

Gallios™ Quick Reference

Purpose:

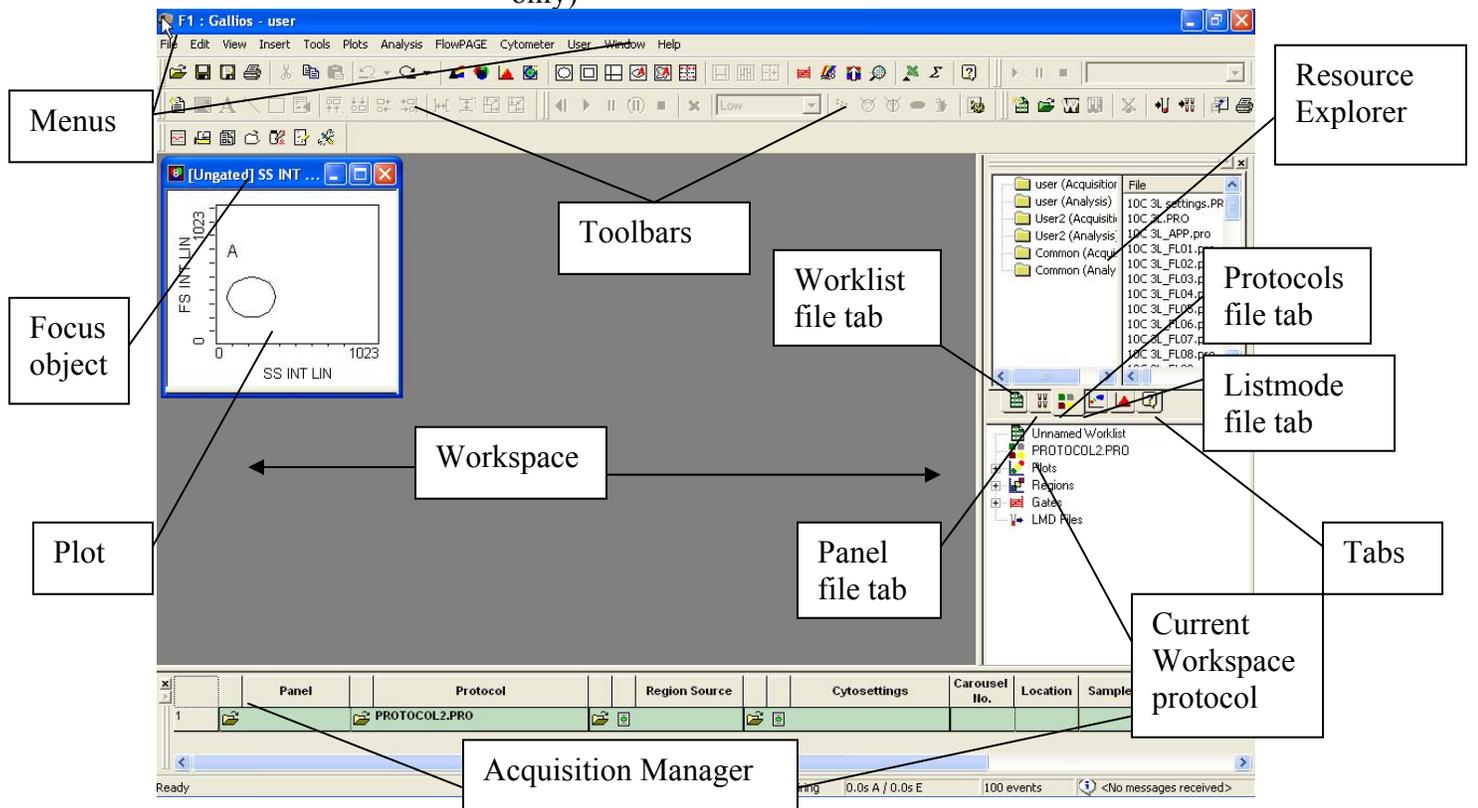
The purpose of this Quick Reference is to provide a simple step by step outline of the information needed to perform various tasks on the system. We begin with basic tasks like starting up or shutting down the system and then proceed to more involved software tasks. It is organized according to the modules in the Gallios Flow Cytometer Training Modules. Major Headings (in blue) are the major groups of tasks. These headings may be further subdivided into subsections of the major task and appear in a logical sequence. For example, the Major task of creating a protocol is subdivided into the subsections: Select Parameters, Create Plots, Instrument Settings, Create Regions, Gate, Analyze, and Save Protocol. A list of the major tasks appears below in the Table of Contents.

