

INTRODUCTION TO PROJECT SHARING: THE MULTIUSER ENVIRONMENT

IN VECTORWORKS ARCHITECT



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INTRODUCTION

Project Sharing is a multiuser environment that streamlines project management and execution. It was developed to help Vectorworks users manage projects involving multiple users, fostering effective collaboration and communication within a project team.

Project Sharing is a single-file structure providing a mechanism that allows multiple users to work within - and access parts of - a file, simultaneously (FIGURE 1). This type of multiuser environment offers all team members the opportunity to act together – sharing their knowledge and expertise to the overall design and documentation of the project. It allows for the entire team to think of a project holistically. More importantly, a multiuser environment means a single source of information that can be used for automation and quality checking in drawing production and data extraction – one of the greatest benefits of BIM.

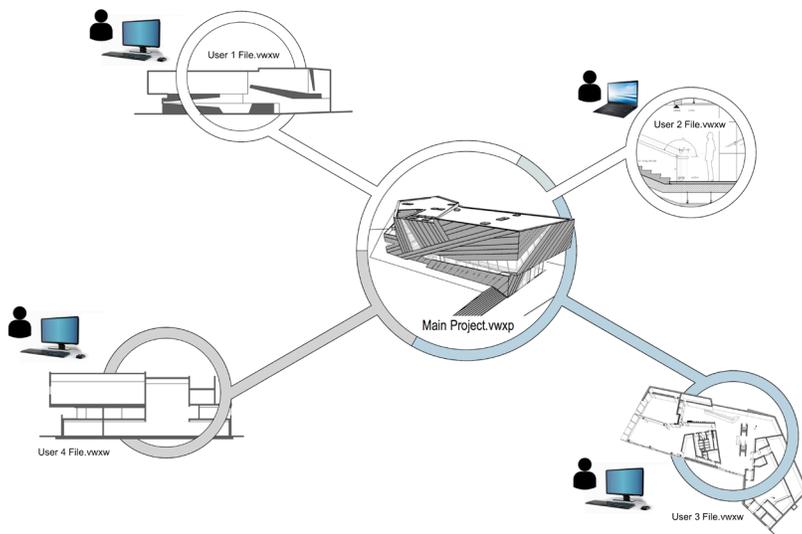


FIGURE 1
Project Sharing in Vectorworks Architect

Management in Project Sharing is done through a robust, permission-based system with options to control access and rights among the design team. Team members are granted access to either layers (design and sheet layers), or to a specific object or groups of objects. They have the ability to **check out** those layers or objects, to work on them, and then **release**, or check them back in. Vectorworks communicates the status of the changes being made by project members along the way, keeping the entire team informed during the project.

UNDERSTANDING PROJECT SHARING

TERMINOLOGY

The functionality of Project Sharing brings some terminology that is necessary to understand.

PROJECT SHARING – the multiuser environment within Vectorworks. Project Sharing creates an environment that streamlines project organization and management by allowing design teams to work concurrently in the same Vectorworks document.

PROJECT FILE – a single file that serves as the **hub** for sharing or collaborating on a project. All team members can access the Project File by way of their Working File. A Project File will be designated with the file extension .vwxp. When a Project File is opened, a Working File is created. This means that the Project File is always accessed through a Working File. The Project File should be kept either on a server or in a cloud-based storage folder that can be accessed by all team members.

WORKING FILE – a local copy of a Project File specific to the user who has created it. The Working File is used to add to, subtract from, or modify the Project File. In essence, all modeling and drawing creation is done in a Working File and then is committed back to the Project File. A Working File is designated with the file extension .vwxw. When a Working File is open, the title bar on the file will include **WORKING FILE** to indicate that you are currently in a Working File (FIGURE 2). The Working File is kept on the hard drive of your local computer.

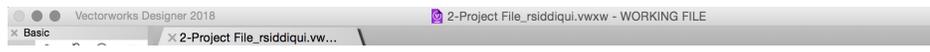


FIGURE 2
Working File Title Bar

CHECK OUT – reserving an object(s), design layer(s) and sheet layer(s) for exclusive use. Once a person checks out an object or layer, they become the owner. That object or layer becomes unavailable to other team members until it is **released** – see below. Multiple objects and layers can be checked out at once.

COMMIT – saving changes made in a Working File back to the Project File.

RELEASE – relinquishing your **reservation** on, or exclusive access to, objects or layers that were previously checked out by you. This will make the objects and layers available for others to check out.

UNDERSTANDING PROJECT SHARING [CONT'D]

REFRESH – an update of all out-of-date parts of your Working File. A refresh is performed after another team member commits their changes to the Project File, which will make parts of your Working File out-of-date. A refresh does not commit your Working File; nor does it affect any of your uncommitted work.

REVERT – discards any changes in the active Working File and reloads an exact copy of the Project File in its current state. This should be used only when changes to your Working File are to be discarded and not committed to the Project File.

MASTER LAYER – a designated, **special** layer that changes infrequently over the life of a project. A Master Layer may contain critical information that should not be changed or overwritten. An example of such a layer may be a design layer that holds a project's structural grid. You can have multiple Master Layers in a project.

OFFLINE MODE – when a Working File is disconnected from the Project File while maintaining exclusive access to the checked-out layers. Offline Mode allows you to continue working without access to the server where the Project File is saved. Layers must be checked out before using Offline Mode to maintain exclusive access to them. Once the Working File is reconnected to the server and the Project File, changes made in Offline Mode can be committed back to the Project File.

PERMISSION LEVEL – one of the unique features of Vectorworks' Project Sharing is the ability to assign a Permission level to each member of a project team. Permission levels range from **Administrative** to **Read Only**, and allow for greater control and management of resources and editing of the Project File. More about the various permission levels can be found in the **How to Set Up for Project Sharing** section.

FORCE RELEASE – when an administrator releases objects or layers that are checked out by another user.

UNCOMMITTED CHANGES – changes that are made to a Working file but have not been committed to the Project file.

UNDERSTANDING PROJECT SHARING [CONT'D]

OVERVIEW OF PROJECT SHARING

Any existing or new Vectorworks document can be shared as a Project File by simply designating it as a Project File through the Project Sharing command in the **File** menu (FIGURE 3). Once a Vectorworks document has been marked as a Project File, all subsequent file opens on that file will effectively open a **clone** of the Project File. These clone files are called Working Files.

This means that the Project File itself is never actually opened. Consequently, all changes, edits, and adjustments are done through a Working File.

When a Working File is created you can check out objects as needed, or an entire layer, which will include all objects on that particular layer. Other team members may check out different layers or objects and work on those in their own Working File. This happens concurrently with the work you are doing in your own Working File.

Each Working File will contain all information, geometry, and data from the Project File, however, users will be restricted in the types of changes they can make in each Working File based on the objects and layers they have checked out and whether they are permitted to make certain changes according to their Permission level.

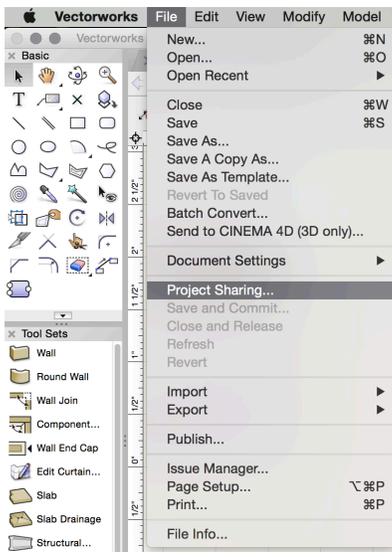


FIGURE 3
File-Project Sharing

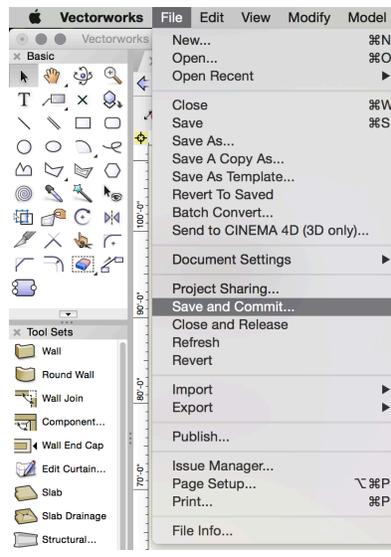


FIGURE 4
File-Save and Commit

UNDERSTANDING PROJECT SHARING [CONT'D]

Once you reach a point where you want to merge your changes back into the Project File, you will perform a commit through the **Save and Commit** command in the **File** menu (FIGURE 4). Changed objects and layers will, in essence, be **inserted** back into the Project File, and other, non-drawing data such as resources, will be merged into the Project File. Once you have performed a **Save and Commit**, others can see your changes by **Refreshing** their own Working Files.

After you've performed a **Save and Commit**, you can continue to make changes to your Working File, as you still have exclusive access to your checked out layers. If you have no more changes to make, you can perform a **Close and Release**, which releases the exclusive access that you have on the checked out layers (FIGURE 5).

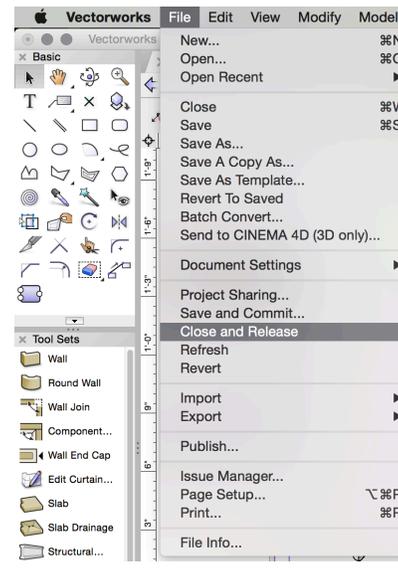


FIGURE 5
File-Close and Release

WHEN TO USE PROJECT SHARING

Because Project Sharing does not change any fundamental aspects of Vectorworks, it can be implemented at any time during a project using any Vectorworks document that will require multiple users. Project Files can also be easily reverted back to regular Vectorworks documents when deemed necessary (for example, when archiving a project).

There is no minimum or maximum size requirement of a project or project team. More importantly, Project Sharing can accommodate the need to increase or decrease the size of the team as necessary.

Project Sharing can be implemented at any point in time, therefore there are no preset rules or requirements for changing a Vectorworks document to a Project File. What may help determine the need for a Project File will be whether or not more than one person needs to access and edit information within the file. So depending on how a project begins and how it evolves, the point in time at which a Project File is created will vary. For example, if a project begins with one person in the conceptual design phase, a Project File may not be necessary. If after the completion of a schematic design package, a team of three people is formed, the Vectorworks document from the schematic design phase can be changed into a Project File, allowing multiple people to access it and continue developing the design.

HOW TO SET UP FOR PROJECT SHARING

UNDERSTANDING AND DETERMINING PERMISSION LEVELS

Because Project Sharing accommodates Vectorworks' layer organization and allows for separate layer check out, the permission levels that are available vary from the ability to create layers to the ability to only edit existing layers. These layers include both design layers and sheet layers. Permission is also required to add, edit, or delete a shared resource such as symbols, wall styles, or classes. The restrictions for each permission level will help determine how to assign the appropriate permission to a project team member.

Implementing Project Sharing will mean a few new responsibilities for the project team. These responsibilities include the creation of the Project File itself, as well as management of the Project File and its shared information. This and other tasks that need to be completed for a project should help inform the Permission level that each team member will require. Understanding the Permission levels and what tasks they allow you to complete, will help you understand how they can coincide with project tasks and roles (FIGURE 6).

| PERMISSION LEVEL | DESCRIPTION |
|----------------------|---|
| Read Only | <ul style="list-style-type: none"> · Read and view the content of the file · Navigate in the file · Edit class and layer visibilities (cannot commit) |
| Layers-Restricted | Read Only permissions, plus: <ul style="list-style-type: none"> · Create, delete, and edit objects on layers · Create, delete, and edit worksheets, scripts, and script palettes · Edit unrestricted document preferences and settings (cannot commit) · Create and edit saved views (cannot commit) · Create and edit working planes (cannot commit) |
| Layers-Unrestricted | Layers-Restricted permissions, plus: <ul style="list-style-type: none"> · Create, delete, and edit layers · Commit saved views · Create, delete, edit, and commit Publish saved sets · Create, delete, edit, and commit batch render jobs |
| Layers and Resources | Layers-Unrestricted permissions, plus: <ul style="list-style-type: none"> · Create, delete, and edit resources · Create, delete, and edit dimensions standards · Create, delete, and edit patterns |
| Project | Layers and Resources permissions, plus: <ul style="list-style-type: none"> · Create, delete, and edit classes · Create, delete, and edit story data · Set and edit master layers · Create, delete, and edit references to Vectorworks files · Edit restricted access document preferences and settings · Commit all document preferences and settings |
| Administrative | Project permissions, plus: <ul style="list-style-type: none"> · Manage project sharing settings · Add, delete, and edit users |

FIGURE 6
Permission Level

HOW TO SET UP FOR PROJECT SHARING [CONT'D]

ADMINISTRATIVE

The **Administrative** permission level essentially has no restrictions. This permission is automatically assigned to the person who first creates the Project File. Exclusive to this permission level is the ability to manage the project sharing settings (such as Project File backup policies) and the ability to add, delete, and edit the users on the project. The administrator will also have the ability to do a force release if needed.

It is highly recommended that there be more than one **Administrative** user on each project as a backup policy. This can be an office-wide BIM or CAD manager along with the project's model manager.

PROJECT

The **Project** permission level is the least restrictive level in the project (aside from **Administrative**). This includes the ability to change and commit document preferences and settings. Project permission is also required to create, edit, and delete references that are being used. This permission level is also necessary to create and delete classes.

