
proTEXt

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<http://tug.org/protext>

The Quickest Way to a TEX System

based on MiKTEX and TEXstudio

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1 Welcome to the World of T_EX

1.1 General

The fact that you're reading this installation guide lets us surmise some fundamental assumptions about your computer life and what you want from it. Allow me to make a few conjectures as to why you've got a *proT_EX* DVD in your drive, and judge for yourself how close I am:

- You're fed up with having to tweak *Word* or some other similarly-afflicted word processor, just because your document has crossed the magic border of 30 pages.
- You don't really have anything against a 'normal' word processor, but your studies or work unfortunately require you to set mathematics (and thus in L^AT_EX).
- Your professor (or other task-master) is a fan of L^AT_EX, and thus you don't have a choice.
- You are interested in producing first-class PDF documents, possibly even interactive ones – like this document. In this case, (PDF)L^AT_EX offers you possibilities that the users of the above-named word processors can't even dream of.

The goal of *proT_EX* is to allow you to install a complete T_EX system as easily as possible. Please note however that:

*This document is not an introduction
to the use of T_EX or L^AT_EX!*

Its only task is to put something useful on your computer.

If you are one of those persons who first installs something, then asks *what* you've installed, I have a few remarks below, just for assurance. You can read those remarks in chapter [3.2 on page 17](#).

1.2 So Setup is running – what now?

By launching the included `setup.exe`, you've started the global *proT_EX* setup. Although we've arranged everything logically, and there shouldn't be any fundamental issues with the installation, perhaps you're still a bit uncertain how the whole thing is going to transpire.

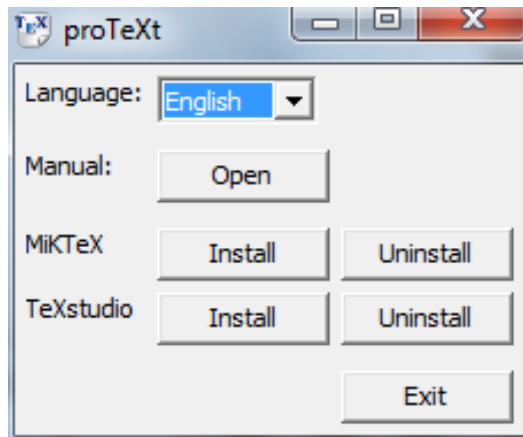


Figure 1.1: *proTeXt*'s global setup window

At least you've already made the correct next choice: you're looking at *this guide*. In the following sections, we'll show you exactly *what* is behind all those buttons.

1.3 Beginners take note: \TeX is different!

If this is your first contact with \TeX , you should try to understand one fact that often trips up beginners: \TeX is both a program and a language. \TeX is a program that uses the \TeX typesetting language to create finished documents.

In order to start working with \TeX in the first place, you will normally need other programs, such as an *editor* in order to compose the required input files.

A *complete* \TeX system consists of several individual components, which unfortunately need to be installed separately.¹

The question of which components are absolutely required has no blanket answer. It depends on your needs and wishes. On this DVD, however, you will find everything you need (in my opinion) for a problem-free start in the \TeX world. Figure 1.2 on the next page shows an overview.

1.4 How do I use this thing?, or: Read Me First!

You get a functioning \TeX system by installing at least the components marked in figure 1.2 as *required*; the illustration also shows the order in which you should install the components.

¹ Look at it this way: what seems right now to be a pain will work out for the best, since you can use the tools you are most comfortable with. You won't be forced to use something just because the developer thinks you should.

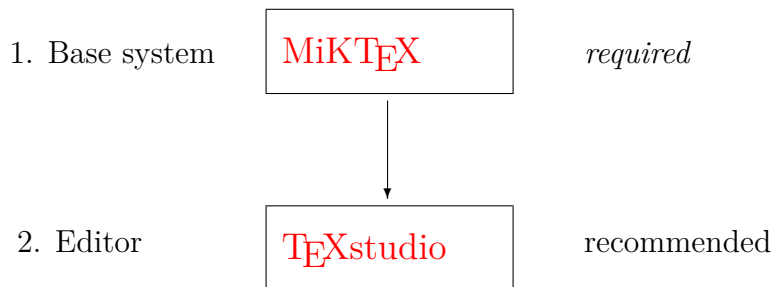


Figure 1.2: *proTeXt*: Overview of the individual components of the installation

Each component has a chapter below that leads you through its installation and offers tips and advice. The general plan is as follows:

Removing old versions : Before you install new components on your computer, you should remove *old versions* that might already be installed. This section will guide you through this quickly and easily.