Table of Contents

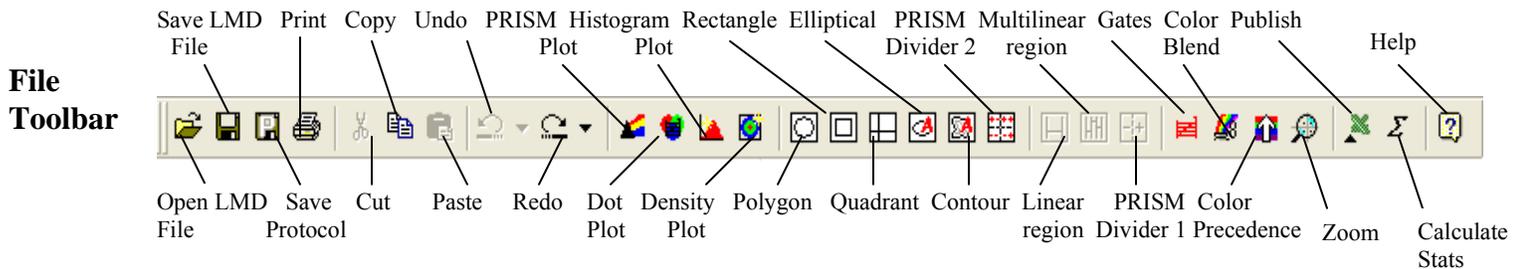
Startups	P. 3
Shutdown	P. 4
Creating a Protocol	P. 5
Create a FlowPAGE	P. 7
AutoSetup	P. 8
Acquisition Manager (Panels)	P. 9
Database	P. 11
Offline Analysis	P. 15
System Setup	P. 19

