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Autodesk® Vault Professional 2022 Data Management for Autodesk® Inventor® Users

Learning Guide

1st Edition

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ASCENT - Center for Technical Knowledge®
Autodesk® Vault Professional 2022
Data Management for Autodesk® Inventor® Users
1st Edition

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Preface

Autodesk® Vault Professional 2022: Data Management for Autodesk® Inventor® Users introduces the Autodesk Vault Professional 2022 software to Autodesk Inventor users. This guide is intended for Autodesk Inventor users who need to access their design files from the Autodesk Vault software. It provides an introduction to the Autodesk Vault Professional software and focuses on Autodesk Vault's features for managing design projects with the Autodesk Inventor software from a user's perspective.

You can use the Autodesk Vault Professional 2022 software and should use the Autodesk Inventor 2022 software to complete the exercises in this guide. Note that this guide does not cover administrative functionality. Hands-on exercises are included to reinforce how to manage the design workflow process using the Autodesk Vault Professional software. Included with this guide is a training Vault that can be used alongside a production Vault, to ensure that both Vaults can be accessed from the Autodesk Vault software.

Topics Covered

- Introduction to Autodesk Vault features
- Using the Autodesk Vault client
- Searching the Vault
- Working with non-CAD files in the Vault
- Working with Inventor files in the Vault
- Customizing the user interface
- Data management and reusing design data
- Items and bills of materials
- Change management

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Prerequisites

- Access to the 2022.0 version of the software, to ensure compatibility with this guide. Future software updates that are released by Autodesk may include changes that are not reflected in this guide. The practices and files included with this guide might not be compatible with prior versions (e.g., 2021).
- Good working knowledge of the Autodesk Inventor software.

Note on Software Setup

This guide assumes a standard installation of the software using the default preferences during installation. Lectures and practices use the standard software templates and default options for the Content Libraries.

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Lead Contributor: Barb Nash

With extensive experience in project management and eLearning development, Barb's primary responsibilities include the design, development, and project management of courseware for Product Lifecycle Management (PLM) products such as Autodesk Vault and Autodesk Fusion 360 Manage. Her work also involves the development of custom training that is designed and configured to a company’s specific environment, processes, and roles.

Prior to joining ASCENT in 2005, Barb managed a technical support team for 10 years supporting CAD and PDM/PLM software.

Barb is a Professional Engineer and holds a degree in Aerospace Engineering. She is also a certified Project Management Professional (PMP) and trained in Instructional Design.

Barb Nash has been the Lead Contributor for *Autodesk Vault Professional: Data Management for Autodesk Inventor Users* since its initial release in 2013.

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In This Guide

The following highlights the key features of this guide.

Feature	Description
Practice Files	The Practice Files page includes a link to the practice files and instructions on how to download and install them. The practice files are required to complete the practices in this guide.
Chapters	A chapter consists of the following - Learning Objectives, Instructional Content, Practices, Chapter Review Questions, and Command Summary. • **Learning Objectives** define the skills you can acquire by learning the content provided in the chapter. • **Instructional Content**, which begins right after Learning Objectives, refers to the descriptive and procedural information related to various topics. Each main topic introduces a product feature, discusses various aspects of that feature, and provides step-by-step procedures on how to use that feature. Where relevant, examples, figures, helpful hints, and notes are provided. • **Practice** for a topic follows the instructional content. Practices enable you to use the software to perform a hands-on review of a topic. It is required that you download the practice files (using the link found on the Practice Files page) prior to starting the first practice. • **Chapter Review Questions**, located close to the end of a chapter, enable you to test your knowledge of the key concepts discussed in the chapter. • **Command Summary** concludes a chapter. It contains a list of the software commands that are used throughout the chapter and provides information on where the command can be found in the software.

