

Migrate to a Single Vault Project

Concept

One of the most important facets of a successful Autodesk® Vault implementation with Autodesk® Inventor® is the correct configuration and use of Inventor project files. There are many benefits to configuring your Vault for use as a single vault project. The single vault project workflow eliminates the complications of learning and managing multiple projects, simplifies file resolution by creating a more flexible environment, and promotes the re-use of design data rather than re-creation.

Single project file configuration provides:

- **Simplicity** - With a single project, you use the same project file for every design. You are no longer required to swap projects for different datasets and you benefit from a single common location for all of your data.
- **Reduced Resolution Failures** - Inventor can automatically search for any missing files throughout your entire data set. This search capability greatly reduces the number of times you need to manually locate missing files and is compatible with Vault, which provides tools to quickly search and manage a large central file set.
- **Increased Design Re-use** - Any data in the vault can be re-used in any assembly by using the Place From Vault command. With this method, you do not have to ever worry about adding a library path or copying a file from another project.

Depending on how you have structured your Vault and configured your projects, it is possible that you may encounter some file resolution errors, and some work may be required to repair broken Inventor links, but these initial obstacles are typically outweighed by the ongoing benefits offered by this workflow. Keeping this in mind, there are a couple of important steps to look at in order to leverage the single project functionality, starting with the creation of your new single project.

Singular Project Folder Structure

We will first look at a Vault structure where multiple projects (and multiple project files) are contained under a single folder called Designs.

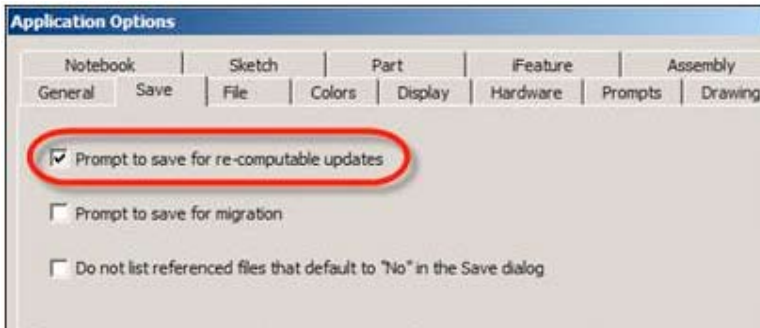
Prerequisites

Before proceeding with the procedure below, the customer should have installed:

- Autodesk Inventor 2009 SP1 or newer
- ADMS 2009 or newer
- Autodesk Vault 2009 or newer
- Autodesk Vault 2009 Property Editing and Inventor file dependencies hotfix - TS1088248

The customer should have also performed the following steps (in order of appearance):

- Each client workstation should open Autodesk Inventor and navigate to Tools>Application Options>Save tab to enable the “Prompt to save for re-computable updates” option.



- All files should be checked into Vault

Notes on TS1088248

<http://images.autodesk.com/adsk/files/ts1088248.zip>

This hotfix is designed to aid in the resolution of Inventor files modified via the following Vault operations:

- Copy Design
- Move file
- Move Folder
- Rename File
- Rename Folder
- Replace File

The fix applies to all file dependencies affected **after** the application of the hotfix. Files that have been affected by resolution errors prior to the installation of the hotfix will not be resolved and must be manually resolved.

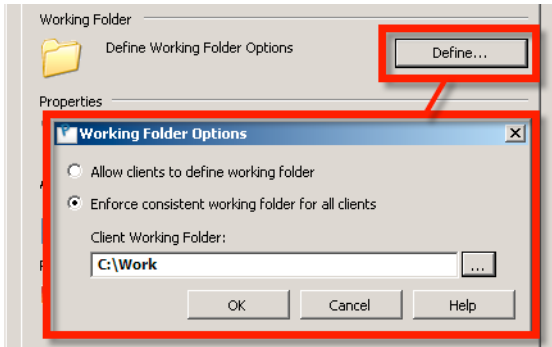
See the related article 'Hotfix - Assemblies open and prompt to resolve files' for a description on manually resolving files.

