

# Installation & Administration Guide

Autodesk Inventor integration  
for  
SOLIDWORKS PDM

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# Glossary

## **Application Programming Interface (API)**

Defines a set of routines, communication protocols and tools for building software. In general, they are clearly defined methods for communication between different components.

## **Bill of Materials (BOM)**

Defines a list of assemblies, sub-assemblies, parts and their quantities needed to produce a final product.

## **BOM position**

Defines a position in the BOM with unique identification, name, quantity and other characteristics.

## **Component Object Model (COM)**

Defines a binary-interface standard for software components introduced by Microsoft.

## **Connector**

Defines a central interface component of each Dassault integration. The integration uses connectors for each participating application to exchange data via their API.

## **Datamodel**

Defines objects and their relationships in a PLM system that are managed by the integration to store data from an authoring application.

## **Dynamic Link Library (DLL)**

Defines a file with a library of functions and other information that can be accessed by a Windows program.

## **Payload**

Defines the data contained within an API request. The description is borrowed from the transportation industry, where a truck carries its cargo (its payload) to a location. The truck, as with the API request, is always the same, but the payload changes with each request.

## **Product Lifecycle Management (PLM)**

Defines systems and processes for managing data during the development of a product from creation through manufacturing to maintenance and disposal.

## **Revision**

Defines a released object state in SOLIDWORKS PDM that cannot be modified.

## **Script engine**

Defines the central component in each integration. It contains the integration logic for processing and forwarding the information and data coming from the connectors.

## **User Interface (UI)**

Defines a (usually) graphical interface through which a user interacts with the computer.

## **Version**

Defines an incremental counter of each object modification in SOLIDWORKS PDM on check-in.

## **x86/x64**

Defines the processor architecture in a computer and thus also the performance of applications. x86 corresponds to 32-bit and x64 corresponds to 64-bit.

# 1 General information

## 1.1 Introduction

The Inventor integration for SOLIDWORKS PDM provides functions to save and load design data to and from SOLIDWORKS PDM.

Concurrent engineering is supported through the use of reservation of individual objects and structures.

The integration uses the API from both applications. It is designed to extend existing Inventor and SOLIDWORKS PDM functionality.

The handling of Inventor structure and objects is done in Inventor itself. Inventor is the technical master application, whereas SOLIDWORKS PDM is the organizational master application. SOLIDWORKS PDM manages Inventor objects and structures that are important in the design and approves a possible workflow for individual design objects.

Functionalities of the integration are available via additional toolbars or extended menus in Inventor. They access both the available functions of Inventor and SOLIDWORKS PDM.

## 1.2 How the integration works

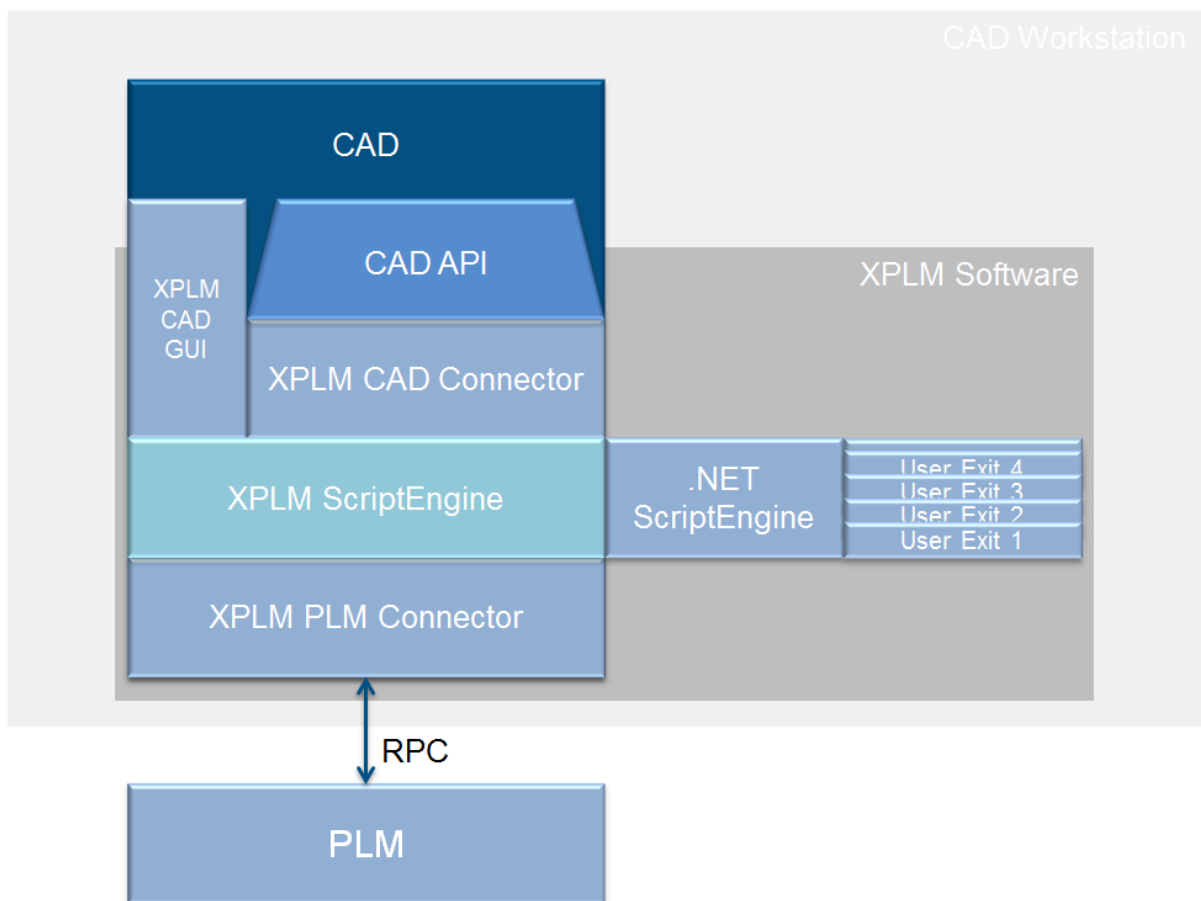
The integration is the interface between Inventor and SOLIDWORKS PDM. It enables consistent data exchange between these applications.

The Inventor connector encapsulates the CAD specific API into Dassault's standard methods to access and manipulate CAD data. Examples: retrieve structure and parameter information, update parameters, change object names.

The SOLIDWORKS PDM connector encapsulates the SOLIDWORKS PDM specific API into Dassault's standard methods to access and manipulate SOLIDWORKS PDM data. Examples: create and update CAD object metadata.

The script engine contains the integration logic between Inventor and SOLIDWORKS PDM. Some of the transactions are exposed in user exits. The user exits receive the full document information at the moment of the execution. The information is passed in a complex data structure. They allow the read access to all document properties and context information as well as the possibility to modify these. The user exits are executed within an embedded VB.NET script engine.

Figure 1: Integration architecture





## 2 System requirements

Before installing the integration, check that all requirements are met.


### Supported versions and special requirements

- Official support: The version is supported by the latest integration. Issues are fixed immediately.
- Limited support: The version is generally supported by the latest integration, but has not been explicitly tested. Issues are fixed only if they occur in the official versions.

Name	Official support	Limited support	Special requirements
Dassault Systèmes SOLIDWORKS PDM Professional	2021-24	2017-20	An administrator account is required during installation and setup of the integration.  SOLIDWORKS PDM client is required on the client side.
Autodesk Inventor	2021-25	2018-20	The user has been granted any necessary privileges to use the application.

### Client-side requirements

To install and run the integration on the client computer, the following is needed:

- Windows 10/11 x64 with local administrator rights
  -  The integration runs on Windows 11, but applications to be integrated may not be compatible. Check the application on the manufacturer's website for compatibility with Windows 11.
- Inventor in a supported version
- Microsoft .NET Framework 4.8.0
- SOLIDWORKS PDM client in a supported version

## 3 Installation

This chapter provides information around the installation of the integration.

