



NVIDIA vMaterials Siemens NX

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Version 1.0



NVIDIA vMaterials – Siemens NX

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1 Introduction

This document guides you through the steps that are necessary to use vMaterials 2 in Siemens NX.

1.1 Prerequisites

- [Microsoft Windows 10](#)¹
- [Siemens NX](#)²

1. <https://www.microsoft.com/en-us/windows/get-windows-10>

2. <https://www.plm.automation.siemens.com/global/en/products/nx/>

2 Installing vMaterials 2 and Material Exchange

1. Download the vMaterials 2 installer for your operating system (Windows, Linux, Mac) from <https://developer.nvidia.com/vmaterials>.
2. Run the vMaterials 2 installer.
 - 2.1. If you have not yet installed the NVIDIA Material Exchange package, you will be prompted to install it. In this case click Next.
 - 2.2. Accept the End User License Agreement for Material Exchange:

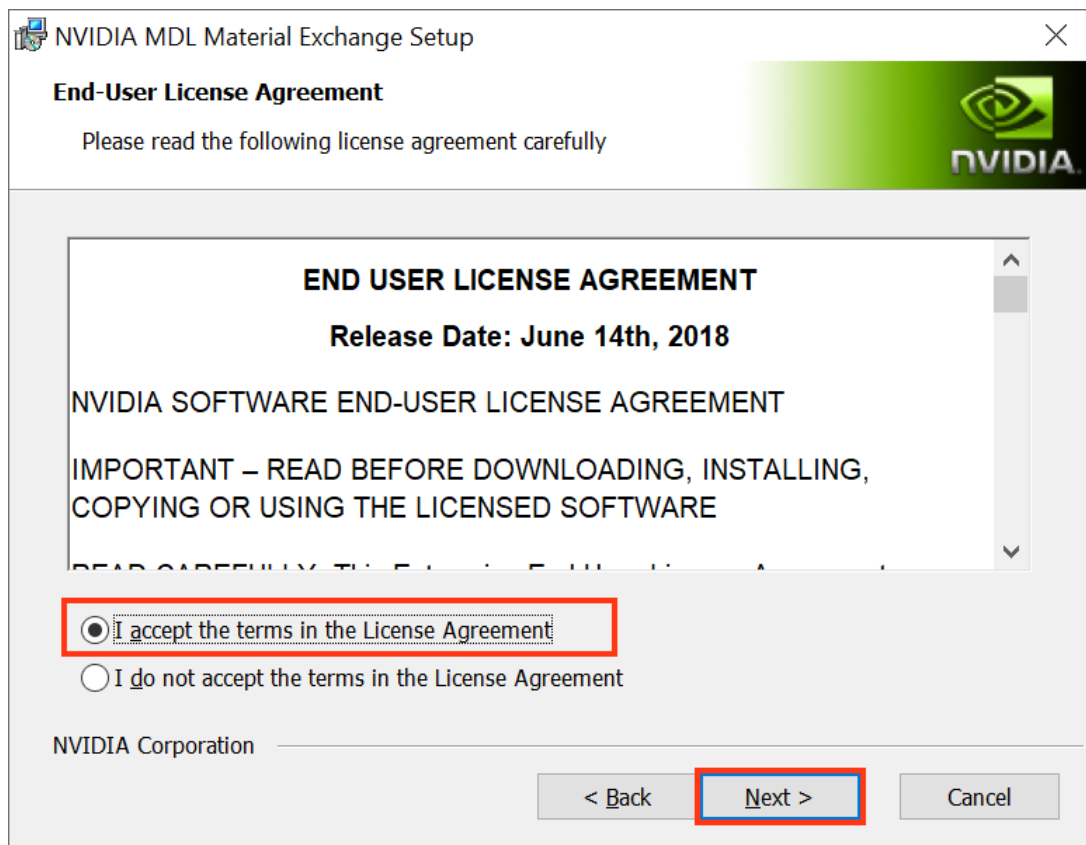


Fig. 2.1 - Accepting the End User License Agreement for Material Exchange

- 2.3. In the next dialog, you define the configuration of Material Exchange. Click **Complete** to choose a complete installation. Material Exchange will be installed in folder `C:\Program Data\NVIDIA Corporation\mdl`.

