# Autodesk Vault – What Is It & Why Do I Need It?

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### Learning Objectives

- Understand the different features found in the Vault family of products
- Ask intelligent questions when deciding on implementing Vault
- Understand some of the potential benefits of adding Vault
- Understand the differences in the Vault subscriptions, and where to find more information

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## Description

This class will be an overview of Autodesk Vault products, and what they can do for your organization. We will talk about the features of the different products, and help you figure out the right questions to ask when deciding if Vault is right for you.

## Speaker(s)

## Christopher Benner

CAD Department Supervisor at Powell Fabrication & Manufacturing, LLC in St. Louis, Michigan. I have been working as a mechanical designer and drafter for more than 20 years, using Autodesk products for the majority of that time. I was inducted in the first class of Autodesk Expert Elites for my activity on the Autodesk discussion forums and social media, and for my CAD Tips, Tricks & Workarounds blog.  I've spoken at Autodesk University 5 years in a row, including a trip to Moscow in 2014 to speak at AU Russia. My specialties are Inventor Tube & Pipe and Frame Generator, Content Center and Vault Professional.

## Mark Lancaster

As a Product Support Specialist for Synergis Engineering Design, a top tier Autodesk Partner reseller, I'm passionate about helping customers get ahead and stay ahead with their Autodesk solutions. I'm an Autodesk Certified Inventor Professional with expertise in frame generator, routed system, content center, and iLogic, and am proud to have Autodesk's Expert Elite status as a Helpdesk technician.  I currently and continually support users around the globe through the Autodesk Installation/Licensing and Inventor forums.  I'm no stranger to the CAD world. I bring 20+ years of experience and industry knowledge in the manufacturing world and 15+ years in 3D modeling to the table, which allows me to better understand the unique challenges our clients face. Plus, I'm a self-taught AutoCAD user since Release 9. Everyday I'm proud to live out my motto, "I'm here to assist you in getting your job done" and help you find better ways of accomplishing your own work.
Other Specialties: Autodesk Vault, Fusion 360, Autodesk Licensing/Subscription, Pro/E, Smarteam, and Lean Manufacturing

# What IS Vault?

In the simplest terms, Autodesk Vault is a tool for document management.  It allows users to store and organize design data and documentation, as well as making it easier to maintain versions and revisions, reuse designs and prevent multiple users from modifying the same document simultaneously.  The different levels in the Vault family also have other functions, which we will cover in later sections.

A *document management system (DMS)* is a system (based on computer programs in the case of the management of digital documents) used to track, manage and store documents and reduce paper.  This is taken from this page on Wikipedia, providing a more generic definition.

## Reasons for Using a DMS Such as Vault

Having a document management system of any kind can save time and money, as well as helping to eliminate possible headaches.  Having all of your data in one location can increase productivity by making searches for documents much faster.  Many systems can track all of the different versions of a file throughout its life cycle, so that older versions or revisions can be viewed or printed.  Using a client viewer, or possibly an online viewer, offices may be able to reduce paper use.  There are many such reasons to use a DMS.

Autodesk Vault is no different.  Even Vault Basic can track versions of a file, and older versions can be viewed or printed, or even purged from the Vault.  Security settings can be configured to ensure that users can perform those tasks that are relevant to their jobs.

The basic check in/check out methodology of Vault ensures that multiple users may not make changes to a document simultaneously.  In the days prior to this technology, if users A&B opened the same AutoCAD file and made changes, whichever user finished and saved last was the winner.  All of the other user's changes would be overwritten and lost.



This costs time and money.  With Vault, the second user would have Read Only rights to the file and could do nothing more than save a copy.  With the higher levels of Vault products there are many other functions that become available, we will discuss these in depth in later sections.

## A Brief History of Autodesk Vault

In 1999 a company named truEInnovations, Inc. was founded by two entrepreneurs, Brian Roepke and Dean Brisson. They wanted to bring a more affordable engineering data management tool to the market. In February of 2002, they announced the launch of truEVault.

