Mac OS X

Troubleshooting Multiple User Accounts

*Additional information is contained in the notes portion of this presentation.

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Intro:

Mac OSX is equipped with a built-in multiple user account system. This allows you to control who has access to the computer, and also who has access to individual files and folders in the system.

Although the multiple user system is a very powerful tool, it also comes with some challenges. Since BD software uses multiple files and folders, you can accidentally deny access and prevent the software from functioning.

This presentation will give you the basics you need to be able to set up a multiple user account system and ensure that BD software will still be able to function. There will also be examples of common errors that may appear when using multiple user accounts, as well as their solutions.

What Types of Users Are There?

- An administrator can:
  – Create new accounts
  – Change ownership of all files
  – Install software

- A standard user can:
  – Access items specified by the owner
  – Access their home folder
  – Change permissions for items that they own

When setting up a new user account, you can specify if you would like them to be an administrator or not.

Among other things, an administrator can create new accounts, override permissions set by other users, and install software. When logged in as an administrator, the account behaves exactly like any other user account. Thus the admin will still not be able to see files and folders that have "no access" specified, unless they change the permissions set by another user.

A standard user only has access to their own user folder and any files or folders that the administrator allows.

Groups can be set up so that ownership and permissions can be applied to groups of individuals and denied to other groups.

In the Users folder on the hard drive, each account has an individual home folder. The icon changes according to which user is currently logged in. Each user has control over their own folder and can deny access to anyone who is not an administrator. This allows them to protect their data from accidental deletion. The default settings for a users home folder is no access (red icon) or read only (newly created files and folders).
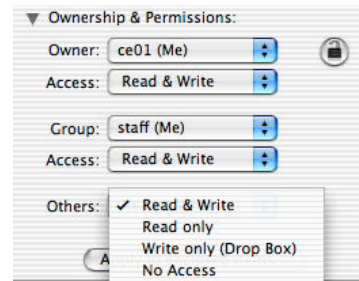
There is also a Shared folder which allows access to all users. A file created in the shared folder can still have limited access, although the folder itself has a default Read & Write setting.

Ownership of each file and folder determines who can change the access level. Ownership does not affect the function of BD software.

The four options for access are listed on this slide.

Read & Write: view and change contents

Read only: view contents

Write only: can move files in, but cannot view them (drop box)

No access: can't view or change contents. Because you can't view them, you also can't search for files if you don't have access.

If any sections are grayed out, click the lock icon on the right to make changes. If you don't have ownership and are not an administrator, you will be prompted to enter an administrator's password to make changes.

Defaults for New Files and Folders

Owner: Current user

Permissions:

Every file and folder has its own permissions, regardless of where it's located. Newly created folders have certain default settings associated with them based on the user. It's important to check the ownership & permissions whenever you create a new file or folder. The user that creates the new file/folder is automatically the owner and the default permissions are as on this slide.

Notice the owner is grayed out and cannot be changed unless you click the lock button and are either the owner or you have an administrator password.

Notice the default is for only the owner to have Read & Write – if you then change the ownership without changing the permissions, the original user doesn't have full access.

Note about "Apply to enclosed items…" – If you use this button to change permissions for an entire folder, it can only apply changes to items that you own. If there are mixed ownerships within one folder, the changes cannot be applied to all items with this button. You have to first change the ownership (an administrator can always change ownership), then you can change permissions.

BD Applications
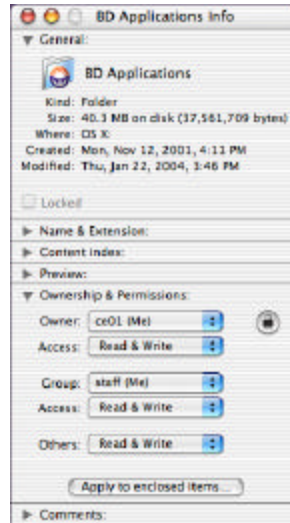
- Select folder or file
- Choose File > Get Info
  – Expand Ownership & Permissions section
- In all fields, choose Read & Write

Note: In the following examples, ce01 is the administrator.