### 3.1 Pre-installation information

#### Data cards

To ensure that the integration works properly, select the data card **Inventor** in dialog *Select configuration details* during the creation of a new vault.

#### Optional preview application

For data formats supported by eDrawings, the integration can use the eDrawings viewer as visualization tool for previewing Inventor files.

For more information about eDrawings, refer to [eDrawings for Autodesk Inventor – Frequently Asked Questions](#)

### 3.2 Installing integration

Make sure that all installation media and licenses are available, and then start the installation.

#### About this task

With this unified installer, you can install Dassault products in the same installation directory and use them in parallel. You can update all components individually without affecting the functionality of other installed products.



The following procedure applies to a new installation. To update an existing installation, see [Updating installation](#) (p. 35) for more information.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 40) for more information.

#### Procedure

1. Copy the installer archive \*.7z.exe to the client computer running Inventor.
2. Close all open applications related to the integration.
3. Extract the archive and start Setup-\*.exe with administrator rights.
4. Install any Visual C++ runtimes that you are prompted for.  
→ The runtimes are installed, and the installation wizard appears.
5. Click **Next** to start the wizard.  
→ The step *License agreement for end-users* appears.
6. Accept the license agreement and click **Next**.  
→ The step *Installation path* appears.
7. Check the installation directory. It must point to the directory *CAD Integration* in the SOLIDWORKS PDM installation directory, for example *C:\Program Files\SOLIDWORKS Corp\SOLIDWORKS PDM\CAD Integration\CAD Integration*. Click **Next**.

- If you have received an overlay package from Dassault, or want to apply your own, enable the option **Apply custom files after installation** and enter the path to the overlay. Overlays contain customized files that overwrite the installed files as the last step. See [Working with overlay packages](#) (p. 44) for more information.
  - To backup the existing installation, enable the option **Backup current installation**. Define the backup scope first. Then click **Browse** and select a backup directory.
    - ! Always create a backup when you update or change an installation. This makes it easier to compare and merge the files later.
- The step *MCAD components* appears.
8. Select the application(s) to be integrated. If required, select additionally a version or other settings. Click **Next**.
- The step *Tool components* appears.
9. Select additional helper tools or add-ons that you can use in the scope of this installation and click **Next**.
- The step *Ready to install* appears.
10. To start installation, click **Install**.
- ! During installation, a progress dialog is shown with detailed information on each MSI currently installed. If there are installation issues, the process stops and you can examine the error in the lower dialog section. If required, click **Save to log** and send the log file to [support@xplm.com](mailto:support@xplm.com) for further investigation. This new progress dialog is available from installer versions 24.3.3.606 onwards.
- For older installers, a common CMD window with the progress is shown. Do not click into this window or installation cannot proceed. To continue if you clicked in, press **Enter** or **Esc**.
11. To close the wizard after installation, click **Finish**.

## Result

Installation is complete and the environment variable `xPlmRootDir` points to the installation directory. You can find log files for all installed components in the directory `C:\ProgramData\XPLM Solution GmbH\logs`.

## 4 Initial setup

### 4.1 Installation for SOLIDWORKS PDM 2023 and older environments

In the following, post-installation steps for SOLIDWORKS PDM 2023 and older environments are described.

#### Procedure

1. After initial installation ([Installing integration](#) (p. 10)), return to the extracted installation archive, open folder `packages` and start `PDMProfessional_[version].msi`.  
→ Installation wizard opens.
2. Click **Next** to start the wizard.  
→ The step *Modify, repair or remove installation* appears.
3. In this step, you cannot change the installation path, but applying overlay packages or making backups are possible. Refer to [Modifying installation](#) (p. 33) for more information.
4. Click **Next** and select the required SOLIDWORKS PDM version.
5. Click **Next**.  
→ The step *Ready to install* appears.
6. To start installation, click **Install**.  
→ Installation starts.
7. To close the wizard after installation, click **Finish**.

#### Result

The installation is modified. Start the product and verify everything works as expected.

### 4.2 SOLIDWORKS PDM

In the following, SOLIDWORKS PDM-related post-installation steps are described.

#### 4.2.1 Add-in registration

Register the add-in as described in the following chapter.

#### Before you start

The required files for 32-bit SOLIDWORKS PDM are located in the installation directory under `<SWPDM INSTALL DIR>\CAD Integration\bin\x86\SolidWorksPDM<version>` and for 64-bit under `<SWPDM INSTALL DIR>\CAD Integration\bin\x64\SolidWorksPDM<version>`.

#### Procedure

1. To register the add-in, open the SOLIDWORKS PDM *Administration* tool, navigate to the desired vault. Right-click *Add-ins* and select **New Add-in...**



If the integration should only be active on one test workstation, register the add-in on this workstation as a *Debug Add-in*.

2. Go to `<SWPDM_INSTALL_DIR>\CAD Integration\bin\x86\SolidWorksPDM<version>` or `<SWPDM_INSTALL_DIR>\CAD Integration\bin\x64\SolidWorksPDM<version>` and select the files
  - EPDM.Interop.epdm.dll
  - SOLIDWORKSPDMPAddin.dll
  - Interop.MSXML2.dll
  - Interop.XPlmComConnector.dll
  - Interop.XPlmComDataTypes.dll
  - Interop.XPlmComService.dll
3. After confirming, a warning message appears. Confirm the message.

## Result

Now navigate to the selected vault in the the SOLIDWORKS PDM *Administration* tool and check if the add-in *SOLIDWORKSPDMADDIN* is available under *Add-ins*. It might be possible that the explorer process needs to be restarted first.

## What to do next

For 64-bit and 32-bit installations: 32-bit and 64-bit components have to be installed in 64-bit environment to give all clients access to the installation. Errors could occur if the SOLIDWORKS PDM Administration misses rights. Run SOLIDWORKS PDM as Administrator. If a second add-in should be registered, perform the steps described in [SOLIDWORKS API Help](#).



On work stations with the SOLIDWORKS PDM client which does not use the integration and where no installation should be carried out, the Visual C++ Runtime library has to be installed (vcredist\_x86.exe, additionally vcredist\_x64.exe at 64-bit), otherwise the start of the client causes an error message.

## 4.3 Inventor

In the following, Inventor-related post-installation steps are described.

Make sure that `InventorIgnoreMissingParts` is set to `true` in `XPlmInventorConnector.xml` to ensure that the integration works properly.

### 4.3.1 Add-In registration

Activate the add-in as described in following chapter.

On first startup of Inventor after integration installation, dialog *Add-in Manager Security Alert* appears. Press **Open Add-In Manager** and search for application *XPlmAddin Class* in opened dialog. Set *Load Behavior* from **Block** to **Loaded/Unloaded** and **Load Automatically**. Do not unblock *SolidWorks Enterprise PDM Inventor AddIn*.

## 4.4 Additional information

### Language settings

The language of the integration can be changed using the XML tag `<Language>` in the `<SWPDM_INSTALL_DIR>\CAD Integration\xml\XPlmConnector.xml` file. The following languages are supported:

Table 1: Available languages

Language	Value to enable the option
English	EN
German	DE

## 5 Configuration

### 5.1 SOLIDWORKS PDM

In the following, further SOLIDWORKS PDM-related configuration possibilities are described.

#### 5.1.1 Setup tasks in SOLIDWORKS PDM add-in

With tasks, Inventor files can be converted by right-clicking a file and selecting a convert command.

##### Before you start

Set `InventorEvent_DocumentChange` to `false` in `PDMPInventorConnector.xml` to ensure that tasks work properly.