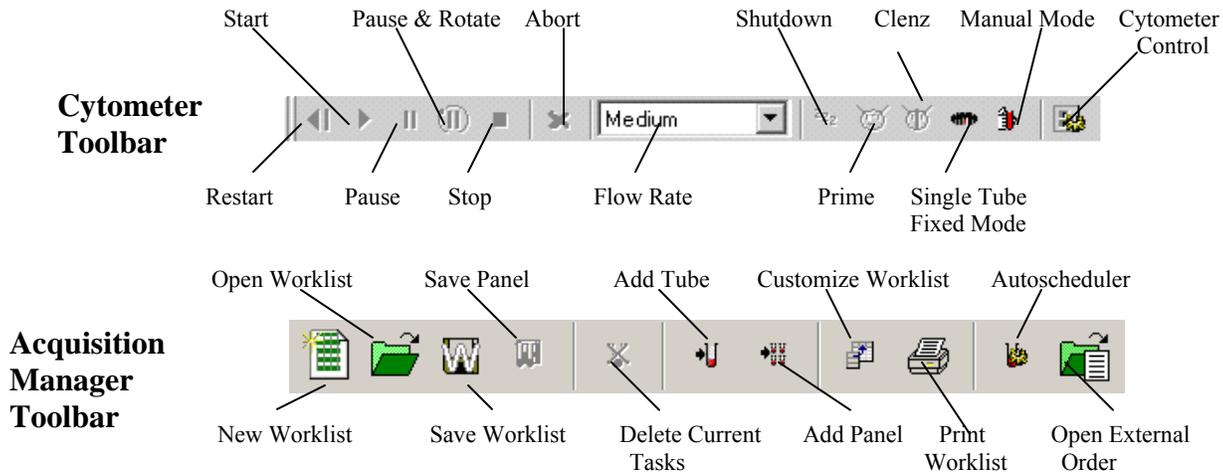
Startups

- Check external Sheath tank, fill the Cleaning agent tank and Empty the Waste tank
- Power the Computer and Monitor On
- Enter a Windows password if any and select **OK**
- Double click  icon.
- Select User name
- Enter User password and select **Next**
- Select **Connect** (to run samples) or **Work Offline**.
- Check gages System Pressure 30 Psi, Vac 17 in (Cytometer only)



Commonly Used Toolbars:





Shutdown

- Place 2 ml of 10 % bleach solution in one tube
- Place 2 ml of de-ionized water in each of 3 tubes
- Select  on the toolbar to clear the Acq. Mgr.
- Select the  tab on the Resource Explorer
- Select the Common Folder
- Select the **cleanse.pnl** and drag and drop it to the Acq. Mgr.
- Enter a carousel number
- Select  button
- Select **Yes** if you wish to save the previous protocol or **No** if not
- When the panel is finished, remove all tubes
- Select  Standby mode
- When finished select  in the upper right to exit the software
- Select **No**



- Select  to turn off the cytometer
- Select **Start** >> **Shutdown** >> **OK** to shutdown the computer

Creating a Protocol

- Select **File >> New >> New Protocol** to clear the workspace of all but one dotplot and single elliptical gate region.
 - Select **Yes** to save old protocol or **No** if you do not wish to save it
- Select Parameters:
- Select  Cytometer Control on the toolbars
 - Select Acquisition Setup tab
 - Set Limits and Max events to stop accumulation later
 - Select  button
 - Deselect unwanted parameters
 - Select any desired parameters
 - Optional: Set Ratio, Time and Derived Parameters
 - Close shutters of unused lasers
 - Select FS Collection angle and SS desired ND filter
 - Select **OK**
 - Select Yes, enter a name and select **Save**
- Create Plots:
- Dot Plots (2 parameter) – Select , Histogram Plot (Single parameter)– Select , Density plot – Select 
 - Select Parameter(s) and then **OK**
 - Repeat for each plot
 - Select each plot Focus (top of the plot) in turn and drag the plot to the desired location on the Workspace
 - Press **CTRL + T**, select plot size, and then **OK** to arrange plots
- Instrument Settings:
- Select  Single Tube Mode on the toolbar
 - Place a sample for the application in position 10 on the carousel
 - Select  Run
 - Select  Cytometer Control and then the Acq. Setup tab
 - Select **Setup Mode** and **QuickSET**
 - Choose discriminator parameter and adjust Discriminator to exclude debris and noise but pass cells
 - Adjust the slider bars (top and side of each plot) beginning with those to be used as gates for a correct pattern
 - Select Acq. Setup tab
 - If needed, select **QuickCOMP** and adjust the compensation using a proper sample until correct patterns are seen

- Deselect **Setup Mode**, **QuickSET**, and **QuickCOMP**
- Allow the system to collect the desired amount of data
- Select  to stop or allow the system to reach a stop value

Create Regions

- Select each plot in turn and add regions:
- **Dot Plots** (2 Parameter Plots only):
 - Polygon* - select 
 - Move the cursor to starting point on plot and left click
 - Use a click move technique to create all the sides back to the starting point
 - Rectangle* – select 
 - Move the cursor to the starting corner and left click
 - Move the cursor to the opposite corner and left click
 - Click to complete the rectangle
 - Quadrant* – Select 
 - Move the cursor to plot and left click
 - Move the region to anchor position and left click
 - Autogate* – Select  ellipse or  contour
 - Move the cursor to desired population and left click
- **Histogram Plots:**
 - Linear* – Select 
 - Move the cursor to starting position and left click
 - Move the cursor to ending position and left click
 - Multilinear* – Select 
 - Move the cursor to first position and left click
 - Move the cursor to end of first region and left click
 - Move the cursor to end of second region and left click
 - Continue until all regions have been created
 - Move cursor to  and left click to finish

