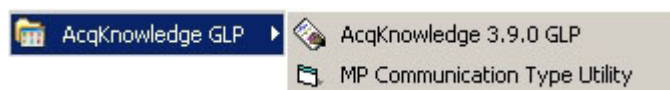




GLP Administrator



Introduction

When *AcqKnowledge* is used with the GLP System installed, each user is assigned “permissions” for the program that indicate what operations that user is and is not allowed to perform within *AcqKnowledge*.

In addition to the Permissions, the software keeps a continuous log of all software and hardware operations associated with a file, whether performed, canceled or failed. These GLP logs store the time, date, machine, and MP unit for each operation. Additionally, they can contain comments giving more detail about the reason for a change. These logs are stored along with a graph file and cannot be altered.

The software monitors only actions that are executed within *AcqKnowledge* — it does not record personal information from other applications on the machine.

To use a GLP System with *AcqKnowledge*, you must designate someone as the “Administrator” for the GLP system. This administrator will need to use the **BIOPAC GLP Administrator** application to maintain user accounts and configure the GLP System to match the standard operating procedures in use.

- ✓ If you do not agree to be monitored by the GLP system, please contact your systems administrator.

This document describes common administration tasks that will need to be performed to properly integrate the GLP System into a working laboratory environment.

Terminology

Term	Definitions
Administrator	Person in charge of performing maintenance for the GLP system for creating and modifying users.
Execute permission	Used to allow or prevent a user from performing a specific operation.
GLP	Good Laboratory Practices. Regulations published by the Food and Drug Administration to govern the conduct of safety tests on regulated products (21 CFR part 11). The purpose of the regulations is to assure the quality and integrity of the data used by the government to arrive at sound regulatory decisions (i.e., to grant approval for marketing a new drug or pesticide). The regulations are process-oriented and address matters such as organization and personnel, facilities, equipment, facility operations, test and control articles, and study protocol and conduct. In all, the regulations contain 144 requirements that control the procedures and operations of toxicology laboratories. <i>Source:</i> http://www.glp guru.com/
GLP user account	Identity of a user used when starting <i>AcqKnowledge</i> . The GLP user accounts specify what parts of <i>AcqKnowledge</i> are accessible to a user. <ul style="list-style-type: none"> While each GLP user account has a corresponding system user account, not every system user account may have a corresponding GLP user account. If a system user account does not match a GLP user account, that user will not be able to launch the <i>AcqKnowledge</i> application.
Group	Set of users that share the same permissions in the GLP system.
Group Identifier	See <i>Identifier</i> .
GUI	Graphical User Interface—the buttons, menu items, etc. available to users.
Identifier	Up to 32 characters, used to internally to distinguish multiple groups from each other; not visible to regular users.
Log	Listing of all of the operations a user has performed within <i>AcqKnowledge</i> . It contains both automatically generated information and optional user-specified information.
Log entry	Single operation, login, logout, or failed authorization item within a log.
Log message	User-specified phrase that can be associated with a log entry. Whether it is required from a user can be specified with the log permission.
Log permission	Used to determine whether a user can perform an operation directly or if the user must specify a brief description before performing the operation. This has no effect unless a user has execute permission for the associated operation.
Modification Log	Log of all operations performed on a graph (vs. user log).
Operation	Specific piece of functionality of the <i>AcqKnowledge</i> software. For example, performing an Integrate transformation.
Permission	Setting that allows portions of the <i>AcqKnowledge</i> software to be restricted.
Short Name Login	Thirty-two (32) characters or less, used to create the GLP account.
SOP	Standard Operating Procedure outlined by your laboratory.
Systems Administrator	Person in charge of performing maintenance for the computer system.
User	Person who is authorized to utilize the <i>AcqKnowledge</i> software with the GLP System.
User account	Identity of a user for the operating system. This is the user account that is used when logging into the machine (Mac OS X or Windows XP Professional). GLP Administrator will not launch without a qualified user account. <ul style="list-style-type: none"> GLP user names should only consist of alpha-numeric and space characters.
User Interface	See <i>GUI</i> .
User Log	Log of all operations performed by a user across all computers and graph files. This per-user audit trail is saved when you close/exit the program.

Administrator Requirements

Windows XP Professional Only

By design, GLP Administration Tool users must log into Windows XP Professional with the unique username “**Administrator**” (not member of Administrators Group, but exactly “Administrator”). GLP user accounts must have non-blank passwords even though Windows XP Professional allows user accounts without passwords. If the GLP Administration Tool is started under another account, configuration changes will not be saved. This prompt will be generated and clicking OK will quit the GLP Administration Tool.



The AcqKnowledge GLP user must be the same as the system user to have the ability to record logs into glp_user_log.xml file. For example, if a user logged into Windows XP Professional with account “A” starts AcqKnowledge GLP and registers into it as account “B,” GLP logs will be missed since system user A has no permissions to modify glp_user_log.xml file corresponded to user B.

In the GLP Administrator program, all folders and files are:

- writeable (full control) only by the “Administrator” privileged account
- read-only by all other users
- except for the glp_user_log.xml files, which are owned by the corresponding user and are modifiable only by that user.

The Windows XP Professional default “Welcome” screen does not list “Administrator” as one of the accounts. For possible work-arounds, refer to your Windows User Manual, contact Microsoft, or review the following articles:

- *Access the Administrator Account from the Welcome Screen*
Submitted by **Doug Knox**, Tewksbury, Massachusetts; Published: November 12, 2001
<http://www.microsoft.com/windowsxp/using/setup/learnmore/tips/knox1.mspx>
- *How can I add the Administrators account to the Welcome Screen in Windows XP?*
By **Daniel Petri**
http://www.petri.co.il/add_the_administrator's_account_to_the_welcome_screen_in_xp_pro.htm
 - Includes a downloadable tool by **Doug Knox** that can enable/disable the Administrator’s account in the Welcome Screen

Domain Installations — For domain controlled installations, you must use a domain controlled machine to log on to Windows™ as **Domain Controller “Administrator”** (not Local “Administrator”). Without this specific login, you will not have authority to set permissions for domain users.

Mac OS X Only

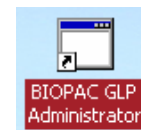
The GLP Administrator can be used with any user account that has permissions to administer the computer. This permission can be found in the “Accounts” System Preference pane under the “Security” tab. It is recommended that you limit administrative access only to users that require administrative rights to install software, create users, or other administrative operating system tasks.

If you do not have the required permission and need help creating a user account, contact your systems administrator or consult the manuals that came with the computer or operating system.

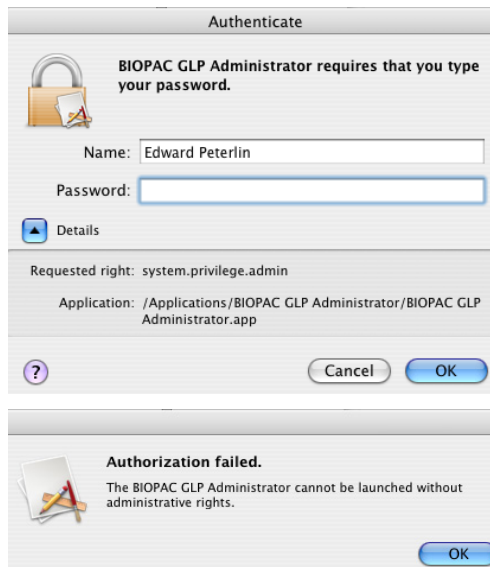
The GLP Administration Tool uses the “Short Name Login” for the system user, as established under System Preferences > System > Accounts.

Starting the GLP Administrator Application

1. Locate the BIOPAC GLP Administrator program and double-click to open. Use the desktop icon, or the Windows Start > Programs > AcqKnowledge 3.X path or browse to the AcqKnowledge 3.X Program Files/Applications folder.



- **Mac OS X Only** — Mac users will be prompted to authenticate privileges with a valid user name and password.



Enter a name and password that correspond to a system user account that has administrative rights and click "OK."

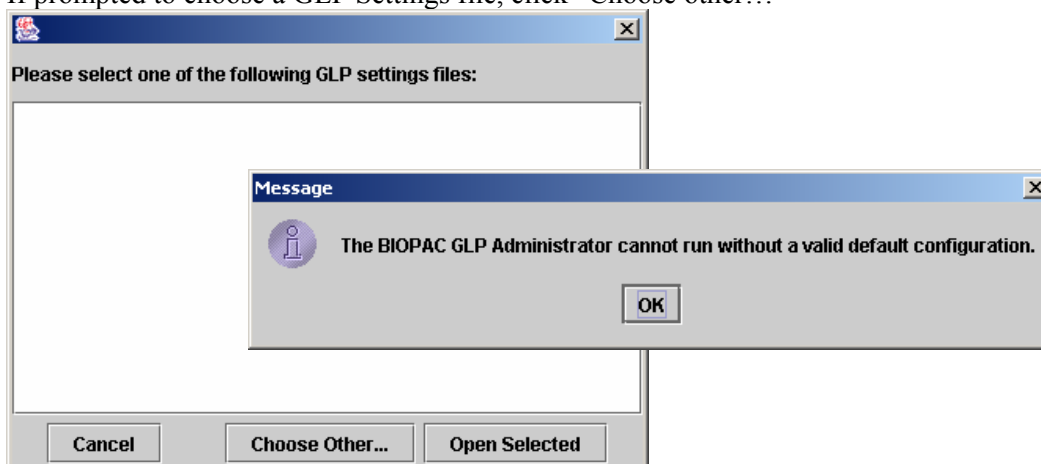
Note that name and password are case sensitive.

There will be a momentary pause before the main GLP Administration Tool launches.

If you click "Cancel," the application cannot be launched. A prompt will be generated and the program will exit when you click "OK."

2. When the GLP Administrator first launches, the software will automatically:
 - a. First, attempt to open the most recently viewed GLP settings from the last time the GLP Administrator was used. On first launch after an installation of the GLP Administrator, this step is skipped. See [Recent Settings Persistency](#) for details.
 - b. Second, search the hard drive for valid GLP settings if no valid settings were opened in step A. The **glp_config.xml** file lives in the GLP Settings folder, which is located in the same place as AcqKnowledge. See [Configuration](#) for details.

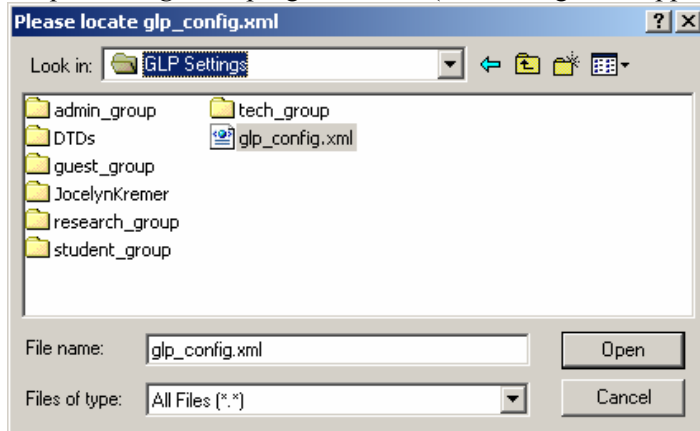
If prompted to choose a GLP Settings file, click "Choose other..."



