Essentials

Autodesk®

Vault Basic 2022

August 2021

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Preface

The Autodesk® Vault Basic 2022 Essentials learning guide introduces Autodesk® Vault Basic 2022 to end users and CAD administrators. Autodesk® Vault Basic is the foundation module of the data management solution from Autodesk, enabling users to consolidate and organize all product information securely for easy reference, sharing, and re-use purposes.

This learning guide is intended for users and CAD administrators who need to access their design files from Autodesk® Vault Basic. It focuses on capabilities for managing design files and related documentation. Hands-on exercises are included to reinforce how to manage the design workflow process using Autodesk® Vault Basic.

Important:

- *Refer to the Course and Classroom Setup section for installing the practice files and setting up the database.*
- *Refer to the Course Workflow section for understanding the placement of chapters and the dependencies between course exercises.*

Topics Covered

- Introduction to Autodesk Vault features
- Basic Vault Tasks
- Working with Vault and Autodesk® Inventor®
- Working with Vault and AutoCAD®
- Working with Vault and AutoCAD® Electrical
- Working with Vault and AutoCAD® Mechanical
- Working with Vault and Autodesk® Civil 3D®
- Common Vault Tasks
- Organizing and Populating a Vault
- Managing Vault

Prerequisites

- Access to the 2022 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 are not might not be compatible with prior versions (i.e., 2021).
- This guide is designed to teach new users the essential elements of using Autodesk Vault Basic 2022 for managing files and projects. The primary focus of this guide is on using Autodesk Vault with Autodesk® Inventor®. The guide also includes lessons on working with other software, such as AutoCAD®, AutoCAD® Mechanical, AutoCAD® Electrical, and Autodesk® Civil 3D.
- It is highly recommended that you have a good working knowledge of Autodesk CAD programs and a working knowledge of one or more of the following products:
  - Microsoft® Office
  - Autodesk® Inventor®
  - AutoCAD®
  - AutoCAD® Mechanical
  - AutoCAD® Electrical
  - Autodesk® Civil 3D
  - Microsoft® Windows® 10

Free Autodesk Software for Students and Educators

The Autodesk Education Community is an online resource with more than five million members that enables educators and students to download for free the same software used by professionals worldwide (see website for terms and conditions). You can also access additional tools and materials to help you design, visualize, and simulate ideas. Connect with other learners to stay current with the latest industry trends and get the most out of your designs.

Get started today - register at the Autodesk Education Community and download one of the many Autodesk software applications available.

Visit www.autodesk.com/education/home/

Note: Free products are subject to the terms and conditions of the end-user license and services agreement that accompanies the software. The software is for personal use for education purposes and is not intended for classroom or lab use.

Course and Classroom Setup

Before you start the course, you must install Autodesk Vault Basic and the course data sets. Autodesk Vault Workgroup or Autodesk Vault Professional software can also be installed and used however please note that the course was created using the Autodesk Vault Basic software and therefore the screenshots reflect the Autodesk Vault Basic interface.

Installing the Practice Files

To install the data files for the practices:

Download the Practice Files ZIP file using the link on the Practice Files page in the learning guide. Unzip the zip file to the C: drive.

The path for all the chapter folders should be C:\AOTGVault\.

After you install the data, this folder contains all the files required to complete each exercise in this guide. If Autodesk Vault software has been previously used on the computer, restore default settings for the user interface

Installing Autodesk Vault

You must install and run this courseware from individual computers. You cannot run the courseware from a shared server. Do not install the courseware on a computer that stores your working vault data.

Install both Autodesk Vault Basic Client and Autodesk Vault Basic Server on each computer. See the Autodesk Vault Basic installation media for installation instructions.

Course Setup Information

By default, the data files for each exercise are placed in the C:\AOTGVault folder. Be aware that if you select a different installation location, you might need to manually edit some of the supplied project files to modify their library search paths. These folders contain parts, assemblies, drawing library files, and other files required by the practices.

The practices are designed to be used back-to-back from start to finish. It is recommended that you log in to Autodesk Vault at the beginning of each exercise and when finishing an exercise, you should exit Autodesk Vault. The chapter folders contain subfolders holding documents for the chapter practices.

If you are using any of the following Autodesk® software applications in conjunction with Autodesk Vault, they must also be installed:

- Autodesk Inventor
- AutoCAD
- AutoCAD Mechanical
- AutoCAD Electrical
- Autodesk Civil 3D
- Classroom Environment

The courseware is intended for use in an instructor-led environment. If you plan to use the courseware on your own in a non-classroom environment, you must set up Autodesk Vault correctly. Before you set up your system, you should be aware of the following:

Do not use a production vault for the practices. It is recommended that you set up a separate vault on a separate vault server.

If you plan to repeat an exercise, you must remove any files that were added to the vault when you previously completed the exercise. It is recommended that you delete the entire vault and start again with a new vault.

Do not attempt these practices on a production vault server until you are familiar with the procedures that are covered.

Setting up the Database for the Practices

Before you start any exercise, you need to perform the basic setup for this course. You must:

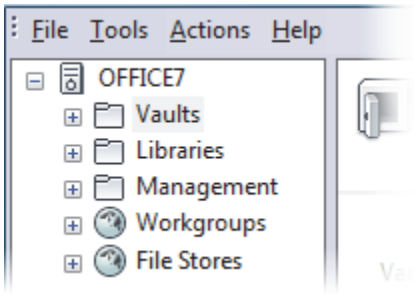
- Create a vault
- Add a user

Note: You must have Autodesk Vault installed.

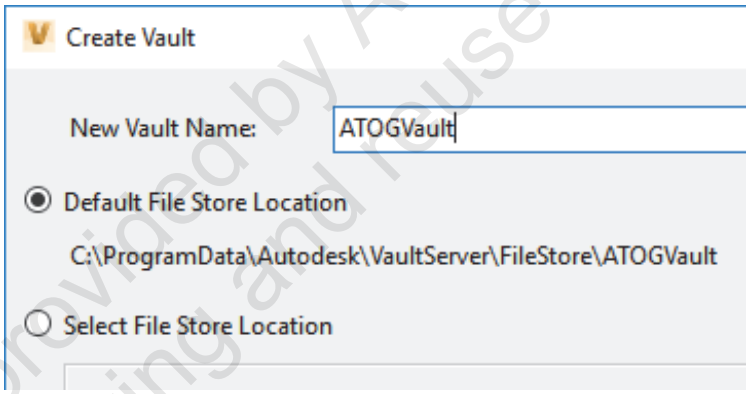
Create a Vault

1. Click *Start menu>All Programs>Autodesk>Autodesk Data Management>Autodesk Data Management Server Console 2022*.
2. In the Log In dialog box:
   - For User Name, enter **Administrator**.
   - Leave Password blank.
   - Click OK.

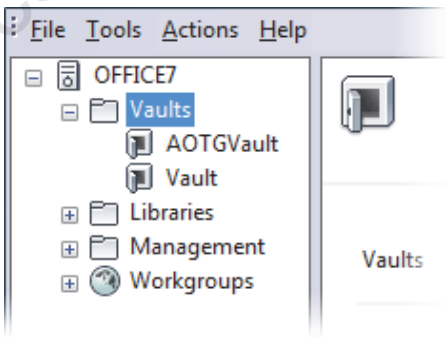
Autodesk Data Management Server Console is displayed.