<http://usa.autodesk.com/adsk/servlet/ps/item?siteID=123112&id=11817081&linkID=9242018>

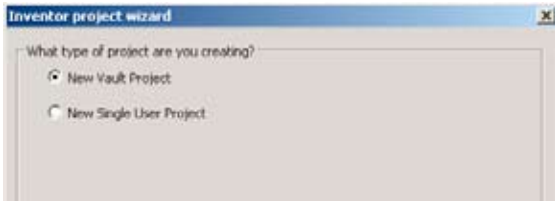
Create New Project File

In the following example, we map the top level folder (“\$”) to a local folder (“Work”). Ideally we should configure the working folder for all users which will simplify the Vault usage by creating a consistent local directory for everyone to work from.

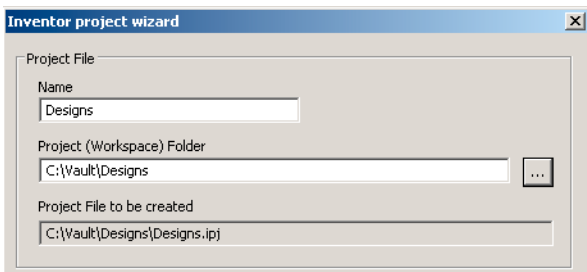
1. To set the working folder, select Administration -> Tools in the Vault browser. On the Files tab, click Define to launch the Working Folder Options dialog. Select Enforce consistent working folder for all clients and enter “C:\Work\” in the Client Working Folder field.



2. Go to Inventor and select File -> Projects. Create a New Vault Project from the Wizard.

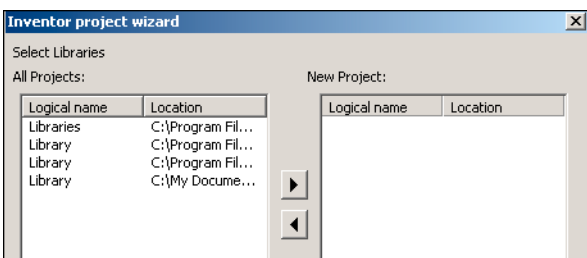


3. Click Next and enter “C:\Work\” in the Project (Workspace) Folder field.



The project file name “C:\Work\Designs.ipj” is displayed in the Project File to be created field.

4. Click Next and skip adding any libraries by clicking the Finish button.



- After the project has been created, highlight the new “Designs” project file and double-click it to set it as active.

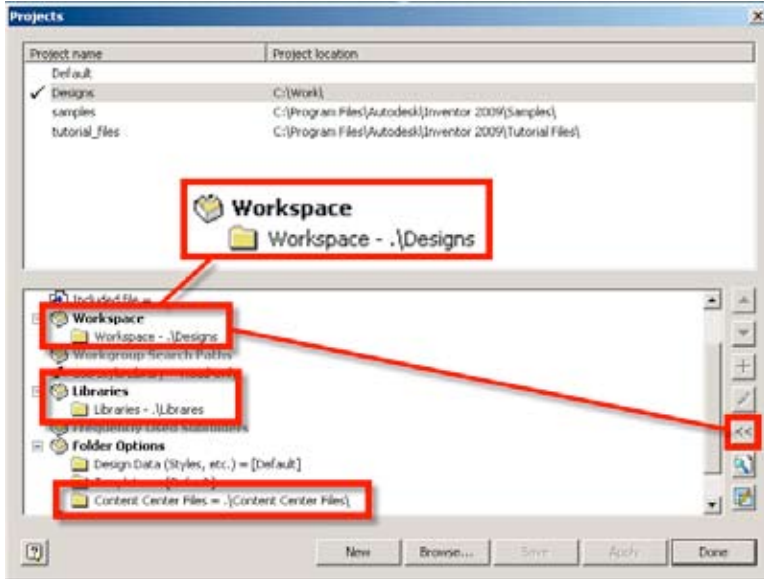
Now we must modify several folder paths.

- Workspace – Expand the workspace path details using the details button on the bottom right of the projects window. Highlight the workspace path “. ” and set this to the folder containing your design files (relative path) “. \Designs\”.
- Libraries – Select the libraries directory and add your library location as “C:\Work\Libraries\”.

NOTE: There are two ways in which your library may be set up – a single library folder under the Vault root with several sub-folders, or, conversely, there may be a number of library folders directly under the root directory of Vault. Both methods are acceptable with perhaps the first, a single library folder under “\$” proving the most flexible and simplest to manage in terms of moving and editing; as such, we will use that example in this document (\$/Libraries/). We will discuss library editing in the next section.