### truEInnovations Introduces truEVault, Workgroup based File Management for Autodesk Inventor & Autodesk Streamline

**Eagan, Minnesota, February 11, 2002** - truEInnovations, Inc., a supplier of file and data management software for the mechanical computer aided design (MCAD) industry, today announced truEVault, the first in-window file management solution designed specifically for Autodesk Inventor™ 3D design software. truEVault is a data and document management tool that gives customers the ability to work concurrently with other members of their team while keeping all current data and past revisions in a secure vault for access at any time. truEVault delivers customers the tightest integration between a 3D software application and file management solution on the market. With this release, truEVault also becomes the first file management solution to be integrated with Autodesk Streamline™, Autodesk's hosted collaboration service designed for small and midsize manufacturers to instantly share design information across extended manufacturing teams.

#### The First In-Window File Management Application for Autodesk Inventor

Leveraging the cutting edge Application Programming Interface (API) of Autodesk Inventor, truEVault offers the best possible user experience by tightly integrating a file management solution directly within the Autodesk Inventor software's user interface. This integration offers customers a seamless experience by limiting the number of applications that need to be open at one time, as well as eliminating the need to continuously switch between applications. Both of these features equate to more productivity for the customer.

"Working with the Autodesk Inventor API, we were able to easily integrate our products and deliver a seamless interface to our customers," said Dean Brisson, chief technology officer at truEInnovations. "Autodesk minimized our development tasks by providing a robust and complete interface as well as the expert technical support we needed to back up our development."

#### The First Integration with Autodesk Streamline

truEVault complements the Autodesk Streamline collaboration capabilities by bridging the authoring tool with the collaboration tool, therefore allowing automatic publishing to the Autodesk Streamline site based on interaction with Autodesk Inventor software. This integration keeps the user's viewable files up to date while making sure the entire organization has the latest version available.

"This release marks a new relationship with Autodesk," said Brian Roepke, president of truEInnovations. "We are providing users with the first solution that understands an engineer's design process and gives them the functionality required to properly manage their files without imposing unwanted burden on their productivity."

"Small to mid-size manufacturing companies who don't want to implement a complex and costly product data management solution need a simple, yet robust solution that allows them to simplify the engineering process and effectively manage the revision history and concurrent use of documents," said Robert Kross, vice president of the Manufacturing Division at Autodesk. "With truEVault, truEInnovations has created the first file management solution that provides our customers with an environment free of administration, installation and configuration tasks, making the design process simpler than ever."

*TRUEVAULT PRESS RELEASE – FEB. 2002 FROM CADINFO.NET*

In 2003 truEInnovations was acquired by Autodesk, who then took the Vault product and began further integrating it into the manufacturing product line, starting with Inventor. Over the years the Vault product line has grown and to work with much of the Autodesk product line, branching from being only a manufacturing solution, into one that supports a wide range of Autodesk products and several 3rd party products as well, as shown below from 2018.

**AUTODESK PRODUCTS:**

| Autodesk Applications | Vault Basic 2018 | Vault Workgroup 2018 | Vault Pro 2018 |
|---|---|---|---|
| Alias | X | X | X |
| Alias Automotive | X | X | X |
| Alias Design | X | X | X |
| Alias Surface | X | X | X |
| AutoCAD | X | X | X |
| AutoCAD 3DS Max | X | X | X |
| AutoCAD 3DS Max Design | X | X | X |
| AutoCAD Architecture | X | X | X |
| AutoCAD Civil 3D | X | X | X |
| AutoCAD Electrical | X | X | X |
| AutoCAD LT | | X | X |
| AutoCAD MEP | X | X | X |
| AutoCAD Map 3D | X | X | X |
| AutoCAD Mechanical | X | X | X |
| AutoCAD P&ID | X | X | X |
| AutoCAD Plant 3D | X | X | X |
| AutoCAD Utility Design | X | X | X |
| Inventor | X | X | X |
| Inventor LT | | X | X |
| Inventor Professional | X | X | X |
| Inventor Publisher | X | X | X |
| Moldflow Adviser | X | X | X |
| Moldflow Synergy | X | X | X |
| Navisworks Manage | X | X | X |
| Navisworks Simulate | X | X | X |
| Revit Architecture | | | X |
| Revit MEP | | | X |
| Revit Structure | | | X |
| Simulation CFD | | | X |
| Simulation Mechanical | X | X | X |
| Simulation WS | X | X | X |
| Simulation Multiphysics | X | X | X |