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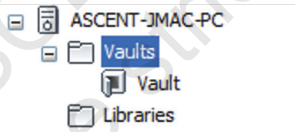
Software Setup

Attach the Database

1. From the Start menu, select **Autodesk>Autodesk Data Management> Autodesk Data Management Server Console 2022**.
2. Log in as **Administrator** without a password.
3. Select **Vaults**, as shown below:



4. Select **Actions>Attach>***Advanced* tab to attach the Vault. Fill in the following details, as follows:
   - **Data File:** *C:\Program Files(86)\Microsoft SQL Server\MSSQL14.AUTODESKVAULT\MSSQL\DATA\Vault_Training.mdf*
     or
     C:\Program Files\Microsoft SQL Server\MSSQL14.AUTODESKVAULT\MSSQL\DATA\Vault_Training.mdf
   - **Log File:** Filled in automatically
   - **File Store:** *C:\Vault Data Management Practice Files\Vault_Training*
   - **Vault Name:** Filled in automatically
5. Click **OK**. The Attach Progress dialog box opens.
6. In the Autodesk Data Management Server Console dialog box, click **OK** when prompted that the vault was attached successfully.
7. Select the **Vault_Training** vault.
8. Select **Actions>Content Indexing Service**.
9. In the Content Indexing Service dialog box, select **Yes, enable the Content Indexing Service**.

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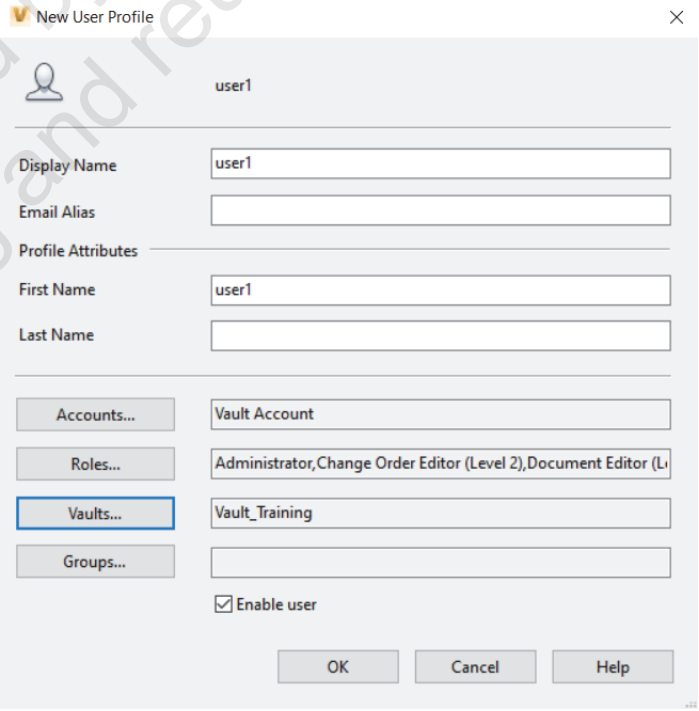
10. Click **OK**.

11. Remain in the Autodesk Data Management Server Console to create users.

Set Up Users

1. If the Autodesk Data Management Server Console is not open, from the Start menu, select **Autodesk>Autodesk Data Management>Autodesk Data Management Server Console 2022** and log in as Administrator. No password is required. Select **Tools>Administration** and select the *Security* tab.
2. Click **Manage Access...**.
3. Ensure the *Users* tab is active and select **New**.
4. Set the *Display Name* to **user1**.
5. Set the *First Name* to **user1**.
6. Click **Accounts...** and select the **Vault Account** option. Leave the password blank and click **OK**.
7. Click **Roles...** and select **Administrator**, **Document Editor (Level 2)**, **Change Order Editor (Level 2)**, **and Item Editor (Level 2)**. Click **OK**.
8. Click **Vaults...** and select **Vault_Training**. Click **OK**. The New User dialog box should display as shown below.