Content Center Files – Finally, expand the Folder Options node and change the Content Center Files location to “C\Work\Content Center Files\”. This location ensures that all users have a consistent content center store, complies with the enforced working folder setting, and provides better Vault performance for these library parts.

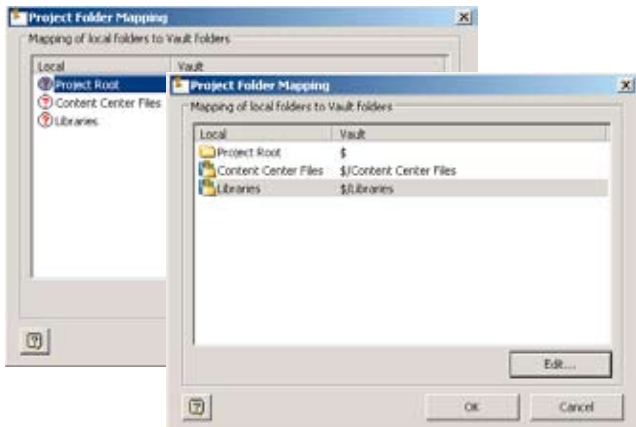
- You now need to set the project file as current and map to Vault workspaces.



NOTE: If you are not already logged into Vault through the Inventor add-in, go to Files > Autodesk Data Management Server > Log In and enter your user name and password.

Go to Files > Vault > Map Folders and select the Workspace as “\$/Work”. Map the libraries folder to “\$/Libraries” and map the Content Center Files as “\$/Content Center Files”. Click Save and Done.

Tip: To avoid issues with people changing the project file details, log into Vault as Administrator and check out the project file so no one else can check out or modify your project file.



NOTE: You must include ALL current top level folders in your project to avoid resolution errors during the project clean up, even if only temporarily by adding them as library paths for restructuring purposes. They will be removed again after the restructure is complete.

Remove Redundant Project Files

With the new single project in place, it is best to remove the now redundant multiple projects living in the workspace sub-folders.

Log in as the administrator and perform a basic search command:

1. Search for *.ipj
2. Highlight results
3. Delete
4. Do NOT remove the new project you have created

You should now have a single project managing all Vault data.

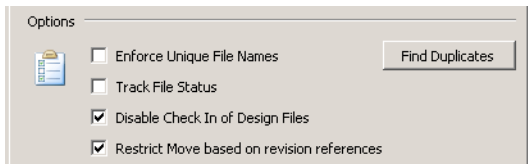
Go to user's workstations and get the latest project file. Set the new project as active and open a sample assembly to test file resolution.

If you wish to test all file resolutions, move the entire vault to a local workspace and scan the entire dataset with Autodesk® Autoloader to check file resolution. See more Autoloader information on loading a large dataset at http://mfgcommunity.autodesk.com/blogs/blog/view/5/Running_Multiple_instances/.

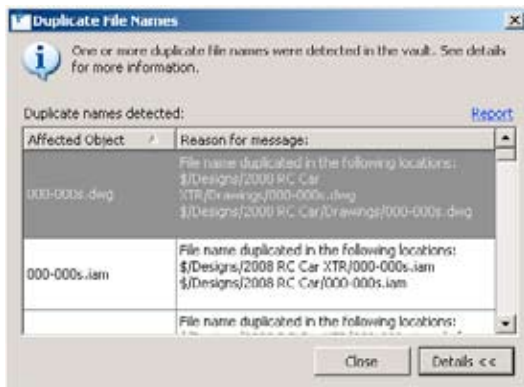
Find Duplicates Inside an Existing Vault

Working inside of Inventor, there is an option to enforce unique file names per project. Vault also offers the ability to enforce unique file names across an entire vault. The disadvantage of using Inventor to enforce unique file names is that you may have a number of individual file names in each project which are actually common across the vault. This redundant naming can cause issues with file resolution once you combine everything into one project, so it's a good idea to remove these duplicates. Inventor will, by design, resolve and open the first file with the correct name and not continue to find subsequent versions which may or may not be the intended component.

To get a list of duplicates, select Tools > Administration and then click Find Duplicates on the Files tab.



The Find Duplicates command produces a list of duplicates from which you can now create a report and work through to rename, replace, or remove files using the relevant Vault tools.



With the report in hand, you will need to check each file's status and take the corresponding action.

