

TUG-MACTEX-2013

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1. MACTEX

This is the portion of the TUG documentation which deals with making the MacTeX-2013 package.

2. IMPORTANT WARNINGS

This section contains lessons learned in 2013. The material here is important for all packages made with the new PackageMaker.

Folders in which packages are built should live on the hard disk rather than an external disk. Building constructs subfolders named “root” which contain copies of material to be installed. This root folder and its contents are usually owned by root. But material on an external drive is owned by the user instead, so owners will be incorrect after installing.

The final MacTeX template refers to root folders of the various sub projects. In the template, each sub project is listed in the left column; clicking on an arrow there reveals a panel in which the root folder is determined and configured.

This root item must be reconfigured if the contents of the corresponding root are changed. Remove the item on the left listing the root (for example, /Applications/TeX) by selecting it and pushing “Delete”. Then drag a new copy of the root folder to this spot. Wait until PackageMaker has digested the new comments by watching a spinning cursor. Then reconfigure that root material. Each project contains *two* copies of the template to make this easy. Copy the configuration material from the “copy” of the template to the “active” template.

Configuration of a root folder is governed by a panel with four tabs: Configuration, Contents, Components, and Scripts. The material in the first and last tabs is important and should be entered carefully. The second Contents tab allows owners, groups, and permissions of individual files in the folder to be set. This task is impossible for a huge root folder like TeXLive, but luckily Apple provides a button “Apply Recommendations” which does it automatically following Apple’s “best practices policy.” Always click this button.

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For binary files like `texlive/2013/bin/universal-darwin`, the recommendations are unexpected. Actual binaries have owner root and group wheel, but symbolic links have owner an individual user and group wheel. Permissions are `-rwxr-xr-x`. Experiments and email conversations show that these choices work well.

For the GUI-package, the third tab, "Components", is very important. It lists actual apps and offers to relocate them. *Turn this off*. Otherwise the installer won't upgrade programs in `/Applications/TeX`, but instead will search the disk for a copy to update. Always check that these items are off.

3. CONTENTS

This is the final product of the build directory, built for internet distribution.

A clean package file will contain

- Files "buildPackage.sh" and "signPackage.sh"
- Files "background.jpg", "License.rtf", "ReadMe.rtf", and "Welcome.rtf"
- `scripts_convert` folder, containing files "postinstall", "setloginpath", and "settex-path"
- `scripts_ghostscript` folder, containing files "postinstall" and "setloginpath"
- `scripts_gui` folder, containing file "postinstall"
- `scripts_telive` folder, containing files "Description.rtf", "postinstall", "setloginpath", "setmanpath", "texdist", "TeXDist-description.rtf", "TeXDistVersion", "TeXMan-Path", and "TeXPath" and PrefPane folder containing the file "Info.plist" and the "TeX Distribution" preference pane
- The MacTeXMaker project file for PackageMaker
- "TUG" folder with this document

This package is easy to maintain. To update the package for a new year, edit the three rtf files, changing the package name to reflect the new date and release date.

4. BUILDING TEXLIVE-2013 WITH PACKAGEMAKER

Edit MacTeXMaker, the Packagemaker project file, using the GUI interface, as follows.

- (1) Click the top item on the left. The right side will change to a view with three tabs. First select the Configuration tab. Edit so
 - (a) Title: MacTeX-2013
 - (b) User Sees: Easy and Custom Intall
 - (c) Install Destination: System volume
 - (d) Certificate: Leave this blank. You might think that putting a certificate name here would correctly sign the package, but experiments show that it does not. The package needs to be signed after it is constructed.
 - (e) Description: Empty
- (2) The Requirements and Actions tab entries for the top item can be left blank

Click the entry TeXLive-2013 in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: TeXLive-2013
 - (b) Identifier: choice1
 - (c) Initial State: Selected and Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the TeXLive-2013 entry in the bottom left column. This item should show an “texlive” directory, obtained by dragging ../TeXLive-2013/root/usr/local to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents or Components tabs. The items under the Configuration tab should be edited as follows:
 - (a) Install: ../TeXLive-2013/root/usr/local (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /usr/local (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.texlive2013
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be edited to read

- (a) Scripts directory: scripts_texlive (The item on the right should have selected “Relative To Project”)
- (b) Preinstall: Leave Blank
- (c) Postinstall: scripts_texlive/postinstall (The item on the right should have selected “Relative To Project”)

Click the entry GUI-Applications in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: GUI-Applications
 - (b) Identifier: choice2
 - (c) Initial State: Selected and Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the GUI-Applications entry in the bottom left column. Add an “Applications” directory to this item by dragging ../GUI-Applications/root/Applications to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents tab. But it is *very important* to edit the items under the Components tab, turning off all boxes labeled “Allow Relocation.” The items under the Configuration tab should be edited as follows:
 - (a) Install: ../GUI-Applications/root/Applications (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /Applications (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.gui
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be edited to read

