GETTING STARTED WITH CERF

Copyright © 2024. Lab-Ally LLC. All Rights Reserved.

Step 1: Download the Software

To gain access to CERF, you will first need to download the correct version of the CERF client application for Windows or Mac to your computer from: www.lab-ally.com/download

Contact support@lab-ally.com if you do not have your password to the download page, or if you want to try the Linux version.

Step 2: Launch CERF and Log In

When you first launch CERF, the log in dialog will open automatically. If you know what server you want to connect to, select it from the dropdown list. If you have never used CERF you will need to add a server. Click Edit Servers.
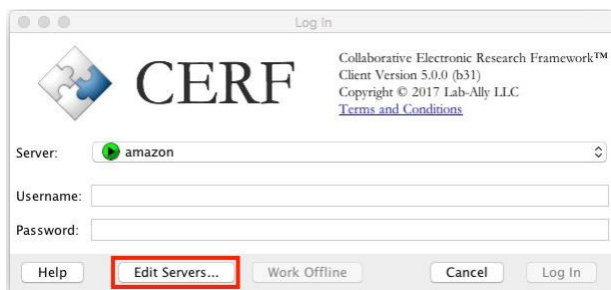

This launches the Edit Servers dialog (shown in the next image).
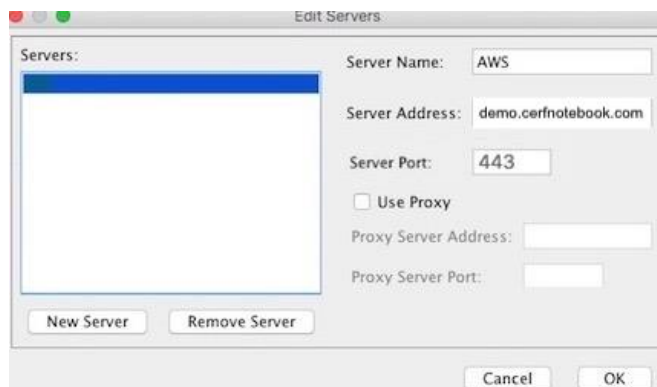
Click on the New Server button. Enter the server name, server address (which will be either the IP number of your CERF server, or the assigned domain name) and the port number (see your administrator). You can ignore the proxy settings unless you are told otherwise. The server name can be whatever you want as long as the address is correct. The Test Connection button will tell you if this server is up and running. Click OK.

> TIP: The port number used by CERF is decided by your IT team. The default for most servers is 8080. If your server uses encryption ("HTTPS"), then the port number will usually be 443.

TIP: The server address will either be an IP number of the form "123.456.789.10" or it will be a domain like "lab-ally.com". Don't include "http" "https" or similar in front of the address.
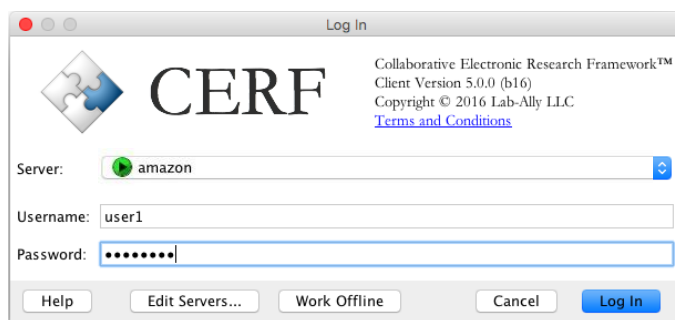

A green icon shows that the server is available. If the server icon is red, it means the server is down. Check with your administrator or contact us at support@lab-ally.com .

Enter your user name and password in the Log In dialog and click Log In. The first time you log in to CERF, you may be prompted to change your password.

NOTE: If you are using the free trial version of CERF Please be sure to read our **Terms Of Use** and **Privacy Policy**. **Do not** add production data nor any personal information to the trial server.

You can only be logged in on one computer at a time in accordance with US 21CFR11. If you are currently logged in to CERF on another computer, or if your session was terminated without logging out, you will see this dialog:
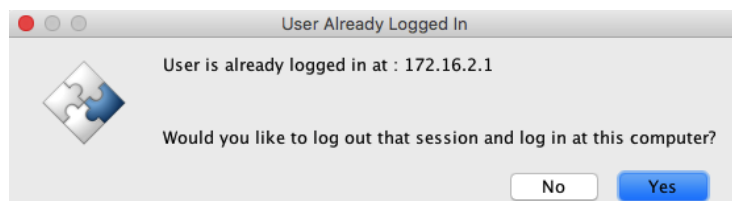
Click the Yes button to continue logging in. Clicking Yes will log you out of any other machine or web browser that you are logged in to.

The first time you run your CERF client software, it communicates with the server and checks to see if it needs to update itself. Whenever there are updated components available on the CERF server, you will see a message at login and you will see a progress bar as new components are downloaded and installed. Depending on the age of your server and the speed of your internet this might take a few seconds or several minutes. The CERF client application may restart itself after this step to install the new components.

If you are unable to launch CERF, or cannot connect to your server, email support@lab-ally.com describing the issue and any troubleshooting steps you have taken. You can find help at: https://cerfsupport.lab-notebook.org

CERF Tour

THE MAIN WINDOW

When you log in to CERF the first time, this is what you'll see (numbered arrows explained below):
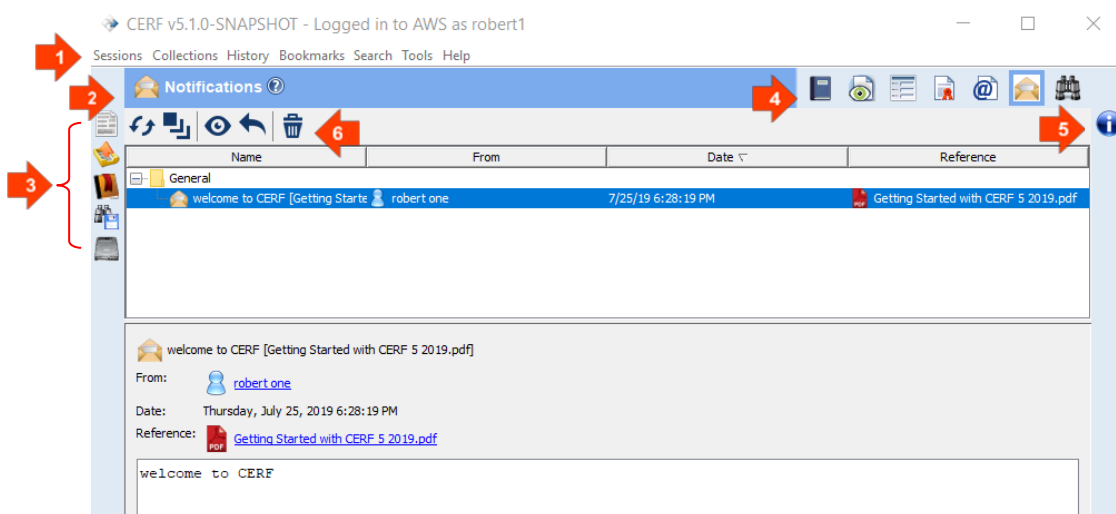
	CERF Menu Bar	The main CERF Menu bar includes familiar tools and some items unique to CERF. The Collections menu is often a good place to start, as this is where you can create new collections of data (either Notebooks or File Cabinets) or access existing collections that have already been made available to you.
	Notifications Pane	When you first log in, the Notifications Pane is displayed in the Middle Panel, and the Right and Left Panels are hidden. Notifications include items for your attention such as notifications about signing requests, completed printing tasks, changes to documents, or messages from other users.
	Left Panel icons	Initially the Left Panel is hidden. Select an icon displayed on the left of the CERF application to open the Left Panel and display one of the panes. The Panes are described in the section below. The most important is the CERF Document Tree panel, which is the primary way that uses navigate data in CERF. Click here for more information.
	Middle Panel Icons	When you first log in, the Notifications Pane is displayed. Select one of the icons to open a new pane in the middle panel in CERF. Click here for more information.