Installation notes : Although in most cases you can use the default values suggested by the installer, should the proverbial ‘exception that proves the rule’ rear its head, you’ll find it documented here.

Updates : Almost as soon as you install software, it’s out of date. However, some components have the ability to keep themselves always up to date, and this section describes how.

Alternatives : As already mentioned, this DVD acts as a *starter kit*, which means that it contains components that I can imagine will help you to get a problem-free start on the road to T_EX. However, since everyone’s taste is a bit different, you will find alternatives listed in this section.

1.5 A few last notes

If you take the following points to heart, nothing should go wrong:

- Read the **installation notes** in each section *before* you install the program. Items are covered there that you may need to know about during the installation.



Even better: **Print** the entire document before you begin installing, and read through it carefully at least once.

- *Only then* should you begin installing.
- Install all the components you need in the same manner. You’ll have a working T_EX system up and running in no time; certainly

less time than Word needs to print the 30 pages we mentioned above.

Let's get started...

1.6 MiKTeX

MiKTeX, a T_EX distribution by Christian Schenk is the basis of *proT_EXt*. MiKTeX is a project that is constantly being developed. You can find notes to its current status at the [MiKTeX Project Page](http://www.miktex.org) (<http://www.miktex.org>).

Version contained in *proT_EXt*: *MiKTeX 2.9*

Required disk space: ≈ 1.75 GB

1.6.1 Removing old versions

If you’ve used an older version of MiKTeX, you should uninstall it before you begin this new install. You can do so either via Control Panel → Add or Remove Programs, or simply click on next to the MiKTeX label in the main setup window (see figure 1.1).

1.6.2 The Systems size

In the last weeks and months, we received several complaints committed to *proT_EXt*’s size (which was at least 3.5 GB). Starting with the current version *proT_EXt* is shipped with a amount of packages and styles, based on T_EXLive’s “medium installation scheme” to reduce space.² This should satisfy the needs of the most L^AT_EX-documents. Beside that, missing packages can be easily post-installed online during the compilation of your document as usual.

1.6.3 Installation notes

After you click next to the MiKTeX label, the installer virtually runs itself, which is to say you can and should accept the default settings. However, be careful at the points shown in the following windows:

Installation Scope

While Windows (at least since version 7) has the potentiality to host multiple user, you can decide if you will make MiKTeX available for all registered users on your host, or only for yourself. Dependent of your choice, the default setted → **Installation Directory** might differ.

In case you’re unsure, and if no serial reason points against it, you should take over the recommended default.

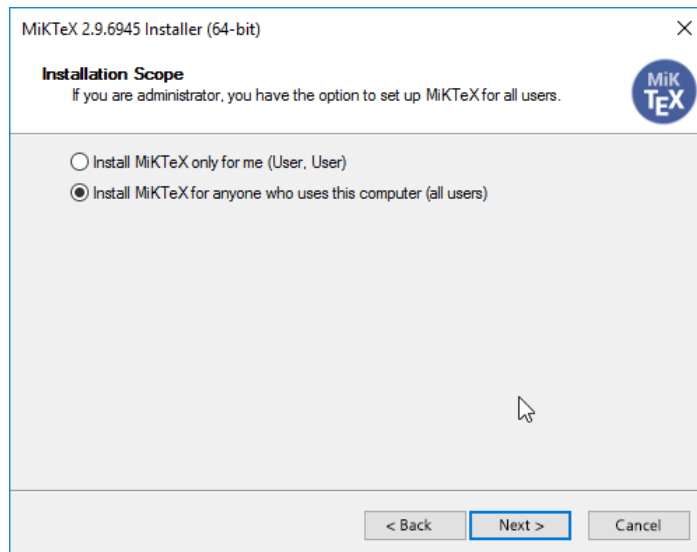


Figure 1.3: Local vs. systemwide Installation.