3. Right-click Vaults. Click Create.
4. In the Create Vault dialog box, in New Vault Name, enter **AOTGVault**. Click OK.



5. Click OK. The vault is added to the list of vaults (you might need to click on the + sign next to Vaults to see the list).



Add a User

1. Click *Tools menu>Administration*.
2. On the *Security* tab, click Manage Access….
3. In the User and Group Management dialog box, click New.
4. In the New User Profile dialog box, enter the following information:
   - In First Name, enter **Vault**.
   - In Last Name, enter **User**.
   - In Display Name, enter **vaultuser**.
5. Click Accounts and select Vault Account. Leave password blank. Click OK.
6. Click Roles.
   - In the Add Roles dialog box, select Document Editor (Level 2).
   - Click OK.
7. Click Vaults.
   - Select AOTGVault and then click OK.
   - Ensure that Enable User is checked.
   - Click OK to close the New User Profile dialog box.
8. Click *File menu>Exit* to close the User and Group Management dialog box.
9. Click Close to close the Global Settings dialog box.
10. Click *File menu>Exit* to close the Autodesk Data Management Server Console.

Course Workflow

The following table outlines dependencies between course practices. The practices in some chapters can be completed without first completing practices in previous chapters.

Chapter	Practices
Introduction	Complete the setup instructions in this chapter. No practices are included in this chapter.
Chapter 1: Introduction to Autodesk Vault	No practices are included in this chapter.
Chapter 2: Basic Vault Tasks	The practices in this chapter are the first course practices. You must complete the practices in the order in which they are presented.
Chapter 3: Working with Vault and Autodesk Inventor	Complete the practices in this chapter after completing the practices in the Basic Vault Tasks chapter. If you complete the practices in this chapter without completing the previous practices, some screen captures will differ from your views of files in the vault.
Chapter 4: Working with Vault and AutoCAD	Complete the practices in this chapter after completing the practices in the Working with Vault and Autodesk Inventor chapter. If you complete the practices in this chapter without completing the previous practices, some screen captures will differ from your views of files in the vault.
Chapter 5: Working with Vault and AutoCAD Electrical	Complete the practices in this chapter after completing the practices in the Working with Vault and Autodesk Inventor chapter. If you complete the practices in this chapter without completing the previous practices, some screen captures will differ from your views of files in the vault.
Chapter 6: Working with Vault and AutoCAD Mechanical	Complete the practices in this chapter after completing the practices in the Working with Vault and Autodesk Inventor chapter. If you complete the practices in this chapter without completing the previous practices, some screen captures will differ from your views of files in the vault.
Chapter 7: Working with Vault and Civil 3D	Complete the practices in this chapter after completing the practices in the Working with Vault and AutoCAD Mechanical chapter. If you complete the practices in this chapter without completing the previous practices, some screen captures will differ from your views of the files in the vault.
Chapter 8: Common Vault Tasks	Complete the practices in the Working with Vault and Autodesk Inventor chapter before completing the practices in this chapter.
Chapter 9: Organizing and Populating a Vault	You can complete the practices in this chapter without completing previous course practices.
Chapter 10: Managing Vault	You can complete the practices in this chapter without completing previous course practices. Some screen captures might differ slightly from your view of files in the vault.

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.
Appendices	Appendices provide additional information to the main course content. It could be in the form of instructional content, practices, tables, projects, or skills assessment.

Chapter 1

Introduction to Autodesk Vault

This chapter provides an overview of Autodesk® Vault features and functionality. You learn how to use Autodesk Vault to manage engineering design data in a secure, centralized location.

Learning Objective in This Chapter

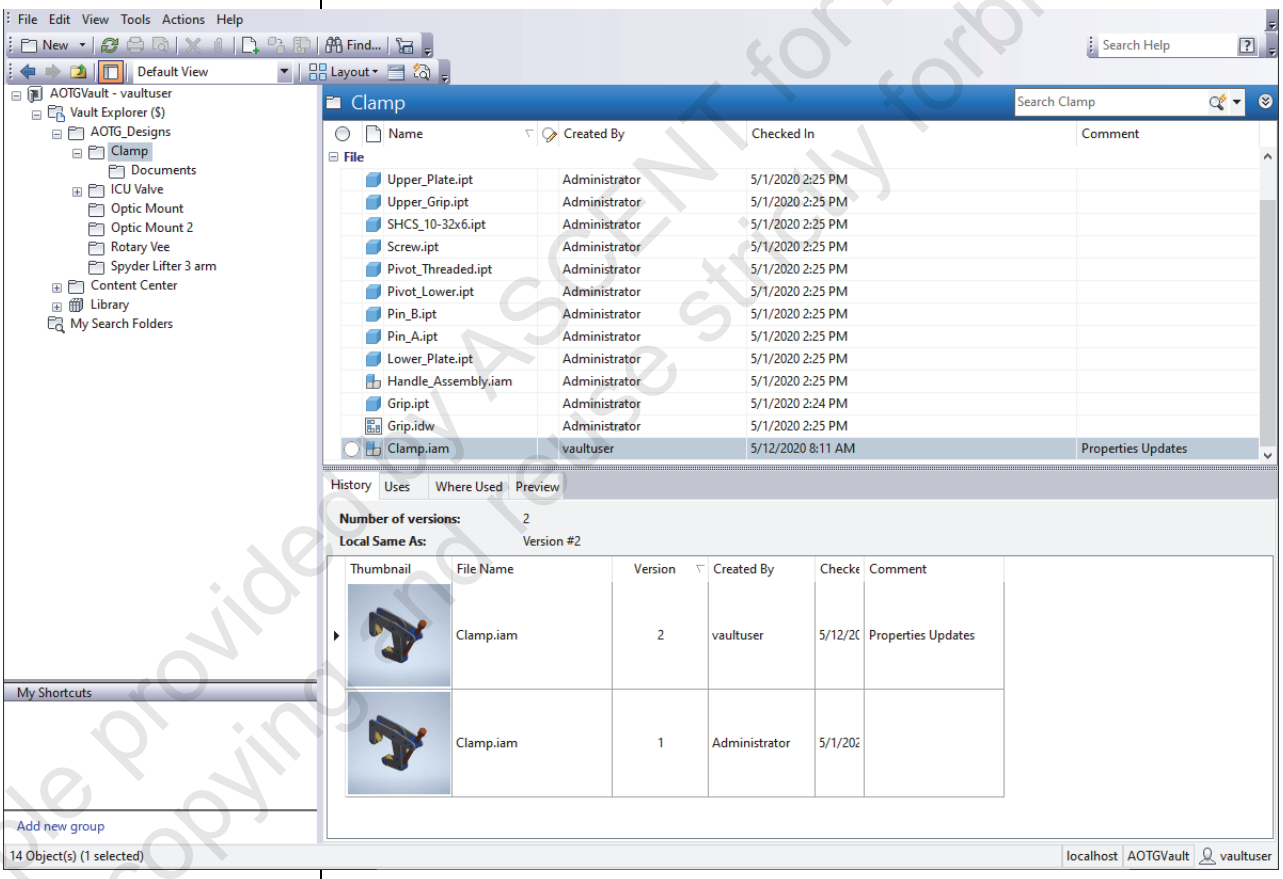
- Describe the features and functionality of Autodesk Vault.