 Notebook Viewer – displays the currently "loaded" Notebook Page or Notebook/Section Table of Contents. To load a Notebook resource, select it in the Document Tree and click the View button. Click here for more information.

 File Viewer – displays files and also the hierarchy of selected File Cabinets or Folders. To view any file from the CERF document tree, click the file viewer panel selector, select a file in the tree, then click the "Load Selected Resource" icon. Click here for more information.

 Controlled Documents – displays special documents assigned to you for approval and closely regulated use. Click here for more information.

 Structured Data Information Management cards (SDIMS). Can be used to display sets of cards that represent entities such as samples or experiment summaries. Click here for more information.

 Inbox – displays incoming emails and attachments sent from your registered email address. Click here for more information.

Notifications – displays your Notifications (includes links to resources you need to sign or reply to, as well as resources you have printed). Click here for more information.

Search – launches the CERF search tool within the center panel. Alternatively use the Search menu at the top of the main window to launch the search tool in its own new window. Click here for more information.

Right Panel Info	Initially the Right Panel is hidden. Click the Info icon ⓘ to show the Right Panel and display annotations, metadata, version history, signature block, and status for the resource selected in the Document Pane. Click here for more information.
Notifications Toolbar	Actions apply to a selected Notification: Refresh Notifications, View, Reply, and Delete. Click here for more information.

Display one or more of the available panes in the Left Panel by clicking on the icons shown to the left of the CERF application. To hide a Pane, click the ✕ in the upper-right corner of that Pane. Panes available in the left-hand panel include the Document Tree (also called CERF Tree or just "Tree"), Bookmarks pane, Saved Search pane, Local Files pane and Checked Out Documents pane, also sometimes called the "Checkout Tray".

Experiment with adjusting the proportions of the Left, Center and right-hand panels by dragging the panel borders left and right or up and down so that you get used to optimizing the layout of the CERF interface to suit your current needs and screen size. It is possible to adjust the interface so that you see all three panels, any two panels, or even just a single panel if that is all you currently need. Hover over the panel borders to see the border drag / panel resize indicator ✛.

DOCUMENT TREE

Click here for more information on the Document Tree.

The Document Tree also called the CERF Tree is where "Collections" (Notebooks , File Cabinets , or Notebook Collections) that you are currently working with are displayed. Click on the respective names to learn more about the collections.

Click on the Documents icon to open the Document Tree. When you first log in to CERF you will see your personal File Cabinet, identified with your username, in the Document Tree. Drag and drop files into this File Cabinet. Now right-click on items anywhere in the Document Tree to expose the contextual right-click Menu.

Click here for more information on Document Tree icons and here for the Document Tree toolbar.

Shown below: right-click > Edit sub-menus for three different resources: 1) Notebook Page, 2) .JPG file 3) Finalized resource in the CERF Document Tree. Note that the menus include different options for the different resources. The different options available in different contexts help maintain compliance and provide appropriate choices for different situations and users.
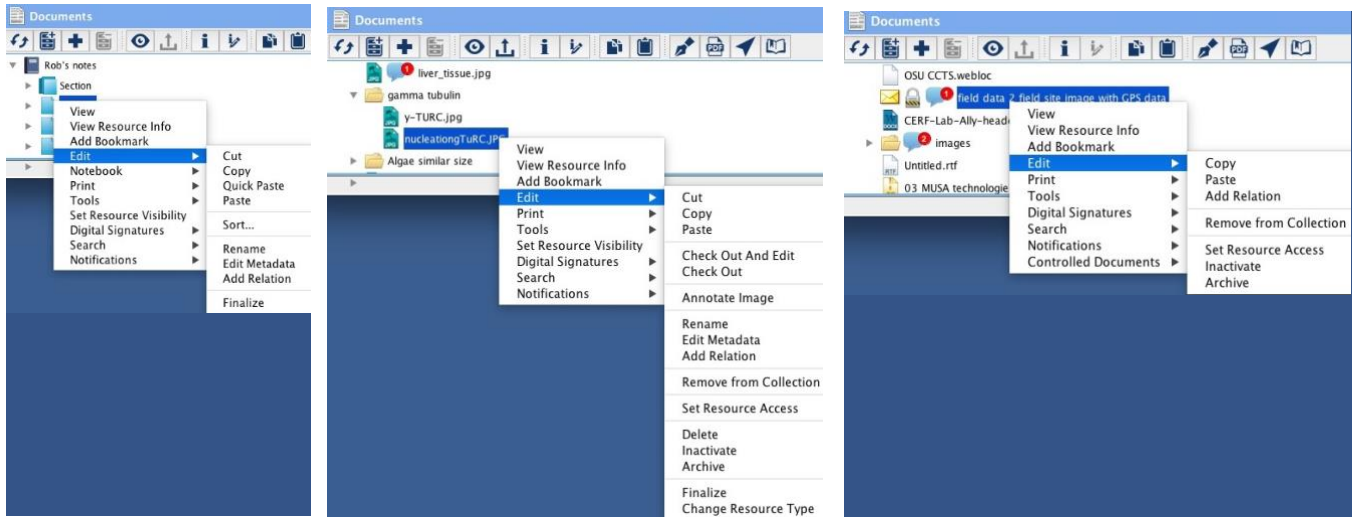
TIP: Many users like to keep CERF open on their screen all the time but adjust the layout of the panels by dragging the boarders left and right with the drag tool ✛ so that only the CERF Tree (Left panel) is visible. This minimizes the screen space used by CERF during periods when the full Notebook viewer is not needed.

TIP: The right-click menu is used extensively throughout CERF. Although many of the functions in the right-click menu can be accessed using icons in the various CERF tool bars, power users quickly learn to use the right-click menu and associated keyboard shortcuts instead. Almost any resource displayed anywhere in CERF can be used with the right-click menu. The items shown in the right-click menu and various sub-menus will vary significantly depending on the type of resource, its current location, and your access role.

CHECKED OUT DOCUMENTS

Next click on the Checked Out Documents icon. This Pane displays a list of checked out documents or files. When you check out an item for editing, a copy is downloaded to your local computer, kept in a special location, then deleted automatically when you check the item back in. You can select Items in the Checked Out Documents pane and chose Check In to return an edited version to the server, Uncheckout to ignore any changes you have made and return the item to the server, and Edit to open previously checked out items for editing in a suitable application. Note that any time you edit a checked out document, the name of the item will turn red, indicating that CERF has detected changes. This will help to remind you to check the edited item back in when you are finished. Click on the small X in the upper-right corner to hide the Checked Out Documents pane. Click here for more information on checked out documents and here for an explanation of the toolbar.

TIP: Keep an eye on this area to make sure you don't have files checked out for editing that you are finished working with. A good best practice is to return checked out files to CERF promptly so that they are available for editing by others with permission to access to them. Other users can VIEW files that are checked out by someone else, but cannot edit them. An empty checkedout tray is a happy checkedout tray!

BOOKMARKS

Click on the Bookmarks icon to show your bookmarked items. You can bookmark a resource by using the right-click menu option, the main menu, or by dragging a resource from the Document Tree to the Bookmarks pane. This makes a link to resources you want to access quickly. Click on the small x in the upper- right corner of this pane to hide it. Bookmarks always point at the most recent version of a resource that is under version control. Click here for more information on bookmarks and here for an explanation of the bookmarks toolbar.

SAVED SEARCHES

Click on the Saved Searches icon. This pane displays any previous searches you have saved. You can run a saved search again. Use saved searches to create dynamically updated "smart cohorts" of data. Click here for more information.

LOCAL FILES

Click on the Local Files icon to show your local file system. You can mark local directories as favorites and these are then easily accessible as a source for drag-and-drop import, or as a destination for drag-and-drop export. Using this pane saves users from having to open a separate Windows file Explorer or Mac OS Finder window, although you can also drag-and-drop items in to CERF from those windows too if you like. This is often more convenient that opening the finder (mac) or file explorer (windows). Click here for more information.

MANAGING COLLECTIONS

A "Collection" in CERF is a container that holds other resources (such as documents, data files and records of work performed in the lab). Keeping work divided into collections makes your data easier to manage and separates your data into manageably sized "chunks" that are then more easily bulk exported from CERF if needed. Click here for more information on collections.