LAYERS AND RESOURCES

The **Layers and Resources** permission level is needed to create, edit, and delete resources. This includes, symbols, textures, wall styles, slab styles, etc. Resources that do not require this permission layer to create and edit include worksheets, records, scripts and script palettes. A person with this permission level can also create, edit, and delete dimension standards within the document preferences.

LAYERS-UNRESTRICTED

Aside from the ability to create, edit, and delete layers, this permission level also allows you to commit saved views back to the Project File allowing others to access these views. This permission level or a higher permission is needed to create, edit, delete, and commit Publish saved sets and batch render jobs. Lower permission levels can access Publish saved sets and batch render jobs, but cannot create them or commit them to the Project File.

LAYERS-RESTRICTED

The **Layers-Restricted** permission level allows you to create, edit, and delete objects and information on layers that already exist in the Project File. Resources that can be created, edited, and deleted with this permission level include worksheets, scripts, and script palettes. It is important to note that this permission level allows you to create saved views, working planes, and edit any unrestricted document preferences so that you can continue to work in your Working File as you like. These types of changes or additions, however, will not be committed to the Project File.

HOW TO SET UP FOR PROJECT SHARING [CONT'D]

READ ONLY

As indicated by the name, the **Read Only** permission level only allows you to navigate through the file. You can access and view all objects, layers and information, as well as update out-of-date viewports. You can change layers and class visibility in your Working File, but cannot commit these changes. This permission level does allow you to Publish drawings and run export commands.

If a team member is attempting to complete an operation for which they do not have the proper permission level, a dialog box will appear (FIGURE 7). This dialog box will inform them of what permission level is required to complete the operation.

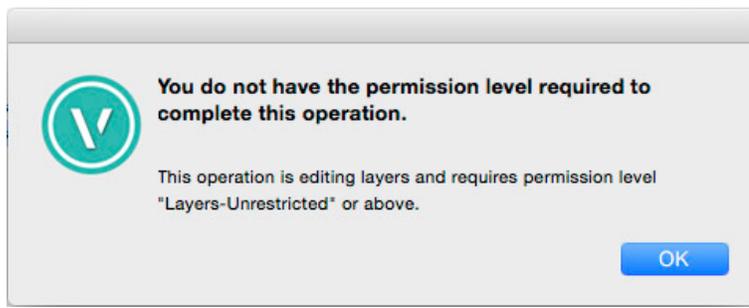


FIGURE 7
Permission Level

FILE ORGANIZATION AND SETUP

Though a Working File does not behave differently or require unique functionality from a regular Vectorworks document, it may require a modified setup to fully benefit from Project Sharing. Because Project Sharing is based on the layer setup of Vectorworks, team members may be limited in what objects can be checked out or what tasks can be performed by the number of layers that are present in the file. Division of certain work and tasks may require a new layer system that allows for more granularity in the file, allowing more people to work on different tasks. For example, if a team member is tasked with creating a finish plan and schedule; an additional **space** design layer can be created to allow this person to work concurrently with someone working on an interior partition layout (SEE FIGURE 8).

It is highly recommended that a template that has a predefined story, level and layer structure be set up and used. This ensures that users who have the **Layers and Resources** permission level and below (those who cannot edit story data and information) can still work on the project and draw with **story-aware objects** as needed.

Though it is best to set up a story and layer standard beforehand, additional design and sheet layers can be added or modified as necessary with the proper permission level as the project progresses forward. For example, when beginning a project that requires documentation of existing conditions,

HOW TO SET UP FOR PROJECT SHARING [CONT'D]

one team member can document the existing conditions on an **existing conditions** layer, while massing model studies are created and developed by another team member on a separate layer. This person can also add layers as needed for additional studies or design options (FIGURE 9).

For help on general model setup and creating templates visit the **How** section of the [Vectorworks BIM page](#).

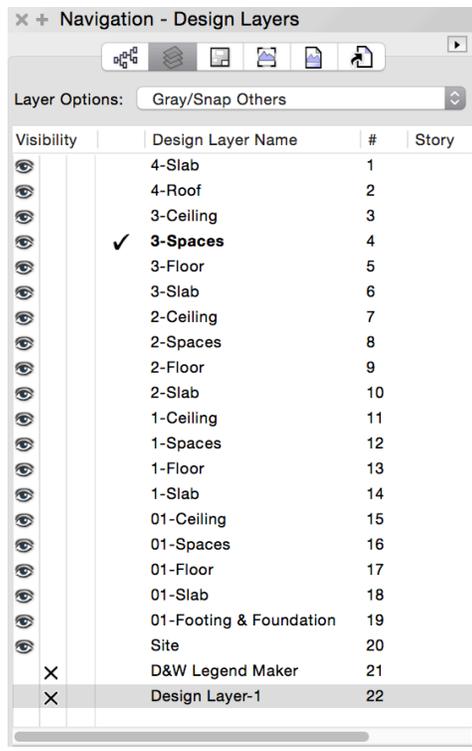


FIGURE 8
Layer Granularity

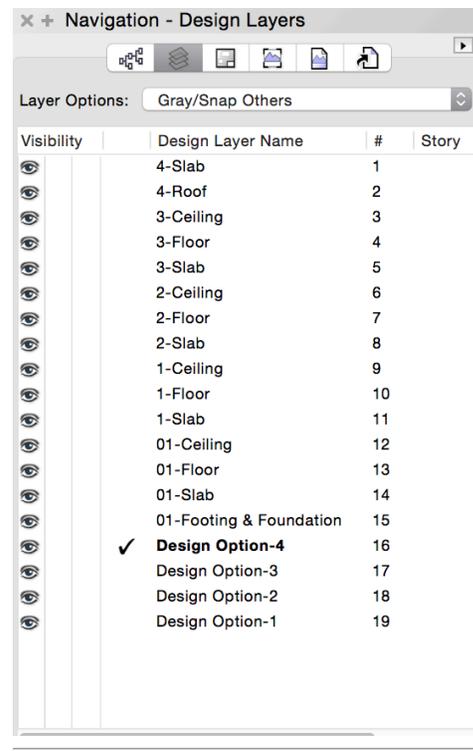


FIGURE 9
Design Option Layers

HOW TO SET UP FOR PROJECT SHARING [CONT'D]

HOW TO ACCESS RESOURCES

As mentioned before, Working Files do not function any differently from other, regular Vectorworks documents. This means that access to shared libraries and resources remains unchanged. The use of Workgroup Folders (or Project Folders) also remains the same. The only difference is that the creation of new resources, or importing new resources into a Working File requires the **Layers and Resources** or higher permission level.

Resources from another Vectorworks document can be imported into a Working File and committed to the Project File (with the proper permission). However, resources cannot be exported from an open Vectorworks document to a Working File (FIGURE 10).

Other resources to consider are what are referred to as **non-drawing data**. These include data such as classes, story information, saved views and so on. The following will describe the behavior of non-drawing data in the Project Sharing environment.

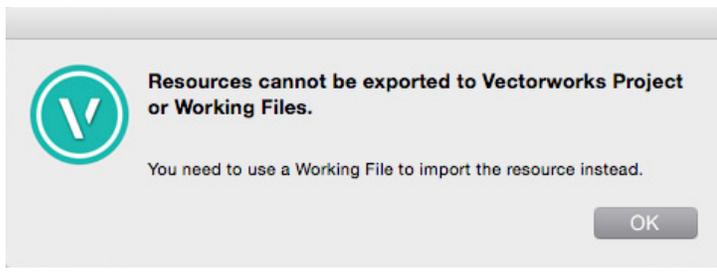


FIGURE 10
Alert for Exporting Resources

CLASSES

Classes can only be created, edited, and deleted by users with **Project** permission level or above.

DIMENSION STANDARDS

Document Dimension Standards are treated like other resources and therefore can only be created and modified by users with the **Layers and Resources** permission level.

HOW TO SET UP FOR PROJECT SHARING [CONT'D]

SAVED VIEWS

All users except those with the **Read Only** permission level can create and edit Saved Views in their own Working files. However, only a user with **Layers-Unrestricted** permission level or above can commit Saved Views to the Project File.

If you are utilizing the **Rotate Plan** function, it will need to be saved as a Saved View for future access. Therefore, a rotated plan view will need to be created and committed to the Project File by a user with the **Layers-Unrestricted** permission level or higher.

PUBLISH SAVED SETS

Saved sets that are used with the Publish command can only be created by users with **Layers-Unrestricted** permission level or above.

BATCH RENDER JOBS

Users with **Layers-Unrestricted** permission level or above can create batch render jobs.

WORKING PLANES

Like Saved Views, all users except those with **Read Only** permission level can create and edit working planes in their own Working Files. Only a user with **Project** permission level or above can commit Working Planes to the Project File.

STORY DATA

Story Data includes story definitions and Story Levels. These can only be created and edited by users with **Project** permission level or higher.

When users who have the **Project** permission level change a resource such as a hatch or a class definition, there could be a resource conflict when their Working Files are committed. This will happen if another person has edited a resource or created a resource with the same name and has committed it to the Project File before them. This is discussed in more detail in **Creating and Editing Resources** in the **Drawing in a Working File** section.

For general information regarding managing resources refer to the [BIM Managers Guide to Resource Management](#).

USING PROJECT SHARING

LOCATION OF THE PROJECT FILE

The Project File (the .wvxp file) should be placed on a server or a shared network location that is accessible by all team members. This means that all team members must have full access to the server. They must be able to read, write, rename, delete, create, etc. to the folder on the server or shared network location in which the Project File is kept. This is necessary for when check outs, releases, commits, and refreshes occur.

The performance of Vectorworks when working on a shared project over a network will depend on the available network bandwidth. If the network bandwidth is insufficient, operations that transfer large amount of data over the network will be slow. It is recommended to have, at minimum, a Fast Ethernet (100Mbit/s) network connection. For large projects, Gigabit Ethernet (1Gbit/s) networks are highly recommended for a faster and more fluid experience. Networks less than 1Gbit/s can still provide a satisfactory user experience if operations transferring large amount of data over the network, such as committing changes to the project file or refreshing a local working file, are kept to a minimum.

For this reason, it is highly recommended to create a protocol and schedule for team members to follow when committing to a Project File and when refreshing their Working Files.

A layer check out or a layer release does not transfer data over the network, and therefore will be executed quickly when compared to committing or refreshing your Working File.

FOR MAC USERS: With OSX 10.9, Apple has made SMB the default protocol for connecting to network shares, moving away from the previous standard, AFP. There have been some issues with SMB on OSX that cause permissions to be set incorrectly.

IF YOU EXPERIENCE PROBLEMS WITH SAVING TO A NETWORK SHARE, ATTEMPT TO CONNECT WITH THE OLD STANDARD AFP TO SEE IF THAT SOLVES THE PROBLEM. TO DO THIS:

1. From Finder, select Go → Connect To Server.
2. Enter the prefix **afp:** prior to your share address. For example, "afp://myserver.address.net".
3. Click **Connect**.

For information regarding network protocol please see our technical bulletin [here](#).

USING PROJECT SHARING [CONT'D]

CLOUD-BASED SHARING

Project Files can be placed and shared in cloud storage with online applications. Supported cloud storage applications include:

- Dropbox
- OneDrive
- Google Drive
- Box

The corresponding desktop applications for these cloud solutions must be installed and used to create a folder in which all shared project information should be placed.

The Project File should be placed in this shared folder that can be accessed by all team members with full read, write, and delete permissions. The individual Project File itself should not be shared.

Never re-upload, move, or copy the Project File or the folder that contains the Project File once it has been placed in the cloud. This will cause connectivity problems between the Project File and the Working File.

LOCATION OF THE WORKING FILE

Working Files are created when you attempt to open a Project File. The name of the Working File will automatically be appended to include a suffix including the user's name (FIGURE 11). Consequently, Working Files are unique to each user and should be used only by the designated user.

Though each user can create multiple Working Files, it is not recommended.

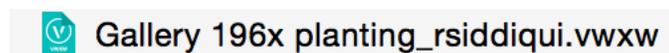


FIGURE 11
Working File Name

When you first create a Working File it is still **unsaved**. This means that the file does not have a designated place to be stored – just like a new, **Untitled** Vectorworks file. For this reason, when a Working File is first created, it should be saved promptly.

The Project File will always be accessed through this Working File. Do not **open** the Project File again, as it will create a new Working File. Duplication of the Working File can lead to miscommunication and many errors with layer check outs. This will be discussed further in the **Drawing in a Working File** section.

USING PROJECT SHARING [CONT'D]

The Working File should be saved to the user's computer's local hard drive. Though it can be saved on a server or in the shared cloud storage folder, it is not recommended to do so. The Project Sharing system is designed to minimize the complications of working over a server network or the internet. By saving a Working File on the server, you will not be taking full advantage of the optimization provided by Project Sharing. Saving on a local hard drive also allows the user to disconnect from the server and continue working in their Working File in Offline Mode.

The backup policy of a Working File is the same as the backup policy of a regular Vectorworks file. A backup copy of the file is created after a designated period of time has passed (every 10 minutes, every 15 minutes, etc.) or after the designated number of operations. The backup copy of your Working File should be created and stored on the same computer that the Working File itself is located. The backup copy should not be created or placed on the server or cloud.

HOW TO CREATE A PROJECT FILE AND WORKING FILES

AS DISCUSSED EARLIER, ANY VECTORWORKS DOCUMENT CAN BE CHANGED INTO A PROJECT FILE AND BE USED IN THE PROJECT SHARING MULTIUSER ENVIRONMENT. TO CREATE A PROJECT FILE:

1. Open an existing Vectorworks document or create a new document.
2. Go to **File** and select the **Project Sharing** option. The Project Sharing Setup dialog box will open.

If you've created a new file, you will be prompted to save the file before continuing with the Project File setup. Save the file on a server/network or a shared cloud-based storage folder that is accessible by all team members.

