OG10410

Cracking the Vault with AutoCAD Plant 3D and AutoCAD P&ID

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Autodesk Inc

Learning Objectives

- Learn how to create new, and how to migrate existing, AutoCAD Plant 3D or AutoCAD P&ID software projects in Vault software
- Learn about attribute mapping, categories, lifecycles, and revision schemes with AutoCAD Plant 3D and AutoCAD P&ID projects
- Learn about the possibilities of using Vault for management of Data Manager outputs

Description

In this class you will learn about the facets of AutoCAD Plant 3D software in Vault software. We will cover the features that Vault software has to offer an AutoCAD Plant 3D project or an AutoCAD P&ID project. Specifically, we will look at lifecycles, categories, and attribute mapping. We will cover the process of creating a new AutoCAD Plant 3D project or an AutoCAD P&ID project and migrating it to Vault software. Then we will look at the migration of an existing AutoCAD Plant 3D project or an AutoCAD P&ID project to Vault software. We will also examine in detail how to manage Data Manager outputs in Vault software. We will also cover the specific rules around utilizing Vault software for your project. An AutoCAD Plant 3D project or an AutoCAD P&ID project in Vault software should be an exciting and positive experience for the extended Design Team. This course is the first step in determining that sort of experience.

Your AU Experts

Jarrod Mudford is a piping designer by profession, working out of New Zealand predominantly in the food and beverage industry. With also a lot of experiences in the oil and gas, geothermal, mining, and water treatment industries, his accolades compliment his career as a Plant Solutions consultant with Autodesk, Inc. His role involves in-depth implementations of solutions with customers' workflows. He enjoys passing on his extensive knowledge to others and assisting in the success of companies utilizing Autodesk products, particularly Plant Design Suite software. Jarrod also has vast knowledge of Inventor software, Navisworks project review software, and Vault software, and he is versed in the advantages of using these alongside AutoCAD Plant 3D software and AutoCAD P&ID software.
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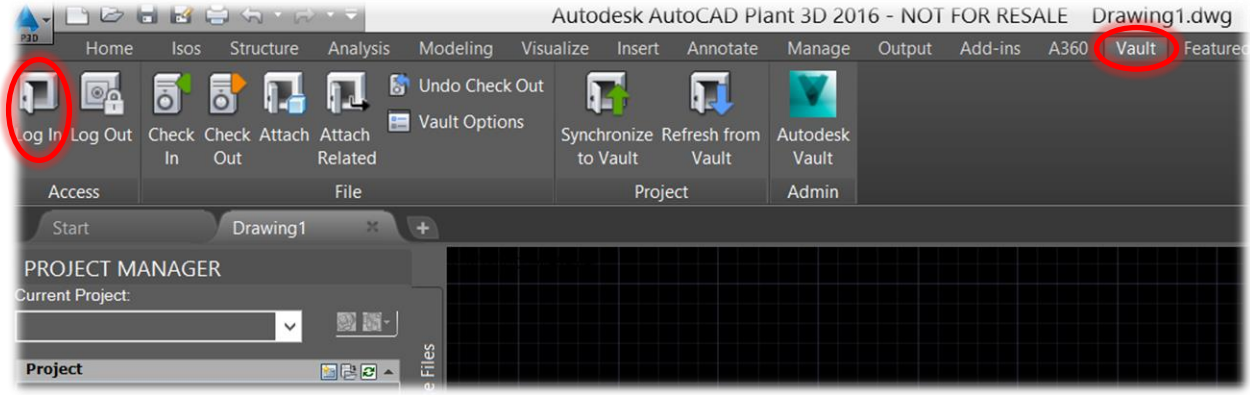
Migrate an existing AutoCAD Plant 3D/P&ID project and create a new AutoCAD Plant 3D/P&ID project

Migrate an existing AutoCAD Plant 3D/P&ID project

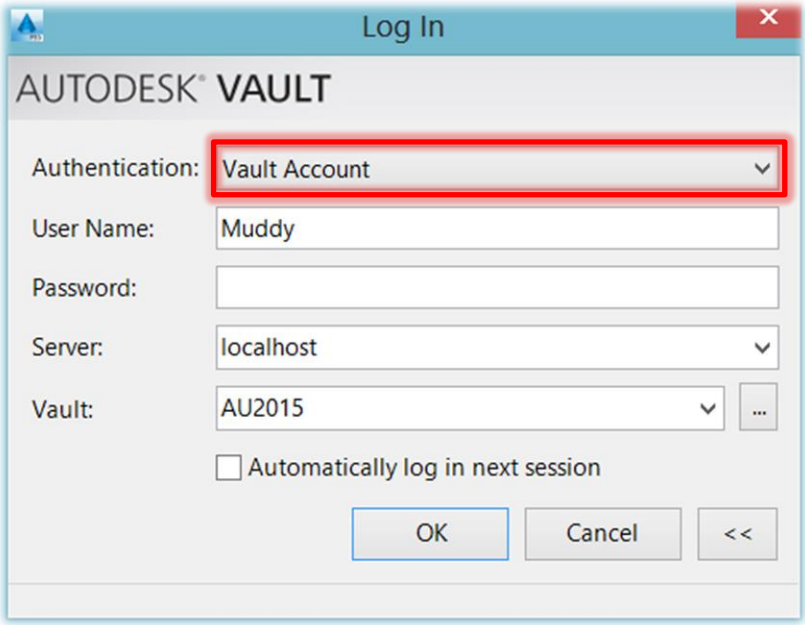
This section will step you through migrating an existing Plant 3D/P&ID project into Autodesk Vault. Before migrating a project to Autodesk Vault. You will need access to the Autodesk Vault system.

Log into Autodesk Vault from AutoCAD Plant3D/P&ID

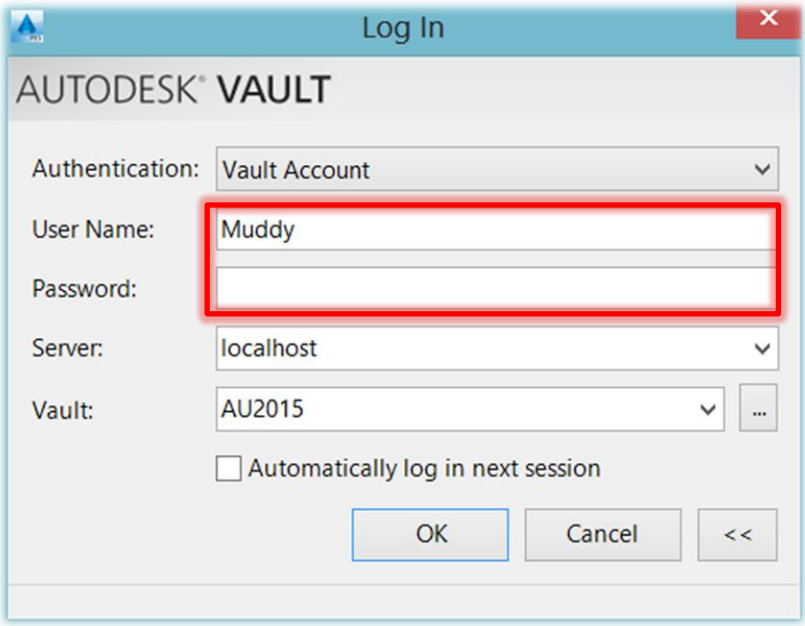
1. On the Vault ribbon, select Log In



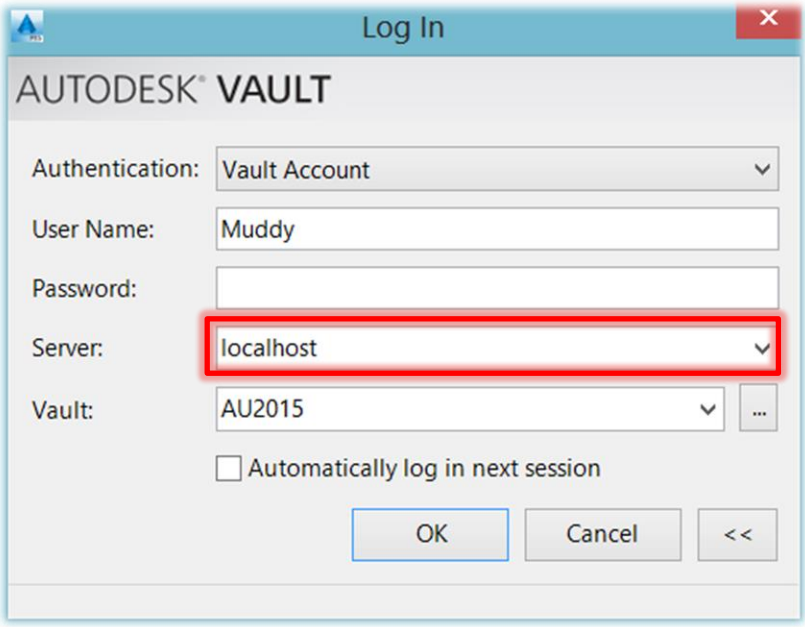
2. Select your Authentication type….Vault Account or Windows Account. If you select Vault Account, you will be required to enter your username and password.



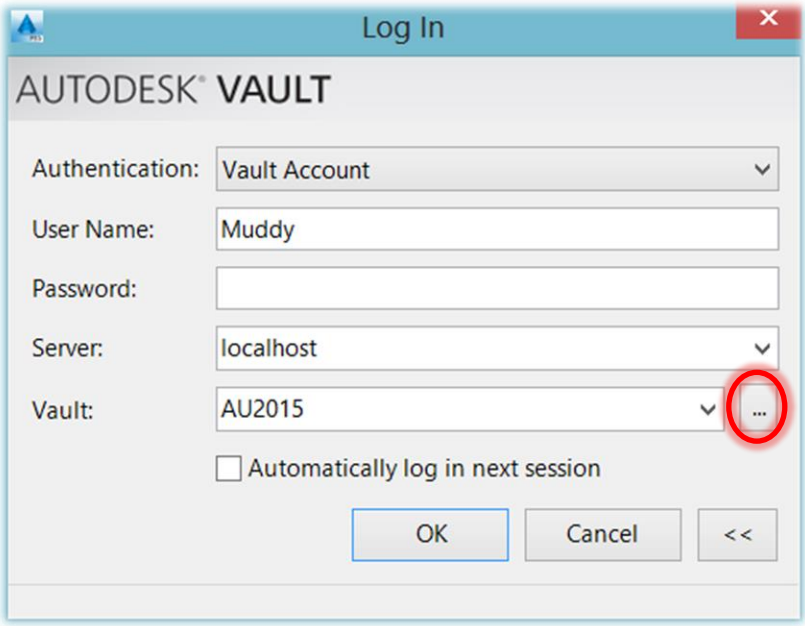
3. If you select Vault Account, you will be required to enter your username and password.



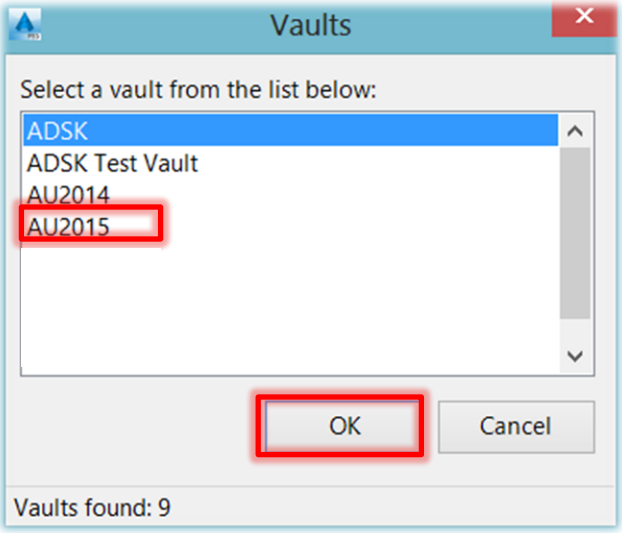
4. Enter the name of the Vault server you are going to be logging in to. This information can be supplied by your systems administrator.



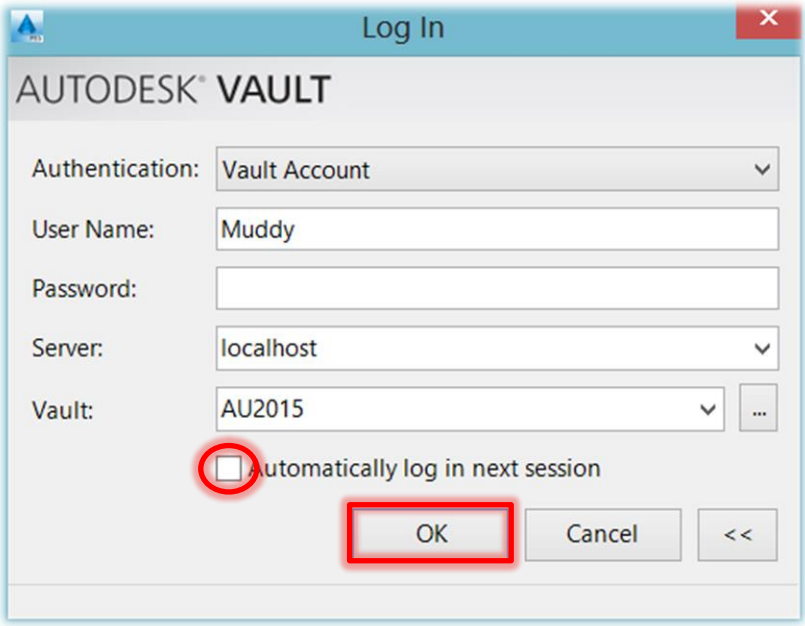
5. Select the button shown below to show a list of all the databases currently on the Vault Server.