**MICROSOFT PRODUCTS**

| Microsoft Products | Vault Basic 2018 | Vault Workgroup 2018 | Vault Professional 2018 |
|---|---|---|---|
| Excel | X | X | X |
| Outlook | | X | X |
| PowerPoint | X | X | X |
| Word | X | X | X |

**OTHER 3RD PARTY PRODUCTS**

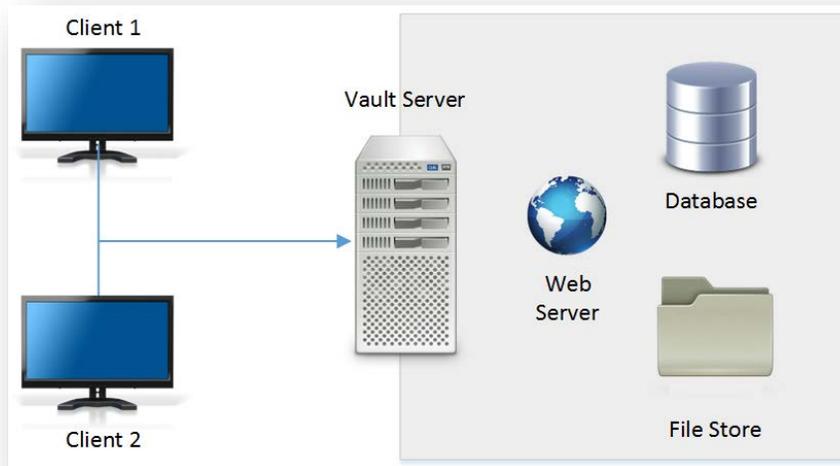| 3RD Party Products | Vault Basic 2018 | Vault Workgroup 2018 | Vault Professional 2018 |
|---|---|---|---|
| MicroStation | | | X |
| ProE | | | X |
| Solidworks | | | X |

## The Vault Architecture

### The Vault Server

The Vault environment is set up as a client - server application. The server side consists of three main components: Database, Web Server and File Store.

The *Database Server* uses Microsoft ® SQL Server to track data and relationships associated with your files.

The *Web Server* uses Windows Internet Information Services (IIS), to manage communications between the server and clients.  IIS must be installed for an environment with more than one user.

