Revit® Structure Worksets 101: Worksharing Monitor

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Worksets are enabled in Revit Structure when the project needs to be shared with multiple team members. And once enabled, users can check out individual elements or an entire Workset. All members of the design team can view these elements or Worksets in read-only mode, which prevents conflicts in the project. Team members adding and changing elements in Worksets can save their work to a personal location and publish work to a central file so others can see their latest changes. With the Reload Latest function, users can also update their local files at any time to view new changes. A better understanding of the process will help in the planning and execution of worksharing in a project environment.

The Worksharing Monitor for Revit facilitates the use of Revit software in a worksharing environment, in which multiple people work on one project.

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About the Speaker:
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The Worksharing Monitor for Revit 2008 facilitates the use of Revit software in a worksharing environment, in which multiple people work on one project. For workshared projects, the Worksharing Monitor answers questions like the following:

- Who is currently working on this project?

- Is my local copy of the project up to date?

- When will my Save to Central operation finish?

- Has my request to borrow elements been granted?

- Are any issues interfering with my work on a Revit project?

- Who is currently saving; who is attempting to save?

- Can I save now? Why am I keyed?

- Do I need to reload latest?

- Who changed the central file in the past X days?

- Do I need to take any action on an editing request?

- Revit is acting slowly, is it because of the low virtual memory?

- How long has it been since I last Saved to Central?

NOTE: *The Worksharing Monitor is not useful for standalone Revit projects, which do not use worksharing to divide the work for a project among several people.*

The Worksharing Monitor works with all Revit products, including Revit Architecture, Revit MEP, and Revit Structure. If you are working on one or more workshared Revit projects, install the Worksharing Monitor on your computer. When you open a workshared project in the Revit software, also start the Worksharing Monitor. (Using the Worksharing Monitor with worksharing projects is not required, but it is strongly recommended.)

Once installed, you can start the Worksharing Monitor in any of the following ways:

- From the Windows desktop, double-click the Worksharing Monitor icon.
- From the Windows desktop, click Start menu--Programs--Autodesk--Worksharing Monitor for Revit 2008.
- From a Revit session, click Tools menu--External Tools--Worksharing Monitor.

The main window of the Worksharing Monitor is organized into 3 panes:

- ***Central File Access pane*** shows information about project files in which you are currently working, and identifies other users who are also working on those projects.

- ***Editing Requests pane*** shows information about requests that you have issued, asking others for permission to work on part of a project. It also shows requests that others have sent to you, asking for your permission to work on a part of a project that you currently control.

- ***Notifications pane*** displays warnings and notices, providing information about issues that may interfere with your work on a Revit project.
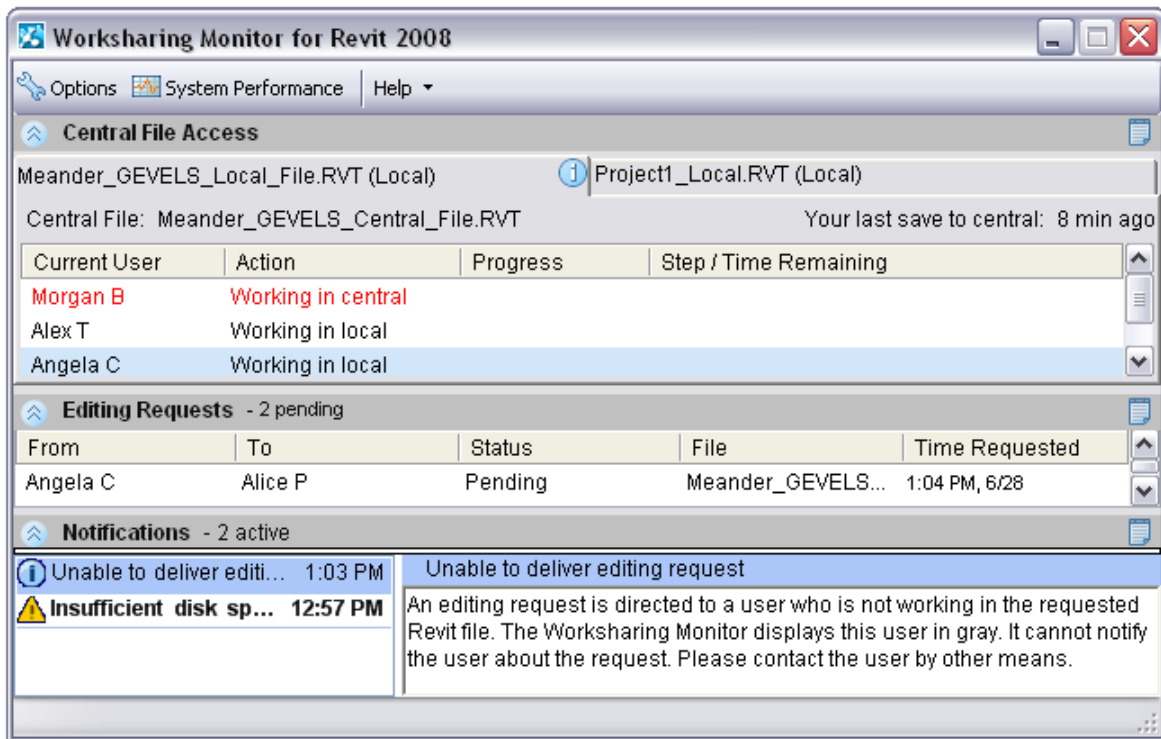
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Desktop Alerts