9. Click **OK**.

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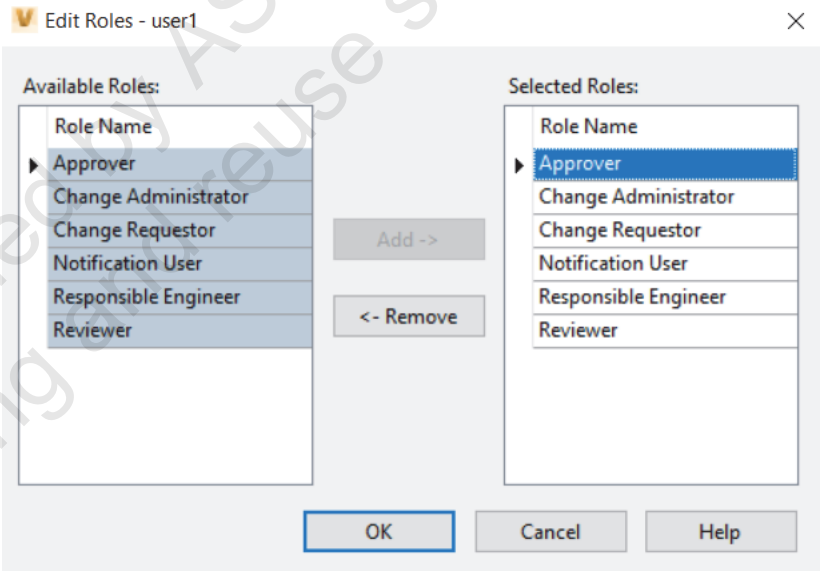
10. Create another user with a *Display Name* and *First Name* of **user2** using the same roles and vault as defined for user1.
11. Click **OK**. Close the dialog boxes.
12. Close the Autodesk Data Management Server Console.
13. Log in to Autodesk Vault client, **Vault_Training** vault as Administrator, no password.
14. For Vault Revision Table. click **Tools>Administration>Vault Settings**. In the Vault Settings dialog box, select the *Behaviors* tab and click **Revision Table.**
15. In the Revision Table Settings dialog box, select the **Enable Revision Table Control** checkbox to enable the Vault Revision Table Functionality, and select **Yes** to load the suggested settings. Click **OK** to close the Revision Table Settings dialog box, then click **Close** to close the Vault Settings dialog box.
16. Select **Tools>Administration>Global Settings**.
17. Select the *Change Orders* tab and then click **Define**. In the Routing window, click **Edit** to edit the Default Routing. Select **user1** and add all of the available roles to **user1**, as shown below.



18. Close the dialog boxes.

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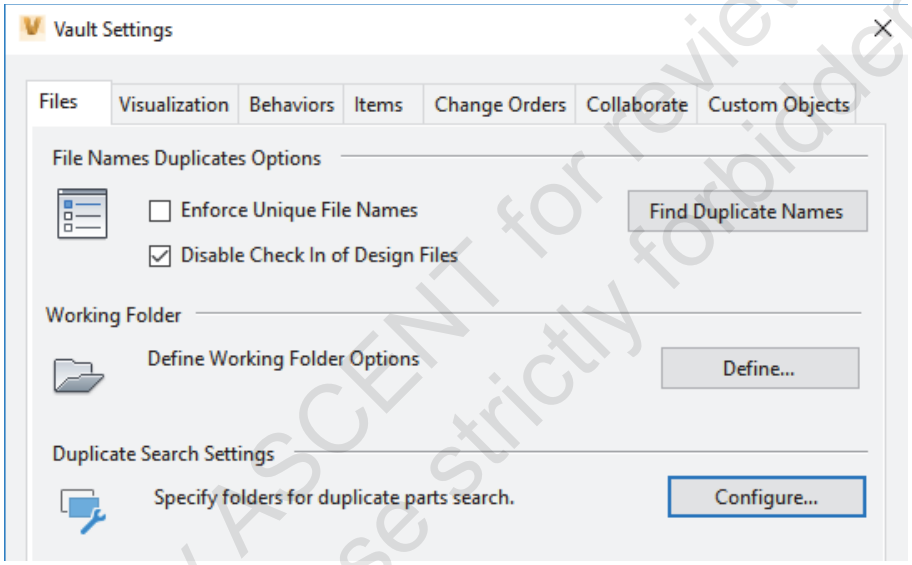
Set Up Duplicate Search

1. Select **Tools>Administration>Global Settings**. In the *Integrations* tab, select the **Enable Job Server** option and click **Close**.
2. Select **Tools>Administration>Vault Settings**.
3. In the *Files* tab, click **Configure...** in the Duplicate Search Settings section, as shown below.



4. Ensure that the **Enable Duplicate Search** option is selected.
5. Click and select the $ folder, then click **OK** to start indexing.
6. Close the Vault Settings dialog box.

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Chapter 1

Introduction to Autodesk Vault

Autodesk® Vault is Product Lifecycle Management (PLM) software that enables you to secure, consolidate, and organize all product information for easy reference, sharing, and reuse. Autodesk Vault users can store and search both non-CAD data (such as Microsoft® Word and Microsoft® Excel® files) and CAD data (such as Autodesk® Inventor®, AutoCAD®, and DWF files). In this chapter, you learn about the features in the Autodesk Vault software to manage your Autodesk Inventor designs.