##### About this task

To setup the tasks defined in `<SWPDM INSTALL DIR>\CAD Integration\xml\PDMPInventorAddin.xml`, do the following:

##### Procedure

1. Open SOLIDWORKS PDM *Administration* tool.
2. Navigate to the desired vault and then to *Tasks*.
3. Perform a right-click and select **New Task...**
4. Enter a name for the new task (e.g. Convert PDF).
5. For *Add-in* select the *PDMP Addin* and click **Next**.
6. Within the *Execution Method* screen, the computer is shown in the *Computers supporting the task* list. If not perform a right-click on the SOLIDWORKS PDM icon in Windows hidden icons and select **Task Host Configuration**.
  - a) On the top right hand side, select **File Vault**.
  - b) In the table, set the **Permit** flag for the SOLIDWORKS PDM add-in and click **OK**.
7. Now click **Refresh List** in the task UI.  
Computer is now visible in the table.
8. Enable the computer and click **Next**.
9. In the *Scheduling* section, the execution time for the task can be defined. In this example we use **This task is not scheduled**. So just click **Next**.
10. In the *Converter Configuration* section, the data from the `ScriptEngine` is defined. Make sure that the values for *Menuitems* and *Targetformat* are set correctly and click **Next**.  
Possible values for *Targetformat* are:
  - For the conversion of drawings to the PDF format use: PDF
  - For the conversion of 3D models to the STEP format use: STEP
11. In *Permissions*, *Success Notification* and *Error Notification* no changes have to be made. So click **OK**.

## Result

Now start an explorer, go to the SOLIDWORKS PDM vault and check if the menu entries are available in the context menu. It might be possible that the explorer process needs to be restarted first.

## What to do next

Do the above described process for all desired tasks and close the *Administration* tool.

### 5.1.2 Improving check in performance

#### About this task

SOLIDWORKS PDM can automatically include drawings referencing a part or assembly when the latter is checked in. The available options in SOLIDWORKS PDM manage this functionality. Including drawings may make the check in command slower. To prevent this, perform the following steps.

#### Procedure

1. Start the *Administration* tool of SOLIDWORKS PDM.
2. Double-click the vault in question.
3. Double-click **Users** and then double-click current user.  
→ *Admin - Properties* dialog opens.
4. Click **Settings** (on the lower left hand side).  
→ *Settings* dialog opens.
5. Select **Check In**.  
→ Option **Look for drawings in the entire vault is enabled**.
6. Disable this option to improve the performance.

## Result

Check in performance is improved.

### 5.1.3 Configuration files

The SOLIDWORKS PDM integration for Inventor is configured mainly using following configuration files:

- **PDMPConnector.xml**: Base configuration of the SOLIDWORKS PDM connector
- **PDMPInventorConnector.xml**: Contains mostly Inventor related settings
- **PDMPInventorTransaction.xml**: Contains the configured transactions for the save, load and update processes.

#### PDMPConnector.xml

Table 2: Settings and values

Setting	Purpose and available values
Settings for SOLIDWORKS PDM logging	



Setting	Purpose and available values
EnablePDMPLogging	<p>If set to <code>true</code>, logging is enabled. Refer to chapter <a href="#">Enabling logging</a> (p. 26) for more information.</p> <p>It is recommended to set this setting to <code>false</code>, because the logging can negatively affect the performance of the integration.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p>
PDMLogFile	<p>Is the definition of the destination of the log file.</p> <p>Important is that the destination is a folder for which the user has write permissions.</p> <p>It is recommended to set the file extension to <code>*.xml</code>.</p> <p><b>For example</b> C:\Users\User1\PDMLog.xml</p>
PDMLogLevel	<p>Definition of the granularity of the log messages.</p> <p>Possible values for the log level are <code>1</code> to <code>10</code>.</p> <p>Levels between <code>1</code> and <code>4</code> are reserved for logging in the business components, while levels <code>5</code> to <code>9</code> include logging information with respect to the data exchange with SOLIDWORKS PDM.</p> <p>Level <code>10</code> provides the maximum number of log messages.</p> <p>The higher the level, the more data is generated.</p> <p><b>Default: 5</b></p> <p><b>Possible values: 1-10</b></p>
PDMWorksCancel OnError	<p>If set to <code>true</code>, any process is aborted on error.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
PDMLogIncludeDate	<p>If set to <code>true</code>, every log entry contains date and time. If set to <code>false</code>, date and time are not written into the log file. This allows comparing two log files.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
<b>Settings for help</b>	
PDMWorksHelpFile	<p>Currently not used.</p> <p>Defines the name of the helper file.</p> <p><b>For example:</b> UserGuide.chm</p>

Setting	Purpose and available values
PDMWorksHelpTitle	Currently not used. Defines the title of the helper file. <b>For example:</b> UserGuide
<b>Settings for connector</b>	
PDMWorksUndoWorkaround	This workaround setting is for SOLIDWORKS PDM 2019, starting with SP0. To avoid that files are missing when using function <b>Undo Check Out</b> , set this setting to <code>true</code> . <b>Default:</b> true <b>Possible values:</b> true   false
<b>Settings for events</b>	
Callback_*	The callbacks are transferred from the SOLIDWORKS PDM API. Please obtain further information there. If set to <code>true</code> , it is activated. If set to <code>false</code> , it is deactivated.

## PDMPInventorConnector.xml

Table 3: Settings and values

Setting	Purpose and available values
<b>Settings for main script engine</b>	
ActivePDMPScriptEngine	Do not change. Script engine to contain and perform the connector process layer. <b>Default:</b> PDMPInventorScriptengine.CScriptEngine
<b>Settings for Inventor Add-in Files</b>	
InventorMenuFiles	Do not change. Name of add-in xml file. <b>Default:</b> PDMPInventorAddin.xml
<b>Menu definition of the context menu entries within SOLIDWORKS PDM UI</b>	
PDMWorksMenuFiles	Do not change. Name of add-in XML file. <b>Default:</b> PDMPInventorPDMPAddin.xml
<b>Handling of error message</b>	

Setting	Purpose and available values
PDMErrorSilent	<p>Defines, if error is shown or not.</p> <p><b>Default: 0</b></p> <p><b>Possible values: 0 (interactive)   1 (silent)</b></p>
<b>Settings for communication component</b>	
RunMacro	<p>Defines the used communication component.</p> <p><b>Default: extern</b></p> <p><b>Possible values: extern (XPLmCOMService)   intern (XPLmUtilities)</b></p>
<b>Setting for using timestamps</b>	
PDMWorksUse PDMTimestamp	<p>Defines, if SOLIDWORKS PDM uses time stamp from the SOLIDWORKS PDM data set or the local file when determining the metadata. It is activated by default. If it is set to <code>false</code>, the <i>Data Card</i> dialog does not appear when adding files to the vault via Inventor.</p> <p><b>Default value: true</b></p> <p><b>Possible values: true   false</b></p>
UseSerialNumber	<p>It is possible to use serial numbers for file names. To use serial numbers, set this option to <code>true</code> and add the name of the number generator to transaction <code>createSerialNumbers</code>, field <code>functionmodule</code> in file <code>PDMPInventorTransaction.xml</code>.</p>
<b>Settings for events</b>	
InventorEvent _ActivateDocument	<p>The property controls whether Inventor throws a corresponding event when a loaded model is activated.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p> <p>Do not change.</p>
InventorEvent _BrowserPane_OnActivate	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws an event when the Inventor Browser Pane is activated. This event is used to update the Edge bar content.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p> <p>It is recommended to set this option to <code>false</code> in conversion environments.</p>

Setting	Purpose and available values
InventorEvent_DocumentChange	<p>The property controls whether Inventor throws a corresponding event when changes are made to a loaded file. This setting is important for the change use case.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p> <p>It is recommended to set this option to <code>false</code> in conversion environments.</p>
InventorEvent_ExitNotify	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. This option is linked to a callback event created by CAD. If such an option is activated, the corresponding transaction defined in the file <code>PDMPInventorTransaction.xml</code> is executed on event occurrence. It is recommended to set this option to <code>true</code> in conversion environments.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
InventorEvent_OpenDocument	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws a corresponding event when a file is opened.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p> <p>Do not change.</p>

## PDMPInventorTransaction.xml

Table 4: Transactions

Transaction	Description
getAttribGetStructureCollection	See chapter <a href="#">Property mapping</a> (p. 20).
getAttribSetStructureCollection	

### 5.1.4 Property mapping

This chapter describes settings for property mapping in configuration file `PDMPInventorTransaction.xml`.

