Pulsonix Vault
Evaluation Guide

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Chapter 1. Getting Started

Introduction to the Pulsonix Vault

The Pulsonix Vault is a revision/version control system which allows you to manage Pulsonix data in a company defined methodology.

The Vault can be installed locally or on a company server and provides controlled user access to a database of Pulsonix data that can be checked in/out, deleted and modified with full audit history.

Introduction to the Tutorial

This tutorial is intended to familiarise you with the Pulsonix Vault features and its methodology by working through a step by step tutorial. Using a supplied Vault demo, the tutorial will show you how to setup, install and use the Pulsonix various elements within the Pulsonix Vault.

Additional Help

Help is available in a number of formats; Online help available by pressing **<F1>** at any time when using Pulsonix; by emailing us at support@pulsonix.com, or by calling us or your local distributor. You will also find the **Vault Users Guide** installed as a PDF file, this is instantly available from the Pulsonix **Help** menu and **<Online Manuals>.**

Chapter 2. Installing the Pulsonix Vault

Installing the Pulsonix Vault

To install the Pulsonix Vault, you will need to run the **Vault Server Setup** application from your Pulsonix Vault Admin installation folder.

If you are running a newer version of Windows, you may find the icon on the right appear in your recently added applications.

You should now see the **Vault Server Setup** dialog.

Click the **Install Demo Vault** button to install the pre-populated Vault which will be used in this tutorial.
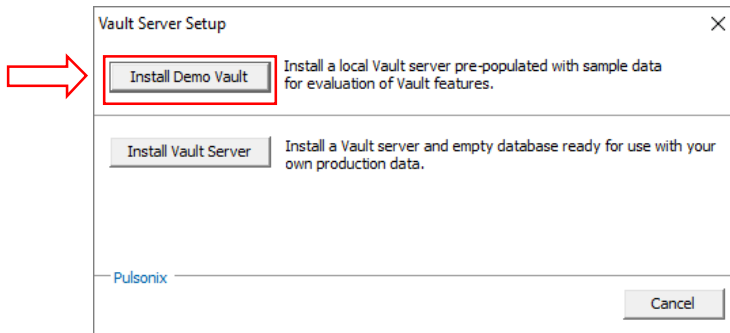
Once you have pressed the **Install Demo Vault** button, you will then be presented with the **Vault Demo Setup** dialog as below:
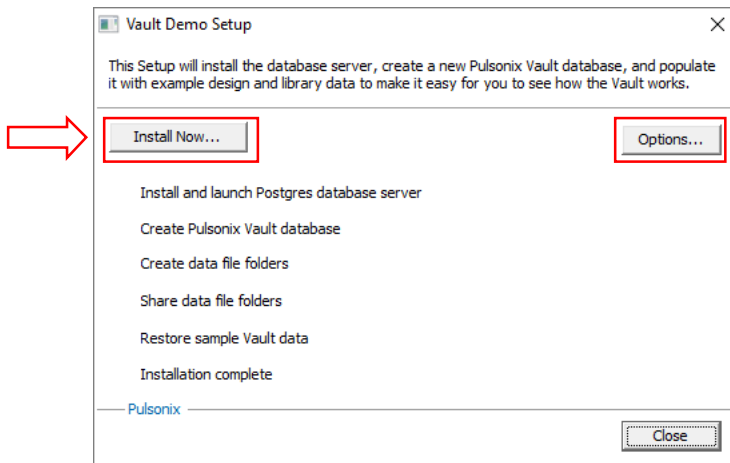
Click the **Install Now** button to complete the Vault Demo setup.

Note: If you already have a Postgres database running, press the **Options** button to set your existing database credentials.

Signing In to the Vault

The final stage of installing the Pulsonix Vault is to activate it from within Pulsonix.

In Pulsonix, go to the **Setup** menu, click **Vault**, you will now see the **Vault Setup – Sign In** dialog. From here, enter the **User Name: 'admin'** and **Password: 'password'** from the **Sign In** tab, click **Test** to verify the connection, click **OK** to close the dialog once the connection is verified and click **OK** again to close the **Vault Setup – Sign In** dialog.
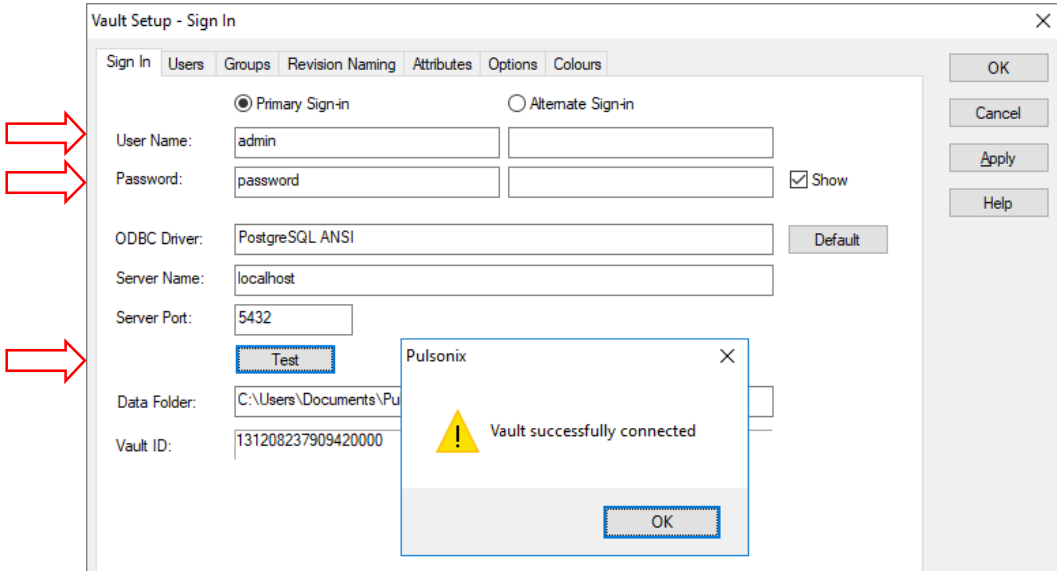
You are now ready to start using the Vault functionality.

Chapter 3. Vault Manager Overview

Vault Manager Overview

To open the **Vault Manager**, click the **File** menu and select **Vault Manager**. Within this dialog you can search and investigate all the items that are saved within your Pulsonix Vault.

