Vault Features You Aren't Using but Need to Be: The Sequel

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PL7015-P   At Autodesk University 2013 you learned that right under your fingertips, already installed on your machines, lies Vault software functionality that can have a drastic impact on the way you work (**view the original course here**). We taught you how to increase productivity, reduce employee stress, and maximize output by learning about functionality that exists in our products today. We scratched the surface, but there is so much more to explore. In the sequel we'll uncover functionality that we didn't have time to cover in the first class, and we'll dive into more of the functionality of Vault Workgroup software and Vault Professional software. This lecture will feature real-world demonstrations of the content. It is time to use the Vault software product to its full potential.

Learning Objectives

At the end of this class, you will be able to:

- Learn how to use a broader set of Vault software functionality that is just waiting to be explored

- Learn how to increase productivity by utilizing powerful Vault software functionality that does the work for you

- Learn how to utilize Vault software functionality that lies undiscovered in the Vault software add-ins

- Learn how to use real-world examples and course documentation to educate your team

About the Speaker

Adam is a Sr. User Experience Designer and has been with Autodesk for over 12 years. Years of experience with Autodesk's data management software has allowed Adam a significant role in improving the user's experience and product quality along the way. Each year, educating and interacting directly with the user community at Autodesk University has been a top priority for Adam.

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Opening Statement

There is a good chance that you are not utilizing the entire set of Vault functionality that is available. It is not for lack of knowledge or expertise. It is most likely because the functionality is not as obvious as it *should* be.
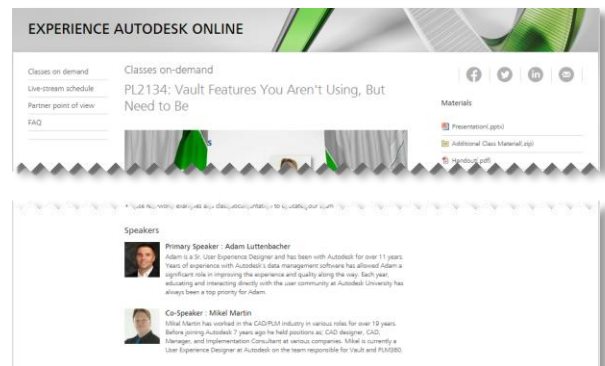
As a user experience (UX) designer, it is my job to make features discoverable, functional, and usable. The reason I am teaching this course at Autodesk University is because I feel that many users have not hit the "sweet spot" of productivity and efficiency with the Autodesk Vault products.

I want you to take what you have learned from this course to find ways that you can incorporate it into your Vault workflows. By doing so, you will find that your data is a lot easier to get to and that it takes a LOT less time to do what you're already doing today.

Part I - PL2134: Vault Features You Aren't Using, but Need to Be

Before we go into the content of this course, I'd like to highlight part I of this series. This course was well received and we heard a lot of great feedback from it. You can view the recorded video of this class as well as get the course documentation [here](#).

Keep in mind that there is a plenty of content in that class that will not be discussed here so you might want to go check it out.

Administration

The first section of this class is called Administration, but will **not** focus on the role of an administrator. Instead, it will focus on the power that some very simple administrative settings have on a team of Vault users

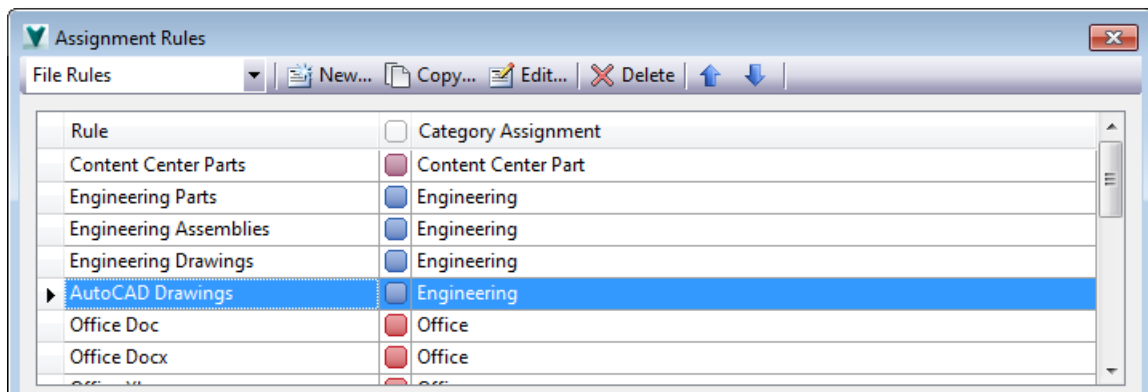**Document Management**

Category Assignment Rules

Categories

Autodesk Vault provides a collection of very powerful tools that can all be used and configured separately. As an example, there is a lifecycle engine, property management, and revision schemes that can be used on files and items. Categories coordinate the use of all of these systems.

More importantly, the administrator can set up a variety of these configurations. This is often necessary because files of **different types or properties** require different combinations of settings. This is done by creating categories and picking the configuration for each one.

Assignment Rules

With categories created and configured properly, the only thing left to do is to depend on all of your teammates to assign them to files properly. Unfortunately, this doesn't always happen as files are added to the Vault.
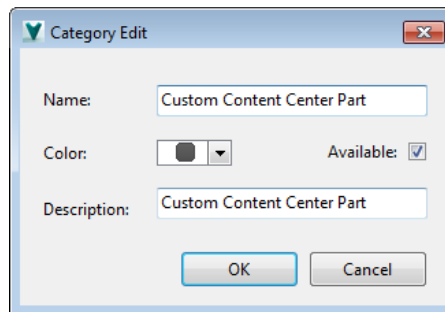
Assignement rules can be created and used to automatically assign categories to files as they are added to the Vault.
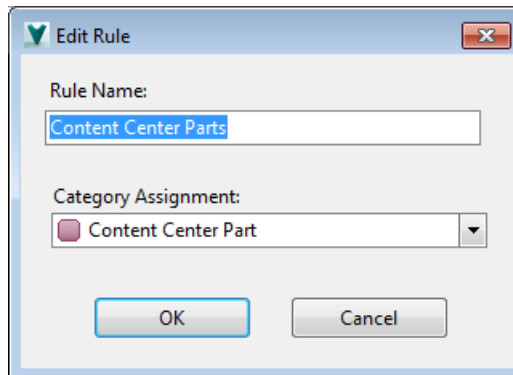

Why is this useful? Manually assigning categories to objects in the Vault is very time consuming, but more importantly, is very error prone. Once a category is added to a file, lifecycle states, revisions, and properties are added to the file.

Follow these steps to configure the automatic assignment of categories using rules. In this example, you will create a rule for assigning all Inventor content center components to a category specifically designed for them:

1. Navigate to Tools>Administration>Vault Settings>Behaviors tab.
2. Choose *Categories* and create a category by giving it a name, color, and description.

3. For this category, add a few properties that would be interesting for these types of files.
4. From the Behaviors tab, choose *Rules*.
5. Create a new rule, give it a name, and assign it to the category you created.

6. Using the Rule Condition Builder, configure your rule to assign to the appropriate files. For this example, choose the following options.
   a. Property = CC Part
   b. Condition = True

Examples of some other rules:

- A rule for Microsoft Office files
  - Rule name = *MS Word files*
  - Property = File Name
  - Condition = Contains
  - Value = .docx
  - Create a category that uses a very simple lifecycle since office files may not require many states and restrictions.
  - Replicate this rule for all other MS Office file types.