1.1 Autodesk Vault Overview

Overview

Autodesk Vault is a secure, centralized storage solution for your design data. In this lesson, you learn about the features of Autodesk Vault, the components of a Vault installation, and how you can extend Vault to manage revisions and engineering changes.

In the following image, Autodesk Vault, a stand-alone application, is used to view the history of an Autodesk® Inventor® file that is stored in a vault.



Objective

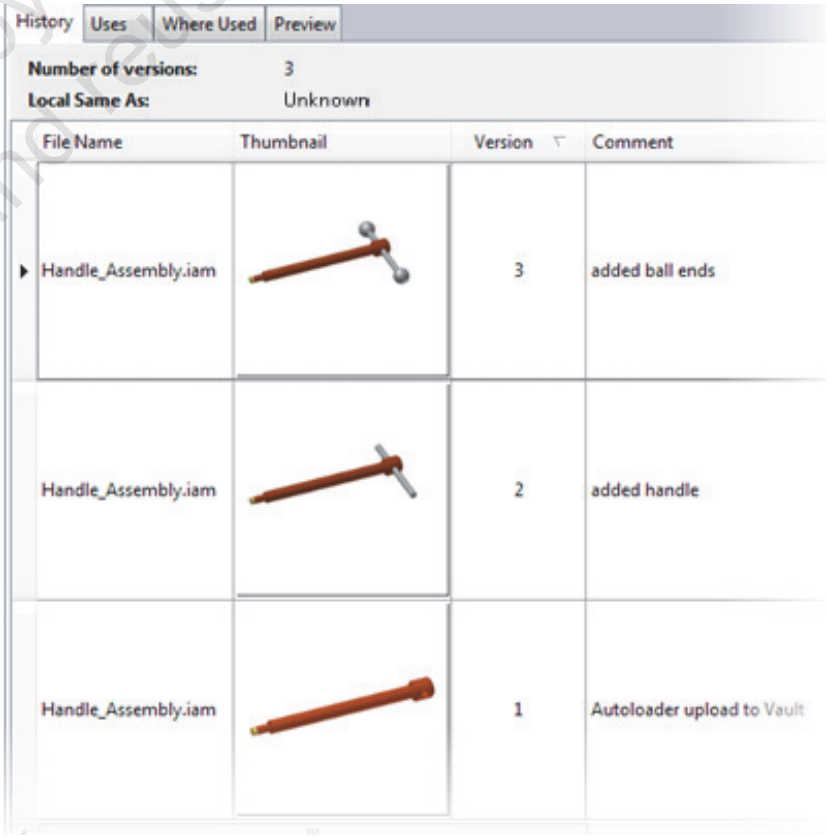
After completing this lesson, you will be able to:

- Describe the main features of Autodesk Vault.
- Describe the components of a Vault server.
- List the clients you use to access a vault.
- Describe the workflow to edit a file stored in the vault.
- Describe how you can extend the capabilities of Autodesk Vault to include management of revisions, bills of materials, and the change process.

About Vault

Autodesk Vault is a file management and version control system that you use to manage your project files. Vault offers security, version management, multi-user support, and integration with Autodesk applications.

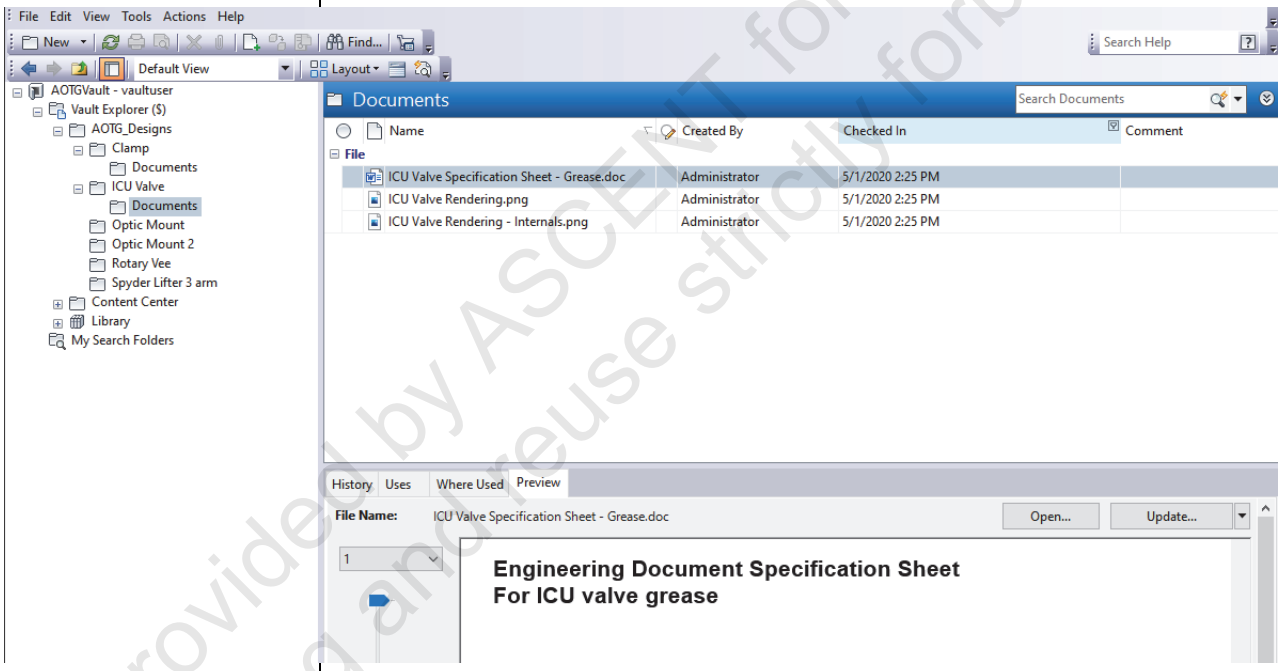
In the following image, the versions of a design are shown in Autodesk Vault, a standalone client that you use to perform common tasks.



Centralized Storage

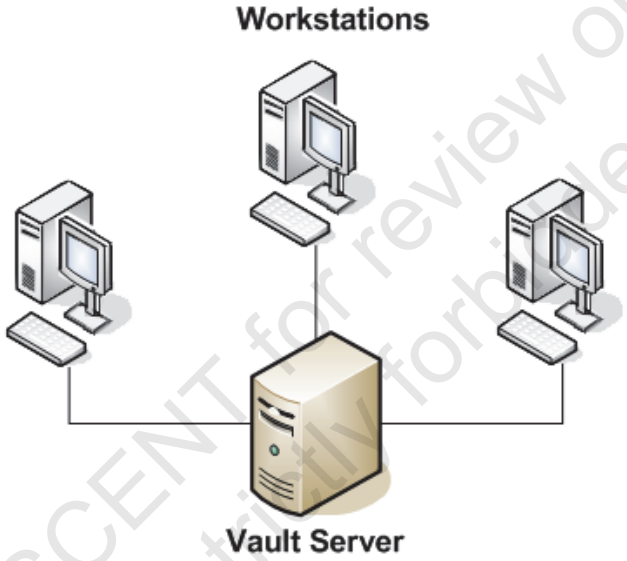
You can use Autodesk Vault to manage all your project files regardless of file format. This includes files from Autodesk Inventor, AutoCAD®-based products, Autodesk® 3ds Max®, Autodesk Revit products, AutoCAD Civil3D®, FEA, CAM, Microsoft Office, PDF files, and more. You can organize all your files and keep them in one central location for easy access by all members of the design team.