The picture below shows you the major facets that are within the Vault Manager.
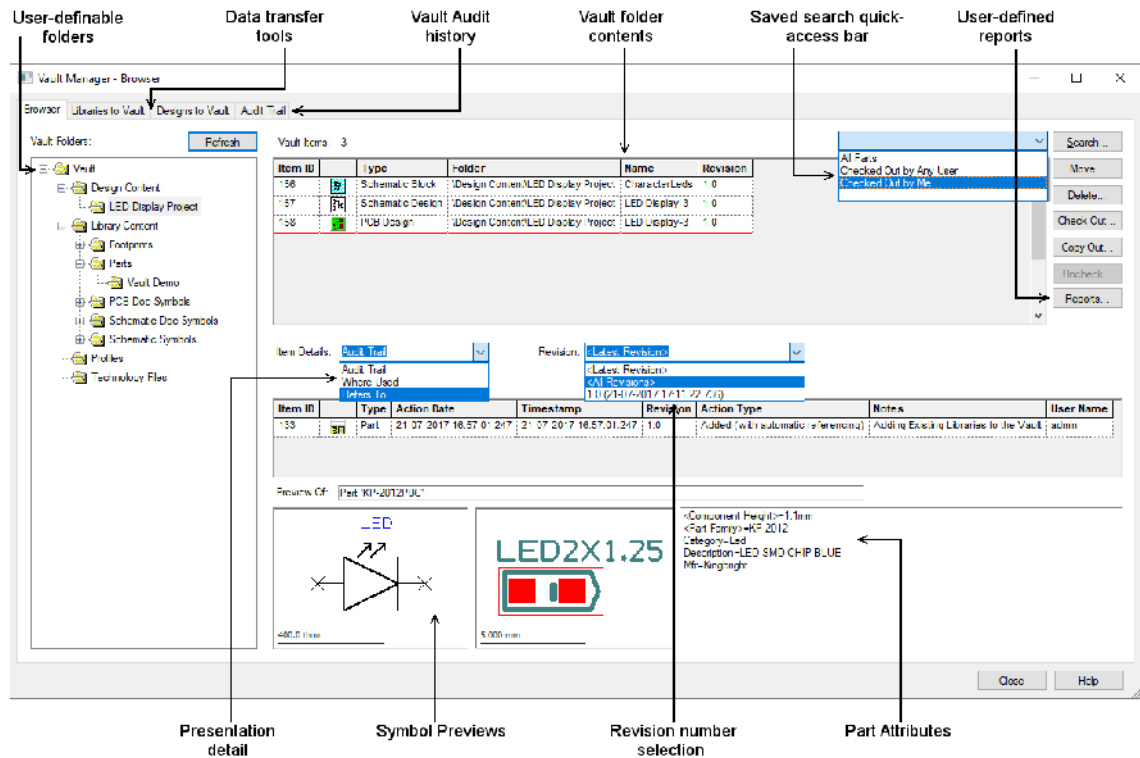
Navigating the Vault Manager

Upon opening the Vault Manager, you will be presented with a blank dialog, as shown below, to navigate the Vault manager you can expand the folders by selecting the '+' symbol.

Open the Design Content folder to show the content of the LED Display project. Within this folder you will see a Schematic Block, Schematic Design and a PCB Design.

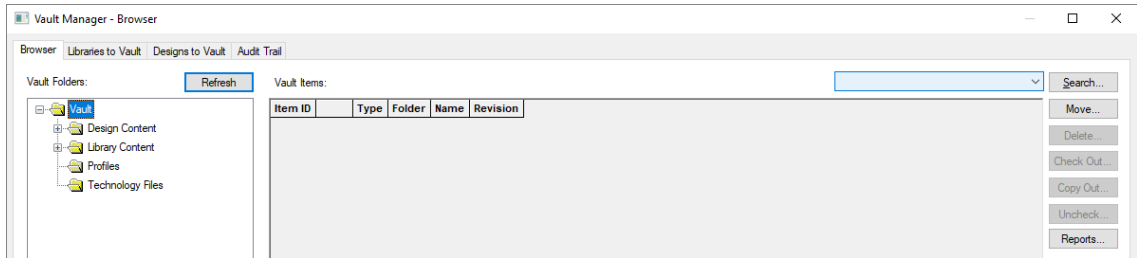Selecting the Schematic Design, you will now see specific details relating to the Schematic Design in the grid below.

▶ Changing the Item Details

Using the **Item Details dropdown arrow**, you can choose which information of the item you wish to inspect. You can choose from **Audit Trial** (an audit history of the selected item), **Where Used** (informs you where the Item is used, e.g. which Designs a selected Parts is used in) and **Refers To** (informs you which items are used in the selected item e.g. Which Parts are used in the selected design).

▶ Changing the displayed Revision

Using the Revision dropdown arrow, you can select which revision of the selected item will be displayed in the grid. You can choose from the **<Latest revision>** (Default setting), **<All Revisions>**, alternatively you can select a specific revision of an item.

Chapter 4. Using the Pulsonix Vault

Creating a new design using Vault items

▶ To start a new Schematic design

On the **File** menu, click **New** and **Schematic Design** from the **Design** tab.
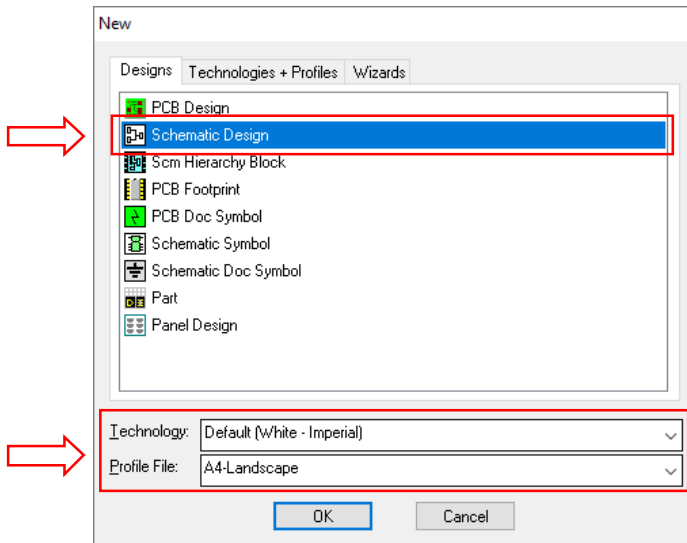
On the **Technology:** drop down list, click on the small 'down' arrow to reveal the list, select **Default (White - Imperial)**, by default this will be shown in the list with a blue background to indicate it has come from your Vault.

On the **Profile File:** drop down list, click on the small 'down' arrow, select the **A4-Landscape** profile file to add an A4 drawing blank, by default this will be shown in the list with a blue background to indicate it has come from your Vault. More detail about Technology files and Profile files is available in the online Help. For now, we will progress on to adding Components to the design.