If you've opened an existing Vectorworks file and it is not on your server or in the cloud, first move the file to your shared location for central access then begin the Project File creation process.

FOR CLOUD BASED SHARING: It is best to start with a regular Vectorworks file in a project folder already in your cloud folder.

3. The first panel of this dialog box informs you that you are sharing this Vectorworks document in the Project Sharing multiuser environment.

Here, you will also be able to choose what type of network protocol should be used when accessing the server (FIGURE 12). If you are using a cloud-based storage system to share your Project file then it is not necessary to change the default. If you are sharing over the server, then it is important to set the network protocol. For more information on network protocol, visit the tech bulletin [here](#).

The checkbox at the bottom indicates that a Working File will be opened automatically upon completion of the setup. It is recommended to leave this option checked.

USING PROJECT SHARING [CONT'D]

The setup can be exited at any time by pressing **Finish** at the bottom right. This will skip all subsequent steps of the setup and open a Working File right away (FIGURE 12).

4. Click **Next** to move to the next pane, **Administer Users**. This panel allows you to add project team members, assign permission levels and assign a user color (FIGURE 13). This color will be assigned to objects that the user has checked out. This color assignment allows users to visualize the current state of objects. Therefore colors should have a good level of contrast.

A list of users and their corresponding permission levels can be imported from another Project File where a project team has already been defined.

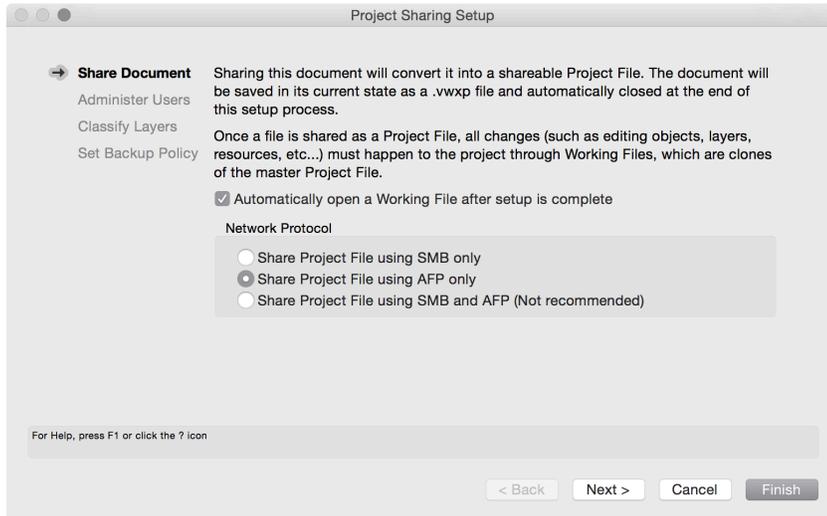


FIGURE 12
Project Sharing Setup

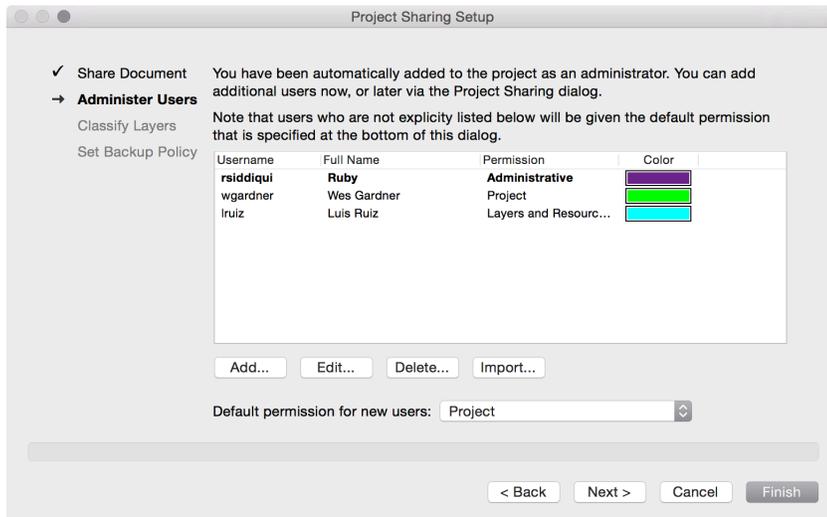


FIGURE 13
Administer Users

USING PROJECT SHARING [CONT'D]

The user name is based on the User Name of the computer login. For this reason it is important that all user names match.

5. At the bottom of the panel, there is an option to set the default permission for any new user that is added to the project. This will be the permission level assigned to a user who double clicks on the Project File and opens a Working File. This operation adds the person to the project team list. The permission level assigned to them is determined by this default.

It is highly recommended that the default permission setting be set to **Read Only**. This insures against any unintentional changes by a non-project team member who may open a Working File to simply view the model or print a check set.

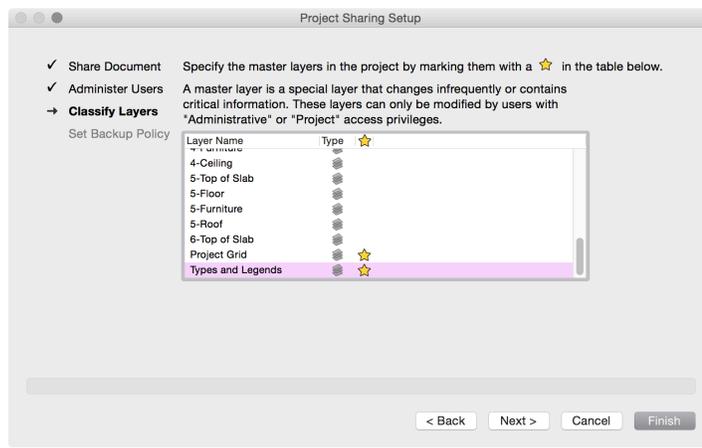


FIGURE 14
Master Layer

6. Click **Next** to move to **Classify Layers**. This is the panel allowing you to specify a **Master Layer**. Only users with **Administrative** or **Project** permission levels can modify Master Layers.

A Master Layer can be either a design layer or a sheet layer. To designate a layer as a Master Layer, simply click in the yellow star column on the far right next to the layer that you would like to mark. A yellow star should appear by that layer (FIGURE 14).

A project can have multiple Master Layers.

7. Click **Next** to move to the last step, which is to set the backup policy for the Project File itself. This is not the backup policy for your Working File, only for the Project File. The backup policy is the same as a regular Vectorworks file inasmuch as a backup copy of the file is created in the

USING PROJECT SHARING [CONT'D]

location that you designate. However, the backup policy for a Project file is based on the number of commits that are performed from any Working File. It is recommended that a backup copy of the Project File be created between every 5 – 10 commits. Additionally, it is also recommended that backup copies be located on the same server where the Project File is stored.

8. Click **Finish** to complete the process of creating a Project File.
9. A new Working File will open automatically if you've indicated to open a Working File in the first step of the setup.

In your new Working File, you will be able to navigate and begin drawing as you would within a regular Vectorworks file.

Because you have created the Project File, by default you have the **Administrative** permission level. This means that you can check out a Master Layer and make changes to defined users in the file via your own Working File.

10. Though your Working File has been created and will have a file name (the Project File name appended with the user name), the Working File is still not saved. Save your Working File on your local computer.

FOR CLOUD BASED SHARING: Your Working File should still be saved to your local computer. This includes backups of your Working File.

USING PROJECT SHARING [CONT'D]

DRAWING IN A WORKING FILE

As mentioned before, the behavior of a Working File is not very different from a regular Vectorworks file. Any drawing, modeling, editing, or creating operations are done in the same way. There are some minor changes to the interface and some settings and functions to be aware of.

At the top right of your Working File you'll notice a quick-preference option called **Project Sharing Options** (FIGURE 15A). These options allow you to control how checked out or available objects are viewed in your own Working File. The options can also be found under the **View** menu under **Project Sharing Options**. There are three options (FIGURE 15B), which include:

- **Show objects using actual colors** will show no visual indication of what is checked out or available.
- **Highlight objects I have checked out** will only highlight objects that are checked out in your Working File by you.
- **Highlight objects using User Colors** will show objects checked out by all users using their User Color.

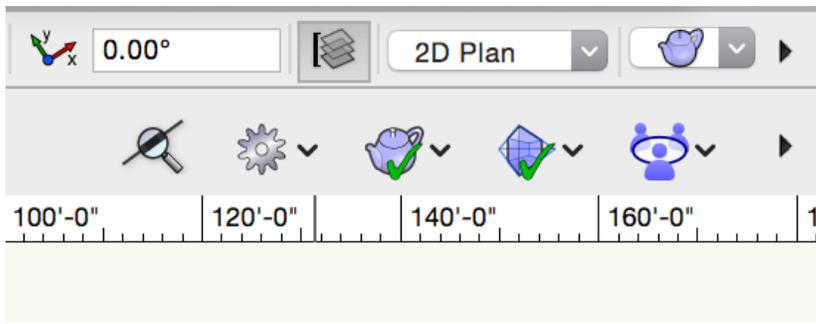


FIGURE 15A
Project Sharing Options

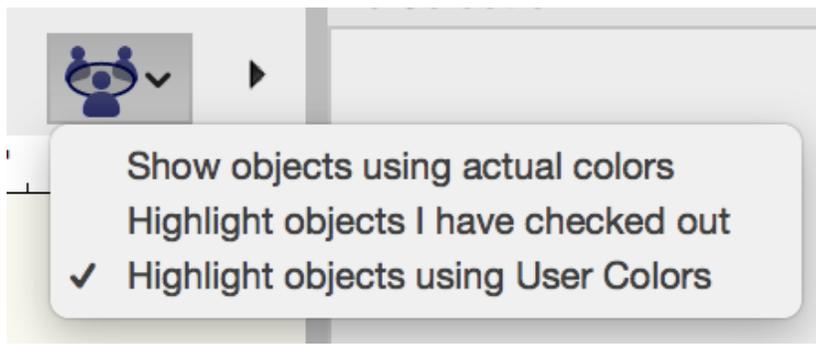


FIGURE 15B
Project Sharing Options

USING PROJECT SHARING [CONT'D]

By default, the **Highlight objects using User Colors** will be the option selected. Objects that are checked out by others will appear with the users designated color (FIGURE 16). There will also be object information cues that will also show the name of the owner of the object (FIGURE 17A). Objects that are available for check out will appear as normal, without a color highlight, and the objection information cue will read **Available** (FIGURE 17B). Objects checked out by you in your Working File will be designated as checked out by **me (username)** (FIGURE 17C).

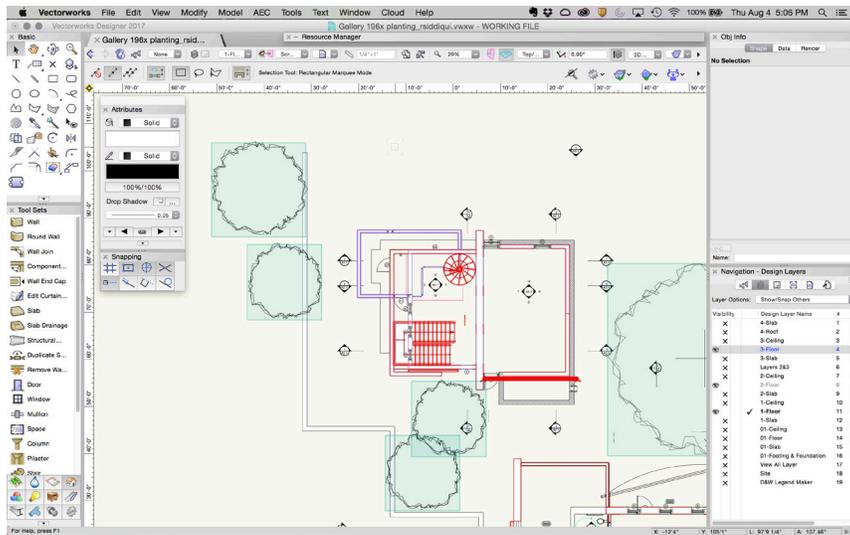


FIGURE 16
Checked Out
Colors

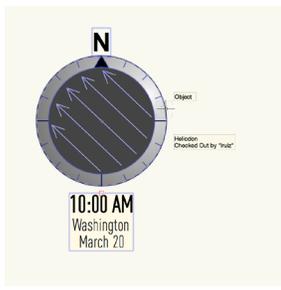


FIGURE 17A
Cue that Shows the Name of the Object Owner

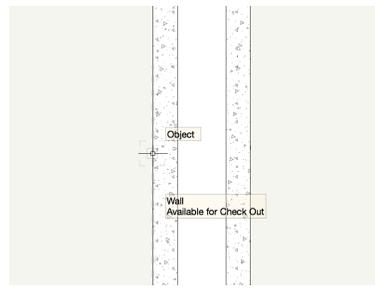


FIGURE 17B
Cue that Shows that an Object is Available

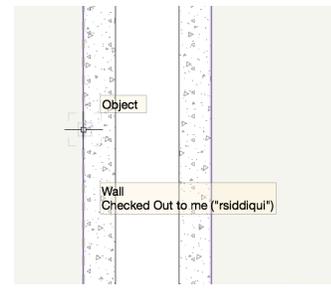


FIGURE 17C
Cue that an Object is Checked Out by Me

USING PROJECT SHARING [CONT'D]

To begin working in your Working File, you can simply begin to draw. You will notice that any new object created will by default take on your user color and be designated as checked out by you. If someone has a specific layer checked out, you will not be able to draw on that layer and will get an alert indicating that the layer is unavailable (FIGURE 18).