The Show Collections dialog (Collections menu) displays all collections (Notebooks, File Cabinets, and Notebook Collections) that you are permitted to access.   You must display Collections in the Document Tree before you can work with them. This is done from the Show Collections dialog. There are three types of collections:

1.   File Cabinets (think of these as being like Hard Drives in which you can store and organize files),

2.   Notebooks (use these to tell the story of your research activities and to build workflows (called templates) that will help your lab achieve reproducible results.

3.   Notebook Collections (a tool for bundling together related notebooks).

> *TIP: Keep your collections limited to a sensible size so that it is easier to export them in the future if you need to. file cabinets should contain less than 1000 files. Consider starting a new notebook ever year, or for each new project or after 100 pages, so that they don't become thousands of pages long.*

SHOW COLLECTIONS

When you belong to a Workgroup, you will be able to access any File Cabinets, Notebooks, or Notebook Collections owned by that Workgroup. If the Document Tree is hidden, click on the Document icon to display it. Now chose Collections > Show Collections from the CERF menu bar.

The left panel of the Show Collections dialog displays all collections you currently have "mounted" in the Document Tree. All the available collections (i.e., collections to which you have access) are shown in the right panel. If you wish to work on documents in a particular collection, you'll need to mount the collection first. If you are new to CERF you may not see any collections here except your own personal File Cabinet, which CERF makes automatically for all new users.
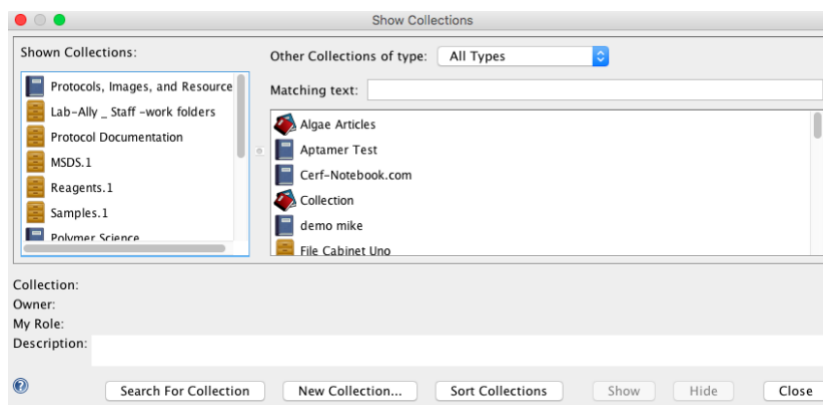
1. Click the drop-down list to display All Types of Collections: Notebooks, Notebook Collections, and File Cabinets. Note that there are several ways to find collections. This is particularly useful if there are many to sort through. You can type text into the Matching Text box in the right pane or you click on the Search for Collection, which gives you the option to Search or Browse. Note your role in the owning Workgroup (shown in the lower left part of the Show Collections dialog).

2. If you see collections in the right-hand column, select them and click on the Show button. The selected collections will be mounted in the Document Tree. If a collection contains resources, there will be a small triangle "handle" displayed to the left of the collection. To expand a collection, simply click on the handle.

HIDE COLLECTIONS

You can easily hide collections that are mounted in the Document Tree. Sometimes this is helpful when you have a lot of collections that are cluttering up the workspace.

1. Select a File Cabinet or Notebook in the Document Tree.

2. Click on the Hide Collection button 🖾 in the Document Tree toolbar.

3. To find the collection again, select Sessions | Show Collections.

> *TIP: You can hide or show multiple collections at once from the Show Collections dialog. Use the control or command key to multiple-select collections. As a best practice, try to only mount collections that you need and hide them when you are not using them. You can use the CERF search tool to find items in unmounted collections if you need to.*

Click here for more information on how to show/hide collections.

VIEW RESOURCE INFO

1. Select a Notebook (or Personal File Cabinet) in the Document Tree.

2. Click on the Info button **i** at the top of the Document Tree to show the Resource Info in a new window or right-click and choose "View Resource Info". There are several panes in the Resource Info that can be collapsed and expanded as needed. The Status Pane shows important information about the ownership and edit condition of the selected resource in the Document Tree, and displays the unique CERF ID for that resource. Click the blue Owner link to see a list of all users who can currently access that resource. This list also shows each user's access role to that resource.
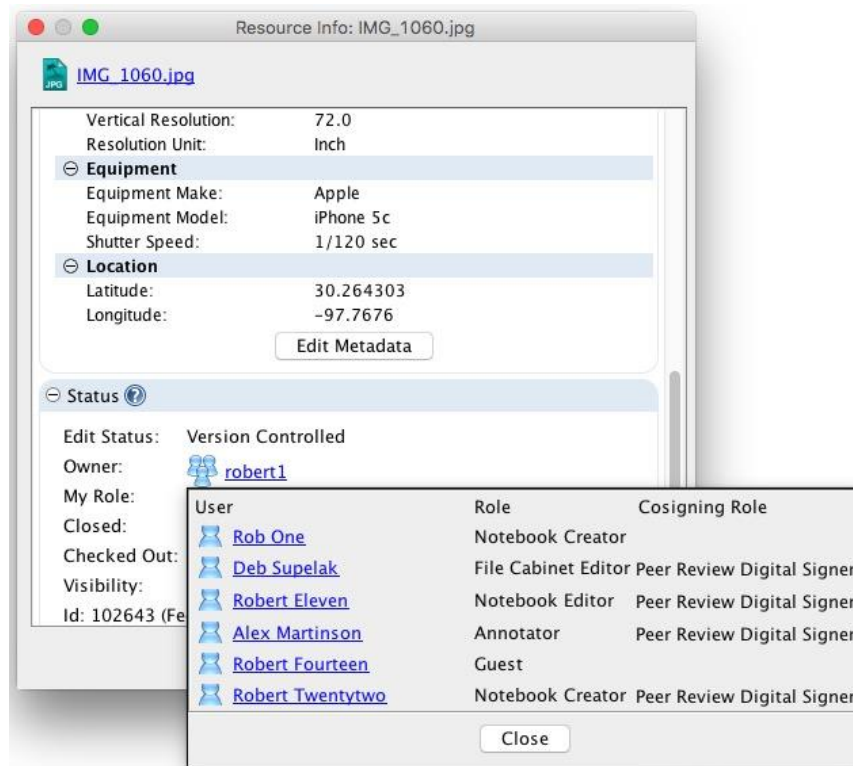
TIP: You can also select items in the Document Tree then click the blue "info" *button at the top right to see the same information in the right hand Panel. Get into the habit of looking at the Resource Info often to understand more about your data, how it is being used, who can access it and who has recently edited it.*

FILE CABINETS

File Cabinets are your file management system in CERF—this is the place where you can organize, edit, share, and store your data, protocols, literature, samples, etc. When you add files to a File Cabinet, they are stored on the CERF server. Click here for more information on file cabinets.

PERSONAL FILE CABINET

When you first log in, you should see your personal File Cabinet mounted in the Document Tree and identified with your username. This is owned by your personal Workgroup. All new users are initially provided with at least this single collection. Your CERF Administrator may also have created other collections for you before you log in for the first time.
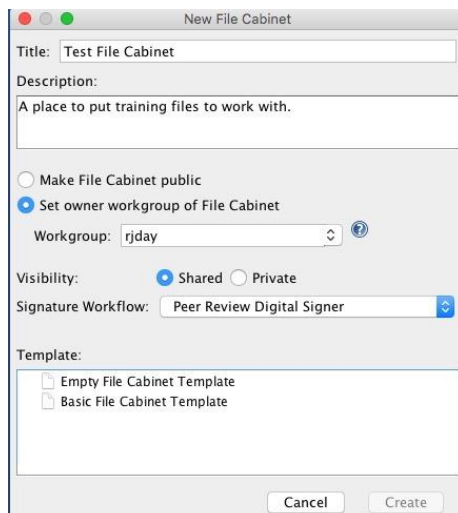
TIP: It is important to understand that in CERF, resources are not owned by individuals, they are owned by Workgroups. A Workgroup certainly CAN correspond to a single individual. When you first log in to CERF you may be the only member of your personal Workgroup. Over time your administrator may add you to other Workgroups, add other users to your Workgroups, or you may be given permission to add other people to your personal Workgroup or create other new Workgroups. You can keep track of who can access resources at any time by looking at the

Resource Info > Owner > then click the blue owning Workgroup name next to the Workgroup *icon to see a list of everyone who can access that resource.*

CREATE A NEW FILE CABINET

Note: you must have the role of File Manager (or Notebook Creator) in at least one Workgroup in order to create a File Cabinet.