Specific permissions are required in order to run BD Applications. When BD software is installed, it brings in the correct permissions. If these settings are changed, you may have problems running BD software. To check ownership & permissions, select the folder or file, choose File > Get Info, then expand the ownership & permissions section (click on triangle on left).

For the BD Applications folder, all three permissions settings should be Read & Write.

BD Folders

- BD Applications folder
- BD Files folder
- System > Library > CFM Support, extensions, frameworks
- Library > Preferences > BD Preferences

When running BD applications, the software will be accessing other files and folders. If any of these supporting files or folders have been set to Read only or No Access, the software may crash, give you an error message, or not perform correctly. The folders on this slide should all be set to Read & Write for all users.

Other Required Access
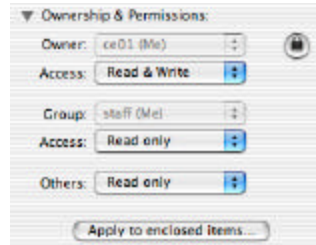
Users must own everything in their home folders.

In addition to the folders already specified, each user should own and have Read & Write access for their own home folder. Other users do not need access to anyone else's home folder.

When running CellQuest, it's possible to select a folder for data storage that has No Access, but you won't be able to save a data file.

When should you check ownership and permissions?

- To share a file with another user
  - Example 1: Before placing a file such as a BD CellQuest Pro template in the Users > Shared folder.
  - Example 1: Before placing a file in the Worklist Manager > CellQuest Experiments folder.
- After installing software
- After upgrading the operating system

Once you get your software installed, you should only have to check ownership & permissions for new files and folders. Since the default setting is for other users to have Read Only access, this is especially important if you would like to share a file with another user.

When creating templates, make sure that you specify that others have Read & Write permissions, and be sure to place it in a folder that allows shared access (such as the Shared folder).

When creating CellQuest Pro documents for use in Worklist Manager, those files should always be set to Read & Write for all users.
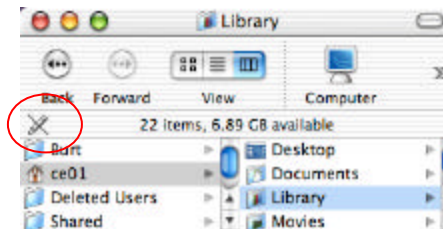
If you start having problems running BD software after you've installed new software or upgraded the operating system, there's a chance that some of your ownership & permissions settings have been altered.

Icons to Look For

Folder with No Access:

Folder with either No Access or Read only:

When troubleshooting problems with a multiple user account, you can start by trying to figure out which files are being used by the software at the time you received the error. If it isn't obvious which file is being used, check the permissions settings on the folders listed earlier in this presentation. Also check the settings on files within those folders to make sure they are all set the same (apply to enclosed items doesn't always work…).

Since it can be tedious to open the Get Info dialog and expand the O&P sections for every file, here's a couple of icons that can clue you in to a problem.
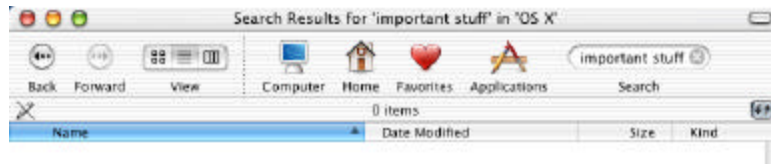
A folder with No Access usually has the red "Do Not Enter" symbol on it. If you select a folder in the Finder view that has No Access, you also will not be able to see any of the contents.

If you open the Finder view and select a folder without Write permission, the "No-Write" icon appears in the upper left corner. If you have Write access, there is no icon here.

Being able to prevent others from accessing your data folders is one of the main reasons for using multiple user login systems. However, there are times when it could backfire on you. Remember that when the permission is set to No Access, you cannot view the contents of the folder. This means that when you do a search, the files within folders set to No Access will be invisible to the search engine. If you lose a data file or folder, try performing a search logged in as each different user so that you can really search all possible locations.