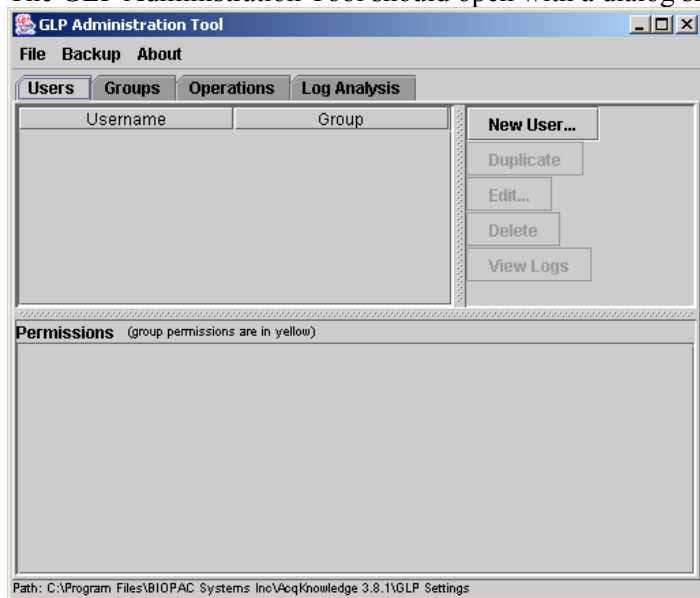
Mac: If you have difficulty finding this file, you can locate it in the Finder by choosing File > Find... and searching for glp_config.xml. Click "**Open**" to load the GLP configuration.

- If you Cancel, a prompt will be generated and OK will quit GLP Administrator.

3. Navigate to the GLP Settings folder in the BIOPAC GLP Administrator folder in the *AcqKnowledge 3.X* program folder (in the Programs/Applications folder) and select *glp_config.xml*



4. The GLP Administration Tool should open with a dialog similar to the one shown below.



- **About** is under the BIOPAC GLP Administrator program menu on a Mac™

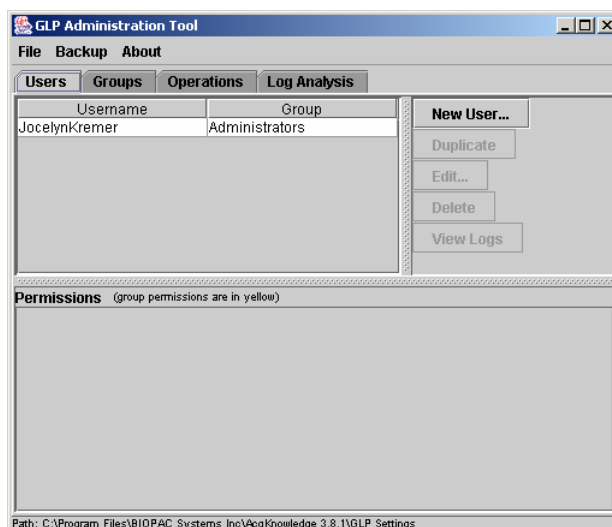
The Main GLP Administration Tool Window

The main window of the GLP Administrator application contains a set of tabs and menus that allow you to examine and modify the GLP setup, logs, and permissions.

The path to the settings that are currently being displayed, and potentially edited, is printed at the bottom of the main GLP Administration Tool window.

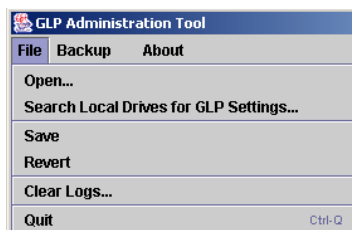
GLP Administration Tool Tabs

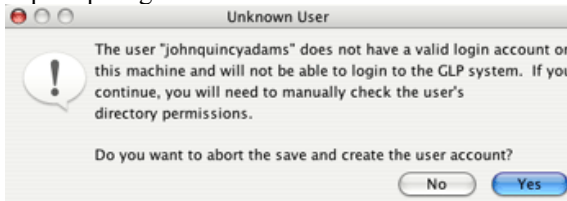
Users	See page 10
Groups	See page 17
Operations	See page 20
Log Analysis	See page 22



GLP Administration Tool Menus

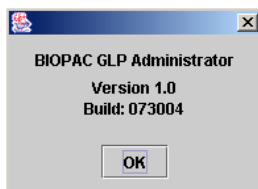
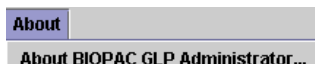
The three menus at the top of the main GLP Administration Tool window—**File**, **Backup**, and **About**—are available regardless of which tab is active.



File	Description
Open...	Switches to a different GLP configuration. This is useful if you have the GLP System for AcqKnowledge installed in multiple locations.
Search	Searches local drives for GLP Settings. See <i>Configuration</i> on page 5 for more information.
Save	Saves any changes made to the users, groups, or permissions. A prompt is generated for unknown users: 
Revert	Discards any changes you have made to the users, groups, or operations and reloads the settings from the disk.
Clear	Deletes the contents of the user log files.
Quit	Exits the GLP Administrator application.



Backup	Description
Backup Current Settings...	Takes a snapshot of the current settings and stores them to a single file. See <i>Using Backups</i> on page 9 for more information.
Restore from Backup File...	Loads a backup file and makes the current settings correspond to that backup. See <i>Using Backups</i> on page 9 for more information.

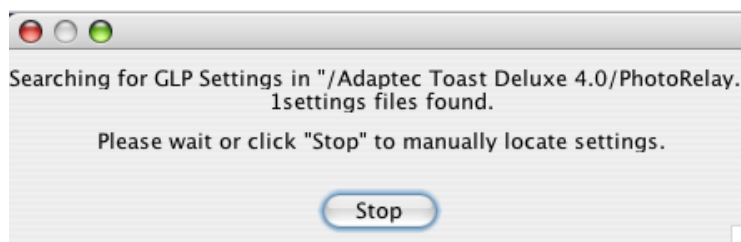


Windows XP Professional:
Select **About menu** > **About**.

Mac OS X:
Use the “BIOPAC GLP Administrator > About BIOPAC GLP Administrator” path.

Configuration

The search and selection of GLP settings files is handled by a sequence of two windows. The first window the user will see is the progress window. While this window is displayed, the GLP Administrator will proceed to search the local hard drives of the computer for any `glp_config.xml` files.

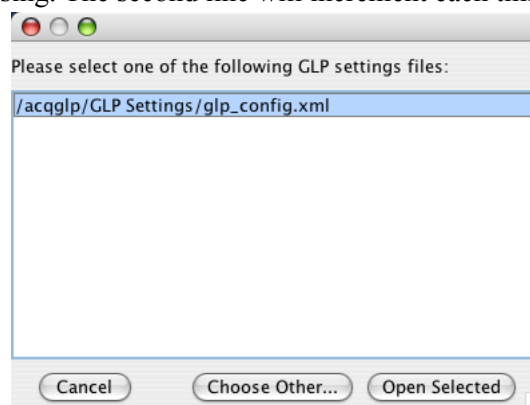


It may take several minutes to fully search all of the local hard drives, particularly for large hard drives with many files and folders. The search does not attempt to look on the network for settings files, only the local computer.

The first line of the window changes to reflect the current location that is being searched. In general, the contents of the hard drive are searched according to the top-level folder structure of the hard drive listed in alphabetical order. This line is not as much of a progress indicator; it is intended to change frequently enough to reassure the user that there is still activity progressing. The second line will increment each time a new settings file is found.

Once all of the hard drives have been exhaustively searched, this window will automatically disappear. The user can choose to interrupt the search at any time by clicking the “Stop” button.

Once the search is complete or has been terminated, the user will see a list of all of the settings files that were found:



This dialog contains a list of all of the GLP settings files that were located on the local hard drives. If the user interrupted the search, it will list all of the settings files located up until the time the user canceled. If no settings files were found, the list will be empty.

If the user clicks the “Choose Other...” button, a file chooser will be opened allowing the user to manually locate the **glp_config.xml** file.

Normally the automated search for GLP settings will occur only on the first installation of the software. After the first launch the persistent most recently used system should remember the appropriate location of the GLP settings. If desired, users can re-initiate a search for the GLP settings files.

Mac OS X: the menu item “File > Search Local Drives for GLP Settings” triggers a new search.

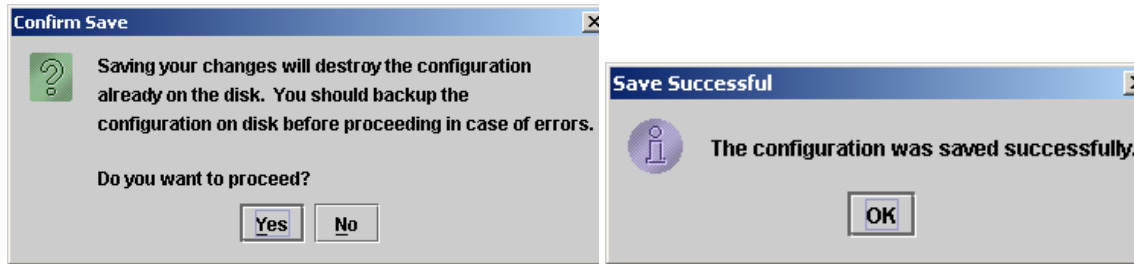
Recent Setting Persistency

The location of the most recently used settings is stored in a properties file named “`glp_admin_mru`”. The GLP Administrator automatically creates this file when the application exits. Users will never need to interact directly with this Properties file.

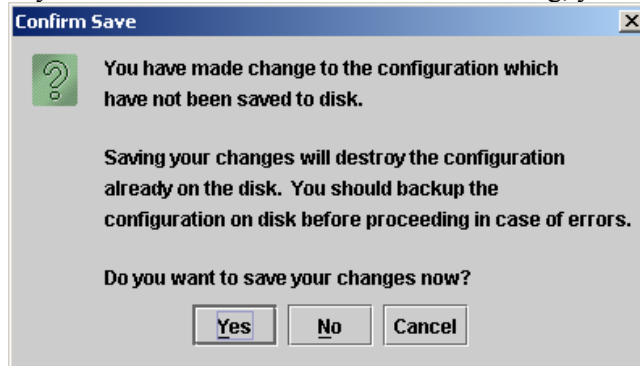
- The most recently used settings are independent for each user account under which the GLP Administrator tool is used.
- *Mac OS X:* this file is invisible to the user in the Finder, but can be accessed from the Terminal.

Saving Configurations

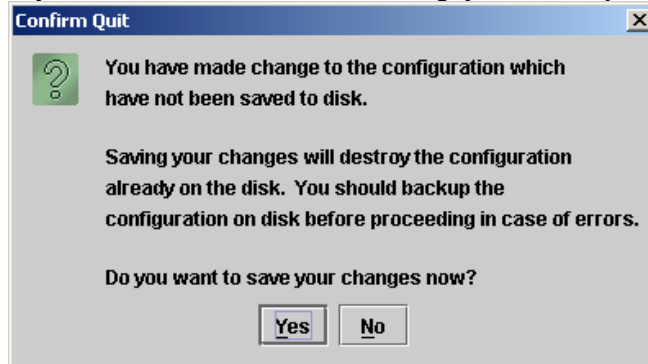
Use **File > Save** to save changes to the GLP configuration settings.