6. Select the Vault database you want to log in to, and select OK.



7. Select the option box if you want to be automatically logged in next time, and/or select OK.



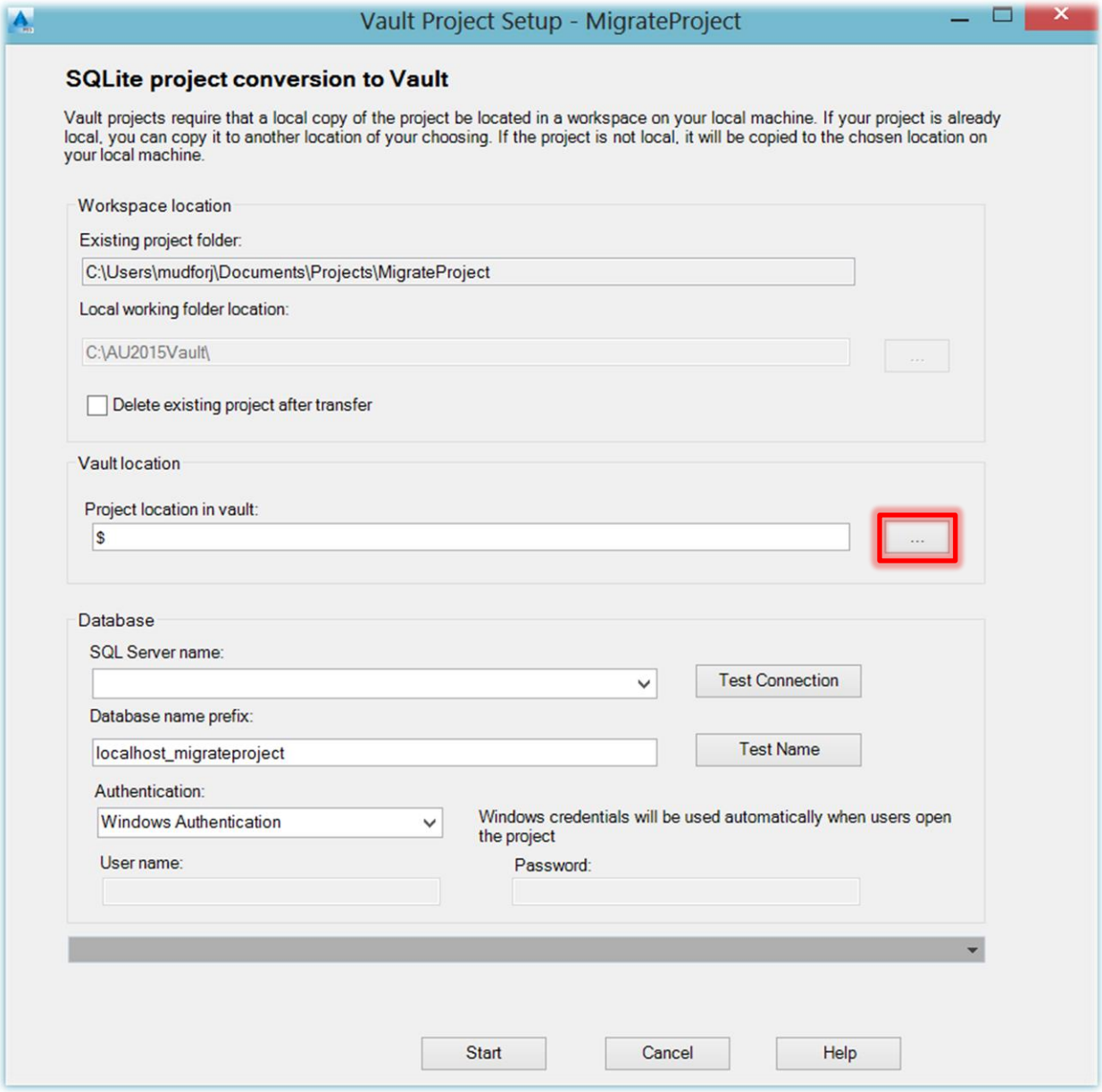
The log in window should disappear and you will be now logged into the Vault. Any problems logging into the Vault should be submitted to your system administrator.

Migrate the AutoCAD Plant3D/P&ID project to Autodesk Vault

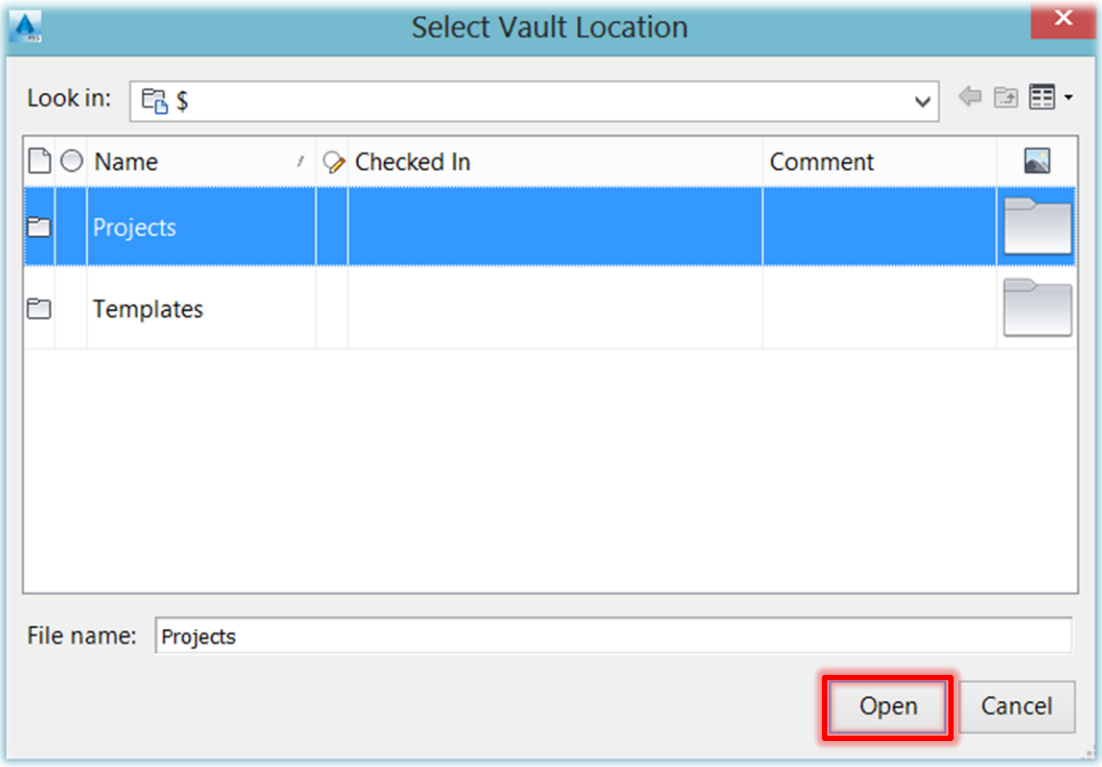
Before migrating a project to Autodesk Vault, it is recommended to take a back up of the project.

8. At the command prompt, enter PLANTPROJECTTOVAULT to show the Migrate Project Dialog box.

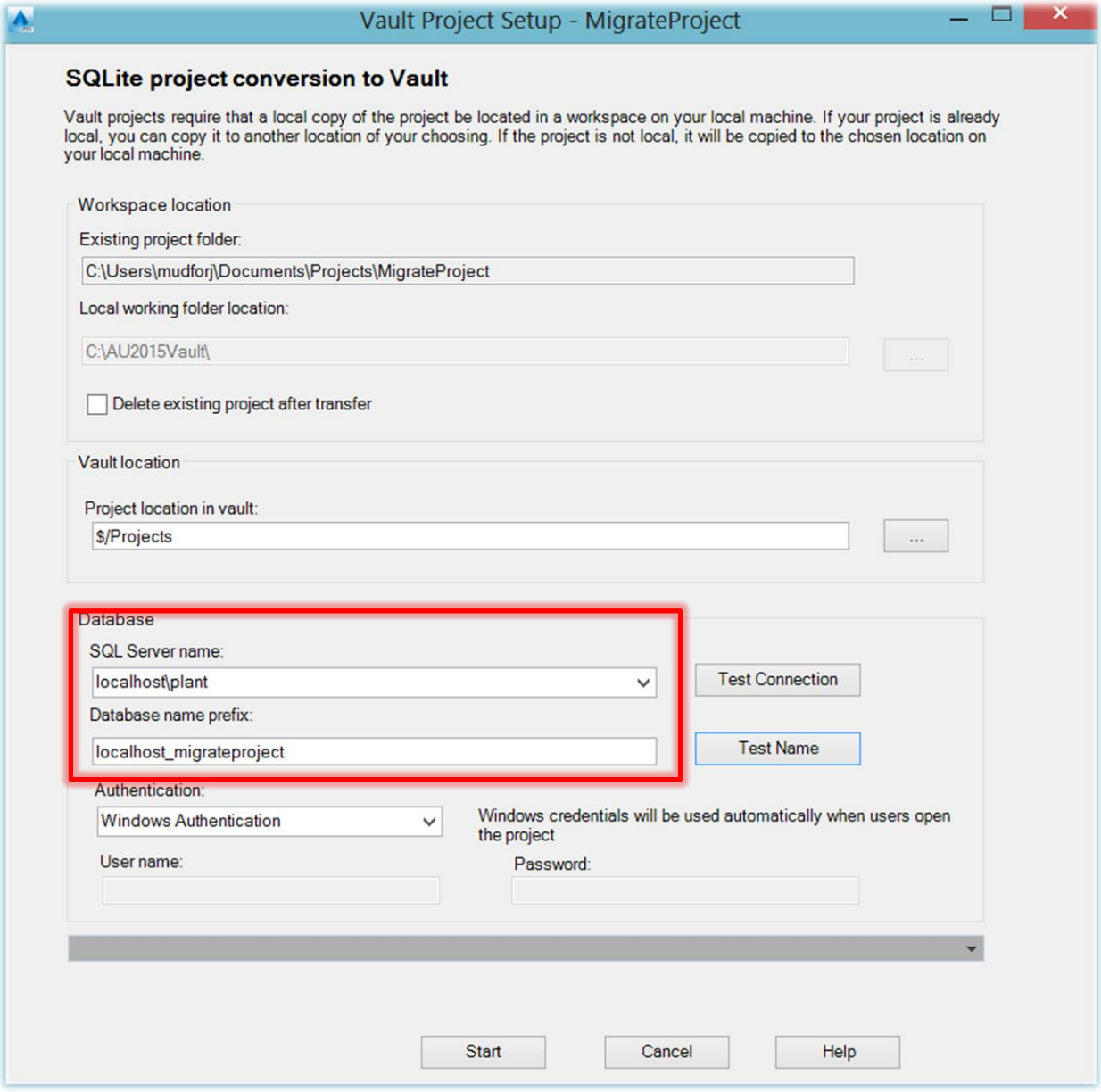
9. Select the button to choose a location in Vault to place the AutoCAD Plant 3D/P&ID project.



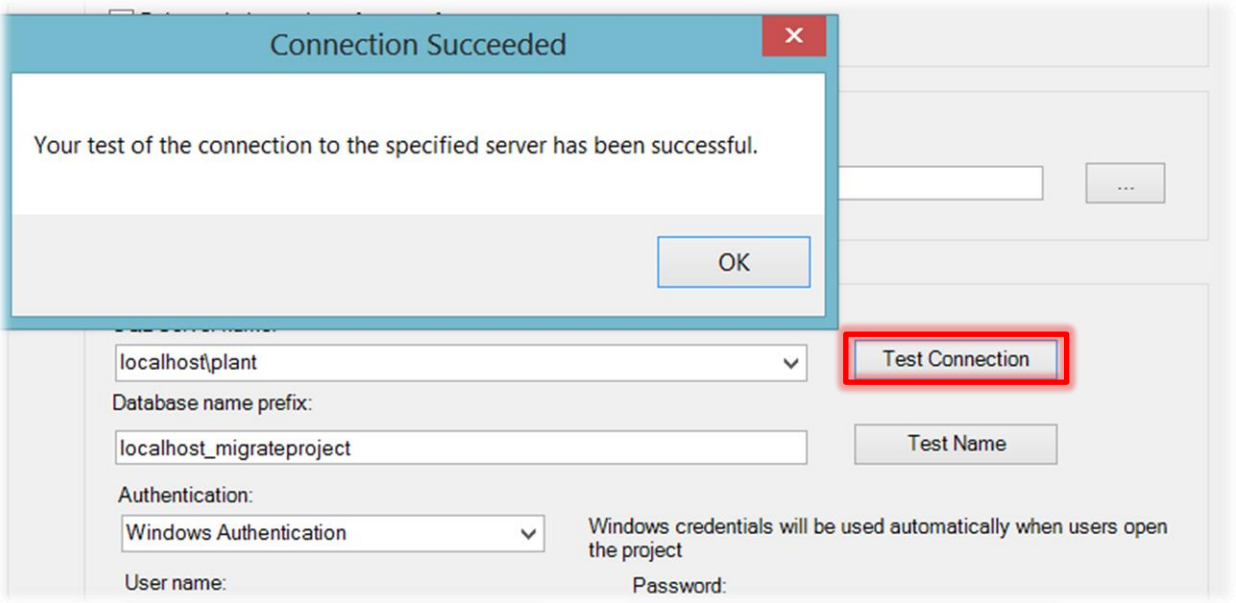
10. Select a location in Vault to place the AutoCAD Plant 3D/P&ID project, and select OPEN.