You can configure the Worksharing Monitor to display desktop alerts when certain issues arise related to Revit workshared projects. A desktop alert is a message that displays near the Windows system tray. To specify the desktop alerts that you want to see, use the Options dialog.

NOTE: *When the Worksharing Monitor window is active, desktop alerts do not display, because the same information displays in the window.*

Setting Options

Use options to specify how you receive information about events related to your current Revit project. You can specify the following:

- Whether the Worksharing Monitor window always stays on top of other application windows. This option makes sure that you see new information as it becomes available.

- Whether desktop alerts display near the Windows system tray to inform you of events as they occur. Use options to indicate whether you want to receive alerts regarding central file access, editing requests, and notifications.

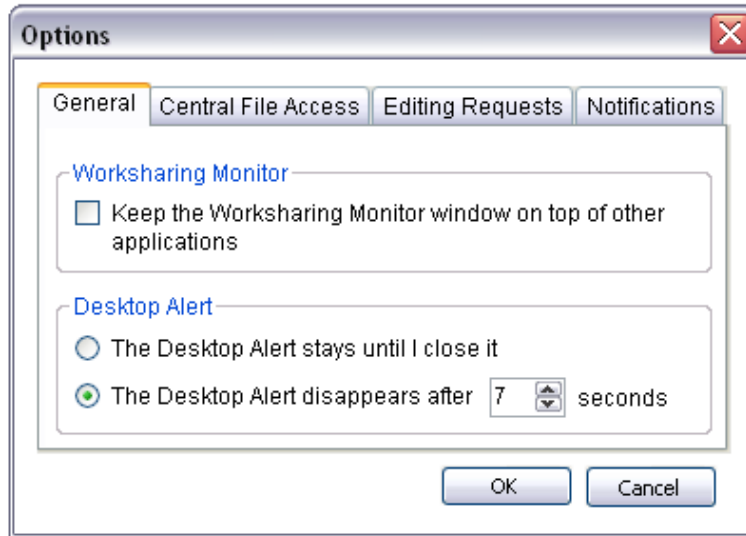To specify options for the Worksharing Monitor, click on the [Options] toolbar.

General Options

Use options on the General tab to specify the following:

- Whether the Worksharing Monitor window always stays on top of other application windows. This option makes sure that you see new information as it becomes available.

- If you use desktop alerts (specified on the other tabs), how long they display on the Windows desktop.
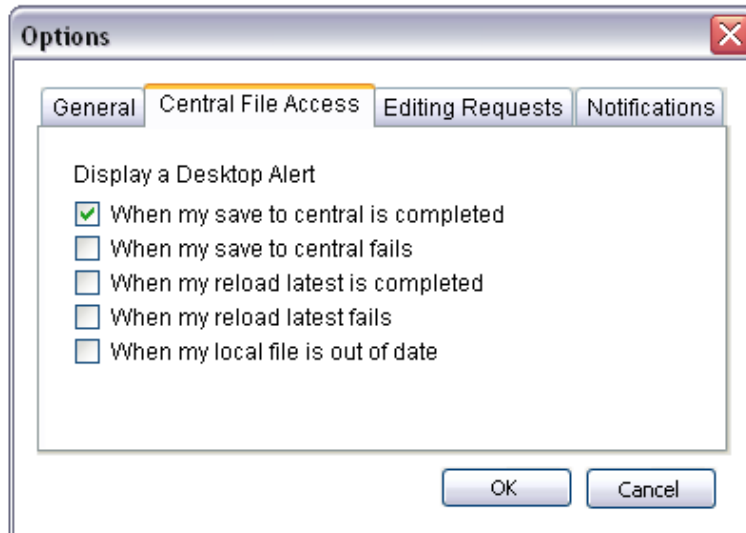
Options for Central File access