1. Click on the New Collections button in the Document Tree toolbar and select File Cabinet.

2. This launches the New File Cabinet dialog
3. Enter the title and a description for the File Cabinet. The File Cabinet title must be unique.
4. Leave the other settings in their default state.
5. Select the "Empty File Cabinet Template". Note that other templates may be available as well.
6. Click on Create to show the new File Cabinet in the Document Tree.

CREATING FOLDERS

1. Select the File Cabinet you just created.
2. Click on the New button (circled below) in the Document Tree toolbar and select New Folder:

3. In the New Folder dialog, enter a name for the Folder.
4. Click OK. Expand the File Cabinet to see the new Folder.

Click here for more information on folders.

ADD CONTENT TO THE FILE CABINET

1. Expand the File Cabinet to show the Folder(s).

2. Select a File from your computer and drag it to the File Cabinet or a Folder within a File Cabinet. You can also right-click a File Cabinet or Folder, select Edit > Add Resource, choose the file you want to add and click "Add to CERF".

3. If the Edit Resources dialog opens and asks if you would like to edit the incoming file's metadata, select "No." This will add the File with the default metadata and Resource Type.

> TIP: You can choose to not add new metadata to incoming resources by selecting "Quick Add" in the preferences.

This is recommended for most users. You can always add metadata to new resources later. Turn off "Quick Add" if you want to add metadata to all new files or designate files as being of a specific resource type, which may then allow you to add custom metadata associated only with that resource type.

4. Expand the File Cabinet or Folder to see the new file you just added.

5. Select the file (click on it once) and click on the View button in the Document Tree toolbar, or right click on it and choose "View". This will open the file in the CERF File Viewer in the center panel. "View In > File Viewer Window" will display the file in a new window if CERF has a suitable viewer plugin. "View In > System Default" will open the file for viewing in a suitable external application.

TIP: Do not try to edit a file that has been opened in view mode with an external application. Some applications will allow you to start editing the file, but then you will find that it will not let you save your changes. Do not try to use "Save As..." . If you DO want to edit the file, close the window and click Check Out and Edit instead.

6. Select a file you imported and click . Review the Resource Info. When a resource is added to CERF, it is given a unique identifier as well as certain other CERF metadata. The Resource Info always includes the creation time and date, (i.e., when the file was added to CERF) the person who contributed the resource, the Resource Type (i.e., document, image, etc.) and other information. CERF also automatically extracts and displays any embedded metadata (often called "file properties" in MS Office documents and images). The metadata, embedded file properties, full text of most file types, and anything else that CERF knows about this file are all indexed for searching at the time of addition so that you and your colleagues (with the right access role) can find the file later using the CERF search tool. You can click the + and – icons to collapse or expand the various sub-panels in the Resource Info window in order to show or hide different types of metadata about your resource.

7. The CERF unique resource ID can be especially useful for citing and locating links to a specific file wherever they occur in CERF. ALL files, folders, collections, and other resources in CERF have a unique ID. Expand the "Status" sub-panel and double click the ID in the Resource Info to select it. Now use control-copy or command-copy to copy the ID number.
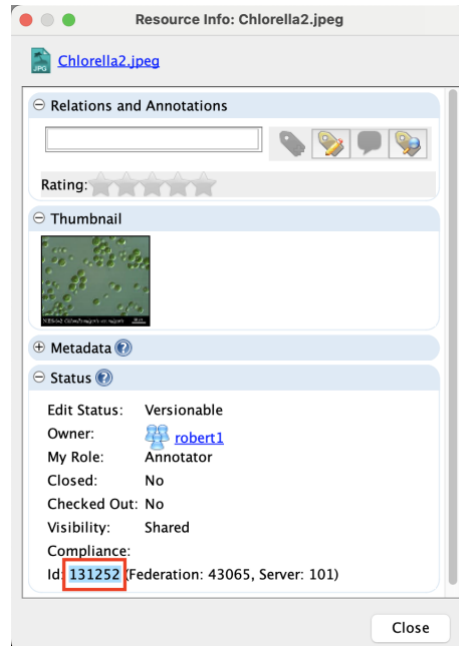
8. Go to the CERF Search engine (using either the central panel, or use the "search" menu to open the search tool in a new window). Click Add Search Parameter and select CERF Resource ID. Click the X on the right to remove any other unnecessary search parameters. Now use control-v or command-v to paste in the ID you copied above and click Search. You should always only see ONE result listed when you search for a CERF Resource ID this way.

Right-click on the search result, shown below in the center panel. Note that the full right click menu is available for each item in your search results. From here you can choose to view the resource, send notifications about it to colleagues that have permission to access it, or perform other actions. To determine the location of this resource in your Document Tree, right-click and choose Search > Navigate. The item will be highlighted in the Tree. Any containers it is in will be automatically opened and if necessary, the collection the item is in will automatically mount in the Tree, and you will be alerted if this file exists in multiple locations.
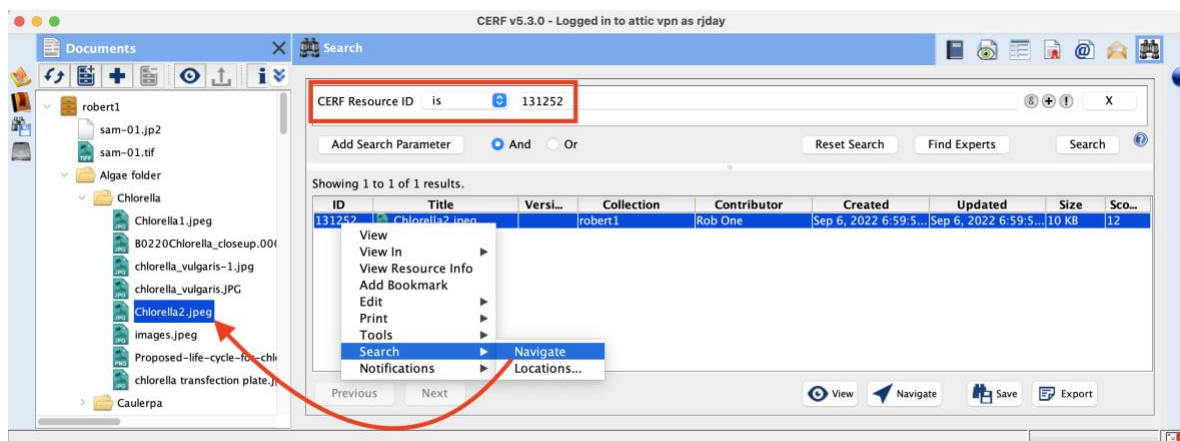
9.   Use Right-click > Search > Locations… to see if the resource exists as links or multiple current versions in more than one location. Use right-click > View Resource Info on any resource to open a new info window then scroll to the bottom of the window to see if there is a version history. If so, the resource you right-clicked on will be highlighted in the list, allowing you to immediately determine if there are older or newer versions of this resource in CERF.

> *TIP: using intelligent Boolean search strategies in conjunction with resource content and metadata to locate specific resources is a key CERF skill.*
>
> *TIP: You can drag items in the search result list to other locations, including destinations in to your local files panel. This can be used to quickly locate and export a copy to your local computer.*
>
> *TIP: You can use this icon [Export] wherever you see it in CERF to export a .CSV or text file containing a summary of in the current window, including search results.*

BATCH ADDITION

1.   Select a directory on your computer that contains several files you want to add to CERF.

2.   Drag the entire directory to CERF and drop it on the File Cabinet you created.

3.   If you see an Edit Resources dialog popup asking if you want to edit the metadata for these resources, select "No." This will add the directory and its contents with the default metadata and Resource Type. The Advanced Training will demonstrate how to tell CERF that incoming files are a special Resource Type and how to add rich, custom metadata for the whole batch.