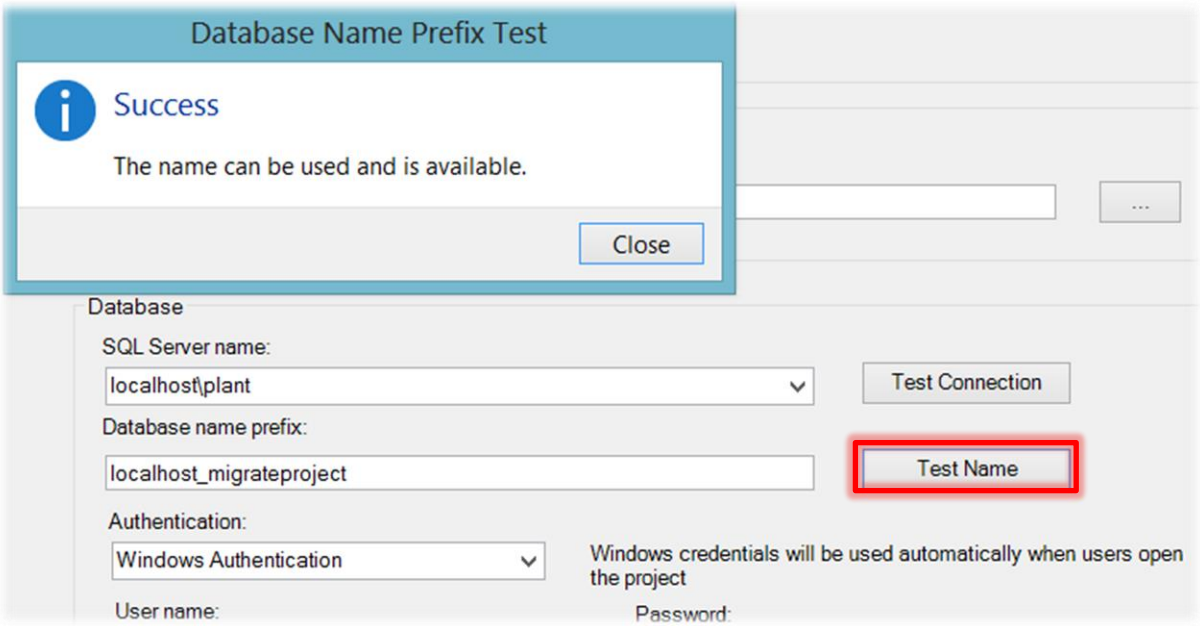
11. In the database section, enter the server\instance for the SQL server, and a database name prefix.



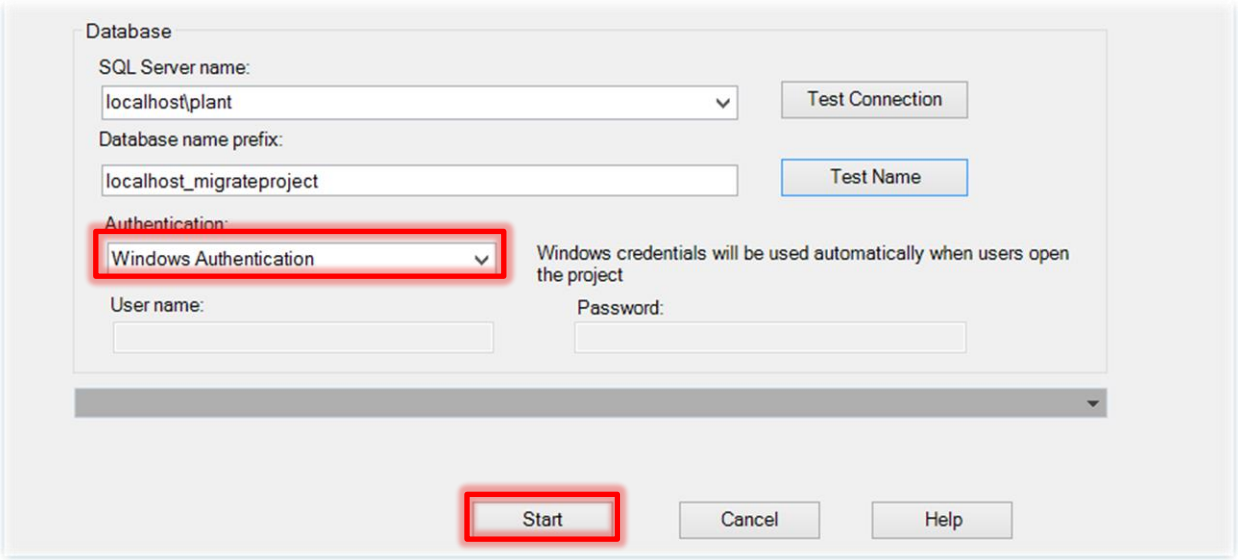
12. Select the Test Connection button to ensure that the connection to the SQL instance is valid.



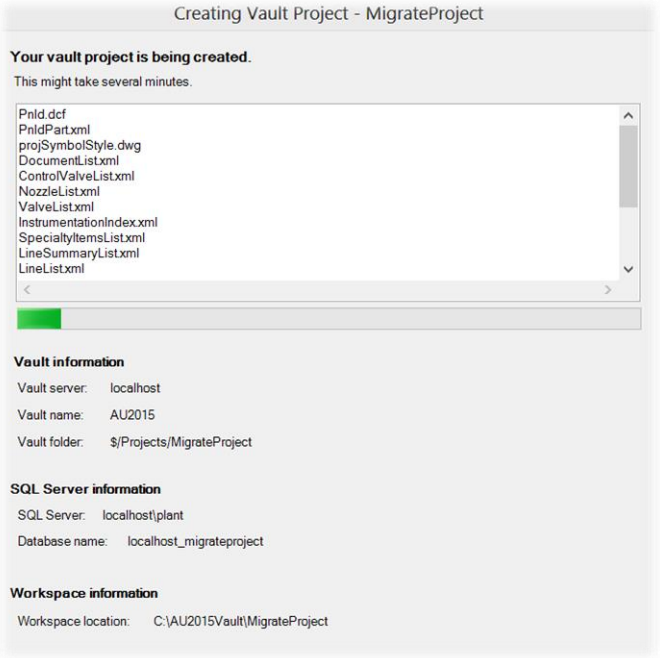
13. Select the Test Name button to check that no other databases with the same prefix exist on the SQL instance.

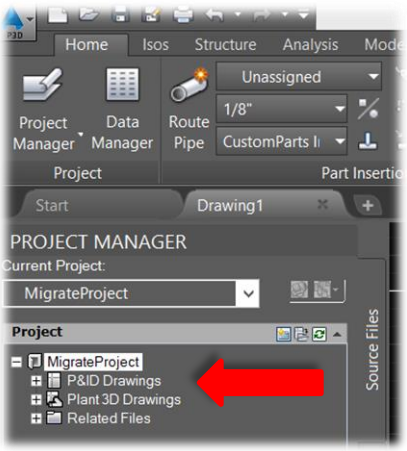


14. Ensure that Windows Authentication is selected for the Authentication type. And select START



A progress window will appear and show the progress of the migration. Once completed the AutoCAD Plant 3D/P&ID project manager will activate the project.



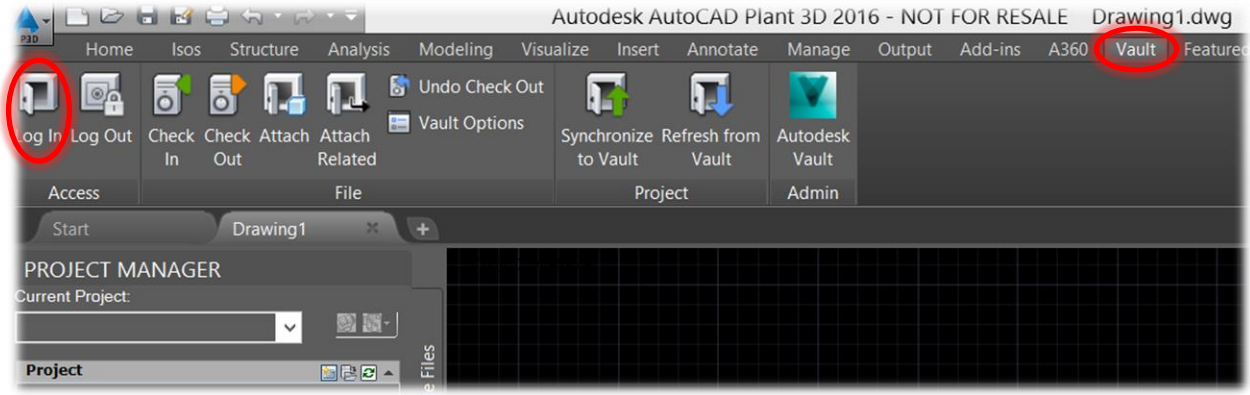


Create a new AutoCAD Plant 3D/P&ID project

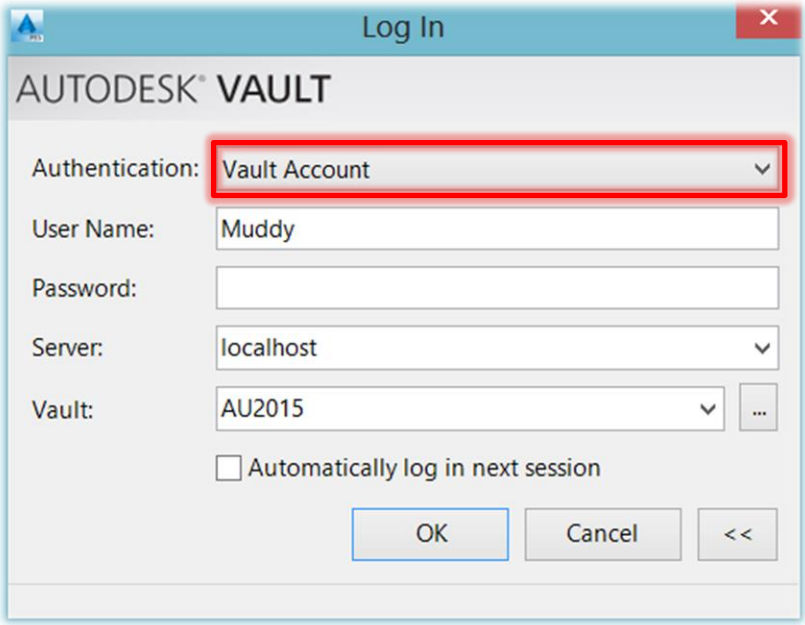
This section will step you through creating a new Plant 3D/P&ID project into Autodesk Vault. Before creating a project in Autodesk Vault. You will need access to the Autodesk Vault system.

Log into Autodesk Vault from AutoCAD Plant3D/P&ID

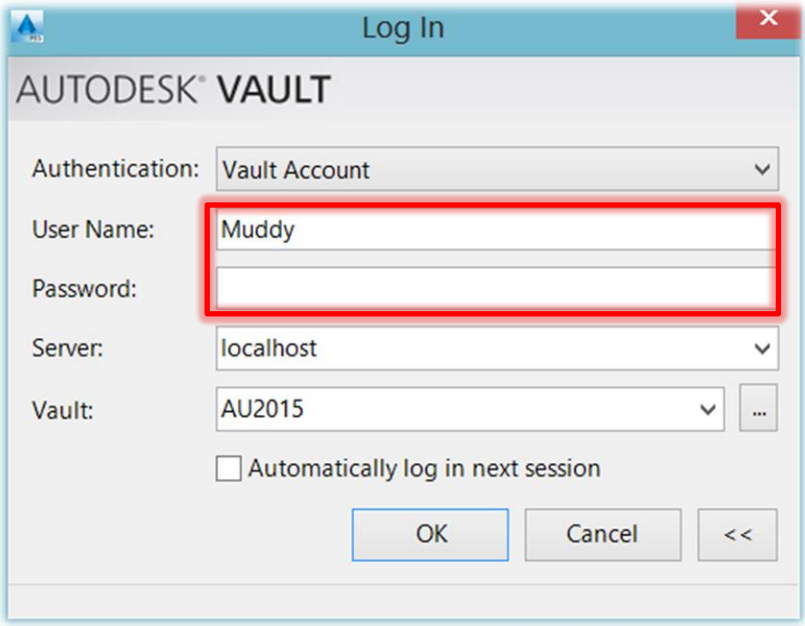
1. On the Vault ribbon, select Log In



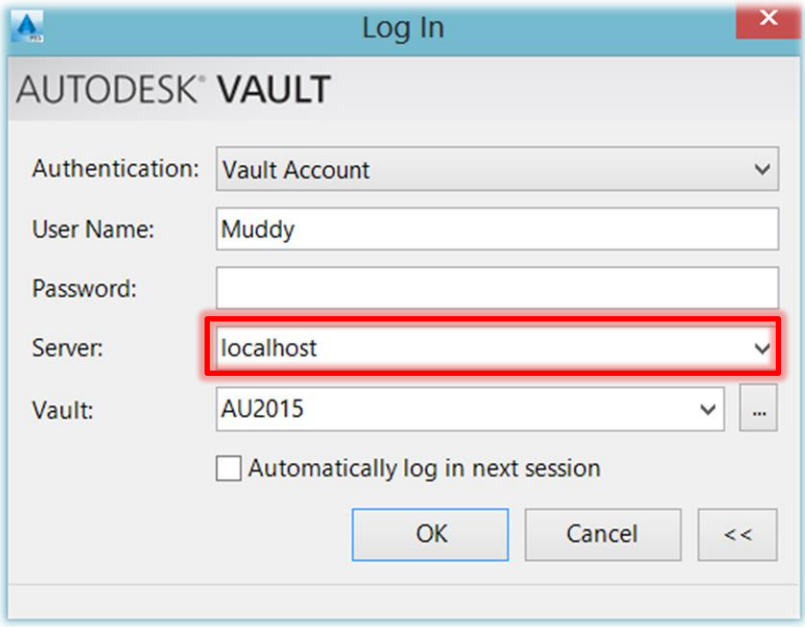
2. Select your Authentication type….Vault Account or Windows Account. If you select Vault Account, you will be required to enter your username and password.