Gate

- Move the cursor to lower right corner of plot to be gated
- When  appears, left click and select Gate
- If you wish to apply the gate to all plots select that option (Note: later ungate the plot containing the gate region)

Optional: Stop Count

- Select Stop and Save tab and enter count
- Select **OK**

Analyze

- Select **Analysis** >> Select **Results**
- Deselect all unwanted statistics and select all desired statistics and Select **OK**

Save Protocol

- Select **File** >> **Save Protocol** or Select 

Create a FlowPAGE

- Select **Insert >> Blank Flow Page**
 - Move the new page to a convenient area of the screen
- Add Plots
- Move the cursor to the center of a plot
 - Left click and drag and drop it onto the FlowPAGE
 - Repeat for each plot
- Arrange Plots
- Select the  Maximize Window icon in the upper right corner of the FlowPAGE to expand the page to full screen
 - Move each plot and move into position
- OR
- Create a large rectangle completely encircling two plots and stats
 - Select the appropriate alignment tool ( top,  bottom,  left or  right)
- Add Text
- Select  on the FlowPAGE toolbar
 - Move the cursor to the location on the page and left click
 - Type in desired text and select **OK**
 - Reshape the text box by grabbing a handle and pulling outward
 - Right click in the box and select Properties to change font, fill, etc.
 - Left click on another part of the page to finish
- Add Images
- Select  on the FlowPAGE toolbar
 - Locate the directory where the image is stored
 - Select the desired image and then **Open**
 - Move the cursor to the desired location on the page and left click
 - Use the handles to resize the image
 - Left click on another part of the page to finish
- Add Lines or Boxes
- Select  or 
 - Move to the starting point
 - Hold the left button and drag to the ending point
- Save FlowPAGE
- Select **FlowPAGE >> Save FlowPAGE As**
 - Enter a name and select **Save**

AutoSetup

Note: To enter a new application, you will need a base protocol and target channels for Flow-Set Pro

New Application

- Select **Tools >> AutoSetup Application Definition**
- Select Create a new application definition
- Select Current user only or All users as desired
- Select **Next**
- Browse to find the base protocol that represents the application
- Select the base protocol and then **Open**
- Select **Next**
- Select Filter Block and then **Next**
- Optional: select dyes
- Select **Next**
- Enter the correct Flow-Set Pro target channels
- Select **Next**
- Enter an application name and select **Next**
- Select Create a verification protocol if you wish the system to generate a verification protocol
- Or
- Select Add additional verifier, locate the protocol, and select **Open** to add a verification protocol
- Select **Next**
- The system summarizes your entries
- Select **Print** if you wish and then **Finish**
- The system now creates all protocols and FlowPAGES needed for Autostandardization

Schedule an Application

- Select **Tools >> AutoSetup Scheduler**
- Select desired application
- Or
- Hold the **CTRL** key down and select multiple applications
- Enter a carousel number and select **Schedule**
- Select **Run** if you wish to run immediately
- Or
- Select **Close** to prep tubes, place them on the system, or enter a calibration factor in the Acquisition Manager
- Select  on the toolbar to run the samples

Acquisition Manager (Panels)

- If it is not visible, select **View** (or right click)
- Select **Acquisition Manager**

Select Columns

- Select **View >> Customize Worklist Columns**
- Select the desired columns to appear and then **OK**

Edit Column Names

- Select **View >> Customize Worklist Columns**
- Left click on the column name until the name can be changed
- Type in the new name and press **Enter**
- When finished, select **OK**