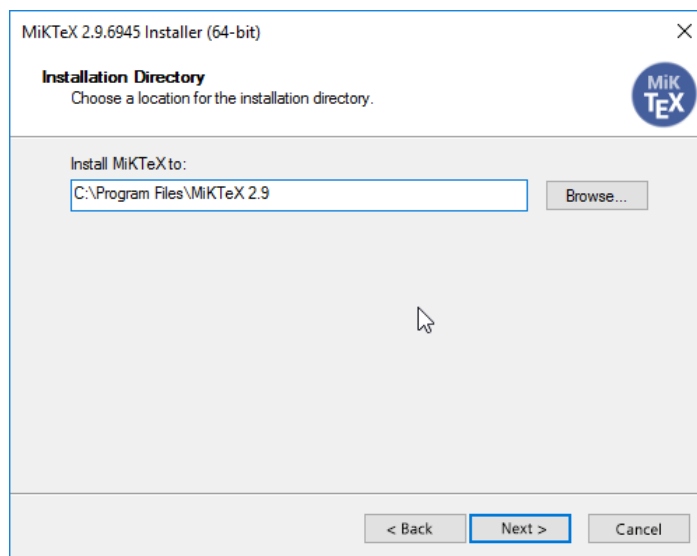


Figure 1.4: MiKTeX's installation directory

Installation Directory

As is typical for Windows, choose a systemwide installation, MiKTeX is installed into the default location `C:\Program Files`. If you've decided to install MiKTeX only for yourself, it will be installed in the local user's `Program`-directory.

In principle, you can install it anywhere you want, even if (in my

² thanks to Dr. Klaus H ppner and his wonderful ideas :-)

opinion) there is no good reason to do so.

Settings

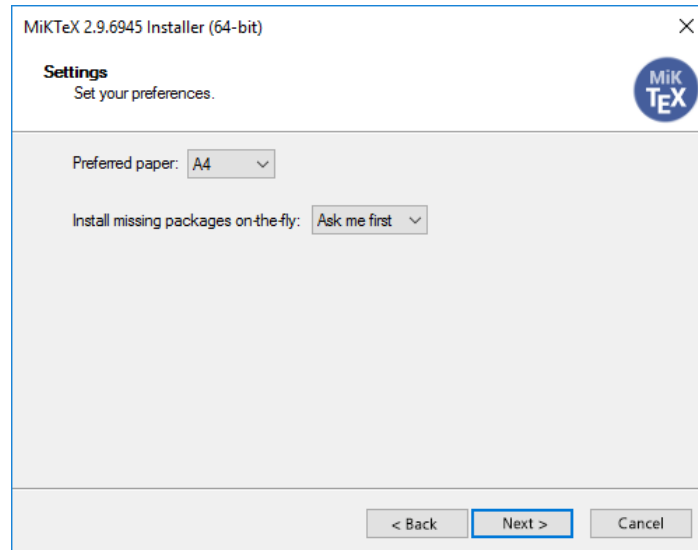


Figure 1.5: Letter or A4?

→ Figure 1.5

→ *Tip*

In the final installation window, you must set the standard paper size. You can choose either American letter or European A4.

After installation, you can change the paper size at any time via **MiKTeX's Console**.

You'll find the **Console** by going to the *Windows* menu and selecting the MiKTeX 2.9-entry.

Update Check

→ Abbildung 1.6 on the next page

In a last step MiKTeX offers the possibility to refresh your system and installed packages to the most current versions. Even if you deny these upgrades, you can easily catch up on everything to a later moment, using **MiKTeX's Console**.

1.6.4 Problem: Installation fails

Some Users reported an unexpected installation failure, while the installation process unhappily ends, producing a (not really helping) message

The operation could not be completed for the following reason:
The operation failed for some reason.

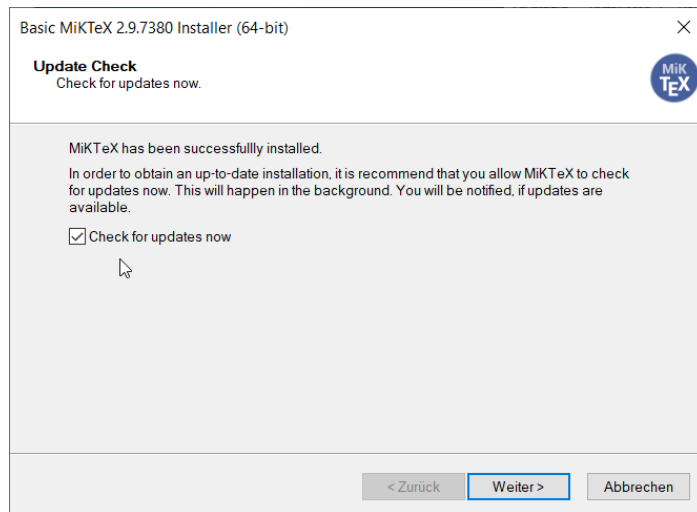


Figure 1.6: Erster Update Check

In nearly almost cases the error was caused by the local anti-virus-software. Disabling the anti-virus-software during installation time leaded finally to success.