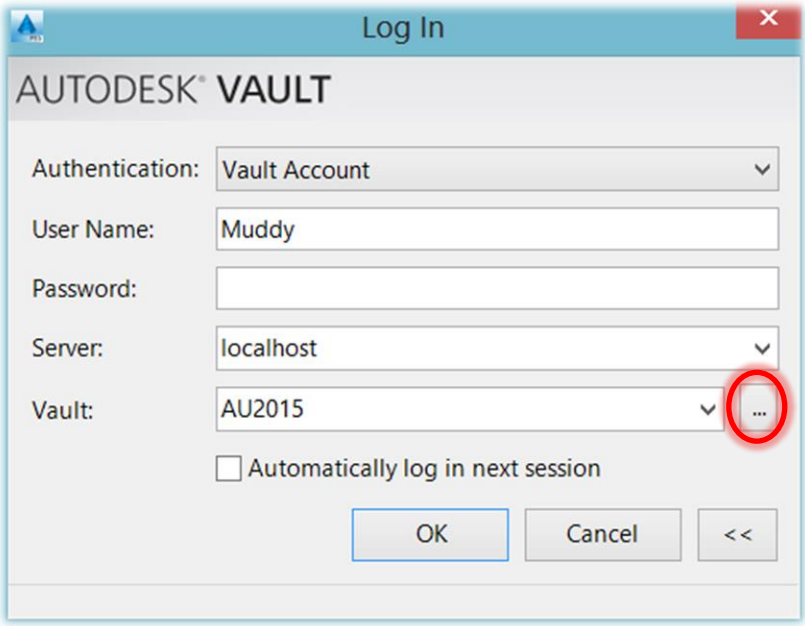
3. If you select Vault Account, you will be required to enter your username and password.



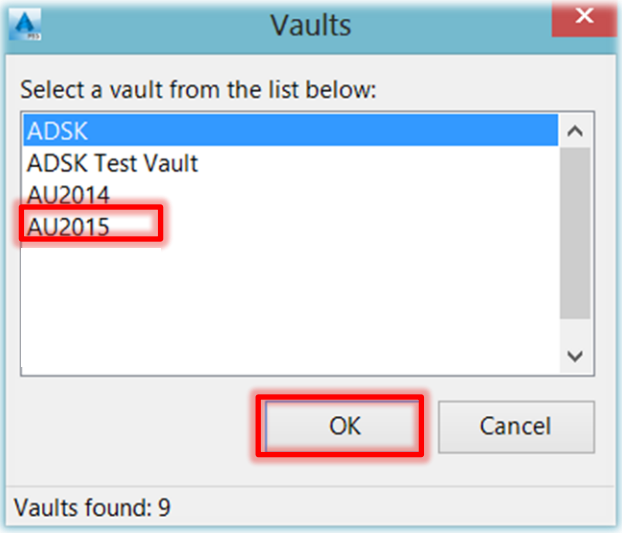
4. Enter the name of the Vault server you are going to be logging in to. This information can be supplied by your systems administrator.



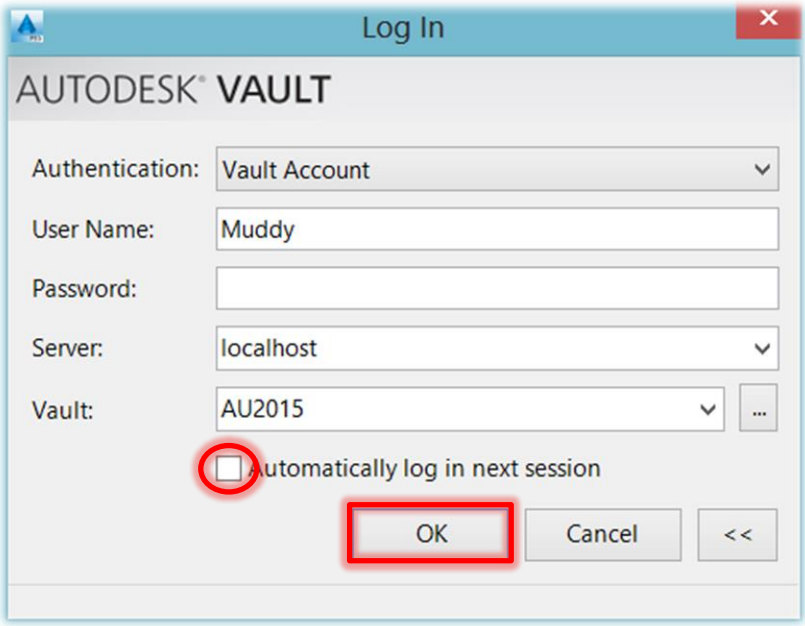
5. Select the button shown below to show a list of all the databases currently on the Vault Server.



6. Select the Vault database you want to log in to, and select OK.



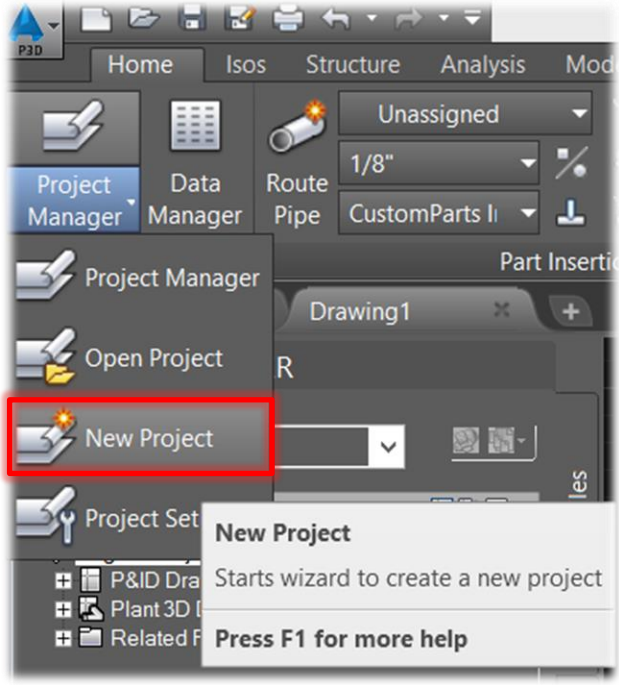
7. Select the option box if you want to be automatically logged in next time, and/or select OK.



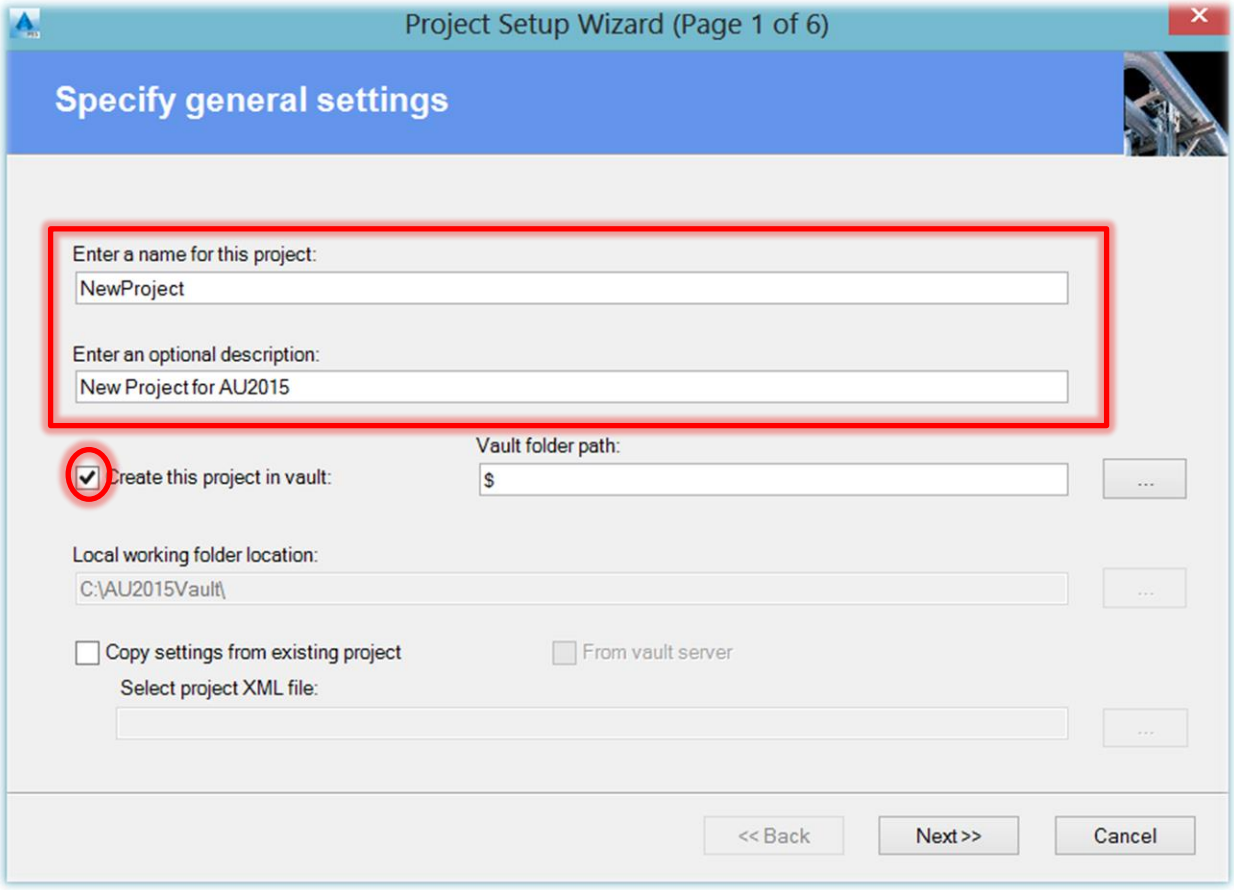
The log in window should disappear and you will be now logged into the Vault. Any problems logging into the Vault should be submitted to your system administrator.

Create an AutoCAD Plant3D/P&ID project in Autodesk Vault

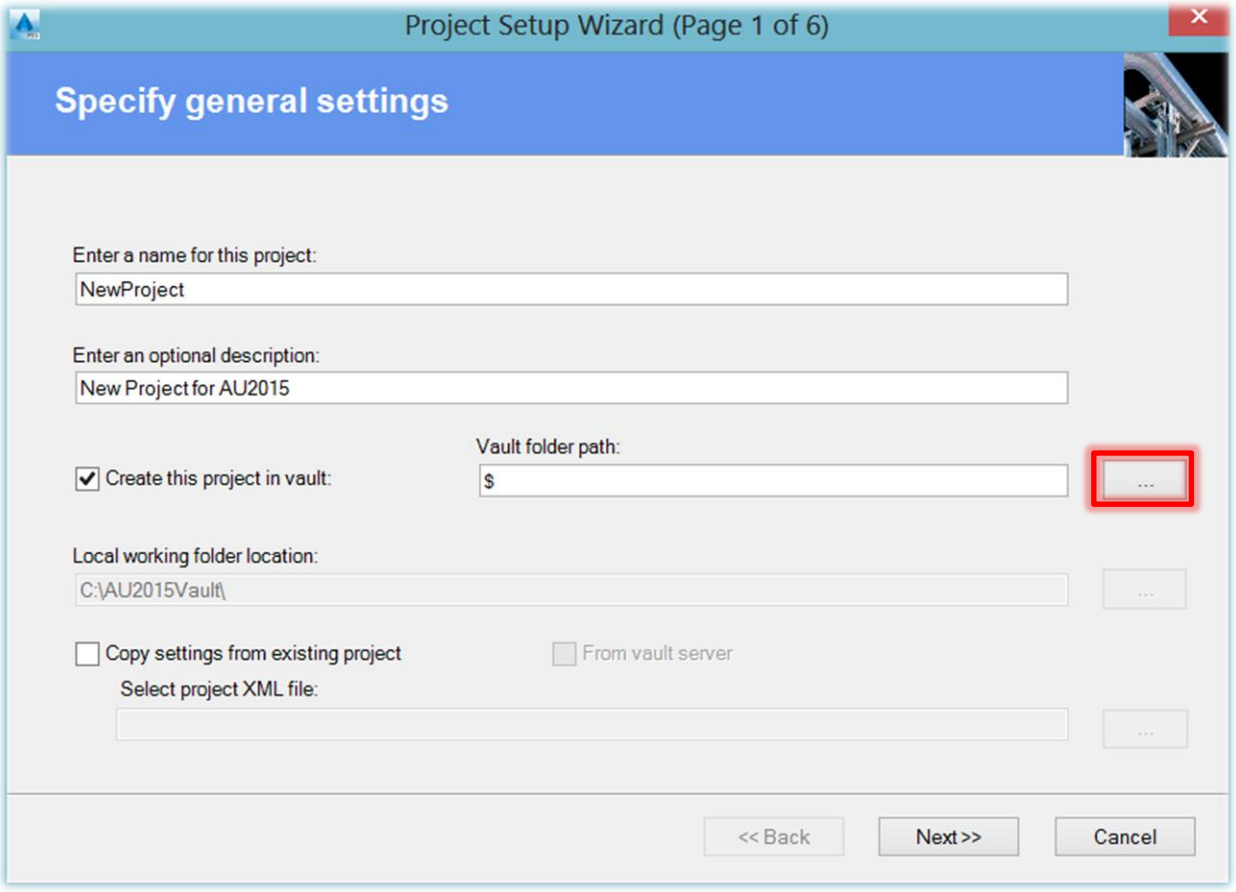
8. Select New Project in AutoCAD Plant 3D/P&ID.



