

LocalTeX Preference Pane

Richard Koch

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1 The Global Pref Pane and the Local Pref Pane

MacTeX installs the current version of TeX Live in `/usr/local/texlive`. There may be several TeX distributions in this location. MacTeX also installs a small data structure in `Library/TeX` invented by Gerben Wierda and Jerome Laurens to describe each distribution. This data structure was somewhat controversial and I once gave a TUG talk complaining about it. Now I'm happy.

Each year's distribution is in a subfolder of `/usr/local/texlive`, named by date. So for instance TeX Live 2017 is in `/usr/local/texlive/2017`. This makes it possible to keep old distributions around, in case a new distribution breaks a crucial class file. We used to install a Preference Pane in Apple's System Preferences, allowing users to switch between distributions. A switch changed all GUI apps to use the new distribution and also changed the command line to point to the new distribution.

Unfortunately, Apple kept changing the rules for Preference Panes. First they had to have PowerPC code, and then Universal code for both PPC and Intel, and then 64 bit Intel code using garbage collection, and then 64 bit Intel code using Automatic Reference Counting, and finally Universal code for both Intel and Arm. Following all of these changes became difficult, so finally MacTeX stopped installing the Preference Pane altogether. That functionality was moved to TeX Live Utility. To use it, select "Change Default TeX Live Version" in TLU's Configure menu.

Both the PrefPane and TeX Live Utility select one distribution for all users and require root access. I'm going to argue that we should have created a Local PrefPane instead, so each user could choose their own default TeX distribution and make this selection without root access. That's how regular programs work on the Macintosh. Programs live in the Applications directory where they can be accessed by all users of the machine. But each user has their own Preference settings for these applications, stored in `~/Library/Preferences`. One user's default Word font might be Times Roman, while another's might be Helvetica Neue.

2 The 2014 Local Pref Pane and the 2024 Version

I created such a Local Preference Pane and gave it to users at the TeX User Group conference in Portland, Oregon during July, 2014. That pane has been available on my web page ever since. But the Pane was written long before Apple switched to Arm processors and became seriously out of date. Moreover, I learned a critical lesson writing that Pane. The pane had a button to automatically reconfigure user's PATH and GUI application settings, but users don't like software that makes changes behind their back. That includes me, and I stopped using the Local Pane years ago. So recently I created a new pane, shown below.

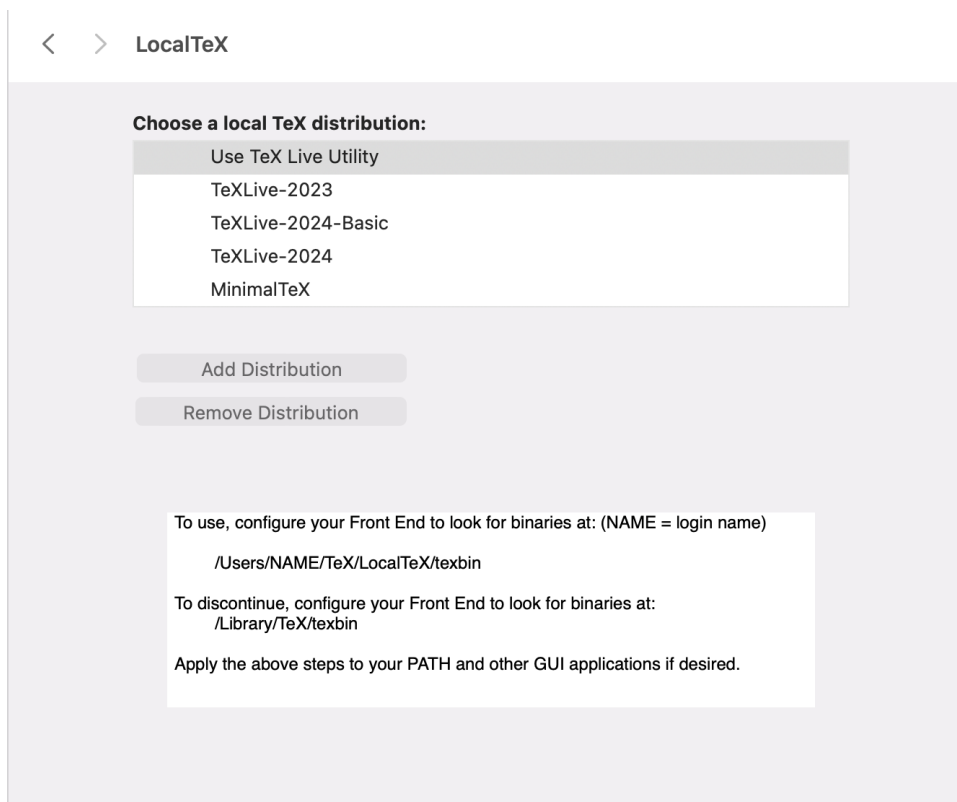


Figure 1: Local TeX

3 Installing the Pane

The distribution folder from my web site contains a file named LocalTeX.prefPane. Drag and drop that file into the folder `~/Library/PreferencePanes`. As usual, `~/Library` is the Library folder in your home directory, which is sometimes slightly hidden by Apple. It is not the system `/Library` folder.