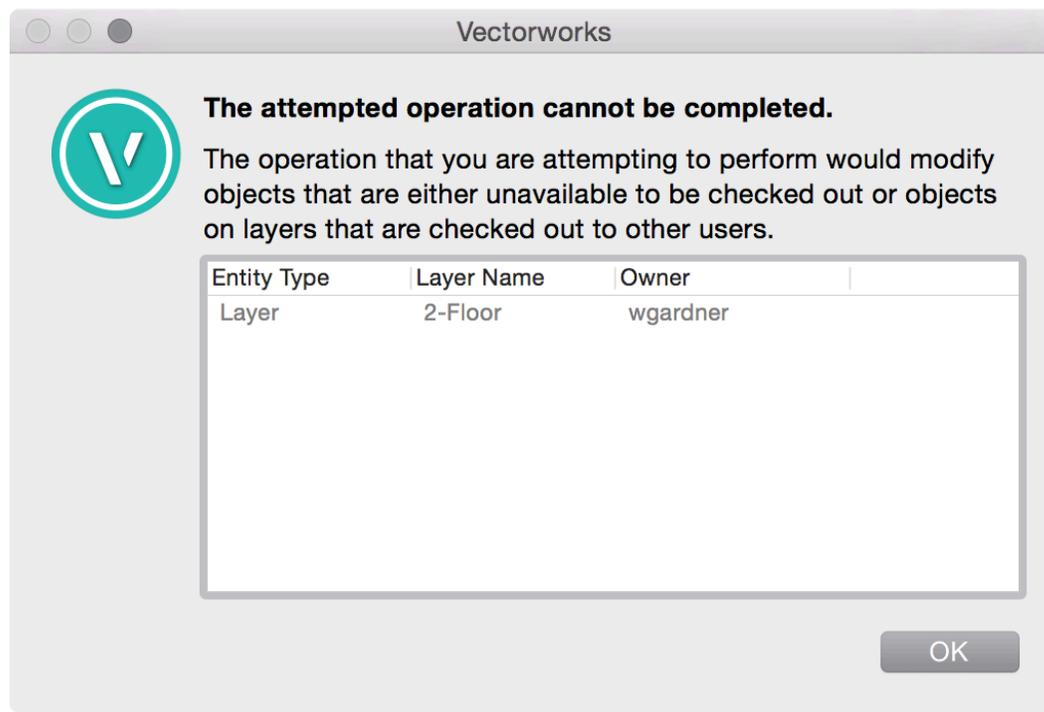


FIGURE 18
Unavailable Layer Alert

USING PROJECT SHARING [CONT'D]

SPECIFIC OBJECT AND LAYER CHECK OUT

In order to edit or modify any existing information or objects, you will need to check the object out or you can check the entire layer out. Checking out the entire layer will, in essence, check out all objects that are placed on that layer as well as lock other users from placing new information on that layer. You can check out a layer as well as individual objects from different layers at the same time (meaning you can mix the two **types** of check outs).

TO CHECK OUT SPECIFIC OBJECTS:

1. Select the available object or objects.
2. Right-click on the selected object(s) and select **Check Out** in the context menu (FIGURE 19).

OR

Go to **Modify** → **Check Out**.

OR

Simply begin to edit the object. You will be prompted to check out the available object and any related objects through an alert dialog box (FIGURE 21).

Individual viewports on Sheet Layers can also be checked out on a per object basis allowing for multiple people to work on the same sheet layer.

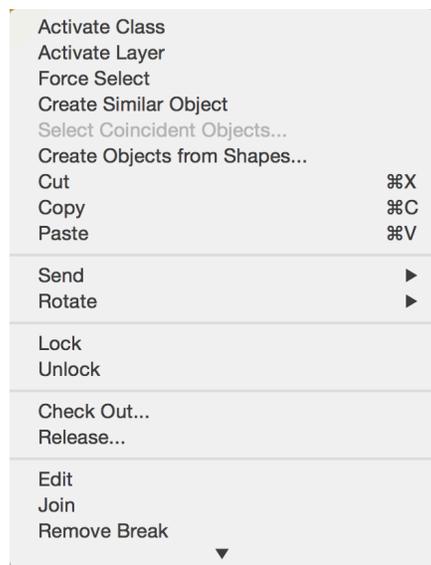


FIGURE 19
Right Click Context Menu

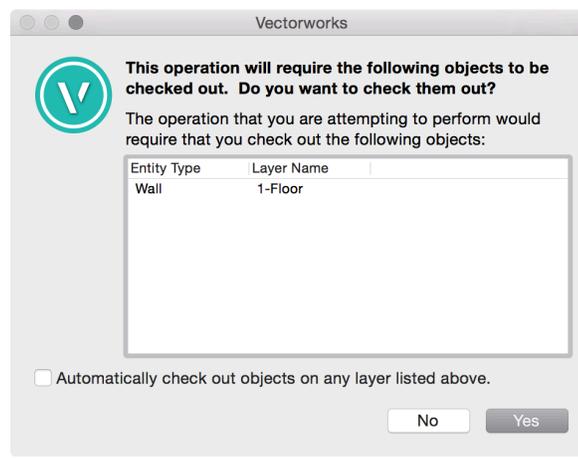


FIGURE 21
Check Out Alert

USING PROJECT SHARING [CONT'D]

There is also an option to perform a Custom Check Out. A Custom Check Out will allow you to check out particular objects that are selected by user-defined criteria – much like the Custom Selection tool.

TO PERFORM A CUSTOM CHECK OUT:

1. Go to **Tools** → **Custom Check Out** (FIGURE 22)
2. The **Custom Check Out** dialog box will open. Here you can set the criteria for the objects you would like to check out (FIGURE 23).
3. Choose the desired criteria options. The number of objects in the file that meet the criteria displays.
4. Specify additional options by clicking **More Choices**. To remove the most recently added option, click **Fewer Choices**.
5. Specify whether to also include objects that are part of groups or viewport annotations.
6. Click **Check Out**.

Custom Check Outs can be performed with predefined **Criteria Sets**. This allows for faster Custom Check Outs for predefined tasks (FIGURE 24). Criteria Sets that are saved by a user will only be available to that particular user – no other user within the team will have access to them.

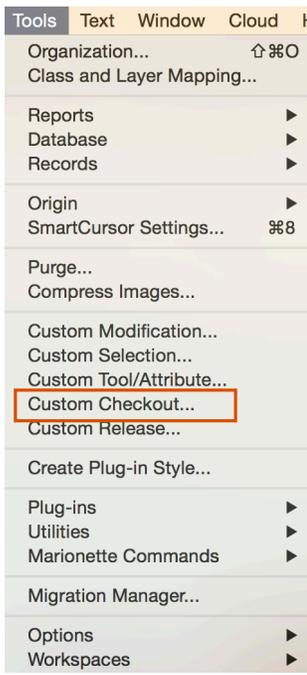


FIGURE 22
Tools Custom Check Out

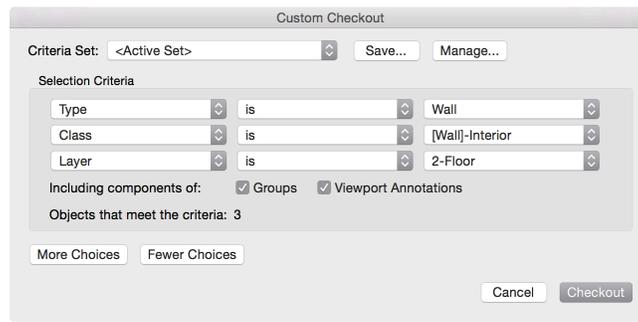


FIGURE 23
Custom Check Out

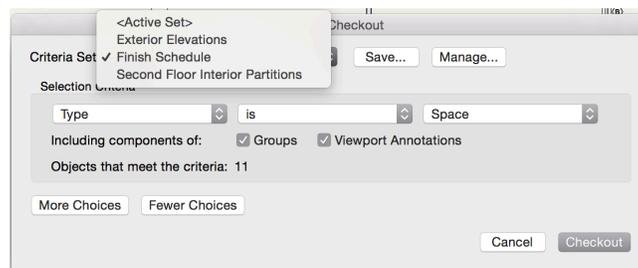


FIGURE 24
Saved Criteria Sets

USING PROJECT SHARING [CONT'D]

TO CHECK OUT SPECIFIC LAYERS:

1. Go to **File** → **Project Sharing**.

When the dialog box opens, navigate to the **Layers** tab (FIGURE 25).

Here you can see the status of all layers in the project. This includes who has checked out what layers, at what time, and with what comment. You can also see what layers have been designated as Master Layers. Layers that you currently have checked out will appear blue. Layers checked out by others will appear gray.

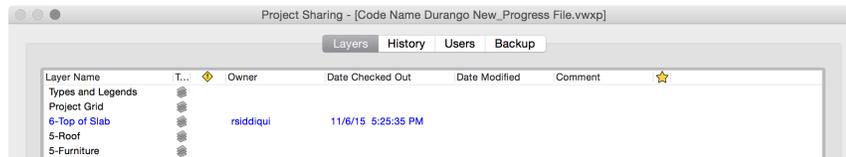


FIGURE 25
Project Sharing
Layers Tab

2. Select which available layers you would like to check out and press the **Check Out** button. This will prompt the **Comment** dialog box.

Enter a comment that will inform other team members why you have checked out these layers.

3. Click **OK** and you will be returned to the Project Sharing dialog box. You will now see the layers you have checked out in blue text with your name next to them.

OR

Right-click on the desired, available layer in the Navigation palette (FIGURE 26).

OR

Right-click on the desired, available layer in the Organization dialog box found under the Tools menu (FIGURE 26).

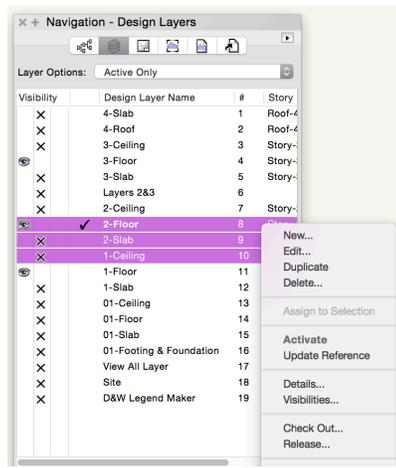


FIGURE 26
Right-click on a Layer in the Navigation Palette for
Check Out

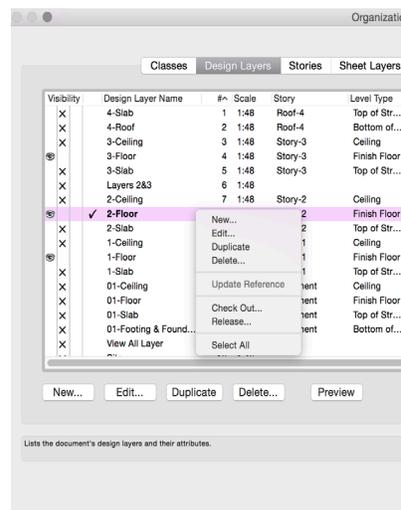


FIGURE 26
Right-click on a Layer in the Organization Dialog Box
to Check Out

USING PROJECT SHARING [CONT'D]

Multiple layers can be selected and checked out through the right-click context menu in the Navigation Palette or the Organization dialog box.

In your Navigation palette, a layer that you have checked out appears in blue text, whereas layers checked out by other team members are grayed out (FIGURE 27). Though objects or layers may not be available to you, you can still see the objects and layers in your Working File. You can also control the visibility of those objects and layers as with a regular Vectorworks file. You will also have the ability to copy unavailable information to paste in a different location or layer.

As you're drawing in your Working File, you may find that you need to check out an object or layer that you currently do not have access to. Rather than having to plan ahead and check out the object or layer ahead of time, if the object or layer is available you can check it out **on the fly**, without any interruptions.

1. Simply begin drawing on the layer you need or editing the objects that exist.
2. The **Check Out Required** dialog box will open, listing the available layers and objects that are required for you to continue the operation (FIGURE 28).
3. Click **Yes** to check out the required objects or layers.

By checking the **Automatically check out objects on any layer listed above**, you are ensuring that any future modification to objects on any of the listed layers will be automatically checked out without receiving an alert (as long as the objects are available).

4. Complete the operation that you have begun.

Once you have checked out your objects and layers, they will no longer be available to other team members. There is no need to save and commit your Working File to reflect this check out in the Project File. This happens in **real time**.

To help you decide whether or you should check out a layer or check out objects, you should understand the differences between the two types of checkouts. The fundamental

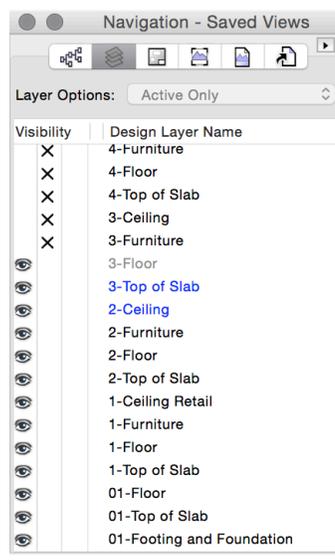


FIGURE 27
Unavailable Layer in the Navigation Palette

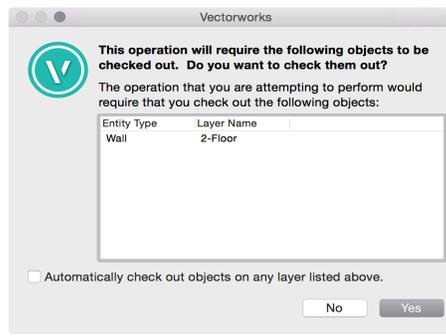


FIGURE 28
Check Out Required Alert

USING PROJECT SHARING [CONT'D]

difference is a matter of management. The main reason that you may want to check out a whole layer rather than just objects, is to lock the layer and prevent anyone else from checking out any related objects on that layer. This is recommended if you are making large, sweeping changes that may require manipulation of objects related to those changes.