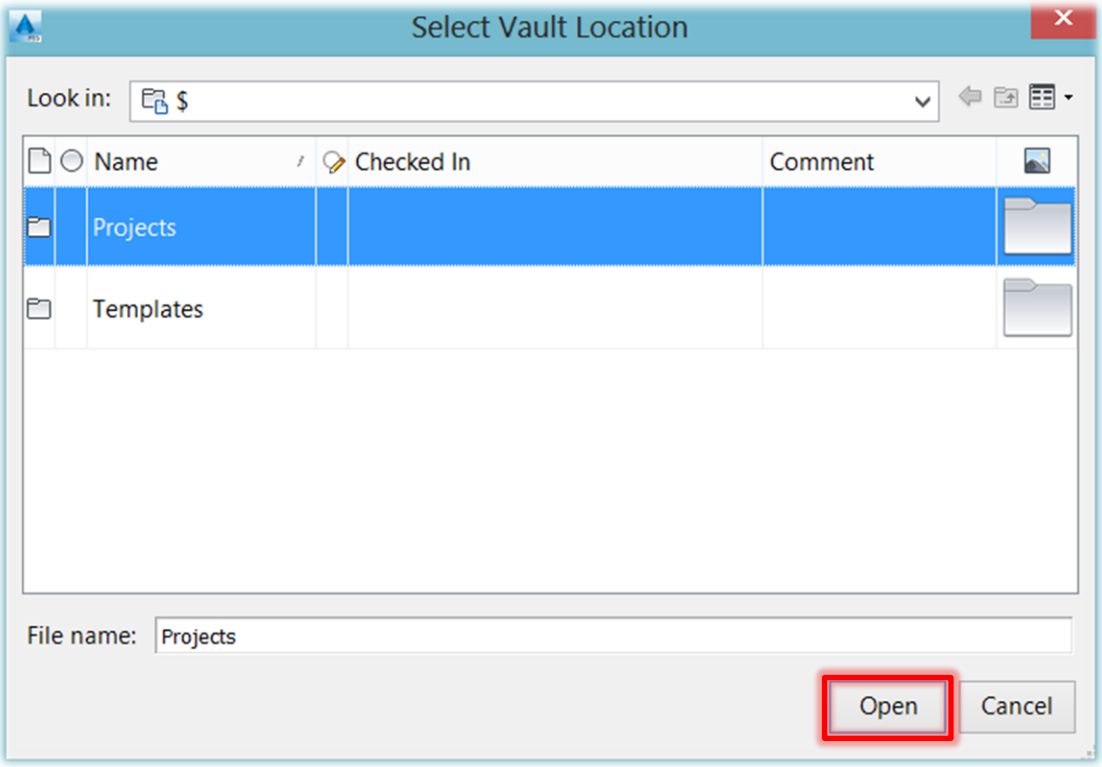
9. Enter a name for the project and an optional description. Select the option for “Create this project in vault”



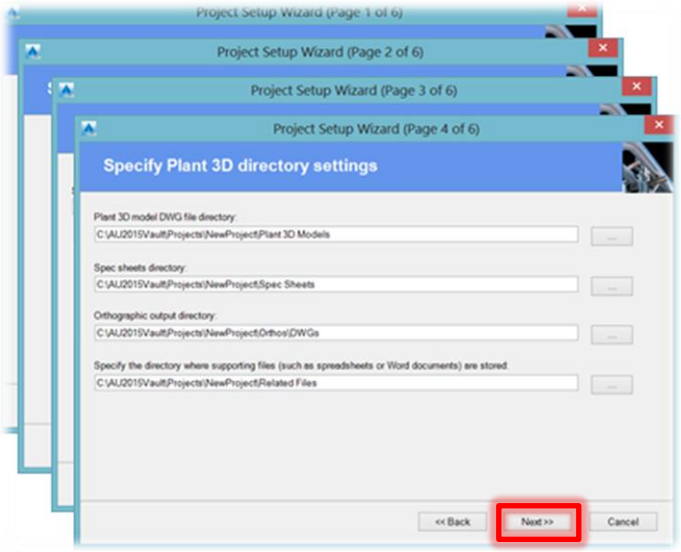
10. Select the button to define the Vault folder path.



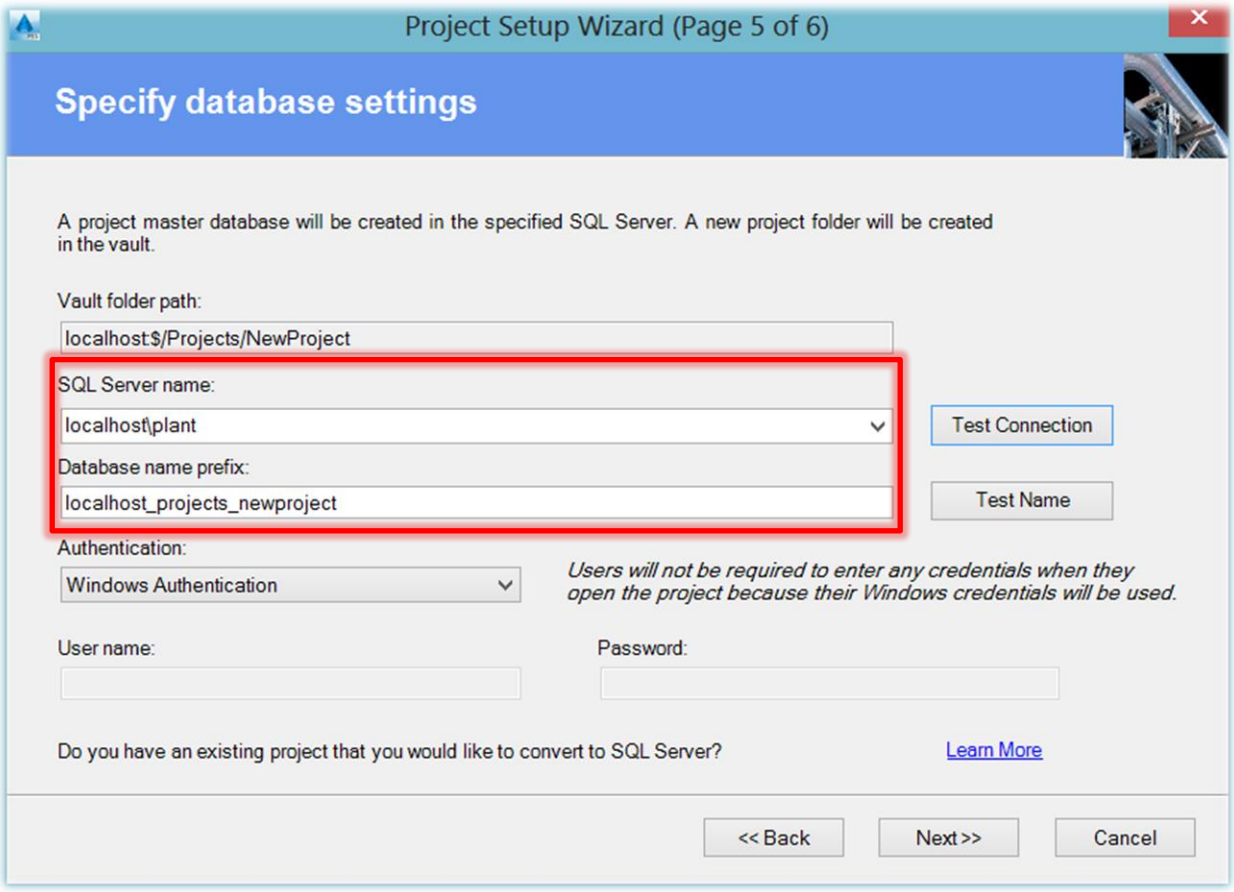
15. Select a location in Vault to place the AutoCAD Plant 3D/P&ID project, and select OPEN.



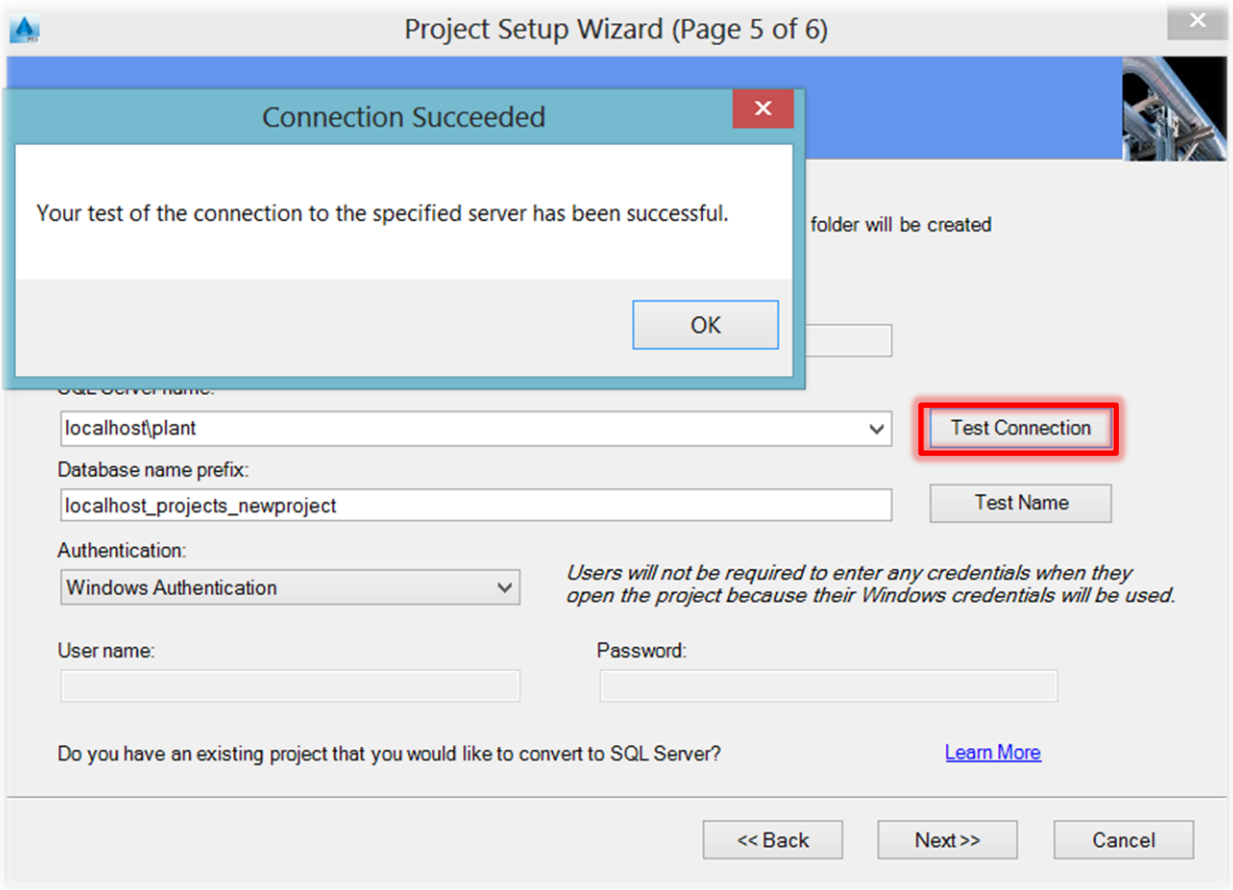
16. Select NEXT on wizard pages 1 through 4.