- A rule for Autodesk Inventor files
    - Rule name = *Inventor part files*
    - Property = File name
    - Create a category that uses a lifecycle that is appropriate for design files.
    - There may be properties that are specifically needed for these file types.
    - Replicate this rule for all other Inventor file types.
    - Condition = Contains
    - Value = .ipt

Lifecycles on Folders

Lifecycles

The Autodesk Vault Lifecycle engine gives you the ability to drive the lifecycle of almost all Vault objects. But that likely sounds a lot more limited than it really is. It also gives you the ability to:

- Apply security overrides on Vault objects
- Configure which employees can change the states of objects
- Control the criterial for change the state of Vault objects
- Control what versions of files get purged
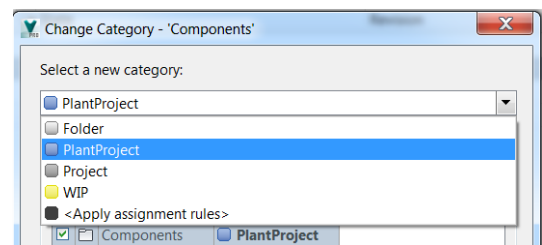
Lifecycles on Folders

Prior to the addition of this functionality, a Vault folder was just a folder. It was a container of objects. With the ability to have lifecycles on folders, a Vault folder can be a project.

Why is this useful?

- When lifecycles are applied to the Vault folders, the objects in that folder are now controlled by the security override that is associated to that folder.
- Give your project a state and transition through the lifecycle.
- Project state transition criteria can be controlled by the objects of the project.

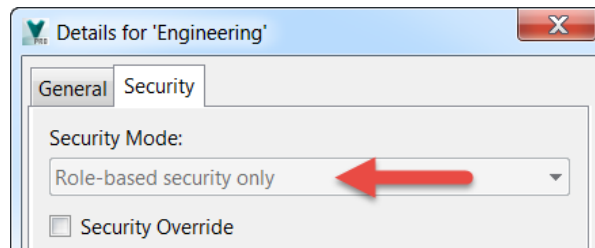Follow these steps to assign a lifecycle to a folder:

1. Select a Vault folder that you want to apply a lifecycle to.
2. Select the Change Category command.
3. Choose the desired category from the pick list – located at the top of the dialog.
4. Choose Ok.

Now that the category is applied to the folder, you'll notice that the color of the folder reflects the color of the category. In addition, the default lifecycle associated with the category is now associated with the folder. If your grid is configured properly, you will also notice that the folder has a state.
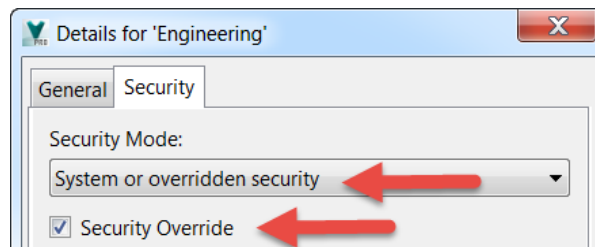
Security of the folder

The security of the folder can be configured manually or by lifecycle states. When there is no lifecycle assigned to the folder, the only security on the folder is role-based security. In this image, notice the *Security Mode* indicates that the folder is using *Role-based security only.*
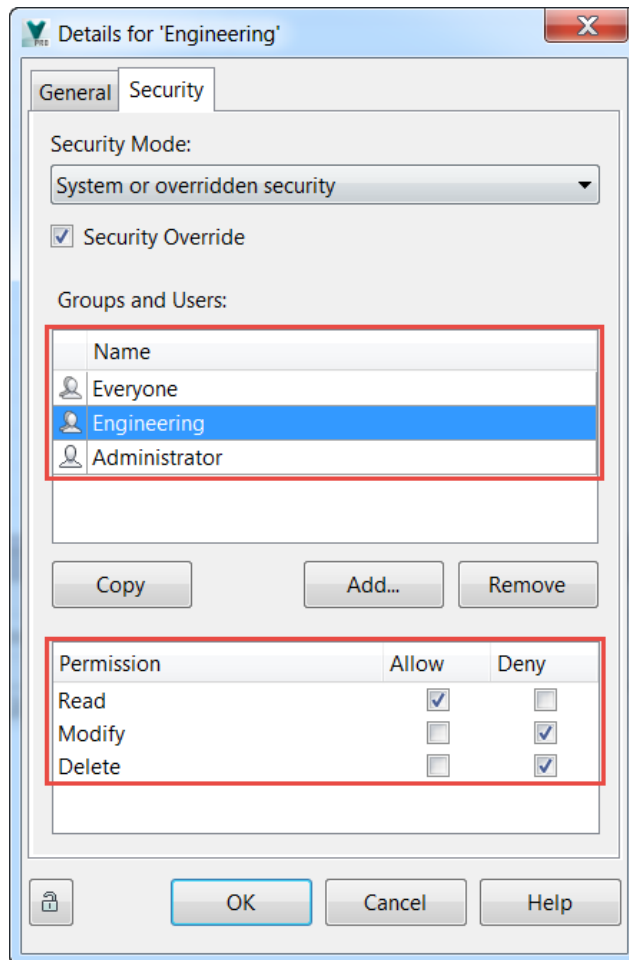

Role-based security means that access to the folder is granted with the user roles that are configured by the administrator.

With the category assigned to the folder, the lifecycle security assigned to the lifecycle states is now applied to the folder as an override. In this image, notice the *Security Mode* indicates that the folder is using *System or overridden security*.

System or overridden security means that the security configured on the lifecycle state is now applied to the folder as an override. This image shows the ACL (access control list) for the folder now that state security is applied.
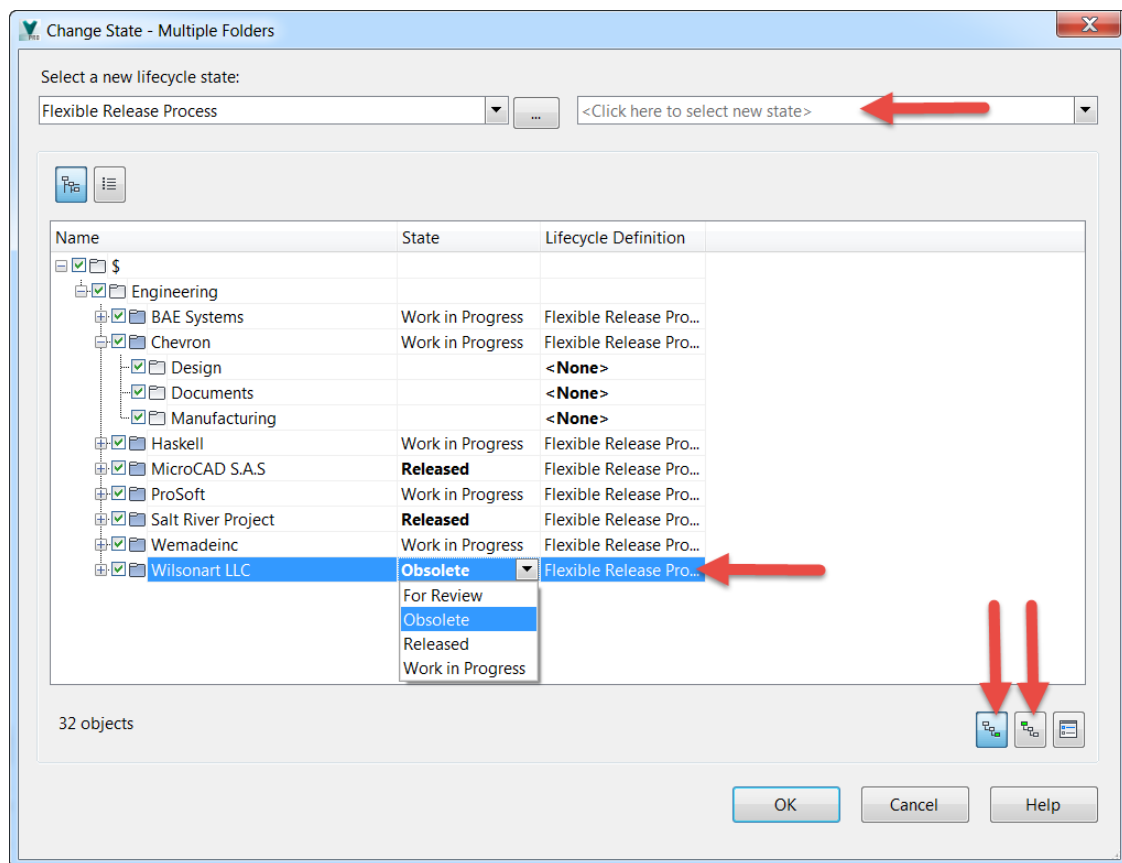