If you check out an entire layer but only modify one object on that layer and then commit the changes to the project file, that is the only object whose data gets transferred to the project file. Not the entire layer. So whether you check out the entire layer or that one particular object, it will still take the same amount of time to commit the changes to the project file. In terms of performance, there's no real difference between the types of check out.

CREATING AND EDITING RESOURCES

To create or edit resources and non-drawing data, a permission level of **Layers and Resources** or higher is required. The actual process of creating or editing any type of resource has not changed in the Project Sharing environment. These operations are done the same way in a Working File as they would be done in a regular Vectorworks file.

As mentioned before, if two project team members with the appropriate permission level attempt to change the same resource, Vectorworks will alert them through the **Entity Conflict** dialog box.

If a resource is changed and committed to the Project File by one user, and another user has changed the same resource in their Working File, they will receive a notification either upon committing their Working File or refreshing their Working File. When this happens an **Entity Conflict** dialog box will appear.

There are two types of conflicts that can occur. The first is a resource conflict. This is when a resource with the same name already exists in the Project File. This includes name conflicts with existing classes, levels, layers, or stories. An **Entity Name Conflict** dialog box will appear and give you the option to either rename the resource you are attempting to commit or to discard the resource (FIGURE 29).

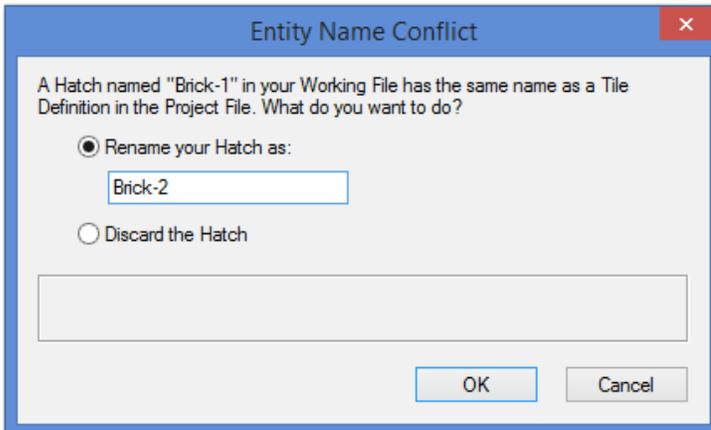


FIGURE 29
Entity Name Conflict

USING PROJECT SHARING [CONT'D]

The second type of conflict that can occur is a resource concurrency issue. This occurs when someone before you has committed a change to an existing resource to the Project File. In this instance you will have three options (FIGURE 30). The first is to override the change that was committed before your change. The second option is to rename the resource you have changed in order to keep both resources in the Project File. And the third option is to accept the changes that have already been committed and discard the changes that you have made.

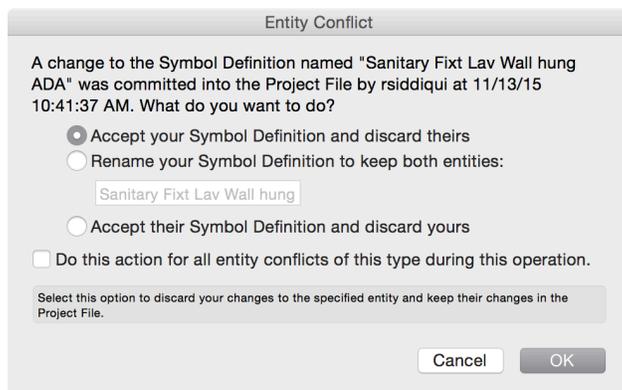


FIGURE 30
Entity Conflict

When a resource concurrency dialog box appears, it will report who has committed changes to the same resource as you and when the commit to the Project File occurred. Always communicate with your team members before making decisions to discard others' changes.

If you have the **Layers and Resources** permission level or higher, you have the ability to create, edit, or delete resources without checking out layers. For example, if a symbol is placed on a particular layer, a user with the appropriate permissions can edit both data and geometry information of that symbol without checking out the layer on which it is placed. Once the symbol is edited and the change is committed back to the Project File, all other Working Files will be prompted to be refreshed with the refresh icon (FIGURE 31). Once refreshed, Working Files will reflect the changes in the symbol.



FIGURE 31
Refresh Icon

USING PROJECT SHARING [CONT'D]

There are some resources that are exceptions to this behavior. These include wall styles, slab styles, and roof styles. If an existing wall style that is being used in the model needs to be edited, it will not only require the appropriate permission, but will also require any instance where the wall style is used to be checked out. This means that if a wall of this wall style is checked out by another user (i.e. is unavailable), the wall style cannot be edited.

If symbols or resources have been edited, created, or deleted without checking out any layers, upon saving and closing your Working File, a dialog box will appear notifying you that your Working File contains uncommitted changes (FIGURE 32).

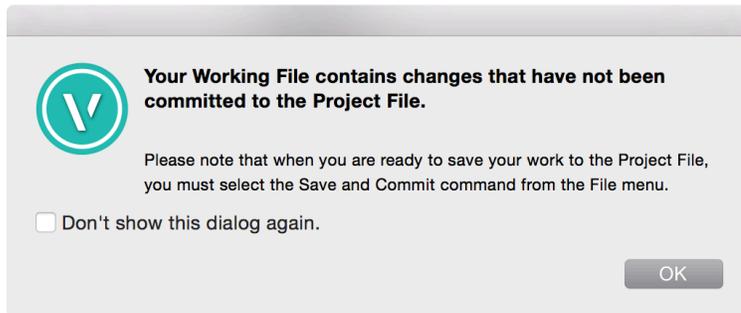


FIGURE 32
Alert for Uncommitted Changes

USING PROJECT SHARING [CONT'D]

REFERENCING

In the Project Sharing environment, references of various file types and references of resources are created in a manner similar to that of a regular Vectorworks file. There are a few rules to keep in mind including the fact that certain permissions are required to create different types of references within your Working File.

The file that is being referenced must be placed in a location that is accessible by both the Project File and by all team members on the project. This means that it must be kept on the same server volume as the Project File where all team members have the appropriate permissions to read and write to the volume.

If you choose for the reference to follow a Relative reference path rather than an absolute reference path, then that path will be relative to the Project File. The reference should also be on the same server volume as the Project file, or within the same project folder if using cloud-based storage.

Project Files can be referenced into other Project Files and into regular Vectorworks files. For example, if you have a regular Vectorworks file for a site model and a Project File for your building model, you can reference the Project File of the building into the regular Vectorworks file of the site.

You cannot reference a Working File. You will have to navigate to, and reference the Project File itself. This is because the Working File is considered a **temporary** file.

Regular Vectorworks files can be referenced into Project Files. From our previous example, the regular Vectorworks file of the site model can be referenced into your Project File. Because you do not open the Project File itself, the reference is created by referencing the site model into your Working File (assuming you have the proper permission level – see below) and then committing the Working File to the Project File.

The permissions required for referencing are as follows:

- **Layers – Restricted** permission level or above is required to create, edit, and delete references to PDF's, image files, and DWG Files.
- **Project** permission level or above is required to create, edit, and delete references to Vectorworks files both regular files and Project Files.

If you are using **Layer Import Referencing** (also known as **old style** referencing), project permission level or higher may be required to update the reference as well. This is because if the update will import new classes, the user must have a permission level that permits creating new classes.

USING PROJECT SHARING [CONT'D]

Something to keep in mind is that when a reference is updated in a Working file, it is recognized as a change to the Working file and will be committed to the Project file. This also means that the reference update will be part of a Working file refresh. If you have multiple references it is best to only update the references that are currently needed in the Working file rather than updating all references. This will cut back on commit and refresh times.

CREATING DRAWINGS AND SCHEDULES

Creating drawings in Vectorworks is achieved by using Vectorworks' sheet layers in conjunction with viewports. This ensures coordination between drawings and better management of change. In the Project Sharing environment, the creation of drawings such as plans, sections, and details through the various **Create Viewport** commands, remains the same as in a regular Vectorworks file.

When the **Create Section Viewport** command is used to create a section, the **Section Style** class is automatically created (if it does not already exist in the current file). Anyone with permissions above **Read Only** can create a section viewport and therefore, create this class. However, the class can only be edited or deleted by a team member with **Project** permission or above.

If a project team member has the **Layers-Restricted** permission level, they will only be able to create viewports on sheet layers that already exist in the file. If a new sheet layer needs to be created, it must be created by a team member with **Layers-Unrestricted** permissions or higher.

To move viewports between layers or to rename or renumber a drawing, work in annotation space, or to edit the crop of a viewport, the viewport must be checked out.

Schedules, or Worksheets in Vectorworks, are a resource, but do not require **Layers and Resources** permission level. This means that project team members with a **Layers-Restricted** permission will be able to create, edit, and delete worksheets. They can also place schedules on existing sheet layers.

Because worksheets in Vectorworks are **bi-directional** (i.e. making a change in the worksheet will change the geometry or data of the object that is being scheduled), any changes in a worksheet that will affect an object will require the checkout of that object. For example, if a select number of doors in the schedule needs to be changed to reflect the proper fire rating, these doors can only be changed via the schedule if the doors and the walls they are hosted in, are checked out. As with all aspects of a project, it is recommended that a protocol for communicating changes and updates to a schedule should be put into place.

USING PROJECT SHARING [CONT'D]

It is important to note that a viewport does not need to be checked out to update it. The same is true for recalculating worksheets. Also, any project team member can update viewports or recalculate worksheets in their Working File regardless of their permission level. This means that a user with **Read Only** permission can update all viewports and worksheets to view up-to-date information and to publish or plot drawings.

When a Working File is first opened you may find that worksheets placed on sheets no longer appear or only show the header information. Worksheets need to be recalculated to correct this. This can be done by right-clicking on the worksheet and choosing **Recalculate** (SEE FIGURE 33).

If you need to add revisions and issuances to the the titleblock, these can be done on a per sheet basis with the **Edit Revision Data** and **Edit Issue Data** found in the Object Information Palette when the titleblock is selected. This can be done with any permission level higher than **Read Only**. However, if issuances are to be added on multiple sheets using the Issue Manager, **Project** permission or higher is required.

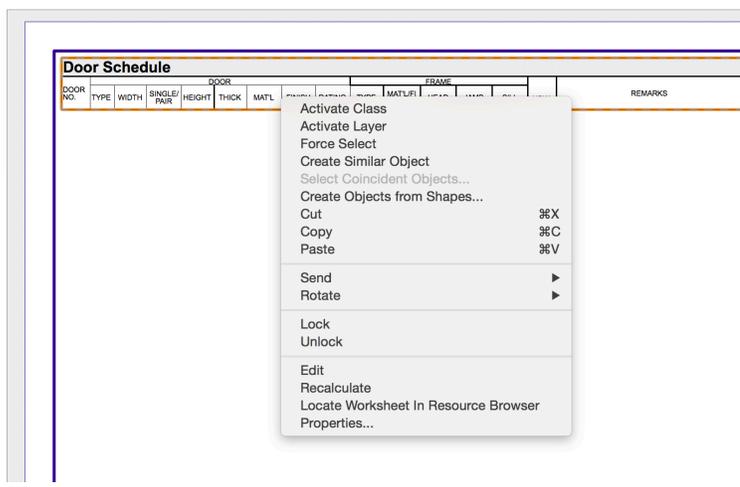


FIGURE 33
Recalculate Worksheet

USING PROJECT SHARING [CONT'D]

WORKING IN VIEWPORTS

When working in viewports it is important to note that entering into annotation space or the viewport crop, will not check out the viewport. This means that two users can enter the annotation space of a viewport and add information. The information that is added, such as a dimension, note, or other type of annotation will be checked out or **owned** by you. Viewports can be thought of as **containers**. All team members can enter the container, and the information within the container can be checked out individually. This flexibility allows for multiple tasks to be done concurrently without locking out other team members. If there is a need to limit work in a viewport to a single team member, that team member can check out the viewport.

Much like Viewports, Groups behave as **containers**. Each team member can enter the group and edit individual objects within the group or add new objects. Those individual objects will be checked out to the user who has created or edited it. Just like viewports, this can be bypassed by checking out the group itself, thereby creating exclusive access to the objects in the group.

COMMITTING CHANGES

Once you have made changes to your Working File, you will have to **commit** those changes back to the Project File. In order to commit changes to the Project File you will also have to save your Working File in its local location. For this reason, the command to commit is both a **save** and a **commit**.

TO COMMIT YOUR WORKING FILE

1. Go to **File** → **Save and Commit**.

When a Working File is committed, the entire file is committed. If you have multiple layers that contain changes, all of the changes will be committed. You cannot selectively commit information on just some of the layers.

If you have made changes to your Working File, but are not yet ready to commit them to the Project File for the entire team to access, you can save your Working File locally through the typical save command. After saving your Working File, upon closing the file you will be alerted through a dialog box that your Working File changes have not been committed (FIGURE 32). This dialog box is a good reminder of whether or not you have committed any changes in your Working File. It is highly recommended that this alert not be dismissed through the **Don't show this dialog box again**.

If more than one team member attempts to commit their Working File at the same time, there will be a longer wait time to commit to the Project File. To understand and make this situation more manageable, it is highly recommended to establish a team protocol for when to commit your Working Files. This protocol should include what time of day that commits should occur and after what type of operations or changes in the Working File have been executed should a person

USING PROJECT SHARING [CONT'D]

commit to the Project File. Communication among the team is vital. Not only should the established protocol be followed, but there should always be constant communication amongst the team.

Your office's Project Sharing protocol should include an established rule that all team members perform a **Save and Commit** as well as, a **Close and Release** of all objects and layers every evening before leaving the office. To ensure that objects and layers are released after committing the Commit dialog box includes a checkbox to **Automatically release checked out layers and objects** (FIGURE 34). This box is checked by default.

