

Getting Started With T_EX*on MacOS X

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Getting started with T_EX and/or variants can be an intimidating process for those who not only have to overcome the burden of learning a new way of document generation, but also have to learn how to get a working installation up and running. The goal of this document is to help you get going with a working installation on MacOS X, not to teach T_EX. That's best left to references available on the MacT_EX site, the main repository for T_EX, [the Comprehensive T_EX Archive Network](#), and [the T_EX Users group](#). Arguments for using T_EX are available at these locations as well. My personal 'pitch' is that I used MS Word® for my masters thesis, my dissertation, and numerous papers. I used FrameMaker for three years. I use L^AT_EX now. My personal belief is that it's better because it is written by the people who need to use it day in and day out, and these people just happen to be, in many cases, highly competent programmers (much more so than I).

You should start by recognizing that many consider the hardest thing about L^AT_EX to be the installation. Fortunately, many software authors have been working diligently since MacOS X was first released in beta form to bring you what has become a group of the easiest to install and maintain distributions on any platform. With these installations, you can use T_EX, L^AT_EX, and many other variants. Because L^AT_EX is the most common, so I will stick to it for examples.

*...or L^AT_EX and other variants

[†]With input from Jérôme Laurens, Joachim Koch, and many others on the MacT_EX mailing list.

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1 Overview

You need one of each:

1. The actual $\text{T}_{\text{E}}\text{X}$ distribution: On the Mac there are four: Gerben Wierda's i-Installer, CMac $\text{T}_{\text{E}}\text{X}$, Oz $\text{T}_{\text{E}}\text{X}$, and te $\text{T}_{\text{E}}\text{X}$ installed with Fink. The second two allow the use of the i-Installer variant, which is based on $\text{T}_{\text{E}}\text{X}$ Live. $\text{T}_{\text{E}}\text{X}$ Live is a superset of te $\text{T}_{\text{E}}\text{X}$ the long-time unix standard.
2. $\text{T}_{\text{E}}\text{X}$ editor: This is nothing more than a text editor. MSWord® will work (defeating the purpose of $\text{T}_{\text{E}}\text{X}$ to every extent), but you want one with at least syntax highlighting, and better yet, one with macros and such from menus, and something with some level of integration with the $\text{T}_{\text{E}}\text{X}$ engine, and some integration with a Viewer.
3. A viewer. If you can't see the formatted document, you're at a significant loss. A formerly significant complaint of ex-users of $\text{T}_{\text{E}}\text{X}$ and variants was the lack of a viewer. Surprisingly, those folks are going on nearly twenty years out of date. This has been more than rectified with the ability to view the results in DVI (device independent)¹, PS, and PDF formats, as well as, of course, on paper.
4. The BSD subsystem. It is installed by default with MacOS X, however, when you install MacOS X, there is an option to not install this. Don't do it! If you neglected to install it, go to your OS X CDs and install it before installing i-Installer. Note that this is different from the developer tools, which are yet another collection of things.

Additionally, you will want a spell checker, but you can wait on this if you just want to get going, if not completely comfortable. The built-in Apple spell-checker can be used in the mean time. It will try to spell check things it shouldn't/can't understand, but that's a secondary issue.

The following sections illustrate some example setups, and try to define the *type* of user suitable for each. The reality is that you may find yourself drifting around trying many of them before settling on what you are most comfortable with. In fact, you may find yourself using different setups for different tasks (one for letters, one for presentations, another for papers, and another for your grocery list). Each scenario is primarily defined by the environment you will spend most of your time in, the editor. There is no right or wrong, simply better or worse *for you*.

2 $\text{T}_{\text{E}}\text{X}$ Shop and i $\text{T}_{\text{E}}\text{X}$ Mac: Unified environments

This scenario is for the person who is not Unix-inclined, hasn't used $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ in classic MacOS, and/or wants a completely free solution.

Choose one:

¹A DVI file is a generic formatted document that can be viewed or printed on any device, with identical results, within device capabilities.