Click the **OK** button to start a new Schematic design.
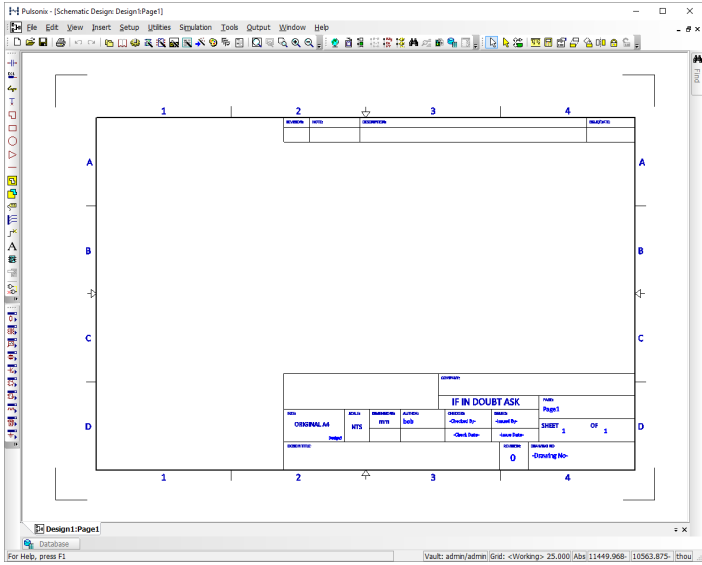
Your Pulsonix window will look like this to the left. To view the whole page, you may need to click <**A**> on the keyboard.

If you wish to start with a black background, either change it in **Colours**, shortcut <**C**> and the **Others** page or start the new design with the **Default** (Black – Imperial) Technology file.
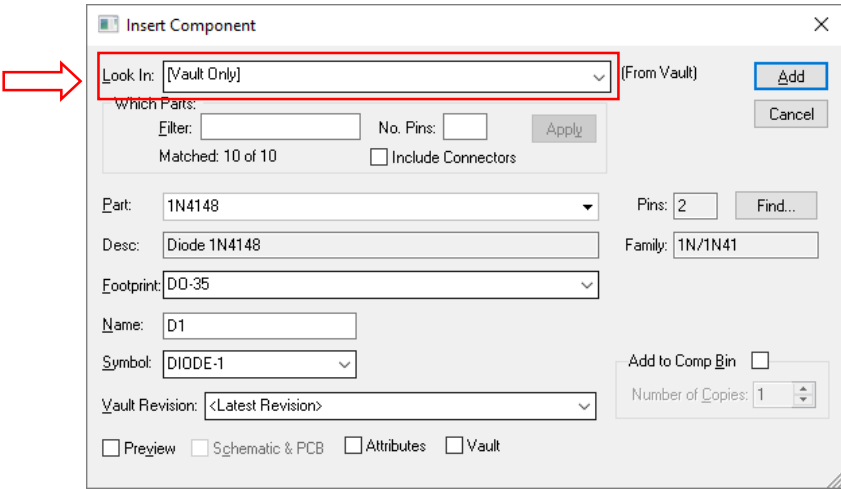
Inserting Components from the Vault

▶ To Insert a Component

Select the **Insert Component** button on the **SCM** toolbar (docked left side) shown circled below, or use the **Insert Component** option from the **Insert** menu. You can also use the shortcut key **Shift-C**
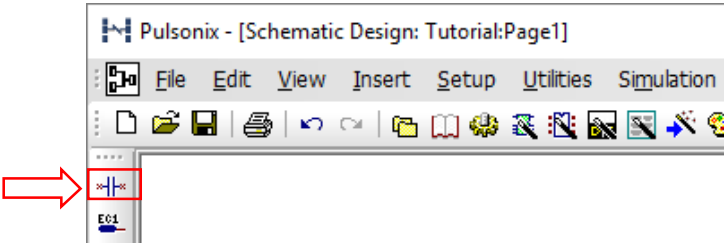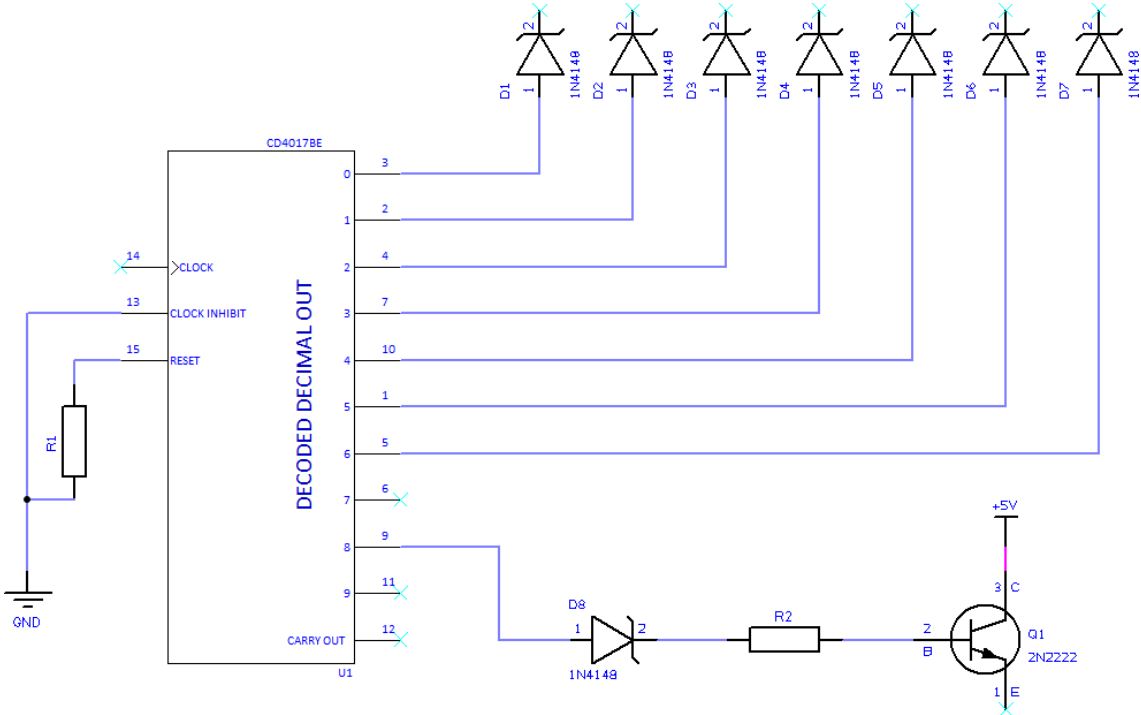

You are presented with the **Insert Component** dialog:

On the initial start-up, the **Look In:** will default to [All Libraries], change the this to be [Vault Only], this will then allow you to only place Parts that have come from your Vault.

For the purpose of this tutorial, we will now make a portion of the LED Display example circuit which can be found in your Vault. As shown below:

The first Part to add is the CMOS Counter/Divider. One of the quickest ways to select the Part you want is to simply type the first letter(s) of its name.