The only time objects and layers should not be released at the end of the day is if the team member intends to continue working in offline mode.

If there are changes that are not ready to be committed to the Project File and the objects and layers must remain checked out by a team member, this must be communicated to the team, especially to the project administrator.

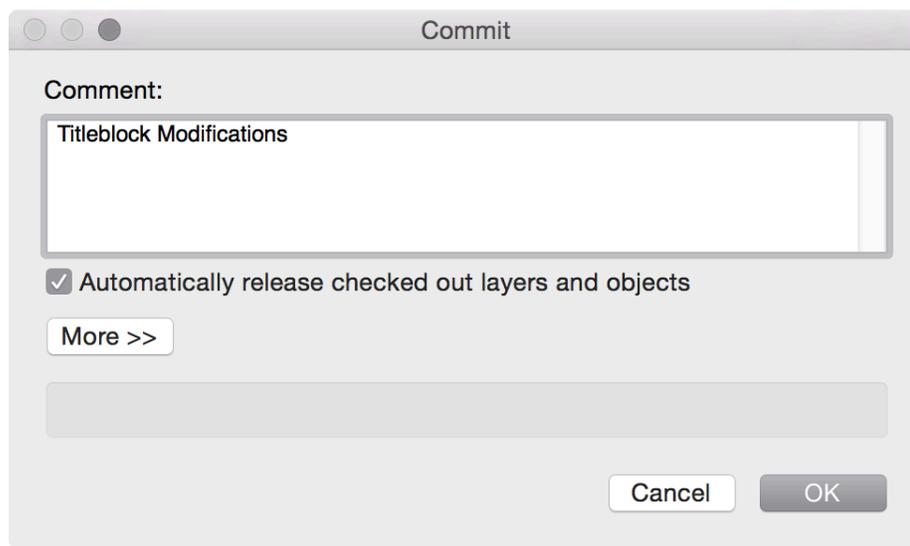


FIGURE 34
Commit Dialog Box

USING PROJECT SHARING [CONT'D]

RELEASING CHECKED OUT OBJECTS AND LAYERS

When one team member checks out an object or layer, it remains locked and is unavailable to other team members. It must be **released** before others can access it. Because the Working File cannot **store** uncommitted changes without having the object or layer checked out, it can only be released after the changes have been committed back to the Project File.

TO RELEASE OBJECTS AND LAYERS:

1. Go to **File** → **Close and Release**.
2. This will locally close the Working File and release all checked out information.

TO RELEASE OBJECTS:

1. Right-click on the object, or selected objects, and select **Release** (FIGURE 19).

OR

With the objects selected, go to **Modify** → **Release** (FIGURE 20).

OR

A **Custom Release** can also be performed. See the Object Check Out section.

If the Working File has not been committed, you will be prompted to either commit the changes or discard the changes before releasing the layers (FIGURE 35).

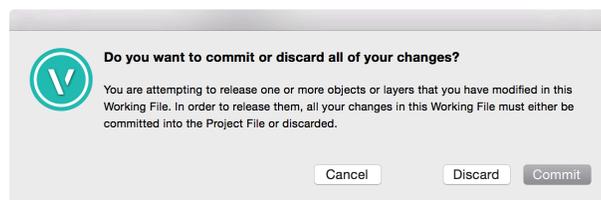


FIGURE 35
Release Uncommitted Changes

A release can be done on a per-layer basis as long as the layer does not contain any uncommitted changes or the object hasn't been modified.

USING PROJECT SHARING [CONT'D]

TO RELEASE A SPECIFIC LAYER:

1. Go to **File** → **Project Sharing**.
2. In the **Layers** tab of the Project Sharing Dialog box, select the layers that you want to release (you select multiple layers at once).
3. Click on the **Release** button (FIGURE 36).

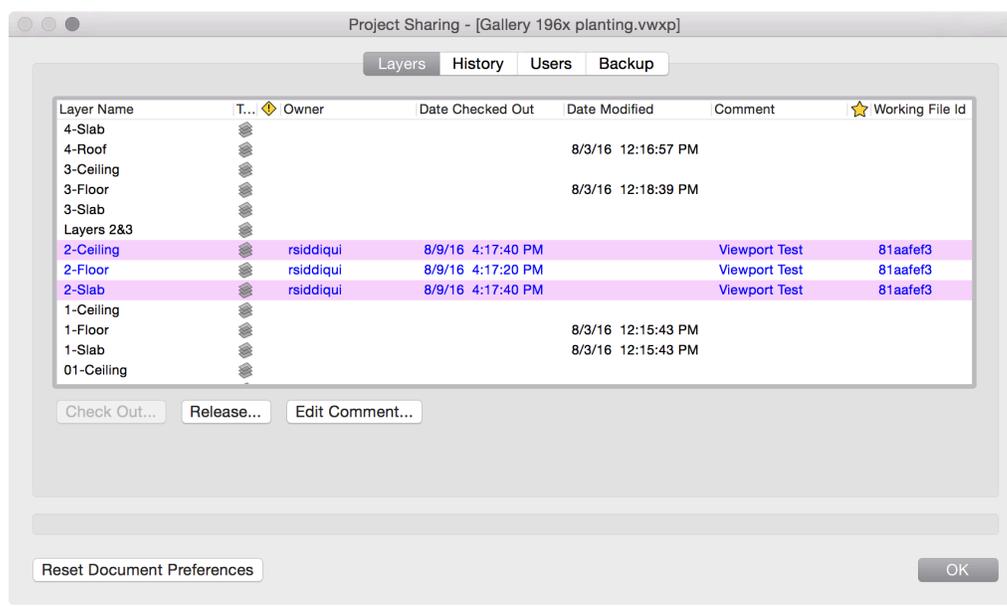


FIGURE 36
Release Layers

Once you have released an object or layer, it will be available to other members of the team. It is not necessary to save and commit your Working file for the layer release to be reflected in the Project File.

The project Administrator can perform a **force release** of an object or layer. This should only be done in extreme circumstances. This will be discussed in the **Project Sharing Administrative Responsibilities** section of this document.

USING PROJECT SHARING [CONT'D]

REFRESHING A WORKING FILE

As you are working, you will need to **refresh** your Working File to see the most current changes that other project team members have committed to the Project File. You will know that your Working File needs to be updated when a yellow exclamation point appears on the **refresh** shortcut in the top left hand corner (FIGURE 31). You can also see more specifically which layers need to be updated by going to the Project Sharing dialog box and clicking on the **Layers** tab. Out-of-date layers will have the same yellow exclamation point icon to indicate that changes to these layers have been committed to the Project File.

THERE ARE TWO WAYS TO UPDATE YOUR WORKING FILE.

1. Go to **File** → **Project Sharing**.
2. Select **Refresh**.

Or simply click the **refresh** shortcut in the top, left-hand corner of your Vectorworks drawing window (FIGURE 31).

A **refresh** of a Working File will update the entire file. There is no option to update only specific layers.

USING PROJECT SHARING [CONT'D]

ACCESSING A BACKUP FILE AND WHEN TO CREATE A NEW WORKING FILE

There are some instances when an existing Working File should be discarded and a new Working File created from the Project File. These instances include:

- You're unable to commit changes to the Project File
- When there's been an event or error that has caused the Administrator to force release your layers or change your permission levels
- The backup of the Working File needs to be accessed for a number of different reasons

Any of the instances listed above can lead to the need to access a backup file of your Working File. A backup file is connected to the Project File since it is a copy of the Working File (this means that the backup file and the Working File share the same file ID number – a number that is assigned in the background by Vectorworks).

TO REPLACE A CURRENT WORKING FILE WITH A BACKUP FILE:

1. Release all objects and layers in the current Working File.
 - a. If there are changes in the current Working File that should not be committed to the Project File: discard all the changes.
 - b. If there are changes in the current Working File that should be committed to the Project File, but cannot be committed or is causing errors or crashes upon committing:
 - i. Go to **File** → **Save a Copy As**.
 - ii. Save the Working File as a regular .vwx file and with a new, descriptive name.
 - iii. Release all objects and layers and discard the changes in your Working File (your changes should be retained in the copy you have saved).
2. Communicate with your team that though you have released these objects and layers, they should not be checked out by anyone else. You will need to check these objects or layers out again and they need to be available to you.
3. Open the most recent backup of the Working File.
4. You will receive a message indicating that refreshing this file will cause uncommitted changes to be lost (FIGURE 37). Click on **Open Anyway**.

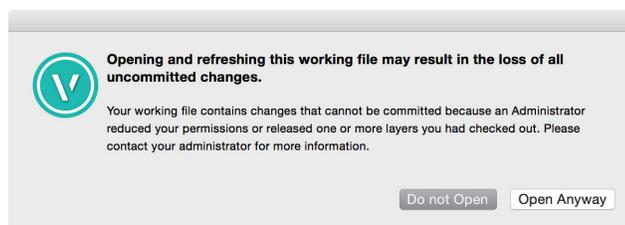


FIGURE 37
Opening a Backup Working File

USING PROJECT SHARING [CONT'D]

5. This backup file will not have any layers or objects checked out.
 - a. If there are uncommitted changes in this backup file that need to be committed: You must first check out the layers on which these changes occur. There is no need to check out the objects. You will be able to commit the changes to the Project File once the corresponding layers have been checked out.
 - b. If there are uncommitted changes in this back file that do not need to be committed: Refresh the file and discard the changes.
6. Save and close the backup file. This is now your most current Working File.
7. DELETE the original Working File (with the .vwxw file extension).
8. Move the backup file to where your Working File should be saved.
9. Rename the backup file to remove the appended timestamp from the file name.
10. Open and use the file as your typical Working File.
11. If you have done a **Save a Copy As** to retain uncommitted changes, these changes will have to be copied and pasted into your new Working File.

If you are saving multiple backups it is important to know that once a backup file is used, the remaining backups should be archived and not used again.

TO REPLACE A WORKING FILE WITH A NEW WORKING FILE:

1. Go to **File** → **Save a Copy As**.
2. Save the Working File as a regular .vwx file and with a new, descriptive name.
3. Release all layers by discarding the changes in your Working File (your changes should be retained in the copy you have saved).
4. Communicate with your team that though you have released these layers, they should not be checked out by anyone else. You will need to check these layers out again and they need to be available to you.
5. DELETE the original Working File.
6. Double click on the Project File to create a new Working File.
7. Check out the layers that were previously checked out.
8. Open the regular Vectorworks file that was Saved from your old Working File.
9. Copy and Paste changes from the regular Vectorworks file to the new Working File.

USING PROJECT SHARING [CONT'D]

WORKING OVER VPN

When working over a VPN (Virtual Private Network) it is important to note that when performing certain operations that require the Working File to access the Project File (committing or refreshing a Working File), there will be a significant slow down in the performance of your file (see the **Location of the Project File** section of this document). For this reason, it is highly recommended that both committing and refreshing a Working File be done more sparingly than when working while directly connected to the server.

A protocol for committing and refreshing should be put into place for working with remote team members who are accessing the server via a VPN connection.

WORKING OVER THE CLOUD

When working with a Project File stored in a cloud-based storage system, your Working File should be saved on your local machine. Because your Working File will communicate with the Project File over the internet, the speed of performing Commits and Refreshes will be dependent on the bandwidth of your internet connection.

USING PROJECT SHARING [CONT'D]

PUBLISHING OR PLOTTING A DRAWING SET

Publishing or plotting a drawing set is done as you would with a regular Vectorworks file. All of the Project Sharing permission levels will have the ability to run the **Publish** command from their Working File. This includes the **Read Only** permission.

Be sure that all Working Files have been committed to the Project File to ensure the most current information is reflected in the Project File. The Working File that is being used to plot or publish should be refreshed as well.

Generally, it is recommended to work within a singular file, however there may be some instances where a **plot file** should be created. A plot file or production file is a separate file used for the creation of drawings. It is distinct from a **model file** by the fact that all sheet layers are created in the plot file and all design layers are referenced from the **model file** (SEE FIGURE 38).

Both model file and plot file should be Project Files allowing multiple team members to access the two files through their own Working Files (FIGURE 39). Though this may add to the responsibilities of file management, this division can help ease file size and performance issues that may arise due to a large number of sheet layers.

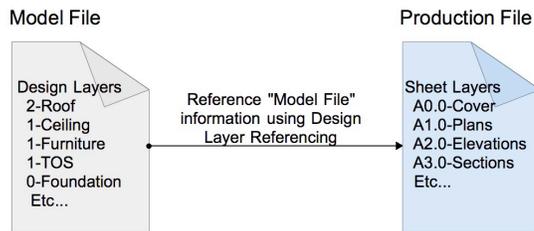


FIGURE 38
Model Files are Referenced into a Production File

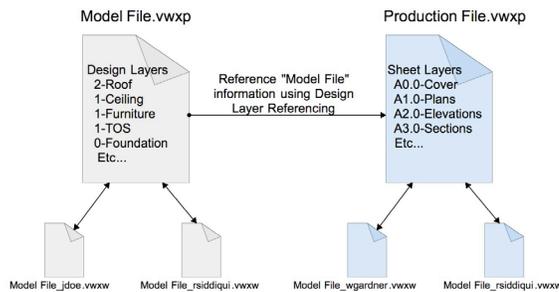


FIGURE 39
Project Files for Modeling Information are Referenced into Project Files for Production

USING PROJECT SHARING [CONT'D]

ARCHIVING

When it comes time to archive your project, it is recommended that the project not be archived as a Project File. This is especially important if a file is being archived in the middle of a project or at certain milestones during the project. The archive file should be **disassociated** with any existing Working Files. This means that when a project is being archived, the Project File should be changed back into a regular Vectorworks document.