4.   The directory and its contents should be displayed as a new Folder with contents. These documents are now saved to the CERF server. Note that you can drag in a directory that contains many nested subdirectories, and CERF will always maintain the hierarchy just as it was on your local computer.

VIEW IN CERF

In CERF you can view many types of files in the center panel or in a separate window without using any external helper

application. To view a file in the CERF File Viewer, do one of the following:

1) Double click a File Cabinet or Folder to load the File Viewer in the center panel then double click a file shown in the center panel to see it.

2) OR click the File Viewer panel selector icon then navigate to any file in the CERF tree, (including files in either file Cabinets or Notebooks). Select the file you want to see and click the "Load Selected Resource" icon. .

3) Select a resource in the document tree and click the "view" icon . This will display the resource in the center File Viewer Panel. If the center panel is already open you can also use the "load to file viewer" icon to do the same thing. From there you can use the "view in new window" icon to view the item in a new adjustable window, or use the "view in external application" icon to open a read-only copy of the file in your default application on your computer.

3) Alternatively, right–click on any file icon almost anywhere in CERF and choose "View" to load the file in the center panel or "View In" to select another available view option from that menu. You can set the default viewer behavior in the CERF application Settings (Mac) or Options (Windows).

4) Use the breadcrumb icons at the top of the center panel to navigate up or down within a File Cabinet hierarchy, then click the file you want to view.

Click here for more information about the File Viewer.

VIEW VERSUS CHECK OUT

To view a file with a suitable external app installed on your local computer:

1.   Select one of the files you just added to CERF.

2.   Right-click any file icon and chose "View In > External Applications. This will automatically launch an appropriate external application on your computer.

3.   A message will appear telling you that you are about to view a read-only copy. Click OK.

4.   The read-only copy will open in the native application for this file. A suitable application must be installed on your computer. CERF will tell you if it cannot find one there.

5.   Close the file when you are done. If you made any changes they will NOT be saved. Do NOT attempt to "save as" or similar as this may cause you to save a copy outside of CERF which is not a best practice. Always try to keep everything safe and secure in CERF.

To Check Out a file:

1.   Select the same file you used in the previous exercise.

2.   This time, double-click on the file or right-click > Edit > Check Out and Edit.

3.   The file will open in edit mode. Note that the native application for the file must be installed on your machine. CERF will tell you if it cannot find one there. For some sorts of files created in CERF itself (e.g. CERF Tables, CERF HTML text entries and SVG files in Notebooks) , CERF already includes the applications necessary to edit the file and will automatically check those files out with its own editing tool.

4.   Close the file without making any changes.

5. Note that there is now a red check-mark ✔ next to the file showing that it has been checked out from the server. When a file is checked out, no other user who has access to it can make changes to it, but they can still view the last version. The file will be displayed in the Checked Out Documents pane to the right.

6. Select the document in the Checked Out Documents pane. Click on the Uncheckout button ↻ . This will return the document to the CERF server, unchanged.

7. Now select the same document in the Document Tree.

8. Click on the Checkout and Edit button ⬆ on the Document Tree toolbar. The file should open in the default application on your computer for that file type.

The document will once again have a red checkmark next to it in the Document Tree and will be shown in the Checked Out Documents pane. You can Mouseover the red check mark to see a yellow popup box that shows who currently has the file checked out. Whenever you work in CERF you may see these red check marks appear and disappear in your Document Tree as other users checkout files and check them back in again.

9. Make a small change to your checked out file using the application that checked the file out, then save the file. Note hat the name of the file turns red in the Checked Out items Pane indicating that CERF has detected a change. Close the

window that the file opened in, and now check the file back in using the Check In button ⬇ in the Checked out items pane. If you don't close the editing window before attempting to check the file in, CERF will remind you that you need to close it first.

Locate the recently edited file in the Tree and look at the Resource Info. Depending on how your server is configured you will usually see a version history for the item you just edited at the bottom of the Resource info area, with versions 1.1 and 1.2 visible. Right click on either version to see the usual options for BOTH versions.

Click here for more information about the Check Out & Edit feature.

> *TIP: You can change the default double click action from edit to view in the CERF application Settings (Mac) or Options (Windows).*
>
> *TIP: understanding the mechanics, available options and variations of CERF's powerful round trip editing system is a key skill for all CERF users.*
>
> *TIP: CERF can treat files as "versionable" meaning that the file can be completely overwritten with a new version, or files can be "version controlled" meaning that all versions of files are kept and are visible as a version history list in the Resource Info. For most users we recommend that the Default Document Edit Status in your Preferences / Options should always be set to "version controlled".*
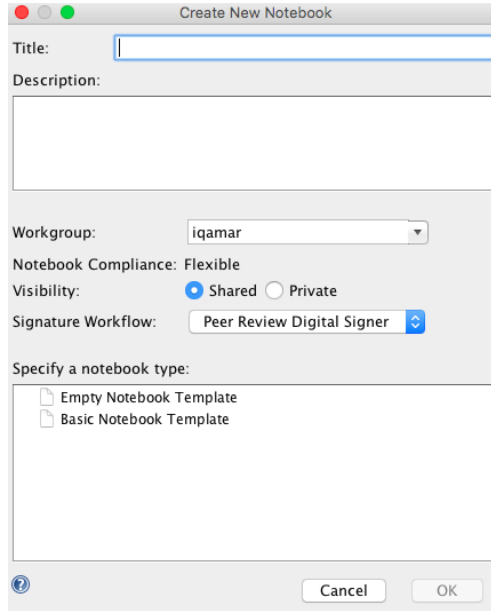
NOTEBOOKS

While File Cabinets are your file management system, think of Notebook as the place where you tell the story of your research, either chronologically or by topic. Your Notebook is a place where you can record your work and visualize it, just as in a paper notebook. It's also a place where you can build templates for repeatable workflows, structured data collection instruments or checklists of tasks that need to be performed in a specific order. Click here for more information about Notebooks.

CREATE A NOTEBOOK

1. Click on the New Collection button ![icon] in the Document Tree Toolbar and select "Notebook." This action will not be enabled unless you are a Notebook Creator in one of your Workgroups.

This launches the Create New Notebook dialog.

2. Enter a unique title for the Notebook and a description (required).

3. Select your personal Workgroup from the drop-down list of Workgroups.

4. You may have a choice of a Flexible or Rigid Notebook. Select Flexible.

5. You may have a choice for Visibility. If you see this, select Shared.

6. For Signature Workflow, select Peer Review Digital Signer from the drop-down list.

7. Select Empty Notebook Template from the list of template and click OK.

8. Look for this Notebook ![icon] in the Document Tree.

NOTEBOOK PERMISSIONS

Your permissions (allowable actions) are determined by your access role in the Workgroup that owns each Notebook. In the case of the Notebook you just created, you are a Notebook Creator – a role with the highest permission level. To find the owning Workgroup and your role in it:

1. Select the Notebook (or any Resource) in the Document Tree by clicking on it once.

2. Click on the Info icon displayed in the upper-right of the CERF interface. This opens the Info Pane in the Right Panel (or click on the Info button in the Document Tree, as described earlier).

3. In the Status pane, find the name of the Workgroup.

4. Click on the Workgroup name to display all the members of the Workgroup and their access roles and signing roles. You can click the name of a user in the list to trigger a new email addressed to that user.

5. Note that your access role for this Notebook is displayed in the Status panel.

> *TIP: If an action you want to perform seems to be missing from the right-click menu or the icon is greyed out in a tool bar, select the resource in the Document Tree, open the Resource Info and verify that you have an access role that allows that action. Send a notification to the Workgroup Administrator requesting a role change if necessary.*

ACCESS ROLES

Your permissions may differ from one collection to the next, depending on your role in the owning Workgroup. Some right-click menu actions may be absent, some of the toolbar buttons may be grayed out, and some drag-and-drop actions may not be allowed if your role does not give you permission for an action. CERF keeps track of all of your allowed actions for different resources in the background. Click here for an explanation of Access Roles.

CREATING NOTEBOOK SECTIONS

Sections provide a way to organize the content of your Notebook. You can make multiple sections in a Notebook and nest them hierarchically if you like.