You organize files in the vault the same way that you organize files outside of the vault. You create folders and then add files to those folders as shown in the following image.



Multi-User Support

Autodesk Vault supports a single user on a single workstation or multiple users with a shared server as shown in the following image.



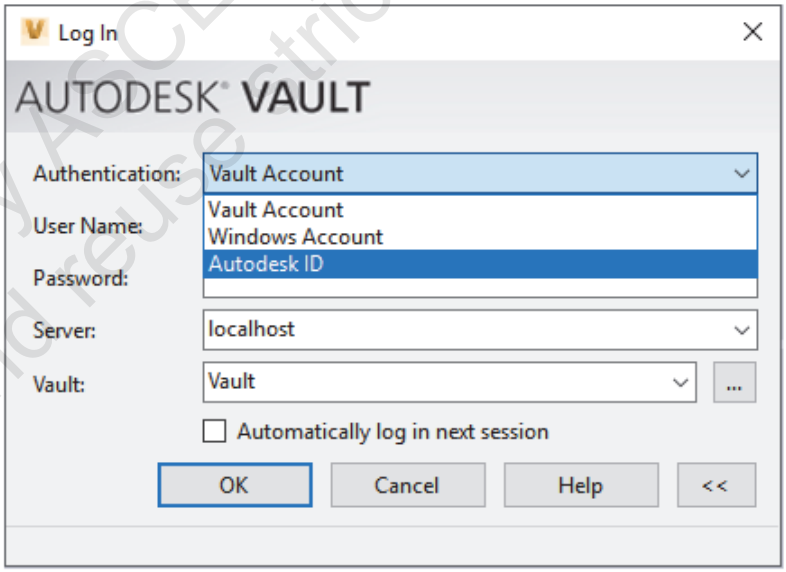
Check out and check in capabilities prevent more than one user from editing a file at one time, and enables all members of the design team to work together. Feedback via status icons and properties keeps all members of the design team informed of the status of files.

Security

Autodesk Vault provides an extra level of security over the standard file system. As shown in the following image, all users must log in to access design data. Autodesk Vault tracks each user's activities so that you can determine who modified a file. Because you cannot easily delete files, and because all file versions are retained, past versions are never misplaced or overwritten.

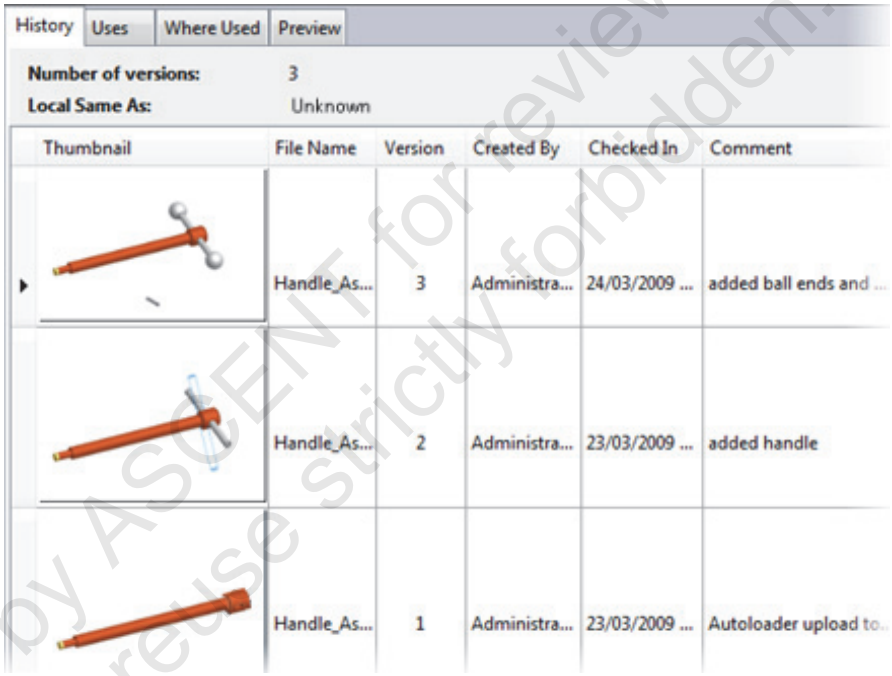
The following authentication options are available:

- **Vault Account**: Requires a Vault-specific user name with a password.
- **Windows Account**: Uses Windows Active Directory credentials, which are entered for you.
- **Autodesk ID**: Uses Autodesk ID credentials.



Version Management

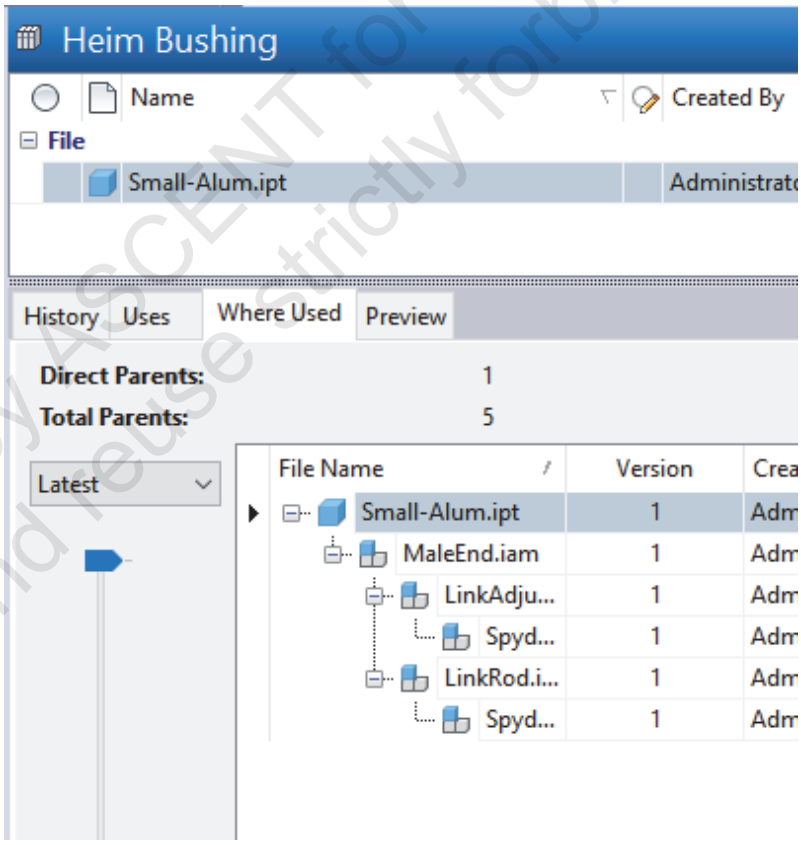
Autodesk Vault stores every version of a file and its dependencies. You can view any previous version and its associated files or roll back the design to a previous version. In the following image, the three versions of an Autodesk Inventor assembly are displayed in Autodesk Vault, a stand-alone application that you use to view the contents of a vault.



File Relationships

Autodesk Vault understands the relationships between files and maintains those relationships for you. If you rename or move files in the vault, the required parent files are updated so the correct relationship is maintained.