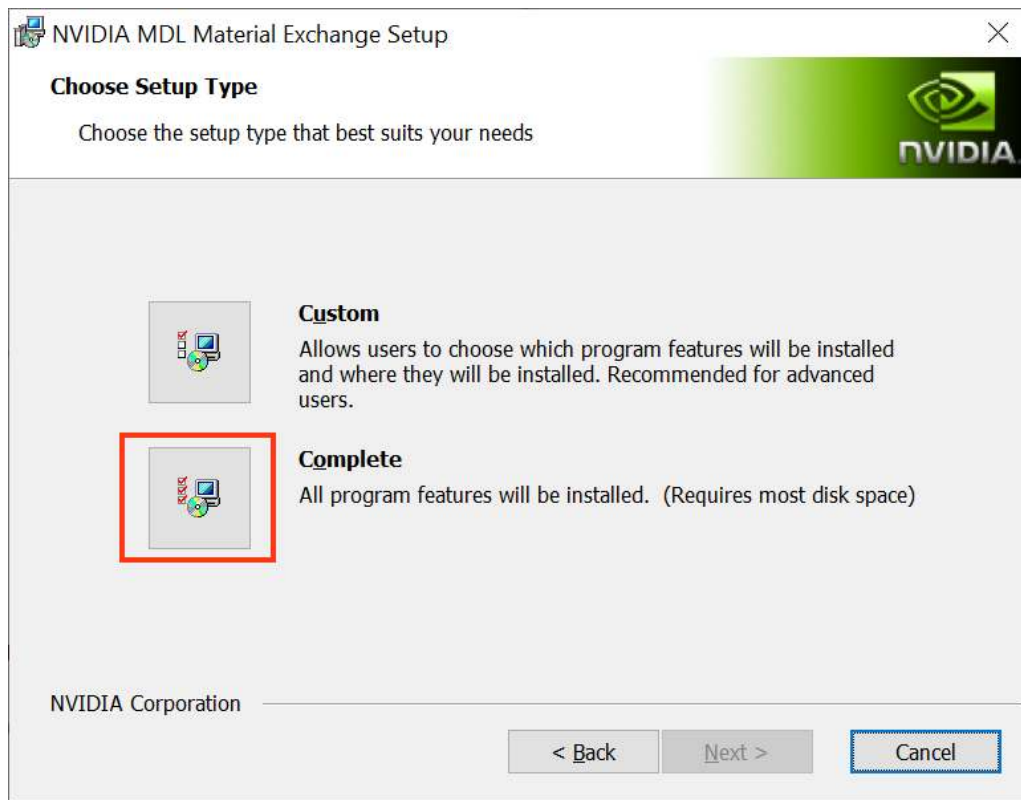


Fig. 2.2 - Choosing to install all program features for Material Exchange

2.4. In the next dialog, click **Install** to complete the Materials Exchange installation.

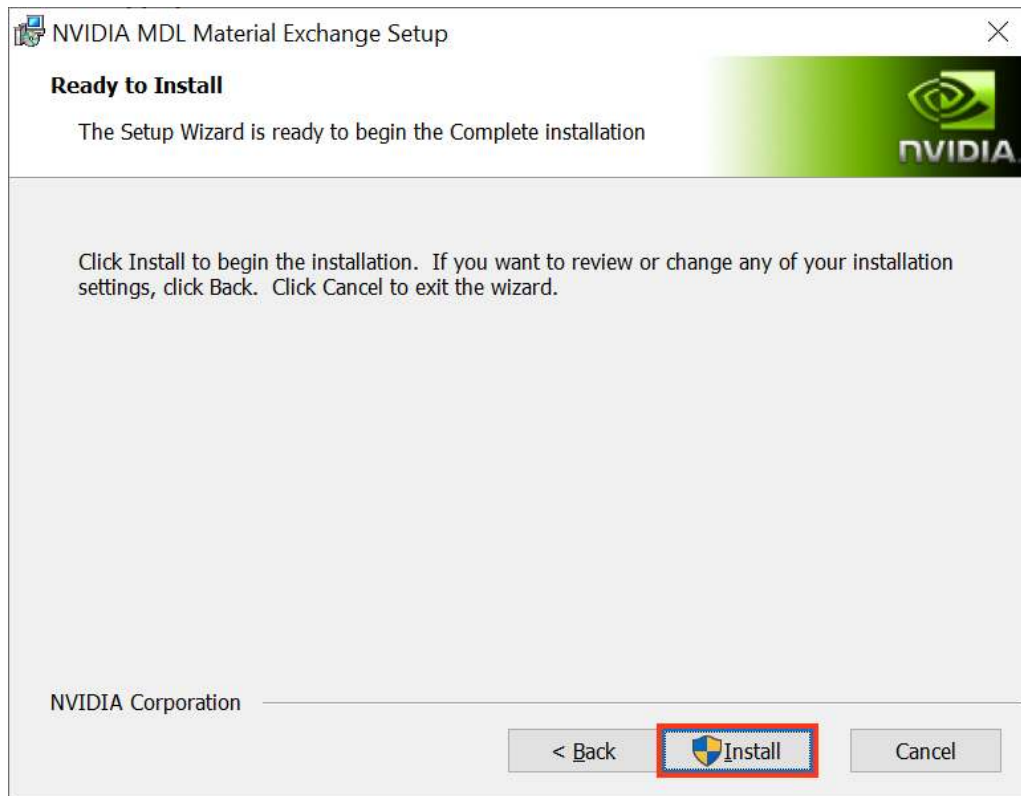


Fig. 2.3 - Completing the installation

2.5. Once the Material Exchange package has been installed, vMaterials 2 installation will proceed.

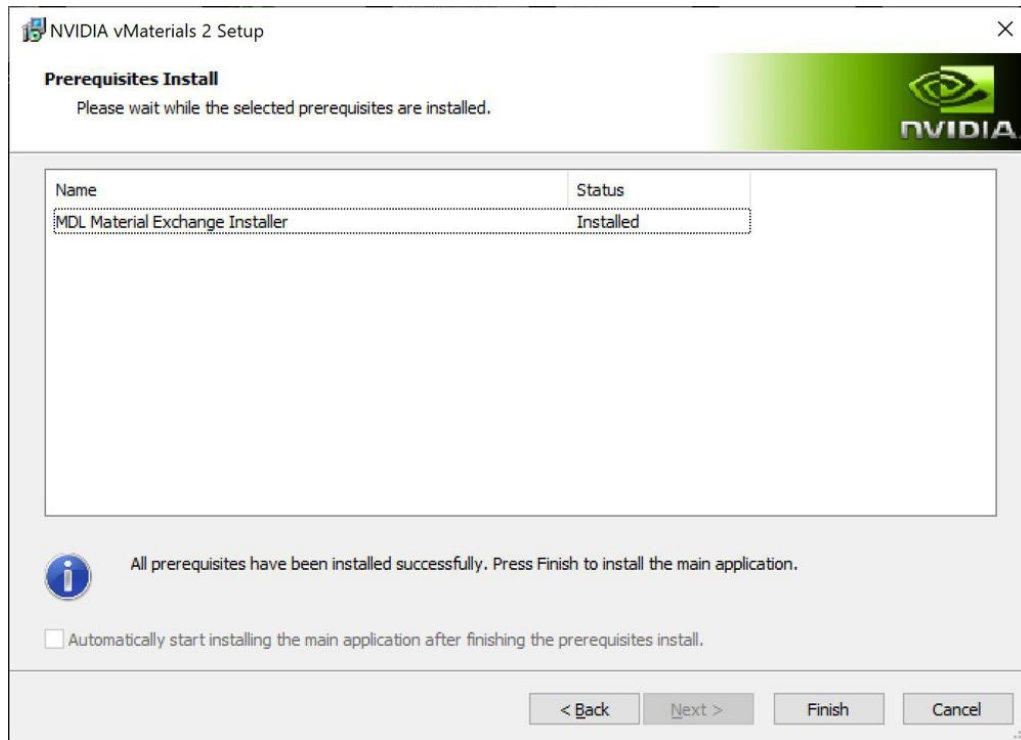


Fig. 2.4 - Completion of the Material Exchange package installation

3. Click Next after the vMaterials 2 welcome dialog.



Fig. 2.5 - The vMaterials 2 welcome dialog

4. In the next dialog, accept the End User License Agreement for vMaterials 2 and click Next.

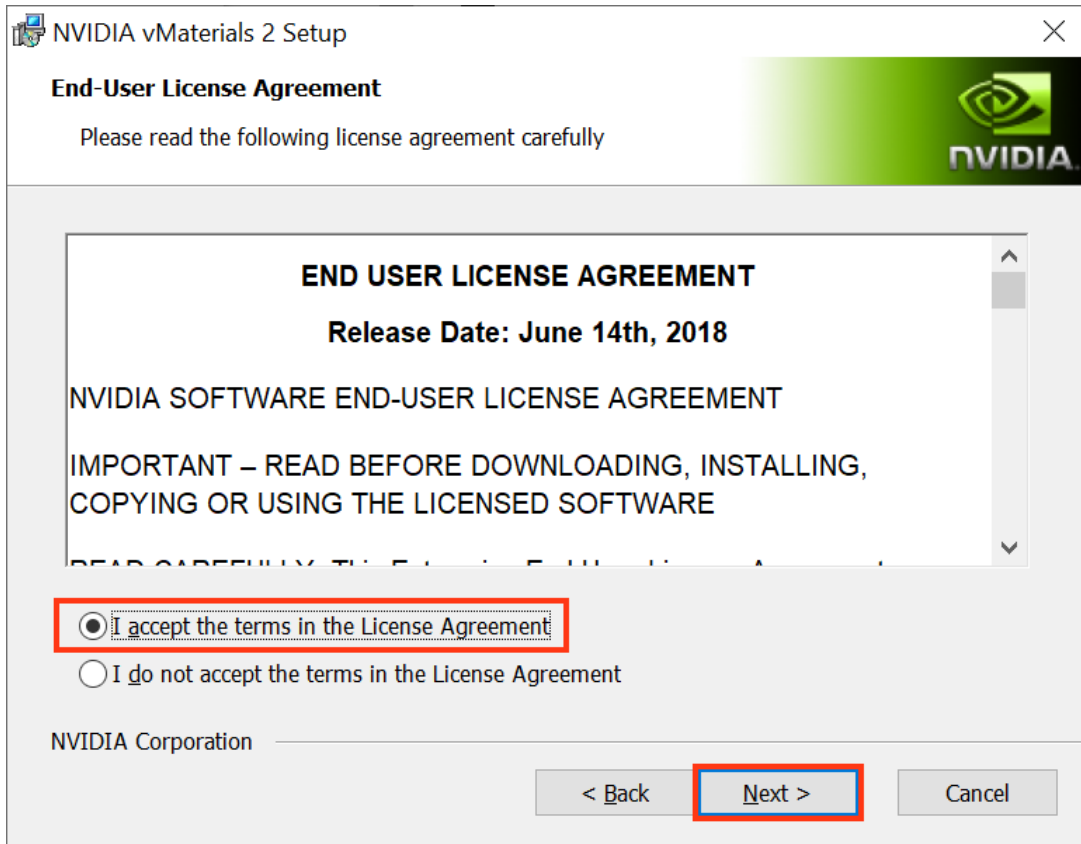


Fig. 2.6 - Accepting the End User License Agreement for vMaterials 2

5. In the next dialog, you will be asked about the configuration of vMaterials 2. Click Complete to choose a complete installation. vMaterials 2 will be installed in a folder based on your username:

C:\Users*username*\Documents\mdl

To install vMaterials to a custom directory, see [Using vMaterials from a different installation location](#) (page 16).

