Differences, known bugs, etc. in the
64-bit LabAnalyst   (01/09/2021)

OS versions: the 64-bit LabAnalyst (the 'Cocoa' version) has been tested on macOS 10.11 (*'El Capitan'*), 10.13 (*'High Sierra'*) and 10.14 (*'Mojave'*).   I don't have a machine with 10.12 (*'Sierra'*) but presumably it should work.   Function with earlier macOS versions is possible but _**not**_ tested. It also runs in 10.15 (*'Catalina'*) but has not been extensively tested on that version.   Preliminary trials indicate that it will **NOT** work on MacOS 11 (*'Big Sur'*).

NEW (compared to 32-bit versions):
- When you resize most plot windows, the contents are updated **continuously** ('live'), instead of after the resize is finished. However, if the file size is large (hundreds of thousands of displayed points), the redrawing will not occur until resizing is finished (a small message to that effect will appear).
- Similarly, when you change the plot colors, the '**Screen colors**' example window is continuously updated as you work with the color selection panel.
- **'tool tips':** These are small 'popup' windows that open when the cursor is over certain buttons. They show information about the button in question. Always operational for the channel selection buttons in many of the **EDIT** and **ANALYZE** menu windows. Optionally available for the toolbar buttons (select this in the 'Preferences: Appearance' window; note that switching this option on is permanent until the next program launch).
- **channel labels window:** If this option is selected ('**Preferences: Appearance**' window), this window is permanently open (unless closed by the user) and list all the channels in the currently-selected data file, with their labels.   This serves a somewhat similar function to the **'tool tips'** option, but it's for helping keep track of channels.
- Many operations run faster than in the older 32-bit versions (or seem to).   Loading very large files may *seem* slower than with the old versions but this is generally illusory (because there are no progress bars; see below).
- The **'Print Window Image'** button available in many **EDIT**, **ANALYZE**, and **SPECIAL** menu operations, sends a graphic of the window to a .pdf, .png, or .jpeg file.

NOT INCLUDED or NO LONGER AVAILABLE:
- **progress bars** (difficult to implement, and in the older 32-bit versions they were only really of use for *very* large data files).   These formerly were shown when files were opened and during certain lengthy conversion and analysis procedures. In 64-bit LabAnalyst, most lengthy processes are accompanied by a simple warning or alert window indicating that users should be patient.
- file information (samples, channels, markers, etc.) is not shown during the file loading process.

- *output* of certain **very old data file formats** (Warthog text, etc.), which aren't of much use on modern Macs. Files in these formats can still be read, however.
- options to use **different fonts** in LabAnalyst windows (formerly in the '**Preferences**' window). As far as I know, this was used very rarely if at all.
- **direct printing of window graphics** (such as the 'screen print' option). LabAnalyst will make either a .pdf or a .png of the window image, but won't send it directly to a printer (it's easy to do that from the .pdf or .png).
- the option to use **multiple results per row** when using formatted tab files for results.

NOT FINISHED, or has KNOWN BUGS:
- **Scripting** hasn't been fully implemented – data manipulation functions (mainly from the **EDIT** menu) mostly work, but analyses are not yet scriptable (these require user intervention to select blocks, etc.).   Also, due to a format change, old script files will probably not work and will have to be re-recorded.
- Sometimes, when **switching between plot windows**, a selected block (click-and-drag method) doesn't show on the plot window (it does in the block window).   Even if the block doesn't show, it will appear properly if you change channels or change the window size. To avoid this annoyance, click on a window's title bar <u>before</u> selecting a block.

DIFFERENT:
- The 'Show All Values' option (**VIEW** menu) works, but only in standard position (under the plot window data bar).   You can't put it anywhere on the plot window, as was previously possible.
- The '**Custom Transformations**' option in the **EDIT** menu works somewhat differently (and hopefully better).
- To see a file's complete comments in a new window, click the '**expand**' button in the small comments window, just below the plot window on the right (previously you could click anywhere in this window to see all the comments). You can also access the comments from the '**Edit File Data**' option in the **EDIT** menu.
- When you drag-and-drop several data files to the program icon, they will load but you will have to click an '**OK**' button for most of them (not sure why but this prevents a problem with improper display and crashing).
- You might see <u>small</u> differences in otherwise identical numerical calculations in the Cocoa and earlier versions, presumably because of the 64- vs. 32-bit processing.
- Screen prints are initially in .png format by default, not pdfs. You can change this in the 'Preferences: Sounds, Printing' window, or you can easily change a .png image file into a pdf using Preview or another image editor). You can also produce .jpeg image files. Unlike with previous versions, you cannot send a screen print directly to a printer from within LabAnalyst.
- Same as above for printing results of time series analyses, or for printing the **'File Info'** window.
- In the 'Preferences' window, sound controls have their own tab (with printing options), and are not combined with the '**Appearance**' tab.
- Scripts, and the script menu options, have been slightly simplified (NOTE: not tested thoroughly yet).

- Help options are accessed through round question-mark (**?**) buttons.
- The 'LACustomTransforms.LActr' file, with the blue triangular icon, has been internalized and no longer needs to be in the same folder as LabAnalyst.
- Similarly, the 'LAprefs.LApr' file has been internalized.
- The **toolbar** can be below, above, or to the left of the plot windows (selectable by clicking the small 'triangle' button at the upper left of the toolbar, or from 'Preferences')

NOT THOROUGHLY TESTED:

- Respirometry calculations involving **evaporative water loss**, including **Analyzer humidity compensation.** These appear to work – unsurprising as the math algorithms are the same as in previous versions, and the ones I have tested **do** work. However, I haven't had time to do *exhaustive* verifications.
- Similarly, **Analyzer humidity compensation** (**RESPIROMETRY** menu) works in terms of the user interface but has not been thoroughly tested yet.
- **breakpoint transformations** (same as above)
- **custom transformations** (same as above)
- **thermoregulatory costs** (same as above)