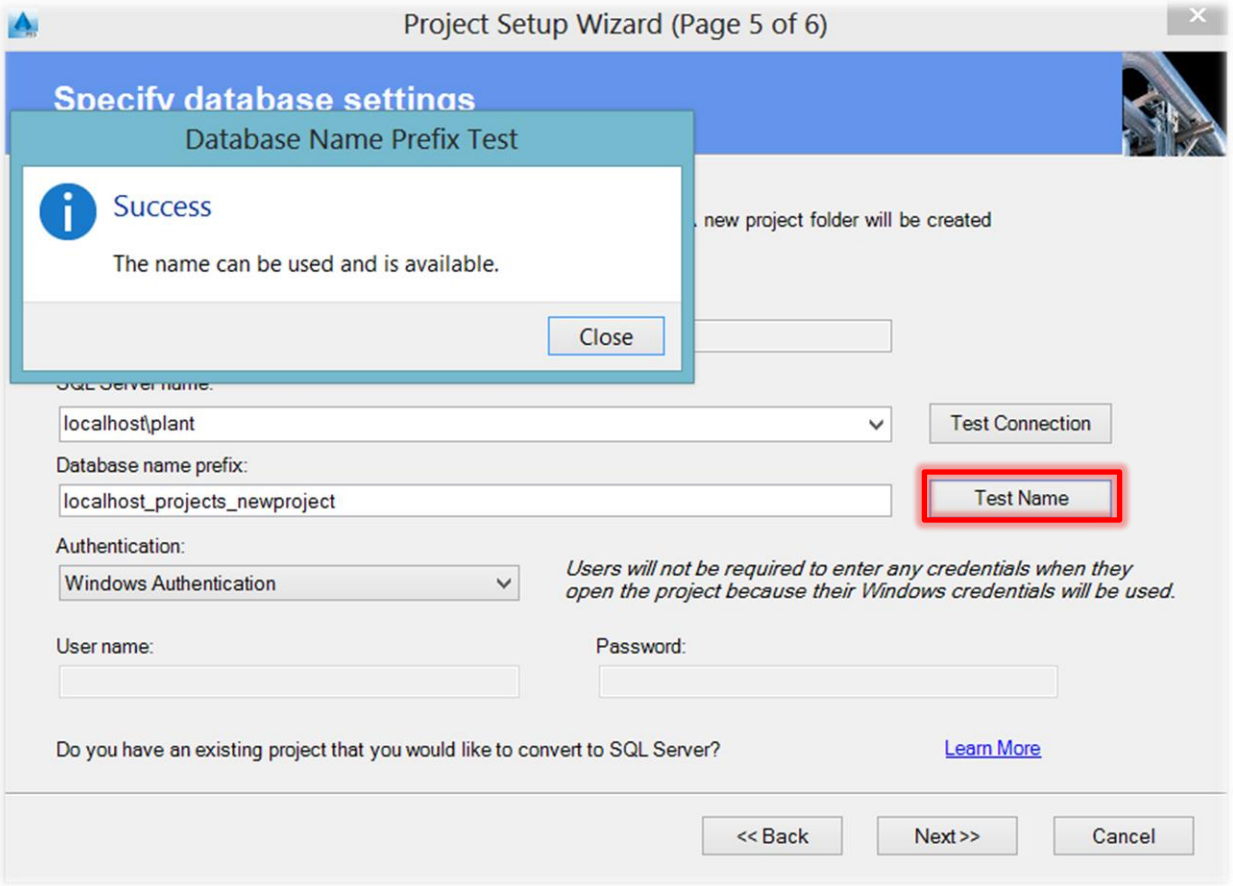
17. On page 5 of the setup wizard, enter the server\instance for the SQL server, and a database name prefix.



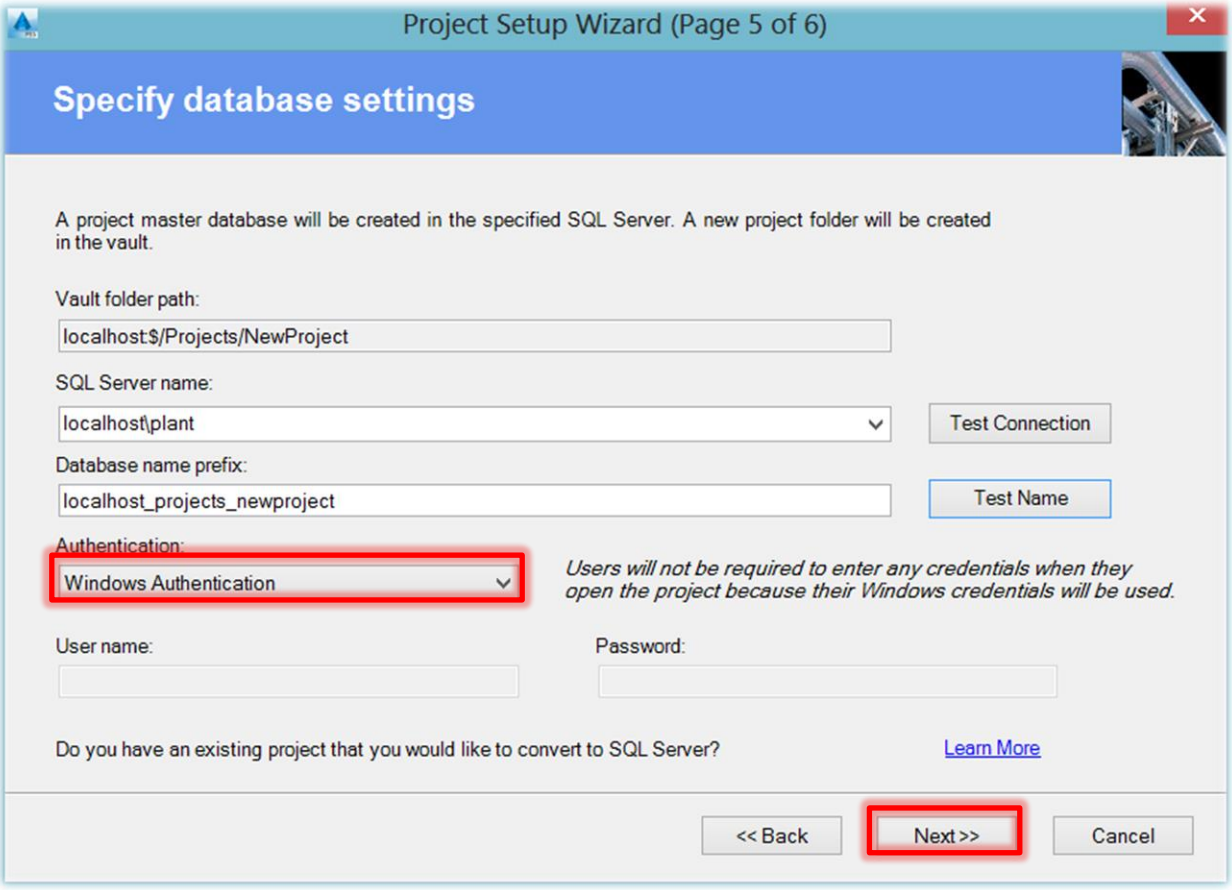
18. Select the Test Connection button to ensure that the connection to the SQL instance is valid.



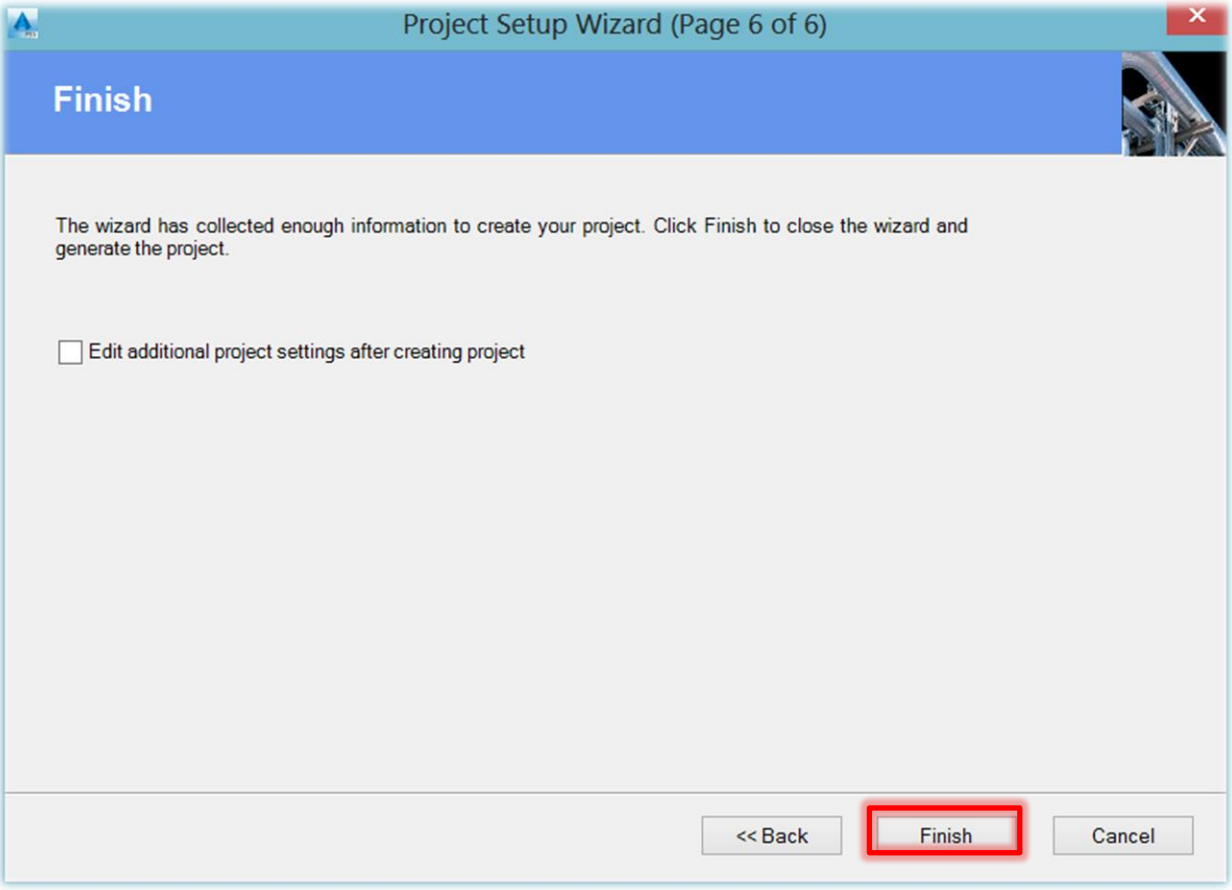
19. Select the Test Name button to check that no other databases with the same prefix exist on the SQL instance.



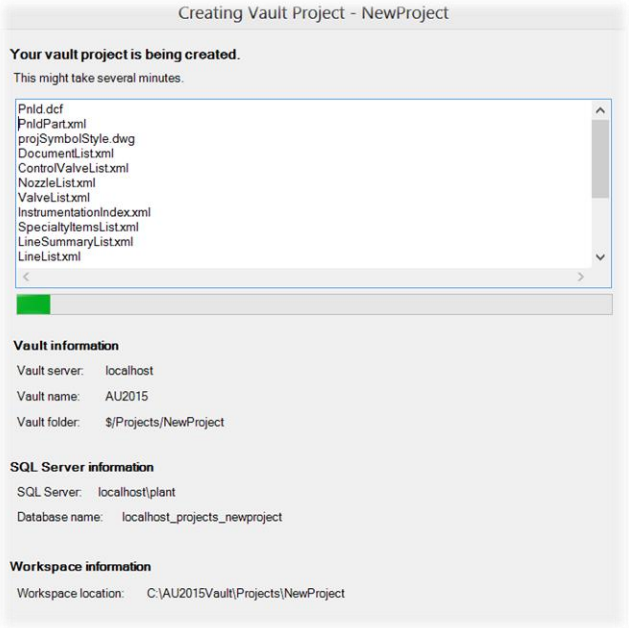
20. Ensure that Windows Authentication is selected for the Authentication type. And select NEXT.

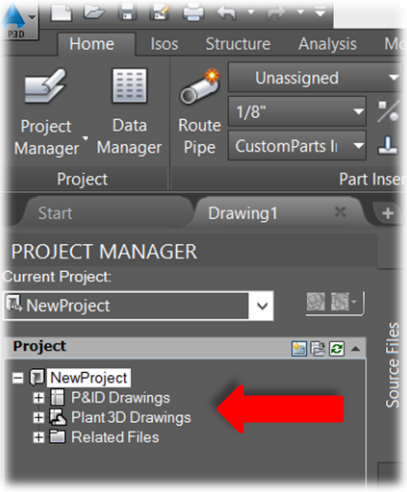


21. On page 6 of the setup wizard, select FINISH.



A progress window will appear and show the progress of the migration. Once completed the AutoCAD Plant 3D/P&ID project manager will activate the project.