Security of the files within a folder

With the security override applied to the folder, the files now inherit the overridden security. As a rule, the files inherit the same security as the folder, but when an override is applied, the override is now inherited by the files.

NOTE: a file can still have a security override of its own. So, if a file has been associated to a lifecycle state, then the security for that state is applied as an override to it. That means that the folder override will not affect the file override.

Lifecycle State on Folder

Lifecycles states on Vault folders allow you to transform Vault folders into projects, report the state of a project, and control the state of project transitions based on its contents. With the category assigned to the folder, follow these steps to change the state of a folder:

1. Select the folder that you want to change the state of.
2. Right-click on the folder and choose Change State.
3. In the Change State dialog, notice there are options available that allow you include parent or child folders.
4. Choose options to include related folders as desired.
5. If you want to apply the same state to all selected folders, choose the desired state from the pick list at the top of the dialog.
6. If you want to apply different states to individual folders, then choose the state for each folder by picking the state from the pick list in each line.

NOTE: When choosing more than one folder, there can be more than one lifecycle definition that can apply to the selected folder set. In this scenario, you can choose the states for each lifecycle definition by using the lifecycle pick list at the top-left of the dialog.
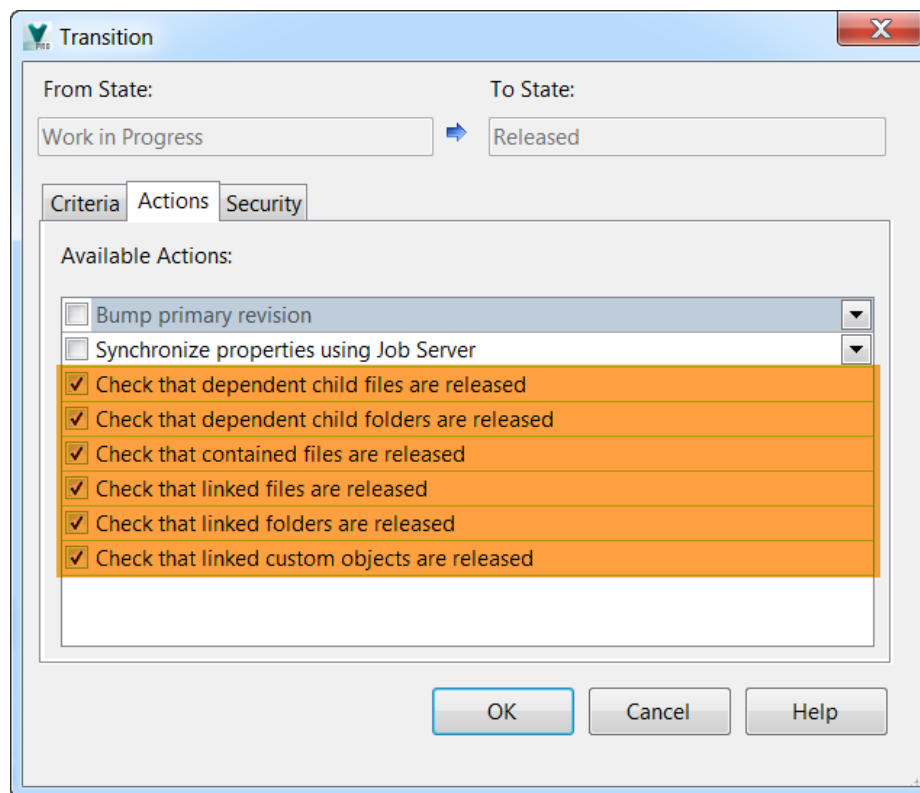
Control Lifecycle State Transition of Folder Contents

If the status of a project is being tracked by the lifecycle state, the state of the contents is typically used to determine whether the project state should be changed.

Example: A customer project should not be changed to a released state until all of the files within the folder are in a released state.

For the manufacturing industry, you likely release products. The administrator can restrict the releasing of assemblies until the related components are released. The same can be accomplished by folders. Follow these steps to configure state transition criteria for folders:

1. Navigate to the *Lifecycle Definitions* dialog in *Vault Settings*.
2. Edit the desired lifecycle.
3. Choose a state that you want to choose transition from.
4. Choose the *Transitions* tab in the right side of the dialog.
5. Choose *Edit*.
6. On the Actions tab, notice there are available actions. These are actions that will run when the user attempts to make a transition between states. Choose any or all of the options highlighted below.

Why is this useful?

- The *Check that contained files are released* setting allows you to make sure that all folder (or project) contents are released before the folder (or project) is released.
- This is an extension of the assembly to component restriction.

Properties

If Vault is anything, it is about 3 things:

- File security
- Version control
- Property management

Several years ago (2011 release), we rebuilt the entire property management tool in Vault. It's likely that most users are only scratching the surface of property management capabilities.

I'm going to show you a few things that are really easy to do and can have a large impact on how you track and manage properties.

Property Mapping

Property mapping will form a relationship between the file properties and Vault properties.

Why is this useful?

- When files are added to the Vault, the values are mapped to Vault properties and can be used for searching, sorting, and managing files.
- File property values can be managed from the Vault – no need to open the file.
- Different file properties can be mapped to one or many Vault properties.

Initial Value Configuration

While the standard property mappings cover most of the workflows for reading and writing property values between your Vault and files, there are a few circumstances that require some unique exceptions:

- You have legacy files that use legacy property values that are not used anymore.
    - If they exist, read them in and map them to the new property that is being used.
    - That in-use property will write the new property to the file.
- There are particular properties that are only read in once and used to be written out to files.

There are 2 parts to these particular feature. They are Initial Value and Initial Value Mapping.

Initial Value

The initial value is a way to provide a default value for properties when there is no property value to read in from the file. For example, if a property value for "Vendor" doesn't exist on a file, then the default value should insert "No vendor" so that the user knows there was no property.

