

Collaborative Analytical ToolBox (CAT)

User Guide

12/10/2010

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CAT Overview

Collaborative Analytical Toolbox (CAT):

CAT, developed by Pacific Northwest National Laboratory, is a client-server analytic framework for building and organizing a knowledge repository. CAT is the result of over 5 man-years of software development and has been applied to a number of research domains. The CAT environment provides a familiar, customizable interface that enables users to:

- Customize the organization of their information.
- View/browse their information in any number of ways and via any number of arbitrary hierarchies.
- Browse or search for information from a variety of sources using many different search tools.
- Pull data back into their project space.
- Integrate with existing tools to analyze their data.
- Collaborate with other users by sharing data, templates, annotations, etc.

CAT was designed with flexible integration as a key requirement, so that it is easy for new or existing tools to be integrated with minimal development cost. As a result, it is based on well-documented, well-supported, robust open source components, (i.e. Alfresco and Eclipse Rich Client Platform).

Alfresco is the open source enterprise knowledge management system upon which the CAT server is based. Alfresco supports many knowledge management features out of the box, such as:

- Support for both file-based and record-based content.
- Extremely flexible content model that supports multiple data type and many relationships between nodes.
- Versioning.
- Category (i.e., taxonomy) support where data can be organized into and searched by any arbitrary hierarchy, without duplicating content.
- Integrated semantic and collaborative components.
- Open source, extremely well designed code that is easy to extend.
- Comprehensive, fine-grained security model.
- Built-in transformation and metadata extraction frameworks.
- Built-in workflow hooks.
- Comprehensive remote interfaces.

Eclipse Rich Client Platform is the open source desktop framework upon which the CAT client is based. It has a very modular, extensible design that makes it easy to customize, integrate with existing tools and mix and match components to create an environment tailored to user needs.

Installation

➤ Uninstall

If you have a previous version of CAT installed, uninstall it first before installing a new version. The Uninstall file or icon will be located in the same folder as the CAT startup file.

If you'd like to clear your workspace & set it back to default settings do the following:

- **Windows users:**

1. Using Windows Explorer, navigate to this folder:

```
C:\Documents and Settings\<username>\Application Data\CAT\CAT Client
```

2. Replace [<username>](#) with what you log in to your computer with.
3. Delete the `.metadata` folder.

- **Mac users:**

1. Using a command prompt (“cd”), navigate to this folder:
2. `<homedir>/CAT/CAT Client`
3. Replace `<homedir>` with your home directory.
4. Delete the `.metadata` folder (one way of doing this is with the command prompt, `rm -rf .metadata`)

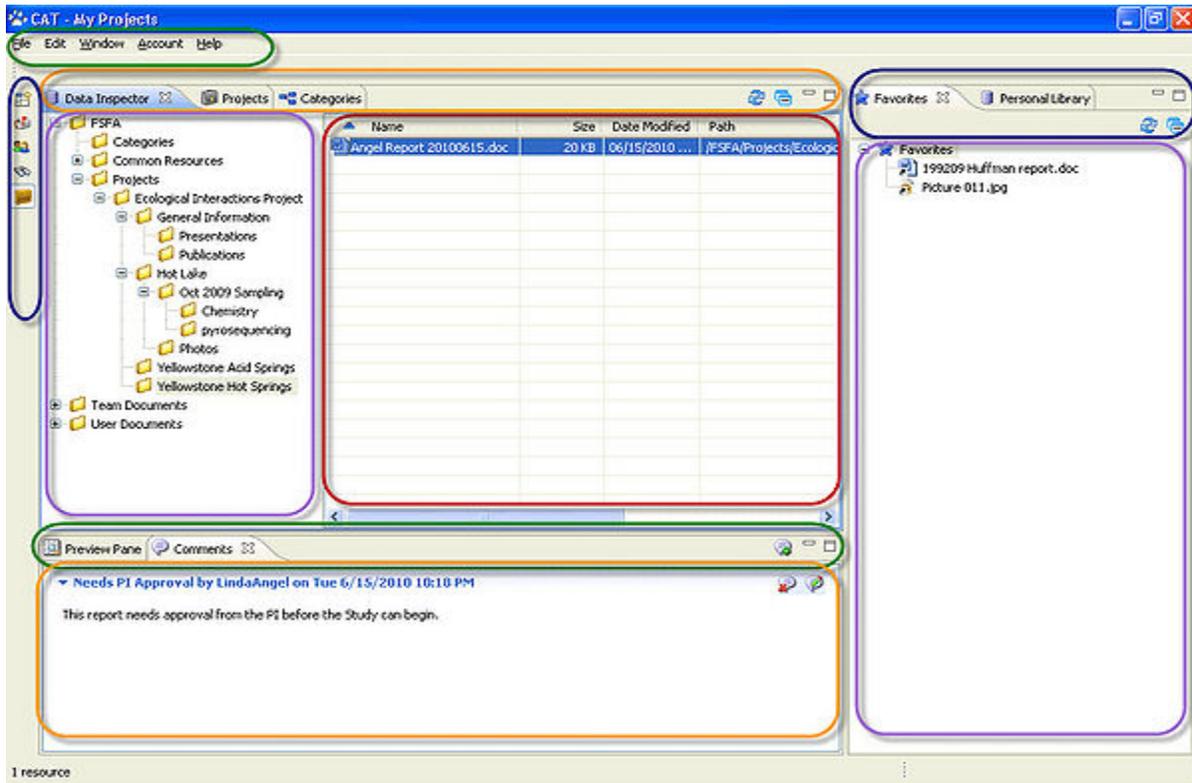
➤ Installation

1. Download the installer for your platform by saving it to your computer
 - **Windows:** [CAT_win_installer.zip](#)
 - **Mac:** [CAT_mac_installer.zip](#)
 - NOTE - Java 6 must be installed.
 1. Go to the Utility folder
 2. Java Preferences
 3. Choose Java SE 6
 - **Linux:** [CAT_linux_installer.zip](#)
 - NOTE - this installation file hasn't been thoroughly tested, contact the [CAT Administrator](#) for any issues
2. Extract contents of ZIP file by doing the following:
 - **Windows users:** Right-click on ZIP file, choose **Extract All...** and follow instructions.
 - **Mac users:**
 1. Double-click on ZIP file to expand it, a folder will be created in the same location as the ZIP, the folder will be called `CAT_mac_installer`
 2. In the `CAT_mac_installer` folder you will find another ZIP file named `CATClient_1_1_0_StapShot_0257.zip`, double-click on this file to extract the contents
 3. An `.app` install file will be created in the same folder

- **Linux users:** Extract the folder CAT_linux_installer from CAT_linux_installer.zip. If you are using a terminal and the .zip is located in the folder /home/Downloads/ you can use the command: `unzip -d /home/Downloads/CAT_linux_installer.zip /destination/folder/`
- 3. **Linux Users:** Make the file ending with .bin in /destination/folder/CAT_linux_installer/ executable. For example, from the terminal this can be done using `Chmod u+x /destination/folder/CAT_linux_installer/CATClient_1_1_0_SNAPSHOT_0257.bin`
- 4. Navigate to the installation file, start installation by doing the following:
 - **PNNL Windows users:** right-click on the EXE file and choose **PM - Run Elevated**
 - **Windows users outside of PNNL:** double-click on the EXE file
 - **Mac users:** double-click of the APP file to start the install
 - **Linux users:** Run the installer from the terminal, for example `/destination/folder/CAT_linux_installer/CATClient_1_1_0_SNAPSHOT_0257.bin`
- 5. Follow default installation instructions.
 - **Mac users:**
 0. You will be asked where you would like shortcuts to be placed, it is recommended to use the default installation settings.
 1. After the install finishes you will see two icons, both labeled `com.apple.dock.plist`.
 - One looks like a red ball with a airplane wrapped around it, this is the uninstall icon
 - The second looks like a sheet of paper, this is the CAT startup icon.
 2. After you start CAT using the CAT startup icon, the icon will change to a paw and the name will change to CAT.
 3. When you terminate CAT, the icon will return to the sheet of paper but the name will remain CAT.