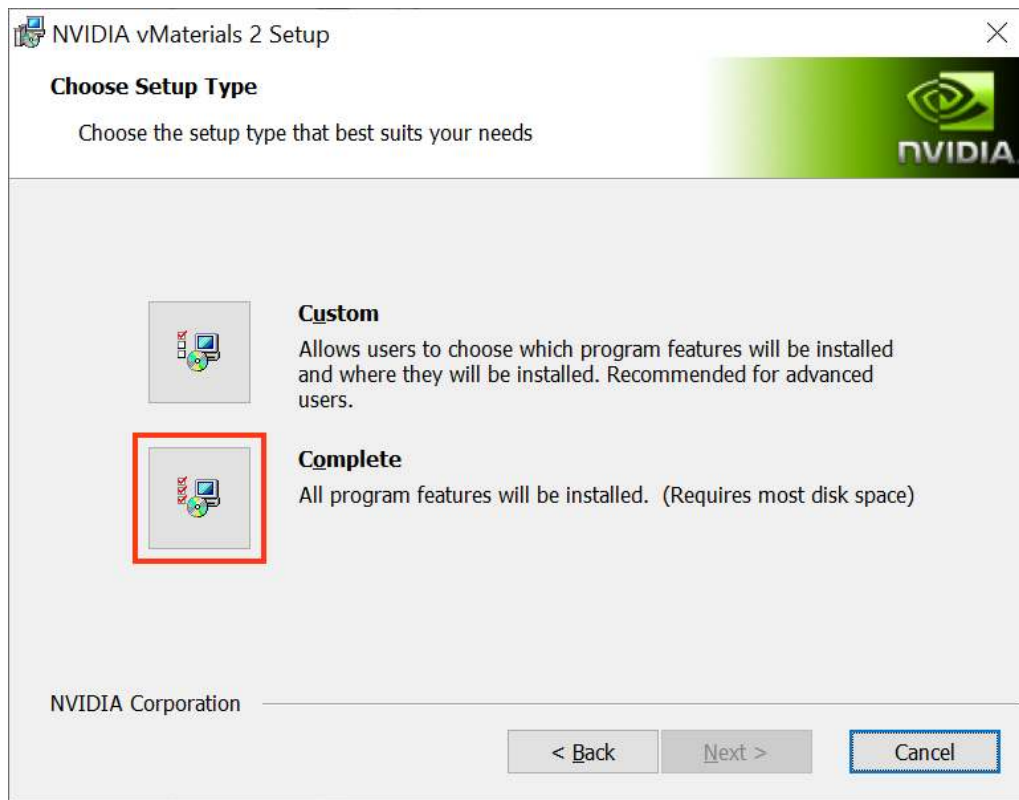


Fig. 2.7 - Choosing the complete installation of vMaterials 2

6. In the next dialog, click **Install** to copy vMaterials 2 files to your chosen folder.

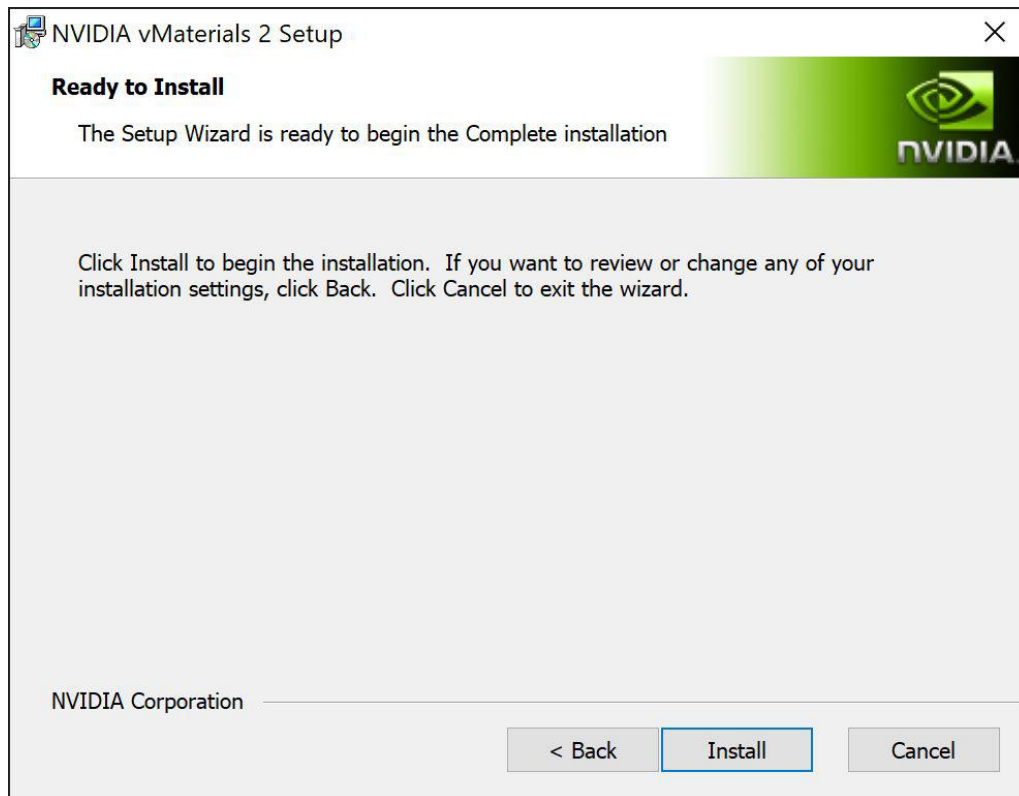


Fig. 2.8 - Installing vMaterials 2 files

7. A dialog displays the progress of the installation.

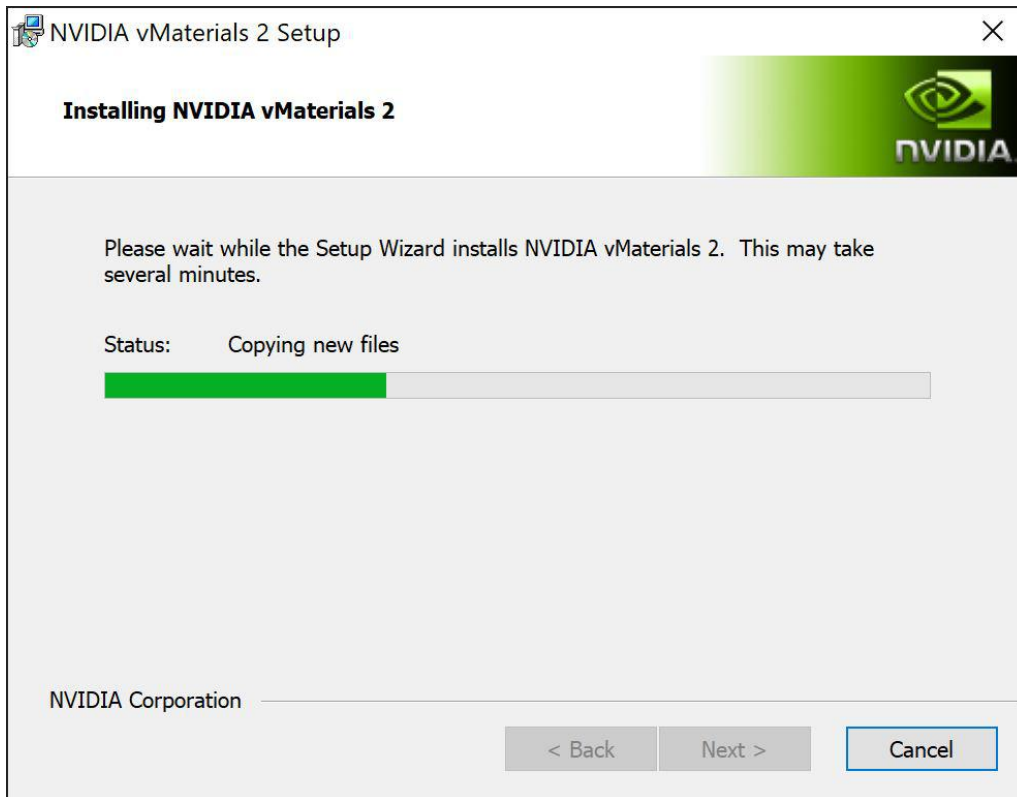


Fig. 2.9 - Installation status display

8. Once the installation is complete, click Finish.

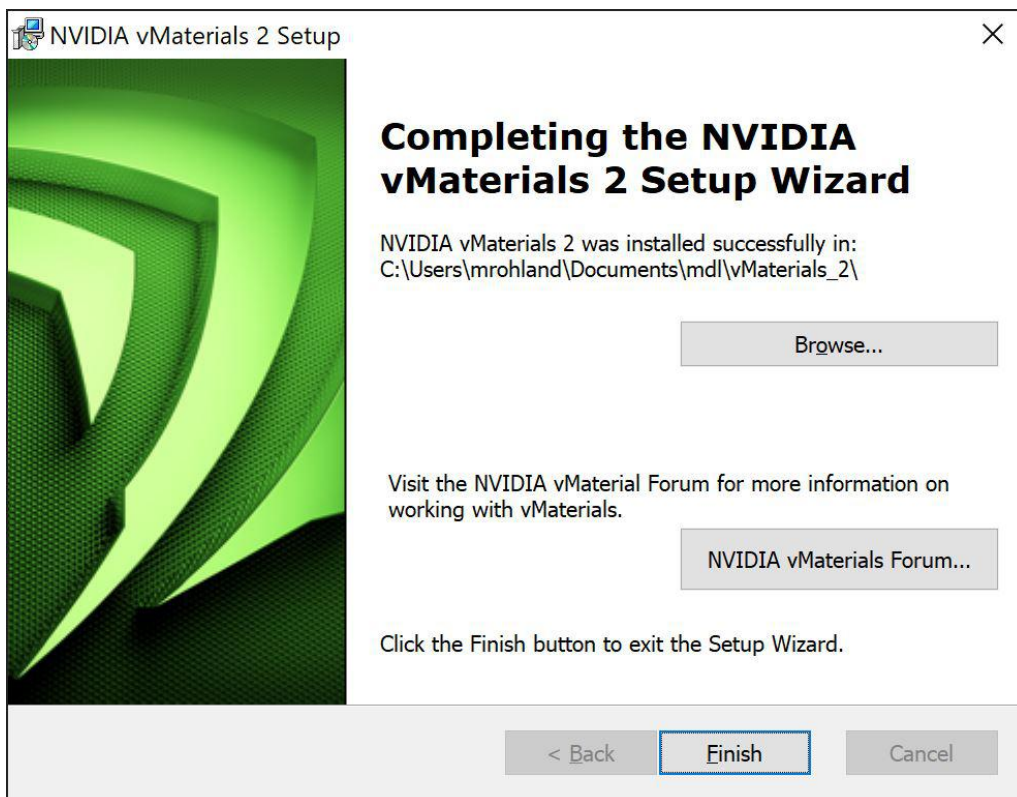


Fig. 2.10 - Completing the vMaterials 2 installation

3 Siemens NX and vMaterials 2

During the installation of Siemens NX, you should also install Studio Render to use vMaterials 2.