1.6.5 Updates

Beginning with the current version, MiKTeX is equipped with the new **MiKTeX Console**, which manages all system's configuration, including Update-Management, local package repositories, ...

As shown above, you'll find the **Console** via the Windows-Menu, inside the MiKTeX-Section.

1.6.6 Whither my own packages, classes, and configurations?

By default, MiKTeX provides you with two directories, in which you may store local Class- and Style-Files. The concrete File- and Directory-Path is shown by **MiKTeX's Console** → Settings → Directories.

→ figure 1.7 on the following page

The directories, named `C:\Users\`, shown at the top, are prepared for your local Class- and Style-Files.

Attention! Never store or overwrite files inside the Install-directories with local content.

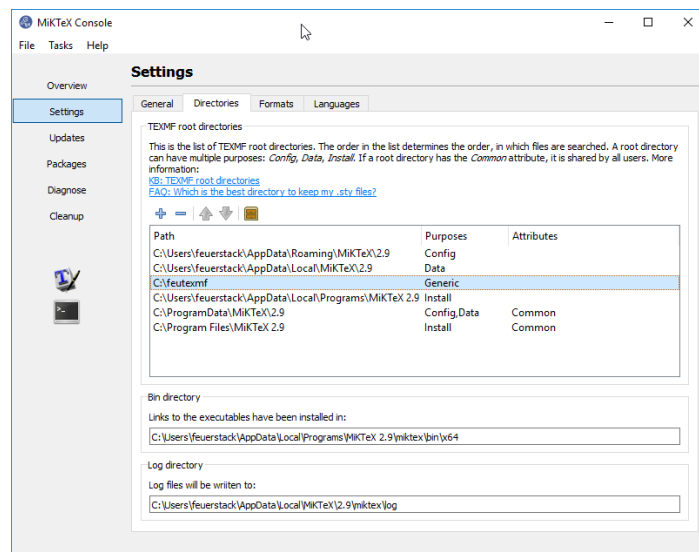


Figure 1.7: Where to store your own \TeX related material.

1.7 T_EXstudio

→ figure 1.8

As you already know from the introduction, in addition to the T_EX engine itself, you also need a *text editor* to create and modify your documents. For quite some time, the *TeXworks* editor has been included in MiK_TE_X. TeXworks is small, simple, and efficient, and is therefore perfect for newbies. However, its simplicity is also its greatest disadvantage: in using it, you quickly reach the limits of its ability.

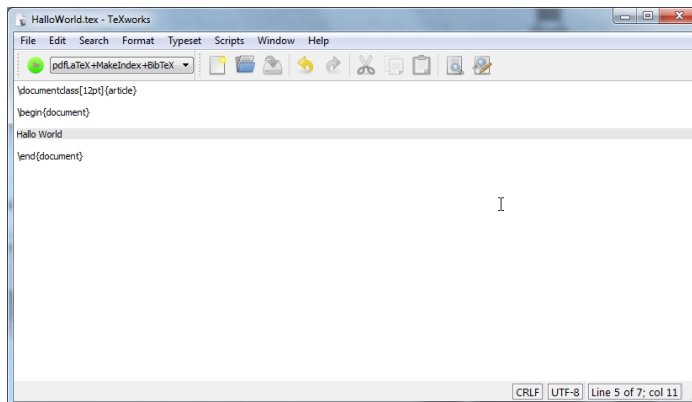


Figure 1.8: *TeXworks* is a compact text editor for beginners.