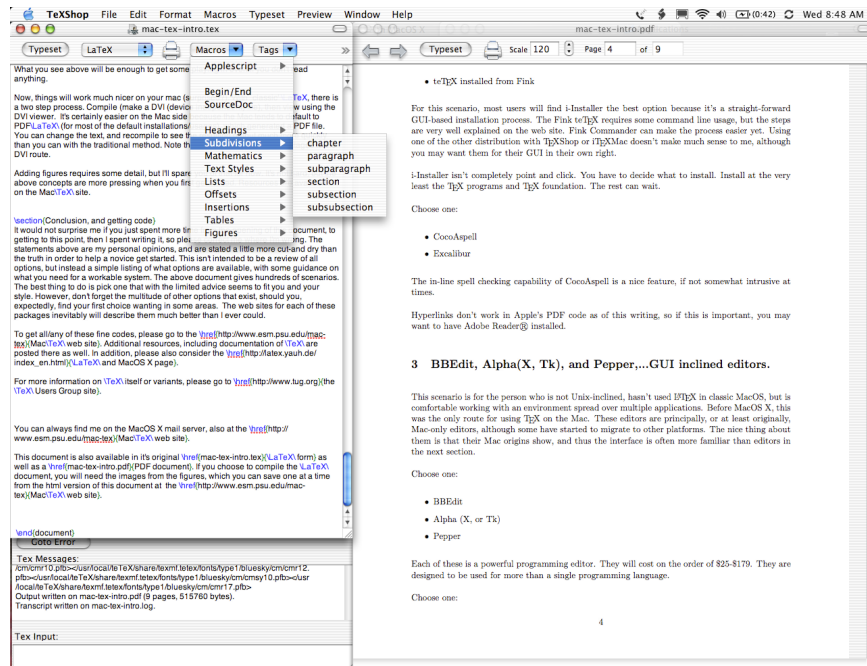


Figure 1: Screenshot of TeXShop while editing this document.

- TeXShop and iTeXMac are woven from the same cloth, so to speak. They are both Cocoa applications, built to run only on MacOS X. TeXShop was the first purely MacOS X TeX editor, and remains one of the most popular. Its design goal is simplicity of interface over functionality, and tends to be changed and enhanced relatively infrequently, but that's because it has much of what many users want. This environment will appear seamless, you will never switch applications (unless you need features not available in TeXShop). See Figure 1.
- iTeXMac, on the other hand, stresses features, at the expense of a less streamlined interface. It has enhanced features much more typical of a powerful programming editor. See Figure 2.

Choose one:

- i-Installer (TeX Live)
- teTeX installed from Fink

For this scenario, most users will find i-Installer, Figure 3, the best option because it's a straight-forward GUI-based installation process. The Fink teTeX requires some command line usage, but the steps are very well explained on the web site. Fink Commander can make the process easier yet. Using one of the other distribution with TeXShop or iTeXMac doesn't make much sense to me, although you may want them for their GUI in their own right.

i-Installer isn't completely point and click. You have to decide what to install. Install at the very least the TeX programs and TeX foundation. The rest can wait.

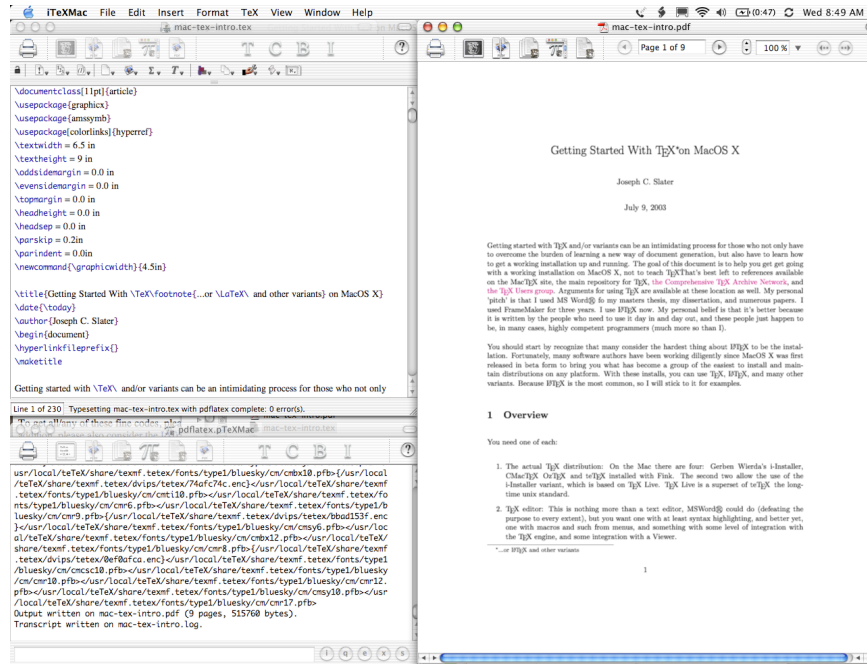


Figure 2: Screenshot of iTeXMac while editing this document.