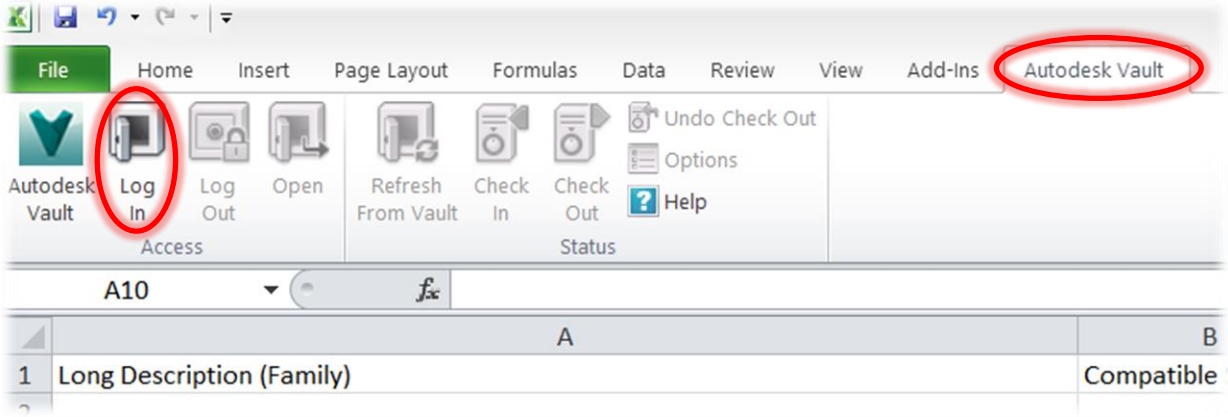


Data Manager outputs from AutoCAD Plant 3D/P&ID in Vault

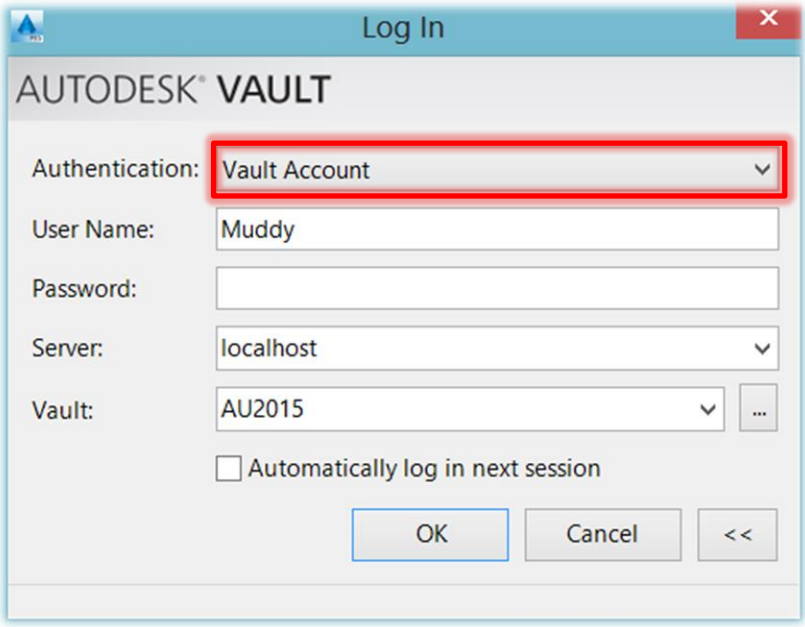
Data Manager outputs are all excel based file formats. These files can also be added to Autodesk Vault directly from excel.

Log into Autodesk Vault from Microsoft Excel

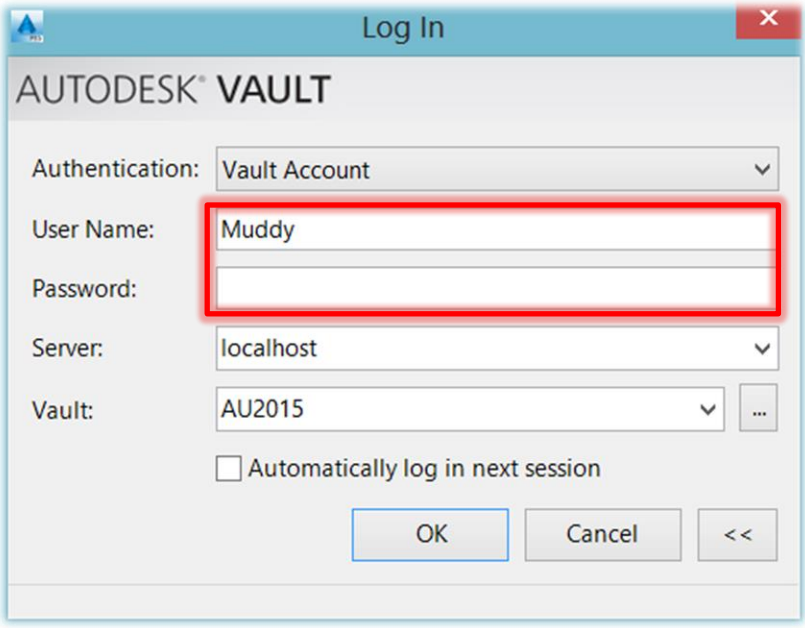
1. On the Autodesk Vault ribbon select Log In.



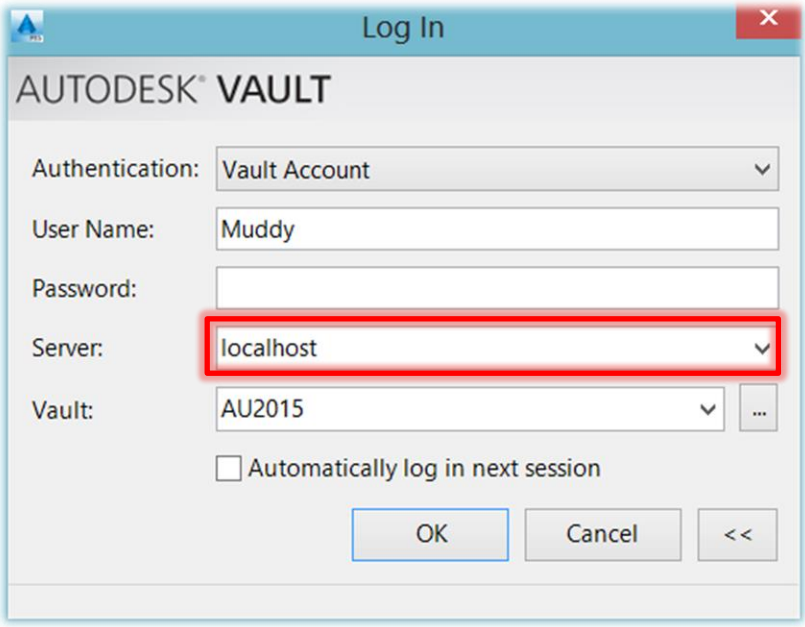
2. Select your Authentication type….Vault Account or Windows Account. If you select Vault Account, you will be required to enter your username and password.



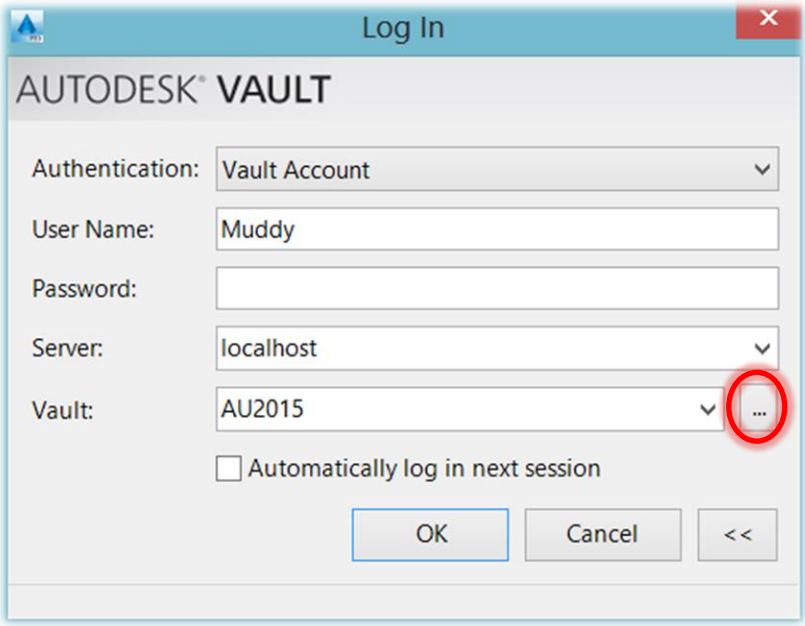
3. If you select Vault Account, you will be required to enter your username and password.



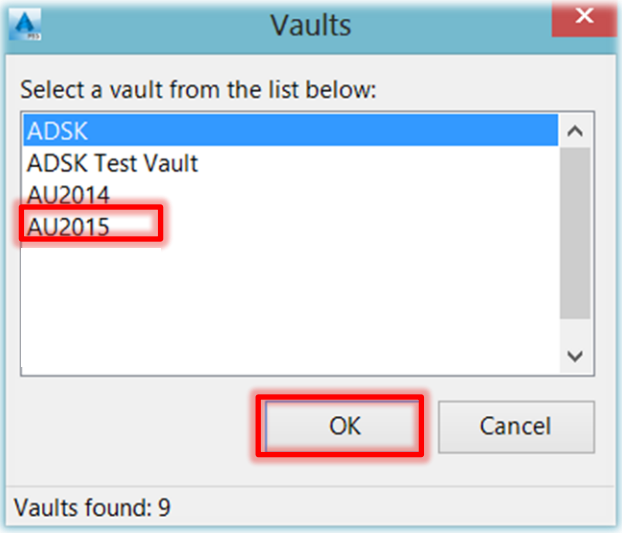
4. Enter the name of the Vault server you are going to be logging in to. This information can be supplied by your systems administrator.



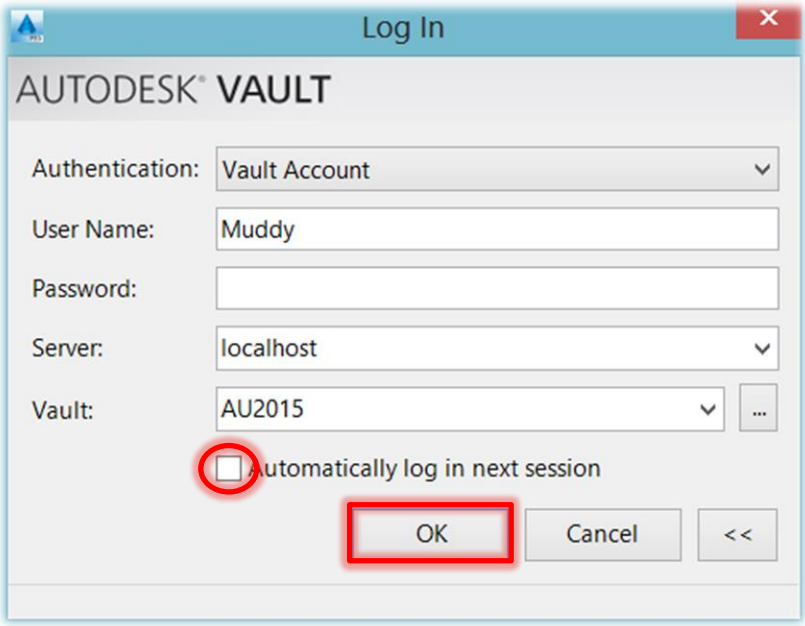
5. Select the button shown below to show a list of all the databases currently on the Vault Server.



6. Select the Vault database you want to log in to, and select OK.



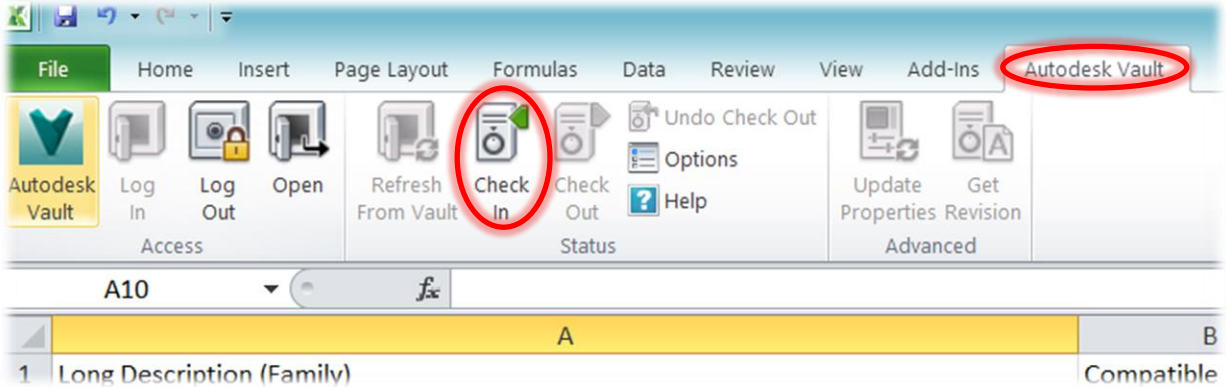
7. Select the option box if you want to be automatically logged in next time, and/or select OK.