Select an option to indicate that you want to receive desktop alerts about central file issues. Clear an option to avoid receiving these desktop alerts.
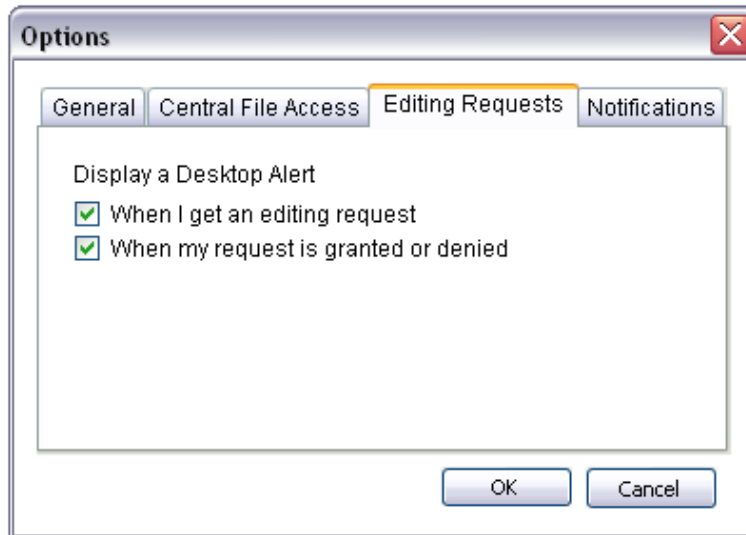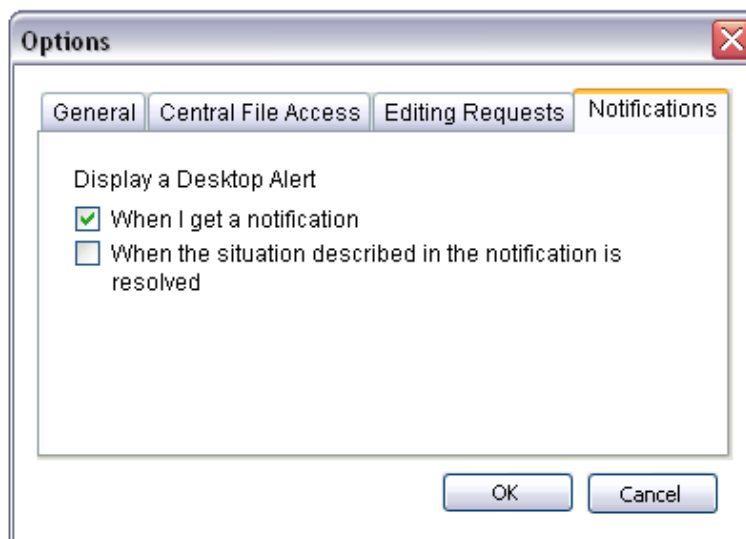
Options for Editing Request

Select an option to indicate that you want to receive desktop alerts when someone sends you an editing request, or when one of your editing requests is granted or denied. Clear an option to avoid receiving these desktop alerts.

Options for Notifications

Select an option to indicate that you want to receive desktop alerts when the Worksharing Monitor issues a notification or a problem is resolved. Clear an option to avoid receiving these desktop alerts.

Monitoring Access to Project Files

The Worksharing Monitor tracks and displays file access information for the Revit workshared projects that you currently have open.