1. In the initial software installation screen, select Install NX.



Fig. 3.1 - Installation screen for Siemens NX

2. Choose Studio Render in the Custom Setup dialog and finish the installation as usual.

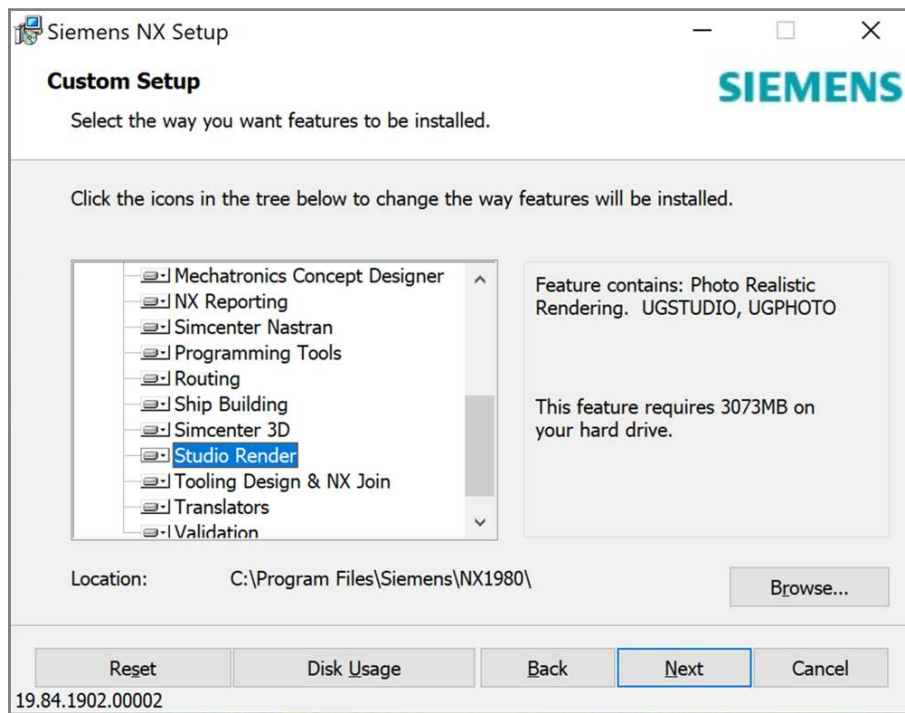


Fig. 3.2 - Choosing Studio Render during a custom setup

3.1 Assigning a vMaterial to a model

1. Launch Siemens NX. If it was running during the vMaterials or MDL Material Exchange installation, you will need to restart it.
2. Start a project or load a model.