Choose one:

- CocoAspell
- Excalibur

The in-line spell-checking capability of CocoAspell, Figure 4, is a nice feature, if not somewhat distracting at times. It acts as a service that can be used by applications enabled to use it. This is likely the best choice for use with these programs unless you do find the in-line spell-checking distracting. Hyperlinks don't work in programs using Apple's PDF code as of this writing, so if this is important, you may want to have Adobe Reader® installed.

3 BEdit, Alpha(X, Tk), and Pepper,...Mac-GUI-like editors.

This scenario is for the person who is not Unix-inclined, hasn't used L^AT_EX in classic MacOS, but is comfortable working with an environment spread over multiple applications. Before MacOS X, this was the only route for using T_EX on the Mac. These editors are principally, or at least originally, Mac-only editors, although some have started to migrate to other platforms. The nice thing about them is that their Mac origins show, and thus the interface is often more familiar than editors in the next section.

Choose one:

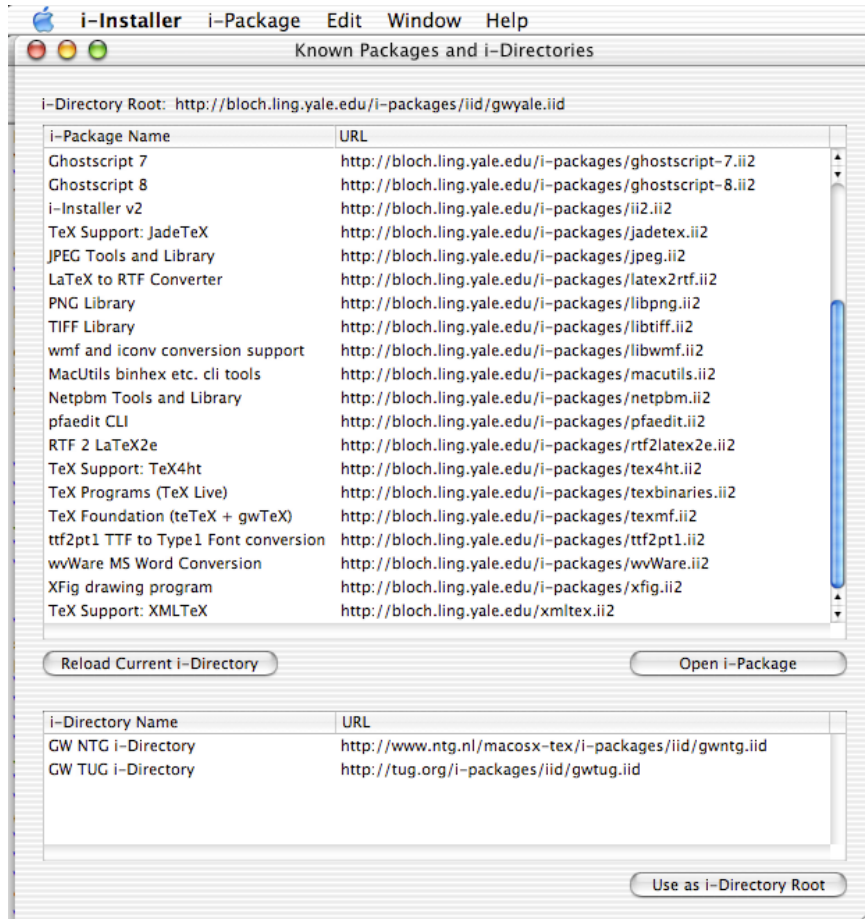


Figure 3: Screenshot of i-Installer.