Viewing Access to the Central File and Local Files

To determine who is currently working on a project on which you are also working, check the Central File Access pane. For each workshared project that you have open in the Revit software, the Worksharing Monitor displays a corresponding tab in this pane. Click a tab to access information about that project.
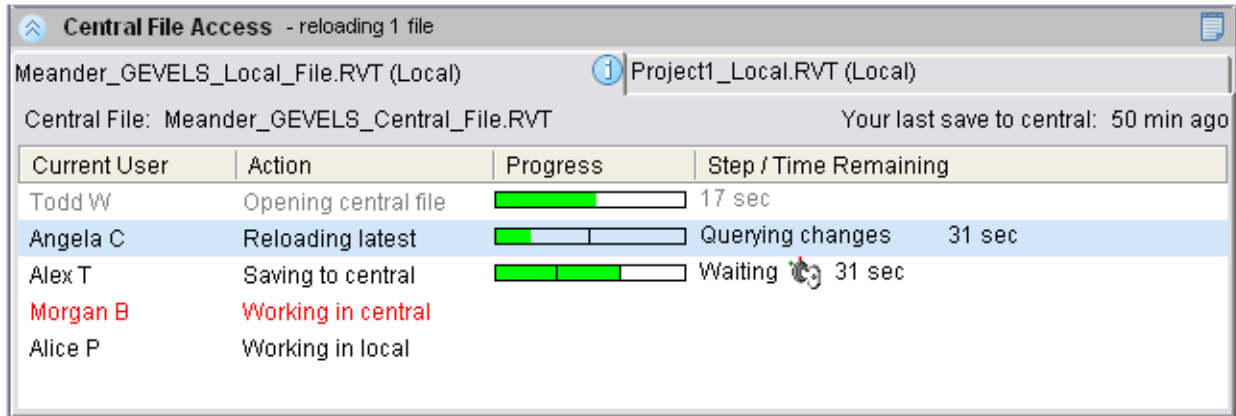
The tab displays one line for each project user. Your information line is highlighted. If you are working with a local copy of the project file, the top of the tab indicates how long ago you saved changes to the central file. Red text indicates that someone is working in the central file.

Check the Action column to see what other users are doing in the project:

- **Working in Local**: The user is working in a local copy of the project file.

- **Opening Central File**: The user is opening the central file to work in it directly.

- **Working in Central**: The user is working directly in the central file for the project.

- **Saving to Central**: The user is saving changes to the central file.

- **Reloading Latest**: The user is updating the local copy of the project file with the most recent version of the central file.

A user name displayed in gray indicates that the user is working in the project but is not currently using the Worksharing Monitor. As a result, this user is not able to receive information about editing requests through the Worksharing Monitor. If you want to borrow elements from this user, you must contact the user directly, rather than relying on the Worksharing Monitor to do so.

Viewing the Central File History

The Central File Access pane displays only current activities related to a project. To see the recent history (up to 5 days) of central file access for the project, use the following procedure.
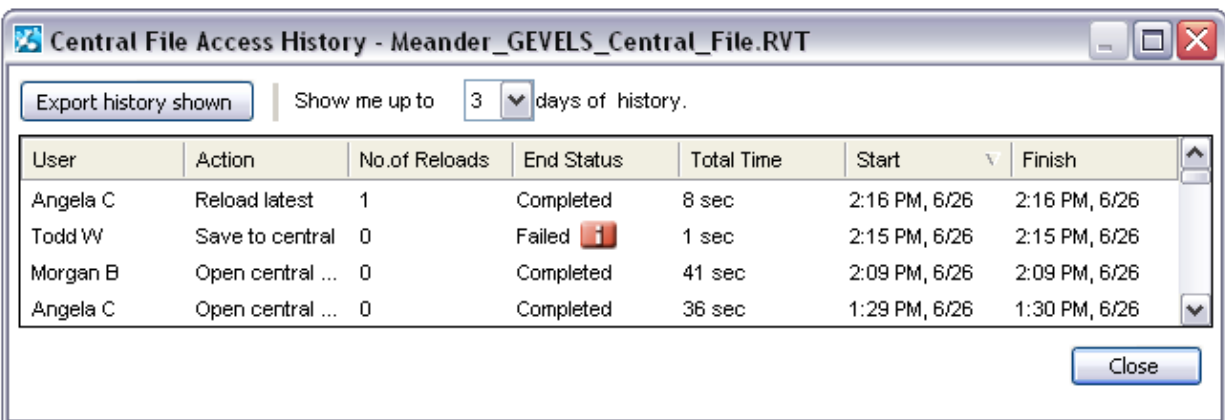
To view the Central File Access history

1. In the Central File Access pane, click the tab for the desired project.
2. Click 📄 (History) in the upper-right corner of the pane.
3. In the History dialog, for Show me up to, indicate the number of days of history to view.