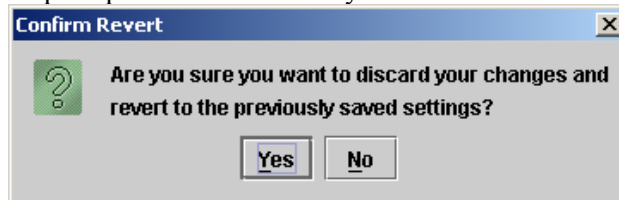
- If you choose another menu item before saving, you will be prompted to save.



- If you use **File > Quit** without saving, you will be prompted to save.



- If you select “No” from a save changes prompt (Confirm Save or Confirm Quit), you will be prompted to confirm that you want to revert to the previous configuration settings.

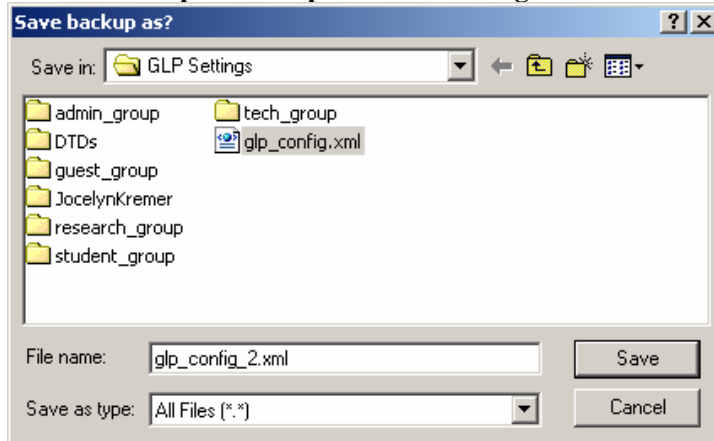


Using Configuration Backups

A configuration backup retains all of the information about users, permissions, groups, and operations that can be configured with the GLP Administrator application. It is a good idea to make periodic backups of the GLP settings. Keeping backups in a separate location can help you recover the GLP System easily in case of failure.

To create a backup of the current configuration settings:

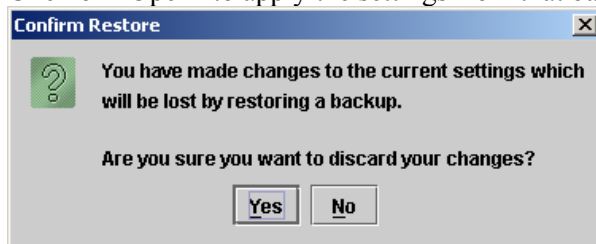
1. Select **“Backup > Backup Current Settings...”** from the GLP Administrator window.



2. Enter the filename and location where you want to save the backup file.
 - The backup will contain any unsaved modifications you have made to the GLP configuration before creating the backup. If you want a backup to mirror the current settings on disk, choose **“File > Revert”** before creating your backup.

To restore the settings contained within a backup:

1. Select **“Backup > Restore from Backup File...”** from the GLP Administrator window.
2. Locate the backup file (these files end in .gbf).
3. Click on **“Open”** to apply the settings from that backup file.



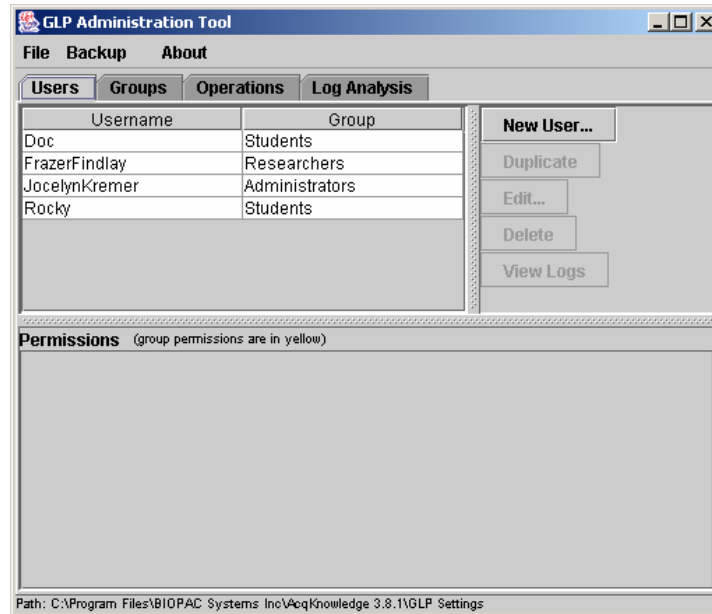
- Note that **“restore”** will overwrite any unsaved changes you have made to the GLP configuration before restoring the backup. If you want to save your changes before restoring, choose **“File > Save”** or create another backup.

For added backup security:

1. Copy **“.gbf”** files created by the configuration backup in the GLP Administration Tool onto a CD.
 - The caveat is that the **“.gbf”** files contain only the groups, operations, and specific user permissions themselves; they do not contain copies of the user logs. This method requires only a single file, rather than requiring users to copy a complete directory structure with all of its permissions. The only way to backup user logs is to copy all the **“glp_user_log.xml”** files with a separate utility.
2. Later, if something goes wrong, restore the configuration from a **“.gbf”** file on the CD.

Working with Users

You modify users on the **Users** tab in the main GLP window. Click on the **Users** tab to generate the interface for managing GLP user accounts.



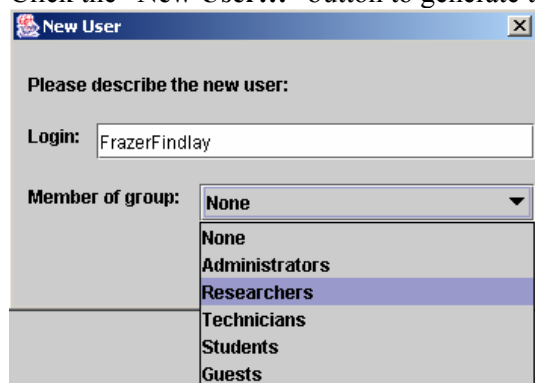
Add New Users

1. The first step to add a user is to create a computer user account to allow the user to log on to the computer. This account is also used to identify the user for the file system permissions to ensure security. The user accounts must be valid for the computer with the GLP Administration Tool installed.
 - User names should only consist of alpha numeric and space characters.
(Even if the OS allows user names with characters like ~, ^, etc., the GLP Administration Tool will fail if these characters are used for GLP user names.)
 - If you do not have the required permission and need help creating a computer user account, contact your Systems Administrator or consult the guides for your computer and/or computer or operating system.
2. The second step to add a user is to create a GLP user account. To successfully create a GLP user account, you must first have created an operating system user account. If you attempt to create a GLP user account for a user that does not have an operating system user account, the software will warn you that the computer user account needs to be created. If you have do not have a valid user account, an error prompt will be generated.



Creating GLP User Accounts

- A) Click on the “**Users**” tab in the main GLP Administration Tool window.
- B) Click the “**New User...**” button to generate the New User dialog:



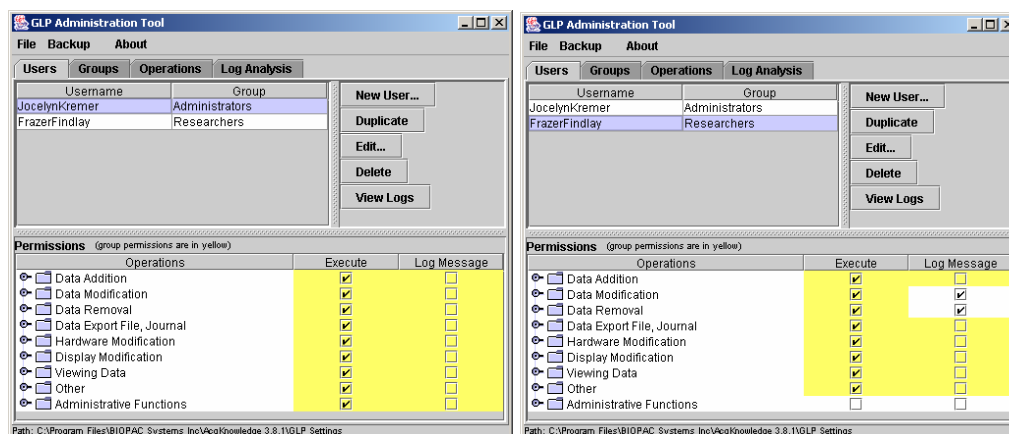
- C) Enter a valid login name.
Mac: Enter the Short Name Login Short Name Login of the user in the edit field next to “Login”. This short login name should be thirty-two (32) characters or less.
- D) Select a group name or “None” from the popup menu next to “Member of group”. A user’s group can be changed later.
- E) Click the “Create” button. The user will now appear in the list of known users in the upper left of the Users tab of the main GLP Administration Tool window.

Modify a User’s Permissions

Each user has a unique set of Execute and Log permissions that indicate what that user can perform with the *AcqKnowledge* software and when the user must enter extra information when performing operations.

To modify a user’s permissions:

1. Click on the **Users** tab in the main GLP Administration Tool window.
2. Locate the User in the list in the upper left corner and click his/her name once.
3. The User’s current permissions will be displayed in the **Permissions** window:

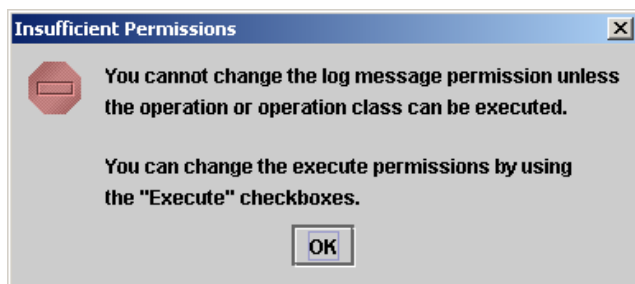


The permissions window displays a tree containing all of the operations that can have permissions associated with them. Operations are grouped together into folders based upon the area of the software they affect. For example, the “Data Removal” folder contains all of the operations that can delete data out of a graph file or a journal.

The permissions for every operation within an Operation folder can be toggled at the same time by using the checkboxes next to the Operation folder. For example, if the Execute permission box is checked for the “Other” operation folder, the user gets the ability to execute every operation within that operation folder:

If you have suppressed Log Messages for any of the operations, they will not be affected unless the log message checkbox for the operation folder is toggled.

If the user is a member of a group, he/she will be allowed to execute all of the operations allowed for that group. In addition, if the group is able to perform an operation without entering a log message, the user will have that ability as well.



Permissions that are inherited from a user's group are displayed as entries with a yellow background. Group Permissions (with the yellow background) cannot be changed. This is because a user can never have less Permission than allowed to other members of the group—only more. To change the state of Permissions in a yellow background, you need to assign the user to a different group where that Permission is not set.

To view the operations contained in one of these operation folders, click the arrow next to the folder to reveal its contents. For a full list of Operations, see Appendix A on page 30.