Create a Panel

- Select  to clear the Acquisition Manager
- Select  protocol tab on the Resource Explorer
- Drag and drop the desired first protocol to the Acquisition Manager
- Select the  on the toolbar to add the desired number of tubes to the panel
- If you wish to change the protocol in any of the tubes, select the  Open Protocol in the Protocol column for that tube
- Select the desired protocol and then **Open**
- Repeat as necessary for each tube
- Under Regions column, toggle the appropriate icon:  to use the regions in that protocol,  to carry the region to the other tubes, or  to import regions from another protocol
- Under the Cytosettings column, toggle the appropriate icon to:  to use the cytosettings in the protocol,  to pass the cytosettings to the next protocol, or  to import cytosettings from another protocol
- Select **Open**
- Edit the Parameter names for each tube to reflect the actual measurements (example: CD3, CD4, etc.)

To Delete a Protocol

- Select the protocol line by its number and press **Delete**

To Move a Protocol

- Select the protocol and drag and drop to the new position

- Save Panel
- Right click on Panel folder  or panel area in Acq. Mgr.
 - Enter a panel name
 - If you desire to create a template in the database for Reporting results, select Export results of panel to Report Generator on the Panel Save Dialog
 - Select **Save**
- Create a Worklist
- Select  Clear Worklist to clear the Acq. Mgr. then:
- To Add Panels
- Select  Panels tab on the Resource Explorer
 - Locate the desired panel and drag and drop it to the Acquisition Manager
 - Repeat as desired
- To Add Protocols
- Select  Protocols tab on the Resource Explorer
 - Locate the desired protocol and drag and drop it to the Acquisition Manager
 - Repeat as desired
- Editing Parameter Names
- Select the desired field (e.g. Under P1, P2, etc)
 - Type in the desired information (e.g. Sample ID, Parameter name, etc.)
- Save Worklist
- Select  Save Worklist on the toolbars
 - Enter a worklist name and select **Save**
- To Run
- Select  to clear Acquisition Manager
 - Select  Worklist tab on Resource Explorer
 - Locate the desired worklist and drag and drop it to the Acquisition Manager
 - Edit the boxes as desired
 - To add Cal Factor, click on  in the Cal Factor column of the Acquisition Manager
 - Enter absolute count calibration value, verify Enabled has been selected, and select **OK**
 - Enter a carousel number in tube one position
 - Select  Run

DataBase

QC Product Editor

Editing a Product

- From the Report Generator toolbar select  Product Editor
- Select the desired product you wish to edit
- Select the desired information field to be edited
- Make the change
- Repeat the process for each field
- When finished, select **Save Prod** then select **Yes** to confirm update to the lot number
- Select **OK**

Entering a New Product

- From the **Report Generator** toolbar select  Product Editor
- Select the **New Product** button
- Select the first information field
- Enter the information
- Repeat the process for each field
- When finished, select **Save Prod** then select **Yes** to confirm update to the lot number
- Select **OK**

Quality Control Report

Setting Region Properties

Sample data is sent to the database when samples are run and the protocol region properties are set correctly

- Drag and drop a protocol to the workspace
- Save the previous protocol or not as desired
- Select a region for statistics to be sent to the database
- Right click the mouse and select **Region Properties**
- Select Region statistics to be exported for Quality Control
- Select a QC Product and select **OK**
- Repeat for each region to be used
- Save the protocol

Activating QC Template (one time procedure)

- Select  on the Report Generator toolbar
- Change instrument to Default
- Select **Template >> Select Template**
- Select desired template and then **Open**
- Select **Template >> Save Template** to save the template with the system serial number
- Repeat process for each template

- Select a Template
- Select  on the Report Generator toolbar
 - Select **Template >> Select Template**
 - Select desired template and then **Open**
- Select a point
- Left click on the point (a red line appears)
- Creating a New QC Template
- First, enter the new QC product (earlier in database) and ensure the protocol has regions selected for QC export with a QC product
 - Run the protocol at least once
 - Select  on the Report Generator toolbar
 - Select **Template >> Clear Template**
 - Select **New Plot** button
 - Click on the header portion of the plot
 - Select user label and select a label from the list or enter the desired label
 - Select the QC protocol from the list
 - Select the appropriate QC product
 - Select the lot number
 - Select a parameter or region
 - Select **X** or **Y axis**
 - Select a statistic
 - When finished, select **OK**
 - Repeat process for each new plot
 - When finished, select **Template >> Save As**
 - Enter a name and select **Save**