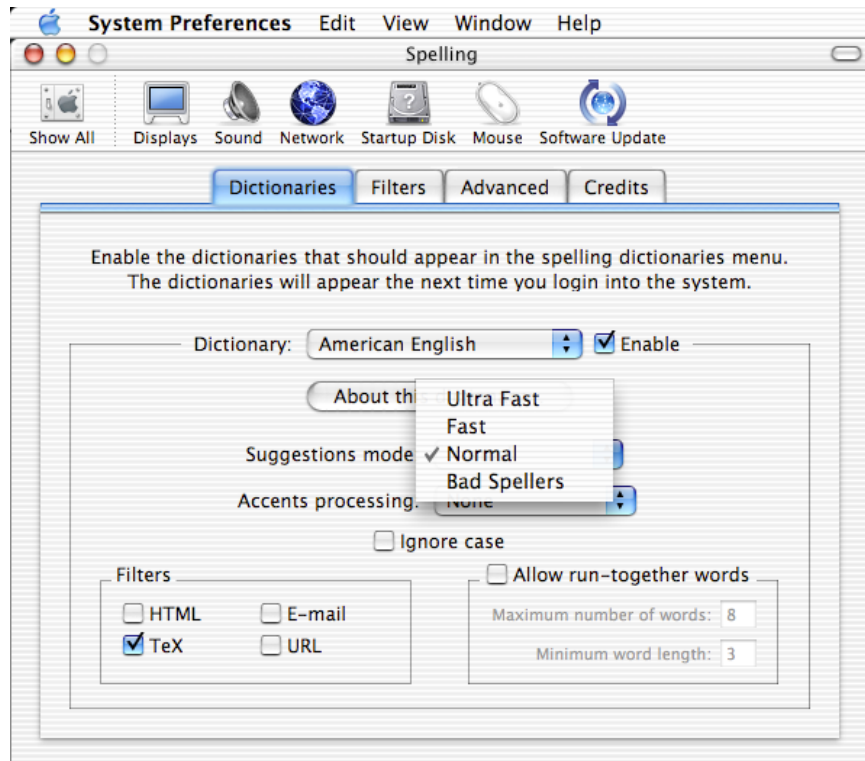


Figure 4: Screenshot of CocoAspell controls in System Preferences.

- BBEdit
- Alpha (X, or Tk)
- Pepper

Each of these is a powerful programming editor. They will cost on the order of \$25-\$179. They are designed to be used for more than a single programming language.

Choose one:

- i-Installer
- te $\text{T}_{\text{E}}\text{X}$ installed from Fink
- Oz $\text{T}_{\text{E}}\text{X}$
- CMac $\text{T}_{\text{E}}\text{X}$
- $\text{T}_{\text{E}}\text{X}$ Shell

For this scenario, most users will find i-Installer or Fink fine. Oz $\text{T}_{\text{E}}\text{X}$ and CMac $\text{T}_{\text{E}}\text{X}$ add a integrated GUI to the $\text{T}_{\text{E}}\text{X}$ engines (over what i-Installer does, which is purely reside behind the scenes to be

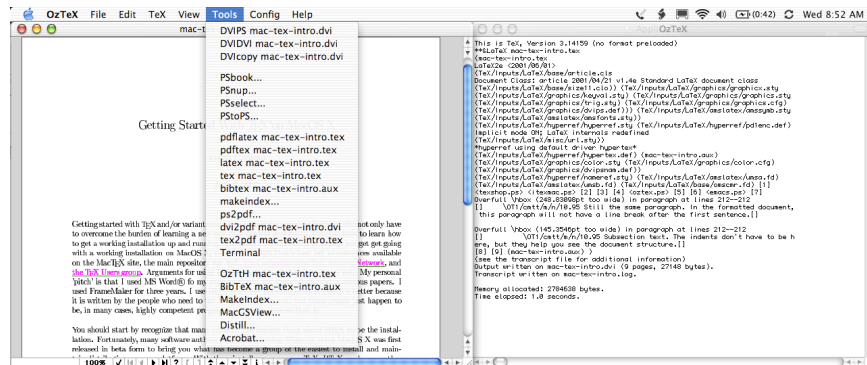


Figure 5: Screenshot of OzTeX while editing this document.

called by other GUIs), resulting in a much easier interface for a novice for special operations (e.g. putting multiple pages start on a sheet...). OzTeX is designed as a handful (few) programs that run many TeX operations, while CMacTeX separates each operation out into its own. Each also has a DVI viewer, necessary when using non-PDF TeX.