NOTE: To help with the resolution process, it may be useful to search for file duplicates using file name, date created, date modified, and file size. True duplicate files will have an identical file size in addition to the file name.

Rename – In a situation where two fundamentally different files exist with one name you will need to give one of these files a different name. Using the rename wizard within Vault, you can be confident that the file links will be correctly repaired and can track this name change.

NOTE: Where possible, renaming the file with the least number of file dependencies is preferable.

Replace – If you have reused a file by simply copying it into a new project and reusing it with the same name, you now have to consolidate this back to one single file. The first step in doing this is to launch the Replace wizard, with which you can select the secondary copy of the file and replace it with the original file in each of its use cases. With only one file now being used (the second file should now have no Where Used links), you can remove the second copy.

Remove – Using the Delete command, you can remove any duplicate files no longer required because they have been replaced or are otherwise unused in the vault. Deleting a file will remove the duplicate and all of its versions, and should only be done when you are confident the file is not in use or unique.

Multiple Project Folder Structure

There is also a possibility that the vault has been structured in such a way that there is a number of Inventor project folders (workspaces) created in the root of your Vault. These project folders will need to be reconfigured in order for a single project to work. There are two ways in which you can reconfigure project folders for a single project.

Option 1: Re-Loading Data

You can reorganize your data into a single project folder by simply reloading your data into the vault.

With this method, you are required to retrieve all your files from the vault and place them in a local working folder (C:\Work\Designs\). Then, by using Autoloader, you must reload these files into a new vault created in the Data Management Console.

See the Autoloader whitepaper for information on loading a large dataset to your Vault. This method will allow you to set a single project file as described in the previous sections, but will remove all version history that would not be appropriate for use in a Autodesk® Vault Manufacturing (previously known as Autodesk® Productstream®) environment.

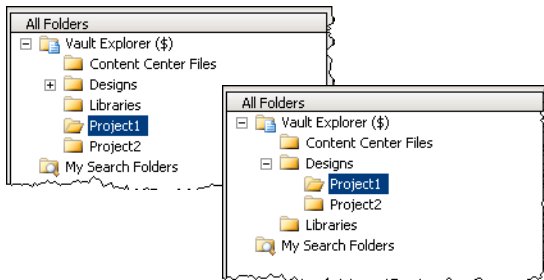
If version history is considered too important to lose, you may have to look at a second option.

Option 2: Moving Data

This option avoids reloading data but **may cause future issues where large file movement in the vault can be problematic. Please review the following section on moving files before you attempt this.**

When moving data, you must create the new folders within Vault “\$/Designs”, “\$/Libraries” and “\$/Content Center Files”. Create the project as described above.

You can then begin to drag and drop each of your project folders to the “Designs” folder, creating the required structure.



Going Forward

To ensure optimum Vault performance going forward:

- Ensure that the Unique File Names flag remains in use so no new duplicates are added
- Ensure all staff understand that one project file is used from this point forward
- Ensure Administrator assigned working folder is in use for all designers
- File move is not frequently used between folders, in particular libraries

Moving Files

By having a project in the \$ folder, you are now able to move files between libraries, or to and from the working folders to any other location in the vault.

Moving files is not ideal but may be unavoidable. Moving files can reduce Vault performance and file retrieval; and it can also cause resolution issues if your project is not set correctly.

The first thing to consider with moving files is the order in which it is done. If you are moving a large number of files, including drawings (IDWs or DWGs), presentation files (IPNs), assemblies (IAMs) and parts (IPTs), you should move them in the following order:

1. Drawings
2. Presentation Files
3. Assemblies
4. Parts

This order will reduce the amount of re-referencing required and reduce resolution failure.

Another consideration is the project file. We have discussed in previous sections how to set up a project in the top level folder (\$) and remove any subsequent projects to ensure the new project is used for all future projects and clean up.