    The History dialog displays information about each action involving the central file for the Revit project. If a central file access operation failed, click 🗓 for information about the failure.

To export history to a file

1. In the History dialog, click Export history shown.
2. In the Export dialog, navigate to the desired folder, specify a file name, and click Save.

User	Action	No.of Reloads	End Status	Total Time	Start	Finish
Angela C	Reload latest	1	Completed	8 sec	2:16 PM, 6/26	2:16 PM, 6/26
Todd W	Save to central	0	Failed 🗓	1 sec	2:15 PM, 6/26	2:15 PM, 6/26
Morgan B	Open central ...	0	Completed	41 sec	2:09 PM, 6/26	2:09 PM, 6/26
Angela C	Open central ...	0	Completed	36 sec	1:29 PM, 6/26	1:30 PM, 6/26

Central File Access History - Meander_GEVELS_Central_File.RVT
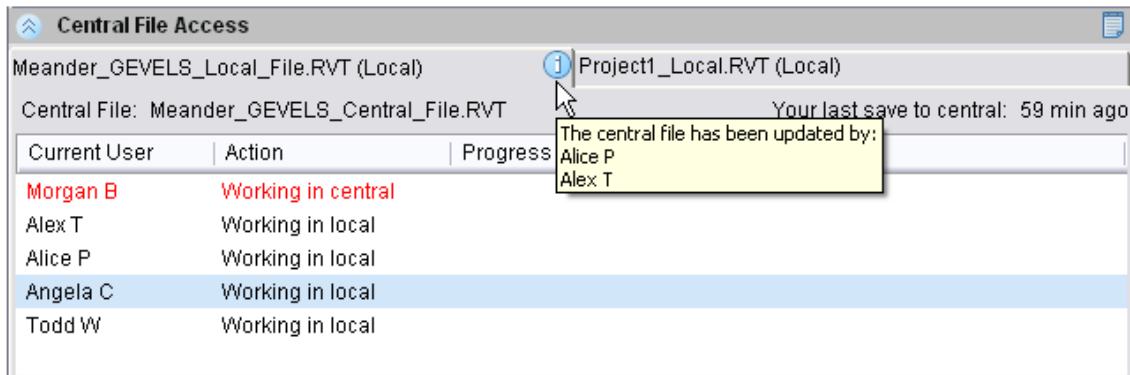Export history shown | Show me up to 3 days of history.

Checking for Updates to the Central File

When you are working with a local copy of a project file, check the corresponding tab of the Central File Access pane to see whether the central file has been updated by others. If other users have changed the central file, the ⓘ icon displays next to the local file name. Move the cursor over the icon to see a tooltip indicating who has updated the central file.
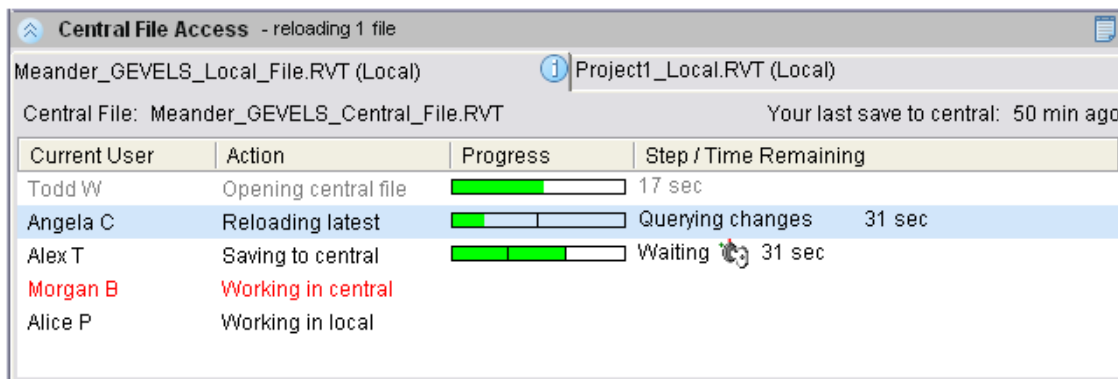
When you use File menu -- Reload Latest in the Revit session to bring your local copy of the project file up to date with the central file, the ⓘ icon disappears from the project tab on the Central File Access pane of the Worksharing Monitor.