- (a) Scripts directory: scripts_gui (The item on the right should have selected “Relative To Project”)
- (b) Preinstall: Leave Blank
- (c) Postinstall: scripts_gui/postinstall (The item on the right should have selected “Relative To Project”)

Click the entry Ghostscript-9.05 in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: Ghostscript-9.05
 - (b) Identifier: choice3
 - (c) Initial State: Selected and Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the Ghostscript-9.05 entry in the bottom left column. This item should show a “local” directory, obtained by dragging ../Ghostscript-9.05/root/usr/local to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents or Components tabs. The items under the Configuration tab should be edited as follows:
 - (a) Install: ../Ghostscript-9.05/root/usr/local (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /usr/local (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.ghostscript9.05
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be edited to read

- (a) Scripts directory: scripts_ghostscript (The item on the right should have selected “Relative To Project”)
- (b) Preinstall: Leave Blank
- (c) Postinstall: scripts_ghostscript/postinstall (The item on the right should have selected “Relative To Project”)

Click the entry Convert-IM-6.7.6 in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: Convert-IM-6.7.6
 - (b) Identifier: choice4
 - (c) Initial State: Selected and Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the Convert-IM-6.7.6 entry in the bottom left column. This item should show an “local” directory, obtained by dragging ../Convert-IM/rot/usr/local to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents or Components tabs. The items under the Configuration tab should be edited as follows:
 - (a) Install: ../Convert-IM/root/usr/local (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /usr/local (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.imagemagick-convert-6.7.6-9
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be edited to read

- (a) Scripts directory: scripts_convert (The item on the right should have selected “Relative To Project”)
- (b) Preinstall: Leave Blank
- (c) Postinstall: scripts_convert/postinstall (The item on the right should have selected “Relative To Project”)

Click the entry Latin-Modern-Fonts in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: Latin-Modern-Fonts
 - (b) Identifier: choice5
 - (c) Initial State: Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the Latin-Modern-Fonts entry in the bottom left column. This item should show a “Fonts” directory, obtained by dragging ../Latin-Modern-Fonts/root/Library/Fonts to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents or Components tabs. The items under the Configuration tab should be edited as follows:
 - (a) Install: ../Latin-Modern-Fonts/root/Library/Fonts (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /Library/Fonts (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.latin-modern
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be left blank

Click the entry TeX-Gyre-Fonts in the Contents section on the left. The right side will change to a view with two tabs.

- (1) Select the Configuration tab. Edit so
 - (a) Choice Name: TeX-Gyre-Fonts
 - (b) Identifier: choice6
 - (c) Initial State: Enabled
 - (d) Destination: /
 - (e) Tooltip: Leave Blank
 - (f) Description: Leave Blank
- (2) The Requirements tab entries for this contents item can be left blank
- (3) Open the TeX-Gyre-Fonts entry in the bottom left column. This item should show a “Fonts” directory, obtained by dragging ../TeX-Gyre-Fonts/root/Library/Fonts to the left column. The right side will change to a view with four tabs. It is not necessary to edit the items under the Contents or Components tabs. The items under the Configuration tab should be edited as follows:
 - (a) Install: ../TeX-Gyre-Fonts/root/Library/Fonts (The item on the right should have selected “Relative To Project”)
 - (b) Destination: /Library/Fonts (The item on the right should have selected “Relative To Project”)
 - (c) Do not check “Allow custom location”
 - (d) Patch: No patch root selected
 - (e) Package Identifier: org.tug.mactex.tex-gyre
 - (f) Package Version: 1.0
 - (g) Restart Action: None
 - (h) Check “Require admin authentication”
 - (i) PackageLocation: Self-Contained

The items under the Scripts tab should be left blank

5. BUILDING

After verifying all these items, build the install package by clicking the “Build” icon. When asked to select a name, choose “MacTeX-2013-Temp”.

Packagemaker will report a large number of warnings in the Ghostscript package, but all are incorrect permissions for links. I believe these permissions are actually correct; they agree with link permissions set by the TeX Live installer.

Packagemaker will also report warnings in the GUI-Applications package. Almost all of these say “Group ID 80 does not match 20 of root volume.” Experimentation involving changing the groups of these applications changes this to “Group ID 20 does not match 80 of root volume.” I do not believe this warning is important, but it would be nice to know more about it.

6. SIGNING

After the package has been made, sign it by executing the following line in Terminal:

```
sh signPackage.sh
```

This script simply calls

```
productsign --sign "Developer ID Installer: Richard Koch" old-name new-name
```

where “old-name” is MacTeX-2013-Temp.pkg and “new-name” is MacTeX-2013.pkg.