Layout

This is a visual layout of a typical **My Projects Perspective** within CAT. Perspectives can be customized so they may look different for each user. Details about the objects found within each colored section are listed below. The CAT layout is also called a **workbench**.



Left Sidebar



The Left side of the CAT workbench displays icons, in this example, the icons are grouped by **Perspectives**.

By default, the **Open Perspective** icon and the **My Project Perspective** icon are displayed. As additional Perspectives are open, their icons will be added to the sidebar for quick access.

Right-mouse click on the Perspective icons for other options.

Top Section

Menu Bar:



Perspectives and Views can be opened and closed using the **Windows** menu options. Users can change their password and CAT profile information by using the **Account** menu. And the **File** menu allows the user to create new objects within CAT.

Top Tab Group:



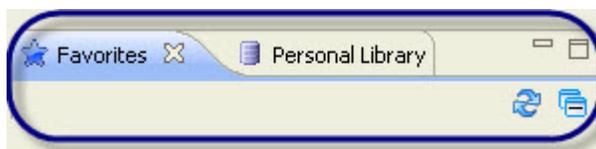
By default, the following Views display within the Top Tab Group of the **My Project Perspective**:

- Data Inspector
- Projects
- Categories

Other objects that appear within this Tab Group are the:

- Refresh icon - refreshes the contents within the View currently being displayed
- Collapse Nodes icon - collapses all folders that are currently expanded within the current View

Right Tab Group

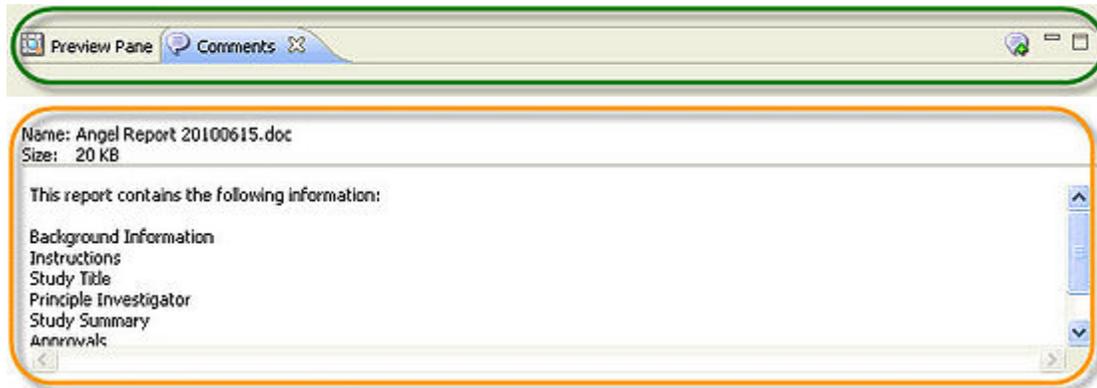


By default, the following Views display within the Right Tab Group of the **My Project Perspective**:

- Favorites
- Personal Library

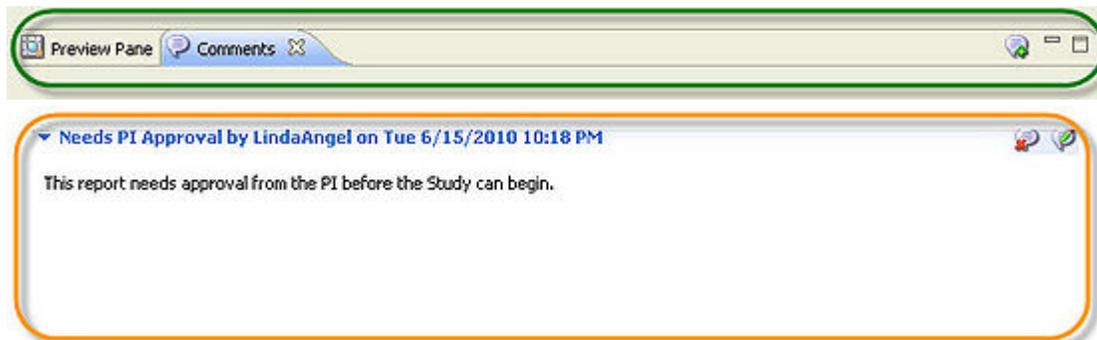
Preview Pane & Comments View

Preview Pane:



Users can view the contents of a selected file in the **Preview Pane View**. Some file extensions may not be recognized by CAT so the preview may produce an error message. To view those files you will need to Save it to your computer, and then open it to view its contents. To Save, right-click on the filename and choose **Save As**.

Comments View:

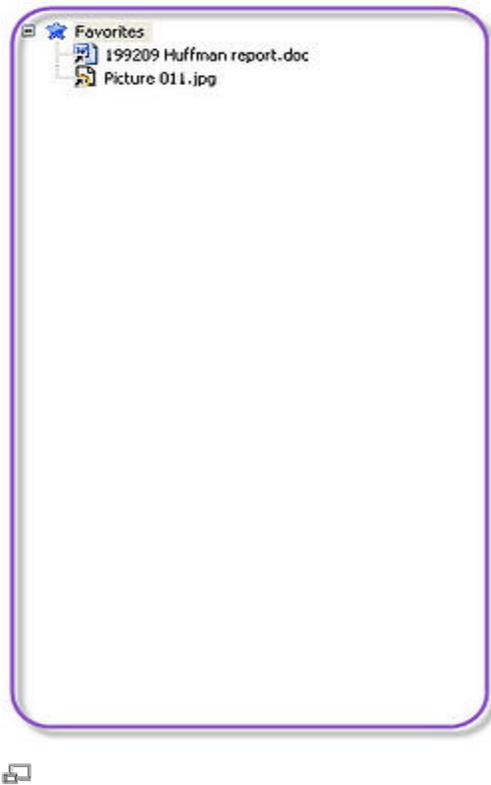


The **Comments View** displays a list of comments associated to a file or folder.

At the top of the **Comments View** Tab near the Minimize and Maximize icons, is the **Create New Comment** icon. A user can click on this icon to create comments for highlighted folders and files.

After a Comment is created, the Comment appears in the **Comment View** pane along with **Edit** and **Delete** icons.