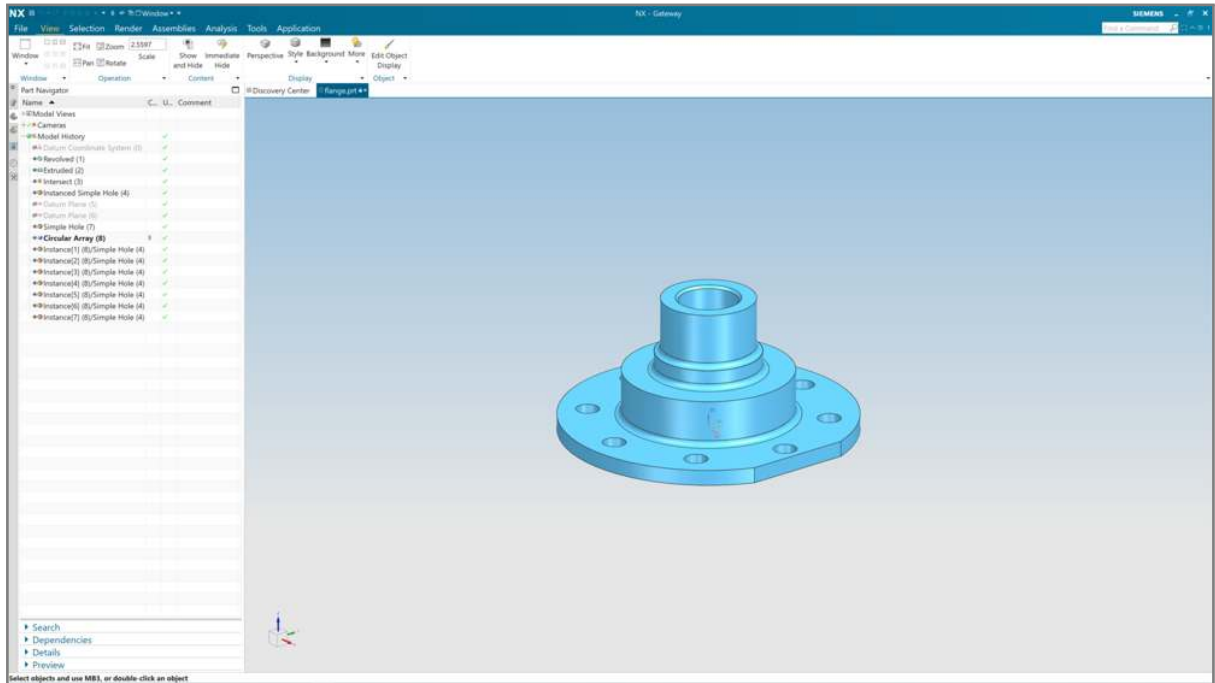


Fig. 3.3 - Creating or loading an initial model

3. Go to the Render tab and enter the Studio Task environment by pressing the Studio Task icon.

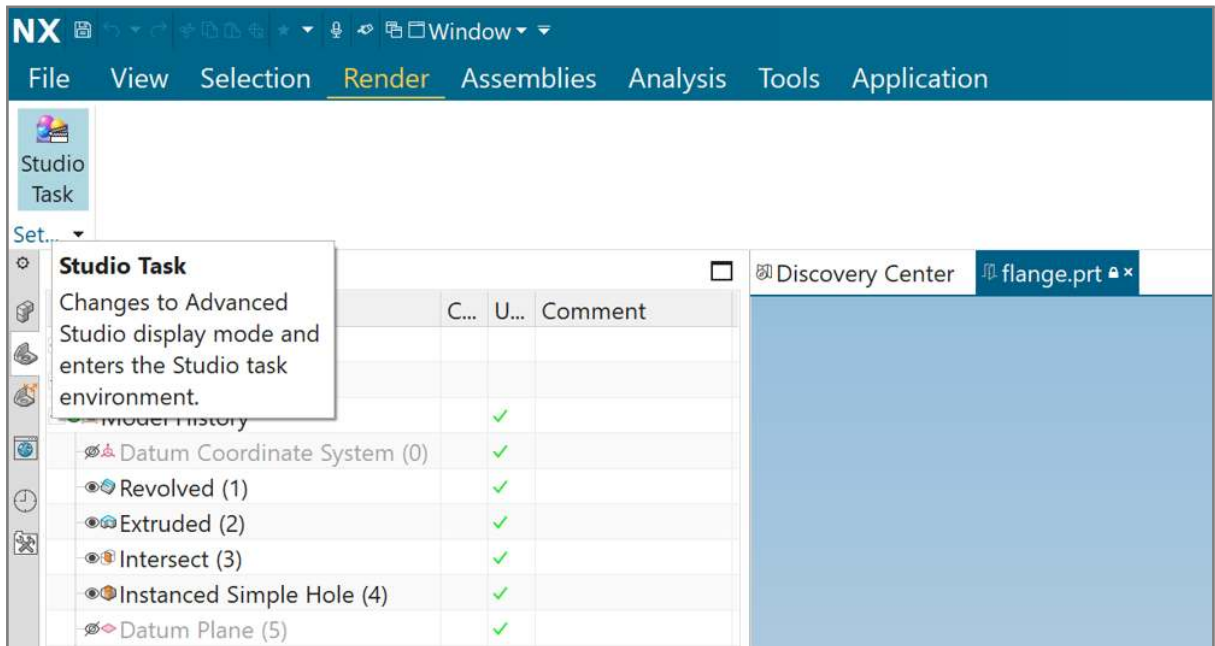


Fig. 3.4 - The Render tab and the Studio Task environment

4. Press the Materials in Part button.

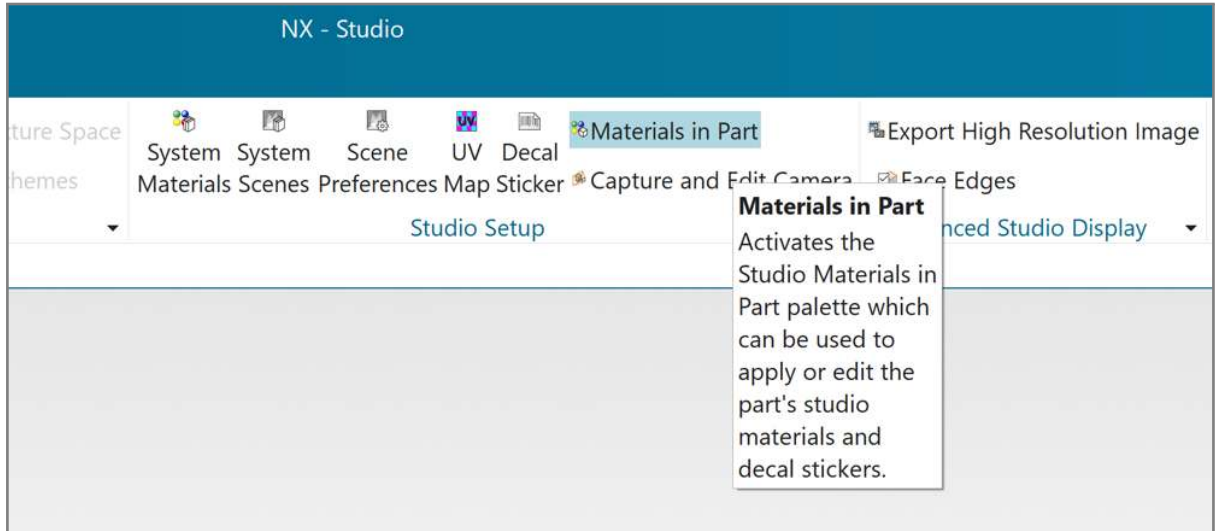


Fig. 3.5 - The Materials in Part button

5. The left panel switches to Studio Materials in Part. Open the folder labeled Visual Materials.

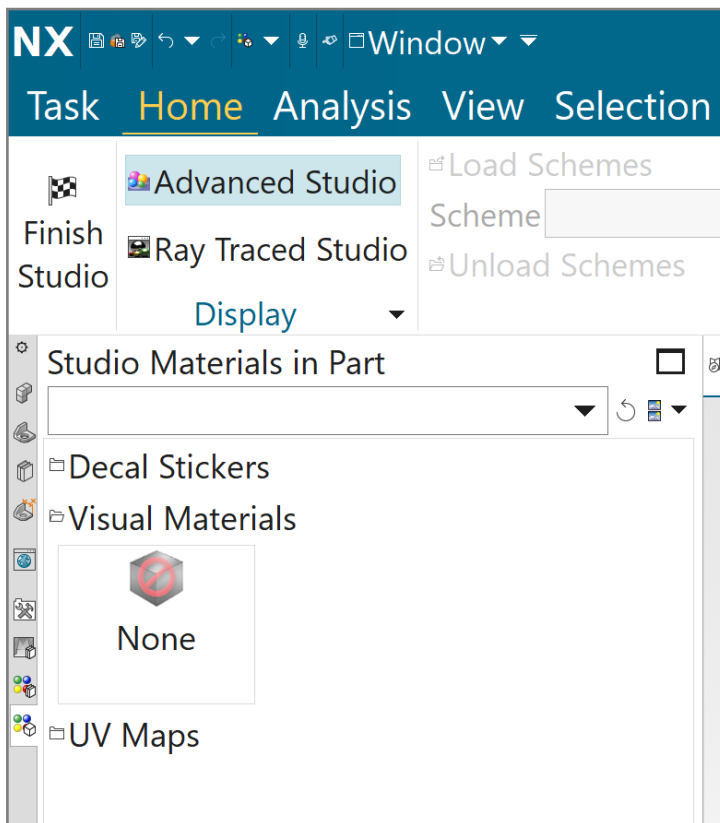


Fig. 3.6 - The Materials in Part display in the left panel

- Click the right mouse button near the Visual Materials entry. Go to New Entry and select Import MDL File.

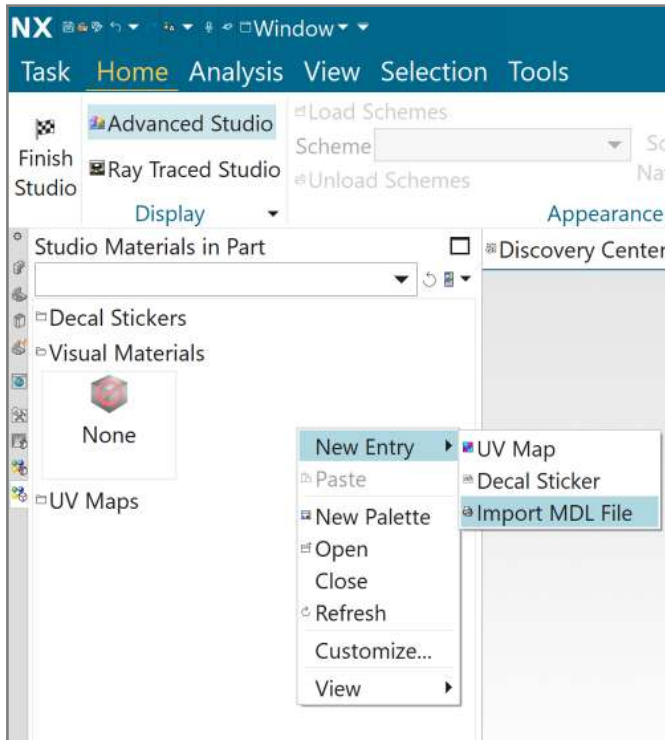


Fig. 3.7 - Importing a vMaterial defined by an MDL file

- Go to the folder of the vMaterials library installation and choose a material to add to your model.