If desired, you can configure an option to receive a desktop alert whenever someone updates the central file.

Saving changes to the Central File

In a Revit session, you use File menu -- Save to Central to save local changes to the project's central file. The Central File Access pane of the Worksharing Monitor displays the progress of a Save to Central operation, which involves several distinct steps. These steps are tracked in the Step/Time Remaining column.

A Save to Central operation involves the following steps:

1. ***Querying Changes:*** Determines whether the central file has changed since the local file was last updated.

2. ***Updating Local File:*** Updates the local copy of the project file to match the most recent version of the central file (if the central file changed after the local file was last updated).

3. ***Saving Changes to Central:*** Saves changes made in the local copy of the project file to the central file.

4. ***Saving Local File*** **(optional):** Saves changes to the local copy of the file, if this option is selected by the user when initiating a Save to Central operation.

If the Step/Time Remaining column displays *Waiting*　　　, the Save to Central operation is on hold because it is blocked by other concurrent actions involving central file access.

Delays when Saving to Central

A Save to Central operation consists of 3 main steps: Querying Changes, Updating Local File, and Saving Changes to Central. A Reload Latest operation consists of 2 steps: Querying Changes and Updating Local File.

When multiple users try to access a project's central file at the same time, their operations may cause delays for each other. For example, if a user tries to access a central file (for example, to Reload Latest) while another user's Saving Changes to Central step is in progress, the Reload Latest operation must wait until the Saving Changes to Central step is complete before proceeding.

If several users initiate Save to Central operations around the same time, the Revit software interleaves the Save to Central steps for each user as much as possible. However, there is no guaranteed order of completion, such as first-come, first-served. In some cases, for example, the first user to start a Save to Central operation may be the last to finish. In addition, after one user's Save to Central operation is completed, the other concurrent Save to Central operations must restart. The Revit software manages this process automatically.

Such delays can disrupt your workflow. If activities of other users will interfere with your access to the central file, the Worksharing Monitor issues a notification (Expected delay during your central file accesses). The Central File Access pane shows information about who is accessing a central file. In these cases, you may want to cancel your operation and do it later.

The following table shows how you may be delayed if you and your colleague (Sam) initiate Save to Central operations at the same time. The table shows how you are affected by Sam. Sam is affected by you in a similar way. If more users are involved, more time and waiting are required to complete all Save to Central operations.

NOTE: *The Revit software automatically manages the Save to Central process for multiple users. In general, you do not need to restart a Save to Central operation manually if it does not complete right away.*

When Sam's Save to Central is at...	Your Save to Central begins...	Result
Query Changes	Query Changes	OK
	Update Local File	OK
	Save Changes to Central	Your Save to Changes Central is blocked. It must wait until Sam's Query Changes is finished.
Update Local Files	Query Changes	OK
	Update Local Files	OK
	Save Changes to Central	OK
Save Changes to Central	Query Changes	Your Query Changes is blocked. It must wait until Sam's Save Changes to Central is finished.
	Update Local File	OK
	Save Changes to Central	Your Save Changes to Central is blocked. It must wait until Sam's Save Changes to Central is finished. Then Revit must repeat all 3 steps of the Save to Central operation.

If a Save to Central Fails

A Save to Central operation may fail for several reasons, including the following:

- There is a design conflict between the central file and a local copy of the file, and the Revit software cannot reconcile the differences.

- The Save to Central operation requires elements that are owned by another user.

- The central file is read-only, missing, or corrupt.

- The backup folder for the central file is missing.

In such cases, the Revit software cannot perform the step of Saving Changes to the Central File. This causes the Save to Central operation to fail. Use the following procedure to learn more about the failure.

To learn more about a failed Save to Central

1. In the Central File Access pane of the Worksharing Monitor, click the tab for the project.
2. Click ▤ (History).
3. In the Central File Access History dialog, locate the line identifying the Save to Central failure.
4. Click ⓘ.

The Worksharing Monitor displays information about the failure.

If the Revit software is unable to reconcile differences between the central file and a local copy of the file, try the following procedure.