For these reasons, we’ve included in *proT_EXt* the *T_EXstudio* editor. T_EXstudio is an editor that ‘supports T_EX’. What that means is that you still have to write the necessary code just like you did before, but T_EXstudio provides you with the ability to write certain constructs like basic formatting and superscripts, or to set up more complex constructs like formulas, tables, and so on, either by clicking on a button or choosing a menu item.

proT_EXt currently contains *T_EXstudio 3.1.1*

Required disk space: 700 MB

1.7.1 Removing old versions

→ figure 1.1 on page 5

If you’ve already worked with an older version of T_EXstudio, you should remove it from your system before installing a new version. You can do this in *proT_EXt*’s setup by selecting the **Uninstall** button next to the T_EXstudio label.

1.7.2 Installation notes

There’s almost nothing that can go wrong with the installation as long as you install *MiK_TE_X first* – which will of course be the case if you follow the directions in this guide.

1.7.3 After the installation

→ figure 1.9

The first time you run \TeXstudio , it will automatically configure itself to run with the \MiKTeX on your system . You can also choose a different language, if you want.

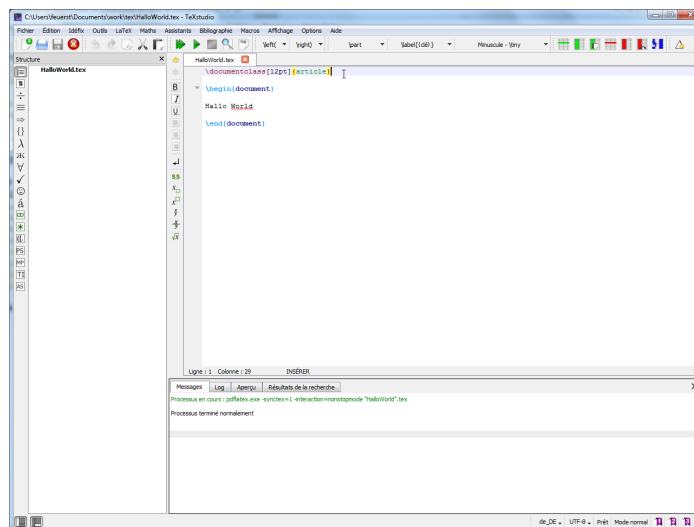


Figure 1.9: \TeXstudio 's first run.

1.7.4 Hints and Problems

Creating a corresponding Program-Icon on the computer's desktop, doesn't seem to be part of the installation anymore. You can easily fix this, by dragging it from the \MiKTeX -section inside the Windows-Menu.

1.7.5 Alternative editors

No other component of a \TeX system is as personal as the choice of an editor. If you feel that you and \TeXstudio just aren't made for each other, try one of these other choices:

TeXniccenter : For years, *the* editor on Windows. Recently, it's been somewhat irregularly maintained. Nonetheless, if you're used to it, see:

<http://www.texniccenter.org/>

WinEdt : In some sense, the progenitor of all Windows \TeX editors. Very capable, but unfortunately *Shareware*. As a consequence, if after 30 days at the latest, you don't pay, the editor won't work any more.

<http://www.winedt.com>

2 Extensions

2.1 General

One of MiKTeX's major advantages is its modularity, which means, that you can extend the system by an uncountable number of additional packages. There seems to be nearly no layout-problem, which isn't already covered by someone's created extra package, regardless if its a special layout for your master-thesis, a presentation's foil-class, ... Despite that, you may want to extend your document by interactive forms or some JavaScript-Programming there exist multiple packages, which provider you with a solution.

A greater part of this packages is already included in *proTeXt*, and there is a good chance at least, that they are usable directly, while you've choosed a Complete MiKTeX installation. So, what do you'll still have to do for using an extra package?

2.2 on-the-fly-installation

The simplest way for using (and installing) an extra package is by referencing it inside your document's preamble. For example

```
\usepackage{aguplus}
```

would provide you with special styles, created by the *American Geophysical Union*. Even if its not already installed on your system, MiKTeX would try an "on-the-fly"-installation, by dragging the missing parts from the internet.

→ figure 1.5 on page 10

2.3 Using MiKTeX's console

MiKTeX's Console is the central part of your installation. Inside the section **Packages** you'll find an overview of all extension available (and installed) for your system. You may also (de-)install packages on this way.

From time to time, it may also be worth to have a look inside the tab **Updates** to keep your installation up-to-date.