Other Views

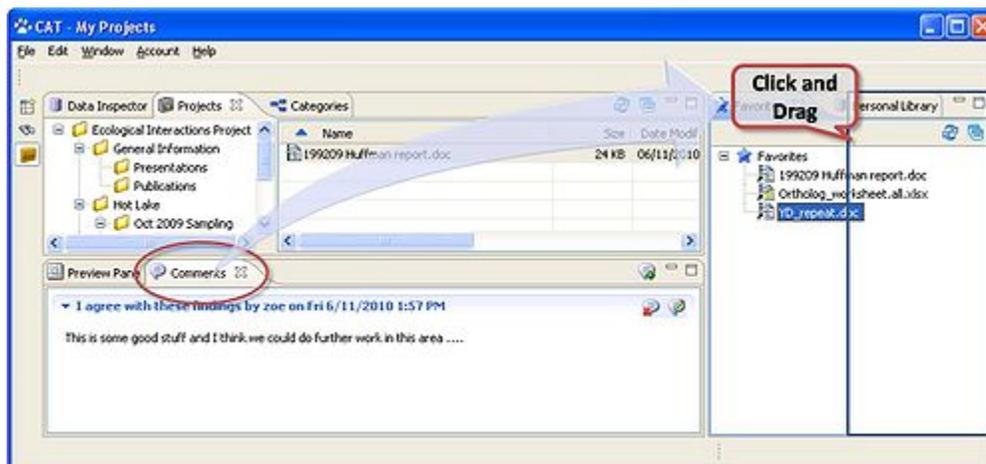


To add additional views to a perspective, see *Customize a Perspective* below.

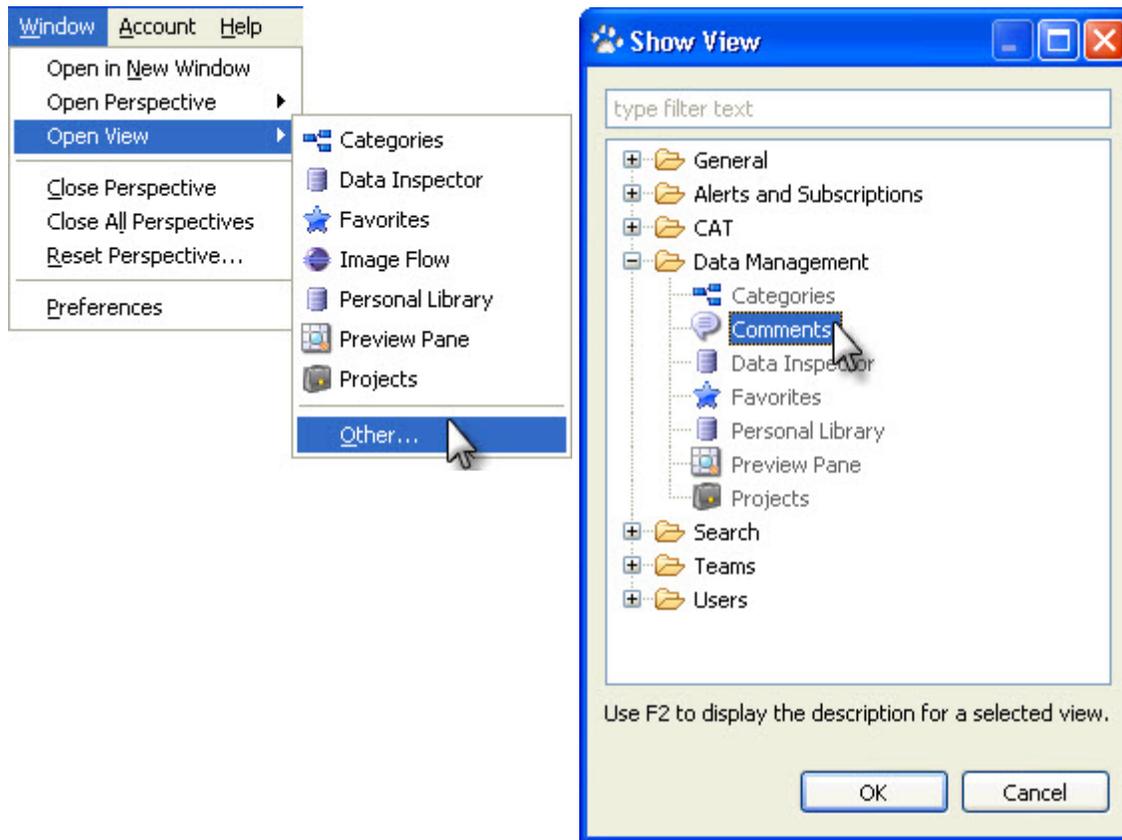
In this example the **Favorites View** is displayed. To bookmark files that you visit often, drag & drop a copy of the file to the Favorites folder within the **Favorites View** pane.

Customize a Perspective

You can customize any Perspective within CAT by dragging the View tabs to any location within the CAT workbench. When dragging a View Tab, potential drop areas will be highlighted in a dark gray outline.



Adding a new View to your CAT workbench



1. Go to **Window --> Open View**
2. A list of commonly used Views are displayed. To see a larger list of all possible Views, select **Other...**
3. Select the View that you would like to display
4. A View Tab will appear in your workbench, drag & drop the Tab to the desired location.

You can reset the layout back to its defaults by selecting **Window --> Reset Perspective...**

Terminology

➤ **View**

The Tab objects found within each Perspective are called **Views**. These Tabs or **Views** can be added, moved, detached, or removed; allowing you to customize your Perspective.

To add a View to a Perspective, use the **Window --> Open View** menu option. Once the View is open, right-click on the Tab to view more options.

➤ **Pane**

All Views have at least one Pane or Window associated to it. Some Views may contain more than one Pane to accurately display data.

➤ **Tab Group**

Tabs that are placed in one common location within CAT.

Two icons associated to a Tab Group are:

- Minimize - changes the Tabs to icons and places the Tab Group icons into the nearest Sidebar
- Maximize - enlarges the selected Tab Group and minimizes all other Tab Groups

➤ **Perspective**

Perspectives contain groups of objects that form a task, activity, listing, or toolbox for a CAT user. To open a Perspective, use the **Window --> Open Perspective** menu option, or click on the **Open Perspective** icon displayed on the Left side of the CAT layout. Once a Perspective has been opened, its icon will appear on the Left side of the CAT layout.

➤ **Workbench**

Another name for the CAT layout is the CAT workbench.