In the Part box, Type C, you will now see the CMOS Counter (CD4017BE) is filtered in the list, now click the **Add** button to insert it into the design.
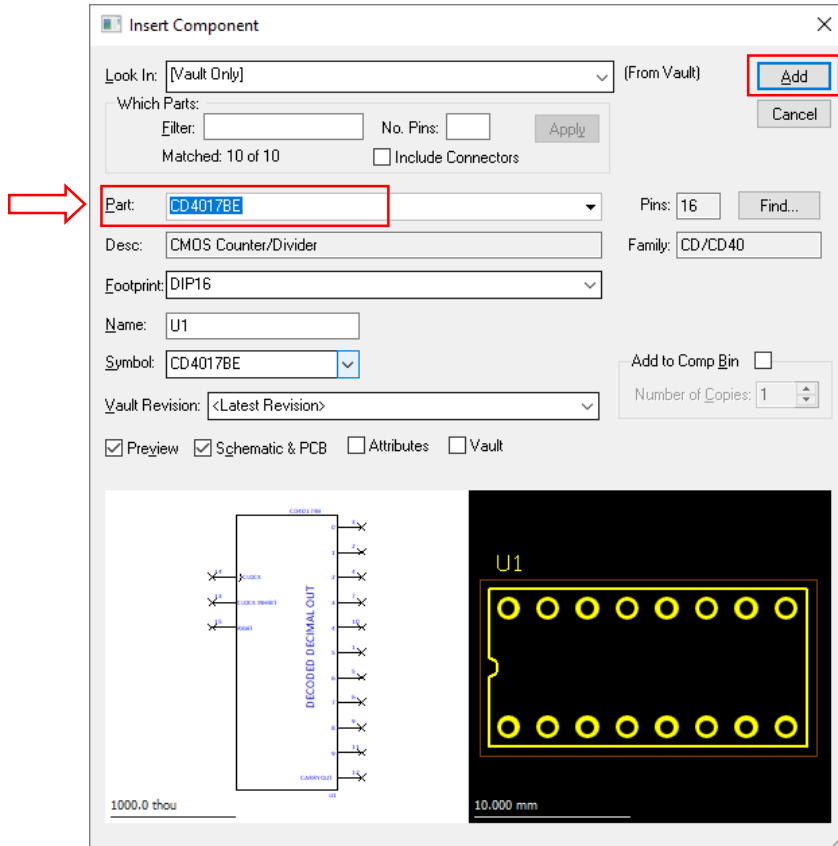
▶ Adding Diodes

We will now add the Diodes to our design. Click on the **Insert Component** button again.

Type **1N148** into the Part field. Click the **Add** button to add the Part to your design. We want to add 8 instances of this Part.
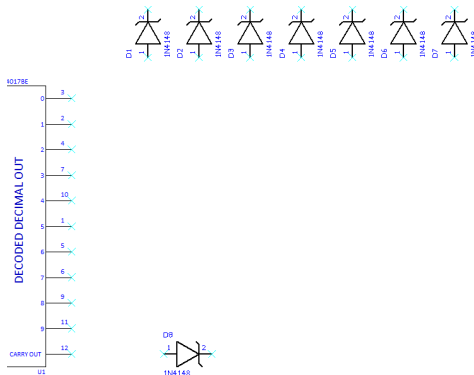
Use the 'R' key on your keyboard to rotate a component during placement.

After you have inserted the symbol, clicking escape on your keyboard will take you back to the Insert Component Dialog.

Hint: Using the context menu during insert, you can select **Insert Multiple Items**, this will allow you to insert 7 instances in one process.

▶ **Add First Resistor**
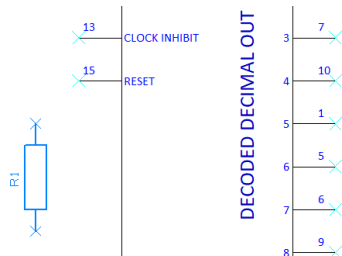
We will now add the first resistor to our design. Click on the **Insert Component** button again.

From the drop-down arrow on the Part Field, select **R 0.25W 5% MCF 10K** and add it to your design as shown in the diagram below.

Use the 'R' key on your keyboard to rotate a component during placement.

After you have inserted the symbol, clicking escape on your keyboard will take you back to the Insert Component Dialog.

▶ **Add Second Resistor**

We now need to add the second resistor that has a different resistance value. Click on the **Insert Component** button again.

From the drop-down arrow on the Part Field, select **R 0.25W 5% MCF 330** and add it to your design as shown in the diagram below.
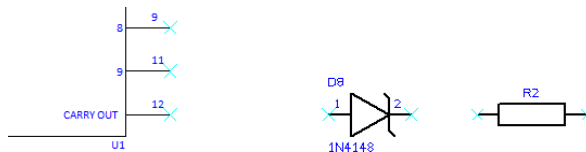
▶ **Add Transistor**

The final Part we need to add the design is the Transistor. Click on the **Insert Component** button again.

Type **2N222** into the Part field. Click the **Add** button to add the Part to your design. Your design should now look something similar to the image below.
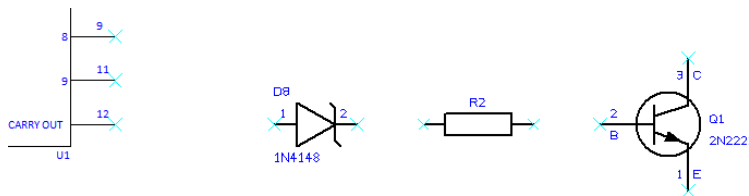
▶ Adding Signal References

We now need to add Signal References to our Design. To do this, click **Signal Reference**, from the Insert Menu.

Ensure the **Look In:** is set to **[Vault Only]**. Select the **+5V Symbol** from the Symbol drop-down list and using the **Add** button, insert the symbol above the Transistor in your design. Upon adding the symbol into the design, a dialog will appear allowing you to define the Net on the Signal, leave it as +5V and click the **Use for all net type** button.

Once you have inserted the +5V Signal Reference, press the escape key on your keyboard, you will now see the **Insert Signal Reference** dialog, from here, select the **GND** symbol from the Symbol list and add it to your design below R1.

Your design should now look like the image below:
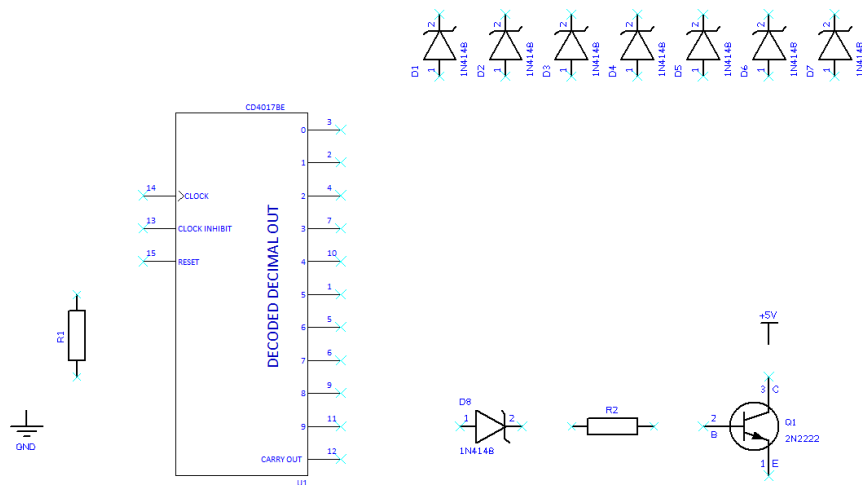
▶ Adding connections to your design

To finish this example circuit, we need to add connections to this design.