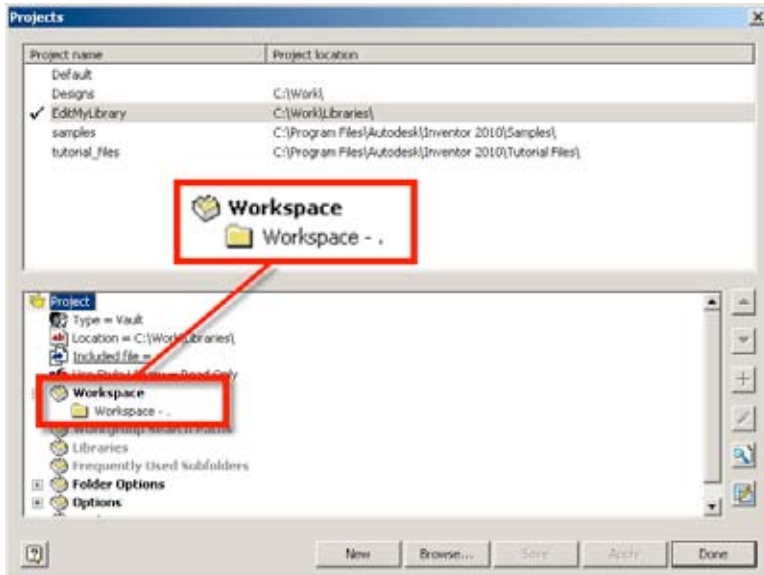
Editing Library Parts

From time to time, users will still need to modify library parts involving either a physical change, in which case a file will need to be modified in the CAD application; or a property edit, such as the file name, part number, or a file location. For each of these edits, there are different considerations to ensure that the file is edited correctly.

Edit File

In order to modify an Inventor file listed as a library file, a library edit project is required. Ideally this project should be temporary, and the edits should be carried out either with full knowledge of the design team or, if possible, outside of working hours. The procedure to create this project is:

1. Create new project called "EditMyLibrary.ipj", leaving the default workspace "."
2. Save the library project to "C:\Work\Libraries" ("C:\Work\Libraries\EditMyLibrary.ipj")
3. Do not add any library locations. Click OK to continue.



NOTE: Ideally, a single project to manage all of the libraries under a single location is preferable but in the case of multiple library folders at the top level, several projects may be required. These should not be used by end users for **any purpose other than modifying library parts**.

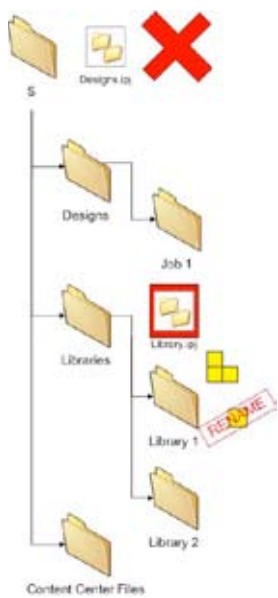
4. Map the workspace in your Vault and add this project file to the vault.
5. Delete the library edit project file when completed. Do not retain it in the vault.

NOTE: It may be worthwhile to keep a copy of the library project in a different state, perhaps in a zip file of the library workspace so when needed, users can get the latest version, unzip the project file, and reconfigure the files for re-use.

The reason for deleting or storing the library project with a zip extension is discussed in the following section.

Rename and Move Library Files

There are specific issues associated with Rename and Move that must be looked at. When consolidating a single project vault, many of these errors will be eliminated.

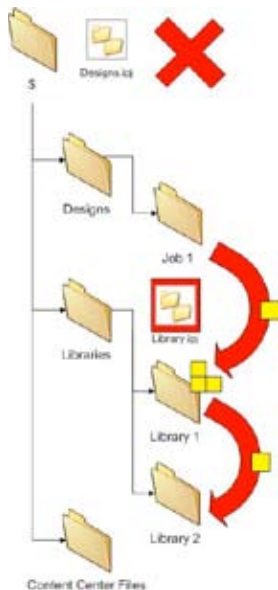
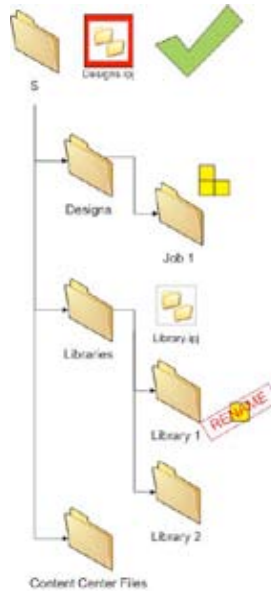


Example 1 – Rename a file in the Library

If you rename a file in folder “Library 1” which has a parent assembly in that same folder and a project designed for editing library components (e.g., “Library.ipj”), then this project will be used to resolve the reference rather than “Designs.ipj”, which is the correct top level project.