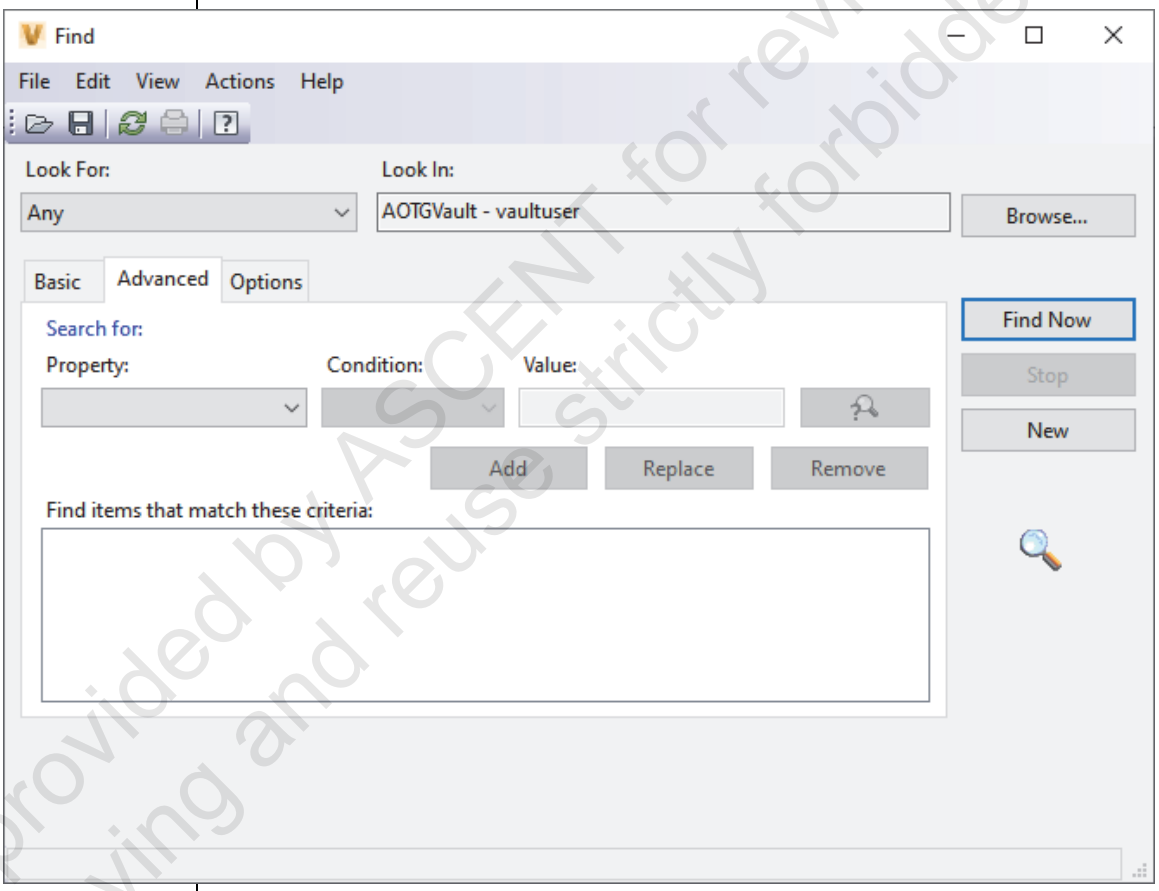
You can view file relationships to determine how a change might impact other designs. For example, before you edit a file, you can determine which designs use the file so that you understand the scope of your changes. In the following image, the Where Used information indicates which designs use an Autodesk Inventor part file.



File Properties

When you add a file to Autodesk Vault, the file's properties are extracted and saved in the database. Additional properties are added to the database, including your user name, the version number, the date, and comments. Using Vault, you can view file properties and search for files based on their properties.

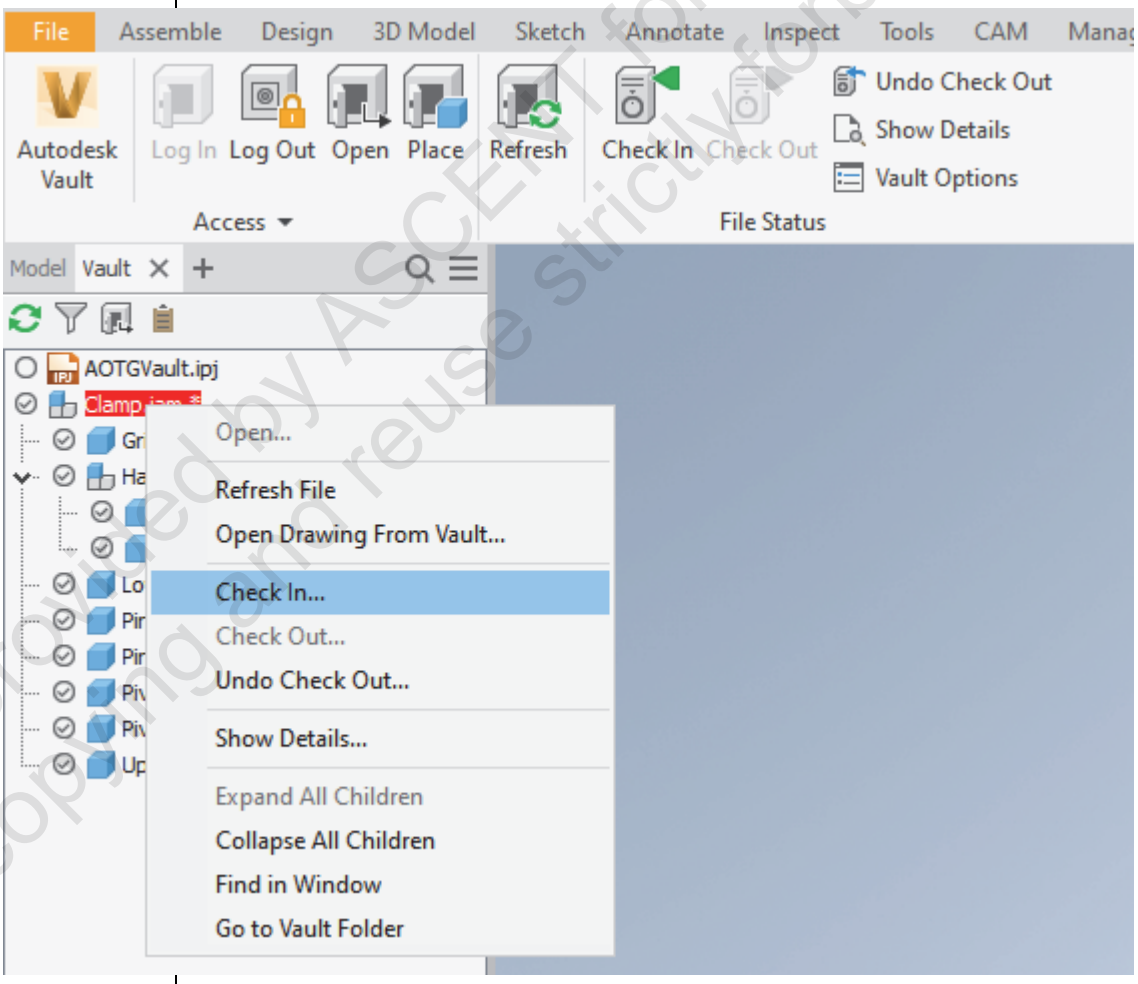
The following image displays the Find tool, which you use to find a file based on its properties.