Learning Objectives in This Chapter

- Describe the key features and benefits of the Autodesk Vault software.
- Differentiate between terms used in the Autodesk Vault software.
- Identify the ways that Autodesk Vault functions can be accessed.

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1.1 Autodesk Vault Features

Autodesk Vault is Product Lifecycle Management (PLM) software that manages the life of a design from conception to retirement. The files associated with the design are tracked and managed. The software also manages who is permitted to work with files at specific times.

The Autodesk Vault software's capabilities include:

- Central repository for data.
- Security access control to data.
- Protection against accidentally overwriting design data.
- Object relationship management.
- Tracks revision history.
- Search and view tools to easily find and view design data.
- Manages CAD and non-CAD data.
- Direct CAD Integration with Autodesk CAD products: Autodesk Inventor, AutoCAD, AutoCAD Mechanical, Autodesk® Civil 3D®, and many more.
- Copy Design tool for copying an entire design, including all related files, and maintaining their relationships to each other in the new design.
- Change Management functionality.
- Items/Bill of Materials Management.

This learning guide focuses on the core functionality of the Autodesk Vault Professional software from a user's perspective.

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1.2 Terms and Definitions

Before working with the software, it is recommended to become familiar with the fundamental terminology of the Autodesk Vault software. This section describes some of the commonly used Autodesk Vault terminology.

Object

Object is a generic term used to describe anything stored in the Autodesk Vault database, such as files and items.

File

File is the term used to describe files stored in the Autodesk Vault database. The vault can store any type of file, including Autodesk Inventor, Project files, AutoCAD, AutoCAD Mechanical, Autodesk Civil 3D, Microsoft Excel, Microsoft Word, etc.

By default, files stored in the Autodesk Vault database do not require unique filenames. Select **Tools>Administration>Vault Settings** and select **Enforce Unique File Names** to ensure that the filenames are unique in the Autodesk Vault software, as shown in Figure 1–1.

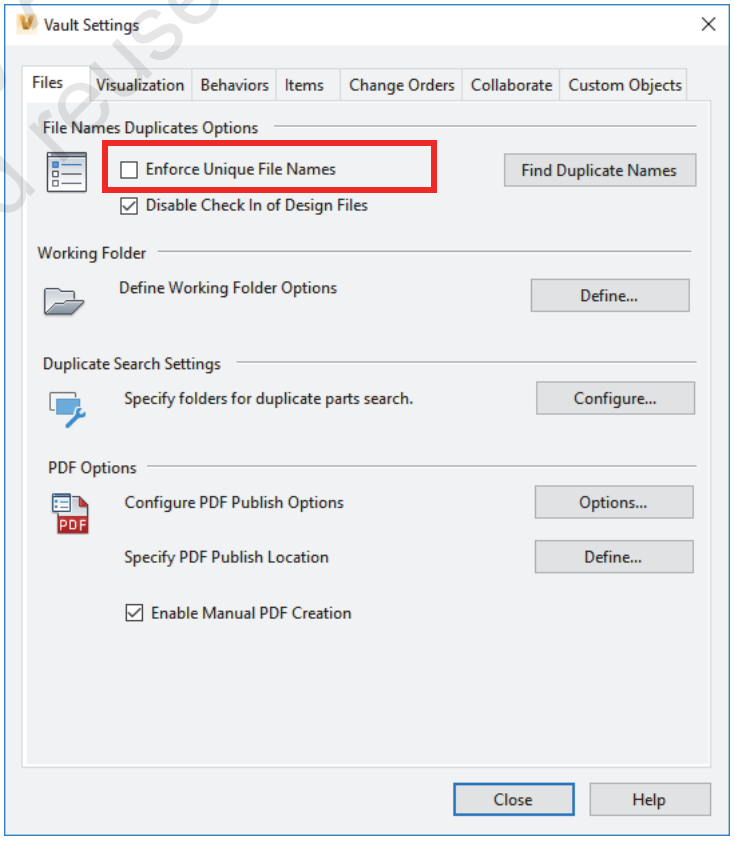

Figure 1–1

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Best Practice: Using Unique Filenames

Enforcing unique filenames is a recommended best practice. If not previously enforced, you can search for duplicates by clicking **Find Duplicates**.

Item

An item is an object type that represents all information related to the end item part. It is a container for data that can include Autodesk Inventor files (and other associated reference files), ECOs, and BOMs. Items refer to what a company manages, assembles, sells, and manufactures. An item is identified by its item number or part number. Not only can items represent parts and assemblies, they can also represent paint, lubricants, etc.