Follow these steps to configure the initial property default value:

1. In the Vault Settings dialog, choose Properties from the Behaviors tab to navigate to the <property dialog>.

2. Create or edit a UDP (User Defined Property) that you want to read the file property into.
    a. For example, edit the *Company* UDP.
3. While in edit mode, select the *Value* field in the *Initial Mapping* row.

4. Enter the default value that you want to be added to the property field if it is empty.

Initial Value Read Mapping

Instead of configuring an initial value, the initial value read mapping allows you to read a property value in from the file to the Vault. The rules are exactly the same in that it will only be used if there is no other mapping being honored for that property. But instead of inserting a predefined value, the value of a file property can be read in instead.

Follow these steps to configure the initial property mapped value:

In order to establish a mapping, you have to navigate to a file and "mine" it. To mine a file means to pick a file and pull a property from it. The property that you choose will be used to establish the relationship going forward.

1. In the Vault Settings dialog, choose "Navigate to the <property dialog>
2. Create or edit a UDP (User Defined Property) that you want to read the file property into.
    a. For example, edit the Part Number. The file property that you want to map in might be *Part Num*.
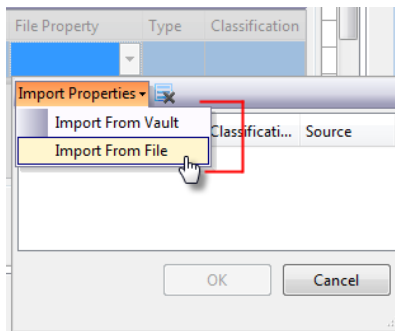3. While in edit mode, select the *Value* field in the *Initial Mapping* row.

4. Instead of entering a default property value, click in the blank row under the *Entity* column.
5. Choose *File* (the only option).
6. Choose a Provider. This will filter the types of files based on their provider type.

7. Once you have selected the provider type, choose the cell under *File Property.*
8. A box will appear with an Import Properties button at the top.
9. Choose *Import Properties* button.
10. When you choose this button, you are presented with 2 options:
    a. Import form Vault – browse the Vault for a file.
    b. Import from File – browse your file system for a file.

11. Select a file from the browse dialog.
12. Once the file is chosen, the file's properties will be listed.
13. Choose a property from the list and choose *OK*.

Your initial mapping is now configured. From now on, if there are no relevant mappings for that UPD on a file, then the initial mapping will be used.

Note: the initial value mapping will only be used if the following conditions are met:

- If the mapped file property doesn't exist on the file, use this initial mapping.
  - A standard mapping doesn't exist.
  - The property that is configured in the standard mapping does not exist on the file.
- Initial mappings only occur on adding file. Never again.
- If an initial value is set on a regular read mapping, that read mapping has higher priority and will overwrite the initial value.
- The only case in which an initial value won't be overwritten by a read mapping is if the value it maps to is blank.

Mapping Priority
When mapping properties, Autodesk Vault allows you to configure multiple property mappings to one UDP (User Defined Property)
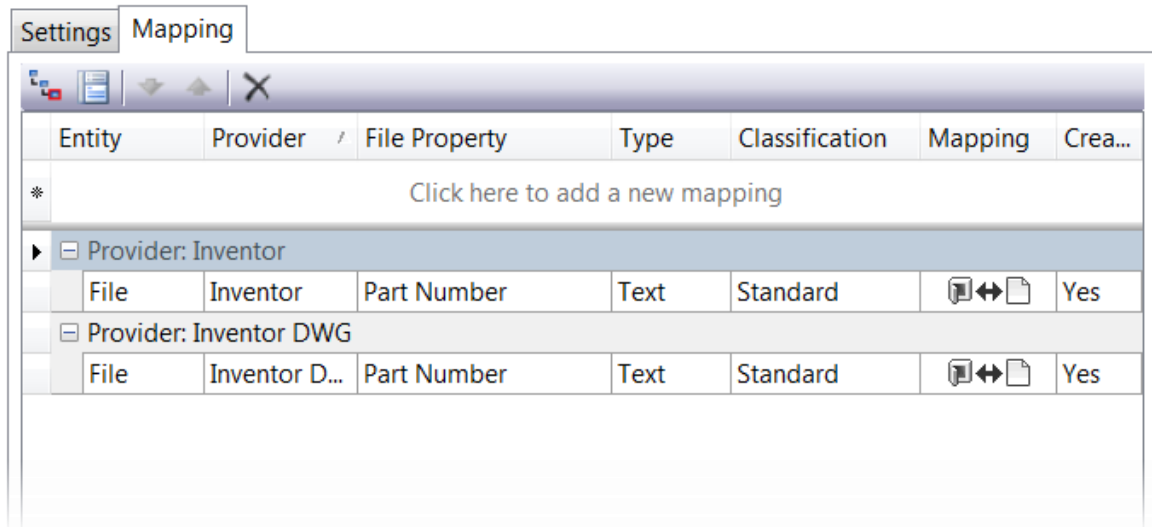
Why is this useful?

- It is common to have more than 1 file property that mean the same thing.
- You can configure Autodesk Vault to bring in both of those properties to one UDP.
- Autodesk Vault allows you to set a priority order to the mappings. This way you can choose which file property value "wins".

Follow these steps to configure multiple property mappings and configure priority:
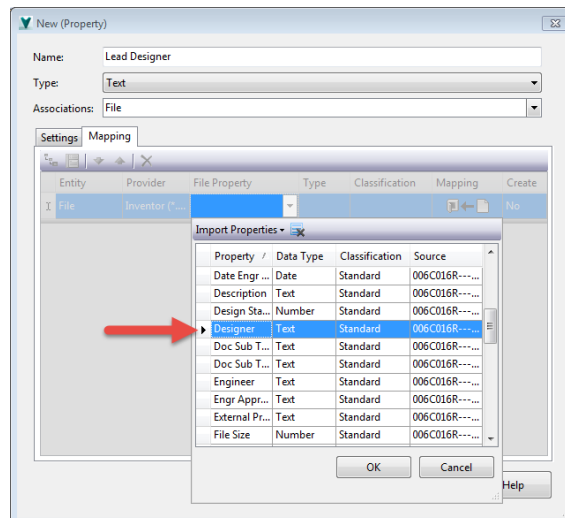
1. Navigate to the *Property Definitions* dialog in *Vault Settings*.
2. Choose a property that you want to configure mappings for and select *Edit*.

   Note: For learning purposes, it is recommended to start with a UDP that has no current mappings.
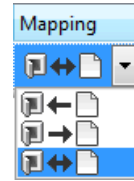
3. Select the *Mapping* tab from the bottom half of the dialog.

4. In the first row, choose an Entity in the first column. This will filter the types of Vault objects down to either files or items.
5. Once chosen, choose a *Provider* from the pick list of options. This will filter the options down to particular file provider types.
6. Once you have selected the provider type, choose the cell under *File Property.*
7. A box will appear with an Import Properties button at the top.
8. Choose *Import Properties* button.
9. When you choose this button, you are presented with 2 options:
    a. Import form Vault – browse the Vault for a file.
    b. Import from File – browse your file system for a file.
10. Once the file is chosen, its properties will be listed.

11. Choose a property from the list and choose *OK.*
12. Choose the Mapping direction that you prefer.
    a. Write – Properties will be written from the Vault to the file only. No reading in.
    b. Read – Properties will be read in from the file to Vault only. No writing to the file.
    c. Read/Write – Properties will be read in from the file to Vault on add or check in. In addition, the Vault properties will be written to the files on check out or download.
13. Workflow for ordering them in the dialog.