A PROJECT FILE IS MADE A REGULAR VECTORWORKS DOCUMENT BY:

1. Open your Working File – ensure that it is refreshed and contains the most current information or the information needed for the archive file.
2. Go to **File** → **Save A Copy As**.
3. Navigate to the appropriate folder where your archived file will be located.
4. Name the archive file with the appropriate file naming convention.
5. Be sure to change the file type to **Vectorworks Drawing (.vwx)**.
6. Click **Save** to complete the process.

This ensures that existing Working Files will maintain their connection with the Project File and not the archived file. Be sure to archive other information such as referenced files and back up files.

USING PROJECT SHARING [CONT'D]

PROJECT SHARING ADMINISTRATIVE RESPONSIBILITIES

As mentioned before, it is recommended that each Project File have two team members with the **Administrative** permission level. This is to ensure that the administrative capabilities are accessible regardless of specific team members' availability.

Though there are project and document settings that require **Administrative** permission, there are two main responsibilities that will require a more active role from the project administrator. These responsibilities include archiving the Project Files (discussed in the prior section) and managing the project team members. Project team members may need to be added to a project or their permission levels changed. As mentioned before in the **How to Create a Project File** section, it is recommended that the default permission setting for any new team members should be set to **Read Only**. This means that any new team member that is added to the project creating a new Working File will have the **Read Only** permission. This is to protect against any unintentional changes by those who may simply want to open the file to review project progression or information. However, if a new team member needs to be able to check out and modify a layer or resource, they will need their permission level changed.

TO CHANGE A USER'S PERMISSION LEVEL, THE PROJECT ADMINISTRATOR WILL:

1. Make sure that the user's Working File is closed and all changes have been committed to the Project File.
2. The administrator will open their own Working File.
3. Go to **File** → **Project Sharing**.
4. Click on the **Users** tab.
5. Select the username whose permission needs to be changed. Click on the **Edit** button.
6. Select the desired permission level in the drop down menu (FIGURE 40).
7. Click **Ok** to exit the **Edit User** dialog box.
8. Click **Ok** to exit the Project Sharing dialog box.

The Working File does not need to be committed for this permission level change to take effect.

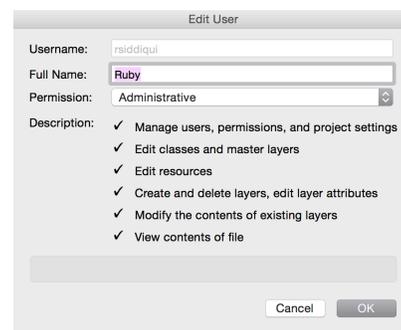


FIGURE 40
Edit User Permission

If a user's Working File contains uncommitted changes and their permission level has been modified, they will not be able to commit to the Project File. It is essential that all changes to permissions be communicated appropriately to prevent the loss of information.

USING PROJECT SHARING [CONT'D]

Another responsibility of the project administrator includes the management of object and layer check outs. If a user has checked out an object or layer and has forgotten to release it, the administrator can perform a **force release**.

TO FORCE RELEASE A LAYER THE PROJECT ADMINISTRATOR WILL:

1. Open their own Working File.
2. Go to **File** → **Project Sharing**.
3. In the **Layers** tab, select the layers that need to be released.
4. Click on the **Release** button.
5. You will see a dialog box appear indicating that the layers are checked out by others and this will **force** the release (FIGURE 41). Be cautious and ensure that all team members are aware of the force release and the possibility of loss of information.
6. To proceed with the force release, click on **Release Anyway**.

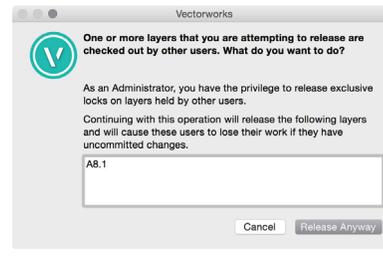


FIGURE 41
Force Release

TO FORCE RELEASE OBJECTS, THE PROJECT ADMINISTRATOR WILL:

1. Select any object owned by the user whose objects need to be released.
 2. Right-click and select **Release**.
- OR
- Go to **Modify** → **Release**.
 3. Click on **Release Anyway** (FIGURE 42).

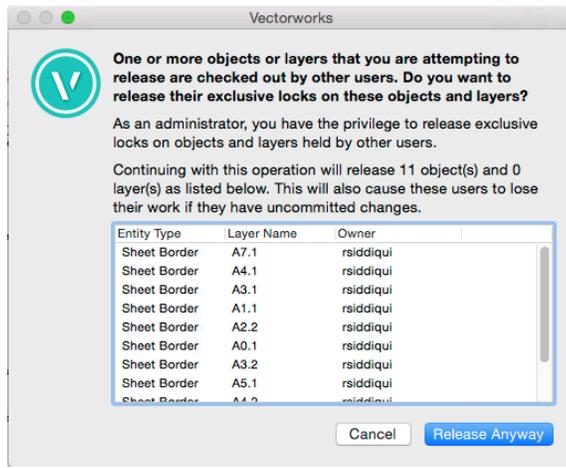


FIGURE 42
Force Release Objects

USING PROJECT SHARING [CONT'D]

ANOTHER WAY TO FORCE RELEASE OBJECTS HELD BY A SPECIFIC USER, THE PROJECT ADMINISTRATOR WILL:

1. Go to **Tools** → **Custom Release**.
2. Under Selection Criteria there are three pull down menus. Select:
 - a. **Owner**
 - b. **is**
- c. Then the username of the team member's objects that need to be released (**FIGURE 42B**).

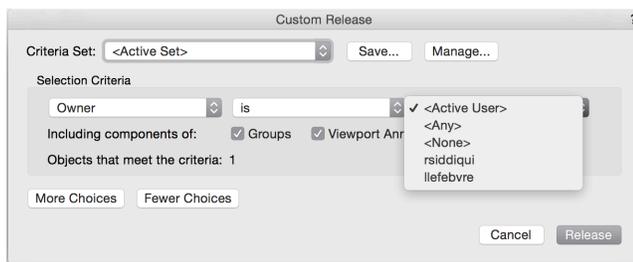


FIGURE 42B
Custom Release of Objects

When force releasing, you are releasing all objects and layers owned by the user. You cannot selectively force release a layer or object. The administrator does not need to commit their Working File for the layers to be available to the rest of the team.

If the user from whom the force release was performed has uncommitted changes in their Working File, they should not refresh their Working File upon opening it. Instead they should perform a **Save a Copy As** and follow the steps outlined in the **Accessing a Backup File** section of this document.

A force release should only be performed in extreme, last-resort cases. If a user has uncommitted changes in their Working File and a force release is performed, they will lose these changes. They will not longer be able to commit to the Project File.

Generally, the project administrator should also be able to make decisions regarding referencing information versus importing information, file structure and archiving to match that of office standards and protocol. As such, Project Sharing will require little change to existing standards within an office and can be easily implemented on all new projects.

For more information regarding Project Sharing refer to the [Vectorworks Help](#), available online. Extensive information regarding permissions and the type of information and data that is committed to the Project File can found [here](#).

For specific help or troubleshooting, call your Vectorworks Tech Support team.

ADDITIONAL INFORMATION

ADDITIONAL INFORMATION

THE PROJECT SHARING DIALOG BOX

The Project Sharing Dialog box can be accessed at anytime within a Working File. This dialog box will provide continuous, up-to-date information regarding the project. You will be able to check on the status of the availability of layers, the permission levels of all project team members, the user colors, access the history of the Project File, and see the backup policy of the Project File itself. Depending on your permission level you will be able to either view the information in these tabs, or edit the information.

LAYERS TAB

The Layers Tab allows you to view all the layers of the project. You can see which layers are available, which layers are checked out by others (seen as gray text), and which layers you have checked out in your own working file (seen as blue text) (FIGURE 36). Unavailable layers will include the username of the team member that has exclusive access to the layer as well as the comment made upon checkout. You can also track the date and time when the layer check out was performed and when the layer was last committed to the Project File.

The project administrator can designate layers as Master Layers within this tab.

HISTORY TAB

Tracking changes and design options as they are added to and subtracted from the project can become difficult in a multiuser environment. The **History** tab of the Project Sharing dialog box contains a compilation of a **change history** of the Project File (FIGURE 43).

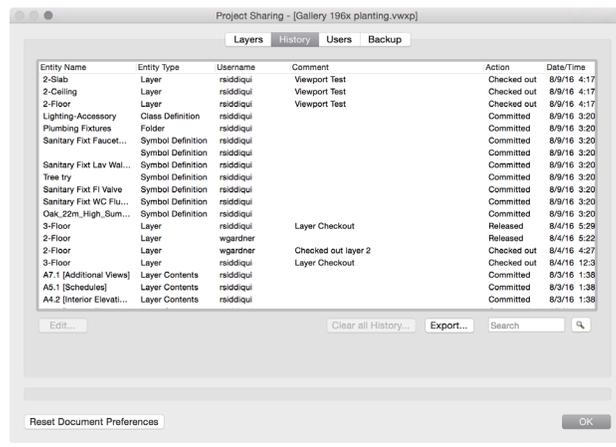


FIGURE 43
History Tab of the Project Sharing Dialog Box

ADDITIONAL INFORMATION [CONT'D]

Information that is tracked and listed in the history tab include the name of the object, the type of entity (such as layers, classes, or resources), the user who has checked out or modified the entity, the action taken (check out, commit, release), and the date and time of the action. The information can be sorted on any column header. For example, all changes to a given layer or all changes made by a particular user. Additionally, a search of the history by keywords can be done using the search control option in the lower right (FIGURE 43).

The entire history of the project can be exported to a comma-separated file by clicking the **Export** button. This export will generate a CSV file that can then be imported into any data processing application such as Excel, Numbers, etc.

The project administrator will be able to clear all the project history by clicking the **Clear all History** button.

USERS TAB

A list of the entire project team can be seen in the **Users tab** (FIGURE 44). Information found in this tab includes team members' username, permission level, and color.

The project administrator is able to add and delete team members, edit their permission level and username, and change the default permission level for new users.

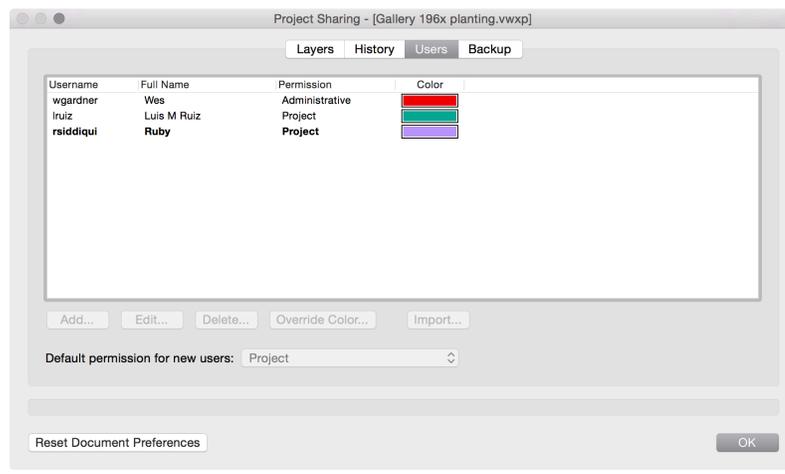


FIGURE 44
Users tab

BACKUP TAB

The backup policy that has been established for the Project file can be seen in the **Backup** tab of the Project Sharing dialog box (FIGURE 45).

The project Administrator is able to change the backup policy for the Project File.

ADDITIONAL INFORMATION [CONT'D]

RESET DOCUMENT PREFERENCES

As mentioned before, the Vectorworks Document preferences can be modified within a Working File, but these modifications will only be committed to the Project File with the **Project** permission level or above. More information regarding Document Preferences can be found [here](#).

In the lower, left-hand of the Project Sharing dialog box is a **Reset Document Preferences** button (FIGURE 45). This will reset the Working File's current document preferences to match those of the Project File. This means if a document preference change has been made by a project administrator, that change will be reflected in the Working File after **resetting** the document preferences through the Project Sharing dialog box.

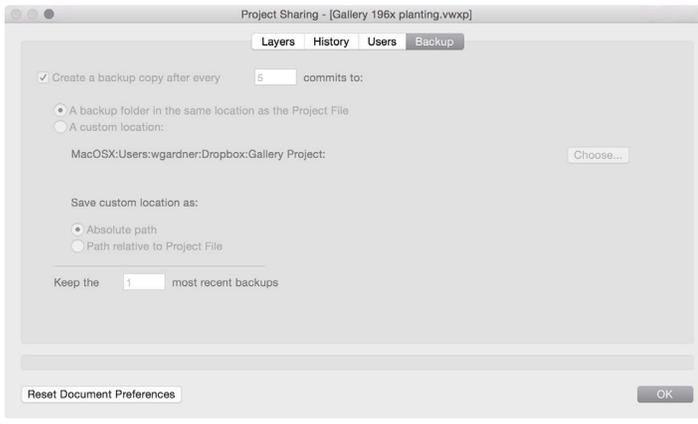


FIGURE 45
Backup Policy

GLOSSARY

PROJECT SHARING – the multiuser environment within Vectorworks. Project Sharing creates an environment that streamlines project organization and management by allowing design teams to work concurrently in the same Vectorworks document.

PROJECT FILE – a single file that serves as the **hub** for sharing or collaborating on a project. All team members can access the Project File by way of their Working File. A Project File will be designated with the file extension .vwxp. When a Project File is opened, a Working File is created. This means that the Project File is always accessed through a Working File. The Project File should be kept either on a server or in a cloud-based storage folder that can be accessed by all team members.