To resolve a design conflict

1. Create a new local copy of the central file.
2. Copy and paste the changes from your old local file to the new local file.
3. Save changes (in the new local file) to the central file.
4. Discard the old local copy that contains the design conflict.
5. Contact customer support so they can investigate the underlying problem and resolve it in a future software release.

Editing Request

When working on a Revit project, you can edit an element without checking out worksets using element borrowing. If another user has control over the workset or element, you make a request to borrow the element. You cannot edit it until the request has been granted and you have loaded the other user's changes to it. You can use the Worksharing Monitor to track editing requests.

Pending Request

The Editing Requests pane lists the following:

- Requests that you have made to other users to borrow elements that they currently control

- Requests from other users to you for access to elements that you currently control

When a request is granted, denied, or retracted, its information moves to the Editing Requests history. If a request is sent to multiple recipients, it displays on the Editing Requests pane as long as it has not been fully granted and none of the recipients has denied it.

NOTE: *To receive a desktop alert when your editing request is granted or denied, or when someone is sending a request to you, set options for editing requests.*

From	To	Status	File	Time Requested
Angela C	Alex T, Todd W	Granted by Alex T, W...	Meander_GEVELS_...	4:16 PM, 6/20
Morgan B	Alice P, Angela C, T...	Pending	Meander_GEVELS_...	4:14 PM, 6/20
Alice P	Angela C	Pending	Meander_GEVELS_...	4:09 PM, 6/20

Editing Requests - 3 pending

For each pending request, the Editing Requests pane shows the sender, recipient, status, related Revit project file, and time when the request was initially sent.

If a user name is listed in gray, that user is not currently using the Worksharing Monitor or does not have the requested project file open. As a result, the Worksharing Monitor cannot notify the user of pending requests. You must use another method to contact the user about the request. The Worksharing Monitor issues a notification when it cannot contact a user about an editing request.
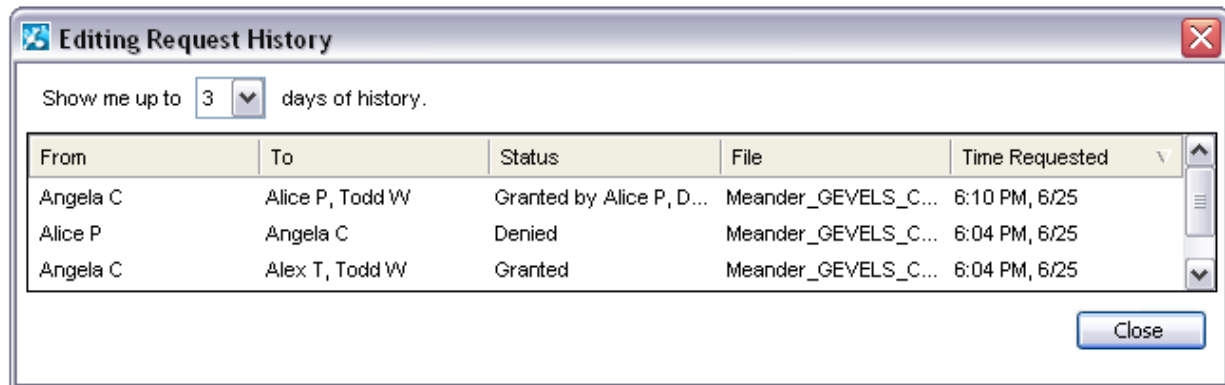
The Status column shows the following:

- Request for a single recipient:
    - Pending: The request is waiting for a response.
    - Redirected, pending: The request was redirected to another user.
- Request for multiple recipients:
    - Granted by: Recipients who have granted the request.
    - Waiting for responses: Recipients who have not responded to the request.
    - Redirected to: Recipients to whom the request was redirected and who have not responded.

Granted, Denied, and Retracted Requests

To see a list of requests that have been granted, denied, or retracted, click 🗒 (History) in the upper-right corner of the Editing Requests pane.