Change Revision by Mapped Value

Autodesk Vault is excellent for managing document versions, lifecycles, as well as revisions. Custom revision schemes allow for tighter integration with your company's document revisions.
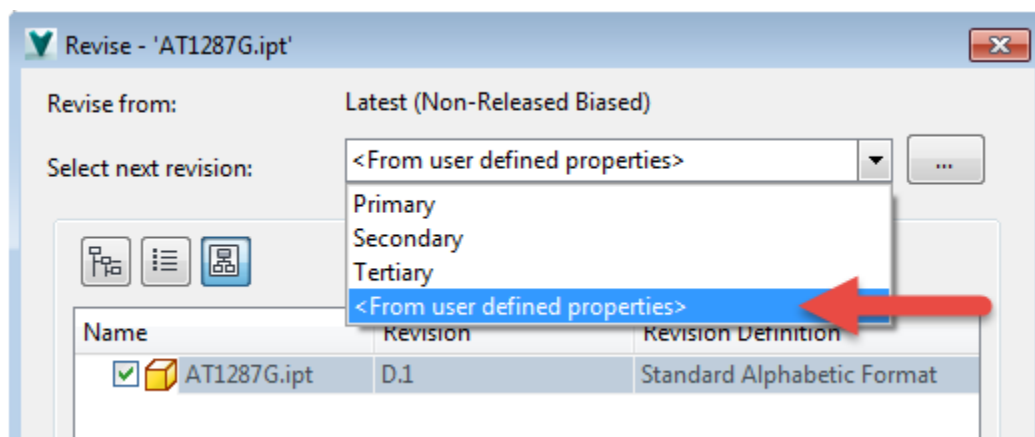
What if you want the revision of the document to drive the initial revision value? You can do that by creating a property mapping from the file revision property to the Vault revision property.
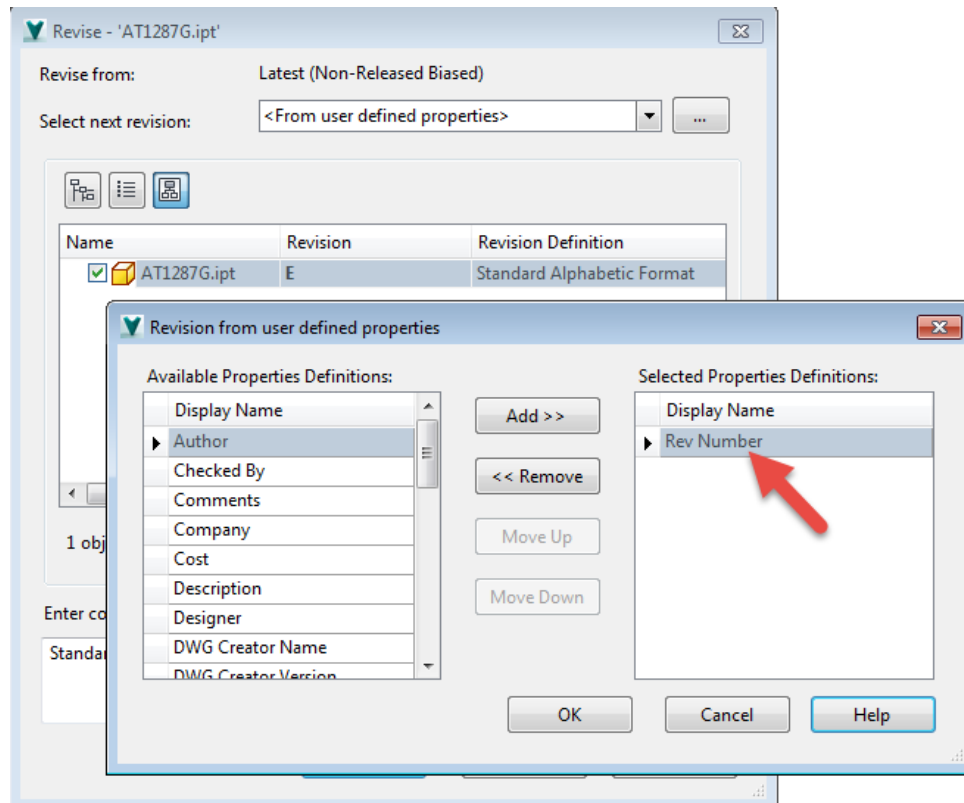
Why is this useful?

- Bulk load some data and the revisions are all set to the beginning of the revision schemes.
- The revision of the file is not the same as the first value of the revision scheme.
- File property can be used in the title block of your drawings

Follow these steps to change revision to UDP value:

1. Select the file or files that you want to set the revision of.
2. Choose *Change Revision* from the *Actions* menu.
3. From the *Select next revision:* field, choose the *<From user defined properties>* option.

4. Choose a UDP from *Revision from user defined properties* dialog and add it to the *Selected properties definitions* section.
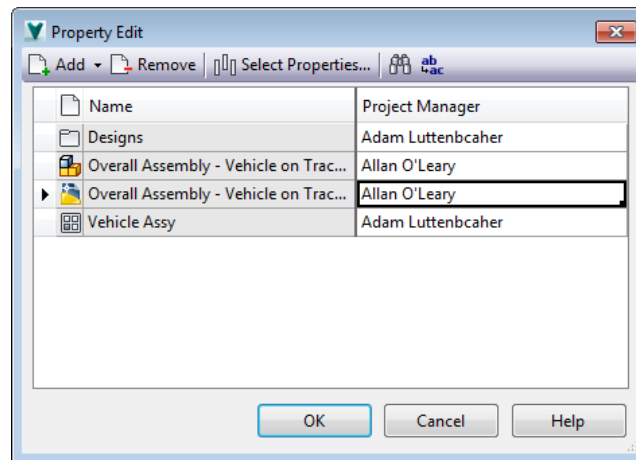

For more on this: Vault Help

Edit Properties

While Autodesk Vault manages properties very well, one thing users have struggled with is the ability modify properties on more than one Vault object at a time. Several releases ago, the ability to modify properties on more than one object at a time was added.

Why is this useful?

- This tip will be useful because edit properties has been made more accessible and expanded to allow the user to edit multiple properties on multiple entity types.

Multiple Entity Types

The edit properties dialog has the ability to edit properties on more than 1 entity type (*entity = files, folder, items, change orders, and custom objects*). Why is this useful? This is useful for a few reasons.

- Until this feature, item property editing had to be done 1 at a time.
- Users can edit properties of folders and files (for example) at the same time.

Steps:
1. Multi-select a file and a folder.
2. Choose the edit properties command (or Ctrl+E).
3. In the Property edit dialog, you can choose to show properties from any entity type.
   Hint: Some properties apply to more than 1 entity type.
4. Choose 'OK'.
   Note: You can edit items, change orders, and custom objects in this workflow too.

Access from Vertical Grid

The vertical property grid gives you quick access to the metadata of selected objects. When editing properties, it takes a few steps to customize the Property Edit dialog to display only the properties you're interested in.

1. Choose several files in the current view.
2. In the vertical property grid, choose 1 or more properties.
3. Choose the 'Edit Selected Properties' button from the grid header.
   Result: Property Edit dialog populates with the selected file(s) loaded. More importantly, the properties that you chose are pre-loaded into the grid for you.
4. Modify the properties and choose the 'OK' button.