4 Using the Pane

To see the new pane in action, open Apple’s System Settings and scroll to the bottom. This location is for third party additions to the Apple Settings, and there may be only one item, LocalTeX. Notice that it looks like the picture on the previous page.

The top item in the choice section will always be “Use TeX Live Utility”. The original Wierda-Laurens structure is still present and TeX Live Utility can still be used to select the active distribution for that structure. The top item says to use the distribution selected by TeX Live Utility.

Most users are the sole owner of their machine, but in college lab settings there may be several people using a machine. The Wierda-Laurens-TeX Live Utility system requires root access to change the default distribution, and makes this choice for all users. But the Local TeX pane is installed by an individual user in a folder they own, and the choice it makes overrides the global choice made by TeX Live Utility.

In a Lab, the global choice might be TeXLive-2024, but a user might temporarily want to switch to TeXLive-2022. So underneath “Use TeX Live Utility”, LocalTeX lists all available distributions known by the Wierda-Laurens data structure and a user can choose any of them.

5 Adding Distributions to the Panel

The key feature of the panel, however, is that users can install distributions in their home directory that are not owned by root, inform the Panel about these distributions, and easily switch to them.

For example, each year I install minimalTeX and use it to make a private install package for a user in Australia. Thus I happen to have a folder named 2024minimal in my home directory containing this small distribution. Let me explain how to make that distribution known to the LocalTeX package.

Push the button “Add Distribution” in the panel. A new panel appears, shown on the next page:

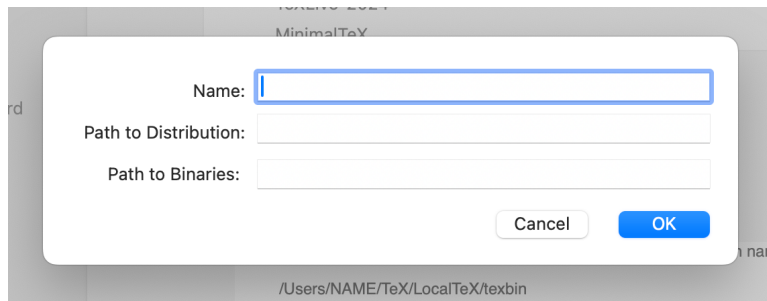


Figure 2: Adding a New Distribution

Fill in the name field; this name will only appear as a choice in the panel, so pick any name you’ll recognize. Fill in the full path to the distribution, and the full path to the binaries of the distribution, and click “OK”. For instance, the two strings I filled in were “/Users/koch/2024minimal” and “/Users/koch/2024minimal/bin/universal-darwin”.

If you earlier added a distribution to the panel in this way but you no longer use that distribution, select the distribution in the Panel and then click the button “Remove Distribution.”

Students may find this feature useful when they use a University owned machine and don’t have root access. They can easily install TeX Live on a thumb drive, carry it with them, and have access to TeX in all locations. The LocalTeX pane only shows distributions that are currently available. So if a thumb drive is removed, its distribution is no longer listed in the pane. Inserting the drive causes LocalTeX to list it again.

6 Configuring Front Ends to Use the Local Panel

One more step is required to use LocalTeX; your GUI programs must be reconfigured for it. I’ll take my own program, TeXShop, as an example. System Settings for this program has tabbed pages, including one labeled “Engine”. The top item on this page, “Path settings”, determines the path to the TeX binary directory that TeXShop will use. The expected entry might be /usr/local/texlive/2024/bin/universal-darwin, and that would certainly work. However, TeXShop is configured for the Gerben-Laurens data structure, so the default entry is

`/Library/TeX/texbin`

The new replacement is `~/Library/TeX/LocalTeX/texbin`. However the panel seems to dislike partial paths, so the replacement which works is

`/Users/koch/Library/TeX/LocalTeX/texbin`

If we later want to stop using LocalTeX and switch back to the Gerben-Laurens data structure, just change this path back to `/Library/TeX/texbin`.

Both strings are printed on the LocalTeX panel, so there is nothing to remember. Consult the panel itself if you want to revert back.

7 Configuring Shell and Other Programs

Some users will want to configure all the GUI programs they use when working with TeX. This may even include the command line. The original version of LocalTeX tried to do this automatically, but that was a bad idea.

The advantage of both the Gerbens-Laurens method and Local-TeX is that a single click reconfigures all GUI programs and the command line simultaneously. This can be a great time saver.

TeXShop has a preference setting for the binary path, so reconfiguration is easy. Some of the other GUI programs for macOS have a more baroque preference system and several different items must be changed when switching to Local TeX. There is nothing I can do about that. Configure the command line by modifying `PATH` in your shell startup script.

8 Removing All Traces of Local TeX

You can switch back to the Gerbens-Laurens method of selecting the active distribution by reconfiguring all of your GUI programs and your shell. There is no need to remove Local TeX.

However, some users may want to remove all traces of Local TeX from their system. This is easy. First, go to `~/Library/Preferences Panes` and remove `LocalTeX.prefPane`. Next, go to `~/Library/TeX` and remove the entire folder `LocalTeX`. Finally, LocalTeX stores its data in the defaults preferences system, so remove this data by typing the following command in Terminal:

```
defaults remove com.apple.systempreferences localTeXExtrasData
```