Choose one:

- Adobe reader
- Adobe Acrobat
- Preview
- OzTeX
- CMacTeX
- MacDVIX

If PDFTeX is used, any PDF® viewer can be used, but hyperlinks don't work in viewers using Apple's® PDF code (e.g. Preview, iTeXMac, TeXShop...), so you may want to have Adobe Reader® or Acrobat installed.

Choose one (speller):

- CocoAspell
- Excalibur

The in-line spell-checking capability of CocoAspell is a nice feature, if not somewhat intrusive at times. I'm not sure whether it works or not in these editors (please instruct me!). Excalibur spell-checks the entire document when commanded by the user, and is callable from Alpha (at the very least). The other editors can be scripted to send the document being edited to Excalibur, if they haven't been already. Note that BBEdit has its own built-in spell-checker.

4 Unix editors

These are usually for more hard-core unix folks (at least in mentality), but others enjoy the power and price, as well as the typically larger expert community. Emacs and vi are Unix staples, but available on pretty much any platform, making them very available where ever you may find yourself. The war will rage to eternity regarding which is best. If you want to do all of your editing, T_EX and code, choose the one that fits your personality.

If you are bringing unix skills from another platform, this section simply illustrates that MacOS X is unix. Apple's web site has a technical brief just for you with the document name *MacOSX_for_UNIX_users_TB* (it's not guaranteed to stay at a fixed link, so I'm not giving one). For simplicity of maintaining installations, you may want to use [fink](#). If you are less unix inclined, these editors may still be of interest to you because they are free and very heavily supported by the free-software community. Both are available from the terminal, but there are Aqua-GUI versions, as well as X-Windows versions (where applicable). You're most likely to want [X-windows](#) installed under this scenario. Choose one:

- Emacs (terminal, Aqua: as Enhanced Carbon Emacs with auc-tex and preview-latex, or X-windows)
- XEmacs (terminal, Aqua, or X-windows)
- vi/vim/kvim (terminal, Aqua, or X-windows)
- nedit
- jEdit
- nano
- kedit
- zoink

Choose one:

- i-Installer
- teT_EX installed from Fink
- teT_EX compiled and built from scratch.

For this scenario, most users will find i-Installer fine. The Fink teT_EX doesn't seem to be as well supported. OzT_EX and CMacT_EX add a GUI to the T_EX engines, resulting in a much easier interface for a novice for special operations (e.g. putting multiple pages on a sheet...), not as well suited for the Unix expert (but not bad to have on hand).

Choose one:

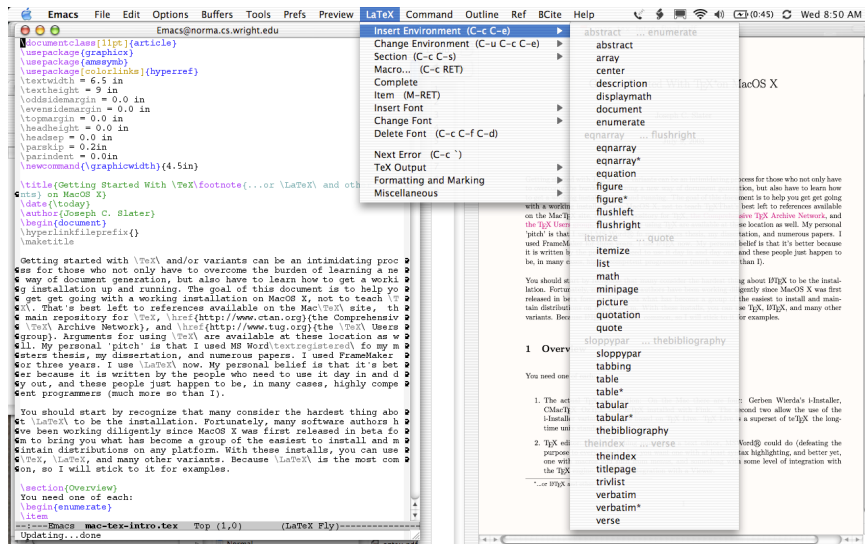


Figure 6: Screenshot of Enhanced Carbon Emacs while editing this document.