Commands Based on Properties

There many great benefits to managing file properties. This section will highlight the functionality that takes advantage of the properties and instruct you on how to configure your Vault to do the same.

Category Assignment

As noted in the previous section, categories manage the lifecycle, properties, and revision schemes of files. Assigning them to Vault objects can be automated by use of assignment rules.

Check the *Category Assignment Rules* section of this document for more on this.

State transitions

The lifecycle definition editor allows the administrator to configure transition criteria based on property values. Transition criteria means that property values must meet certain defined criteria in order for the state to transition to the next.

Examples of transition criteria:

- Value is not blank – As a rule, your company may want to make sure that a value of a property is filled in before the transition is made.
- Is there a change order? – Restrict the release of components based on whether they are controlled by change orders.
- Property compliance – If properties are not compliant, do not proceed.

Copy Design Behaviors

The copy design feature released in 2015 R2 allows you to configure behavior rules based on the file type or other properties (similar to the category assignment rules).
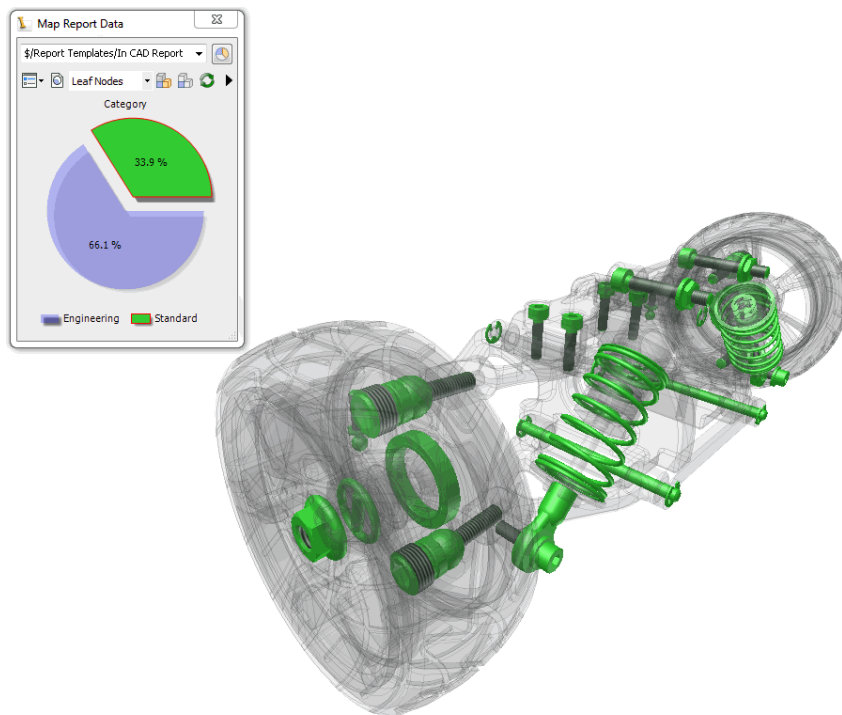
Consumers

Like the Administration section, this section is not just useful for consumers or "end-users" of the product. Instead, this content will shine light on the small and discrete commands that are simply not well known.

Add-Ins

Data Mapping

Date mapping gives the user a heads-up display of Vault property information by color-coding the assembly components. You can take it as step further by isolating specific values visually in the model

Why is this useful? Use this feature to powerful things like highlight all components based on category or controlled by a change order.

Follow these steps to use the data mapping feature in Inventor:

1. Open an assembly in Inventor.
2. Log into the Vault add-in.
3. Select the Vault ribbon (toolbar).
4. Choosing Data Mapping button.
5. From the pick list, choose to browse to a report template.
6. Choose a report template
   Note: templates are shipped and installed on your machine.
7. With a template chosen, select 'Generate Report'.
   Result: report/graph is shown in dialog.
8. Choose the 'Apply color mapping' command.
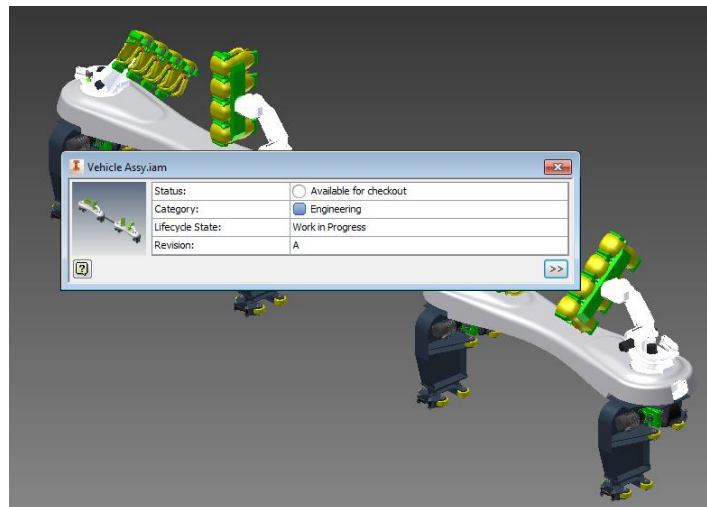   Result: models receive the color shown in graph.

Property Editing from Inventor Add-In – Data Cards

Inventor allows you to edit Inventor properties, but this functionality is limited to properties tha
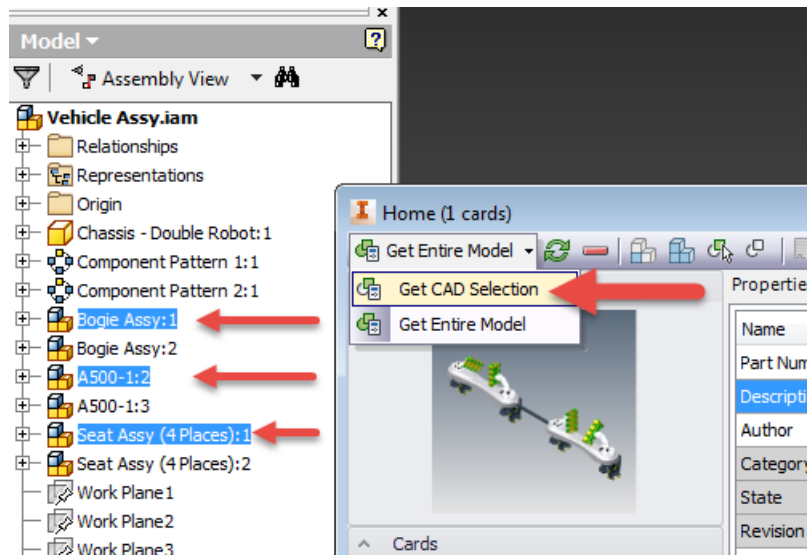
- You can modify the properties of more than one Vault file at a time.
- Vault property constraints are enforced while editing. This helps to prevent property non-compliance.
- Vault property mappings will be applied upon edit from within the Inventor UI.
  - Removing the need to do a property update.
- Edit Vault properties that do not exist on the Inventor file.