To insert a connection, you can double click on a Symbol's pin which will invoke the insert connection option. Alternatively, you can use the **Insert Connection** mode, available from the **Insert** menu.

Route the Schematic so it looks similar to the example below:
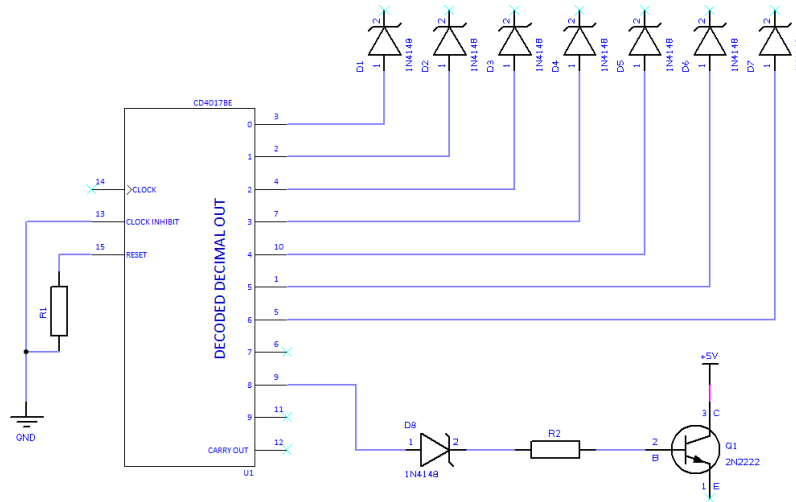
Our example circuit is now finished, you can choose to click the **Save** option from the **File** menu if you would like to keep a local copy of the file prior to checking it into the Vault. If you do not choose to save the design, the Vault will automatically create a save version as you check it into the Vault for the first time.

Checking a design into the Vault

With the example design we have just created open, click the **File** menu and select **Check into Vault**.

You will now be presented with the **Check Into Vault** dialog.

In **Name:** type 'Tutorial Design'. Next you need to define where the design will be saved to, set the **Vault Folder** to be \Design Content\Tutorial Design. Finally, add a **Check In Note** for the design.

When checked, the **Close item after Check In** option will close the design automatically for you.

Press the **OK** button to check the design into your Vault.

Adding items to the Vault

The next section of this tutorial will look at how to add new items to the Vault for the first time.

We will look to add a Surface Mount resistor to the Vault as we do not currently have one in the demo.

As there is already a resistor Schematic Symbol in the Vault, we will only need to add a Footprint and Part to the Vault.

▶ Add SM0605 Footprint to Vault

From within Pulsonix, go to **Setup, Libraries** and click the **PCB Footprints** tab.

Clicking the drop-down arrow, open the **SM** library.

From within the **Contents**, select the footprint **SM0603** and click the **Check In...** button.
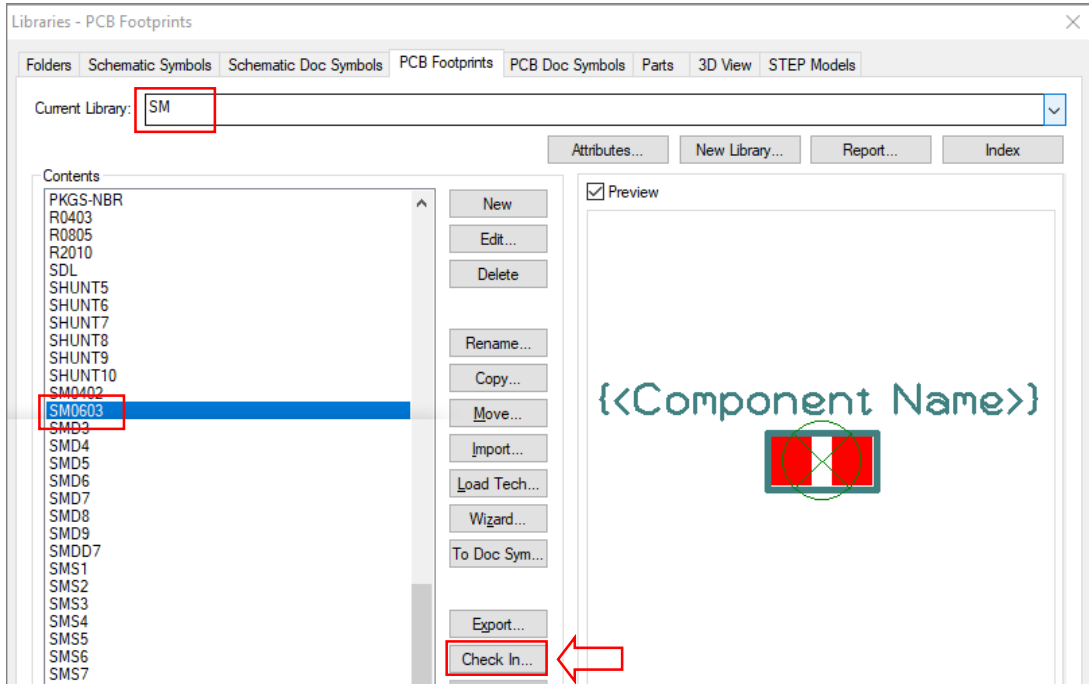

From within the **Check Into Vault** dialog, select the chosen **Vault Folder** and enter a **Check In Note** for the Footprint. Press the **OK** button to check the Footprint into the Vault.
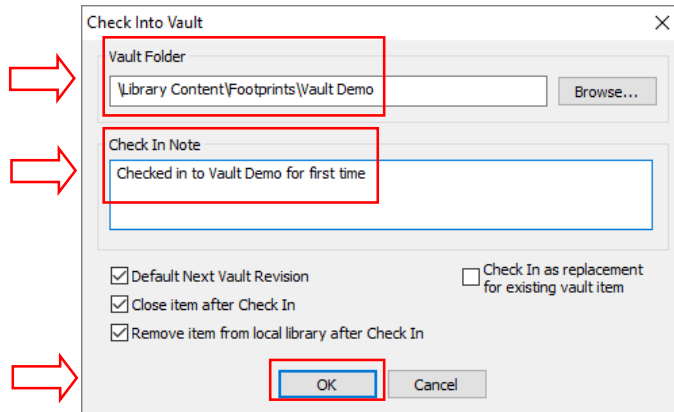
Now the Footprint is in the Vault, we can look to create a Part, referencing the Schematic Symbol and PCB footprint which is form the Vault.