#### getAttribGetStructureCollection

The function **AttribGet** reads the properties from the Inventor file and transfers them to SOLIDWORKS PDM. The mapped variables in the data card are filled with properties.

The purpose is to prepare properties so that SOLIDWORKS PDM can use them.

Therefore, a parameter list with block and attribute names of the common mapping is created after the intermediate mapping with transaction `getAttribGetStructureCollection`.

The transaction contains all Inventor standard property blocks with its standard properties. These properties can be mapped here to some data card properties as required.

```
<Structure>
<Name>Summary</Name>>  <!-- block name in file card -->
<FieldCollection>
  <Field>
    <Name>[Name]</Name>  <!-- attribute name in file card, e.g. Comments -->
    <Type>XPlmDocument</Type>
    <Subtype>StructureCollection</Subtype>
    <Structurename>SummaryInformation_EN</Structurename>
    <Attribut>[Attribut]</Attribut>  <!-- attribute name in Inventor, e.g. Comments -->
  </Field>
```

The transaction can be extended if desired. But Inventor attribute names are fix, except names at the custom block. There it is possible to use own attribute names.

Troubleshooting is supported by log messages.

### getAttribSetStructureCollection

The function **AttribSet** saves variable values from SOLIDWORKS PDM into the CAD file properties of Inventor (changes via data card).

Data coming from SOLIDWORKS PDM must be converted into a compliant format for updating file properties.

The mapping looks as following example:

```
<StructureCollection>
<Structure>
<Name>Summary</Name>
<FieldCollection>
  <Field>
    <Name>[Name]</Name>  <!-- attribute name in file card, e.g. Comments -->
    <Value>[Value]</Value>  <!-- attribute name in Inventor, e.g. Comments -->
  </Field>
```

### Customizing property mapping

If property mapping has to be customized, please follow these steps:

1. Copy file `PDMPInventorTransaction.xml` to `Customer_PDMPInventorTransaction.xml`
2. It is recommended removing all transactions from the new file that should not be modified, so that the file `Customer_PDMPInventorTransaction.xml` contains the two transactions `getAttribGetStructureCollection` and `getAttribSetStructureCollection`.
3. Define the property mapping in the new configuration file.

4. To map a custom property from Inventor to SOLIDWORKS PDM, add definitions to transaction `getAttribGetStructureCollection`, structure `CustomProperty` as in following example:

```
<Transaction>
  <Aliasname>getAttribGetStructureCollection</Aliasname>
  <Import>
    <Parameter>
      <StructureCollection>
        ...
        <Structure>
          <Name>CustomProperty</Name>
          <FieldCollection>
            <Field>
              <Name>[property name]</Name> <!-- e.g. AssemblyNo -->
              <Type>XPlmDocument</Type>
              <Subtype>StructureCollection</Subtype>
              <Structurename>Inventor User Defined Properties</Structurename>
              <Attribut>[attribute name]</Attribut> <!-- e.g. AssemblyNo -->
            </Field>
          </FieldCollection>
        </Structure>
      </StructureCollection>
      ...
    </Parameter>
  </Import>
</Transaction>
```

5. To map defined property (step 4) from SOLIDWORKS PDM to Inventor file properties, add definition to transaction `getAttribSetStructureCollection`, structure `CustomProperty` as in following example:

```
<Transaction>
  <Aliasname>getAttribSetStructureCollection</Aliasname>
  <Import>
    <Parameter>
      <StructureCollection>
        ...
        <Structure>
          <Name>CustomProperty</Name>
          <FieldCollection>
            <Field>
              <Name>AssemblyNo</Name>
              <Value>AssemblyNo</Value>
            </Field>
          </FieldCollection>
        </Structure>
      </StructureCollection>
      ...
    </Parameter>
  </Import>
</Transaction>
```

### Fallback

In case transactions `getAttribGetStructureCollection` and `getAttribSetStructureCollection` are not available, variables are declared in the corresponding data card via the Dassault Systèmes SOLIDWORKS PDM Professional administration tools.

These file properties are provided by the Inventor connector:

```
Inventor Summary Information
  Title
  Subject
  Author
  Keywords
  Comments
  Last Saved By
  Revision Number
  Thumbnail

Inventor Document Summary Information
  Category
  Manager
  Company

Design Tracking Properties
  Creation Time
  Part Number
  Project
  Cost Center
  Checked By
  Date Checked
  Engr Approved By
  Engr Date Approved
  User Status
  Material
  Part Property Revision Id
  Catalog Web Link
  Part Icon
  Description
  Vendor
  Document SubType
  Document SubType Name
  Proxy Refresh Date
  Mfg Approved By
  Mfg Date Approved
  Cost
  Standard
  Design Status
  Designer
  Engineer
  Authority
  Parameterized Template
  Template Row
  External Property Revision Id
  Standard Revision
  Manufacturer
  Standards Organization
  Language
  Defer Updates
  Size Designation
  Categories
```



## 5.1.5 BOM creation

This chapter describes settings for bill of materials in configuration file `PDMPInventorTransaction.xml`.

- The SOLIDWORKS PDM-BOM is configurable (see transaction `updateCADBOMs` in transaction file `PDMPInventorTransaction.xml`, properties BOM name, type etc.).
- The SOLIDWORKS PDM-BOM has eight default columns (Filename, Dir, IDs, Configuration, TreeLevel, Qty, Version) which are always created by the connector.
- Further columns can be added depending on the CAD (property `BOMColumnDefinition` in transaction `updateCADBOMs`).
- The content of BOMLines is configurable (see transaction `updateCADBOMPosition`, the fields in BOMLine must match default and custom columns, the name is crucial).



`updateCADBOMPosition` is the transaction for standard components. The transaction for special components is called `updateCADBOMPosition_[name of the component]`, e.g. `updateCADBOMPosition_virtualComponent`.

## 5.1.6 Document creation

This chapter describes settings for the document creation via Inventor function **New** in configuration file `PDMPInventorTransaction.xml`.

The transaction `getNewDocumentSettings` controls the behavior for the document creation via the Inventor function **New**. Following settings are available:

Table 5: Settings in transaction `getNewDocumentSettings`

Setting	Purpose and available values
FieldCollection	
showDatacard	<p>If set to <code>true</code>, data card is shown when creating documents via Inventor function <b>New</b>.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
maxIteration	<p>Defines the maximum index of iterations for adding files to the vault.</p> <p><b>Default: 100</b></p> <p><b>Possible values: minimum value is 1</b></p>
StructureCollection SerialNumber	

Setting	Purpose and available values
createSerialNumber	<p>If set to <code>true</code>, name of the created file is preallocated in save dialog. The serial number needs to be created in SOLIDWORKS PDM Administration tool and added to <code>usedSerialNumber</code>. If the serial number does not exist, an appropriate error message appears.</p> <p>However, the preallocated name can be overwritten by the user.</p> <p><b>Default:</b> <code>true</code></p> <p><b>Possible values:</b> <code>true</code>   <code>false</code></p>
usedSerialNumber	<p>Defines the serial number for the preallocation, see <code>createSerialNumber</code>.</p> <p><b>Default:</b> <code>[empty]</code></p>

## Fallback

In case transactions `getNewDocumentSettings` is not available, the default values are as follows:

Table 6: Fallback values

Setting	Value
FieldCollection	
showDatacard	<code>true</code>
maxIteration	<code>1000</code>
StructureCollection SerialNumber	
createSerialNumber	<code>false</code>
usedSerialNumber	<code>[empty]</code>

### 5.1.7 Enabling logging

If required, you can activate logging for the components used in the integration. Logging should not run permanently, as a large amount of log messages are generated and performance is affected. Deactivate logging again, after the issue is solved.