Follow these steps to edit Vault properties from within Inventor:

1. From Inventor, choose Vault tab.
2. Choose Data Card.
3. The basic data card is displayed.
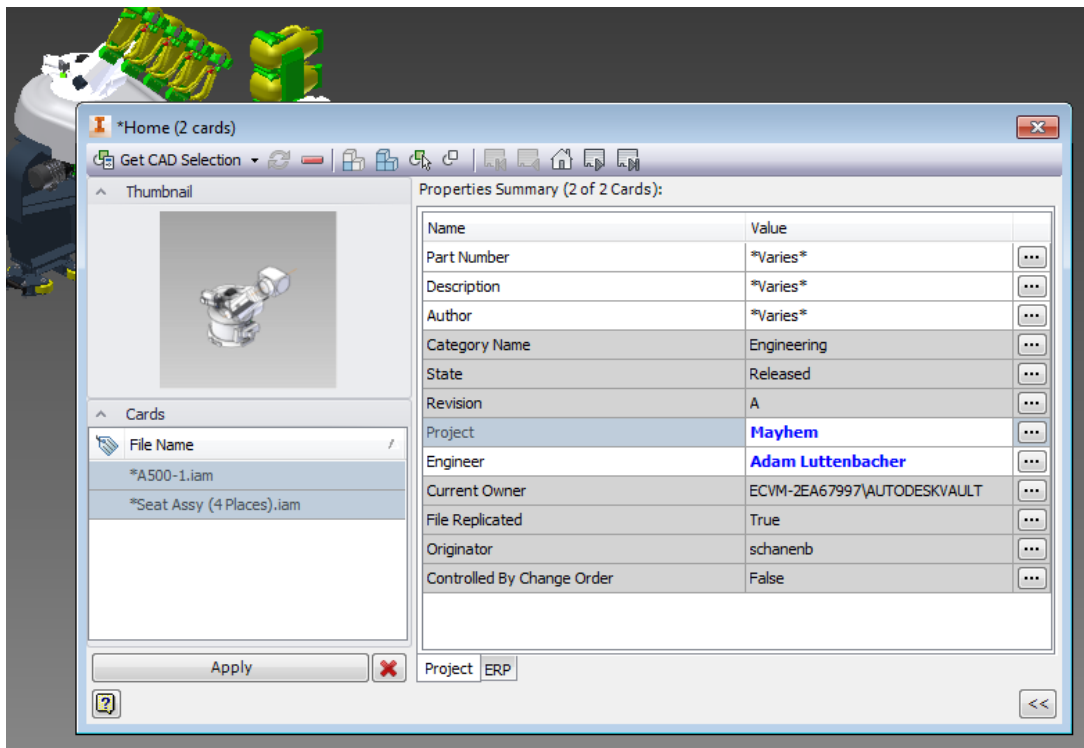4. Select the button in the bottom-right to expand into the more detailed view.

5. View the Vault properties that are configured on the card.
6. To add more components to the dialog, choose them in the UI or the browser and choose the *Get CAD Selection* option.

7. Now the models will be added to the card.
8. Alternatively, you can use the *Get Entire Model* option.

Follow these steps to edit Vault properties on the selected models:

1. Select the Edit button at the bottom-left of the dialog.

2. Check out if prompted to.

3. Modify property values as needed and choose *Apply*.

    For more on this feature:
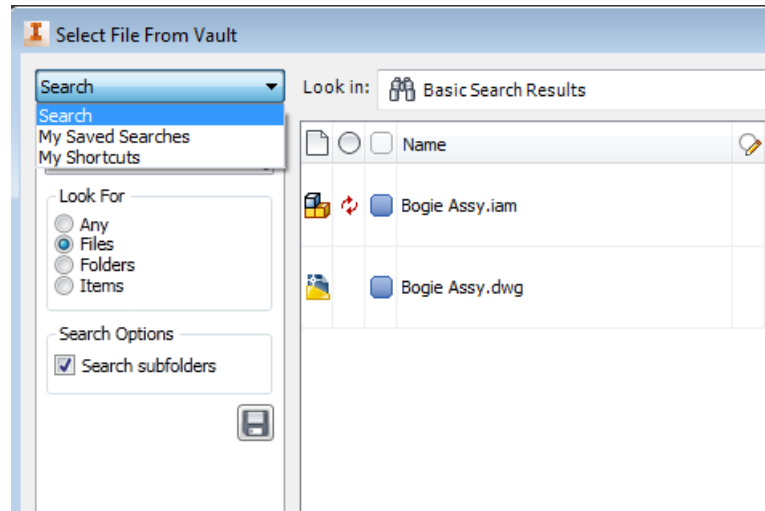   Working with Data Cards

Search from Add-In

While opening or placing files from Vault, there used to be no way to efficiently search for files in the Vault. The reason for this has to do with how the data was loaded from the server. In the 2012 release, a new search feature was added to the Open and Place from Vault dialogs.
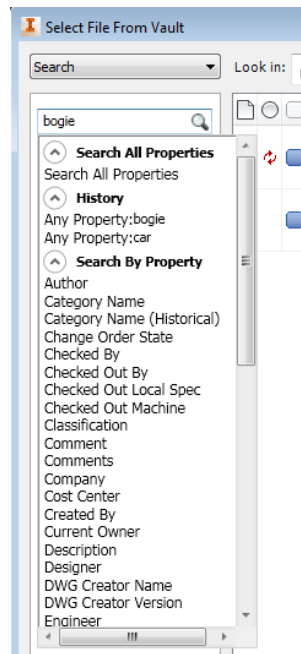
Why is this useful?

- This search command will search the Vault data base (within the project scope) to find any file.
- Inventor-Vault user can limit search to particular properties.

Follow these steps to perform a search from within the Inventor interface:

1. Choose Open from Vault/Place from Vault.
2. From the pick list in the upper-left corner, choose *Search*.

3. Type in the value you would like to search for in the search field.
4. Notice, once you type, that the properties are listed. This allows you to reduce the scope of your search to just those properties.

Thin Client

In the 2013 release, the new Thin Client was introduced for the first time. The thin client offers a fresh new interface that allows more people on your team easier workflows and usability.

Hyperlink

While users are taking advantage of the thin client, a feature that many aren't taking advantage of is a fairly obvious one. When a file or item is opened, the url for that page can be used for quick navigation to that object.

Use the URL to send to other employees, track in standard documentation, or mark as a favorite in your browser.

Advanced Find Functionality

In the thin client, there is an ability to do a search within a search. This can be helpful when you want to "peel the onion" to find the objects you're looking for.
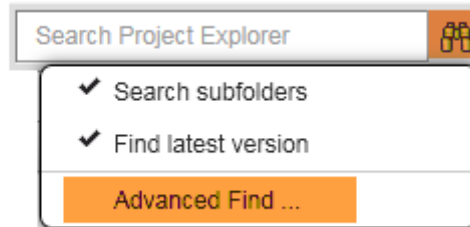
Why is this useful?