Change Order

A Change Order, also referred to as an ECO, is an object that describes why, how, and when changes are made to an Item and/or Inventor file. The result and purpose of a Change Order is to release these objects.

Properties/ Metadata

Object properties refer to the information or metadata associated with a specific object in the Autodesk Vault database. Every object in the database has properties that include the object name, state, revision, version, and other attributes. Since the Autodesk Vault software stores these properties in the database, they can be searched for to locate an object.

File Management Terminology

Autodesk Vault's operations include recording the process of change in a file. The terminology related to these processes is described as follows:

Term	Description
Get	Downloads a copy of a file from the vault into a client's working folder. This option enables you to either get a read-only copy of the files, or mark the file as being worked on (checked out) so that you can make modifications. The Autodesk Vault software always contains the master copy of the file.
Check Out	Marks the file as being worked on (checked out) but does not download a copy to your working folder.
Undo Check Out	Checks the selected files back in, unmodified, without creating a new version and without uploading the files back to the vault.

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Check In	Uploads a file from the client's working folder to the Autodesk Vault database. You are prompted to save a file before check in if you have not already done so.
Open	Opens the latest version of a file in the associated application. It downloads a copy of the file from the vault into a client's working folder.
Version	Defines the state of the file in the change process. It is an incremental numeric attribute that changes every time a file is changed and submitted (checked in) to the database.
Working Copy	A local copy of the file that has been downloaded from the vault and is located in a local directory or workspace on your machine. The downloading takes place during **Get** and **Open** operations.
File Status in Vault (Vault Status)	Defined by both the state of the file (checked in, checked out, etc.) and the state of the file in the vault compared to the local copy on the client's file system (newer, older, etc.).
Refresh	Updates the current state of the files in the vault.
Revision	Defines a collection of versions with a single character typically, such as A or B. A revision is created with the **Revise** command. Revisions can also be automatically generated through a Lifecycle State change.

Best Practice: Delete Working Copies

The vault contains all of the master files, which means you are working on a copy of the master file each time you check it out. When you check a file back into the Vault, it becomes the latest version of the master file. Consider your workspace or local working folders as a temporary location for your design files as they are being modified. A recommended best practice is to delete the working copies when you check them in.

Category

Categories are used to group objects and help to assign behaviors and rules to each group of objects. A category can automatically assign user-defined properties to objects in the Vault. Categories can also be used to automatically assign lifecycle definitions or revision values to files.

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Lifecycle

Lifecycles are used to manage the stages of maturity of an object. Objects such as files, items and change orders move from state to state (e.g., Work in Progress > For Review > Released, etc.), as managed by the lifecycle definition. At each lifecycle state, an individual is responsible for performing some type of work. An example of a file or item lifecycle is shown in Figure 1–2. An example of a change order object or ECO lifecycle is shown in Figure 1–3.

File or Item Lifecycle Example

Figure 1–2

ECO (Change Order) Lifecycle Example

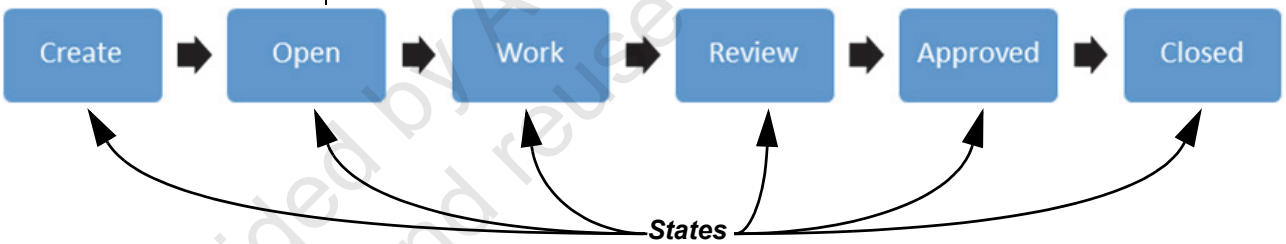

Figure 1–3

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1.3 Accessing Autodesk Vault

There are two ways of accessing Autodesk Vault functions:

- Logging in to the Autodesk Vault client.
- Logging in from Autodesk Inventor to use the Autodesk Inventor Vault Add-in.