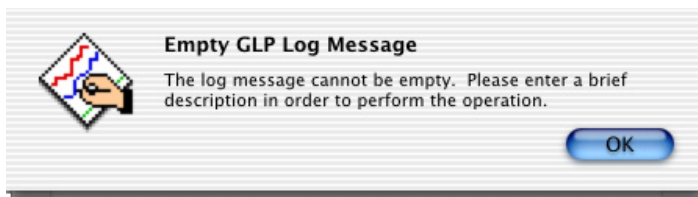
a) **Execute**

To give a user the ability to execute a certain operation within *AcqKnowledge*, click the corresponding checkbox in the "Execute" column. When the box is checked, the user will be able to perform the operation.

- For example, to allow a user to overwrite existing information in a graph file during acquisitions, you would click the box to the right of "Overwriting Files" to give the user Execute permission for the "Overwriting Files" operation, as shown above.

b) **Log Message**

Notice that there is a check in the "Log Message" column too. This means that whenever the user executes the "Overwriting Files" operation, they will be required to enter a description each time they overwrite a file.

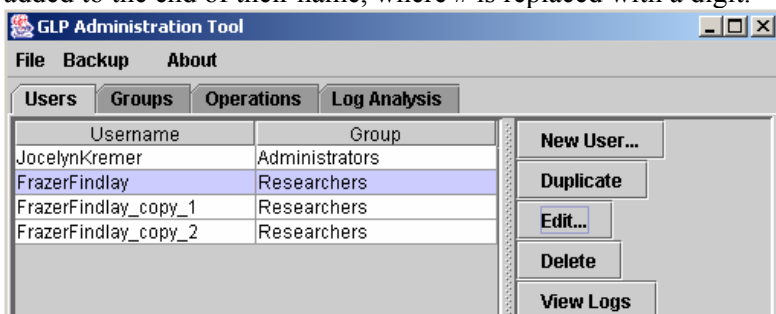


- If you want the user to be able to execute the operation without providing further details, click the checkbox in the "Log Message" column to uncheck the Log Message permission. The user will be able to overwrite files. To the user, it will seem like the operation is proceeding as it would without the GLP System present, but the operation will still be logged by the GLP System. This allows for operations that are not critical to an SOP to be performed in a user-friendly manner.

Duplicate User Settings

If you are adding new users to a GLP System and want them to have settings identical to an existing user, you may find it useful to make a copy of the existing user account instead of configuring a new one from scratch. To duplicate a user account:

1. Click on the **Users** tab in the main GLP Administration Tool window.
2. Locate the existing user account you want to duplicate in the list at the top left and click it once to select the row.
3. Click the “Duplicate” button. This will create a new user at the bottom of the list with `_copy_#` added to the end of their name, where # is replaced with a digit.



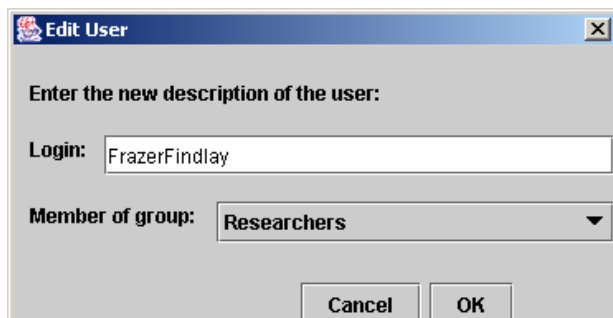
4. Click once on the newly added copy account to select it.
5. Click the “Edit...” button.
6. Type in a valid user name.
Mac: Use the short name login of the new user’s Mac OS X user account.
7. Click “OK” to confirm your changes.

Note If multiple users share the same permissions, you may want to consider using groups to ease administration. Using groups will allow you to modify permissions for multiple users from a single location. If you use the Duplicate command, you will need to manually change the permissions for each individual user.

Edit — Change a User’s Login Name

If you change the short name login associated with a user account or add user accounts through the “Duplicate” command, you may need to change the login name to correspond to the new user account settings. To change the username for a GLP user account:

1. Click the **Users** tab in the main GLP Administration Tool window.
2. Locate the old username in the list at the top left and click it once to select the row.
3. Click the “Edit User...” button.



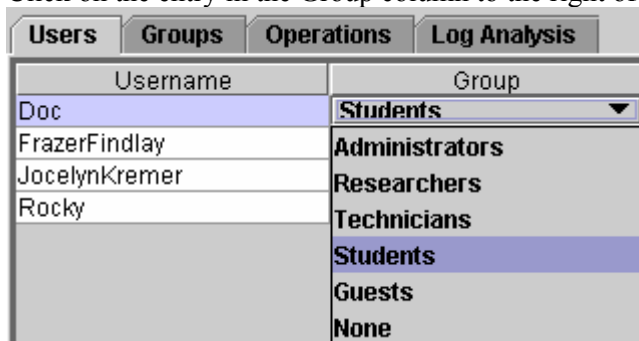
4. Enter a new valid user name.
Mac: Enter the new short name login corresponding to the Mac OS X user account in the “Login” text field.
5. Click “OK” to confirm your changes.

Add a User to a Group

To add a user to an existing group, there are two options.

A) Assign the user to a new group.

1. Click the **Users** tab in the main GLP Administration Tool window.
2. Locate the username in the list at the top left.
3. Click on the entry in the Group column to the right of the username.

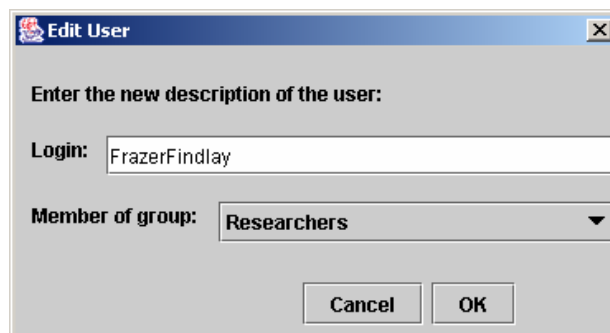


4. Choose the new group to assign the user to from the popup menu that is generated, or choose "None" to not assign the user to any group.

The Permissions display will be adjusted to reflect the new permissions the user has obtained from the new group.

B) Use the full "Edit User" dialog to change the user's group.

1. Click the **Users** tab in the main GLP Administration Tool window.
2. Locate the username in the list at the top left and click it once to select the user.
3. Click the "Edit User..." button.



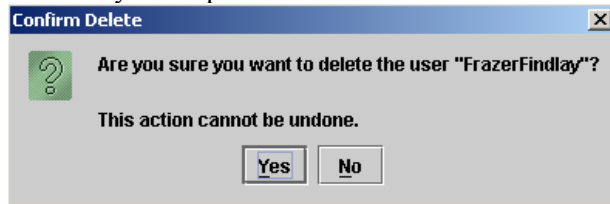
4. Choose the group the user should be assigned to from the "Member of group" popup menu.
5. Click the **OK** button to confirm your changes.

The permissions display will be adjusted to reflect the new permissions the user has obtained from the new group.

Delete a GLP User Account

When a user will no longer be working with the GLP system, it's a good idea to remove that user's account to prevent from any unauthorized access to the GLP system. This will help to maintain system security. To delete a GLP user account:

1. Click on the **Users** tab of the main GLP Administration Tool window.
2. Locate the existing user account you want to erase in the list at the top left and click it once to select the row.
3. Click the "Delete" button to remove the user.
4. Confirm your request.



Note: When you delete a user account, the GLP logs for that user are also deleted. For archival purposes, you may wish to export the user's log before removing their account.

View User Logs

A per-user log is associated with each user to tracks the user's logins and logouts for the GLP System and all of the operations the user has performed. The User Log is saved when you close/exit the program.

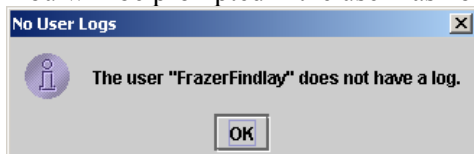
To view the entire log for an individual user:

1. Click on the **Users** tab of the main GLP Administration Tool window.
2. Locate the user name in the list at the top left and click it once to select the row.
3. Click the "View Logs" button. A log window will be generated to display all log entries associated with the selected user. See **Working with Logs** for details.

A window titled "Log for JocelynKremer" showing a table of log entries. The table has columns: Date, Application, User, Machine, Type, and Message.

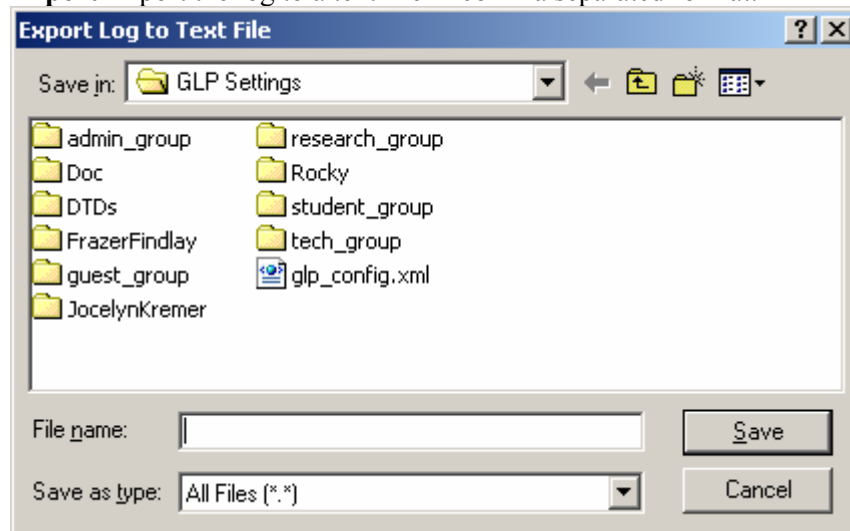
Date	Application	User	Machine	Type	Message
Thu May 27 08:09:48 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Login	
Thu May 27 08:09:51 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	New Data File or File (mp150 : 0003A9):
Thu May 27 08:10:16 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	About (mp150 : 0003A9):
Thu May 27 08:10:24 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	Equation Generator, Expression (mp150 : 0003A9):
Thu May 27 08:26:56 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	Exit (mp150 : 0003A9):
Thu May 27 08:26:56 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	Close File (mp150 : 0003A9):
Thu May 27 08:26:56 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	Close File (mp150 : 0003A9):
Thu May 27 08:26:59 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Operation	Close File (mp150 : 0003A9):
Thu May 27 08:27:00 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	JOCELYNPC	Logout	

- You will be prompted if the user has no logs yet.

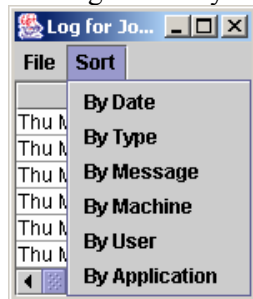


File menu **Close** Close the log window.

Export Export the log to a text file in comma separated format.



Sort menu Sort log entries by date, type, message, machine, user, or application.



To restrict the displayed entries to a specific range, you can use the query features on the “Log Analysis” tab of the main window (see page 21).

Log File Maintenance

There are two sets of logs. The one that tracks everything and is accessible from the administrator application may need to be cleared periodically. After extended periods of usage, the per-user audit trails can grow quite large and the performance of *AcqKnowledge* and the Log Analysis features of the GLP Administrator may become sluggish.