- While the same can technically be done by building the right advanced find, it is common to need to trim down the results after the first search was executed.
- Advanced search results are stored on the advanced find page. This allows you to return to the results and search more than once (different search criteria).
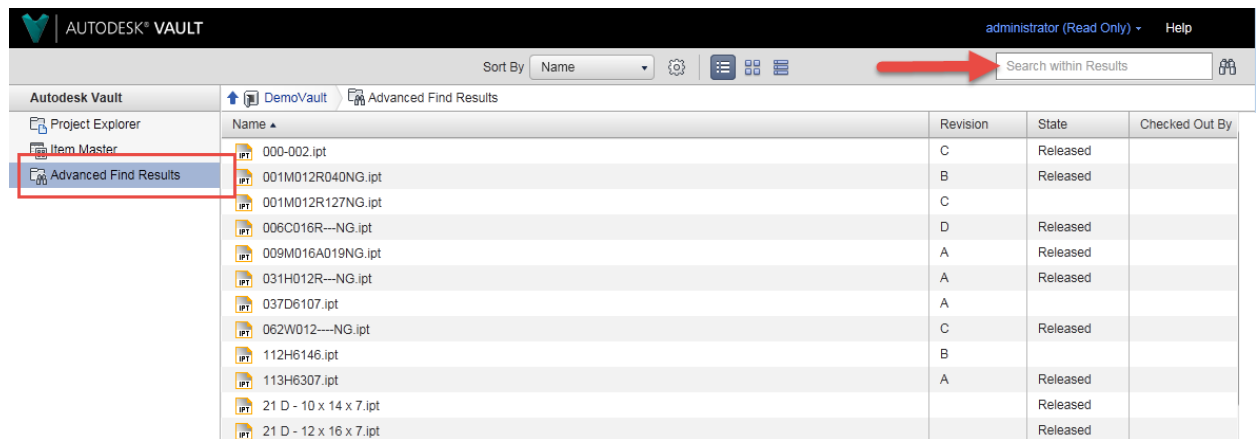
Follow these steps to run a search with advanced find:

1. Log into the thin client for your server: http://<servername>/AutodeskTC

2. Choose Project Explorer or Item Master.
3. Next to the search field, choose the icon and choose *Advanced Find*.

4. Enter the appropriate values to search and choose *Search*.
5. Now you will be viewing the search results as a full page.
6. To search those search results, type another value in the Search field in the upper-right.

7. This will refine the search results.

Note: At any time, choose the Advanced Find Results tab in the left panel to return to the last run search.

View Drawings with ADR
With Autodesk Design Review installed on your machine, the thin client offers the ability to view the visualization file associated with the design files.

Follow these steps to view DWF files in the thin client:

1. Choose any file in the Vault.
2. With the file selected, hover over the thumbnail to reveal the mustache.
3. On the mustache, select the magnifying glass icon.

If there is a DWF file associated to the file, the DWF file will be opened in an Autodesk Design Review add-in.

Note: This works best when using Internet Explorer
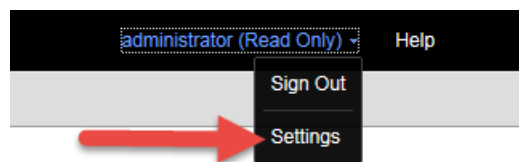
Block Download of Files

From the Autodesk Vault thin client, users are allowed to download visualization attachments. For non-Vault office users, the visualization is the only file they can download.

This might not be preferred for all users. For example, if you are contracting work to another company, you may not want them to download the visualization file.

Follow these steps to prevent the downloading of visualization attachments from the Autodesk Vault thin client:

1. Navigate to your thin client: http://<servername>/AutodeskTC.
2. As an administrator, choose *Settings* from the dropdown menu where you name is.

3. In the Thin Client Options page, notice the option in the *File Download* section.
4. Uncheck the option to *Restrict download of file with visualization attachment*.

File Download

Customize the download behaviors

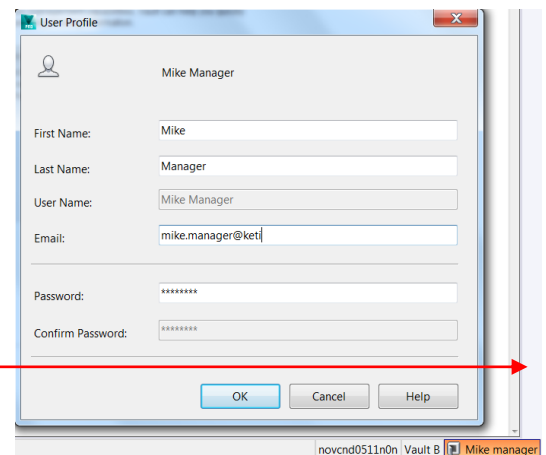☑ Restrict download of file with visualization attachment

Section 3: Vault Tips and Tricks
This section of the course consists of smaller tips and tricks. These are still helpful but likely won't have as big of an impact on your work.

Profile Editor
By clicking on the username located in the bottom-right corner of Vault Explorer, you can modify your user profile settings. Modifications can be made to:

- Name
- Username
- Email
- Password

Autodesk Exchange Apps (App Store)
The "App Store" is a resource available to Autodesk users that is created by the community for the community. Autodesk Exchange Apps for Autodesk Vault helps you achieve greater speed, accuracy, and automation from concept to manufacturing.

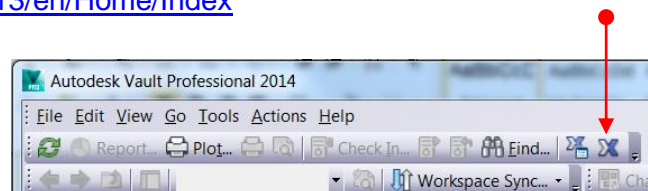Simply click on the Autodesk Exchange Apps Website button in your Vault toolbar.

http://apps.exchange.autodesk.com/VLTM/2013/en/Home/Index

Drawing Compare
Drawing compare is an app that is available in the Autodesk Exchange App store.

Autodesk Vault Drawing Compare allows users to select and visually compare different drawings, versions or revisions leveraging the attached dwf file to detect and highlight document changes.

http://apps.exchange.autodesk.com/VLTM/en/Detail/Index?id=appstore.exchange.autodesk.com%3adrawingcompare%3aen

Project Thunderdome
This particular utility comes from one of Autodesk's developers, Doug Redmond.

http://justonesandzeros.typepad.com/

http://justonesandzeros.typepad.com/blog/2010/11/project-thunderdome.html

Wouldn't it be nice to push Vault settings out to all the Vault users? For example, you've learned how to create useful saved searches that can be powerful for you. Now you can distribute them out to all of your users.

Section 4: Resources
This section highlights some very helpful resources that available online.

Under the Hood
This is a blog that is intended for Vault and PLM 360 users. It is managed and contributed to by Allan O'Leary, Brian Schanen, and Michelle Stone (Autodesk product experts). This site full of tips and tricks that you are sure to find useful!

http://underthehood-autodesk.typepad.com/blog/

Cracking the Vault
This is a blog that is intended for Vault users and is run by the Autodesk Vault Support Team. This is a great resource for problem solving.

http://crackingthevault.typepad.com

It's All Just Ones and Zeroes
This is a blog for Vault and PLM 360 API developers and is run by Doug Redmond (Autodesk developer). This is a great resource for all things related to the Vault API.

http://justonesandzeros.typepad.com/

http://www.youtube.com/user/ItsAllJust1sAnd0s

Discussion Forums

The Autodesk discussion forums provide a place for customers and industry partners to ask and answer questions. These forums are regularly monitored by Autodesk employees.

Vault discussion forum - http://forums.autodesk.com/t5/Vault-General/bd-p/101

Vault Customization forum - http://forums.autodesk.com/t5/Vault-Customization/bd-p/301

Summary

Those are all features that you are likely not using, but need to be. Take what you have learned from this course to find ways that you can incorporate it into your Vault workflows. By doing so, you will find that managing your data is a lot easier than you thought.