Reminder: Being logged in as an Administrator doesn't allow you to view the contents of folders that have No Access specified. It only allows you to change the No Access setting, so that you can then view the contents.

Now we're going to go over a few common errors and scenarios that could come up if the wrong permissions settings are selected. There are many different types of errors that can be associated with ownership & permissions problems. Troubleshooting these problems sometimes requires a lot of patience. Hopefully by giving you examples of common problems, you'll be prepared to handle these issues back in your own lab.

CellQuest Pro – Destination folder in the Browser set to No Access. CellQuest won't prevent you from selecting a No Access folder. You will only have a problem once you deselect Setup and click Acquire.
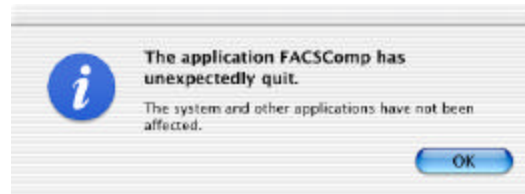
?Question: Why can't the software continue at this point?

Answer: At this point, CQ Pro is trying to create a data file, and files can only be saved into a folder with Write access (either Write only or Read & Write).

Common Errors – BD FACSComp

Error

- BD FACSComp unexpectedly quits when launched.

> **The application FACSComp has unexpectedly quit.**
>
> The system and other applications have not been affected.
>
> OK

Cause

- BD Files > FACSComp Files folder has been changed to No Access.

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If FACSComp doesn't have access to the FACSComp Files folder, it refuses to launch.
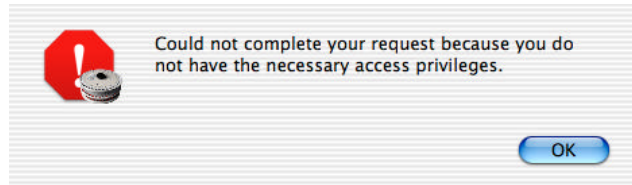
?Question: Why do you think it can't launch?

Answer: When FACSComp launches, it creates a new, dated folder in the FACSComp Files folder (to store the summary report). It must have either Write Only or Read & Write privileges to do this.

Note to instructor: If no one in class has the Loader option, you can skip this slide.

Error: You encounter this message when you exit Assay Settings in Worklist Manager Software.

Cause: When linking documents to instrument settings, you must have write privileges to save the changes (changes are saved as you exit this view). You may think that only some of the documents are being used, but the software is using every document in the folder. If only one document is specified as read only, you'll see this error message.

Whenever a user creates a new document, the default settings are Read & Write for that user only. Other users have Read only access. Therefore, if the creator of the Experiment document doesn't set the permissions for others to be Read & Write, there will be documents in your CellQuest Experiments folder that cannot be linked.

If you see this error, the assay settings can still be used for this session, but any changes you make will not be saved when you relaunch BD Worklist Manager software.
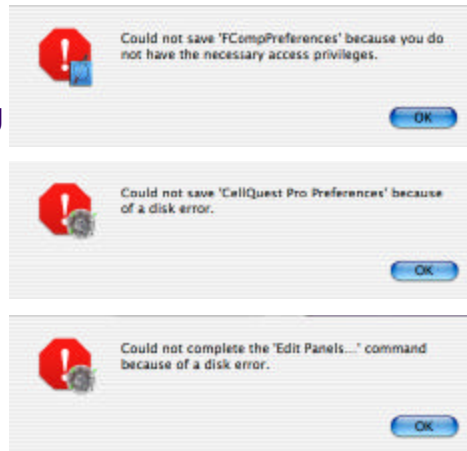
If you don't have access to BD preferences, there are many possible errors depending on what function you're trying to perform in the software. Any time you perform a function that saves information to the preferences, you'll get an error. You'll also see an error when you quit the software, since it updates the preferences file at that time.

Sometimes instead of seeing an error, the software just won't retain the changes you've made the next time you launch the software. For example, in BD FACSComp, it won't remember new Lot IDs if the preferences cannot be saved.