Execute following steps to enable logging:

1. Edit the file `PDMPConnector.xml`:
  - A. Set `EnablePDMPLogging` to `true`.
  - B. Set value `PDMPLogFile` to a path on local disc.
  - C. Set value of `PDMPLogLevel` accordingly.
2. Edit the file `XPlmInventorConnector.xml`:
  - A. Set `EnableInventorLogging` to `true`.
  - B. Set value `InventorLogFile` to a path on local disc.
  - C. Set value of `InventorLogLevel` accordingly.

## 5.2 Inventor

In the following, further Inventor-related configuration possibilities are described.

### 5.2.1 Configuration Files

The SOLIDWORKS PDM integration for Inventor is configured mainly using the following configuration files:

- `XPlmInventorConnector.xml`: Contains the base configuration of the Inventor connector.
- `PDMPInventorAddin.xml`: Contains the menu definitions and add-in registration. Do not change this file.

#### XPlmInventorConnector.xml



The configuration of the `XPlmInventorConnector.xml` depends on the environment.

When converting it should be ensured that the environment is not used for client operations and vice versa.

For better user handling, particular events are used in client environments. These events check changes of CAD files and check if files are for example checked in or out. Through interactions (message boxes) the user can make decisions.

During task operations in the conversion environment, the appearance of message boxes causes the task to terminate.

For this reason, most events need to be deactivated in conversion environments.

Table 7: Settings and values

Setting	Purpose and available values
<b>Environmental Adjustments - Client</b>	
ApprenticeReducedAttributeSet	<p>The property controls whether a reduced set of attributes is read when traversing. If set to <code>true</code>, then a reduced set of attributes is read.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p> <p>Do not change.</p>
InventorApprenticePropertyDefaultValues	<p>This property controls if default date values are converted. If set to <code>true</code>, the property converts the default date value of Inventor to an empty string. If set to <code>false</code>, the default date value of Inventor is set.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
EnableInventorLogging	<p>If set to <code>true</code>, logging is enabled.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p>

Setting	Purpose and available values
InventorLogLevel	Describes the log level (higher number means more log messages. <b>Default: 10</b>
InventorLogFile	Value is the full path to the log file, required if logging is enabled. <b>For example</b> C:\tmp\Inventor.log
InventorIgnoreMissingParts	The property controls whether the traversing of CAD structures is aborted with errors if files are not found. <b>Default: true</b> <b>Possible values: true   false</b> Do not change.
InventorEvent_ExitNotify	This option is linked to a callback event created by CAD. If such an option is activated, the corresponding transaction defined in the file <code>PDMPInventorTransaction.xml</code> is executed on event occurrence. It is recommended to set this option to <code>true</code> in client environments. <b>Default: true</b> <b>Possible values: true   false</b>
InventorEvent_DocumentChange	The property controls whether Inventor throws a corresponding event when changes are made to a loaded file. This setting is important for the change use case. <b>Default: true</b> <b>Possible values: true   false</b> Do not change.
InventorEvent_OpenDocument	The property controls whether Inventor throws a corresponding event when a file is opened. <b>Default: false</b> <b>Possible values: true   false</b> Do not change.
InventorEvent_SaveDocument	The property controls whether Inventor throws a corresponding event when saving a loaded model. <b>Default: false</b> <b>Possible values: true   false</b> Do not change.

Setting	Purpose and available values
InventorEvent _BrowserPane_OnActivate	<p>The property controls whether Inventor throws an event when the Inventor Browser Pane is activated. This event is used to update the Edge bar content.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p> <p>Do not change.</p>
<b>Environmental Adjustments - Conversion (Tasks)</b>	
InventorEvent_StartNotify	<p>This option is linked to a callback event created by CAD. If such an option is activated, the corresponding transaction defined in the file <code>PDMPInventorTransaction.xml</code> is executed on event occurrence. It is recommended to set this option to <code>false</code> in conversion environments.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p>
InventorEvent_ExitNotify	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. This option is linked to a callback event created by CAD. If such an option is activated, the corresponding transaction defined in the file <code>PDMPInventorTransaction.xml</code> is executed on event occurrence. It is recommended to set this option to <code>true</code> in conversion environments.</p> <p><b>Default: true</b></p> <p><b>Possible values: true   false</b></p>
InventorEvent_DocumentChange	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws a corresponding event when changes are made to a loaded file. This setting is important for the change use case.</p> <p><b>Default: false</b></p> <p><b>Possible values: true   false</b></p> <p>It is recommended to set this option to <code>false</code> in conversion environments.</p>

Setting	Purpose and available values
InventorEvent_OpenDocument	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws a corresponding event when a file is opened.</p> <p><b>Default:</b> false</p> <p><b>Possible values:</b> true   false</p> <p>Do not change.</p>
InventorEvent_ActivateDocument	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws a corresponding event when a loaded model is activated.</p> <p><b>Default:</b> false</p> <p><b>Possible values:</b> true   false</p> <p>Do not change.</p>
InventorEvent_SaveDocument	<p>The property controls whether Inventor throws a corresponding event when saving a loaded model.</p> <p><b>Default:</b> false</p> <p><b>Possible values:</b> true   false</p> <p>Do not change.</p>
InventorEvent_BrowserPane_OnActivate	<p>Change of property value in file <code>PDMPInventorConnector.xml</code>. The property controls whether Inventor throws an event when the Inventor Browser Pane is activated. This event is used to update the Edge bar content.</p> <p><b>Default:</b> true</p> <p><b>Possible values:</b> true   false</p> <p>It is recommended to set this option to <code>false</code> in conversion environments.</p>

## 5.3 Renaming

### Renaming of Inventor models

Renaming of Inventor models causes issues in SOLIDWORKS PDM if the Inventor Apprentice version is not matching the Inventor file version. Therefore we recommend to ensure the following:

- Before initial imports into SOLIDWORKS PDM all Inventor files must be on the same Inventor version as the integrations you want to use. Run the Inventor upgrade tools before the import.
- Avoid working with duplicate file names in Inventor. Inventor allows the same filename in different folders. This feature should not be used in SOLIDWORKS PDM installations since it can cause issues with further processes (like pack&go) and would require to rename components later.

- Prevent renaming, copy and move of Inventor files in SOLIDWORKS PDM. Use Inventor CAD **Save As** capabilities instead. If you are using SOLIDWORKS PDM for renaming, copy or move ensure a refile of the affected assemblies to the matching Inventor version.

The following table describes the actions in the Inventor integration that are influenced by the Inventor version and Inventor file version.

Table 8: Influenced actions

Feature	Inventor version matches Inventor file version	Inventor version is higher than Inventor file version	File Format Plugin usage (Inventor Apprentice)
Load in Inventor	OK	OK	-
Save in Inventor	OK	OK	-
Get properties	OK	OK	x
Set properties	OK	OK	x
Check in	OK	OK	(partial)
Check out	OK	OK	-
Analyze structure	OK	OK	x
Renaming (Explorer)	OK	<b>Fails</b> – Workaround: perform a refile and resave from Inventor before	x
Copy (Explorer)	OK	<b>Fails</b> – Workaround: perform a refile and resave from Inventor before	x
Move (Explorer)	OK	<b>Fails</b> – Workaround: perform a refile and resave from Inventor before	x
Get version	OK	<b>Can fail loading an old version if renamed components are used – Workaround: Upgrade files in vault to matching Inventor version</b>	x

### Technical background

Renaming a component forces a *Replace Reference* in the latest version. On loading an older assembly version the renamed component file is replaced again in the older assembly version. The older assembly version could have been produced in an older Inventor version. The Inventor Apprentice API cannot replace the reference in Inventor assemblies that do not match to the Apprentice version.

Recommendation: Avoid renaming and move in SOLIDWORKS PDM during the product lifecycle. If you rename components in the database, make sure to version up and re-save immediately the higher level assemblies and drawings from Inventor where these components are used. On Inventor upgrades make sure you upgrade the required Inventor data inside SOLIDWORKS PDM to the used Inventor version.