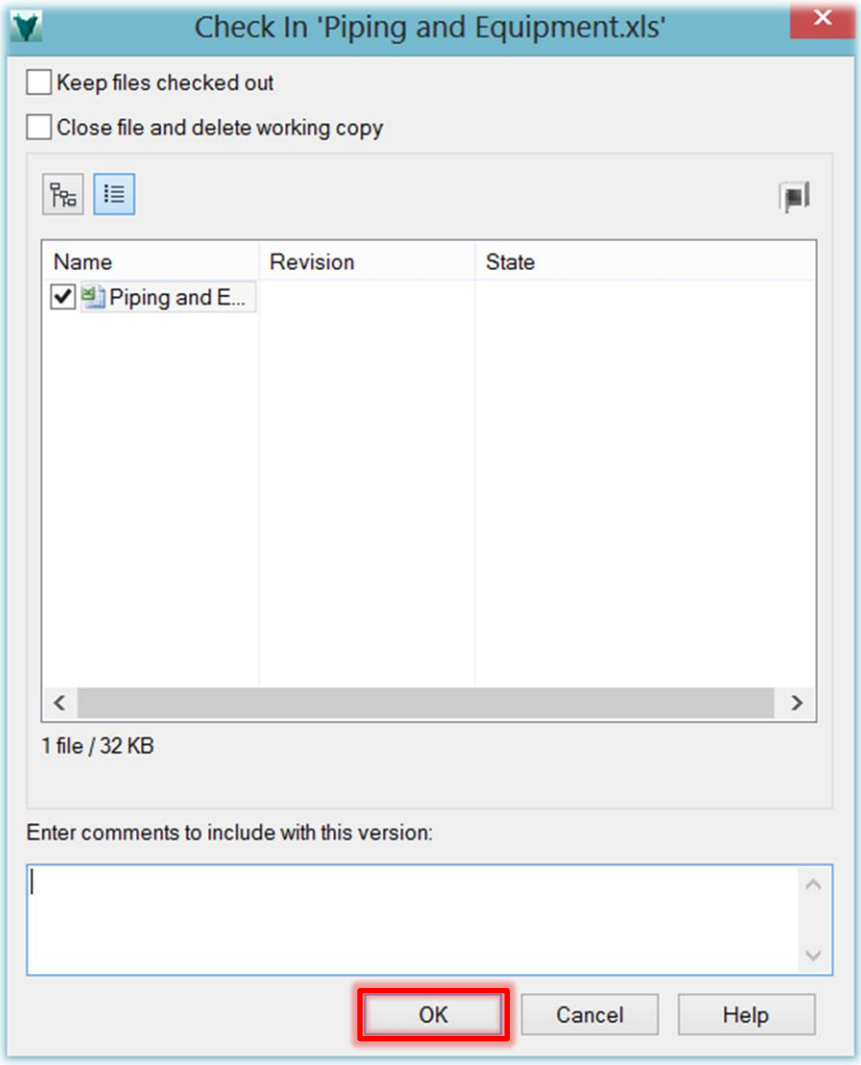
The log in window should disappear and you will be now logged into the Vault. Any problems logging into the Vault should be submitted to your system administrator.

Checking in a file with Microsoft Excel

On the Autodesk Vault ribbon select Check In.

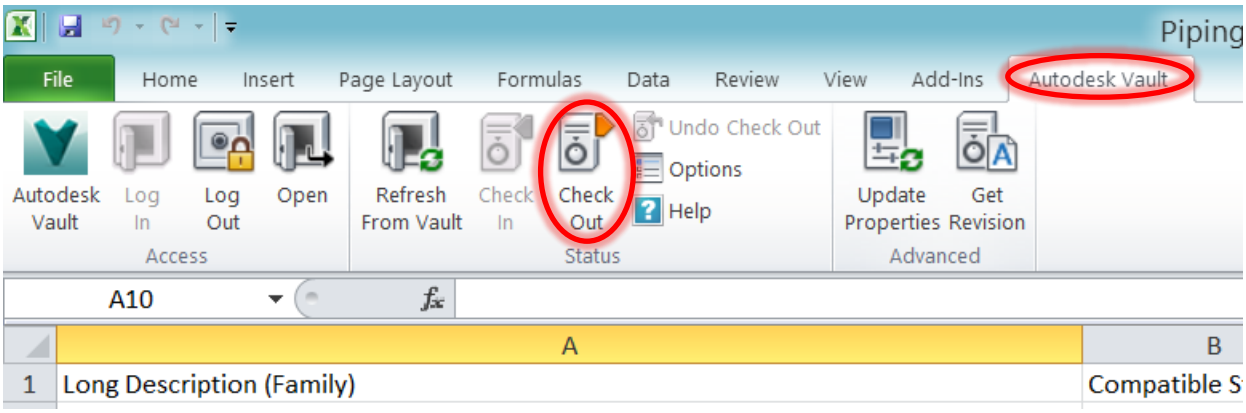


On the Check In dialog box, select OK



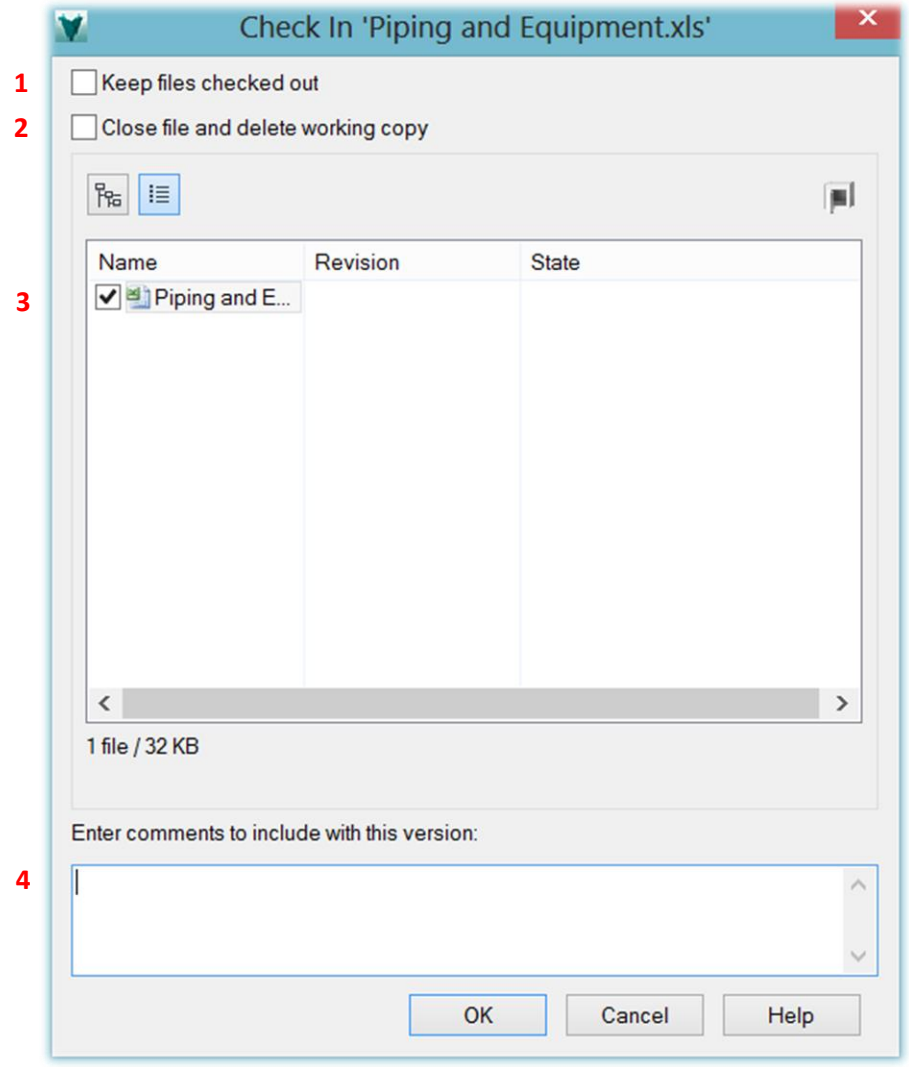
Checking out a file with Microsoft Excel

On the Autodesk Vault ribbon select Check Out.



Note:
During the check in and check out process, you may get some prompts appear. These prompts are too exhasutive to list here individually. Each prompt should be handled at each occurrence and the information provided is recommended to be read and understood before selecting an option. Prompts can be set to have automated responses, but this is recommended once you have a full understanding of the Vault.

Working with the Check In dialog box



1. Selecting this option before Checking the file in to Vault, will only update the Vault and the file will remain checked out to you. This is a quick way of updating the Vault with the latest version of the file but keeping the file open for continuing editing.
2. If you select this option, the file will also be closed and deleted from the local workspace. This option is efficient for the checking in the final version of the document and clearing the local workspace.
3. In some cases where you are working with a number of files at the same time, you can select which files will be checked in or not. If only working with a single file, then there will only be one listed here.
4. Entering comments to the version being checked in will indicate to other users of the document what it is that has been modified.

Autodesk Vault with Attribute Mapping, Lifecycles, Categories, and Revision Schemes

This section explains the features listed above and where they can help with AutoCAD Plant 3D/P&ID. To set these components up in Autodesk Vault, it is suggested to seek expert help. These features can be set up in a number of ways and there is near infinite ways it can be done. The setup for these features need plenty of thought about what, who, how, and when.

Categories

AutoCAD Plant 3D/P&ID generates its own category within the Vault. This is done the first time a project is created in the Vault. This category, *PlantProjectFile*, cannot be renamed, or modified in any way. It is pertinent to the operation of AutoCAD Plant 3D/P&ID in Autodesk Vault.
Every file that is generated by AutoCAD Plant 3D/P&ID and added to the Vault will be categorized as a PlantProjectFile.
The category can be assigned a Lifecycle and Revision Scheme to suit a design department's workflow of drawing development and progress.
From the AutoCAD Plant 3D/P&ID application, there will be no indication that it is a PlantProjectFile. This will be more evident in the Vault Client, (desktop application). Because this is defined by the application there is no management/configuration component to the Vault for AutoCAD Plant 3D/P&ID files for categories.

Lifecycles

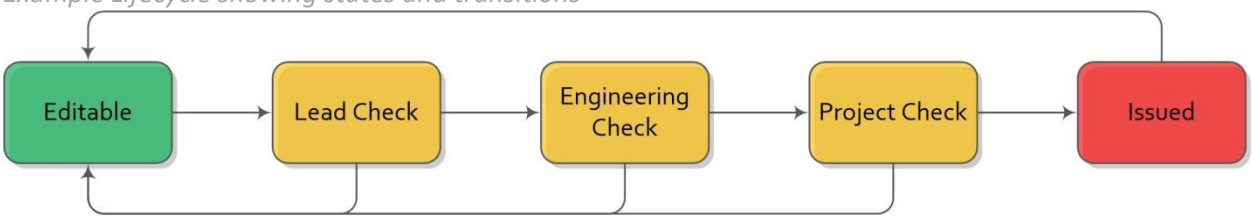
A Vault Lifecycle is applied to a category and manages the progress of the file through its inception, checking process, issued definition, and whether or not it is locked from editing by certain users. A lifecycle contains "**States**" and "**Transitions**". States are to define the current position of the drawing/model file in the design project. And transitions are the process of moving the drawing/model file from one state to another.
As an example depicted below, there are states of Editable; Lead Check; Engineering Check; Project Check; and Issued. Lifecycles are completely customizable to suit your terminology and workflow.
The Editable state is the state the drawing/model file is in that it can be edited by AutoCAD Plant 3D/P&ID. The Lead Check State through to Project Check will prevent the drawing/model file being edited. The Issued State will prevent the file being edited, and lock the file into an issued state to prevent any unauthorized access or transitioning to the Editable state.

Example Lifecycle showing states

Each state shown above can be uniquely permissioned to ensure only permitted users are accessing the drawing/model file while it is in a certain state.

The transitions are also customizable to only allow certain users to move a file from one state to another. The transitions are set also to allow the proper workflow being adhered to. In the example below there are a number of transitions defined by arrows.

Example Lifecycle showing states and transitions



Editable to *Lead Check*: When a drawing/model file has been edited and is ready to start the checking process. Once it is place in the *Lead Check* state, it can be locked to users that are defined as editors of the file. This will prevent changes being made while a file is being checked.

Lead Check to Editable: Once the check has been done at the *Lead Check* state, then it can be moved back to *Editable* state if the drawing/model file requires more work before it is considered ready to move to the *Engineering Check* state.

Lead Check to *Engineering Check*: Once the drawing/model file has been checked, and the checker deems it ready for engineering checking, then the transition can be made to *Engineering Check.*

Engineering Check to *Editable*: Once the check has been done at the *Engineering Check* state, then it can be moved back to *Editable* state if the drawing/model file requires more work before it is considered ready to move to the *Project Check* state.

Engineering Check to *Project Check*: Once the drawing/model file has been checked, and the checker deems it ready for project checking, then the transition can be made to *Project Check.*

Project Check to *Editable*: Once the check has been done at the *Project Check* state, then it can be moved back to *Editable* state if the drawing/model file requires more work before it is considered ready to move to the *Issued* state.

Project Check to *Issued*: Once the drawing/model file has been checked, and the checker deems it ready to be issued, then the transition can be made to *Issued.*

Issued to *Editable*: When a drawing/model file has been issued and a change needs to be made to that file, the drawing/model file can be transitioned to the *Editable* state. In this case, the Vault can invoke a revision bump to efficiently ensure the drawing/model file is revisioned appropriately, and in accordance with any procedures that may exist.

Revision Schemes

A Vault Category also has a Revision Scheme assigned to it. The revision schemes are then adhered to and cannot be cheated. The revisions are managed by the Vault and when used alongside Lifecycle transitions can provide an effortless method of tracking drawing/model files throughout the course of the design project.

Revision schemes can be defined and named however you want. Typical revision schemes are numeric, (0, 1, 2, 3, 4, 5……), and alpha, (A, B, C, D, E, F…..). The revision schemes can also be set to skip letters such as I, O, S, X.

There is no interaction day to day with the revision schemes, so it is a set and forget feature. The drawing/model file will take the next available revision number/letter for that file.