Autodesk Vault Client

The Autodesk Vault client (also referred to as Autodesk Vault Explorer), provides the user interface for accessing data in the vault. Tasks performed in the Autodesk Vault client software include searching the vault, viewing file status and history, and checking files in and out. The Autodesk Vault software can also be launched and accessed from the Autodesk Inventor software.

The Autodesk Vault client software displays a complete view of the data in the vault. The main window includes the Navigation pane, Main table, Preview pane, and Properties grid, as shown in Figure 1–4.

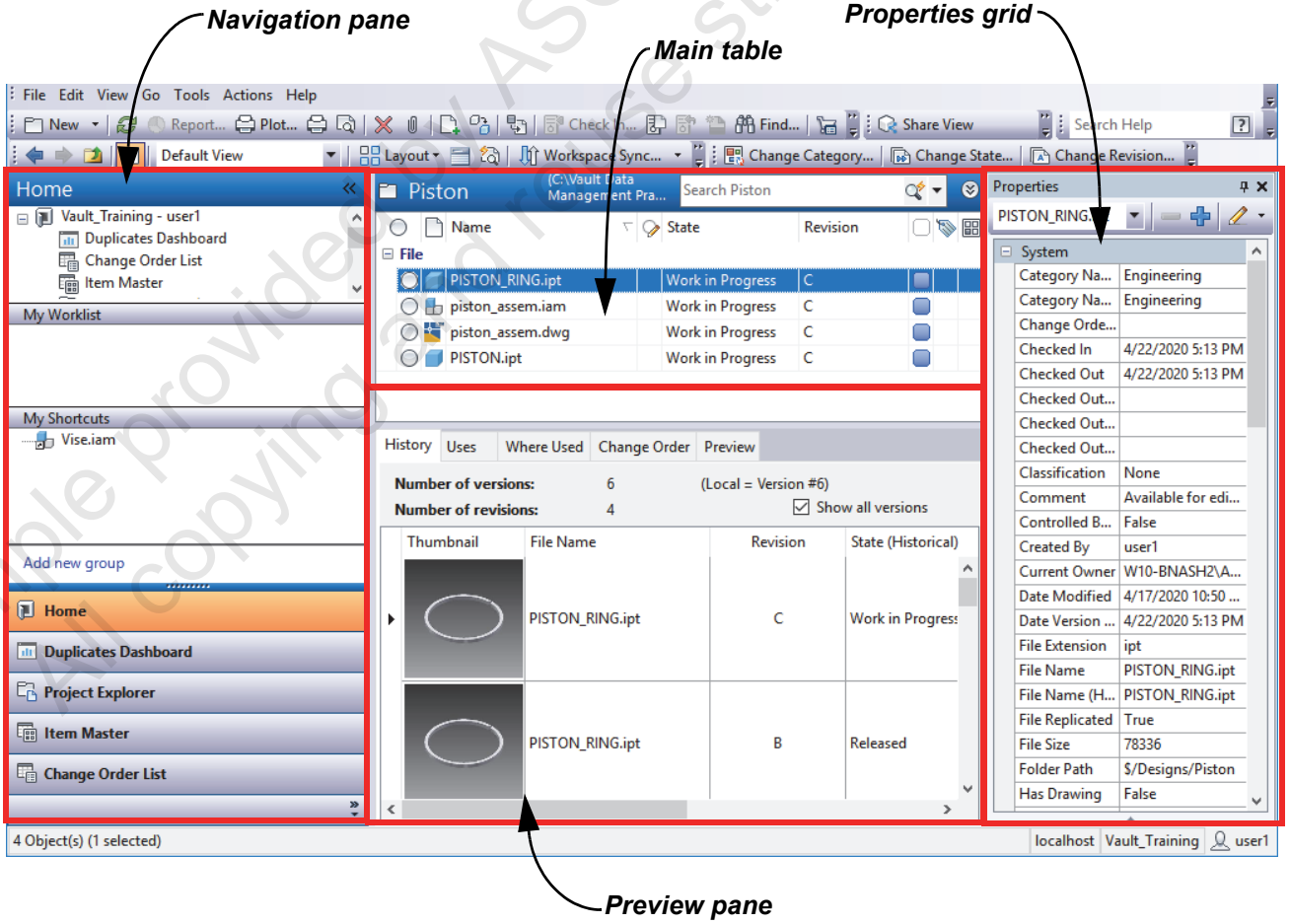

Figure 1–4

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Autodesk Inventor Vault Add-in

The Autodesk Inventor software has a direct integration with Autodesk Vault using the Autodesk Inventor Vault Add-in. This means that the Autodesk Inventor software has a Vault menu or tab in its interface, providing quick access to the Autodesk Vault options. File operations, such as Check In and Check Out, can be performed from within the Autodesk Inventor interface to maintain file relationship integrity. The integration interface showing the Vault menu is shown in Figure 1–5.