In comparison, a library file with parents that reside outside of the Library in a folder under the workspace will use the “Designs.ipj” to resolve the reference to these parents, and will always resolve correctly on open in this project.

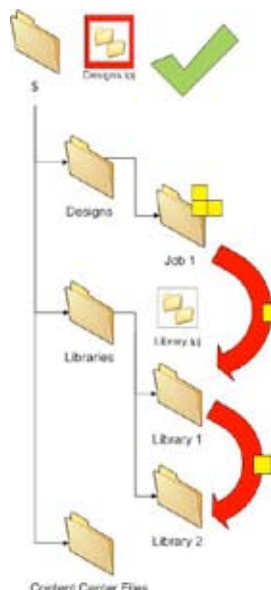
Generally file resolution errors in Inventor still should be overcome using the single master project but, ideally, the first situation will be avoided by removing the library editing project when it is not required.



Example 2 – Moving Files into and out of the library

If you were to move a file into or within the library folder with a parent also located in the library then the “Library.ipj” would be used to resolve the files in their new location rather than the Designs.ipj, which would typically be used to open the parents.

If this file’s parent resides within the Workspace folder path (or if no Library.ipj exists), then any move of this library file will utilize the “Designs.ipj” project file, ensuring that there are no resolution errors in the future.

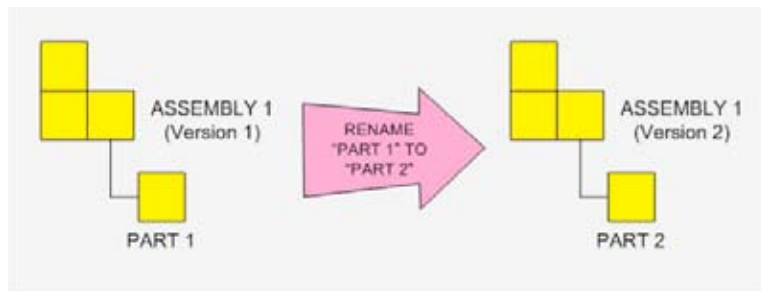


How to Repair Bad References

When Vault operations affect child-parent relationships, a new parent file version is created for the affected children.

For example, renaming Part 1 used in Assembly 1 to "Part 2":

- Creates Version 2 of Part 1, now called Part 2
- Creates Version 2 of Assembly 1 which references Part 2



If the wrong project was used to resolve the file renaming, then when Inventor is opened, Version 2 of Assembly 1 will not automatically find Part 2, and the user is forced to manually resolve this.

By way of getting around this issue, Hotfix TS1088248 now provides details in the comments field of Part 2 as to the project used to complete the operation.

Designs							
File Name	Version	Revision	State	Created By	Checked In	Comment	
Part2.ipt	2			Administrator	16/12/2008 4:46...	Rename (\$/Designs.ipj)	
Assembly1.iam	2			Administrator	16/12/2008 4:46...	Rename	

Designs							
File Name	Version	Revision	State	Created By	Checked In	Comment	
Part1.ipt	1			Administrator	16/12/2008 4:40...	Add	
Assembly1.iam	1			Administrator	16/12/2008 4:41...	Add	

In a multi-project vault, this comment would allow you to locate the project used for file resolution and resolve the files correctly. Once we have a single vault project however, this should resolve all files correctly regardless of location. In this case, we can use the comment information to locate and remove the unwanted project, most likely located in one of the vault sub-folders, and simply continue to open the file using the single vault project file.

Conclusion

Despite the extra diligence required to ensure existing assemblies and drawings open correctly under the new master project, these procedures will help to alleviate your current resolution errors. By revising the basics of your Inventor project usage and interaction with Autodesk Vault based on the procedures and suggestions in this document, your design team will avoid many ongoing issues associated with file resolution, simplify file management in Vault and the day to day use of Inventor, and facilitate greater design re-use.

Learn More

The Vault family of products helps design, engineering, and manufacturing workgroups manage the Digital Prototyping process. Users can reduce time organizing files, avoid costly mistakes, and more efficiently release and revise designs. The revision process can be quickly deployed or tailored to unique requirements. For more information about the complete Vault family of products, go to www.autodesk.com/vaultfamily or contact an authorized Autodesk Reseller at www.autodesk.com/reseller.