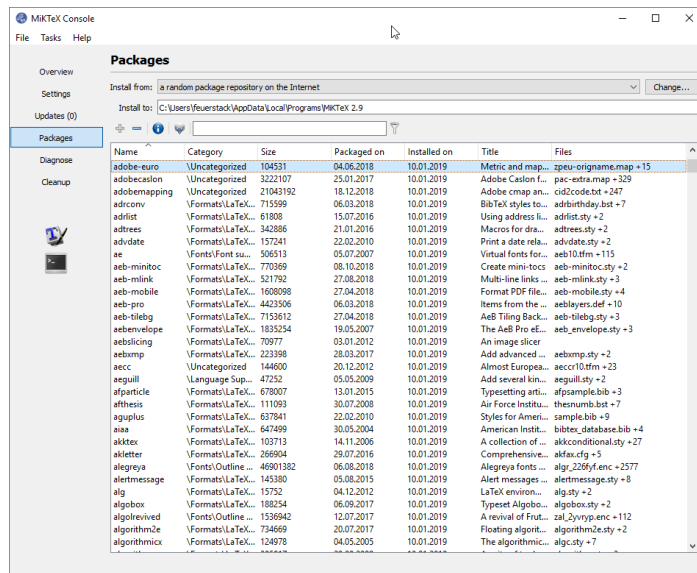


Figure 2.1: MiKTeX's Console

2.4 Packages not controlled by the Update Wizard

What do you do when you need a package that isn't in this distribution¹ and you can't find it in the Package Manager?

These and many other packages are distributed free of charge via CTAN,² which you can also access (if you are connected to the Internet).

A simple interface to CTAN is via the TUG web site at <http://www.tug.org/ctan.html>. From there you can search the archive and choose a server to use for your download.

¹ for example, one you read about in *The L^AT_EX Companion* (cf. chapter 3.2 on the next page)

² The Comprehensive T_EX Archive Network

3 Addresses/References

3.1 Getting off to a good start

If you have no experience whatsoever with T_EX/L^AT_EX, reading these guides (included on the DVD) should help get you started:

Peter Flynn: [Formatting Information](#); Silmaril, 2004

Tobias Oetiker et al.: [The Not So Short Introduction to L^AT_EX 2_ε](#).

See <http://www.tug.org/begin.html> for more references and introductory information.

3.2 Further references

Through the T_EX Users Group, you can order Addison-Wesley titles at a discounted price. (You do not have to be a TUG member to get the discount.) TUG has a page devoted to T_EX books at <http://www.tug.org/books>. Selected titles:

Frank Mittelbach, Michel Goossens, Johannes Braams, David Carlisle, and Chris Rowley: *The L^AT_EX Companion*, 2nd edition; Addison-Wesley; 2004. \$59.99 (discounted to \$41.99)

Helmut Kopka and Patrick W. Daly: *Guide to L^AT_EX*, 4th edition; Addison-Wesley; 2003. \$49.99 (discounted to \$34.99)

Donald E. Knuth: *The T_EXbook*; Addison-Wesley; 1984. \$42.95 (discounted to \$30.07)

3.3 Other addresses of relevance for T_EX

Because it is free software T_EX naturally has a world-wide user community. If you have Internet access, you can usually find answers to your questions at the following addresses:

FAQ

The FAQ¹ for English is available at <http://www.tex.ac.uk/faq>. It has a wealth of practical information on virtually any T_EX topic.

¹ FAQ = Frequently Asked Questions, also with *answers*!

Mailing lists

`texhax@tug.org`: One of several mailing lists that the T_EX Users Group runs. Perhaps the easiest way to subscribe is via the lists section of the TUG web site at <http://lists.tug.org/texhax>

Newsgroups

`comp.text.tex`: The main T_EX newsgroup.

T_EX Users Group (TUG)

TUG is the international user group for English-speaking T_EX users. Membership includes a subscription to the *TUGboat* journal, software distribution on DVD and CD (*proT_EXt*, T_EX Live, MacT_EX, the Comprehensive T_EX Archive Network), as well as discounts on conferences, publications, and software.

Like DANTE and other user groups, TUG supports the continued development of T_EX and friends (such as *proT_EXt*!). You can find out more information about the T_EX Users Group on their web site at <http://www.tug.org>.

Other T_EX user groups

There are many more T_EX user groups for other languages and locales. Please see <http://www.tug.org/usergroups.html> for a list.

Happy T_EXing!