Getting Started

Execute CAT

Find the installed CAT startup file or icon on your computer and launch it by doing the following:

- **PNNL Windows users:** right-click on the EXE file (or the icon in your START menu) and choose **PM - Run Elevated**
- **Windows users outside of PNNL:** double-click on the EXE file (or select the icon in your START menu)
- **Mac users:**
 1. The CAT startup icon looks like a sheet of paper (labeled `com.apple.dock.plist`).
 2. After you start CAT by clicking on the CAT startup icon, the icon will change to a paw and the name will change to CAT.
 3. When you terminate CAT, the icon will return to the sheet of paper but the name will remain CAT.
- **Linux users:** open your terminal and run `/install/folder/CAT` where `/install/folder` is the location of where you installed CAT

Login

Login to CAT using the **Username and Password** provided to you in an email message

Logout

Exit the program

Change Password

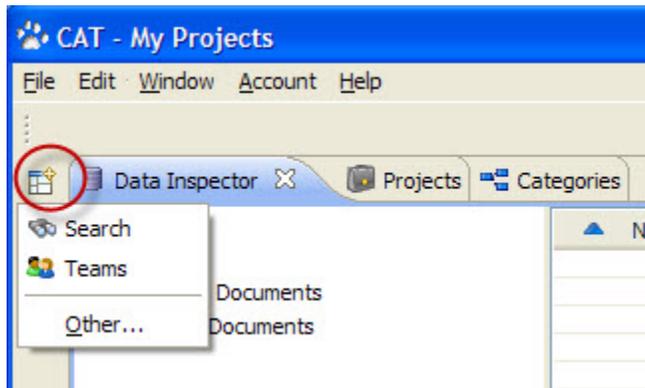
1. Go to **Account --> Change My Password**
2. Enter the password provided, then enter your new private password

View CAT Software Version

- Click on menu items **Help --> About CAT**

Add Users to a Team

1. Click on the **Open Perspective** icon and choose **Teams**



2. Once the **Teams Perspective** is open, double-click on the Team Name that corresponds to the Collaborative Project that you want to add users to
3. Click the **Add...** button and add users

NOTE: Users must already have an account, if not, contact the [CAT Administrator](#)

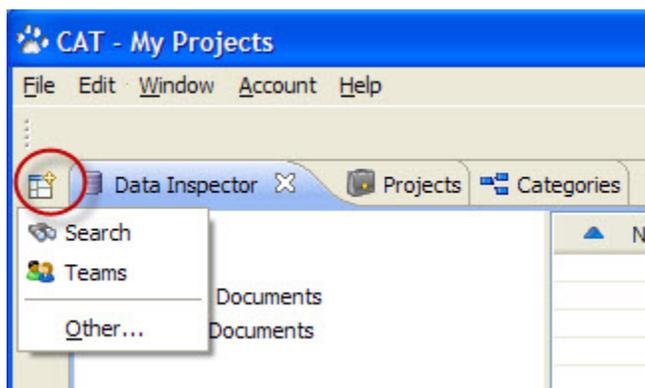
Search

You can search for:

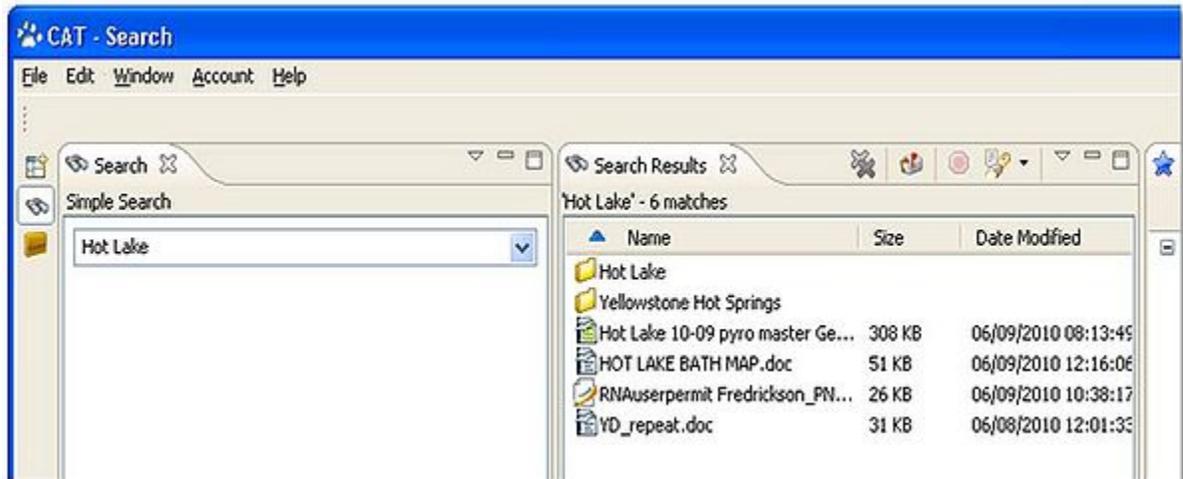
- file names
- folder names
- file description
- author of a file
- file meta-data
- file contents (searchable only if the contents are visible in the preview pane)

To search:

1. Click on the **Open Perspective** icon and choose **Search**



2. Type a keyword or phrase into the drop-down box
3. The files that contain the keyword or phrase will display in the **Search Results View**.



Advanced Search

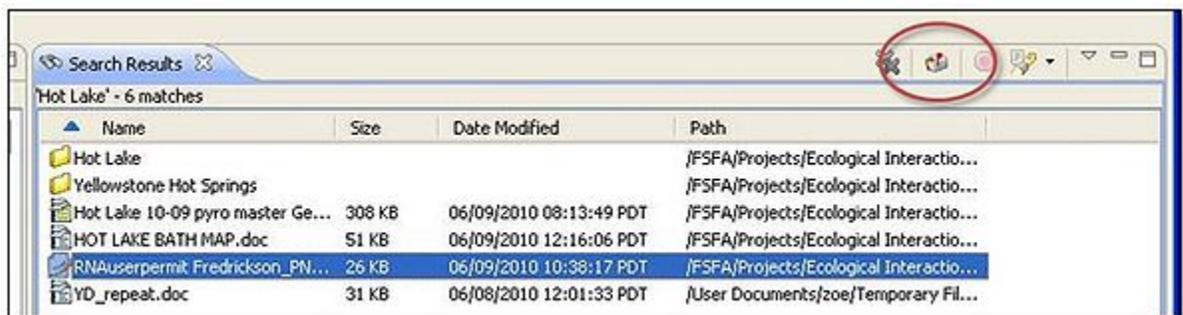
Advanced Search is also available. To activate (and deactivate) Advanced Search, click on the icon displayed in the picture below.



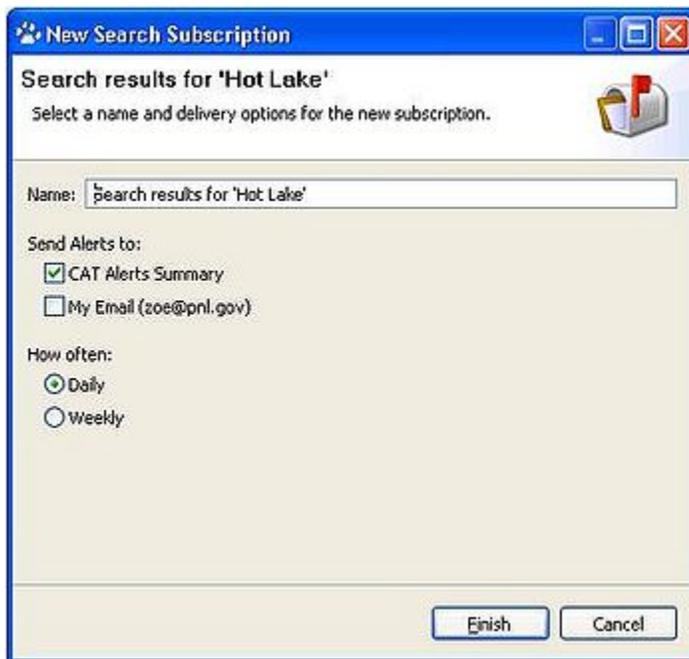
Alerts & Subscriptions

A Search can be scheduled to run on a Daily or Weekly basis. When the Search Results change, an Alert will be created and a notification will be sent.