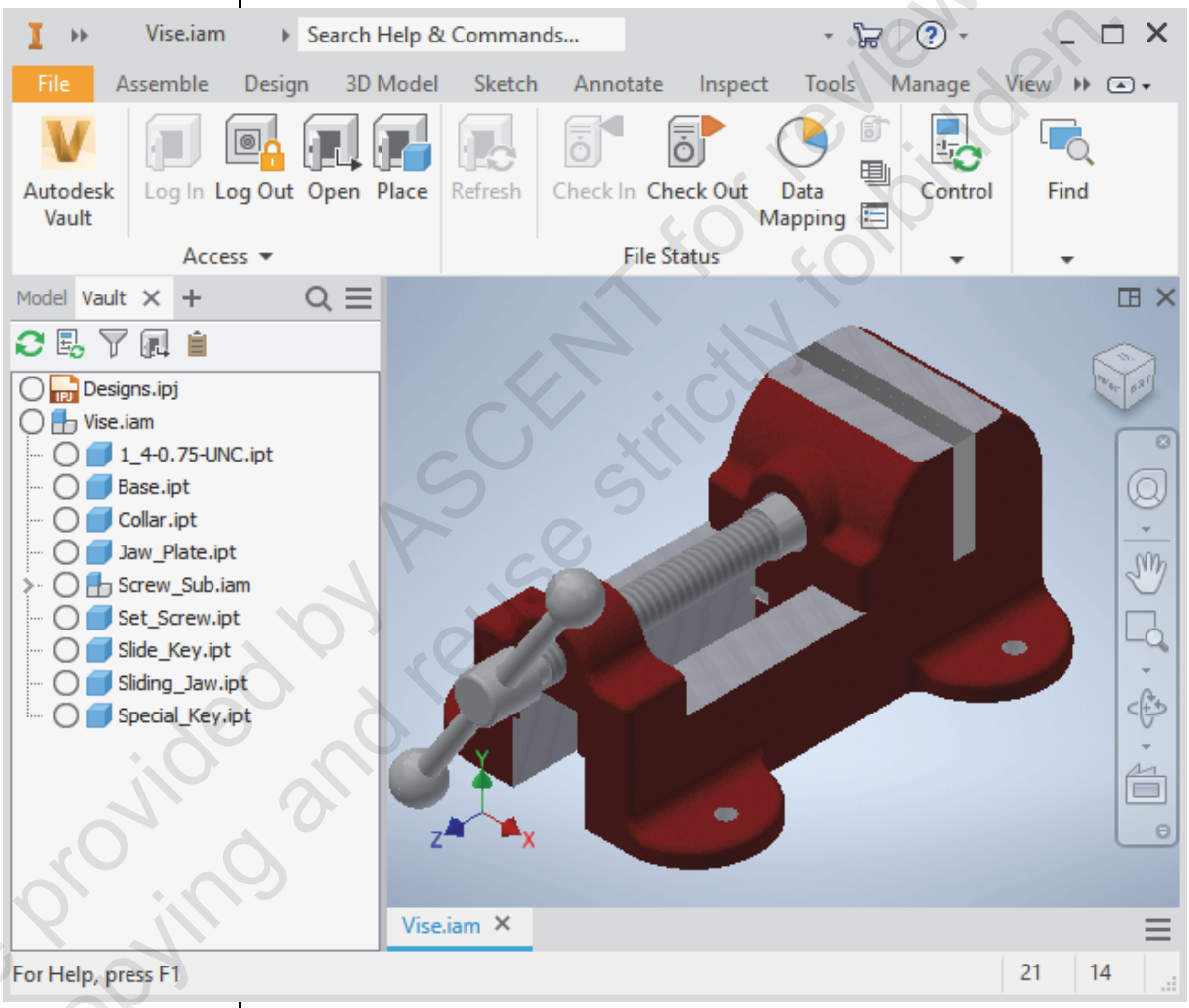

Figure 1–5

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Chapter Review Questions

1. What are some of the key features and benefits of the Autodesk Vault software?
   a. Central repository for data.
   b. Protection against accidentally overwriting design data.
   c. Search and display tools to easily find and view design data.
   d. All of the above.
2. What term is used to describe the stages of maturity of an object?
   a. Item
   b. Change Order
   c. Lifecycle
   d. Revision
3. The **Check Out** command downloads a copy of a file from the vault into a client's working folder.
   a. True
   b. False