▶ Create New Part to include Vault Items

From within the **Library Manager**, click the **Parts Tab**, select the **Resistor** Library from the drop-down arrow and click the **New** button.
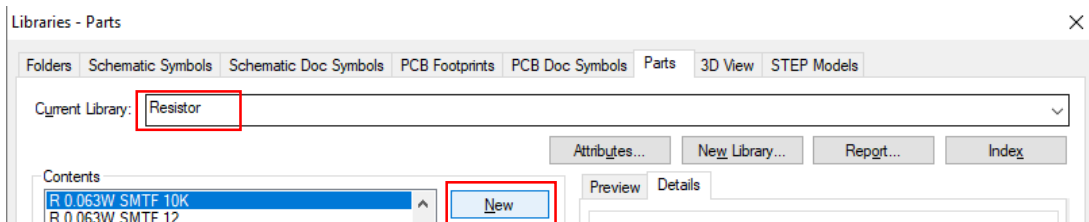
Within the **New Part** Dialog, type the name for the new Part, this will be **R 0.25W 10K**. Now you type a **Description** for the Part, its **Name Stem** and **Pin Count**.

Next, in the **PCB View** section, we need to assign a Footprint to the Part. Using the drop-down arrow, search for the **SM0603** footprint we added to the Vault.

Finally, in the **Schematics View**, search for the Symbol **R** which is in the Vault.

▶ **Adding Attributes to the Part**

From within the Part Editor, we can now add Attributes to the Part, these will then be searchable from within the Vault should we need to search for them.

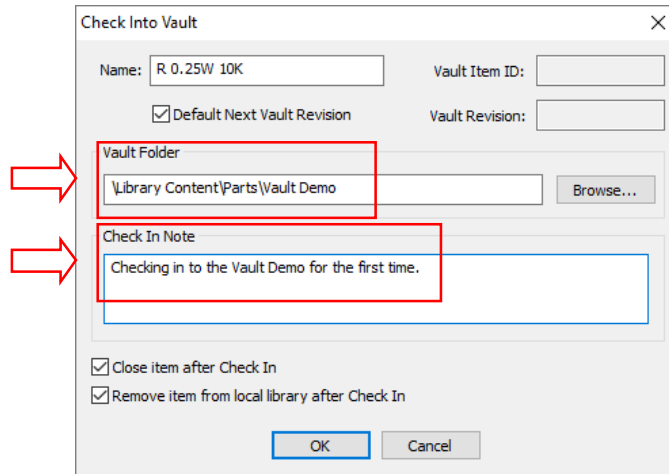Type 10K in the Value field and Resistor in the Category field.
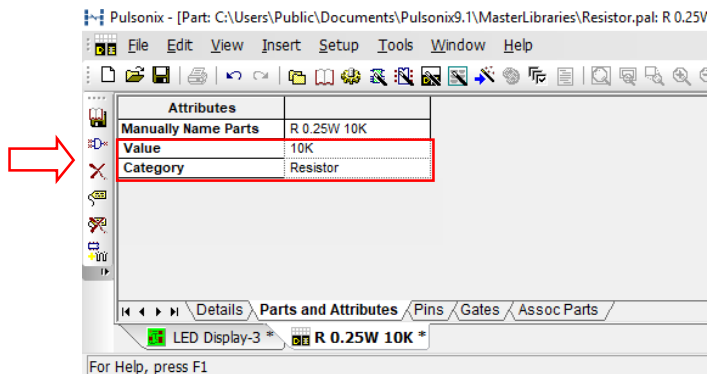
If you wish to add more attributes, go to the **Insert** menu and click **Attributes**.

▶ **Check Part into Vault**

Now the Part is complete, we now need to check it into the Vault. From the **File** menu, click **Check Into Vault**.

Select the chosen **Vault Folder** and enter a **Check In Note** for the Part.

Update Vault Design with Vault Part
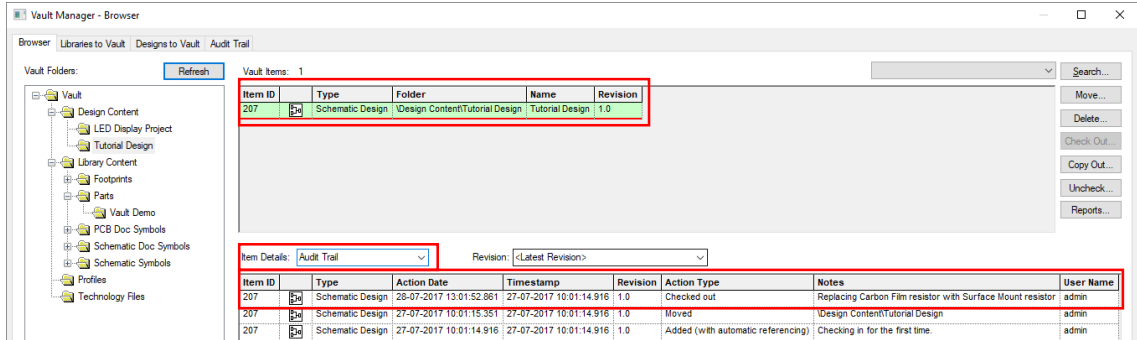
▶ **Update Tutorial Design with R 0.25W 10K Resistor**

We will now check the Tutorial Design out of the Vault and replace the now deemed 'obsolete' 10K Carbon Film resistor with the more modern Surface Mount version we just created.