1. First, a Search should be created as explained above.
2. Next, click on the Subscription icon



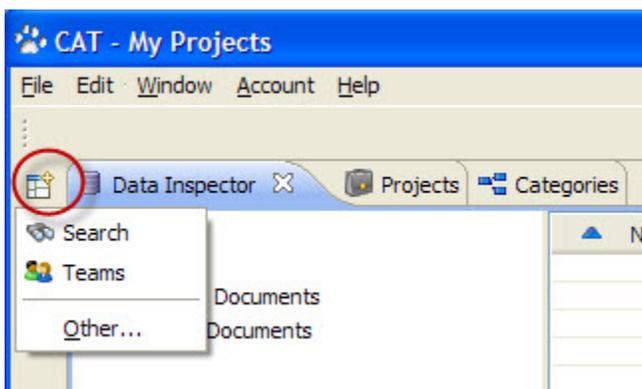
3. The **New Search Subscription** window will appear



4. Name the Search Results set.
5. Select the method(s) in which you want to be notified.
6. Select the schedule in which you want the Search to run
7. Click the **Finish** button.

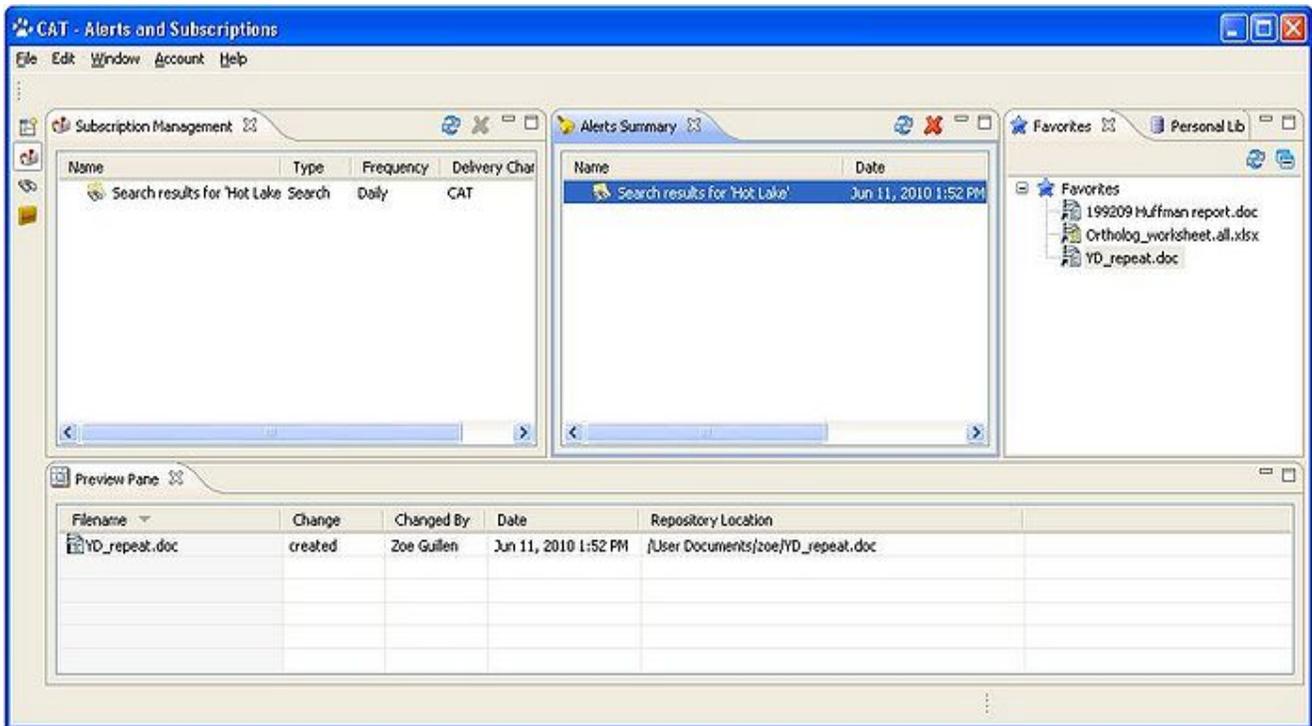
Alerts and Subscriptions can be found on the **Alerts and Subscriptions Perspective**. To open this perspective, do the following:

1. Click on the **Open Perspective** icon and choose **Other...**



2. An **Open Perspective Window** will open, select **Alerts and Subscriptions** and press the **OK** button.

Subscriptions are located in the **Subscription Management View** and Alert notifications will appear in the **Alerts Summary View**. Search Results for each Alert Notification can be viewed in the **Preview Pane View**.



Collaborative Projects

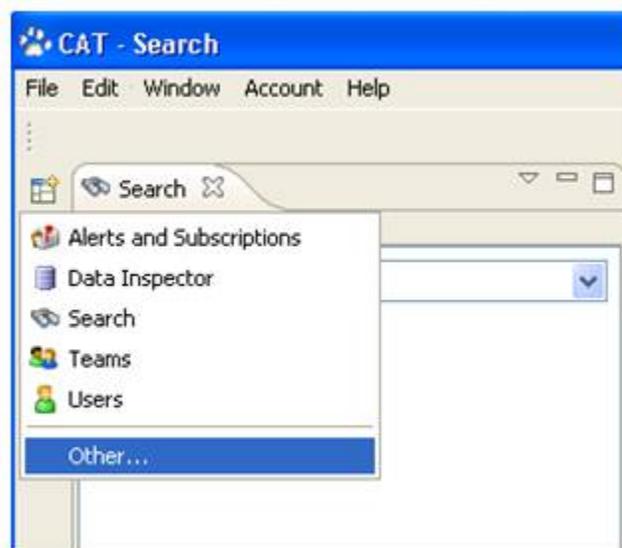
Using the My Project Perspective

After you login to CAT, the **My Project Perspective** will display and default to the **Data Inspector View**. If the Perspective has been customized the workbench may look different. Click on the **Projects View** to see a list of Collaborative Projects in which you belong.



If the **My Projects Perspective** is not visible look for its icon in the Left Sidebar and click on it. If the icon cannot be located, retrieve it by doing the following:

1. Click on the **Open Perspective** icon in the Left Sidebar (or choose the menu item **Window --> Open Perspective**)
2. Select **Other...**
3. Select **My Projects (default)**
4. Click on the **Projects View**





Under each Collaborative Project, you will see the following folders. These folders can be renamed or removed. New folders can also be created.

Study Name Folder

Rename this folder to match the name of the Collaborative Project Study. Additional Study folders can also be created.