4. Which of the following provides a complete view of all of the data files in the vault?
   a. Autodesk Vault Client (also known as Autodesk Vault Explorer)
   b. Autodesk Data Management Console
   c. Autodesk Inventor
   d. Vault Add-in
5. What term relates to the incremental numeric attribute that changes every time a file is changed, submitted, and checked in to the database?
   a. State
   b. Revision
   c. Version
   d. File Status

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6. In Figure 1–6, what is the name of the highlighted area?
   a. Navigation Pane
   b. Preview Pane
   c. Main Table
   d. Properties Grid

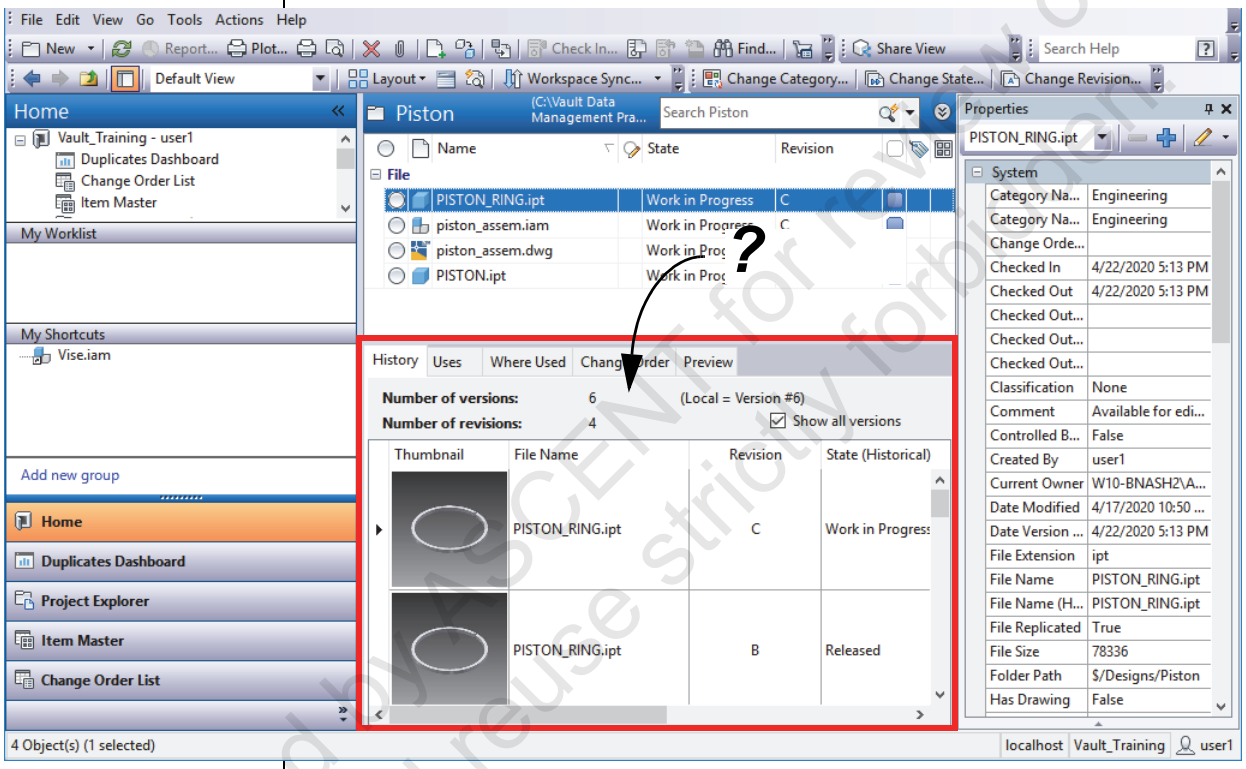

Figure 1–6

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