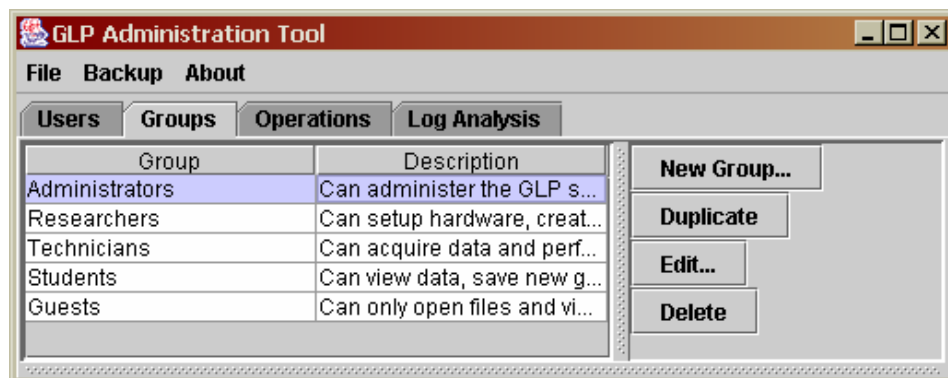
- It is recommended that the per-user audit trails be cleared out periodically to maintain the system in a functional state.

The logs can be cleared using the “File > Clear Logs” menu item.

A second set of audit trails is stored in the system.

- How often it may need to be cleared depends on how heavily the system is used. The way to determine if it needs to be cleared is if, when trying to view logs in the GLP Administrator, an "Out Of Memory Exception" warning is shown instead of the per-user log (essentially, the log is too large to fit in memory).
- Users should perform this as maintenance once a year or so.
- Clearing the logs is a workaround for reducing the log size. Note that clearing the per-user logs has no effect on the logs that are stored along with each graph file.

Working with Groups



Groups represent a set of users that have a common set of permissions within the GLP System and allow for ease of administration. When the Permissions are changed for a group, they are automatically changed for each user that is a member of the group.

You can customize the permissions of groups to match categories of users of your SOP. Doing so can provide a quick way to ensure newly added users gain the proper permissions as required by your SOP. In addition, if your SOP changes you can quickly add or remove the necessary operations allowed for users by simply modifying the group settings.

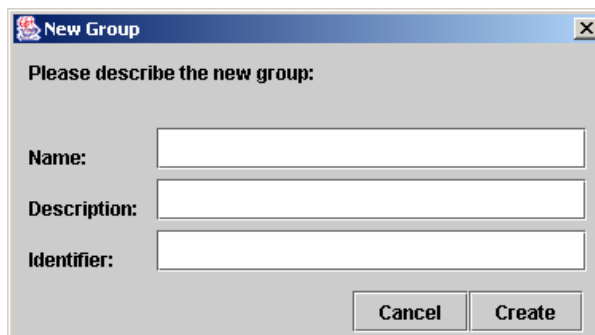
Default Groups

When you first install the GLP System, a set of generic, predefined groups will be available. You can extend, remove, or modify the default groups to match your SOP. The default groups are intended to be generic and provide a quick way for a laboratory to establish the GLP System.

Group	Description
Administrator	Access to all areas of the software and will not be required to enter a log message when performing any operations. This group is intended to encompass system administrators configuring the GLP System, but it may be extended to include SOP developers who are constructing default graph templates for researchers.
Researcher	Access to all areas of the software with the exception of the GLP administrative functions (setting auto-logout timeout, toggling automatic backup after acquisition, and specifying the auto-configuration of the AcqKnowledge GUI based on user permissions). Researchers can also view the GLP modification logs in order to review changes made by others to the files. Researchers will be required to log all operations that modify or remove data. All other operations will be logged automatically, but the user will not be required to insert a specific message to accompany them.
Technician	Access to all areas of the software with the following exceptions: GLP administrative settings; removing data from a graph; overwriting data on an acquisition; modifying the hardware setup (with the exception of changing acquisition parameters—for example, adjusting latencies based on system load conditions). Technicians can also connect to different MPs, connect to different network adapters, and add new MPs in a multiple-unit system. Technicians will be required to log all operations that modify or add data (except typing into a journal), adjust hardware settings, or export data to the clipboard.
Students	Mostly limited to viewing data, although they will have the ability to export information to other applications. Students will be able to open graph files and templates, save graph files, modify the view of a graph file, and perform textual additions to a journal along with wave data and measurement export. Students will be required to comment copying information to the clipboard for data export or saving files.
Guests	Limited to viewing data only. Guests will be allowed to open data files and close them, but will not be allowed to print them or export them to other operations. Guests will not be required to enter log messages, as none of their operations will affect the data.

New Group

1. Click the “New Group” button on the main GLP Administration Tool window to generate the New Group dialog.
2. Fill in descriptions for the group:
 - a. Enter a **Name** for the group.
 - This name will be used in the group list displayed on the “Groups” tab and in other areas of the GLP Administrator user interface. It should be short and descriptive.
 - b. Enter a short **Description** of the types of users who will be members of this group.
 - c. Enter an **Identifier** identifier for the group.
 - Identifiers are used internally to distinguish multiple groups from each other and aren’t visible to regular users.
 - A group identifier can be 32 characters or less and should contain only letters, numbers, and underscores. It should not contain periods, spaces, or other punctuation.
 - A good method for choosing identifiers is to construct a short name with eight or less characters, like a short login name, and postfix `_group` onto the end. For example, `labtech_group` would make a good identifier.
3. Click the “**Create**” button to create your new group.
 - By default, the group will not have any Permissions.

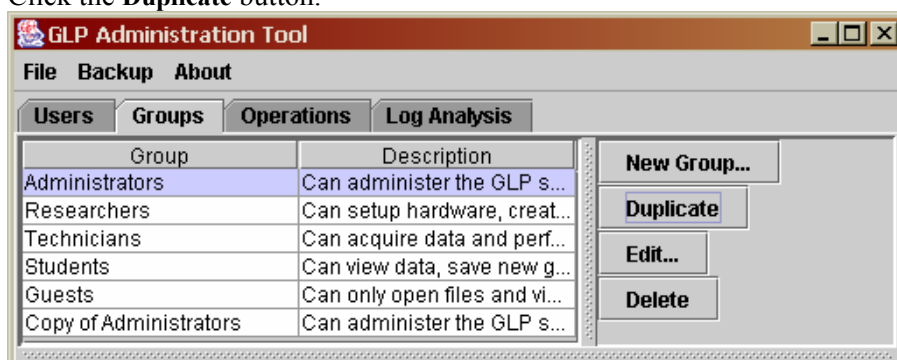


The image shows a dialog box titled "New Group" with a close button (X) in the top right corner. The main text inside says "Please describe the new group:". Below this text are three input fields: "Name:", "Description:", and "Identifier:". At the bottom right of the dialog are two buttons: "Cancel" and "Create".

Duplicate a Group

If you want to create a new group, you may wish to base it off one of the existing groups to avoid configuring the permissions from scratch. Note that changes to one of these groups will not affect the other group—both are independent groups. To duplicate an existing group:

1. Click on the **Groups** tab of the main GLP Administration Tool window.
2. Locate the group you want to duplicate from the list in the top left and click it once to select it.
3. Click the **Duplicate** button.

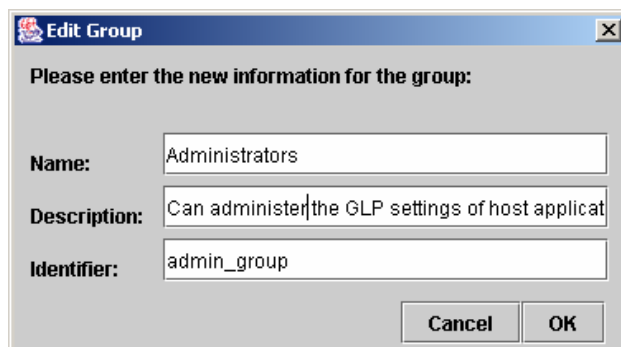


- A new entry will be created and added to the bottom of the list. It will take the name of the source group with “**Copy of**” added to the front. You can rename the duplicated group using the Edit Group command from the main GLP Administration Tool window.

Edit a Group's Information

You can change the name, description, or identifier of a group. To edit a group:

1. Click on the **Groups** tab of the main GLP Administration Tool window.
2. Locate the group whose name, description, or identifier you wish to change in the list of known groups at the top left, and click it once to select it.
3. Click the **Edit ...** button of the main GLP Administration Tool window to generate the Edit Group dialog.



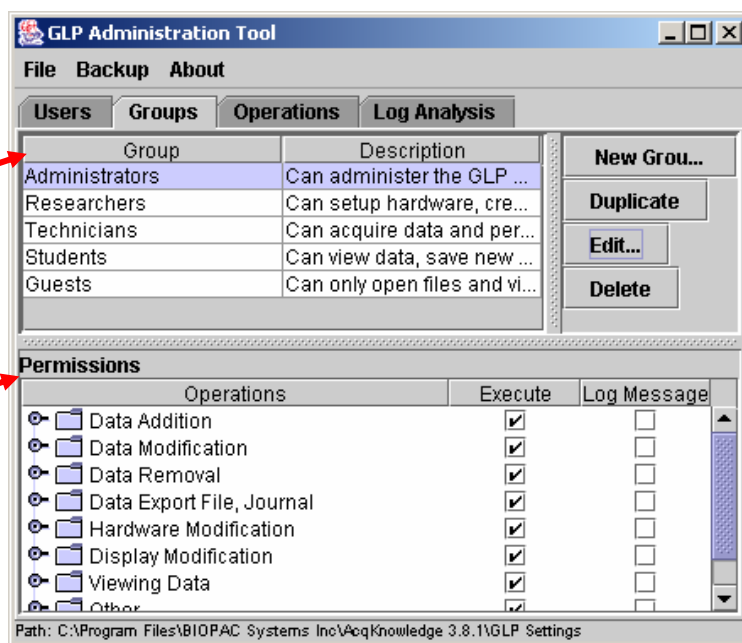
4. Change the settings for the group.
5. Click **OK** to accept your changes.

Modify Group Permissions

All of the modifications to groups are performed on the **Groups** tab of the main GLP Administration Tool window. Click on this tab at the top of the window to display the **Groups** interface:

At the top left is a list of all of the currently defined groups in the GLP configuration.

At the bottom is a list of operations organized into Operation folders (similar to how the Permissions are displayed on the Users tab).



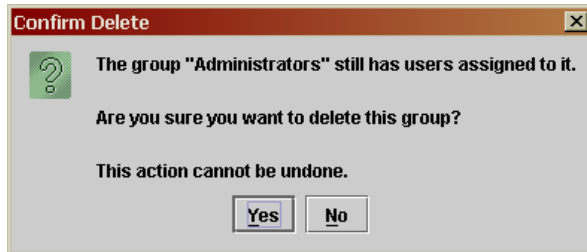
To modify a Group's permissions:

1. Locate the group in the list at the upper left and click the name of the group once to select it.
 - The Permissions window will display the settings for that group.
2. Locate the desired operation or operation folder and toggle the Execute and Log Message checkboxes as desired.
 - See [Modifying Permissions](#) on page 11 for details about how to toggle these checkboxes.
 - All Execute and Log Message permissions for a group are modifiable (unlike user permissions).