1. Select the Notebook you just created.

2. Click on the New button (circled below), select New Section.
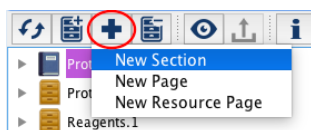
3. In the New Section dialog select the Empty Notebook Section Template (a Basic Section contains one blank Page; an Empty Section has no Pages). If other templates are available, they will be displayed in this dialog.

4. Enter a Title for the Section (optional). You can rename the section later.

5. Click OK.

6. Click on the expander next to the Notebook to display the new section. Select the section and click the New button again, then select New Page to add Notebook pages to a section.

PERFORMANCE AND NOTEBOOK SIZE

In order to maximize performance (i.e., the time to load a Notebook Page), we suggest that you add no more than 30 Entries on a Notebook Page. Keep in mind that a Notebook should have no more than about 30 Sections per Notebook and no more than about 30 Pages per Section. In CERF just like in the paper world, it is a good best practice to divide your work logically into Notebooks that might represent discrete time periods (e.g. 1 month or 1 year), or specific discrete projects. Always limit your notebooks to a sensible size. You can make as many Notebooks as you like in CERF so there is no reason to try to fit too much work in a single notebook. Administrators can set a hard page number limit in the business policies area if they like. We recommend this be set to not more than 300 pages.

CREATING PAGES

Pages in the CERF Notebook are like Pages in a paper Notebook, except that the Page can include your notes, images, tables, voice recordings and files of all types.

1. Select the Section you just created

2. Click on the New button and select New Page or right-click on the section and choose Notebook > new Page.
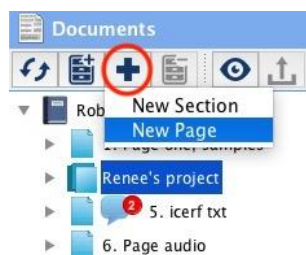
3. Select the Empty Notebook Page Template in the New Page dialog. There may be other sorts of page templates available. Enter a new Page title and click OK.

When you create a new page, it will open in the Notebook Viewer (in the Middle Panel of CERF). You can open (load) an existing Notebook Page that is displayed in the Document Tree by double-clicking on the Page OR by selecting the Page and clicking on the View button in the CERF Toolbar.

Click here for more information on notebook sections and pages.

> *TIP: Although anything in CERF can be made into a template, the most commonly used type of template in CERF is Notebook Page template. It is a common convention in labs that a notebook page represents a specific unit of work like a protocol, workflow, experiment or a standard period of activity like a day or a shift. The use of notebook pages as templates is facilitated by the use of special entries called Placeholders. These can be used as receptacles waiting for data that is not yet available. To turn any Notebook page into a template, right click on the page icon or the bottom of the page itself and choose tools > create template.*

CREATING ENTRIES

You can always add content to your personal Notebooks, but in Notebooks owned by other Workgroups, you must have a role of at least Notebook Editor to add files or make changes. There are several ways to create new entries on a notebook page. Some of them are described below.

Click the "new entry" toolbar button then choose your entry type from the menu (shown below). If you are new to CERF you should certainly try creating at least one of each of these entry types on a test page. You will need to have appropriate Applications on your computer for working with MS Office files, .txt files and mind map files. Click here for an explanation of entry types.
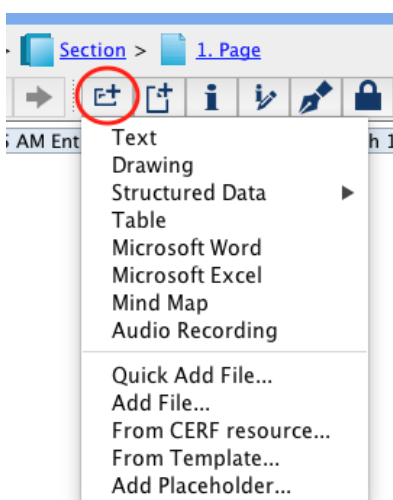
4. Click anywhere on the blank portion of the page to open a new CERF text entry. Experiment with the text editor tool bar to see what kinds of content you can create here. Technically this tool is actually an HTML editor, which means

that a range of styles and elements like simple tables are all supported. Note that you can even copy the page source from simple third-party websites, click on the HTML source tab and paste that code into the text editor to recreate the basic layout of the web page in your Notebook entry. Click Create Entry to finish editing. You can subsequently checkout this entry for additional editing at any time.

5. To add a resource to a Notebook page from a File Cabinet: Expand a File Cabinet in the document tree, select a file and, while holding down the mouse button, drag it to the whitespace at the bottom of a Notebook Page. You can collapse other Entries on the Page to give yourself more room to better see any entry that is displayable by CERF.
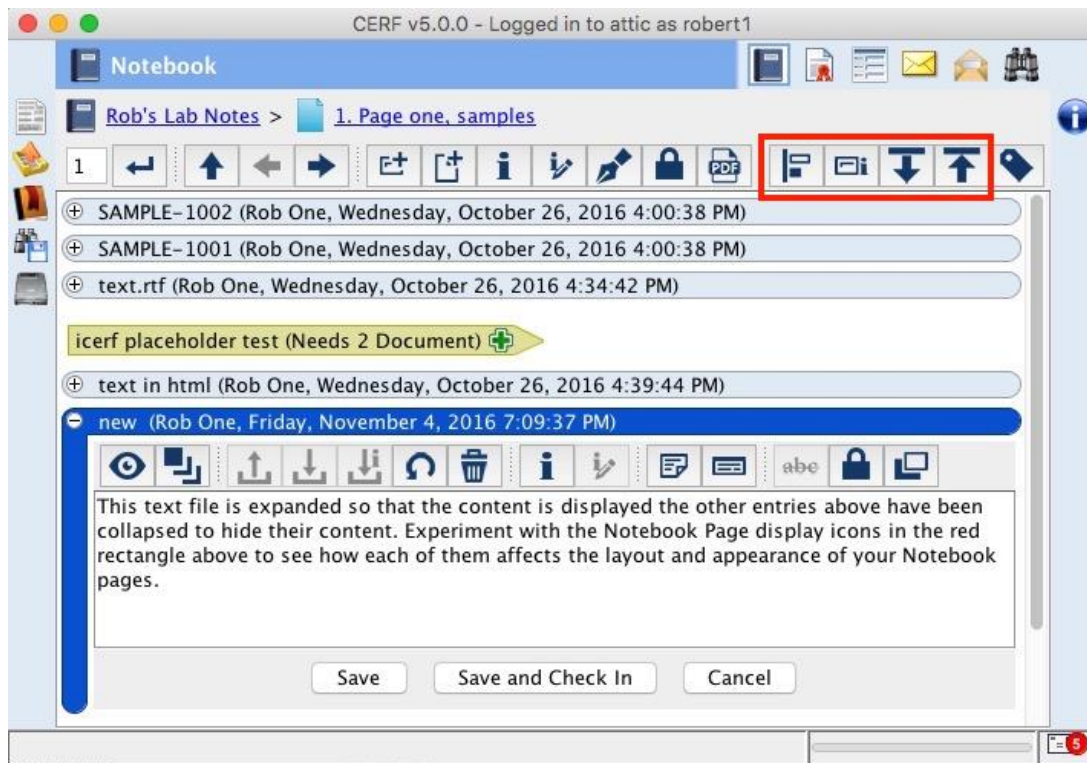
Note that you can also select multiple files and add all of them to the page at once. CERF will ask whether you want to create a completely new resource (with a different resource ID), or whether it will be treated as a version that can be traced back to the original copy, or whether you want to create a link (i.e. exactly the same resource made available in both places).

There is also an option for adding the item from the file cabinet not as a Notebook Entry but as a "Relation". Relations are way of showing that this Notebook Page is merely related to the item in the File Cabinet. Creating relations between items using drag-and-drop (or copy and paste) and telling CERF to treat the items as relations is a good way to illustrate relationships between different resources in CERF. Relations for a given resource appear as a list at the top of the Resource Info window or panel. Click here for more information on relations.