Analyses

Data Packages Folder

Genomics

Proteomics

Experiments

Simulations

General Information Folder

Presentations

Publications

Files

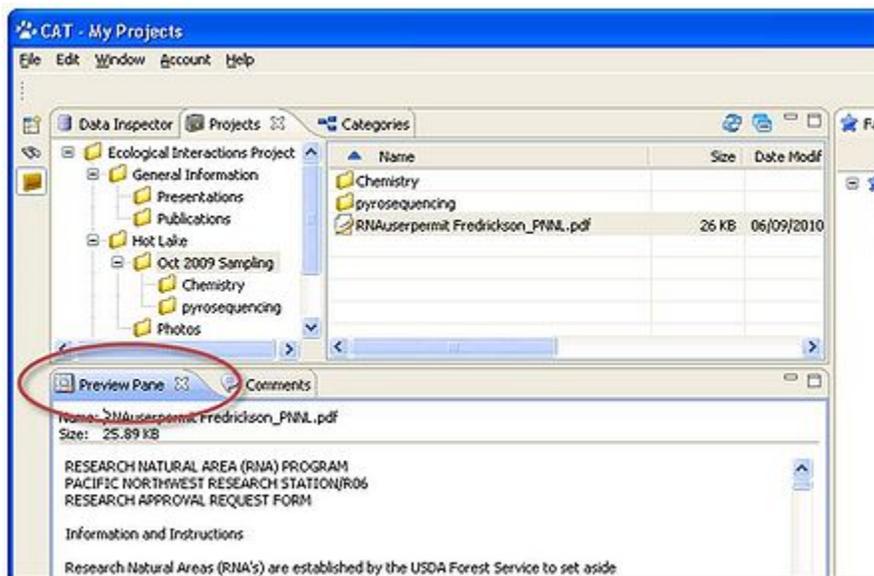
Working with Files

Add

1. Navigate to the appropriate folder in CAT
2. Navigate to the file located on your computer
3. Drag the file from your computer to the folder in CAT

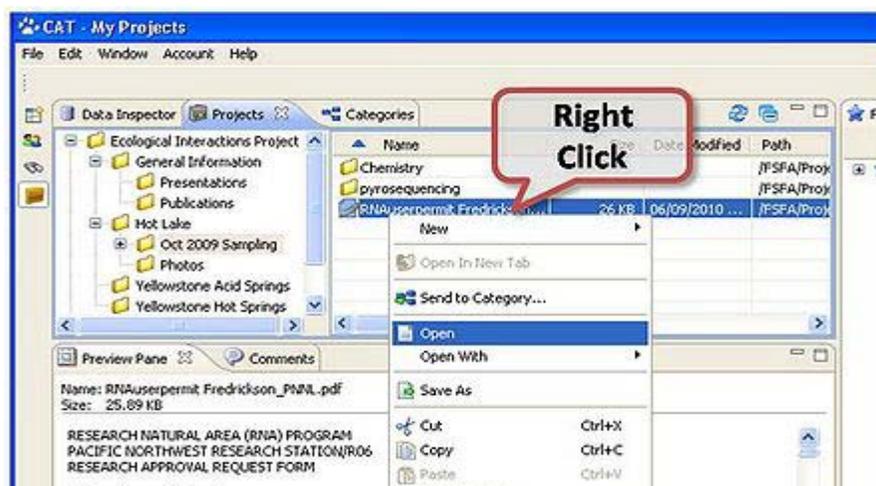
Preview

1. Click on the filename
2. View the contents of the file in the **Preview Pane**



Open

1. Right-mouse click on the filename
2. Choose **Open** or **Open With**



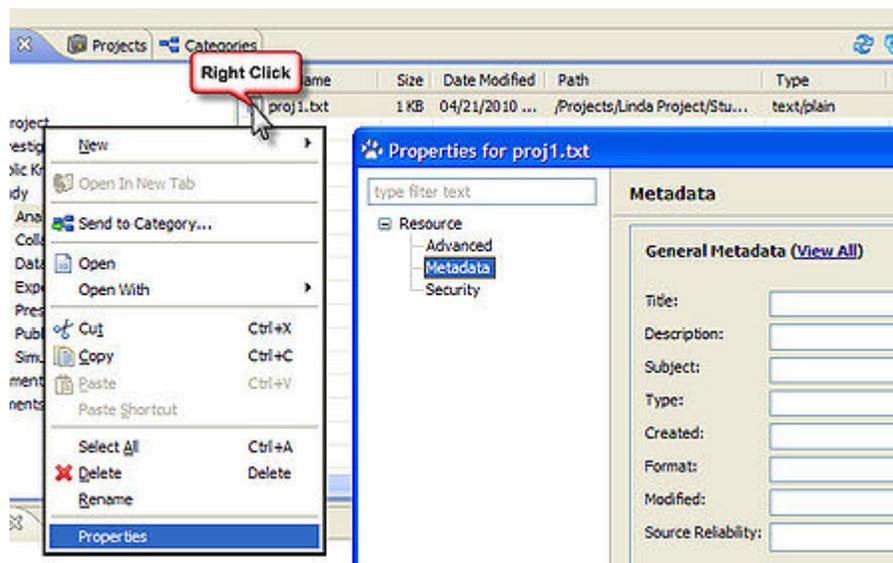
Modify

You are able to open any file within CAT, modify it, and save it.

Properties

To add metadata to a file:

1. Right-mouse click on the filename
2. Choose **Properties**
3. Expand **Resource**
4. Select **Metadata**



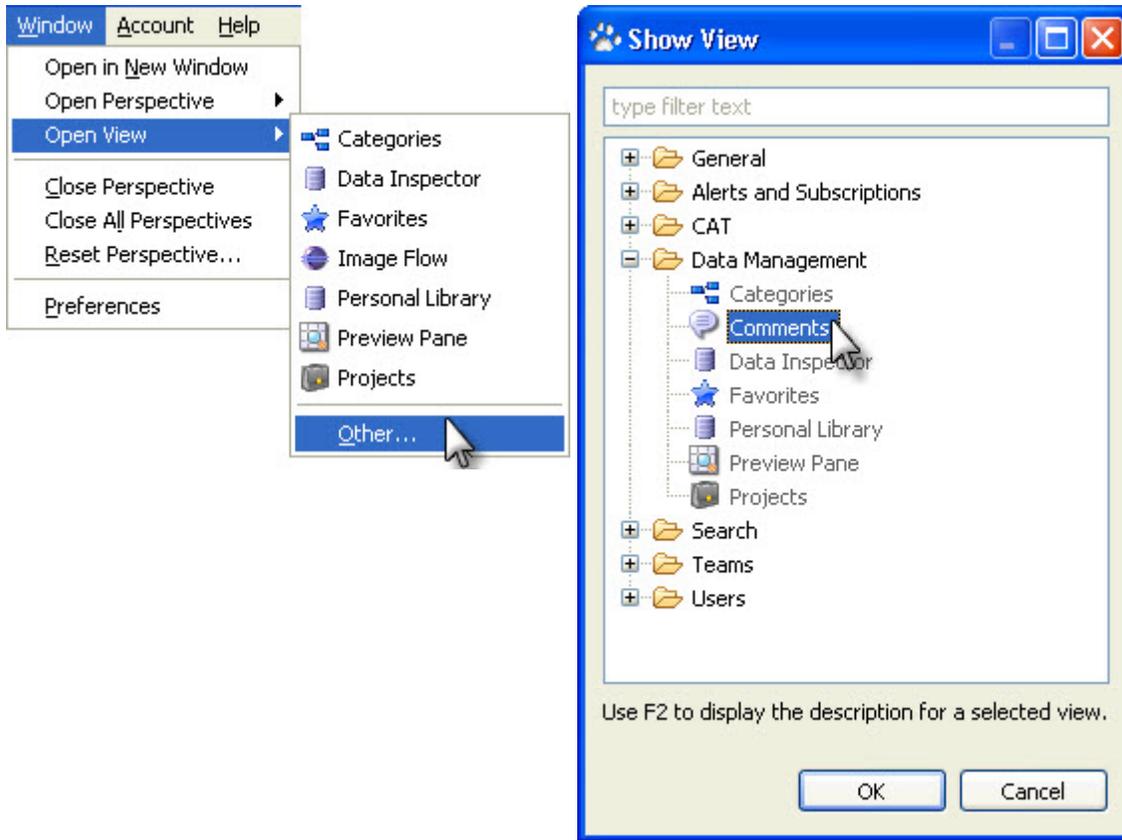
Comments

Comments can be added to a file or folder.

To add new comments to a file:

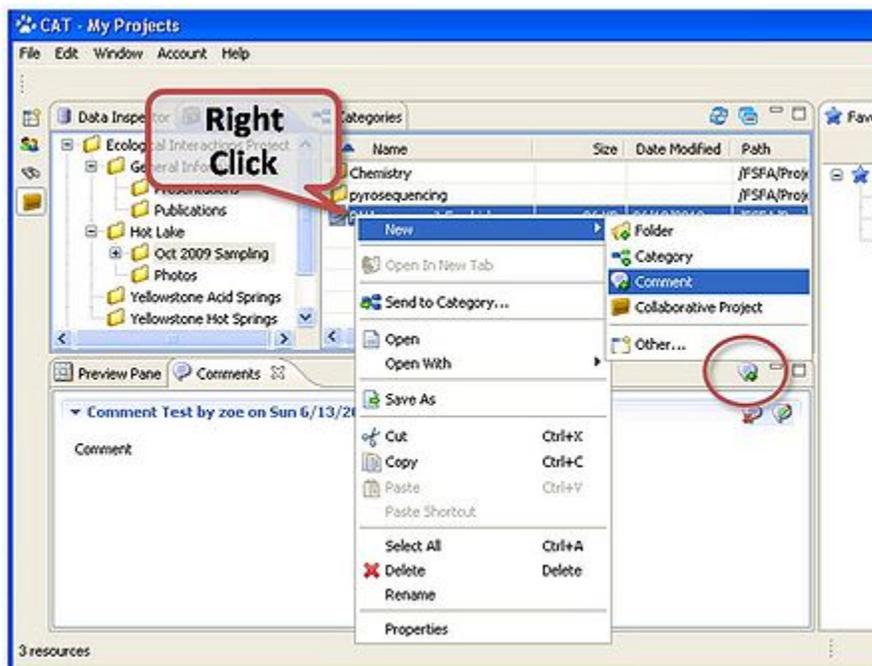
1. Right-mouse click on the filename
2. Choose **New --> Comment**
3. Enter the subject and content of the Comment
4. For additional comments, repeat Steps 1-3 above.

Add a Comments View tab to the CAT workbench



1. Go to **Window --> Open View --> Other...**
2. In the **Show View** window, navigate to & select **Data Management --> Comments**
3. Click **OK**
4. The Comments View tab will appear in your workbench, drag & drop the Tab to the desired location. In this example it is located in the Bottom Tab Group. See the *Layout Tab* on the CAT instructions page for more information.

Using the Comments tab



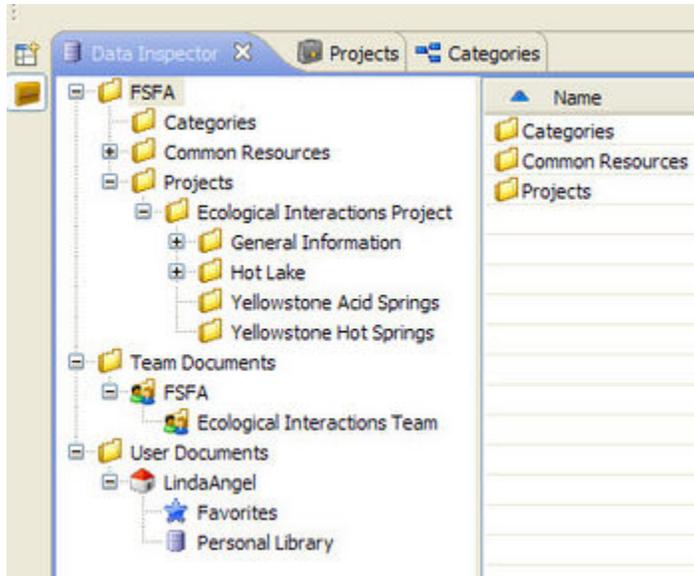
- Click on the **Add** icon to add new comments.
- Click on the **Edit** icon to reply or edit an existing comment.
- Click on the **Delete** icon to remove an existing comment.

To add comments to a folder, navigate to the folder and repeat Steps 1-3 above.

Data Inspector

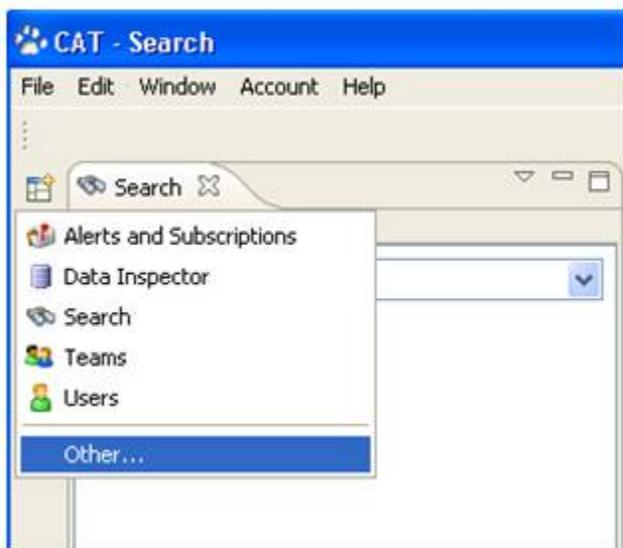
Using the Data Inspector View

After you login to CAT, the **My Project Perspective** will display and default to the **Data Inspector View**. If the Perspective has been customized the workbench may look different. Be sure the **Data Inspector View** is active by clicking on the Tab.



If the **My Projects Perspective** is not visible look for its icon in the Left Sidebar and click on it. If the icon cannot be located, retrieve it by doing the following:

1. Click on the **Open Perspective** icon in the Left Sidebar (or choose the menu item **Window --> Open Perspective**)
2. Select **Other...**
3. Select **My Projects (default)**
4. Click on the **Data Inspector View**



Project Root

Under the Project Root folder ("FSFA" is the Project Root in the picture above), you will see three subfolders.