From within the **Vault Manager**, open the Tutorial Design folder, select the Tutorial Schematic Design and click the **Check Out...** button. Add a note in the **Check Out Note** section and press **OK**.
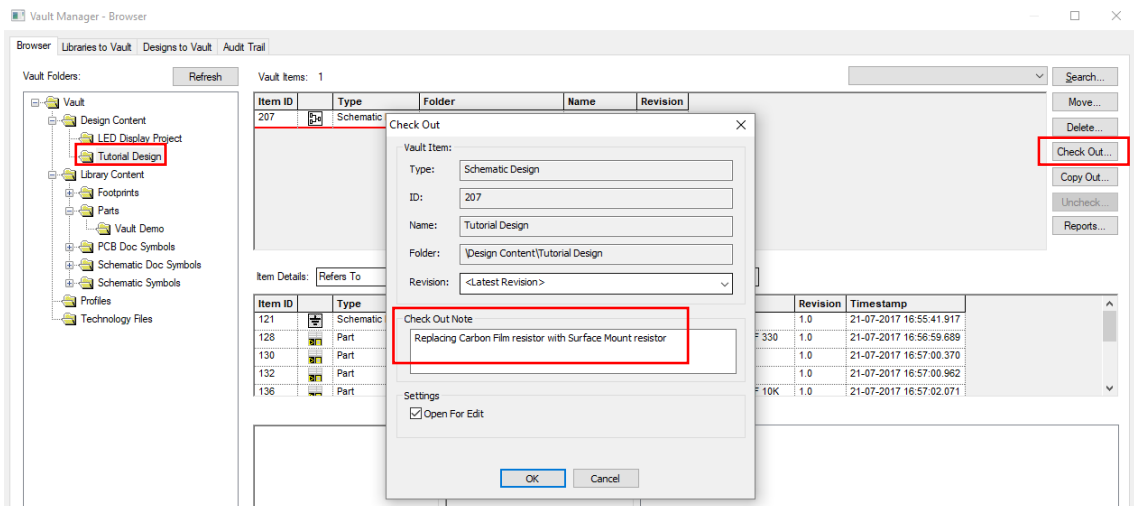
Once checked out, you will notice the Tutorial Design has changed its background colour in the **Vault Manager**. This indicates the item has been checked out by a user. Changing the **Item Details:** to display the **Audit Trail** allows you to see the action that has occurred and by whom.
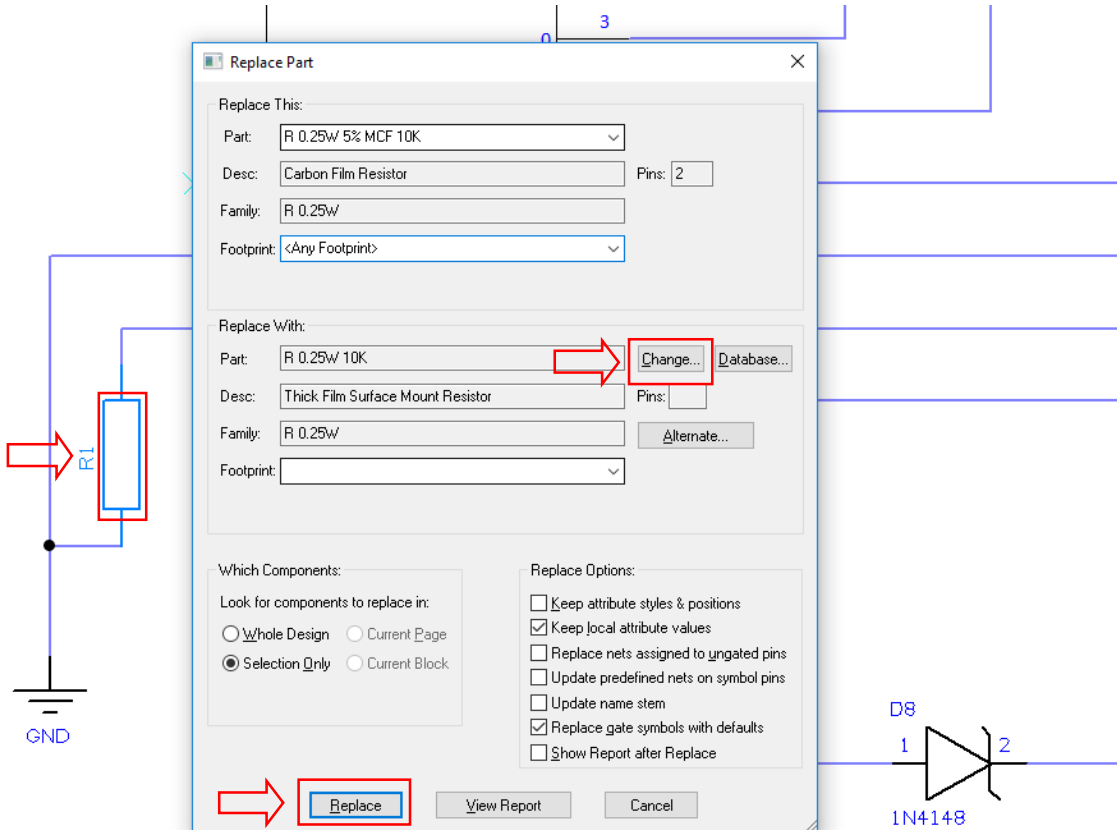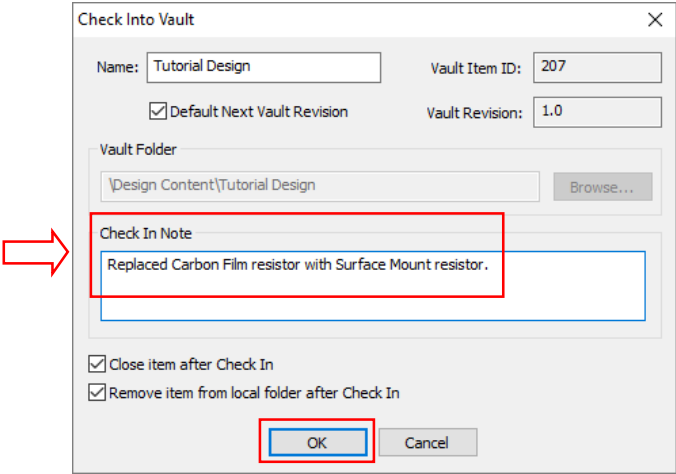
▶ Replace Resistor in the Tutorial Design

Select the component R1 in your design, right click and select **Replace Part** from the Context Menu.

From within the Change Part dialog, click the **change** button and select the R 0.25W 10K Resistor we added to the Vault earlier in this tutorial. Click the **Replace** button to update the design with the new Part.

We can now check the design back into the Vault. From the **File** menu, click **Check Into Vault**, add a **Check In Note** and press **OK** to finish.

Investigating items within the Vault

Now that we have more than one revision of the Tutorial Design in the Vault, we can start to see an audit history of what actions have happened and by whom.

If we change the **Item Details**: to **Refers To**, and the Revision: to **<Latest Revision>**, we will see the design now contains the new resistor we have added to replace the 'obsolete' Carbon Film resistor.

We now need to if the 'obsolete' Carbon Film resistor is used in any other designs and will then be able to update those designs with the new Surface Mount version accordingly.

▶ **Locate Carbon Film Resistor**

To locate the Carbon Film Resistor we can change the Design **Revision**: to be **1.0**, as we know this design revision uses the old resistor. Select the Resistor in the Item Details section, right click and select **Show 'Where Used'** from the **Context Menu**.

The Vault Manager will now 'jump' to the **Item Details** table for the Resistor Part and list all the designs it is used in.

We can see that the Carbon Film resistor is also used in the LED Display Schematic and PCB Designs. These would need to be checked out and updated before the next iteration is produced.


Creating a Search in the Vault

We will now look to create a Search from within the Pulsonix Vault, these can be saved for easy access in future.

From within the **Vault Manager**, Click the **Search...** button.