The *File Store* is where your files are securely stored.  It relies on the Database Server to maintain the index information of where those files are located.
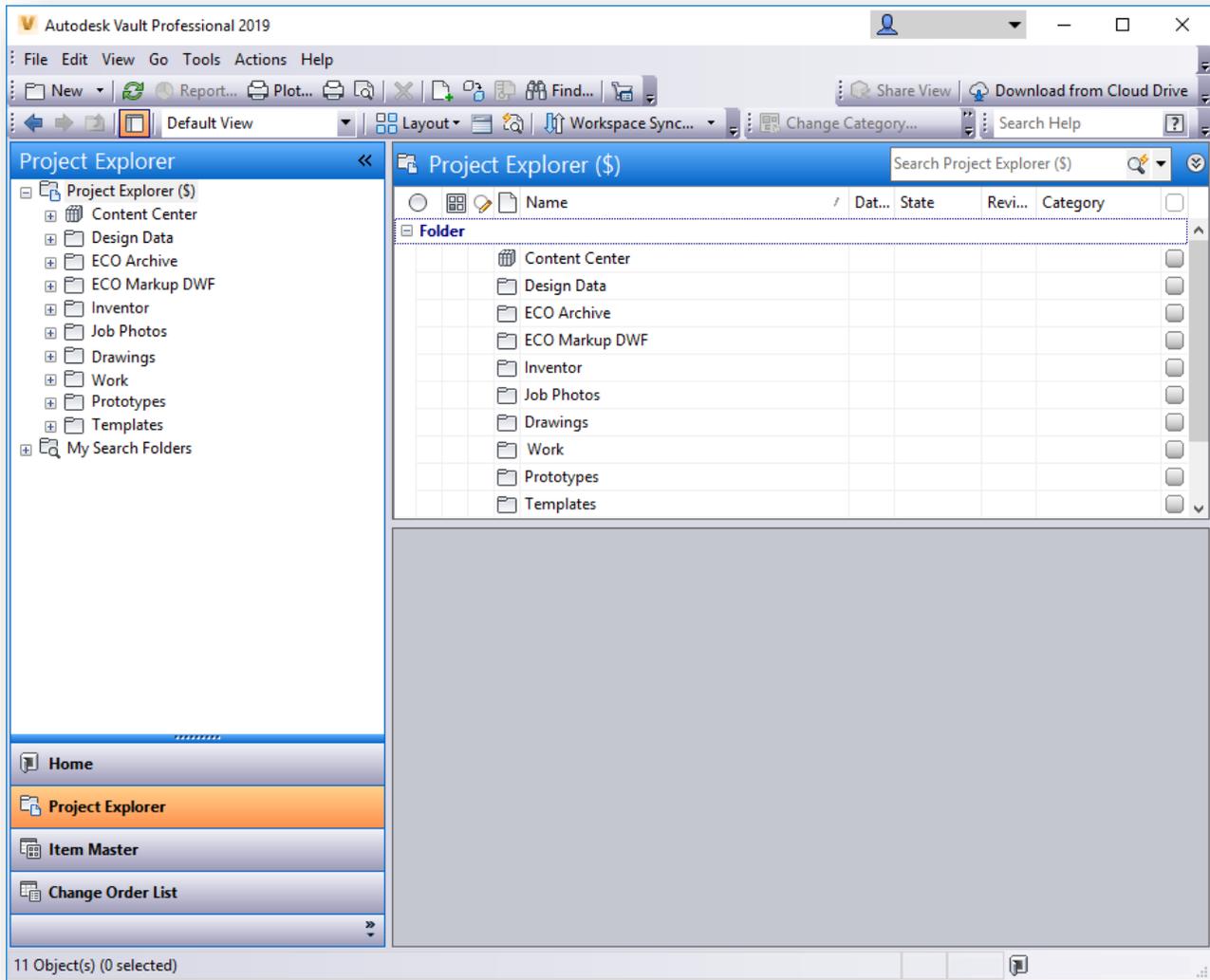
It is generally considered a best practice to have a single, dedicated server for the Vault server.  This setup will prevent competing business applications form interfering with Vault.  Examples include Microsoft Exchange as well as other data management systems.  Other Vault configurations are possible, for example, placing the database and file store in separate locations.
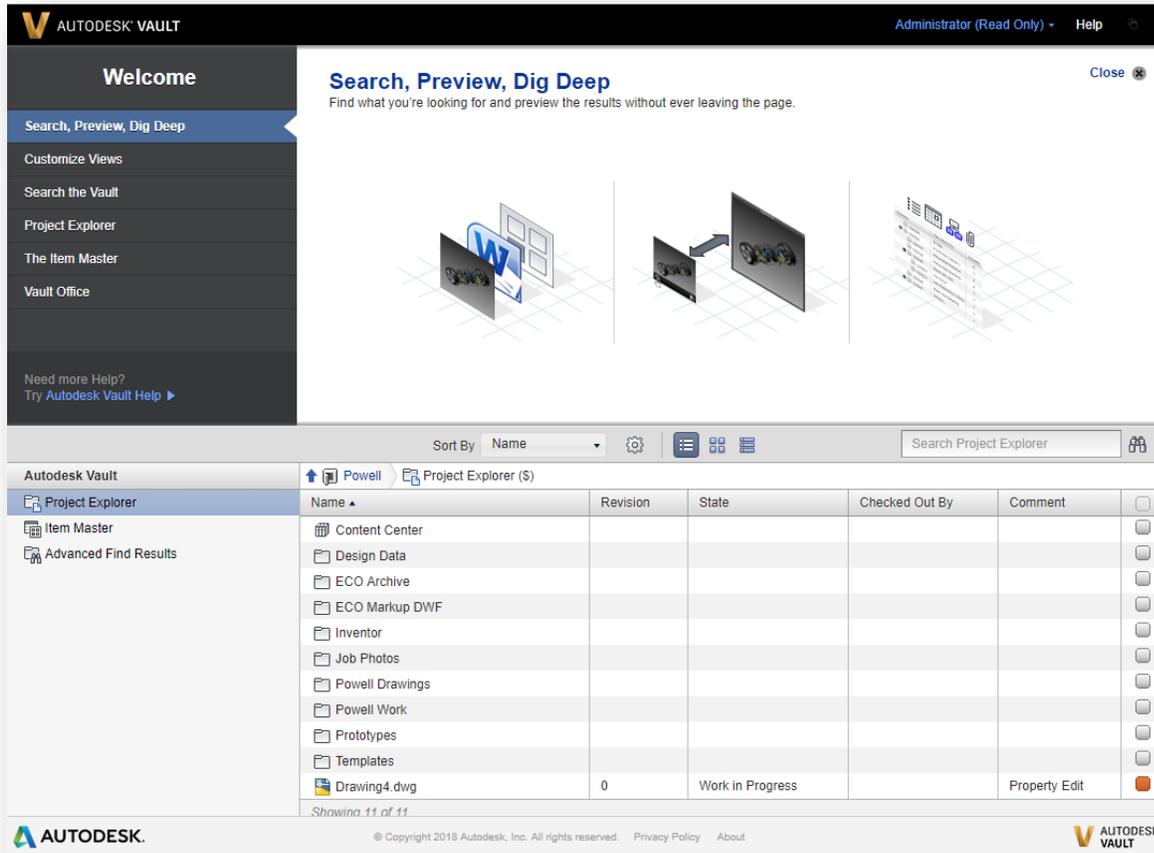
## Vault Clients