Integration with Applications

Autodesk Vault is integrated into Autodesk® Inventor®, AutoCAD®, AutoCAD® Mechanical, AutoCAD® Electrical, Autodesk® Civil 3D®, Autodesk® 3ds Max®, Microsoft Office and more. The integration provides commands within the application that you can use to perform most Vault tasks without leaving the application.

For example, the Vault client interface for Autodesk Inventor includes a Vault browser. Icons indicate each file's status and shortcut menus give access to common Vault commands as shown in the following image.



Sharing Project Files with Other Users

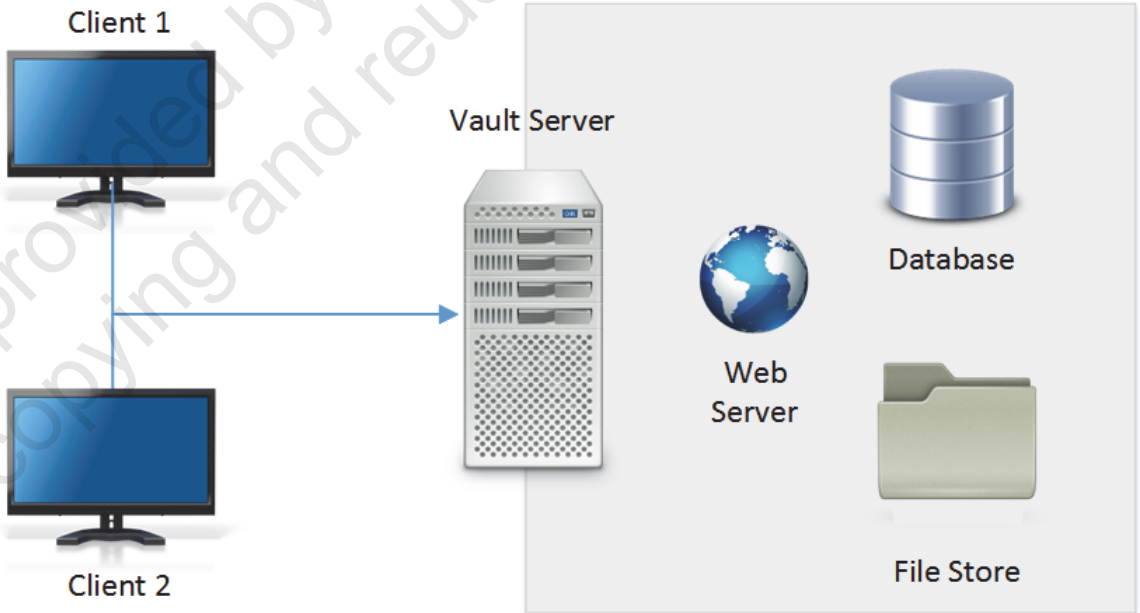
Autodesk Vault makes it easy to keep other members of the design team up-to-date by automatically publishing visualization files, such as DWF™ and DWFx, each time a file changes. You can publish to a shared folder outside the vault. Project Sync is available in Vault Professional.

Autodesk Data Management Server

About the Vault Server

The vault server consists of a computer and the software required to manage the vault itself and the transactions between the vault and the vault clients. The server can be located on a single workstation to support a single user or it can be located on a shared workstation or server to support multiple users.

The vault server includes a secure database that stores file properties and file relationships so you can quickly search across all your designs or determine where files are used. The server also includes a secure file store where the versions of your design files are stored. You create, manage, and maintain vaults and content center libraries with the Autodesk Data Management Server (ADMS) software.



In a typical multi-user installation, the Vault server software is installed on a server that is accessible by all workstations throughout a network. The vault clients, including Vault Explorer and the Vault add-ins for specific applications, are installed on each workstation.

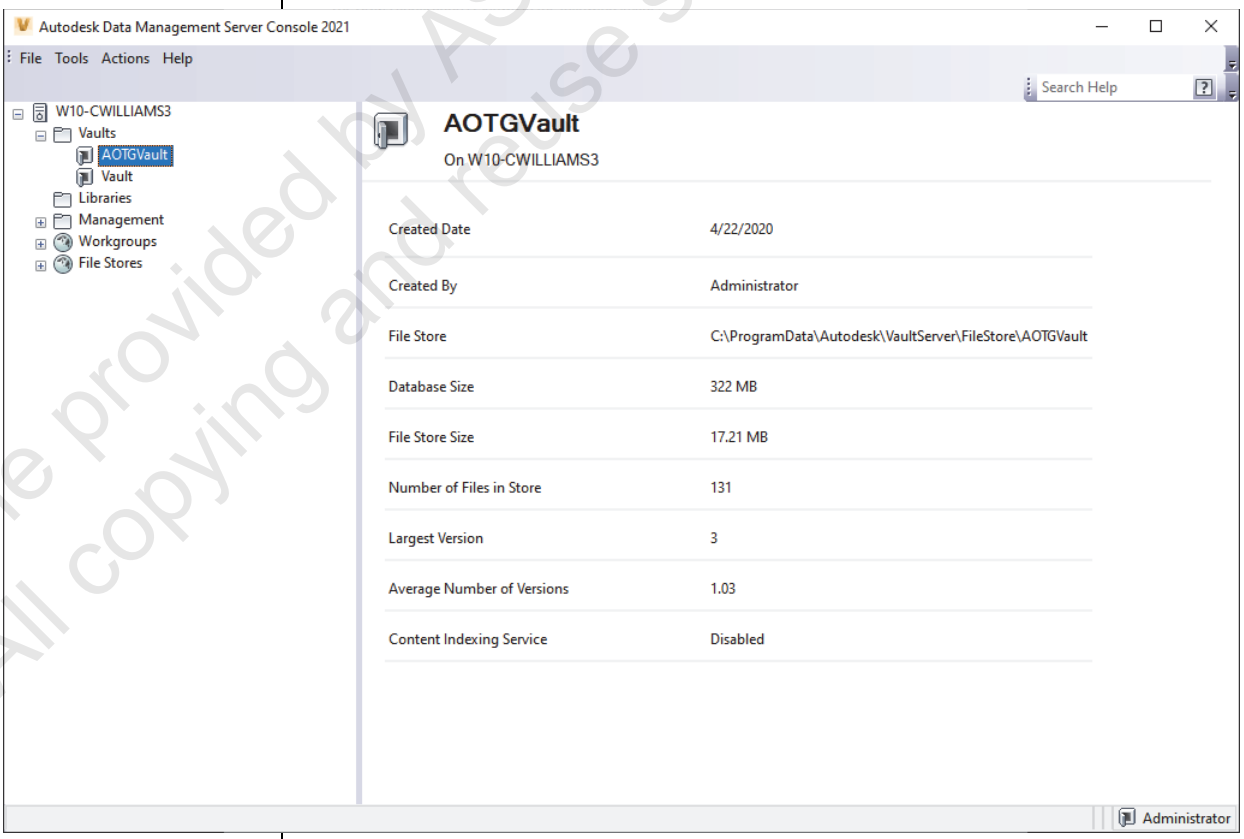
In a single-user, single-workstation environment, the server and clients can be installed on a single workstation as shown in the following image.