Delete a Group

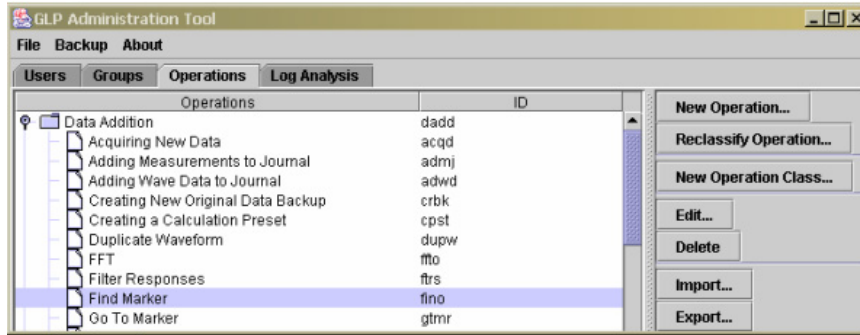
If a group no longer has any users associated with it or is no longer used, you may want to delete that group. You should not delete a group that still has users assigned to it. After you delete a group, you may want to run through all users to make sure that each user is still a member of a valid group. To delete a group:

1. Click on the **Groups** tab of the main GLP Administration Tool window.
2. Locate the group you want to delete from the list in the top left and click it once to select it.
3. Click the **Delete** button.



4. Confirm your request.

Working with Operations



The Operations tab of the GLP Administrator provides an interface for customizing the individual operations that are recognized by the GLP system. It is used only when upgrading an existing version of a BIOPAC software package, adding the GLP System to another BIOPAC application, or enabling your own software package to be incorporated into the GLP System.

✓ **Unless you are explicitly instructed** in documentation accompanying an upgrade of a BIOPAC product, you should not need to use anything on this tab.

New Operation

Delete

Reclassify

Import

New Class

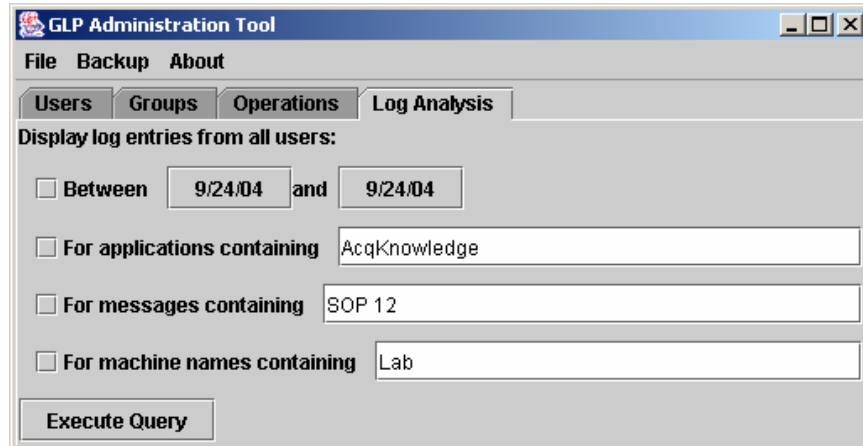
Export

Edit

Performing Log Analysis

You can view individual user logs from the **Users** tab, or you can search across the logs of multiple users. Unlike the *AcqKnowledge* modification log, the log entries for a single document being worked on by multiple users will be split across multiple user logs.

Use the **Log Analysis** tab of the main GLP Administration Tool window to specify criteria and search through the logs of all users and extract only specific entries.



1. Activate the desired search criteria by checking the box next it; you can use multiple search criteria at the same time.
 - a) A specified date range.
 - b) Entries from applications whose names contain an explicit piece of search text.
 - c) User entered messages containing an explicit piece of search text.
 - d) Log entries created on computers whose names contain an explicit piece of search text.
2. Specify the search criteria.
 - Type in the text field for the application, message, and machine name search criteria. For example, to search for log entries from all users from applications containing “*AcqKnowledge*”, messages containing “SOP 12”, and machine names containing “Lab”, the search criteria would look like the dialog shown above.
 - Specify the date range (see next page for details).
3. Click on **Execute Query** to perform the search through all user logs and display the results.
 - The GLP System does maintain the per-user logs persistently on disk, but it does not keep records of search queries performed with the GLP Administrator application. If you need to archive the results of a search, you must export them to a text file.

Specifying Date Range Search Criteria

You can restrict Log Analysis results to a specific date range, as specified at the top of the **Log Analysis** tab. The date range line contains two buttons showing the range of dates to search between, inclusively. The start and end dates are both initially set to the current date. You perform the same series of steps to set the start and end dates of the date range.

1. **Activate the date criteria** by checking the box next to the date range buttons.



2. **Click a date button** to generate the calendar for the start or end of the search range.

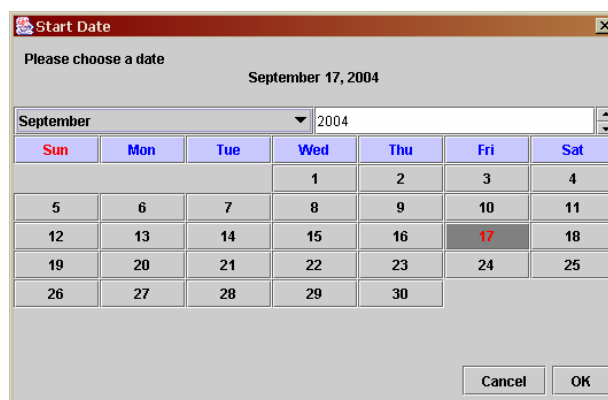


Start date

End date

At the top of this calendar is a textual representation of the date that reflects the date selected from the calendar.

- This date will be used in the search criteria when you click on the “OK” button.
- Today’s date is always indicated as a **red** number in the calendar.

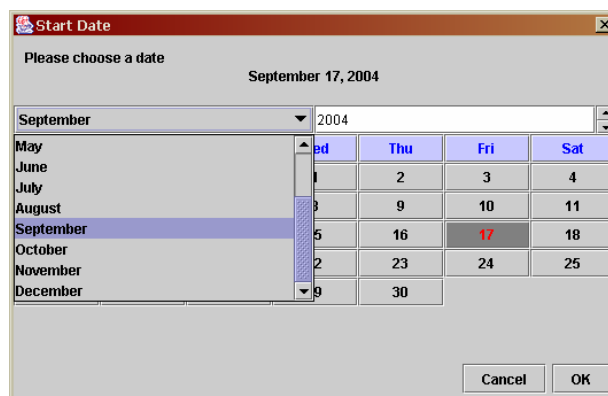


3. **Change the date** by clicking its number within the calendar.

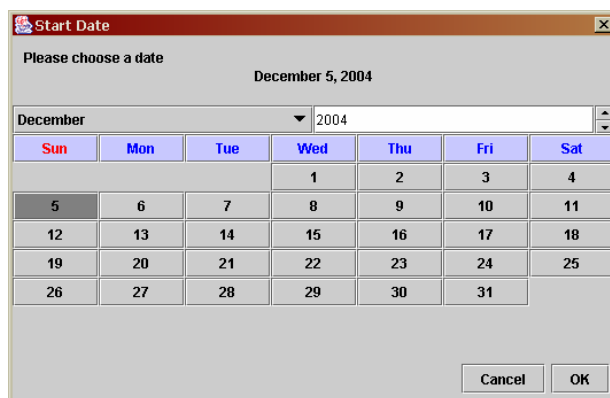
The date at the top will change. For example, if the “3” was clicked, the newly chosen date would be Friday, September 3rd.

4. **Change the month** using the popup menu directly above the day headings.

For example, to enter December 5, 2004 as the date, you would choose the new month from the list that is generated when you click on the month menu.



The selected date will be moved to that month. This change will be reflected in the date printed above the calendar. In this example, the date was changed to December 5, 2004.

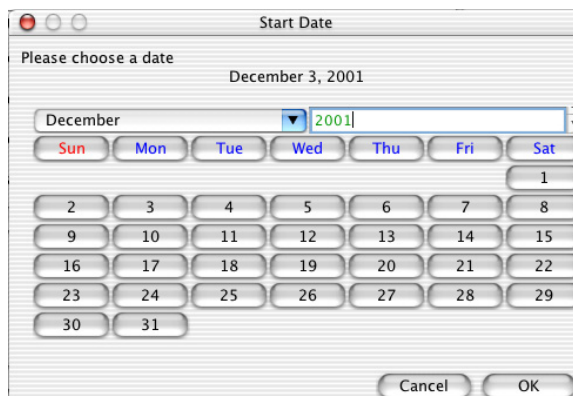


5. **Change the year** by clicking in the year text field and typing in the desired year.

- You must use four digits to designate the year. If you type "01" in this field, you will be flipped to the year 1 AD.

The layout of the days in the calendar will change to reflect the year entered. In this example, "2001" was entered.

Notice that the chosen date has changed to the new year and "December 3rd, 2001" is printed above the calendar.



6. To complete this example and, click on the "5" button in the Wednesday column to move to the 5th.
7. Click the **OK** button when the date printed above the calendar shows the desired date.



- In this example, the date range for the search criteria will start on December 5, 2001 and end on February 26, 2002.



Working with Logs

The GLP System maintains two separate logs:

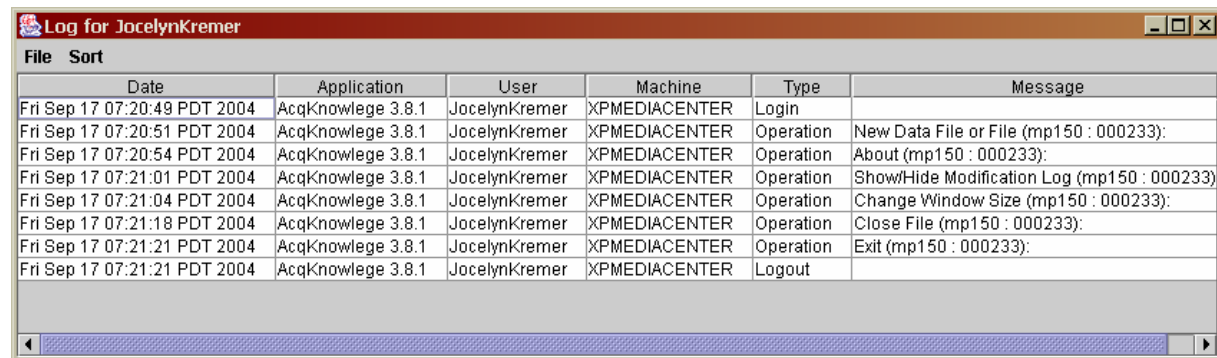
- Graph-specific audit trail log (saved when the graph is saved).
- Per-user audit trail log (saved when you close/exit the program).

Both log types capture every keystroke/operation. If you type a five letter word in the journal, the log will capture five keystroke entries. See the table of operations starting on page 30 for details.

TIP To minimize log clutter from text entry, use Wordpad or TextEditor to type the desired text and then paste it to the journal. This will generate a single log entry “Pasting in the journal” rather than a “Typing text to journal” entry for every keystroke.

The GLP Administrator allows you to analyze the per-user audit trails. To generate a log window that displays all of the corresponding log entries, click on either the “View Logs” button in the “Users” tab of the main GLP Administration Tool window or the “Execute Query” button on the “Log Analysis” tab.