A Vault Client is the access point for the end user to connect to the Vault server.  This is where users access files or perform any of the Vault operations.

The *Vault Client,* sometimes called Vault Explorer or Vault Thick Client, is the primary place to view all the Vault structure.  Users may view, print or add files, perform file-based operations and configure Vault settings, all based on the level of permissions the user has been granted and which Vault level you have.
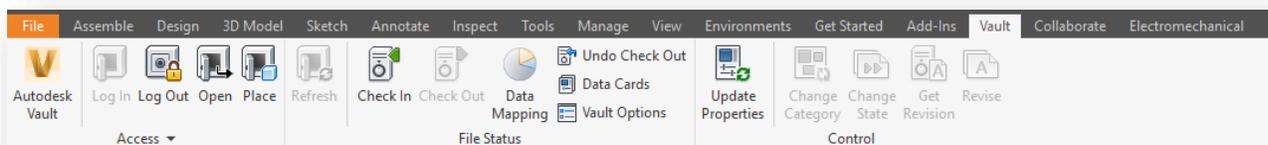
The **Vault Thin Client** is a browser-based client that allows users to view the contents of a Vault and print files, if they have permissions.  With a Vault Office license, the thin client also lets users perform some file management tasks.  Thin client works best when opened with Microsoft Internet Explorer.
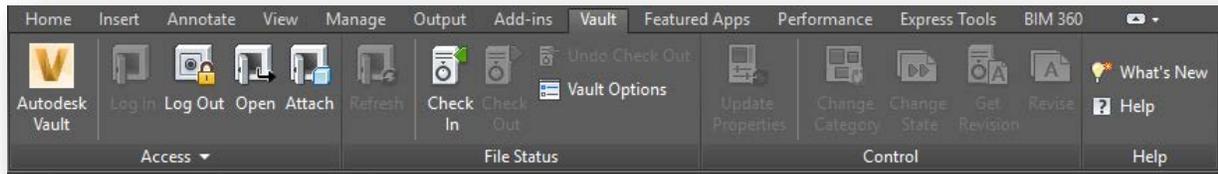


