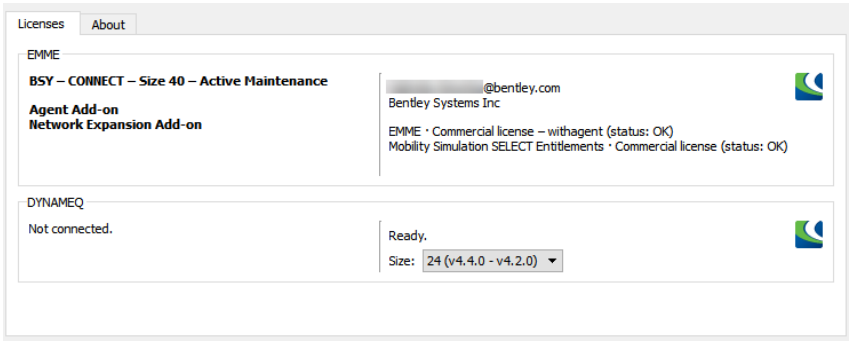
As long as you have the LLU running, and are signed in to the Bentley CONNECTION Client with your account credentials, you can run the pre-CONNECT versions of EMME (and DYNAMEQ) specified above seamlessly.

If LLU is already running, you will see the following icon in the system tray:

If the icon does not appear LLU must be launched from the Windows *Start* menu (Enter *LegacyLicenceUtility* in the Windows *Start* menu search box).



When a pre-CONNECT version of EMME is launched, LLU will check with the license server to determine if it has access to EMME. If you have product entitlement, EMME will run. Information on the EMME entitlement (license) is given in the *Licenses* tab of the LLU, as shown below.



Should the OpenPaths edition change after the LLU has started, for example from OpenPaths Advanced to OpenPaths Ultimate, the LLU will require a reload.

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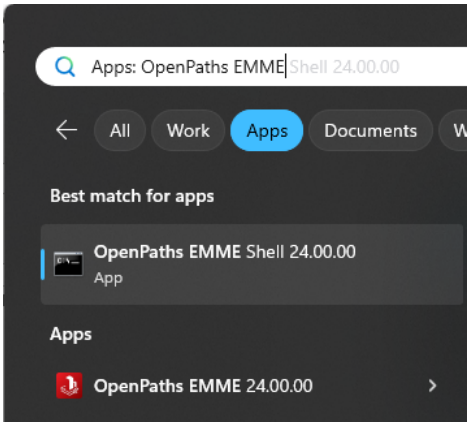
Starting OpenPaths EMME

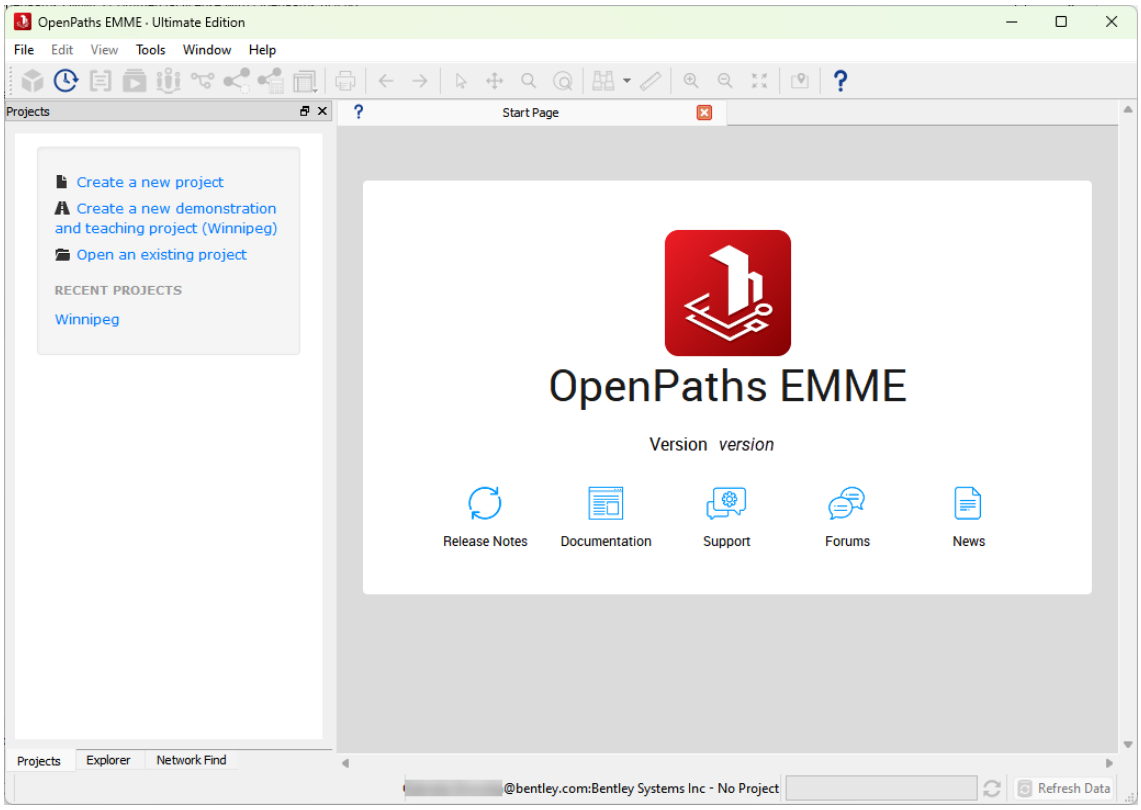
Once OpenPaths EMME has been authorized and connected to a licence service, OpenPaths EMME can be started.