WORKING FILE – a local copy of a Project File specific to the user who has created it. The Working File is used to add to, subtract from, or modify the Project File. In essence, all modeling and drawing creation is done in a Working File and then is committed back to the Project File. A Working File is designated with the file extension .vwxw. When a Working File is open, the title bar on the file will include **WORKING FILE** to indicate that you are currently in a Working File (FIGURE 2). The Working File is kept on the hard drive of your local computer.

CHECK OUT – reserving an object(s), design layer(s) and sheet layer(s) for exclusive use. Once a person checks out an object or layer, they become the owner. That object or layer becomes unavailable to other team members until it is **released** – see below. Multiple objects and layers can be checked out at once.

COMMIT – saving changes made in a Working File back to the Project File.

RELEASE – relinquishing your **reservation** on, or exclusive access to, objects or layers that were previously checked out by you. This will make the objects and layers available for others to check out.

REFRESH – an update of all out-of-date parts of your Working File. A refresh is performed after another team member commits their changes to the Project File, which will make parts of your Working File out-of-date. A refresh does not commit your Working File; nor does it affect any of your uncommitted work.

GLOSSARY [CONT'D]

REVERT – discards any changes in the active Working File and reloads an exact copy of the Project File in its current state. This should be used only when changes to your Working File are to be discarded and not committed to the Project File.

MASTER LAYER – a designated, **special** layer that changes infrequently over the life of a project. A Master Layer may contain critical information that should not be changed or overwritten. An example of such a layer may be a design layer that holds a project's structural grid. You can have multiple Master Layers in a project.

OFFLINE MODE – when a Working File is disconnected from the Project File while maintaining exclusive access to the checked-out layers. Offline Mode allows you to continue working without access to the server where the Project File is saved. Layers must be checked out before using Offline Mode to maintain exclusive access to them. Once the Working File is reconnected to the server and the Project File, changes made in Offline Mode can be committed back to the Project File.

PERMISSION LEVEL – one of the unique features of Vectorworks' Project Sharing is the ability to assign a Permission level to each member of a project team. Permission levels range from **Administrative** to **Read Only**, and allow for greater control and management of resources and editing of the Project File. More about the various permission levels can be found in the **How to Set Up for Project Sharing** section.

FORCE RELEASE – when an administrator releases objects or layers that are checked out by another user.

UNCOMMITTED CHANGES – changes that are made to a Working file but have not been committed to the Project file.

FREQUENTLY ASKED QUESTIONS

1. WHEN SHOULD I SET UP MY VECTORWORKS FILE FOR PROJECT SHARING?

Because Project Sharing does not change any fundamental aspects of Vectorworks, it can be implemented at any time during a project using any Vectorworks document that will require multiple users.

There are no preset rules or requirements for changing a Vectorworks document to a Project File and therefore requires no special setup.

2. CAN I STILL USE LAYER AND RESOURCE REFERENCING?

Yes.

When you share project files and use referencing, keep in mind the following rules:

- Project files can be referenced into other project files and regular Vectorworks files; resources referenced from the file cannot be modified.
- Regular Vectorworks files can be referenced into project files. For example, a symbol library can be referenced into a project file; resources referenced from the file can be modified.
- Working files cannot be referenced into any other files since they are considered temporary files that can be deleted at any time.
- Place the reference file in a location accessible by the project file and all users working on the project.
- Relative reference paths are relative to the location of the project file, and the referenced file must be on the same volume as the project file.

3. WHAT IF I NEED TO LEAVE THE NETWORK THAT THE PROJECT IS ON? CAN I STILL WORK ON THE PROJECT?

Yes, Project Sharing includes a Work Offline mode in case you need to take a laptop on a trip or you temporarily lose access to the network containing the project file. When in this mode, changes will ONLY be saved to the working file directly and any layers or objects you have checked out will not be available to other users until you reconnect to the project file and release them. Offline mode will also prevent you from accessing the Project file to check out new objects or to release objects. So be sure to check out all information that you want to work on before disconnecting from the server or the internet.

If Vectorworks detects a loss of connection to the server, it will prompt you to begin working in offline mode.

FREQUENTLY ASKED QUESTIONS [CONT'D]

4. WHAT IF I WANT TO SEE WHO MADE CERTAIN CHANGES TO A PROJECT?

The History feature within the Project Sharing dialog box will let you search not only for users, but by specific layers to either focus on ALL of a specific user's changes, or to focus on which users made a change to a particular layer. Since you can add comments when checking out layers and objects, or when editing or releasing layers and objects, you can also search the comment history. So including useful keywords in the comment is advised.

5. WHAT SHOULD I DO IF MY WORKING FILE HAS BECOME CORRUPTED OR I CAN NO LONGER COMMIT TO THE PROJECT FILE?

- Do a Save A Copy As (not just **Save As**) of the working file and turn it into a regular Vectorworks file.
- Have the administrator force release the objects or layers that were checked out.
- Delete your working file (you should have your changes in the **saved as** regular Vectorworks file).
- Create a new working file from the project file.
- Check out the necessary objects and/or layers.
- Copy and paste the changed elements from the regular Vectorworks file to the new working file.
- Commit the changes to the Project File.

6. CAN I SEE CHANGES MADE BY OTHER USERS LIVE, IN REAL-TIME?

Not yet. Currently only after another user Commits changes to the project and you Refresh your working file will you see their new changes.

7. CAN A USER WITH FUNDAMENTALS USE PROJECT SHARING?

No. Project Sharing is only available in Architect, Landmark, Spotlight or Designer.

8. CAN I CONVERT A PROJECT FILE BACK TO A REGULAR VECTORWORKS FILE?

Yes. You can use File → Save a Copy As (not just **Save As**) in order to change your Working file, into a regular Vectorworks file. The original project can then simply be archived or removed at your discretion.

Make sure that when using Save a Copy As, you then select the vwx file format to save as, not the default vwxw format.

9. CAN I STORE AND SHARE THE PROJECT FILE ON CLOUD STORAGE?

Yes, you can put project files (.vwxp) in Google Drive, Dropbox, OneDrive, or Box folders.

FREQUENTLY ASKED QUESTIONS [CONT'D]

10. HOW DO I DECIDE IF I SHOULD USE A CLOUD-BASED STORAGE FOR PROJECT SHARING OR VPN TO CONNECT TO MY PROJECT FILE ON MY SERVER?

Even though a cloud-based storage folder and VPN are both dependent on your internet speed, connecting to a server via VPN is much slower in general.

11. CAN I CREATE A PROJECT FILE ON THE SERVER AND THEN MOVE IT TO CLOUD STORAGE FOR OTHERS TO ACCESS?

Yes. You can move (not copy) your Project File to cloud-based storage for sharing with others. You should share a Project File either on the server or on a cloud-based storage system – not both.

12. CAN I CHANGE THE PERMISSIONS FOR USERS THAT CURRENTLY HAVE LAYERS CHECKED OUT?

Yes, but you should ALWAYS make sure that a user releases any objects or layers and commits any changes before their permissions are altered to prevent a situation where a user is attempting to commit a change in an area they no longer have access to.

13. WHAT HAPPENS WHEN I CHANGE THE PERMISSION LEVEL OF A PROJECT TEAM MEMBER?

If a user's Working File contains uncommitted changes and their permission level has been modified, they will not be able to commit to the Project File. It is essential that all changes to permissions be communicated appropriately to prevent the loss of information.

14. WHAT HAPPENS WHEN I DELETE A USER WHO HAS OBJECTS OR LAYERS CHECKED OUT?

Nothing. The objects and layers will remain checked out. If there are uncommitted changes in the user's original Working file, they will have to open a new Working file (which will add them back to the project), return to their original Working file and commit changes and release all information.

As with all other administrative responsibilities that include forced changes for users, communication is key.

15. CAN A USER HAVE MORE THAN ONE WORKING FILE AT ONCE?

Yes. However, it is not recommended for a single user to create and use more than one working file at a time. The objects or layers you have checked out are restricted to the working file that you have checked out in. You will not be able to modify any of those objects in your second working file. This can lead to confusion and problems.

FREQUENTLY ASKED QUESTIONS [CONT'D]

16. HOW IS MY USERNAME DETERMINED?

The Project Sharing user name is determined by your computer's login name.

17. CAN THERE BE IDENTICAL USERNAMES?

No. If your office is utilizing a generic computer login such as **User** or **Architect**, this will create identical or duplicate usernames since the username is determined by the computer login name. Office protocol will have to change to give each computer a unique login to avoid this problem.

18. WHAT NETWORK PERMISSIONS ARE REQUIRED FOR USERS TO ACCESS THE LOCATION WHERE A PROJECT FILE RESIDES?

Users should have Full access. Read, Write, Rename, Delete, Create, etc.

Vectorworks uses a **safe save** technique for saving files, in which the previous version of the destination file is maintained until the last possible moment, to avoid potential file damage during save, such as by a hardware or network failure. To support this in a networked environment, permissions must be correctly set to handle the required file operations.

IN PARTICULAR, THE FOLLOWING TWO CONDITIONS MUST BE FULFILLED:

1. The user must have permission to delete files in the destination folder. This is usually the case when the user has write access to the folder. However, some network server configurations using fine-grained control (e.g. with Access Control Lists) may need to be specifically configured to allow this, by assigning **delete_child** permission to the folder. See (<https://support.apple.com/en-us/HT201416>) for more information.
2. Files created in the destination folder must inherit the permissions of the folder itself. Server installations that use Access Control Lists may need to ensure that **file_inherit** permission is set on the destination folder. (Note: On OSX Server, ACLs may need to be explicitly enabled. See (<https://support.apple.com/en-us/HT203574>))

19. WHAT ARE THE SYSTEM REQUIREMENTS FOR USING PROJECT SHARING?

The system requirements for Project Sharing are the same for your regular Vectorworks use. The most current System Requirements can be found [here](#).

Project Sharing does have Network requirements for both LAN sharing and Cloud sharing. These requirements can be found with the system requirements.

20. WILL CHECKING OUT A LAYER AFFECT FILE PERFORMANCE DIFFERENTLY THAN CHECKING OUT AN OBJECT?

Working in the project sharing environment is the same as working in a regular Vectorworks file. The only time your working file transfers data to the project file is

FREQUENTLY ASKED QUESTIONS [CONT'D]

when you are committing changes or you are refreshing your working file. Checking out objects or layers or releasing them does requires only a small amount of data to transfer. It does connect to the project file, but generally these actions don't require much time, regardless of how many objects or layers you are checking out. This is true for working over a server or through a cloud-based storage folder.

If you check out an entire layer but only modify one object on that layer and then commit the changes to the project file, that is the only object whose data gets transferred to the project file. Not the entire layer. So whether you check out the entire layer or that one particular object, it will still take the same amount of time to commit the changes to the project file. In terms of performance, there's no real difference between the types of check out.

21. HOW DO I DECIDE IF I WANT TO CHECK OUT AN ENTIRE LAYER OR JUST A FEW OBJECTS?

It's a matter of management. The main reason that you may want to check out a whole layer rather than just objects, is to lock the layer and prevent anyone else from checking out any related objects on that layer. This is recommended if you are making large, sweeping changes that may require manipulation of objects related to those changes.

22. SHOULD I CHECK OUT THE OBJECTS I NEED AHEAD OF TIME, OR SHOULD I CHECK THEM OUT "ON THE FLY" AS I NEED THEM?

Project Sharing supports both an explicit upfront check out and an on-demand or **on-the-fly** check out. There is no real recommendation for one over the other, but it is highly encouraged that teams set a protocol for check outs in order to avoid repeated alerts of unavailable objects.

23. HOW DO I DECIDE IF I SHOULD USE THE SMB OR AFP NETWORK PROTOCOL?

If you are using a Mac OSX server, you should use the AFP protocol and should turn off SMB on your server.

If you are using a Windows-based server, you should use SMB.

You should never mix SMB with AFP – meaning each user should be using the same network protocol. More information can be found [here](#).

24. HOW OFTEN SHOULD I COMMIT MY WORKING FILE TO THE PROJECT FILE?

Each office should set their own standards or protocols for when to commit changes from a Working file and when to Refresh their Working files. It is highly recommended that for large projects with many users, a schedule should be created for committing and refreshing Working files. Committing should only take place after significant changes have been made or milestones met. All other work should be saved locally to the Working file.

FREQUENTLY ASKED QUESTIONS [CONT'D]

25. HOW OFTEN SHOULD I REFRESH MY WORKING FILE?

Working files should be refreshed when any new and significant information has been committed to the Project file by other team members.

As with committing, for large projects with many users, a schedule for refreshing Working files should be created.

26. WHY DOES COMMITTING OR REFRESHING MY WORKING FILE SEEM TO TAKE LONGER WHEN I HAVE REFERENCES?

When you refresh references in your Working file, this is committed back to the Project file as a change. If there are a lot of references that have all been updated, your commit to the Project file will take longer. Since the updated references are recognized as changes, a refresh of a Working file will also take longer. It is recommended that references should only be updated when needed in a Working file.

27. WHAT HAPPENS WHEN TWO PEOPLE TRY TO COMMIT THEIR WORKING FILES AT THE SAME TIME?

Only one person can commit their Working file at a time. The second person will receive an alert and will have to wait to commit their Working file.

28. HOW DO I DETERMINE WHAT PERMISSION LEVEL TO ASSIGN TO DIFFERENT PROJECT TEAM MEMBERS?

Implementing Project Sharing will mean a few new responsibilities for the project team. These responsibilities include the creation of the Project File itself as well as management of the Project File and its shared information. This and other tasks that need to be completed for a project should help inform the Permission level that each team member will require. Understanding the Permission levels and what tasks they allow you to complete, will help you understand how they can coincide with project tasks and roles. More information on Permission Levels can be found [here](#).

29. CAN I HAVE MORE THAN ONE PROJECT ADMINISTRATOR?

Yes. As a matter of fact, we highly recommend that there should be two or more users with Administrator permission levels.

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