## 6 Update

### 6.1 Modifying installation

Complete these steps to modify an existing installation and add for example new components or remove existing.

#### About this task

During modification, no existing files are overwritten and only missing files are added.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 40) for more information.

#### Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
  - a) In the system settings, go to *Apps & Features* and search for the entry **Autodesk Inventor Setup**.
  - b) Select the entry and click **Modify**.
    - Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.
  - The step *Modify, repair or remove installation* appears.
4. Click **Modify**.
  - The step *Installation path* appears.
5. In this step, you cannot change the installation path, but applying overlay packages or making backups are possible.
  - If you have received an overlay package from Dassault, or want to apply your own, enable the option **Apply custom files after installation** and enter the path to the overlay. Overlays contain customized files that overwrite the installed files as the last step. See [Working with overlay packages](#) (p. 44) for more information.
  - To backup the existing installation, enable the option **Backup current installation**. Define the backup scope first. Then click **Browse** and select a backup directory.
    - ! Always create a backup when you update or change an installation. This makes it easier to compare and merge the files later.
6. Click **Next** and update components, if required.
  - The step *Ready to install* appears.
7. To start installation, click **Install**.
  - ! During installation, a progress dialog is shown with detailed information on each MSI currently installed. If there are installation issues, the process stops and you can examine the error in the lower dialog section. If required, click **Save to log** and send the log file to [support@xplm.com](mailto:support@xplm.com)

for further investigation. This new progress dialog is available from installer versions 24.3.3.606 onwards.

For older installers, a common CMD window with the progress is shown. Do not click into this window or installation cannot proceed. To continue if you clicked in, press **Enter** or **Esc**.

8. To close the wizard after installation, click **Finish**.

### Result

The installation is modified. Start the product and verify everything works as expected.

#### Related links

[Working with overlay packages](#) (p. 44)

## 6.2 Repairing installation

Complete these steps to repair an existing installation if the product does not work correctly, for example fixing missing or corrupt files, or incorrect shortcuts and registry entries.

### About this task

During repair, existing files are overwritten and components registered again.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 40) for more information.

### Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
  - a) In the system settings, go to *Apps & Features* and search for the entry **Autodesk Inventor Setup**.
  - b) Select the entry and click **Modify**.→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.  
→ The step *Modify, repair or remove installation* appears.
4. Click **Repair**.  
→ The step *Installation path* appears.
5. In this step, you cannot change the installation path, but applying overlay packages or making backups are possible.
  - If you have received an overlay package from Dassault, or want to apply your own, enable the option **Apply custom files after installation** and enter the path to the overlay. Overlays contain customized files that overwrite the installed files as the last step. See [Working with overlay packages](#) (p. 44) for more information.
  - To backup the existing installation, enable the option **Backup current installation**. Define the backup scope first. Then click **Browse** and select a backup directory.



Always create a backup when you update or change an installation. This makes it easier to compare and merge the files later.

6. Click **Next**.

→ The step *Ready to install* appears.

7. To start installation, click **Install**.



During installation, a progress dialog is shown with detailed information on each MSI currently installed. If there are installation issues, the process stops and you can examine the error in the lower dialog section. If required, click **Save to log** and send the log file to [support@xplm.com](mailto:support@xplm.com) for further investigation. This new progress dialog is available from installer versions 24.3.3.606 onwards.

For older installers, a common CMD window with the progress is shown. Do not click into this window or installation cannot proceed. To continue if you clicked in, press **Enter** or **Esc**.

8. To close the wizard after installation, click **Finish**.

9. **Optional:** Carefully compare and merge the changes from the backup directory with the newly installed files.

## Result

The installation is repaired. Start the product and verify everything works as expected.

### Related links

[Working with overlay packages](#) (p. 44)

## 6.3 Updating installation

Complete these steps to update an existing installation.

### About this task

Dassault strongly recommends using appropriate services for an update. This ensures that existing functionality and modifications are correctly transferred to the new product. Contact <https://www.solidworks.com/support/> for assistance.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 40) for more information.

### Procedure

1. Close all open applications related to the integration.
2. Start the new installer `Setup-*.exe` with administrator rights.  
→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.  
→ The installer detects an existing installation and shows a message.
  - If the existing installation is compatible with the unified installer, you can proceed. At the start of the installation, the old components are removed first and the new ones are installed afterwards.

How to identify if the existing installation is already compatible with the unified installer technology?

- The directory `C:\ProgramData\XPLM Solution GmbH` exists.
- The registry entry `HKLM\SOFTWARE\XPLM Solution GmbH\{00000000-0000-0000-0000-000000000000}` exists.
- If the existing installation is not compatible with the unified installer, it will first be uninstalled completely. Before you continue, manually back up the existing installation directory `<SWPDM INSTALL DIR>\CAD Integration`. Then proceed with installation.



In both cases, files with the prefix `customer_` are not affected by the update. All other files are overwritten with the new files.

4. Click **Next**.

→ The step *License agreement for end-users* appears.

5. Accept the license agreement and click **Next**.

→ The step *Installation path* appears.

6. If an existing and compatible installation was found, you cannot change the installation path in this step, but applying overlay packages or making backups are possible.

- If you have received an overlay package from Dassault, or want to apply your own, enable the option **Apply custom files after installation** and enter the path to the overlay. Overlays contain customized files that overwrite the installed files as the last step. See [Working with overlay packages](#) (p. 44) for more information.
- To backup the existing installation, enable the option **Backup current installation**. Define the backup scope first. Then click **Browse** and select a backup directory.



Always create a backup when you update or change an installation. This makes it easier to compare and merge the files later.

7. Click **Next** and update components, if required.

8. To start installation, click **Install**.



During installation, a progress dialog is shown with detailed information on each MSI currently installed. If there are installation issues, the process stops and you can examine the error in the lower dialog section. If required, click **Save to log** and send the log file to [support@xplm.com](mailto:support@xplm.com) for further investigation. This new progress dialog is available from installer versions 24.3.3.606 onwards.

For older installers, a common CMD window with the progress is shown. Do not click into this window or installation cannot proceed. To continue if you clicked in, press **Enter** or **Esc**.

9. To close the wizard after installation, click **Finish**.

10. Carefully compare and merge the changes from the backup directory with the newly installed files.

## Result

The installation is updated. Start the product and verify everything works as expected.

### Related links

[Working with overlay packages](#) (p. 44)

# 7 Uninstallation

## 7.1 Removing installation

Complete these steps to remove an installation.

### About this task

To uninstall an installation, you need the setup and component MSIs. If you installed correctly, they are located in the directory `C:\ProgramData\XPLM Solution GmbH\packages`.



The Windows uninstall feature is not supported. However, you can start the MSIs from Windows and use the installer's uninstall function.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 40) for more information.

### Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
  - a) In the system settings, go to *Apps & Features* and search for the entry **Autodesk Inventor Setup**.
  - b) Select the entry and click **Modify**.  
→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.  
→ The step *Modify, repair or remove installation* appears.
4. Click **Remove**.  
→ The step *Remove of the installation* appears.
5. Click **Remove** to remove the installation.
6. To close the wizard after installation, click **Finish**.
7. Check the directory `<SWPDM INSTALL DIR>\CAD Integration` for leftover directories and files, and delete them manually.

### Result

The installation is removed.

## 8 Troubleshooting

This chapter describes instructions for troubleshooting integration errors.

### 8.1 Common troubleshooting procedure

In case of integration problems, do the following.

1. Close related programs.
2. Enable logging.
3. Restart the integration and reproduce the problem.
4. Send an email with a problem description and log files to support.

### 8.2 License errors

If you encounter license issues that affect the integration, see the configured log file for more information. The following table will help you to solve license issues.