Starting EMME Desktop

OpenPaths EMME Desktop should be started from the application shortcuts provided in the *Start* menu, or by clicking directly on an EMME *project file* in Windows Explorer.



When Desktop is launched, the following window is displayed.



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From the *Explorer* window you can create a new project or open an existing project. For details on how to get started with an EMME project, refer to the *Getting started* section in the *Desktop Manual*.

From the *Start Page* you can consult the *Release Notes* and the *Desktop Manual*, contact our *Support Team* with a question, connect with other EMME users via the *Bentley Communities*, or consult the *OpenPaths Blog* to read up on our latest news.

Shortcuts

Shortcuts to Desktop can be customized using **`%EMMEPATH%\programs\Emme`** (Windows) with the following options:

```
Usage: Emme [ -u | -p | -l | -a ]
```

`-u` *`user_initials`*	Use initials to identify user
`-p` *`project_file`*	Start Desktop with a specific project (**`.emp`** file)
`-l` *`language_code`*	Start Desktop in the specified language
`-a, --desktop-api [`*`port`*`, no]`	Activate Desktop API service on an optional port, or deactivate it by specifying `no` (without any port specification). For help on using the Desktop API, see *Desktop API Guide* (available from the *Help* in the Desktop menu bar).

The Desktop API service is launched on the default port when EMME is called with no options. The default port is 4242. If the default port is busy, the next available port is used. The port on which the Desktop API is listening is given in the *Advanced pane* of the *Application Options* window.

To launch the Desktop API service on a specific port, specify the port number together with the `-a` option; for example, `Emme -a 5051`.

The default port can be set using the `EMME_DESKTOP_API_PORT` environment variable. For example:

```
set EMME_DESKTOP_API_PORT=5051
```

If the `EMME_DESKTOP_API_PORT` variable has been set, the Desktop API will use the port specified by the value of this environment variable, or the next available one, if the port is busy.

Starting and using OpenPaths EMME from APIs

Modeller and Desktop can both be started using various EMME APIs (Application Programming Interfaces) for the Python programming language. For more details, consult *Help → API Guides and References* from the *Desktop menu bar*.

Starting external workflows from the OpenPaths EMME Shell

OpenPaths EMME Shell shortcut is recommended for workflows which must be started outside OpenPaths EMME; it will always produce a command shell which corresponds to the desired version of EMME and the Python environment configuration in Desktop *Tools → Application Options → Modeller → Python path*. It does this by starting a command shell with properly initialized `EMMEPATH`, `PATH` and `MODELLER_PYTHON` environment variables. The *OpenPaths EMME Shell* should be used to properly configure a command shell for the following workflows:

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- EMME API use from external Python processes. See *Standalone Operation* in the *Modeller API Guide* (available from the *Help* in the Desktop menu bar). Note: Desktop contains the native Modeller shell Python environment for ad hoc scripting.
- Prompt or macro use from shell scripts/batch files. See *Chapter 2* of the *Prompt Manual* for more details. (Note: Desktop contains the native *Prompt* command-line interface and Modeller permits running macros via the *Run macro (Tool)*.

If after starting OpenPaths EMME an error message is displayed stating that the use of OpenPaths is prohibited, and you have checked with your license administrator that you have the proper entitlements, check the file permissions for the file **`C:\Users\`*`user_name`*`\AppData\Local\Bentley\OpenPaths\license.json`**. In some cases, *anti-virus and file monitoring services* can slow down or block access to the **`license.json`** file.

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