Categories

The contents of this folder also appears within the default **Categories View**, found in the top section of CAT.

Common Resources

The **Categories & Common Resources** folders are shared by all Project Root members. Anyone can view, add, or edit files in this area. However, to move or remove files, you have to be the file owner (the user who originally added it to CAT).

Projects

This folder will display a listing of the collaborative projects you have access to. See the *Projects Tab* on the CAT instructions page for more information.

Listed below are additional folders available within the **Data Inspector View**.

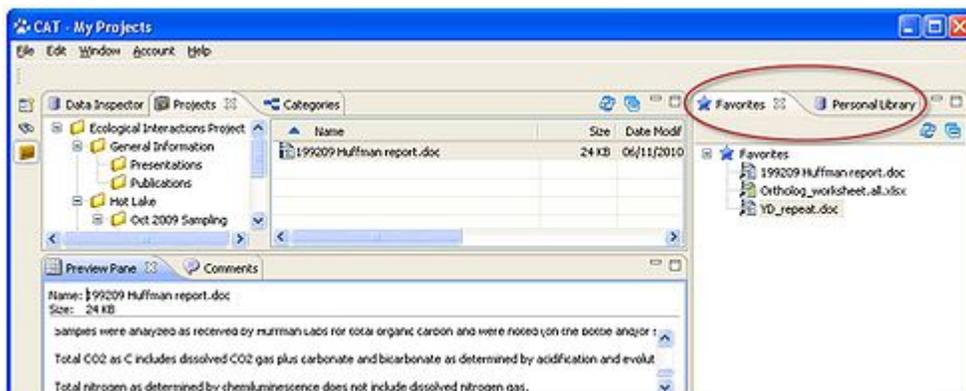
Team Documents

This folder will display a list of teams in which you belong. Each team corresponds to a Collaborative Project (found under the **Projects View**). Teams can contain information that may not be found under its Collaborative Project, however, to avoid any confusion, files should not be placed in this area.

User Documents

Each CAT user has a personal area in which to store private information.

When CAT is initially opened, the **Favorites View** and **Personal Library View** of the current user are displayed to the right of the CAT application. See the *Layout Tab* on the CAT instructions page for more information.



CIFS

Access Files Stored in CAT using CIFS

Users can access files stored in CAT by mapping a drive to the CIFS Shared Folder. Users may find it useful to access the CAT files directly. For example, a user might want to map to the CIFS drive from an instrument's computer in order for the instrument to process a file that is stored in CAT. One thing to note while navigating through the shared CIFS drive: you will see files and folders that are hidden in the CAT desktop application, so the two views (CIFS and CAT) will not look exactly the same.

When CAT is launched, a CIFS drive is automatically mapped to the user's computer. To manually access the CIFS drive without using CAT, follow these procedures:

Open the Shared Folder

Windows users:

1. Open Windows Explorer by right-clicking on the **Start menu** and selecting **Explore**
2. In the Address bar enter the path to the Shared Folder:
`\\microbes.pnl.gov\alfresco`
3. When prompted enter your **CAT Username** and **Password**

Mapping a Drive

Windows users:

1. From Windows Explorer, select **Tools --> Map Network Drive...**
2. Chose any **Drive** letter that isn't already in use
3. For **Folder** name enter: `\\microbes.pnl.gov\alfresco`
4. Click **Finish**
5. When prompted enter your **CAT Username** and **Password**

Mac users:

1. Create a folder to link to the CIFS share
2. Open a command prompt and type in the following command: `mount -t smbfs //<username>:<password>@microbes.pnl.gov/alfresco <localPath>`
 - o Replace `<username>` and `<password>` with your **CAT Username** and **Password**
 - o Replace `<localPath>` with the path to the folder you created above
 - o For example: `mount -t smbfs //JoeD:Twa7ypQ2@microbes.pnl.gov/alfresco /users/JoeD/MyFolder`

Linux users:

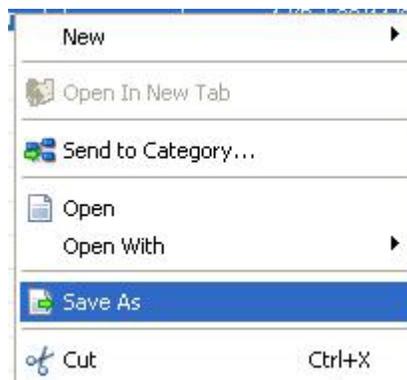
1. Create a folder to link to the CIFS share
2. Open a command prompt and type in the following command: `mount -t cifs -o rw,noauto,user=<username>,password=<password> //microbes.pnl.gov/alfresco <localPath>`.
 - o Replace <username> and <password> with your **CAT Username and Password**
 - o Replace <localPath> with the path to the folder you created above
 - o For example: `mount -t cifs -o rw,noauto,user=JoeD,password=Twa7ypQ2 //microbes.pnl.gov/alfresco /users/JoeD/MyFolder`
3. Unless you are root, the command above would need to be issued with "sudo" in front of it and then the user attempting the mount would be prompted for their password. To add a user to sudo, they would need to be added into the "wheel" group (/etc/group) and the /etc/sudoers file would need to have the wheel line uncommented.
4. EMSL-managed systems do not use a local sudo. The sudo command is in AFS and access is controlled by the UNIX team, contact support@emsl.pnl.gov if you are on an EMSL-managed Linux system and need help with this.

CIFS Failure

When using CAT, if the user cannot drag files from CAT to their computer, this is an indication that there isn't a CIFS connection. When CAT is launched, a CIFS drive is automatically mapped to the user's computer. This automatic mapping will fail under these circumstances:

1. When CAT is running on a Linux computer.
2. When the user's Institution or Internet Service Provider blocks the ports required to make an external CIFS connection.

When there is not a CIFS connection, you can still access the contents of files by using the "Save As" right click menu item to save a copy of the file to your computer. To update the file in CAT, simply drag and drop the file from your computer into CAT. .



For help with CIFS, contact the [CAT Administrator](#) (Gordon Anderson).

Help

Frequently Asked Questions

Documentation

- [CAT Tips](#)
- [FADE Getting Started Guide](#)

Presentations

- [CAT Server Architecture](#)
- [FADE Overview](#)

What is FADE?

The Pacific Northwest National Laboratory's Fused Analytic Desktop Environment or FADE is an integrated suite of software tools that enable you to build, organize, share, and analyze an evolving repository of documents (data files) for multiple analysts and multiple analytical uses. FADE fuses data management capabilities with a selection of PNNL's powerful and award-winning data transformation and analysis applications.

At the center of this analytical environment is the Collaborative Analytical Toolbox (CAT) workbench, which is FADE's visual interface for manipulating data files in multiple perspectives. Although the workbench includes capabilities for search, previewing, and annotating documents, the CAT is at heart a data-use facilitator: it integrates analyst collaboration, diverse types of documents, content management services, and FADE's analytical tools into a single, extensible framework for ingesting, extracting, exploring, and analyzing the text content in those documents.