About Autodesk Data Management Server Console

Autodesk Data Management Server (ADMS) Console is an application that runs on the vault server. You use ADMS Console to perform maintenance and management tasks on vaults such as:

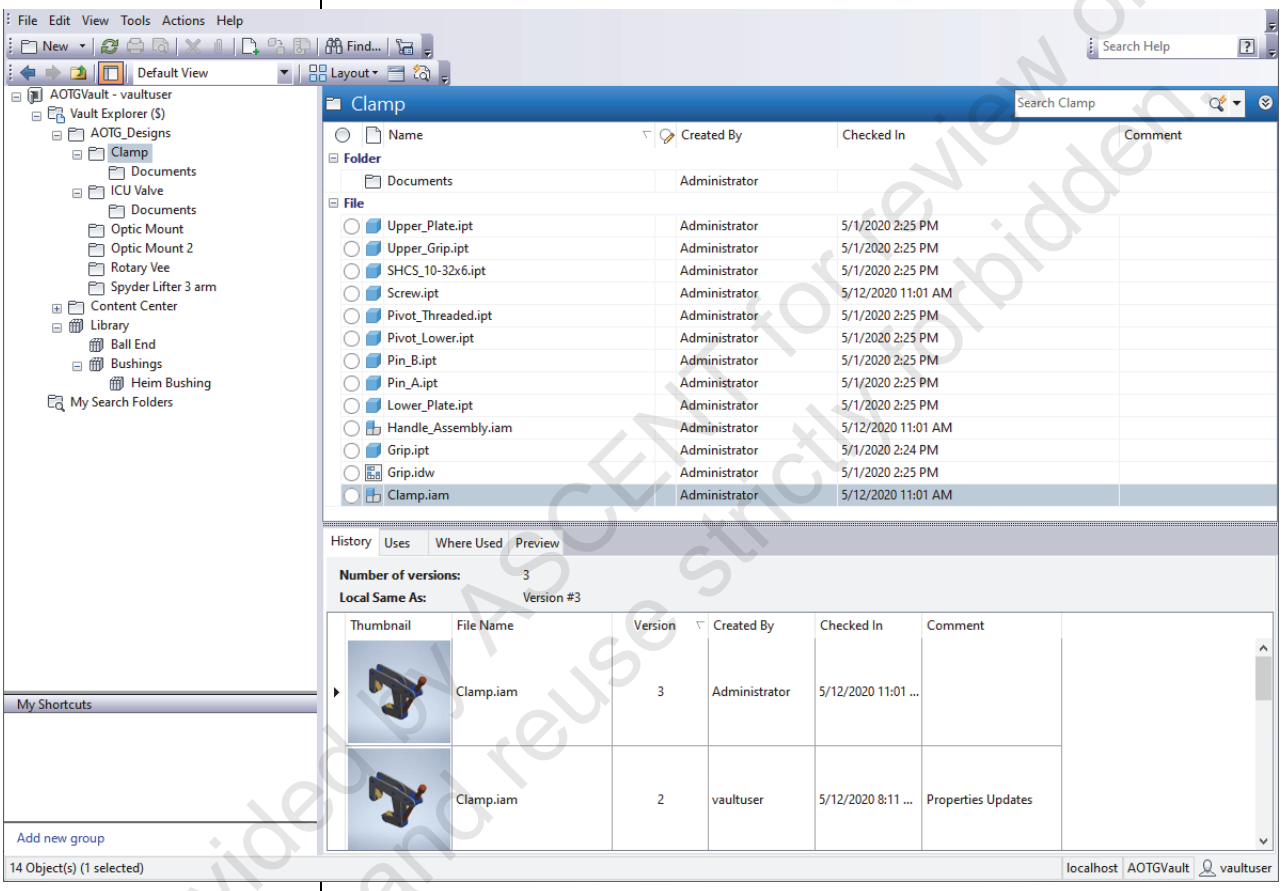
- Creating and deleting vaults.
- Backing up and restoring vaults.
- Moving vault databases and file stores.
- Purging unneeded versions of files.
- Defragmenting vault databases.

The ADMS application is shown in the following image.



Vault Clients

You access files in the Vault using vault clients that run on your workstation. You use a stand-alone client to perform common tasks on all files and folders in a vault. In each application that you run, you use the built-in client to seamlessly work with the files associated with that application. The following image displays the Vault client.



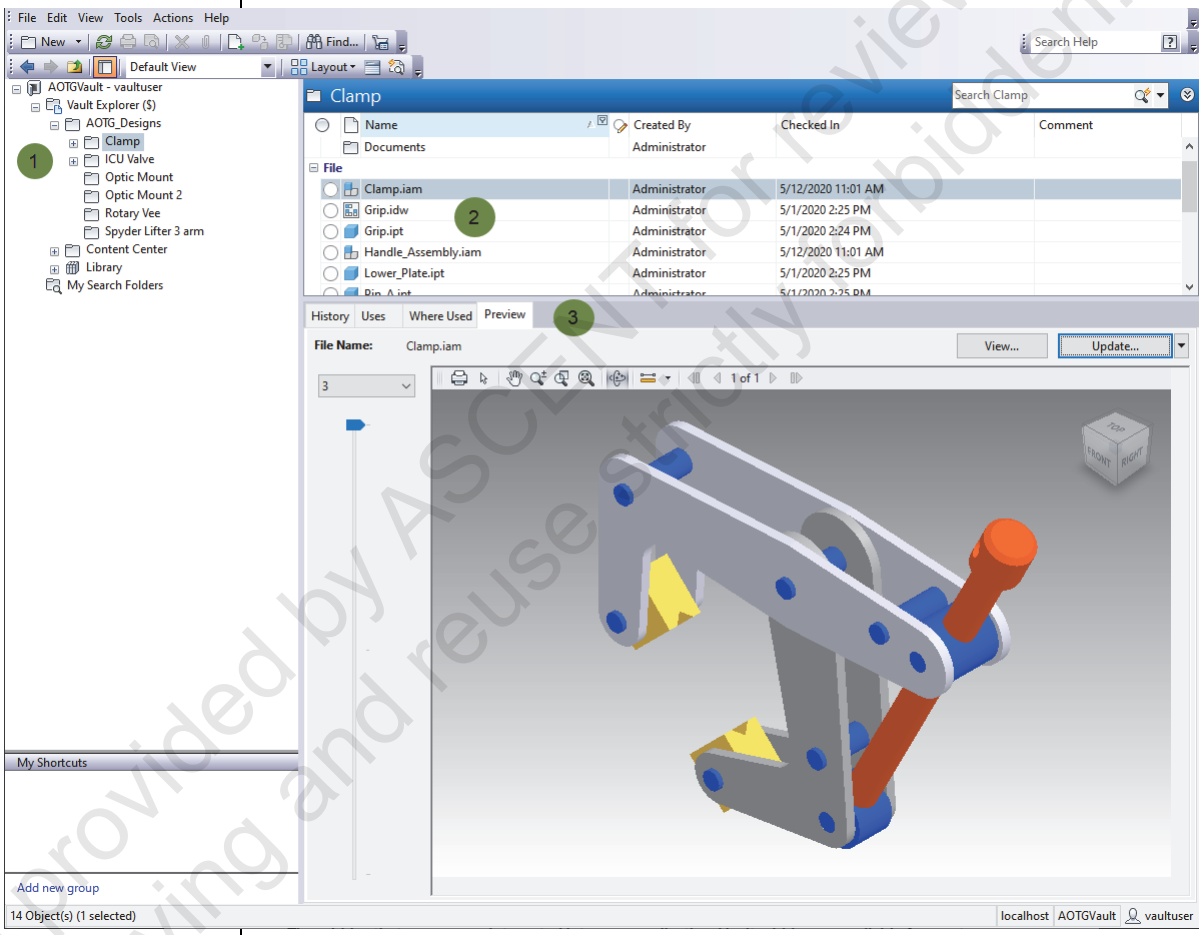
About Autodesk Vault

Autodesk Vault is a stand-alone application that you use to perform vault tasks such as:

- Viewing files and properties.
- Determining the status of a file.
- Finding designs based on file properties.
- Viewing the history of designs.
- Viewing file relationships to determine where a file is used.
- Moving and renaming files.