> *TIP: CERF will often prompt you to say more about what you want to do when you drag and drop items within CERF. The options offered to you depend on what you are moving, where you are moving it to, what your role is in the source and destination locations, and the past uses and status of the resource. In general, try to create Links and Versions when possible to avoid filling CERF up with replicate, identical copies of files in different locations, and try to build consensus in your organization about where to store and who should have access to your various resources. Always Use abundant metadata to make the purpose of, and difference between similar files and version clear to your downstream audience in the near and distant future.*
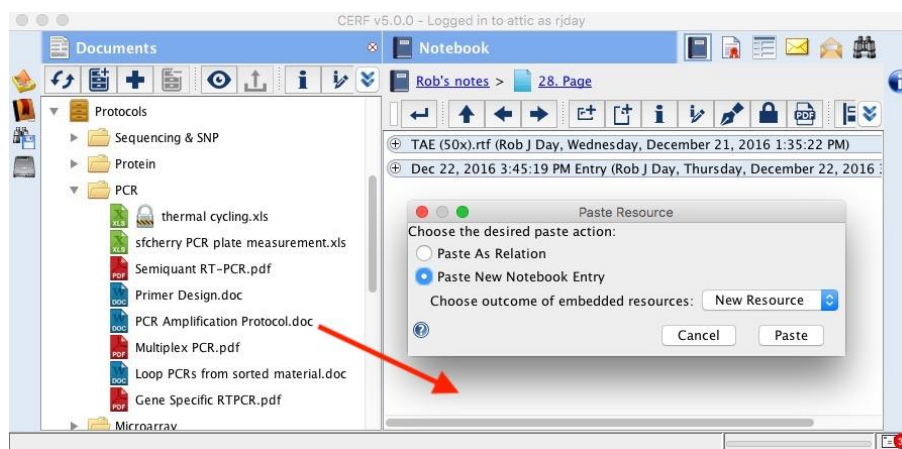
TIP: You can use the right-click > Copy and Paste commands, OR the Copy icon in the document tree (and the right-click > Paste in on the Notebook Page) to accomplish the same thing. You can also drag and drop resources to Notebook Pages directly from many other locations in CERF, such as from a CERF search results list, from other Notebooks and from your email-to-CERF inbox. Additionally, users can even drag specific versions of resources from the CERF Resource Info window. To use an older version of a resource, open the Resource info in the Right Panel, locate the older version in the resource version history, then drag the desired version to your notebook page. Users can also drag data cards from the Structured Data Information System panel and SOP's from the Controlled Documents panel by dragging them from that panel up to the Notebook icon at the top of the interface. The center panel will instantly switch to show the current notebook page so that you can now drop the item onto the page.

6.   You can drag-and-drop files from your computer file system straight into the Notebook Page or onto the icon of the target Notebook Page in the Document tree.

7.   You can also make new entries by right-clicking on a Notebook Page icon in the document tree, or in the blank space at the bottom of a page. If you have the right access permissions, you can then choose Notebook > New Entry to open the New Entry dialog. Select the type of entry you want to create then click OK.
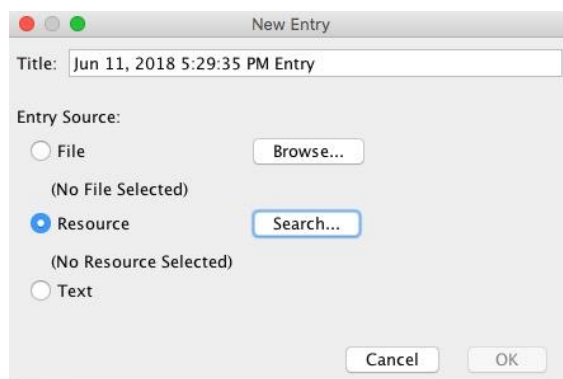
8.   You can right-click on Notebook Page icon or on the page and chose Notebook > New Entry From Template to choose from a list of available page templates that you and your colleagues have previously made.

TIP: Notebook entries are technically containers with a single file inside. The Entry and the Entry Content can have their own independent metadata so that users can better annotate them within a specific context. For example, an image file used as an entry might have its own keywords, but if that same file is used in more than one notebook, then the entry metadata used to describe why that same file was used (or what else that entry is related to) may well be different in different places.

VIEWING DOCUMENTS INLINE

Many file types can be displayed on notebook pages or in the CERF File Viewer so that you can see the content of the file without opening it in an external application. You can choose whether you want to see the content of files inline or as a simple icon (i.e., a link).

1. Click on the blue selection bar to select an Entry containing a file type that CERF can display inline using it's built in viewer plugins. Click on the Change Display Type button (shown below) on the Entry toolbar and select "Show PDF Preview."

Note: A Business Policy determines the maximum file size that can be displayed inline; thus you may find that some files cannot be displayed inline (in that case, you can use "View In > System Default" to view the file with an external application.

If you create a Notebook Page from a template, then the files in that page may not initially be displayed inline. To display ALL the files on the page, right-click on the Page icon in the CERF Document Tree and choose: Notebook > Show All Inline.

> *TIP: If a file cannot be displayed inline, CERF offers the option to display a substitute file instead using the Set Official Print Copy function. This allows the user to display anything they want (image, text, PDF or other file) to represent the underlying data file.*

EDITING ENTRIES

Use the check out and edit function (icon in the edit toolbar, or right-click > Entry Content > Edit > Check Out and Edit) to edit any entry. CERF will automatically determine if the entry should be edited by one of the applications built into CERF or passed to an external helper application for seamless round trip editing on your local computer. Checked out Resources are listed in the Checked Out Documents panel on the left. It's good practice not to check out more items than you need at any one time, and you should be sure to check items back in when you are done editing them. Generally you should always check in edited files as new versions and you should tell CERF to update references to the edited files in all collections.

> *TIP: You can tell CERF which Applications on your computer you would prefer CERF to use for viewing and editing specific file types within the preferences / options area.*

> *TIP: You can checkout resources from CERF and leave them checked out when you end your CERF session. You then have the option to continue working with them in offline mode.*

WORKING WITH METADATA

Metadata is information about your files in CERF. One of the outstanding features of CERF is its ability to add, display, edit, manage and search for metadata. Click here for more information about metadata.

There are several different types of metadata that CERF can work with:

1. **Embedded metadata**, sometimes also called "file properties". This is information embedded in your files before they were added to CERF. Different applications you work with outside CERF might add any number of metadata values to your files. For example, MS office often adds the name of the person who authored the file or the name of the company that your copy of MS office is registered to. Another example is photos taken with your smart phone that

often have metadata such as longitude and latitude embedded in them. Whenever possible, CERF will look inside your files and display embedded metadata in the CERF Resource Info. CERF also adds this metadata to its database so that you can use that information to search for those files using the CERF search engine. In the example below, the CERF search engine was used to find photos taken with an iPhone at a specific latitude and longitude. Note that CERF did not *create* this metadata, it merely extracted and indexed existing information that was already in the file.

> *TIP: If you do not see the metadata property you want to search for in the default list of search parameters in the search tool, click Search Parameters > Metadata… to display a full list of many additional choices.*
>
> *TIP: You cannot currently edit embedded metadata in CERF, but you can add as much additional CERF metadata as you like, as described below.*
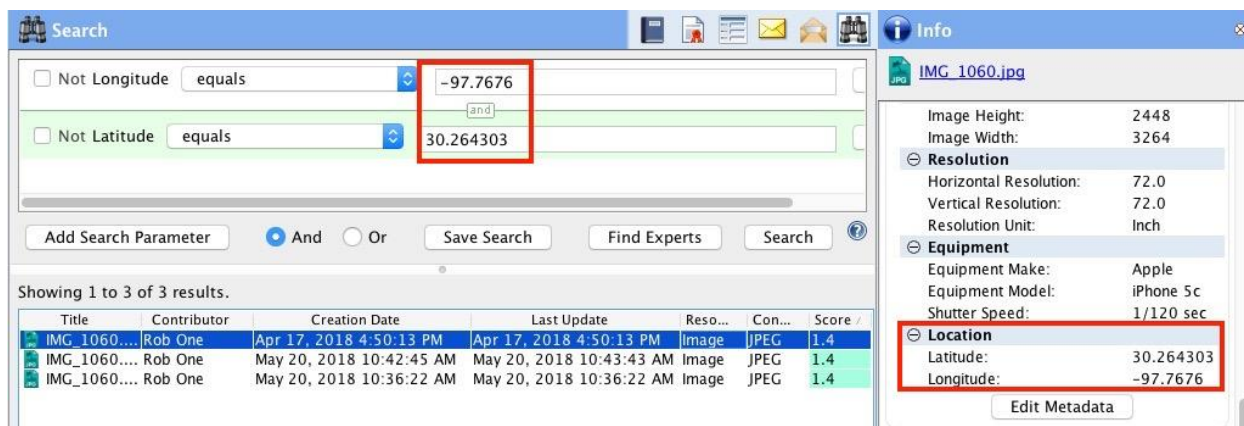
2. **CERF Annotations**. Annotations are a type of informal metadata that can be used to categorize CERF resources. Examples of annotations include Tags, Advanced Tags, Notes, Ratings and Relations. A user must have a role of Annotator or higher in order to create annotation. Image Annotations can be used to add searchable information and labels to images. CERF Annotations are not versioned, do not affect the underlying data files and can be added and removed from any type of file in CERF at any time. Even digitally signed or finalized files can be annotated.