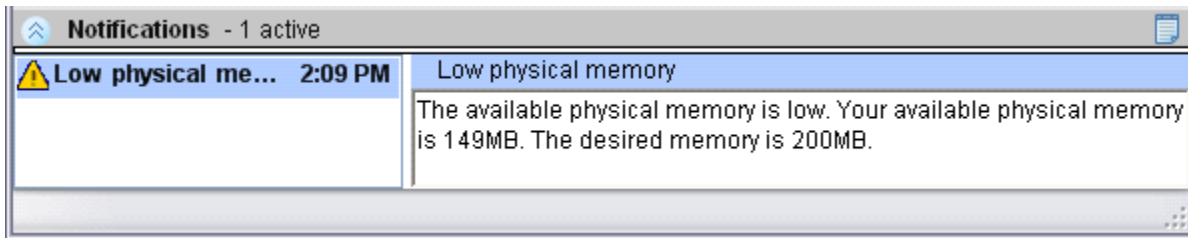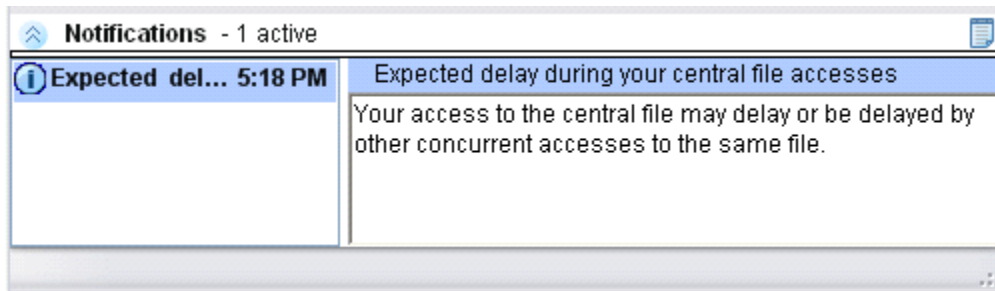The Editing Request History dialog can display up to 5 days of information about editing requests.

Notifications

To inform you of issues that may interfere with your work in Revit, the Worksharing Monitor sends notifications. For example, the Worksharing Monitor can send notifications of low virtual memory, a slow network, delays for central file access, and so on.
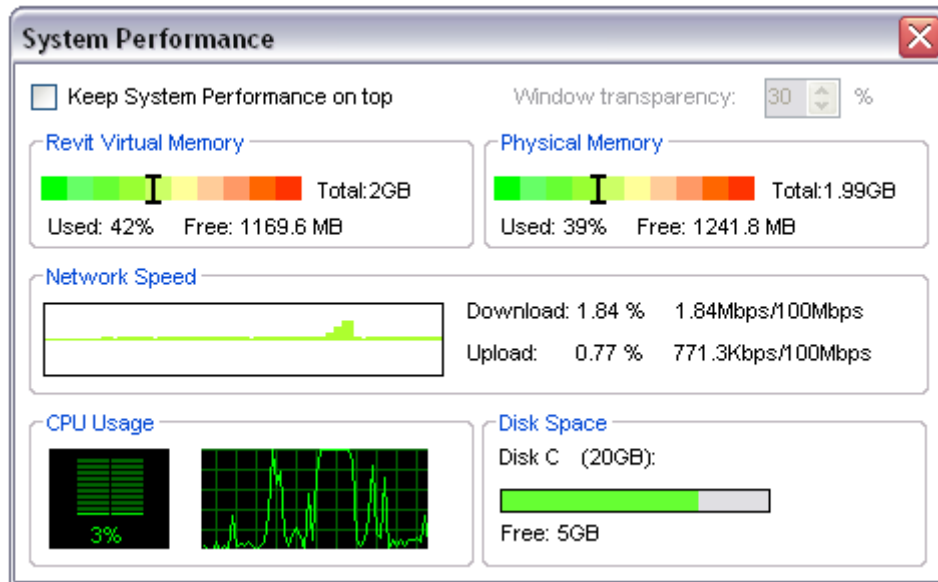
Monitoring System Performance

Your work in a Revit project can be affected by the availability of system resources, such as physical memory, virtual memory, CPU load, and disk space. You can use the System Performance Monitor to monitor these resources. If a resource reaches a predefined threshold, the Worksharing Monitor issues a notification.

To start the System Performance Monitor, click [System Performance] on the Worksharing Monitor toolbar.

To keep the System Performance Monitor window on top of other applications, select Keep System Performance on top. If you click outside the window to make it inactive, the window becomes smaller and semi-transparent. Click in the window to make it active again. The window expands to its full size.

To adjust the transparency of the window, select Keep System Performance on top, and change the value for Window transparency. A higher value results in a more transparent window. You can enter a value between 0 and 80. The default is 30%.