- Adobe reader
- Adobe Acrobat
- Preview
- xdvi
- xpdf
- MacDVIX

If PDF_TE_X is used, any PDF[®] viewer can be used, but hyperlinks don't work in programs using Apple's[®] PDF code so you may want to have Adobe Reader[®] or Acrobat[®] installed. xdvi and xpdf can be installed using fink, or i-Installer. DVI viewers are also available with MacT_EX and OzT_EX.

Choose one (speller):

- Excalibur
- ispell
- aspell

The in-line spell-checking capability of CocoAspell is a nice feature, but won't work here. Excalibur spell-checks the entire document when commanded by the user, and is callable (open -a Excalibur *filename*). ispell allows spell-checking in-line in emacs. Enhanced carbon emacs has this set up ready for ispell when it's installed.

5 Trying It Out: My First L^AT_EX Document

```
1 \documentclass{article}
2 \author{me}
3 \date{\today}
4 \title{My_First_Document}
5 \begin{document}
6 \maketitle
7 \section{My_first_section}
8 .....Now I'm up and running, see equation (\ref{eqn:random}).
9 .....\begin{equation}\label{eqn:random}
10 .....\alpha^{\beta}=\frac{\sqrt{\int_0^{\infty}x^2dx}}{\beta}
11 .....\end{equation}
12 .....A paragraph
13
14 .....Another paragraph.
15 ..... Still the same paragraph. In the formatted document, this paragraph
16 ..... will not have a line break after the first sentence.
17 .....\subsection{In more detail}\label{sec:subsectionmoredetail}
18 ..... Subsection text. The indents don't have to be here,
19 ..... but they help you see the document structure.
20 \end{document}
```

Don't get wrapped up in margins and such. That's the beauty of L^AT_EX. You don't worry about visual form. You worry about logical form. Things like `eqn:random` and `sec:subsectionmoredetail` above are just variables, for all intents and purposes. What you see above will be enough to get some playing in even if you don't read anything.

Now, things will work much nicer on your mac (surprised?). With 'classic' L^AT_EX, there is often a two step process. Compile (make a DVI (device independent) file), then view using the DVI viewer, and convert that to PDF or PS for printing. If the end result will be a PDF document, PDFL^AT_EX is generally much faster, but some advanced features may not work correctly (they are going away quickly, though). The Mac tends to default to PDFL^AT_EX (for most of the default installation-usages), which generates a PDF file. Note that there are still some advantages to the DVI route, one significant one being illustrated by MacDVIX in which clicking in the DVI can send you directly to the appropriate location in your T_EX document.

Adding figures requires some detail, but I'll spare you of that for now. It's not hard, but the above concepts are more pressing when you first get started. Resources are available on the MacT_EX site. Additionally, this document is also available in its original L^AT_EX form as well as a PDF document. If you choose to compile the L^AT_EX document, you will need the images from the figures. You can save them one at a time from the html version of this document at the MacT_EX web site by control-clicking on each of them. You can compile this document fine without them. L^AT_EX will gripe about missing graphics, but you can always answer 'Q' (capital 'Q' without the quotes) to go

into quiet mode. It will continue without stopping to complain.

6 Conclusion, and getting programs

It would not surprise me if you just spent more time from the opening of this document, to getting to this point, then I spent writing it, so please correct me where I'm wrong. The statements above are my personal opinions, and are stated a little more cut-and-dry than the truth in order to help a novice get started. This isn't intended to be a review of all options, but instead a simple listing of what options are available, with some guidance on what you need for a workable system. The above document gives hundreds of scenarios. The best thing to do is pick one that with the limited advice seems to fit you and your style. However, don't forget the multitude of other options that exist, should you, expectedly, find your first choice wanting in some areas. The web sites for each of these packages inevitably will describe them much better than I ever could.

To get all/any of these fine programs, please go to the [MacTeX web site](#). Additional resources, including documentation of TeX are posted there as well. In addition, please also consider the [L^ATeX and MacOS X page](#). For more information on TeX itself or variants, please go to [the TeX Users Group site](#).

You can always find me and a slew of even more expert people on the MacOS X TeX mail server. Signup is at the [MacTeX web site](#). Good TeXing!