Panel Template

- Accessing a template
- Select  on the Report Generator toolbar
 - Select **File >> Open** and locate the desired template
 - Select the template and then **Open**
- Creating a Template
- First create a panel and then save the panel with the
 - Export results of panel to report Generator selected
 - Select  Panel Template on the Report Generator toolbar
 - Select **File >> Open** and locate the new blank template
 - Select the template and then **Open**
 - Select the desired global options on the Local tab

- Select each field in turn and enter the desired information
- Select **Update** to enter the information and clear the fields

Or

- Select **Update & Retain** to enter the information only
- Repeat for each line
- Select Data Plots tab to add plots
- When finished, select **File >> Save**

Panel Report toolbar



- Select  Panel Report on the Report Generator
- Select **Search** button to list reports
- Highlight desired report and then click on **Select**

Database Entry



- Select  on the Report Generator toolbar
- Select **New**
- Enter information in each desired field and select **Save**

Maintenance Log



- Select , double click on item to log

Service Log



- Select , select field and enter information

Offline Analysis

Retrieve with Runtime Protocol (protocol used To collect the data)

- Select  Listmode tab on the Resource Explorer
- Locate the desired listmode file and drag and drop the file to the Workspace
- If asked do you wish to clear acquisition data, answer **Yes**
- Save previous protocol as desired
- The protocol appears and the data shortly after

Retrieve with a Different Protocol

- Select  Protocols tab on the Resource Explorer
- Locate the desired protocol drag and drop it the Workspace
- If asked do you wish to clear acquisition data, answer **Yes**
- Save previous protocol as desired
- Select  Listmode tab on the Resource Explorer
- Locate the desired listmode
- Drag and drop it to any one of the plots on the Workspace
- The protocol will populate with the data

Retrieve Multiple Listmode Files with Runtime Protocols

- Select **Tools >> Listmode Playback**
- Right click on  Add Protocol tool in the window
- Select New Worklist
- Select  Add Protocol tool once for each addition protocol
- Under the LMD File column, select  Open File icon
- Select the desired listmode file and then **Open**
- Repeat for all listmode files
- Select the Options tab and other desired options
- Select the Single File Mode tab
- Select the  Run tool in the window
- The files are displayed

Files with Different Protocols

Same as previous action but with one addition:

- Select the  Open Protocol icon under the Protocol column
- Select the desired protocol and then **Open**
- Repeat for each protocol

Batch Automator

- Select **Tools >> AutoMATOR Setup**
- To remove old selected files from the list: select the files and then the Remove Files button
- Select **Add Files**
- Select the desired files and then **Open**
- To change the order: Select a file and drag and drop it to a new position
- Select the desired process option next to the files (↓ pass, ⌚ pause 12 seconds, ⏸ stop and wait to restart)
- Select the desired output option
- To process: Select  Run on the Automator toolbar

Listmode Playback Tool

- Select **Tools >> Listmode Playback**
 - Select either the  Add Protocol or  Add Panel
 - Select  Open for the first listmode file
 - Select the listmode file and then **Open**
 - Repeat for each listmode file
 - If desired, select the  Open for each protocol in turn
 - Select the desired protocol and then **Open**
 - Select Options tab and desired options
 - Select Single File Mode tab
 - Select  tool in the window
- The files are displayed

Publishing

Set Preferences

- Press **CTRL + W** and select Publish tab
- Select the desired publishing option Publish to Text File or Publish Data to MS Excel or both
- Select desired data format
- Select desired bitmap size

- Select desired File References option
 - Select whether or not to switch to Excel on publish
 - Select **OK**