- Copying an existing design as a start point for a new design.
- Creating folders in a vault.
- Checking out files and opening them (in the corresponding application).

The Autodesk Vault client application is shown in the following image.



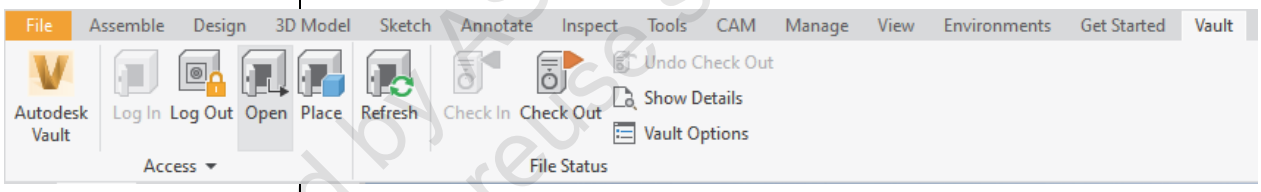
1. The folder structure indicates how files are organized in the vault. You organize files in the vault using the same techniques that you use to organize files on a local drive.
2. The file pane lists the contents of the selected folder. Details for each file are shown such as the current status, the latest version number, who checked out the file, and comments. You can customize the file pane to show any of the properties that are stored in the vault.
3. The tabs provide access to detailed information on the selected file, file history, and relationships to other files. The Preview tab displays the associated visualization file.

Autodesk Vault Add-ins for Applications

The add-ins that you use are integrated into your application. Vault add-ins are available for most Autodesk products and for Microsoft Office applications. Using commands built in to each application, you can perform common editing-related vault tasks such as the following:

- Determining the status of files.
- Adding files to a vault.
- Checking out files and opening them in their associated application.
- Getting files from the vault.
- Checking files in and out of the vault.

For example, in Inventor, you can access common vault commands from either the ribbon or a toolbar as shown in the following image.

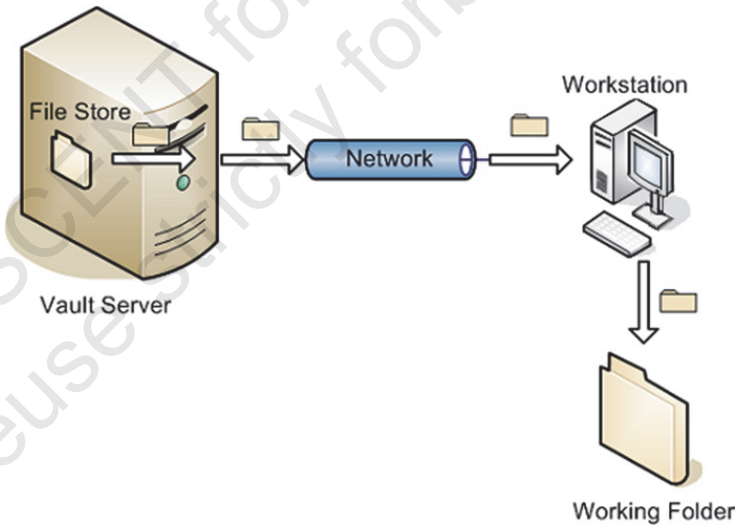


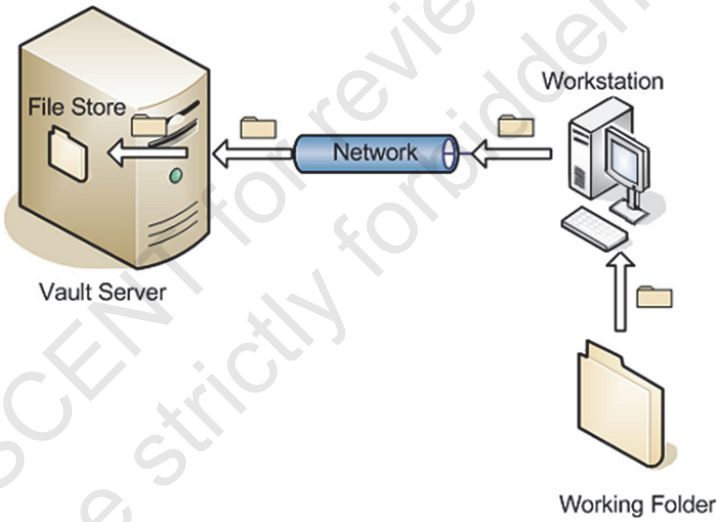
A Typical Workflow

To work on files from the vault, you get a copy of the files onto your local working folder. To edit the files, you check them out. After editing the files, you check them back in to return them to the vault.

Process: A Typical Workflow

The following steps describe a typical workflow for editing a file from the vault. Details on how to use Vault with specific applications are presented in later chapters.

Step	Description
Get a copy of the file from the vault	The first step is to get a copy of the files from the vault onto your local computer. The vault contains the master copy of all the files so that all users have access to the latest versions. When you are editing files, you always work on copies of the files on your local computer. The local copy of the file is copied to the working folder on your workstation as shown in the following image. 
Check out the files to edit	Once the files are on your computer, you work on them as you normally would. Before you edit a file, however, you must check it out of the vault. This informs all other users of the file that you have it reserved for editing and prevents them from editing the same file. Multiple users can have copies of the same files on their computers but a file can be checked out to just one user at a time. Other members of the design team can still get read-only copies of files from the vault for viewing or for reference in their designs or can check out another file in the same model for editing.

Check in the completed files	Once you finish editing a file, you check it back in to the vault. When other users check the status of the files, they will be informed that you have finished editing the file and they can refresh their local copies of the model files to get the latest version from the vault. When you check in a file, the local copy of the file is copied back to the Vault server as shown in the following image. The previous version is not overwritten— the file and its dependencies are saved so you can recall the previous version of the model at any time. 

Key Points

- You do not work on files in the vault. You work on files on your local computer that you have copied from the vault.
- You must check a file back in to the vault in order to update the copy in the vault.

Extending Vault Basic

As your needs grow, you can extend Autodesk Vault Basic by purchasing Autodesk Vault Workgroup or Autodesk Vault Professional. Each application builds on Vault by adding capabilities to manage revisions, bills of materials, and the engineering change process. Autodesk Vault Basic forms the basis for all of these applications and continues to provide secure storage, version management, property management, and collaboration capabilities.

1.2 Chapter Summary

In this chapter, you learned about the features of Autodesk Vault and how Autodesk Vault is a secure, centralized storage location for managing engineering design data.

Having completed this chapter, you can:

- Describe the features and functionality of Autodesk Vault.