Reason	Description	Solution
No license file found	No license file was found in the directory <code>&lt;SWPDM INSTALL DIR&gt;\CAD Integration\xml</code> or the alternative directory defined in environment variable <code>XPlmLicenseDirectory</code> .	Put license file in this directory. If no license file is available, get a valid license file from Dassault.
Cannot read file	There is not enough memory to read the license file.	Upgrade RAM on the computer where the integration is installed.
Unable to read license	The license file cannot be read/decrypted.	Get a valid license file from Dassault. Do not edit a license file.
Unable to retrieve license data	The content of the decrypted data does not correspond to an Dassault license content.	Get a valid license file from Dassault.
No domain data found	No domain entry was found in the license file.	Get a valid license file from Dassault with all applicable domain names. Domain names are case sensitive.
License is not valid for current domain <code>&lt;DOMAIN_NAME&gt;</code>	The customer domain does not exist in the license file.	
No MAC address found	No MAC address entry was found in the license file.	Get a valid license file from Dassault with all applicable MAC addresses. MAC addresses are case sensitive.
This system is not allowed	The customer MAC address does not exist in the license file.	
There is no license for <code>&lt;LICENSE_NAME&gt;</code>	The requested license is not part of the customer's license subscription.	Get a valid license file from Dassault with all integration components that are subscribed. License names are case sensitive.

Reason	Description	Solution
Unable to retrieve license information for <LICENSE_NAME>	There is no information about when the license expires.	Get a valid license file from Dassault.
License for <LICENSE_NAME> is expired on <YEAR>-<MONTH>-<DAY>	License is expired and no longer valid.	Resubscribe and get a valid license file from Dassault.

## 8.3 Adding drawings to vault leads to infinite loop

When adding files to the vault via Inventor, the data card appears. In case of drawings (.idw), adding may not result in the data card being displayed. The reason is a missing configuration of the SOLIDWORKS PDM vault. By default, only parts (.ipt) and assemblies (.iam) are considered for adding files to the vault. After adding the file extension (.idw) as described below, the data card appears.

### Procedure

1. Open the SOLIDWORKS PDM Administration tool.
2. Expand node **Users** of the affected vault and perform a right-click on the user. Select **Settings** from the context menu.
3. In the left part of the upcoming dialog, select **Adding Files** and add ; `idw` (with semicolon) to the list of file extensions.
4. Restart the vault and the integration.
5. Add a drawing to the vault via Inventor.

### Result

Data card appears for the drawing.

## 9 References

### 9.1 Silent-mode installation

You can also install this Dassault product in silent-mode. Silent-mode has the advantage that you can easily install the product from a batch file without showing the installer GUI. Alternatively, you can start the installer with preset options, allowing it to be installed in a controlled manner by the user or by other automated installation routines.


The installer packages are all of type Windows Installer (MSI) and require corresponding parameters for silent-mode installation.

The Visual C++ runtimes are normal executables. Always install all x64/x86 runtimes that come with the installer package.

#### Understanding installer structure

When you start an installation using the installer, required files are copied first to the directory `C:\ProgramData\XPLM Solution GmbH` and are executed from this location.

```
XPLM Solution GmbH
├──cmd
├──log
└──packages
```

- `cmd`: Contains the batch files `Setup-*_admin.bat` and `Setup-*_user.bat`.
    - The file `Setup-*_user.bat` contains the copy commands for the required MSIs from the original location to the directory `C:\ProgramData\XPLM Solution GmbH\packages`.
    - The file `Setup-*_admin.bat` installs the individual MSIs from this new location with the parameters as defined in the installer.
  - `log`: Contains log files of each installed component.
  - `packages`: Contains copies of all MSIs used for installation, modification or uninstallation.
-  Use the definitions in the files `Setup-*_user.bat` and `Setup-*_admin.bat` as the basis for a silent-mode installation. The command line calls already contain the required component MSIs and parameters as selected in the installer.

#### General command line calls

Installing Visual C++ runtimes:

```
vcredist_*.exe /quiet
```

Uninstalling Visual C++ runtimes:

```
vcredist_*.exe /quiet /uninstall
```

Installing or modifying MSIs:

```
msiexec /i <fileName>.msi /quiet <parameter>=<value>
```



### Repairing MSIs:

```
msiexec /i <fileName>.msi /quiet INSTALLMODE=Restore
```

### Uninstalling MSIs:

```
msiexec /x <fileName>.msi /quiet REMOVE_SECURE=1
```

### Using preset options in the installer (Setup-\*.exe):

```
Setup-*.exe <parameter>=<value>
```

### Using preset options in the installer (Setup-\*.msi):

```
msiexec /i Setup-*.msi <parameter>=<value>
```

## Creating a batch file for silent-mode installation

This example is intended as a general guideline for creating an installation script in silent mode. It assumes that the MSIs used for the installation are stored on a network share.

1. On a test computer, extract the main archive and start the file `Setup-*.exe` with administrator rights.
2. Select required components and settings, and finish installation.
3. Copy the entire contents from the extracted archive to a network share, for example `\\myShare`.
4. Create a new batch file locally, for example `silent.bat`.
5. Add the installation commands for the C++ runtimes to this file, for example:

```
REM *** install c++ runtimes ***  
\\myShare\vcredist_14.38.33130.0_x64\vcredist_14.38.33130.0_x64.exe /quiet  
\\myShare\vcredist_14.38.33130.0_x86\vcredist_14.38.33130.0_x86.exe /quiet
```

6. Go to the directory `C:\ProgramData\XPLM Solution GmbH\cmd`.
7. Open the file `Setup-*_user.bat` and copy all *robocopy* commands into your batch file. Change the path in the first argument (the source) to point to the network share, for example:

```
REM *** copy from network share to client ***  
robocopy "\\myShare\packages" "C:\ProgramData\XPLM Solution GmbH\packages" ←  
Core_23.0.0.538.msi  
...
```

8. Open the file `Setup-*_admin.bat` and copy the command line calls for installing the MSIs into your batch file. Change the path of the MSI to point to the network share, for example:

```
REM *** installing msi ***
msiexec /i "\\myShare\packages\Core_*.msi" /passive ←
    CALLED_BY=Setup-* ←
    INSTALLDIR="C:\Program Files\XPLM Solution GmbH\" ←
    BATCH_ADMIN="C:\ProgramData\XPLM Solution GmbH\cmd\Setup-*_admin.bat" ←
    GUI_LOG_FILE="C:\ProgramData\XPLM Solution GmbH\log\Setup-*_gui.log" ←
    JAVA_JNI=0 ←
    JAVA_JNI_X86="" ←
    JAVA_JNI_X64="" ←
...

```



In the above example, line breaks were inserted to show readable content. Usually, each `msiexec` call would be on one line. You can further clean-up each call by deleting the information marked red, as it is not required in your batch file.

9. To test silent installation, use a clean client computer, copy the batch file `silent.bat` to it and run it with administrator rights.

## Parameters usage

- If no parameters are defined, default settings apply. In the following tables, default settings are underlined.
- If you use parameters in the scope of `Setup_*.exe/msi`, use them with the provided prefix, for example `COR_JAVA_JNI`.



You cannot use the setup files `Setup_*.exe/msi` for silent-mode installation. For this you must use the individual component MSIs. However, you can use parameters in `Setup_*.exe/msi` to preset options when installing in GUI-mode.

- Use parameters without prefix to define settings within the scope of component MSIs, for example `Core_*.msi`.
- Use the following parameters to control either GUI-mode or silent-mode installation:
  - `none`: GUI-mode
  - `/quiet`: Silent-mode without GUI
  - `/passive`: Silent-mode with additional progress indication

## Parameter for silent-mode & GUI-mode

The following parameters apply to silent mode as well as to the presetting of options in GUI mode.

Table 9: Component MSI & Setup EXE/MSI

Prefix	Parameter	Value	Description and use
	INSTALLDIR	Path to a valid directory	Defines the path of the installation directory. Available in all MSIs.