- Output
 - Select **Tools >> Publish Results Now**
 - Enter name and select **Save**
 - System opens MS Excel and displays data

- Assigning Color to Dot Plots
 - Press **CTRL + W** and select Gating tab

- Color Precedence
 - Select **Automatic Color Precedence**
 - Select **OK**
 - Select  Color Precedence Setup on the toolbars
 - Edit colors as desired
 - Move regions using a drag drop technique
 - Select **OK**
 - Color will be assigned to dots based on the color located highest on Precedence list (top position)

- Color Blend
 - Select **Color Blend Mode**
 - Select **OK**
 - Select  Color Blend Setup
 - Select 3 different regions to blend
 - Select **OK**
 - Color will be assigned based on the number of the regions satisfied by the event

- Copy and Paste
 - Copy Image
 - Select a plot
 - Right click and select **Copy Plot Image**

 - Paste Image
 - Open the desired program (e.g. PowerPoint, Word)
 - Select desired area
 - Select **Edit >> Paste**

 - Copy Data
 - Select plot
 - Right click and select **Copy Plot Data**

 - Paste Data
 - Open the desired program (e.g. MS Excel)
 - Select desired area
 - Select **Edit >> Paste**

- Freeze Single Histogram Plots
 - Run a sample or retrieve a listmode file
 - Choose a histogram plot to apply freeze frame

- Move the cursor to the lower right corner of the plot
Until  appears
- Left click and select the Histogram tab
- Select Freeze Frame and then **OK**
- Run another sample or retrieve another file, an outline of the previous file appears on top of the new file
You can repeat the process to achieve 2 freeze frames on top of a new file

Baseline Offset

- Select **File >> Workspace Preferences**
- Select Plot Display tab
- Select **Baseline Offset On**
- System adds a randomized positive Gaussian offset to the low channels bringing the negative population out from channel zero on log displays

Listmode Compensation

- Select  Listmode tab on the Resource Explorer
- Select desired listmode file
- Drag and drop it to the workspace
- Select **Analysis >> LMD Quick COMP**
- Adjust the slider bars to change the compensation
- The data responds accordingly
- Save recompensated file (file extension will be CMP)

System Setup

- Administration Functions
- Select a the user with administration privileges
 - Enter the user password
 - Select **Admin** button
 - Select the user, enter both the user and administration passwords and select **OK**
- Add a User
- Select **Add User**
 - Enter user name, first name, last name and title
 - Select desired privileges
 - Select Change and enter a user password
 - Select **OK**
 - Optional: Select Paths tab and change user paths
 - Select **OK**
- Group Users
- Select **Workgroups**
 - Select **Edit** and then **Add**
 - Rename your workgroup as desired
 - Select **OK**
 - Select all users to be included in the workgroup
 - Select **OK**
- Track User Usage
- Select **Export Log**
 - Enter range of dates and select **Next**
 - Select users to be included in the billing file
 - Select **Next**
 - Select to send to clipboard or file and select Delimiter
 - Select **Finish** and then **Close**
- Unlock a User
- Select user
 - Select **Modify User**
 - Select **Unlock User**
- Archive
- Select **Archive Data**
 - Select Archive location
 - Select dates
 - Select data to archive
 - Select **Archive** and then **OK**
 - Select **Close**

- Workspace Preferences
 - Select **File >> Workspace Preferences**

- File Naming
 - Select LMD Filename tab
 - Select items to be part of the filename
 - Select **OK**

- Plot Display
 - Select Plot Display tab
 - Select desired options
 - Select **OK**

- Gating
 - Select Gating tab
 - Select desired options
 - Select **OK**

- Acquisition
 - Select Acquisition Options tab
 - Select desired output options
 - Select **OK**

- User Info
 - Select User Info tab
 - Enter desired user information
 - Select **OK**

- Publish
 - Select Publish tab
 - Select desired publishing format options
 - Select **OK**