*AUTODESK VAULT THIN CLIENT 2019*

**Vault Add-in Clients** are those found within another application, such as AutoCAD, Inventor and Microsoft Office products.  These can be used for some basic Vault functions as well as application specific Vault tasks.
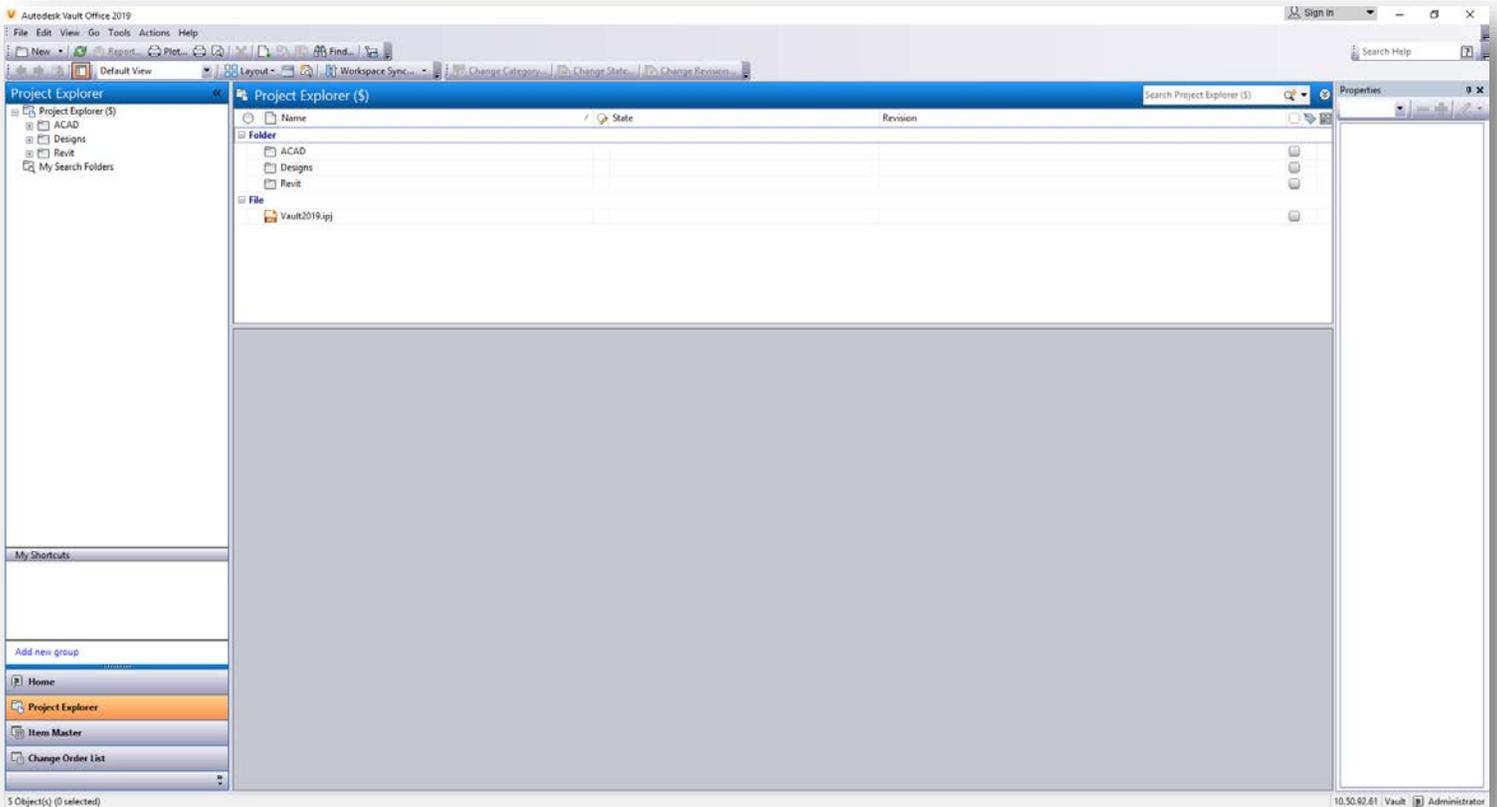


*INVENTOR PROFESSIONAL 2019 VAULT ADD IN*

*AUTOCAD 2019 VAULT ADD IN*

**Vault Office Client** provides limited Vault functionality to users who need to manage non-CAD data such as documents, spreadsheets or images.  This is useful, for example, to engineers or engineering firms that deal with a lot of non-CAD data.