There are several ways to create Relations in CERF but the easiest is to right-click and choose Edit > Add Relation, then choose a relation type from the dialog box.
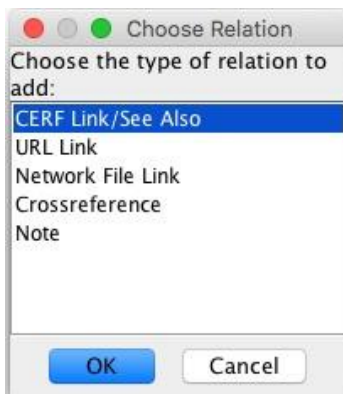

Dragging and dropping one resource onto another can also be used to create CERF Relation Links (i.e. a way to show that two CERF resources are related). Relations are listed at the top of the Resource Info, and some types of Annotations (Tags, Ratings, Notes) can also be created there too without clicking "Edit Metadata" first. You can add as many Notes, Tags and Relations as you like to a resource and delete them at any time by clicking the x icon next to each one.

A special icon is used to indicate that Notes or Relations are associated with a resource, and a red counter shows how many of these there are in total (5 in this case).

In the example below, the file "01ab003468.gb" has the following Annotations:

- 2 Notes
- 1 "See Also" file reference (sectioning.m4v)
- 1 "See Also" folder reference (polytomella)
- 1 associated URL
- 2 Tags (sequence and DNA) Click either tags to open a new search window automatically set to search for Parameter = "Tag", Value = "sequence" or "DNA"
- A rating of "5 stars" (Stars can be used as an internal quality guide to the importance or quality of the data).
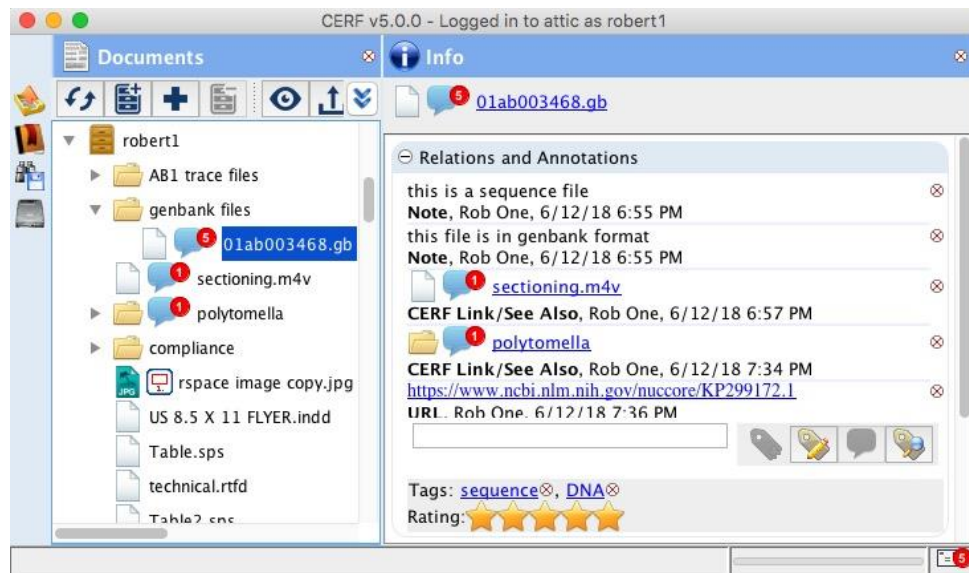
3. **CERF Metadata**. This is more formal categorical information that can be associated with most resources in CERF

using the Edit Metadata icon or the right-click > Edit > Edit Metadata command. Users can also open a Resource Info window or panel and THEN click Edit Metadata. Users must have access role of Metadata Editor or higher to be able to edit the values in CERF metadata categories. When you edit the CERF Metadata of a resource you are creating a new version of that resource that will appear in the version history. Click here for more information on how to edit metadata.

4. The Edit Metadata window is shown below:
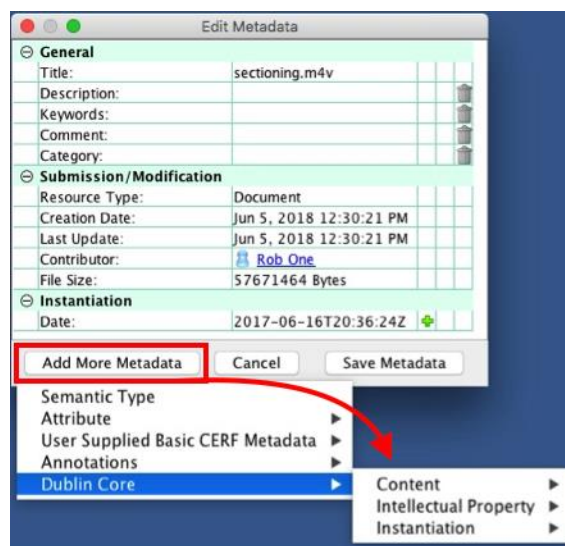
Fields that include a delete icon (trash can) on the right are editable. Certain fields not editable for compliance reasons, and fields displaying embedded metadata that are part of the file itself are also not editable.

If you don't see the metadata type you want to add, try clicking Add More Metadata then choose a category from the dropdown menu or sub-menus. Note that CERF includes dozens of additional ontologies and metadata categories that you MIGHT see in the Add More Metadata dropdown. The options displayed there depend on the CERF Resource Type you are looking at also how your admin has configured Domains on your server. Domains are used to allow different types of researcher to have access to different types of specialized metadata categories and resource templates so that they only see options that are relevant to their research. Users with a sufficient access role can add as many different metadata fields and values as they like in the edit metadata window, and these all become searchable categories that can be located with the CERF search engine. Note that CERF metadata created inside CERF is associated with your files but is not physically inserted into them. Some metadata fields are not currently editable here because they are part of the parent file (sometimes called "file properties") this type of metadata is still displayed and indexed for searching by CERF. A good example would be "instantiation Date" which is the date a file was first created, (not the date it was added to CERF). Since this is a fixed value, it is not editable within the CERF "Edit Metadata" window.

When you export a file from CERF, it retains its original embedded metadata, but any CERF metadata you created is not currently embedded inside the exported file, but may be included as an accompanying XML file. A good best practice is to assign responsibility for appropriate metadata oversight to a specific specialist(s) in your organization then have them ensure that everything in CERF is meaningfully labeled to make it easier to find in the future.

NEXT STEPS

Now that you have seen some of the key features in CERF you should find that the more detailed descriptions of CERF's advanced features in the user manual will be easier to follow. To continue learning more about CERF we suggest you also read:

- **CERF 5 Advanced User Training Guide.pdf**
- **CERF 5 PI's Guide_Lab-Ally.pdf**
- **The full user manual at https://cerfsupport.lab-notebook.org**

Contact support@lab-ally.com for assistance with live training, formal User Certification materials, IQ / OQ validation and on-site workflow analysis.