You will now be within the **Search in Vault** dialog, change the **Find:** to be **Schematic Design** and press the **Apply** button.
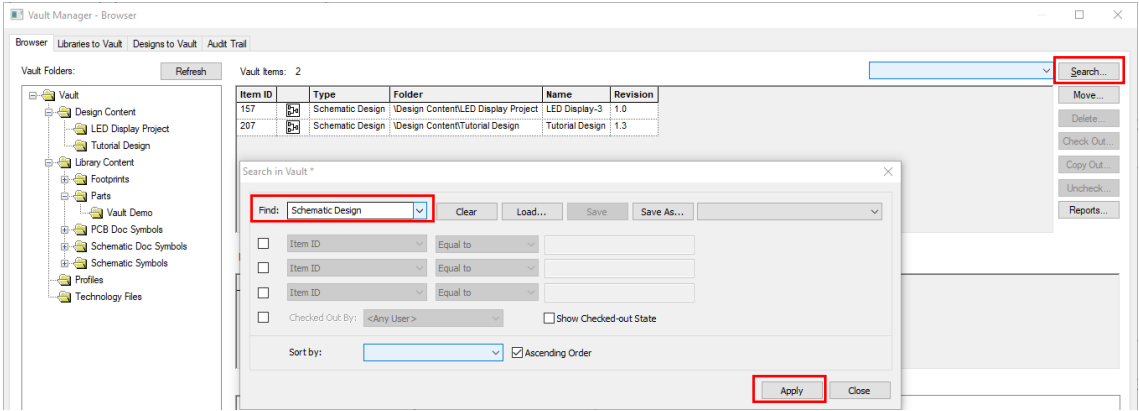
Now click the **Save As** button, and type **Vault Schematic Designs** for the name of your search and press **Save**.
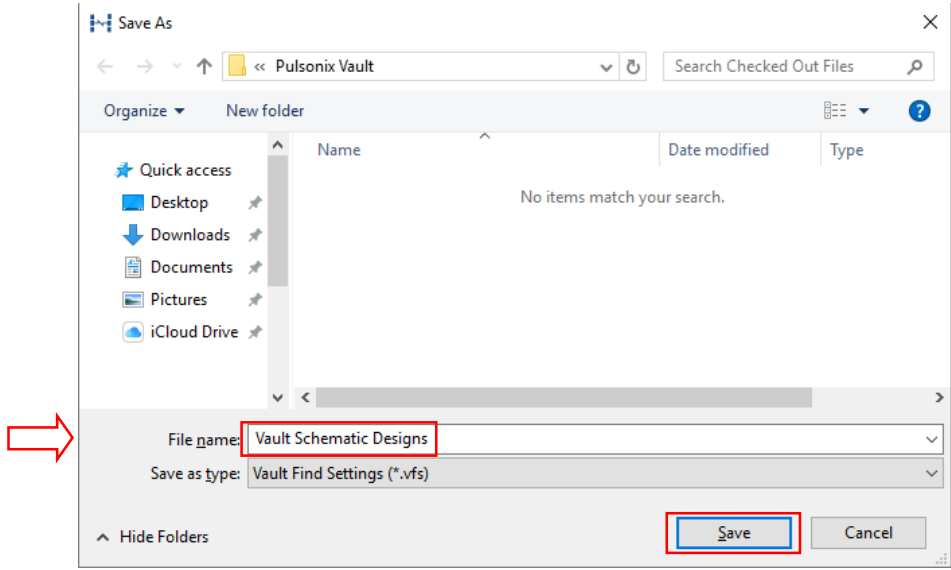
Going back to the Vault Manager, you will now see the Search is available from the drop-down arrow for ease of access and use in the future.
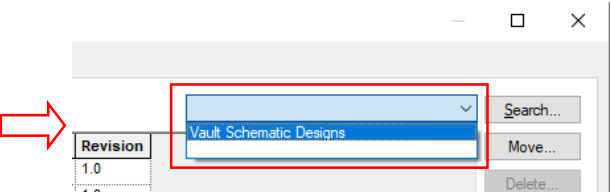
Note: You could create quick searches to show All items currently checked out of the Vault, or All items checked of the Vault by user x.

## Seeing the Audit History within the Vault

When you wish to see recent activity within the Vault, you can use the Audit Trail tab to see what actions have occurred, when they occurred and by whom.

▶ Create Audit Trail Query

Enable the **Filter By:** section, tick the **Latest:** box and enter **10** in the value section. Now select the **entries** radial button.

Tick the **Where:** box and select **Action Type**, Equal to and Added in the drop-down boxes.

Now press the **Apply** button to see the results of your query.
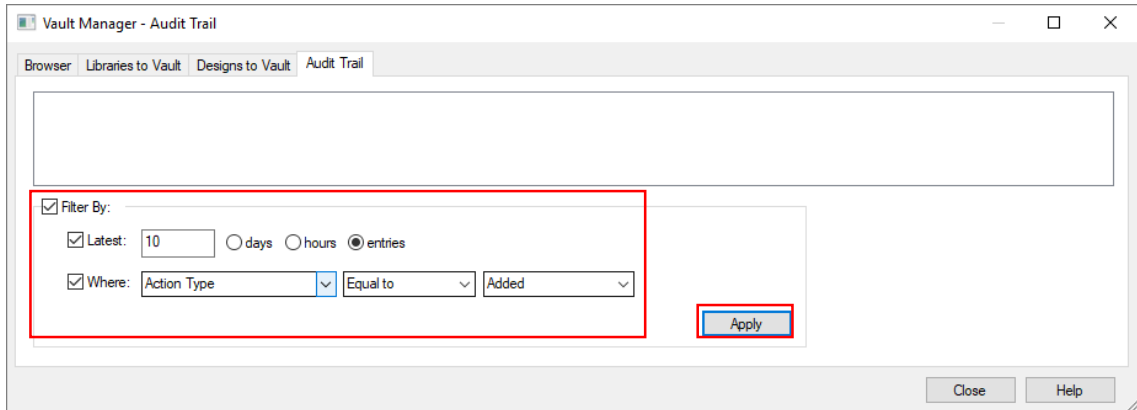
From this search, we can see two items have been added to the Vault, the time and date they were added, by whom, what the item was and the note that accompanied the check in.
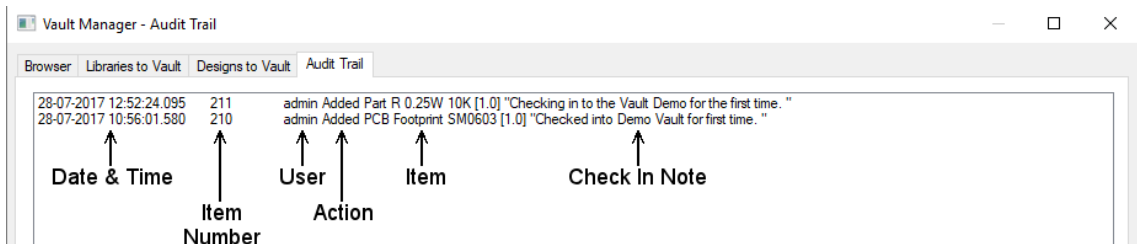
This completes our brief run-through of the Pulsonix Vault.

Additional Information

There are more aspects to Pulsonix Vault which are not covered in this document. Further information can be obtained in the Online Help using the <**F1**> key at any time, or from the Pulsonix Users Guide supplied as a PDF file under the **Help** menu and **Online Manuals** or on our web site.

While evaluating Pulsonix or once you've purchased it, technical support is provided in the form of telephone support from our office or from your local sales office, or by email.

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