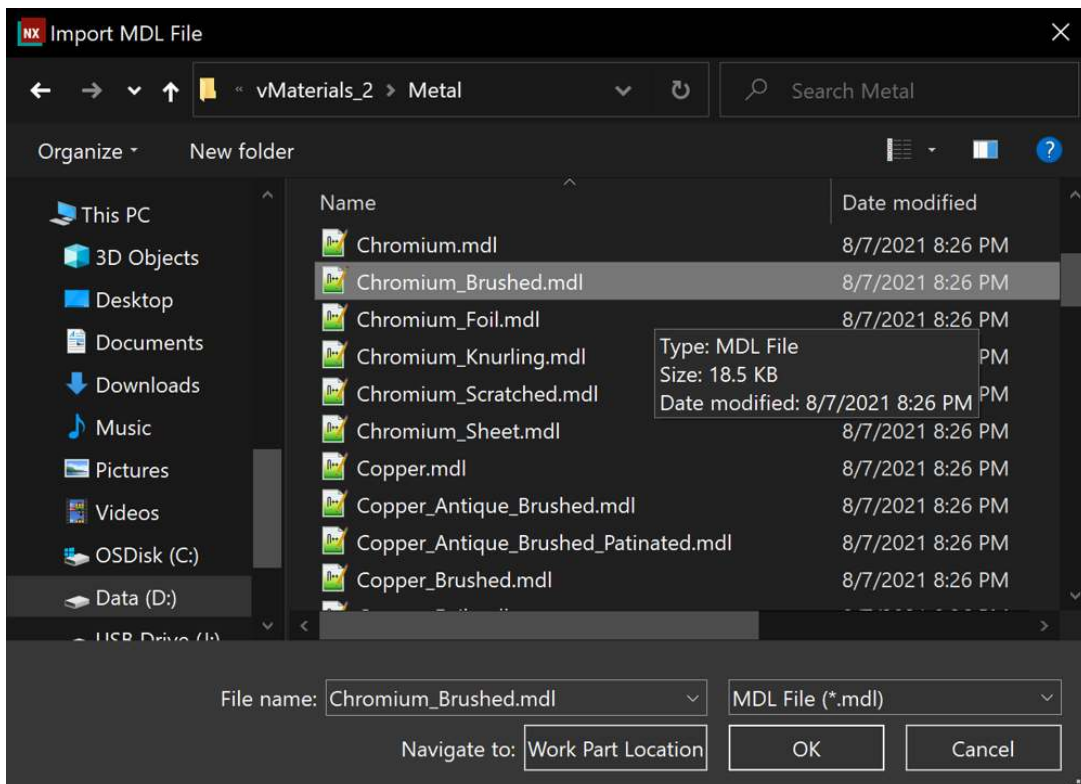


Fig. 3.8 - Choosing a vMaterial

8. All vMaterials come with different presets. Press the left mouse button and drag and drop a preset onto a model.

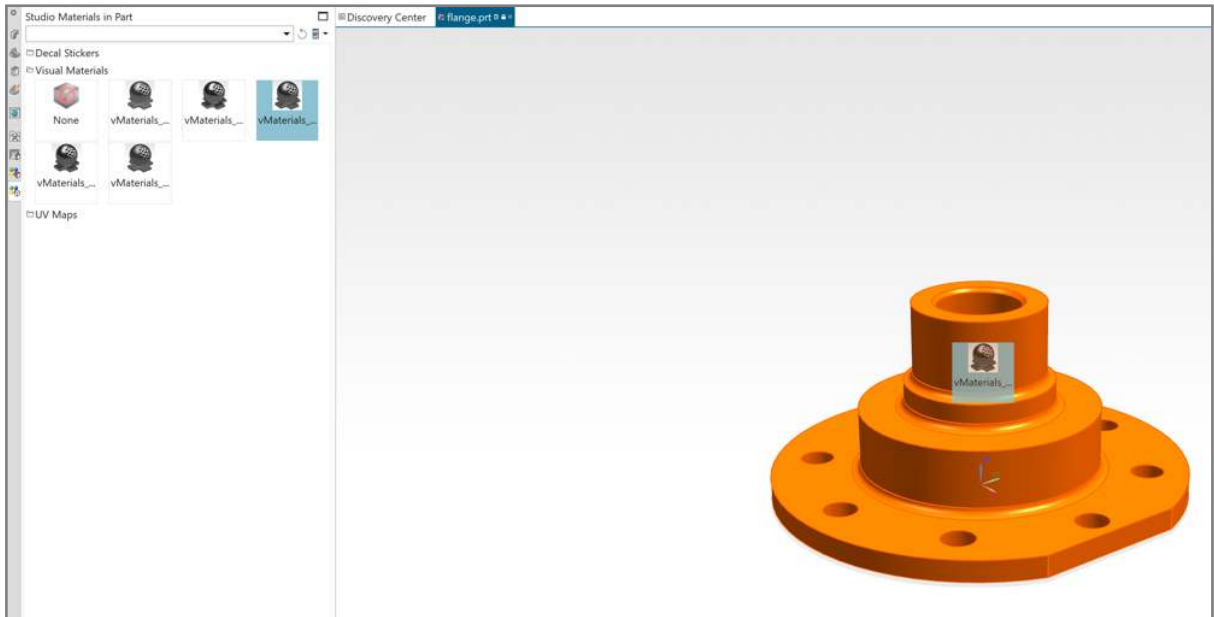


Fig. 3.9 - Selecting a material to drag and drop onto a model

9. Now the material is assigned to the model. Press the Ray Traced Studio button to render the vMaterials with Iray.

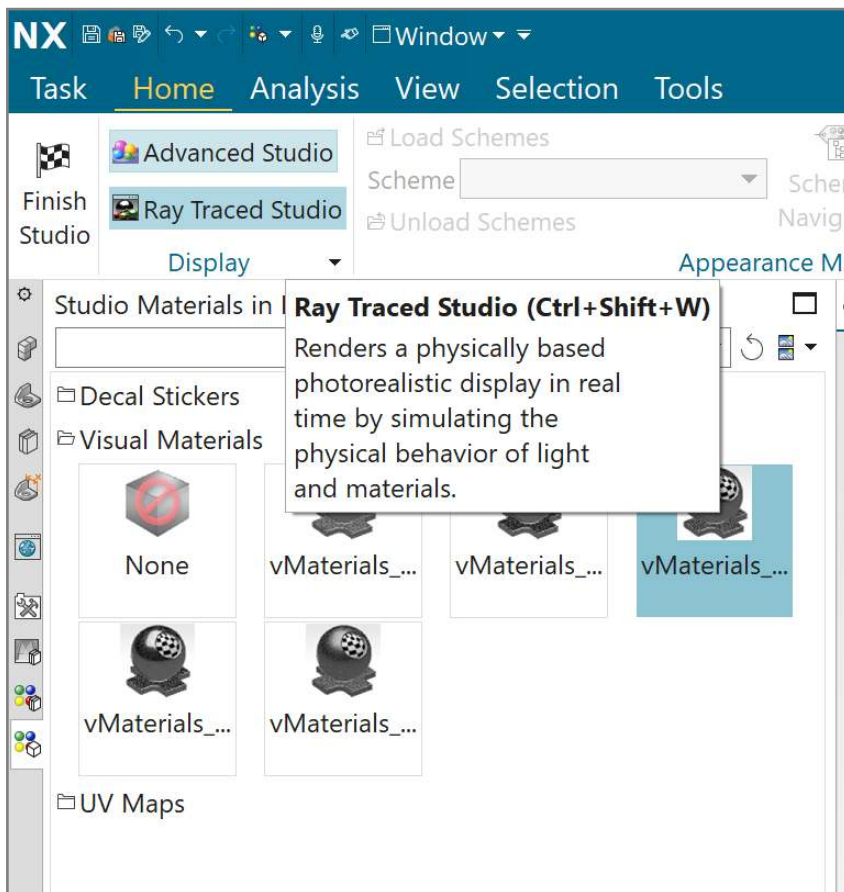


Fig. 3.10 - Rendering the model with Iray

10. The Ray Traced Studio window displays the rendering of the model.

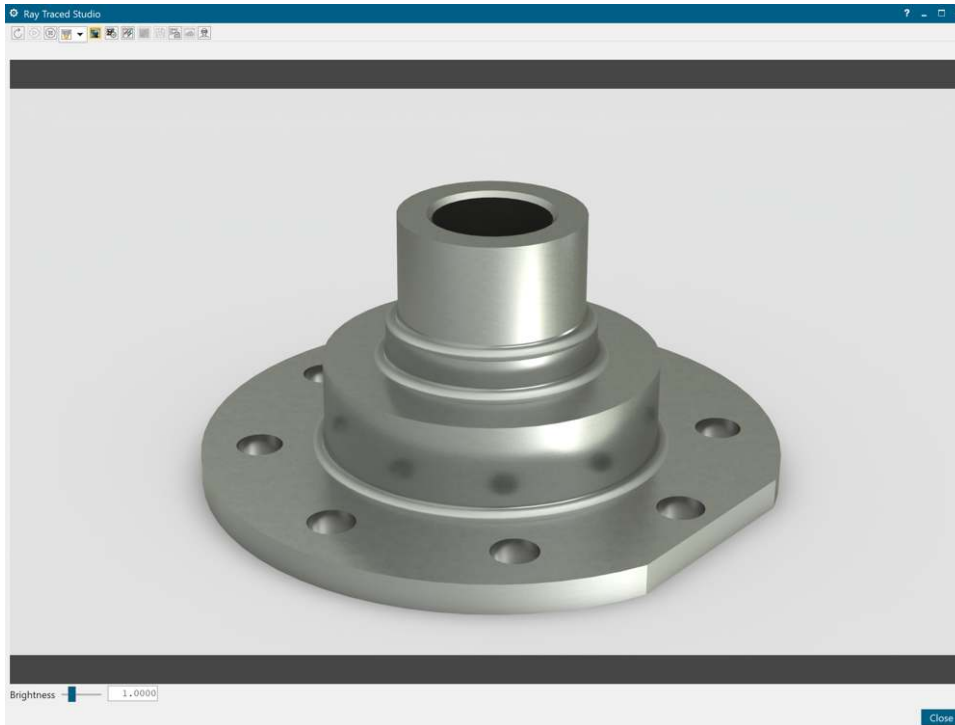


Fig. 3.11 - The Ray Traced Studio window

11. You can edit the presets of a vMaterial. Click with the right mouse button onto the preset icon and select Edit.

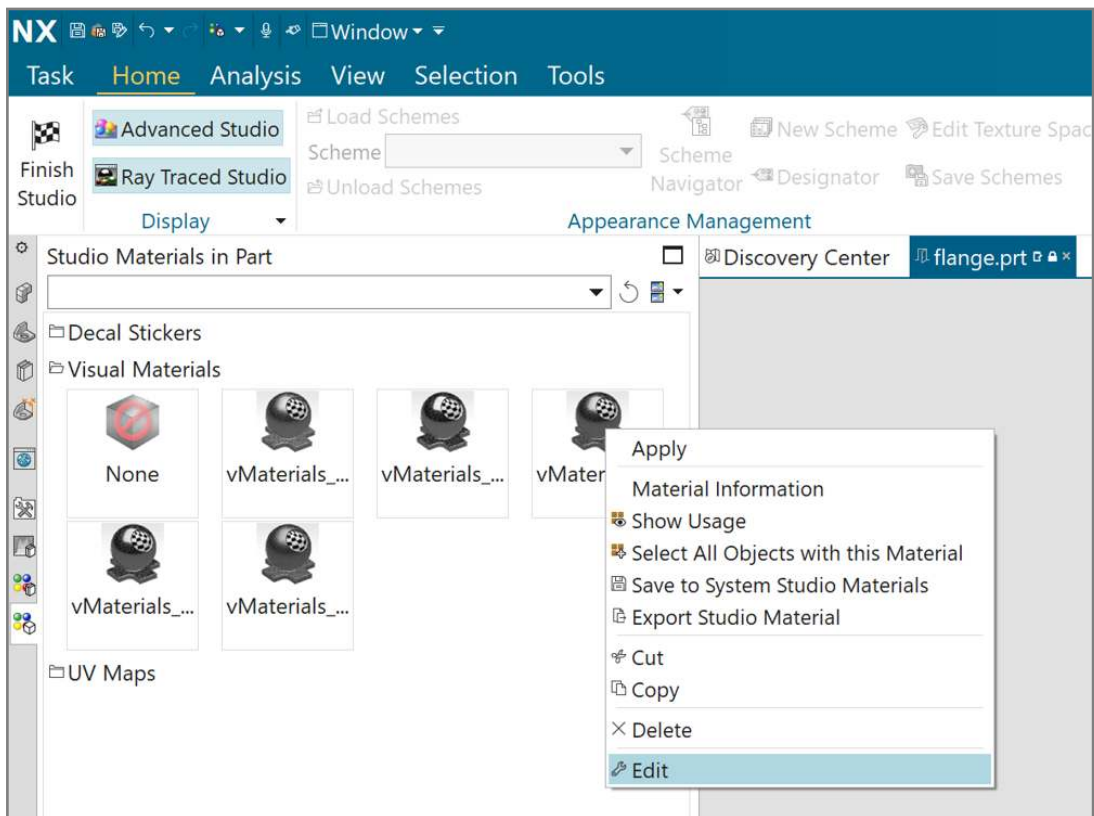


Fig. 3.12 - Editing material presets

12. The Studio Material Editor appears. Select the base under Structure to display the material properties. As you make changes, the rendered image will be updated. You can also edit the material with right mouse-click on the model in the 3D viewport with the Edit Material... button.