You can have multiple log windows open at the same time, allowing you to compare full logs of different users or compare different log query results.



Date	Application	User	Machine	Type	Message
Fri Sep 17 07:20:49 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Login	
Fri Sep 17 07:20:51 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	New Data File or File (mp150 : 000233):
Fri Sep 17 07:20:54 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	About (mp150 : 000233):
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	Show/Hide Modification Log (mp150 : 000233):
Fri Sep 17 07:21:04 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	Change Window Size (mp150 : 000233):
Fri Sep 17 07:21:18 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	Close File (mp150 : 000233):
Fri Sep 17 07:21:21 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Operation	Exit (mp150 : 000233):
Fri Sep 17 07:21:21 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPEDIACENTER	Logout	

Logs are presented as a table where each row contains a single log entry and columns represent:

- a) **Date** the entry was made
- b) **Application** that was running when the entry was made
- c) **User** identified by the short login name of the user using the application, the name of the computer where the program was running
- d) **Machine** that is being used, as identified by the name assigned to that computer
- e) **Type** of the entry (login, logout, operation, or failed authorization).
- f) **Message** accompanying the entry.

If you cannot see any of these columns, use the horizontal scrollbar at the bottom of the window to reveal the hidden columns.

To resize the entire window, click in the lower right hand corner of the window and drag, similar to resizing windows in other applications.

To resize the width of an individual column, move the mouse to the line between two columns labels (at the top of the column). The cursor will change from a pointer to a horizontal arrow. Click the mouse and drag to specify the new column width.

To close a log window, click its Close box in the title bar or choose File > Close.

Types of Entries

A log window can display four types of entries:

Type of Entry	Description
Login	Indicates when a user began using an application and provided his/her login name and password to the GLP system.
Logout	Indicates when a user quit the application or was logged off automatically after the application timeout.
Operation	Indicates when the user successfully performed an operation with the software. These entries can include operations for which users have Execute permission as well as operations that were authorized by other users. Log entries for operations authorized by another user will begin "Authorized by (short login name)". Any user-specified Log Message will appear after the end of the operation name and hardware serial number.
Failed Authorization	Indicates when the user attempted to perform an operation for which he/she didn't have Execute permission and did not get another user to authorize the operation. You can use Failed Authorization entries to search for intentional or accidental deviations from your SOP.

Sorting Log Entries

	By Date	Application	User	Machine	Type	Message
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Login		
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Logout		
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	About (mp150 : 000233):	
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	Change Window Size (mp150 : 000233):	
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	Close File (mp150 : 000233):	
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	Exit (mp150 : 000233):	
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	New Data File or File (mp150 : 000233):	
Fri Sep 17 07:21:01 PDT 2004	AcqKnowledge 3.8.1	JocelynKremer	XPMEIACENTER	Operation	Show/Hide Modification Log (mp150 : 000233):	

When a log entry window is opened, the log entries are grouped by their username. You can sort log entries by date, type, message, machine, user, or application. Most of the columns will be sorted in alphabetical order.

A) Sort by Columns

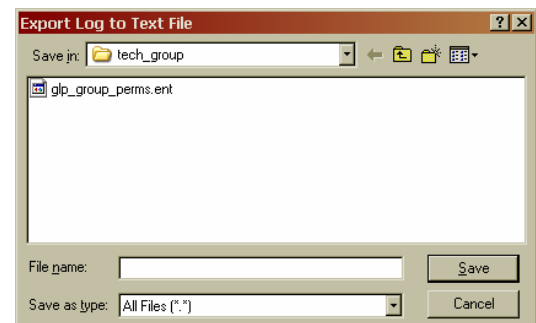
- Click once on a column label (at the top of columns) to sort the entries in increasing order based on the values of that column.
- Click on a column label a second time to sort the entries in decreasing order based on the values of that column.

B) Sort menu

- Choose the corresponding menu item to sort the log entries in ascending order by that column.
- Choose the menu item again to sort the log entries in descending order by that column.

Exporting Log Window Contents

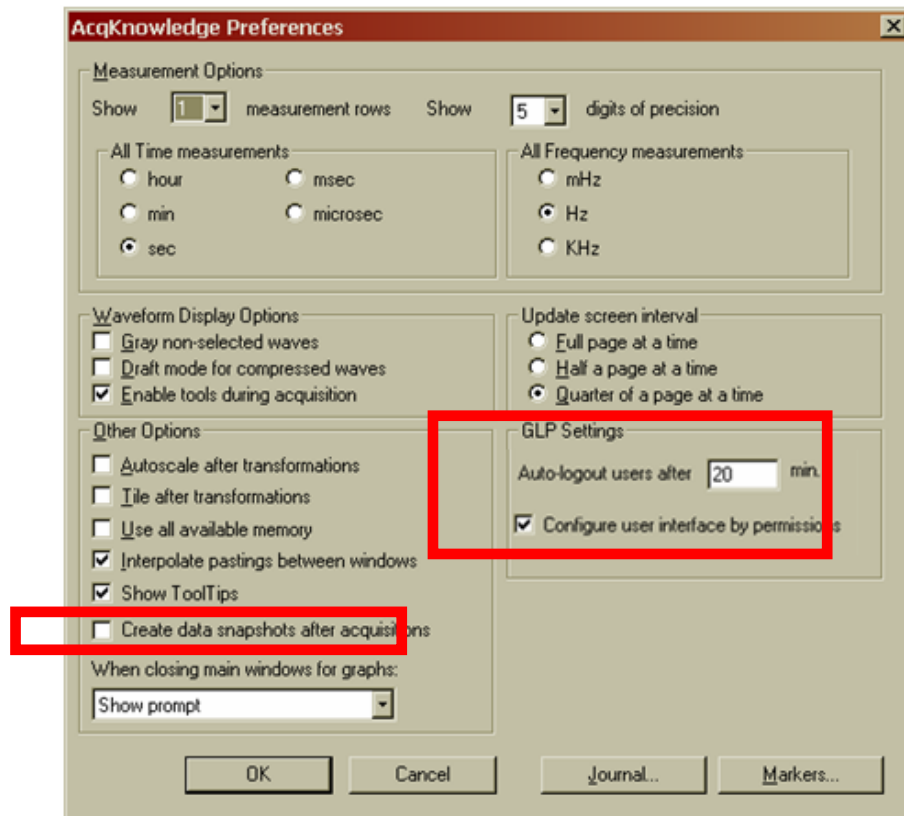
You can save the contents of a log window into a tab delimited text file by choosing File > Export... and specifying a file name in the file chooser that appears. You can then open the exported text file with Microsoft Excel or another application to create a hardcopy printout of the log window contents. You may also want to export log window contents to perform searches through log entries with more detail than the GLP Administrator application provides. When you use File > Export to export the log to a tab-delimited text file; the order of the entries in the created file will match the order of the entries in the log window.



Configuring AcqKnowledge

In addition to the User Permissions and Log Analysis features that are controlled with the GLP Administrator application, there are three AcqKnowledge-specific settings that can be useful in a GLP environment. All of the operations for changing these settings are located in the “Administrative Functions” operation folder in the GLP Administrator permissions areas. Only users with sufficient privileges on their GLP user account can modify the AcqKnowledge-specific settings. Members of the default “Administrators” group will have the execute permission to change all of these settings.

These three settings are located in the AcqKnowledge Preferences dialog accessed through Display > Preferences:



Create data snapshots after acquisitions

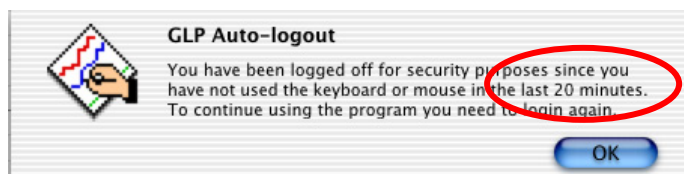
AcqKnowledge can be configured to automatically take a snapshot of the data within a graph file immediately as an acquisition is completed either normally or through using the Stop button. These snapshots are retained within the graph file. When an acquisition finishes, the contents of the graph contain the original data as read in from the hardware unit. By allowing AcqKnowledge to automatically create snapshots at the end of acquisitions, the program facilitates retention of original data in a format that cannot be changed by any user. Additionally, the original data will be automatically kept with the graph file as it is moved to different media or renamed.

To enable the snapshot function, locate the “Other options” box of the Display > Preferences > General dialog from AcqKnowledge and check “Create data snapshots after acquisitions.” This setting will apply to all users of the software.

IMPORTANT: To satisfy GLP record retention requirements, in addition to using this automatic snapshot, you should retain physical media with the original graph file saved to disk immediately after an acquisition.

Auto-logout

When used with a GLP System, *AcqKnowledge* will automatically log users out after a specified period of inactivity. This period is specified in minutes in the “GLP Settings” box of the Display > Preferences dialog.



Specify this period in the Display > Preferences dialog

“Inactivity” means a period of time in which the user has not used either the mouse or the keyboard for the *AcqKnowledge* application. The software maintains a timer that is reset whenever the mouse or keyboard is used.

Note: The timer is only reset when a mouse button or a keyboard key is pressed; mouse motion alone will not reset the timer.

If the timer reaches the timeout specified in Display > Preferences > GLP Options > Auto-logout after “X” minutes, the user will be required to re-enter his/her login and password to continue using the *AcqKnowledge* software.

The user will be prompted to re-login the next time he/she attempts to use the keyboard or the mouse. This means that auto-logout will not affect the completion of any long running acquisitions or transformations that are in progress at the time the user is automatically logged out due to inactivity.

If a dialog is open, expiration of the auto-logout timer will not require reauthorization until after the displayed dialog is closed.

Configure user interface by permissions

Users may not have access to all areas of the *AcqKnowledge* software based on their permissions as assigned with the GLP Administrator application. *AcqKnowledge* offers a way to allow the GUI to restrict itself to only show the operations a user will successfully be able to perform.

When “Configure user interface by permissions” is checked in the Display > Preferences dialog, menu items and buttons that correspond to operations a user does not have permission to perform will be removed from the GUI.

- For example, if a user doesn’t have permission to perform the “Integrate” transformation and the Configure option is active, the “Integrate” command will be removed from the Transform menu display.

Some menu items may correspond to multiple operations. These menu items will not be removed from the GUI, regardless of the user’s permissions. An example of this is the Edit > Clear All menu item. This item corresponds to two distinct operations, clearing wave data in a graph window and removing the text of a journal. Because the menu item corresponds to multiple operations, it will not be removed automatically from the GUI.

By using the “Configure user interface by permissions” option, you can simplify the application for your users and prevent them from encountering many Failed Authentication permission dialogs. This works best in an environment where reauthorization of operations by other users occurs infrequently. Users will not be able to access operations for which they do not have Execute Permission.

By not using this option, the user interface will contain all of the controls and menu items that a user with permission to perform every operation would see. When a user attempts to perform an operation for which they do not have Execute Permission, the reauthorization dialog will be generated. If there is no authenticating user, a failed authorization entry will be made in the GLP user logs and *AcqKnowledge* will not perform the operation. Setting “Configure user interface by permissions” off is useful in environments where users may need to perform operations not allowed by their permissions.

Applicability of menu.dsc Configurations

Previous versions of *AcqKnowledge* have included a menu configuration file to remove menu items. The text file was named **menu.dsc** and was installed in the same directory as the *AcqKnowledge* application.