*VAULT OFFICE 2019 CLIENT*

### Replication

Vault Replication is used to copy data from one server to a second server in a different location.  It is commonly used in companies with multiple locations around the globe.  Data can be shared across locations without having to send large files across a Wide Area Network.  Replication can be performed on demand or as a scheduled task.  It is only available in a multi-site environment.

## The Vault Family of Products

### Vault Basic

Vault Basic can be used to organize, manage and track your data and documents in a central location.  Basic has Check in and Check out capabilities to protect data, and basic version controls. Users can easily share and reuse data and even work with "AnyCAD" data.  Vault Basic can be integrated with Microsoft Office as well, to manage documents, spreadsheets and presentations.

Vault Basic is a free entitlement to customers who have purchased a qualified CAD application such as AutoCAD, AutoCAD Verticals, Inventor, suites or Product Design & Manufacturing Collection. Although the Vault Basic Server can be installed on a server (physical box), virtual server or a computer meeting system requirements, the Vault Basic client itself can only be installed on those machines that already contain a qualified CAD application.

### Vault Workgroup

Vault Workgroup aims to help teams share design and engineering information more easily. Incorporating all of the functions of Vault basic, Workgroup also adds easy administration functions to control access and permissions across workgroups in an organization.  Workgroup also adds life cycle and revision controls directly in the application interface.

Vault Workgroup is available as a subscription for 1 or 3 years.

### Vault Professional

Vault Professional continues to build on the functionality of the above products by adding multi-site tools such as replication to further connect design teams around the world.   In addition to tracking life cycles and revisions, Professional also offers tools for Engineering Change Orders and Bills of Materials.  Integration with ERP systems makes it easier to share this data with the entire enterprise.

Vault Professional is also available in both 1 and 3 year subscriptions.

### System Requirements

The system requirements for the various Vault products and releases can be found on the Autodesk Knowledge Network at this location.

## Compare all Vault Family Features

Data management features shared by all three Vault products.

| Products | Vault Basic | Vault Workgroup Subscribe | Vault Professional Subscribe |
|---|---|---|---|
| **∧ Features** | | | |
| — Data management fundamentals | | | |
| Direct CAD integration | ✓ | ✓ | ✓ |
| Support for AnyCAD | ✓ | ✓ | ✓ |
| Fast data searching | ✓ | ✓ | ✓ |
| Central location for project data | ✓ | ✓ | ✓ |
| Data reuse | ✓ | ✓ | ✓ |
| Concurrent design | ✓ | ✓ | ✓ |
| Easy administration and configuration | ✓ | ✓ | ✓ |
| Quick, flexible deployment | ✓ | ✓ | ✓ |
| Microsoft Office integration (Word, Excel, PowerPoint) | ✓ | ✓ | ✓ |

*HTTPS://WWW.AUTODESK.COM/PRODUCTS/VAULT/COMPARE-PRODUCTS*

Advanced features of Vault Workgroup and Professional.

| Products | Vault Basic | Vault Workgroup | Vault Professional |
|---|---|---|---|
| | | Subscribe | Subscribe |
| **─ Advanced data management** | | | |
| Visual data management for Inventor | | ✓ | ✓ |
| Automate tasks and deliverable creation | | ✓ | ✓ |
| Automatically publish and manage PDFs | | ✓ | ✓ |
| Projects and reporting | | ✓ | ✓ |
| Revision control | | ✓ | ✓ |
| Flexible data security | | ✓ | ✓ |
| Microsoft Outlook integration | | ✓ | ✓ |
| Project lifecycles | | ✓ | ✓ |
| Vault Office | | ✓ | ✓ |
| BOM management | | | ✓ |
| Automated engineering change orders | | | ✓ |
| Custom objects | | | ✓ |
| Multisite scalability | | | ✓ |
| Revit integration | | | ✓ |
| ERP integration | | | ✓ |

## Is Vault the Right Solution for You?

Now that you know the features and some of the costs associated with the different Vault products, how can you decide if one of these is the right direction for your organization?  And if yes, which version of Vault is the best for your needs?