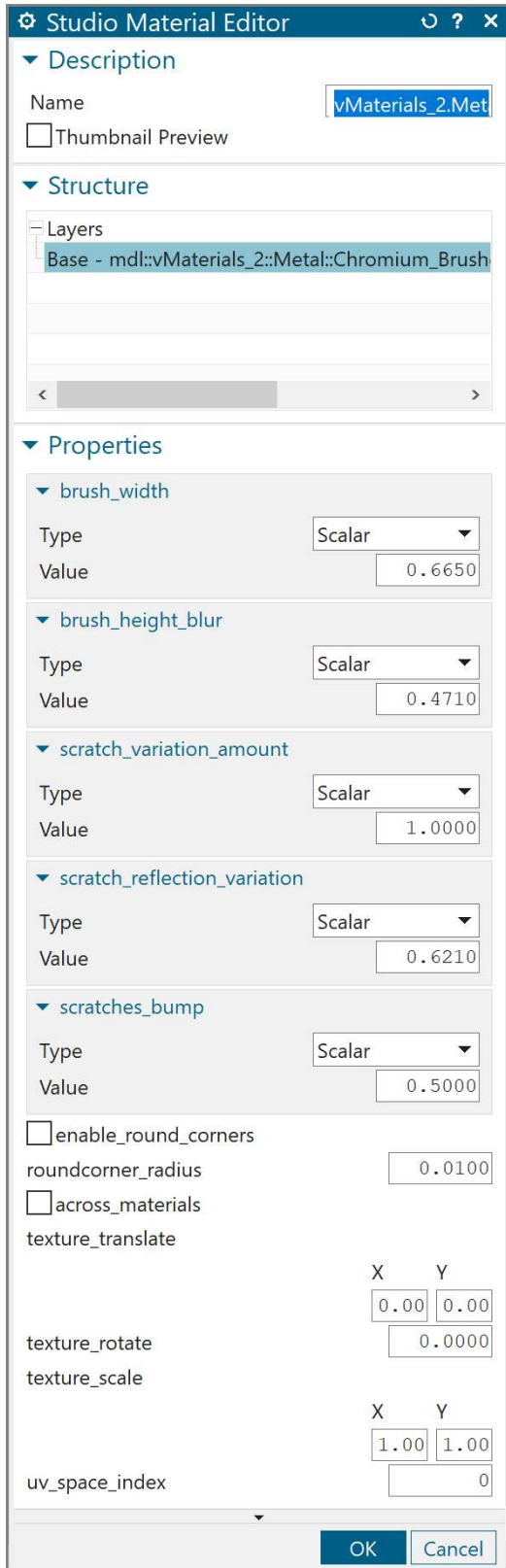


Fig. 3.13 - Editing the properties of a material

3.2 Using vMaterials from a different installation location

If you didn't install vMaterials 2 using the default settings or moved the library to a different location, you will need to define the new path. If vMaterials are not available in Studio Materials in Part, an import error like the following will be displayed.

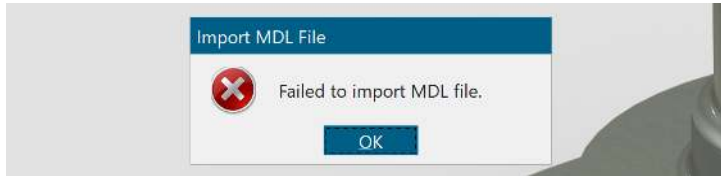


Fig. 3.14 - Error message when vMaterials folder cannot be found

To define a new location for the vMaterials, do the following:

1. Open the Edit system environment variables control panel by pressing the "Windows" button, typing "sys", and clicking on the Open item that appears.