If a **menu.dsc** file is present on your computer, it will override any user's execute permissions corresponding to that menu item. Which is to say, menu entries that the configuration file specifies should be removed will be removed from the GUI regardless of the user's execute permissions.

To prevent access to software functionality, you are encouraged to configure *AcqKnowledge*'s user interface through the "**Configure user interface by permissions**" setting in combination with appropriate user permissions; using **menu.dsc** files is not a secure solution.

Appendix A — Operations

→ Operations for AcqKnowledge GLP for Mac OS X are on page 33.

Operations for AcqKnowledge GLP under Windows XP Professional — see table below.

- Use the table to indicate user permissions for your Administrator to establish:

E Execute (allow)

L Require Log Message

AcqKnowledge GLP for Windows XP Professional					
		E L		E L	
Data Addition	Acquire New Data Acquisition Settings Summary to Journal Add Measurements to Journal Add Wave Data to Journal Create New Data Snapshot Create a Calculation Preset Duplicate Waveform FFT Filter Responses Find Marker Gastric Wave Analysis Gastric Wave Coupling Go To Marker Heart Rate Variability IFFT			Insert Marker Insert Measurements into Graph Insert Waveform Marker Summary New Data File or File New Histogram Graph New Offline Averaging Graph Open Histogram Options Panel Power Spectral Density Rate Rate Transformation Selecting Measurements Stop Acquiring Time and Date Stamps Typing Text into Journal	
Data Modification	Absolute Value Adaptive Filter Arc Tangent Base 10 Log Change Displayed Measurement Change Marker Location Connect Endpoints Convolution Copy Wave Data Correlation Coupled WFLC Derivative Difference Edit Marker Label Equation Generator Expression Exponential FIR Bandpass Filter FIR Bandstop Filter FIR Filters FIR Highpass Filter FIR Lowpass Filter FLC Function IIR Bandpass Filter IIR Bandstop Comb Filter IIR Bandstop Filter IIR Filters IIR Highpass Filter IIR Low + Highpass Filter IIR Lowpass Filter			Integral Integration Inverse Mean Square Error Limit Mean Square Error Modify Channel Labels Modify Channel Units Modify Horizontal Axis - Precision Modify Horizontal Axis - Time, Frequency, Arbitrary or Offset Modify Vertical Axis - Precision Natural Log Noise Organize Channel Presets Paste Waveform Pasting Clipboard Data Into The Journal Rename Presets, Standard and Custom Resample Graph Resample Waveform Sine Smoothing Square Root Template Function Threshold Undo Wave Math Wavelet Decomposition Wavelet Recomposition WFLC	

AcqKnowledge GLP for Windows XP Professional					
E L			E L		
Data Removal	Clear Text in the Journal Clear Wave Data Cut from Graph Delete All Presets, Standard & Custom Delete Preset(s), Standard & Custom		Erasing a Marker Overwriting Data on Acquisitions Overwriting File Removing a Waveform Rewind Function		
Data Export File, Journal	Acquisition Settings Summary to Clipboard Copy Graph to Clipboard Copy Journal to Clipboard Copy Measurements to Clipboard Copy Wave Data to Clipboard Cutting from Journal		Export Modification Log Graph Merge New Graph New Journal Saving a Graph Saving a Journal		
Hardware Modification	Add New MP Devices Modify Acquisition Parameters Modify Advanced Averaging Parameters Modify Channel Parameters Modify Manual Control Parameter Modify Sound Feedback Parameters		Modify Stimulator Parameters Modify Triggering Parameters Switching Between MP Devices Switching Between Network Adapters Update Firmware		
Display Modification	Adjust Grid Line Spacing Adjust Grid Parameters Autoplot Autoscale Horizontally, all Channels Autoscale Horizontally, to Length of Active Channel Autoscale Vertically, all Channels Autoscale Vertically, one Channel Autoscale after Transformation Center Horizontally (X/Y mode) Center Vertically Change Font Change Markers Preferences Change Proportion of Journal to Graph Change Proportion of Modification Log to Graph Change Wave Tool Change Window Position Change Window Size for Graph and Journal Change Selected Area Chart Display Compare Waveforms Digit of Precision Display Mode - Scope, Chart, X/Y or Overlap Dot Plot Dot Size Draft Mode for Compressed Waves Enable Tools During Acquisition Find Peak, Find Next Peak, Find All Peaks Frequency Measurement Units General Preferences Gray non-selected Waves Include Channel Number Include Measurement Name Include Time Value		Journal Preferences Last Dot Only (X/Y mode) Line Plot Lock/Unlock Grid Markers Preferences Maximizing Window Minimizing Window Modify Input Value Display Settings Modify the Horizontal axis - Scale and Initial Offset Modify the Vertical axis - Scale and Initial Offset Number of Measurement Rows Optimize Range Overlap Waveforms Reset Chart Boundary Scroll Select All Separate Line for Each Measurement Show/Hide Channel Numbers Show/Hide Grids Show/Hide Hardware Show/Hide Journal Show/Hide Markers Show/Hide Measurements Show/Hide Toolbar Step Plot Tabs Tile Waveforms Tile after Transformation Time Measurement Units Update Screen Interval; Full, Half, or Quarter Page at a Time Use Measurement Interpolation Waveform Color Waveform Order Wrap Text to Window Zoom Forward and Back		

AcqKnowledge GLP for Windows XP Professional					
E			L		
Viewing Data	About		Printing Graph		
	About MP#		Printing Journal		
	Close Data View		Printing Modification Log		
	Close File		Show Input Values		
	Create Data View		Show Original Data		
	Opening a Data File or Journal		Show/Hide Channels		
	Print Setup		Statistic		
Other	Application Notes From The Web		Interpolate Pasting Between Windows		
	Change Default Graph Close Action		Toggling Overwrite Warning		
	Exit		Use all Available Memory		
Administrative Functions	Data Snapshot after Acquisition Completion		Change Auto-logout Timeout		
	Change User Interface Configuration by Permission		Create Default Menu.dsc		
			Show/Hide Modification Log		

→ Operations for AcqKnowledge GLP for Windows XP Professional are on page 30.

Operations for AcqKnowledge GLP under Mac OS X — see table below.

- Use the table to indicate user permissions for your Administrator to establish:

E Execute (allow)

L Require Log Message

AcqKnowledge GLP for Mac OS X				
GROUP	OPERATION	E	L	INVOKED BY...
Data Addition Operations that insert channels into the graph	Duplicate waveform			Edit > Duplicate Rt mouse menu
	Insert waveform			Edit > Insert waveform
	Rate Transformation			Transform—Rate, all functions
	Insert Measurements into Graph			Transform > Find Cycle/Peak
Adding text into graph	Events Inserting a new event			Append Acquisition Mouse Click Right-click menu in event insertion area in event toolbar Event tool Escape, F1-F9
Adding Text to Journal	Typing text into journal			Typing text into a journal
	Adding Measurements to journal			Edit > Journal > paste measurements (Edit > Clipboard > copy measurements, paste into journal) Ctrl M Transform > Find Cycle/Peak
	Acquisition Settings Summary			Edit > Journal > Paste Acquisition Summary to Journal
	Adding Wave data to journal			Edit > Journal > paste wave data (Edit > Clipboard > copy wave data, paste into journal) Command D
	Paste Selection Edges in Journal			Selection palette > Popup > Paste edges in Journal
	Event Summary			Event palette > Actions > Summarize to Journal
	Time and Date stamps			Icons in the journal
	Gastric Wave Analysis			Transform > Specialized Analysis > Gastric Wave Analysis
	Gastric Wave Coupling			Transform > Specialized Analysis > Gastric Wave Coupling
	Time-Frequency Analysis			Transform > AR Time-Frequency Analysis
	HRV Analysis			Transform > Specialized Analysis > Heart Rate Variability
	Filter Responses			Transform > Digital Filters > FIR, IIR Derivative
	Histogram			Transform > Histogram
	Off-line Averaging			Transform > Find Cycle/Peak > Output > Averaging
	Rate			Transform > Rate, New Graph
New Graphs, not acquired	FFT			Transform > FFT
	New Graph from Spectrum			Spectrum Analyzer Palette > Popup menu > New Graph from Spectrum
	IFFT (Acq only)			Transform > IFFT
	DWT			Transform > DWT
	IDWT			Transform > IDWT (only available when a DWT produced graph is in front)

AcqKnowledge GLP for Mac OS X			
GROUP	OPERATION	E	L
	PCA		Transform > Principal Component analysis
	Inverse PCA		Transform > Inverse PCA (only available when a PCA produced graph is in front)
	ICA		Transform > Independent Component Analysis
	Inverse ICA		Transform > Inverse ICA (only available when an ICA produced graph is in front)
	3D Visualization		Transform > Find Cycle/Peak > Output > 3D Surface
Other	Acquiring new data		Press the start button Command-space (Mac) Advanced Averaging window > Start
	New data file or file		File > New (PC) File > New > Independent journal (Mac) File > New > Graph window (Mac)
	Selecting measurements		Measurement rows
	Creating a new preset		MP > Channel Setup > Calculation setup dialogs
	Creating New Data Snapsnot (3.8.1 GLP)		Edit > Create New Data Snapshot
	Inserting events at selection boundaries		Event Palette > Actions > Mark Selection
	Starting Batch Acquisition		Batch > Start Acquisitions
	Adding Template to Batch		Batch window, Add...
	Adding Text Annotation		Annotation tool > Click in graph window
	New Workflow		Workflow > New Workflow
	Adaptive Template Matching Analysis		Transform > Template Functions > Adaptive Template Matching
Data Modification			
Editing Functions	Copy		Edit > Copy Command C
	Paste (from Cut or Copy operation)		Edit > Paste Command V
Off-line Transformations	Integral		Transform > Integral
	Integration		Transform > Integration
	Function		Transform > Function > (unlisted)
	Absolute Value		Transform > Function > Abs
	Arc Tangent		Transform > Function > Atan
	Connect Endpoints		Transform > Function > Connect Endpoints
	Exponential		Transform > Function > Exp
	Limit		Transform > Function > Limit
	Natural Log		Transform > Function > Ln
	Base 10 Log		Transform > Function > Log
	Threshold		Transform > Function > Threshold
	Square Root		Transform > Function > Sqrt
	Sine		Transform > Function > sin
	Noise		Transform > Function > Noise
	Derivative		Transform > Derivative
	Difference		Transform > Difference
	Smoothing		Transform > Smoothing
	Resample		Transform > Resample
	Equation Generator, Expression		Transform > Expression
	Delay		Transform > Delay
	Rescale		Transform > Rescale

AcqKnowledge GLP for Mac OS X				
GROUP	OPERATION	E	L	INVOKED BY...
	Remove Projection			Transform > Template > Remove Projection
	Normalized Cross Correlation			Transform > Template > Normalized Cross Correlation
	Comb Filter			Transform > Digital filters > Comb
	Wave math			Transform > Wave Math
	Changing event location			Option-click and drag the event Event palette > Selected Event > Location edit field
	Undo			Edit > Undo
	Editing Events			Event toolbar > event label edit field Event palette > Selected Event > Label edit field
	Execute Script Transformation			Transform > Specialized Analysis > (script name)

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