It is always best to do a full investigation before diving right in.  Vault, even Vault Basic, should be approached carefully and with a forward-looking plan.  There are certain questions that you can ask yourself when starting the process.  Some of these may include:

- Do you store and manage your CAD files on your local or network drives?
- Do you have a need to search for files, projects etc.?
- Do you ever need to go and look back at history (and you don't really have that history)?
- Do you have several individuals modifying the same files?
- Do you need to share and work on the same information across different Engineers and Designers/Drafters?
- Do you need version control?
- Do you need a mechanism to control who sees what drawings and/or documents?
- Do you still use a manual process in controlling and modifying your drawings and/or documents?
- Do you need to have non-Engineering individuals to review and approve drawings and documentations?
- Do you need to share, view, and print your information outside of your Engineering Department and/or via vendors or your end customers?  Or is this a manual process using printers/plotters and email as a form of communication?
- Do you need a form of collaboration because your design team is located through the world?

Other points to consider may include items such as:

- What file naming standards are currently in use.
- What is the current life cycle in use in your design process, if any.
- What is the current design workflow, from concept to release, and who is involved.
- How often do you re-use existing designs?
- What current software is part of your design process, and
- What pain points exist in your current process.

One of the larger issues that should be considered, and many overlook, is the culture in your organization.  Implementing Vault can cause a large cultural change, and you should consider whether the people who will be involved are ready to accept this level of change.  If there is going to be a large amount of resistance or blowback, an implementation may fail, or cause bitterness among users who feel it was forced on them.  Ask your intended users for their input and involvement in the decision process.  This will help to create ownership for them and may make the decision and implementation go more smoothly.

Also look at the level of support for a Vault adoption from senior management. Think about what other departments may be affected by this change and get them involved in the process up front. Training and support are also very important; are you ready to get the necessary training? Will you have one onsite expert who will be your Vault admin and "champion"? The involvement of a reseller or consultant could also be very helpful, or even critical in making a smooth transition. If you already have access to Vault Basic through your current subscriptions, this may be a good way to "get your feet wet" and introduce the idea of Vault to your team. When subscription renewal time comes, you can always upgrade and add more features.

Also critical is the involvement from the beginning of your IT staff. They will be necessary for input on the infrastructure of a Vault environment, and for helping to specify equipment that may need upgrading or replacing. Ask them to create a "sandbox" environment for you, that you can use to test things out before full implementation.

Be aware of the third party add ins and apps that are available to work with Vault, as well as other tools from Autodesk available with Vault itself. The Job Processor for example, which allows you to use a dedicated computer to run repetitive jobs for your users, while they keep working. There are client add ins for third party CAD applications such as Solidworks, Pro-E/CREO and Microstation, as well as Microsoft Office products. Keep an eye on which version of Vault supports the applications you want to support. Third party apps such as those made by coolOrange may also make your workflows easier.

As you can see, there is a lot to consider when deciding if Vault is right for you or not. Before (and after) making your final decision, develop a well thought out plan. The "before" plan could include your list of arguments and benefits for why you think that Vault is a good decision. Include the input of your team to show management that you have buy in from others. Your "after" plan, of course, would be based on your decision of which Vault to purchase. It should include extensive research of the system requirements and installation procedures. This is not a system that can be installed by simply selecting an Install button and walking away. We will not be going into the details of installation in this class, as they are extensive and need to be fully understood before taking the plunge. We do, however, strongly recommend doing a lot of homework and having a solid plan in place. This includes a backup plan for what might go wrong and what you will do when it does.

We hope this handout and class gave you some good information about what Vault is, and what it can do for your organization. For additional resources we suggest contacting a local reseller or visiting Autodesk.com. The Autodesk Community can be a huge help as well, with several forums, blogs, the Autodesk Knowledge Network and social media accounts. You can always find someone willing to help. Good luck in your Vault adventure!