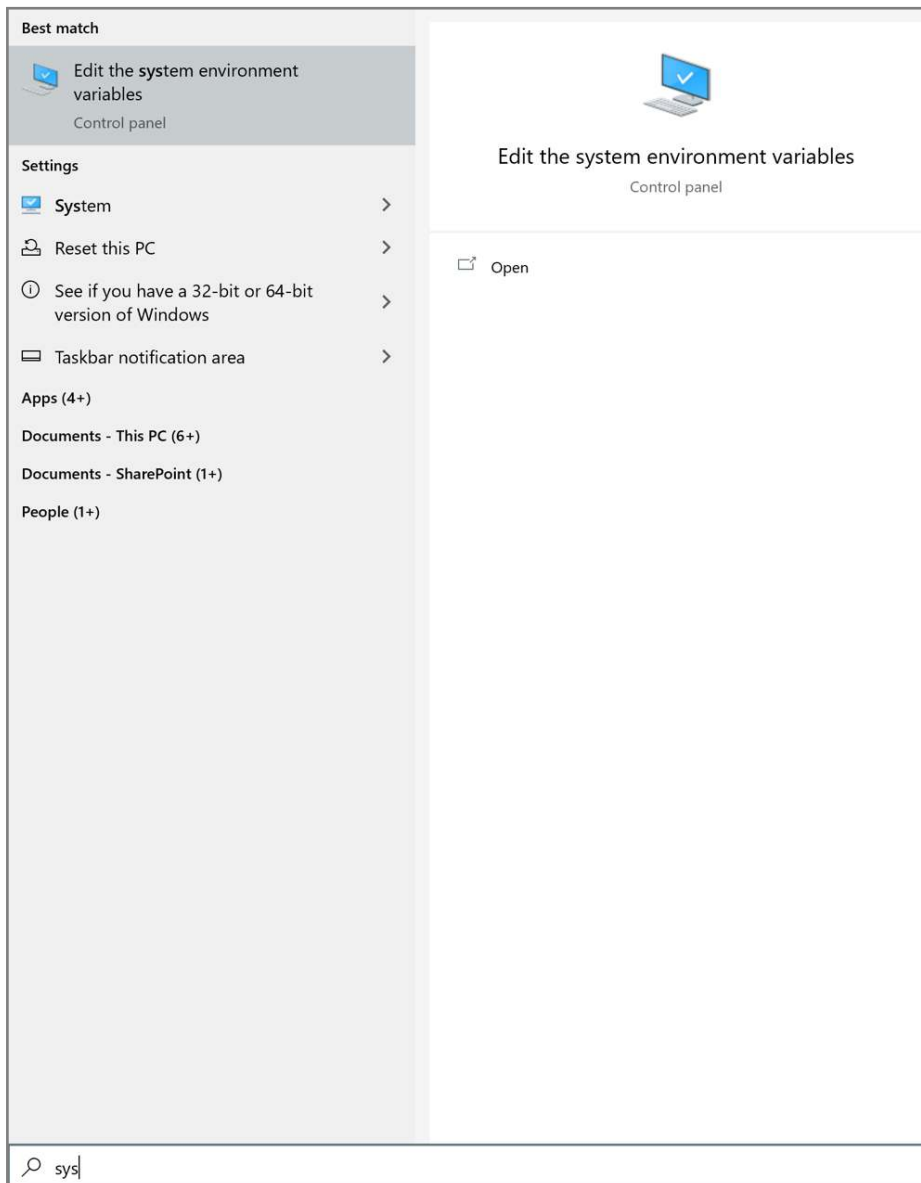


Fig. 3.15 - Searching for the Edit system environment variables control panel

2. The System Properties dialog appears. Click on Environment variables.

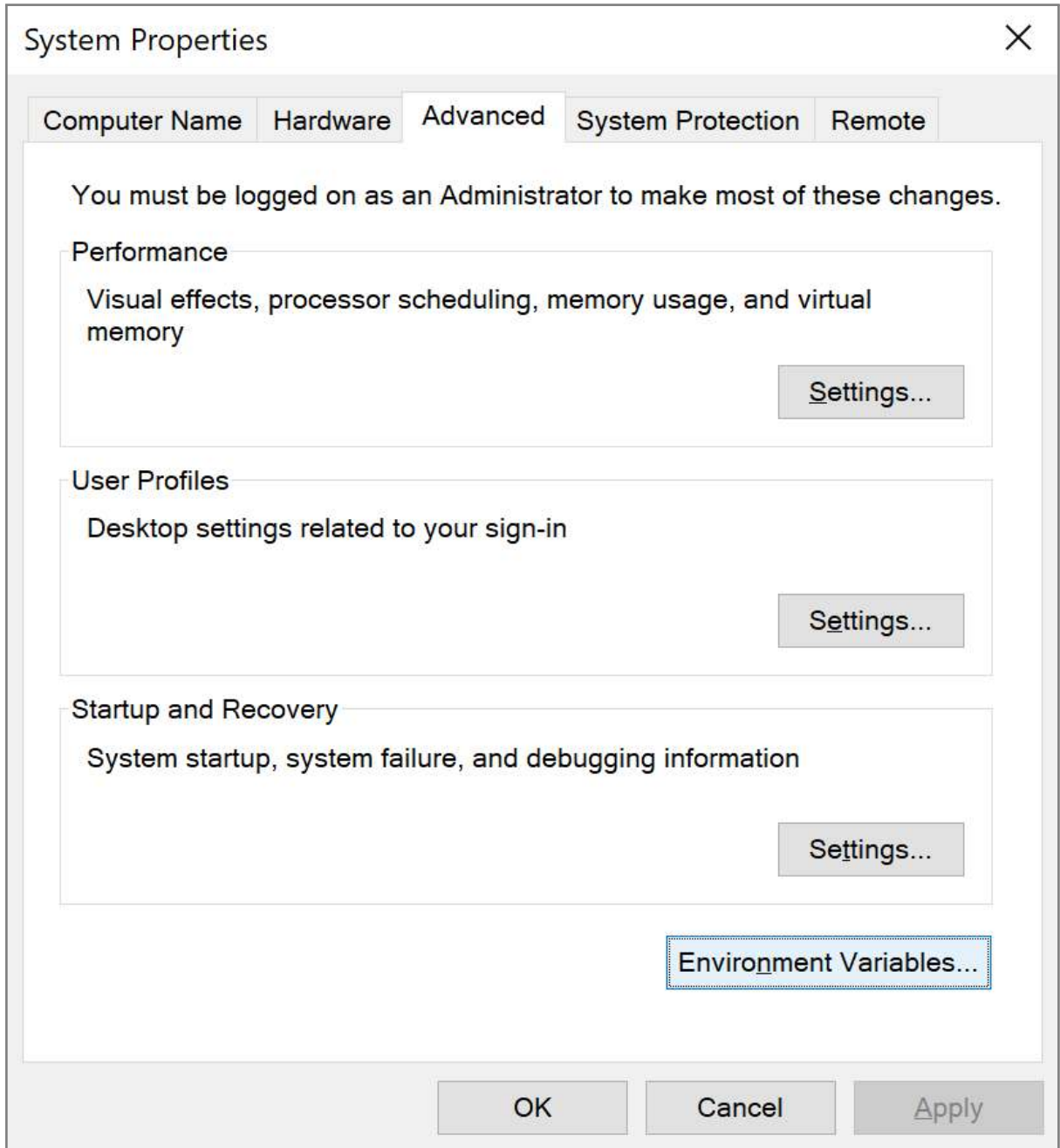


Fig. 3.16 - The System Properties dialog

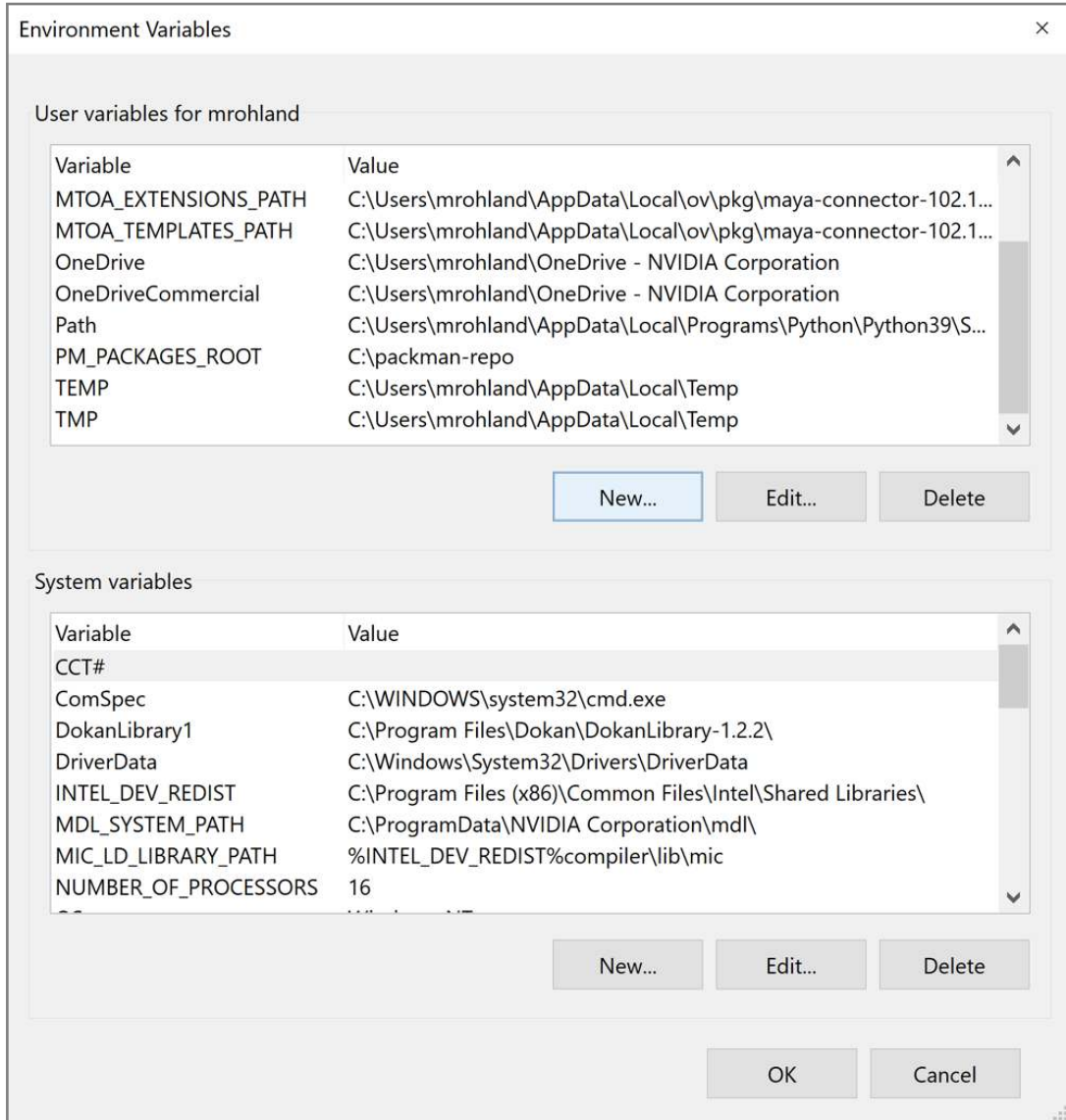
3. Click on **New** in the **User variables** section.

Figure 3.17

4. In the **New User Variable** dialog, set the variable name to **NX_RENDER_LWIRAY_MDL_USER_PATHS**. Set its value to the folder containing your vMaterials. After pressing the **OK** button in all three windows you will be able to import vMaterials.

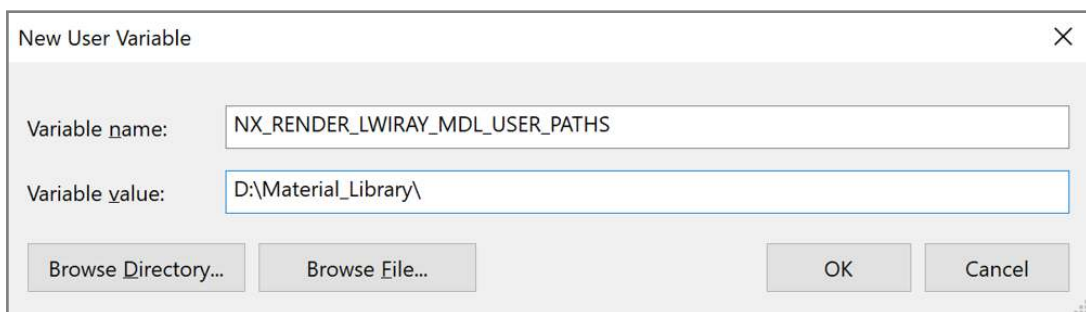


Fig. 3.18 - Defining the value of user variable NX_RENDER_LWIRAY_MDL_USER_PATHS