Prefix	Parameter	Value	Description and use
	INSTALLMODE	<u>C</u> hange   Restore	Defines the installation mode after the installation is already completed and the installer is restarted. <ul style="list-style-type: none"> <li>Change = Modify</li> <li>Restore = Repair</li> </ul> Available in all MSIs.
	REMOVE_SECURE	<u>0</u>   1	Enables uninstallation. This corresponds to <b>Remove</b> in the installer. Available in all MSIs.
PDM	VERSION	Version as shown in installer	Defines the SOLIDWORKS PDM version. Available in EnterprisePDM MSI and all Setup EXE/MSI using this component.
INV_	VERSION	Version as shown in installer	Defines the Inventor version. Available in Inventor MSI and all Setup EXE/MSI using this component.
PDM_	VERSION	Version as shown in installer	Defines the SOLIDWORKS PDM version. Available in PDMProfessional MSI and all Setup EXE/MSI using this component.

### Parameter for GUI-mode



The following parameters apply exclusively to the presetting of options in GUI-mode and not to silent-mode.

Table 10: All MSIs

Parameter	Value	Description and use
BACKUP_FILES	Path to a valid directory	Defines a location for the backup.
BACKUP_TYPE	FULL   CONFIG	Defines the backup scope. <ul style="list-style-type: none"> <li>FULL = full backup of &lt;SWPDM INSTALL DIR&gt;\CAD Integration.</li> <li>CONFIG = backup of configuration directory only, for example &lt;SWPDM INSTALL DIR&gt;\CAD Integration\xml.</li> </ul>
CUSTOM_FILES	Path to a valid directory	Defines the path to a directory containing an overlay package with custom files to be copied after installation.

Table 11: Setup-PDMPProfessional-Inventor EXE/MSI

Parameter	Value	Description
PDM_INV	0   1	Enables Inventor.

## 9.2 Working with overlay packages


An overlay package contains custom files with modified configuration. In the installer, you can select an option to apply an overlay as the last step of the installation process, copying the custom files over the installed files.


### Supported overlay features in the installer

First familiarize yourself with the features that are supported for overlays when using the installer.



The following features are available from installer versions 24.3.3.606 onwards. For older installers, the legacy behaviour applies. This behaviour has some limitations, see column **Legacy** for more information.

Feature	Description	Legacy
Directory or archive support	<p>An overlay can be referenced in form of an archive (<code>zip</code>, <code>7z</code> or <code>7z.exe</code>), or as a directory.</p> <p> When extracting an overlay archive, a double directory structure can be created, for example <code>myOverlay\myOverlay\xml</code>. If you select an overlay directory in the installer, always select the directory that corresponds to the level of the installation directory.</p>	Only directories and no archives can be referenced.
Local or network support	You can reference an overlay from the local disk or from a network share.	

Feature	Description	Legacy
Multiple installation directories	<p>Certain products require multiple installation directories. Usually core components are installed in the main installation directory, whereas other parts are installed in a different path.</p> <p>You can reference these individual paths in the overlay, so that the content is copied to the correct location when the overlay is applied.</p> <p>For this, add the installation parameter as first directory in the overlay structure, for example:</p> <ul style="list-style-type: none"> <li>■ <code>myOverlay\INSTALLDIR</code>: When applying the overlay, the directory <code>INSTALLDIR</code> is resolved to the main installation directory <code>%xPlmRootDir%</code>.</li> <li>■ <code>myOverlay\&lt;PREFIX&gt;_PATH</code>: When applying the overlay, the directory <code>&lt;PREFIX&gt;_PATH</code> is resolved to another installation directory.</li> <li>■ <code>myOverlay\&lt;PREFIX&gt;_PATH</code>: When applying the overlay, the directory <code>&lt;PREFIX&gt;_PATH</code> is resolved to another installation directory.</li> </ul> <p>See <a href="#">Silent-mode installation</a> (p. 40) for installation parameter.</p>	
Custom scripts	<p>When applying an overlay, you can also run a script with custom actions.</p> <p>For this, create the directory <code>script</code> in the overlay and save the script <code>custom.bat</code> in it.</p> <p>If the product requires multiple installation directories, add the installation parameter again as first directory in the overlay structure, for example:</p> <ul style="list-style-type: none"> <li>■ <code>myOverlay\INSTALLDIR\script\custom.bat</code></li> <li>■ <code>myOverlay\&lt;PREFIX&gt;_PATH\script\custom.bat</code></li> <li>■ <code>myOverlay\&lt;PREFIX&gt;_PATH\script\custom.bat</code></li> </ul> <p>When applying the overlay, the script is first copied to the directory <code>C:\ProgramData\XPLM Solution GmbH\custom_files\&lt;DATE-TIME&gt;</code> for backup purposes. Then it is copied to the directory <code>script</code> in <code>%xPlmRootDir%</code> or the alternative installation directory and executed from there.</p> <p> In installers from version 24.4.4.628 onwards, you also have access to all environment variables in your script that were written during the installation.</p>	

Feature	Description	Legacy
Auto-detection	<p>Overlay archives or directories are automatically recognized if they are located next to or in the extracted setup directory and contain the string <i>overlay</i> in any written form in their name, for example:</p> <ul style="list-style-type: none"> <li>■ Example 1 (overlay as 7-Zip archive next to extracted setup) <pre>&lt;EXTRACTED INSTALLER DIR&gt; myOverlay.7z</pre> </li> <li>■ Example 2 (extracted overlay next to extracted setup) <pre>&lt;EXTRACTED INSTALLER DIR&gt; myOverlay</pre> </li> <li>■ Example 3 (overlay as ZIP archive in extracted setup) <pre>myOverlay.zip packages vcredist_*_x64 vcredist_*_x86 Setup-*.exe</pre> </li> <li>■ Example 4 (extracted overlay in extracted setup) <pre>myOverlay packages vcredist_*_x64 vcredist_*_x86 Setup-*.exe</pre> </li> </ul> <p>If the overlay exists as shown in the above examples, and the installer is started for the first time, the option <b>Apply custom files after installation</b> is automatically enabled with the correct path.</p> <p>When the installer is restarted, it checks whether the applied overlay is still in its original location and automatically enables the option with the correct path. For example, put the overlay to a network share and it is always referenced from this location, see also best practices.</p>	<p>Only directories and no archives can be auto-detected. The overlay directory must be named <i>custom_files</i>.</p>

### Best practices with overlays

- To create an overlay, copy modified files to a new directory with the string *overlay* in its name, for example *myOverlay*. Also create relevant sub-directories as in the original location from where you copied the files, for example *myOverlay\xml*.

- To create an overlay archive, it's important to create the archive from the content in the directory `myOverlay` and not from the directory `myOverlay` itself. Otherwise you will get a double directory structure, for example `myOverlay\myOverlay\xml`, which will result in the content being copied to the wrong place.
- To apply an overlay in the installer, enable the option **Apply custom files after installation** and navigate to the overlay. Depending on the overlay type, make sure that you select either **Directories** or **Archive Files** in the selection dialog. If you have placed the overlay for auto-detection, the option is automatically enabled with the correct path.
- To apply an overlay manually, copy from the overlay directory the modified files to the directory `<SWPDM INSTALL DIR>\CAD Integration` and its related sub-directories, for example from `C:\temp\myOverlay\xml` to `<SWPDM INSTALL DIR>\CAD Integration\xml`.
- For deployment to clients, it is best to store the overlay on a network share. This allows you to update modified configuration on a regular basis and apply the overlay via your preferred method.

### How to apply an overlay in silent-mode

There are no parameters for applying an overlay package in silent-mode, because the copying process is not triggered by an MSI installation. You can only use certain parameters to preselect options in the installer. But, you can use *Robocopy* commands to copy the overlay content from a network share directly to the installation directory.

1. Copy the overlay to a network share, for example `\\myShare\myOverlay`.
2. In your own batch file for silent-mode, add the copy operation to the installation directory as the last step, for example:

```
...
REM *** apply overlay ***
robocopy "\\myShare\myOverlay" "<SWPDM INSTALL DIR>\CAD Integration"
```

3. Test your batch file on a clean client computer.
4. Check that the overlay was applied correctly and that the product is working.