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# proTEXT

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February 18, 2013

<http://tug.org/protex>

## The Quickest Way to a T<sub>E</sub>X System

based on MiK<sub>T</sub>E<sub>X</sub> and T<sub>E</sub>Xstudio

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# 1 Welcome to the World of T<sub>E</sub>X

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## 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<sub>E</sub>X* 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<sup>A</sup>T<sub>E</sub>X).
- Your professor (or other task-master) is a fan of L<sup>A</sup>T<sub>E</sub>X, 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<sup>A</sup>T<sub>E</sub>X offers you possibilities that the users of the above-named word processors can't even dream of.

The goal of *proT<sub>E</sub>X* is to allow you to install a complete T<sub>E</sub>X system as easily as possible. Please note however that:

*This document is not an introduction  
to the use of T<sub>E</sub>X or L<sup>A</sup>T<sub>E</sub>X!*

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<sub>E</sub>X* 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.

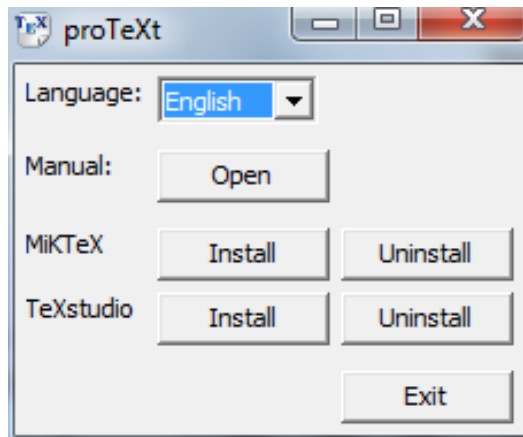


Figure 1.1: *proTeXt*'s global setup window

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: $\text{T}_{\text{E}}\text{X}$ is different!

If this is your first contact with  $\text{T}_{\text{E}}\text{X}$ , you should try to understand one fact that often trips up beginners:  $\text{T}_{\text{E}}\text{X}$  is both a program and a language.  $\text{T}_{\text{E}}\text{X}$  is a program that uses the  $\text{T}_{\text{E}}\text{X}$  typesetting language to create finished documents.

In order to start working with  $\text{T}_{\text{E}}\text{X}$  in the first place, you will normally need other programs, such as an *editor* in order to compose the required input files.

A *complete*  $\text{T}_{\text{E}}\text{X}$  system consists of several individual components, which unfortunately need to be installed separately.<sup>1</sup>

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  $\text{T}_{\text{E}}\text{X}$  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  $\text{T}_{\text{E}}\text{X}$  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.

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<sup>1</sup> 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.

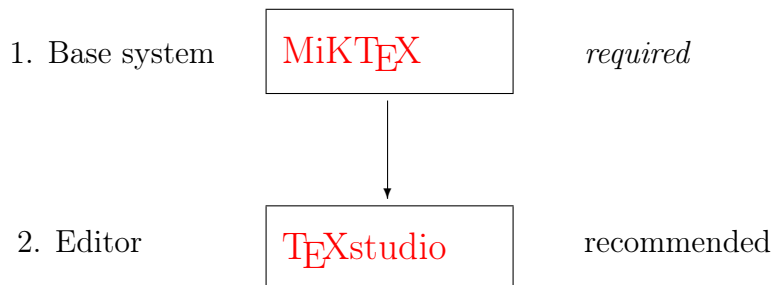


Figure 1.2: *proTeXt*: Overview of the individual components of the installation

*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 TeX. 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 TeX 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<sub>E</sub>X distribution by Christian Schenk is the basis of *proT<sub>E</sub>X*. 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<sub>E</sub>X*: *MiKTeX 2.9*

### 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 **Uninstall** next to the MiKTeX label in the main setup window (see figure 1.1).

### 1.6.2 Installation notes

After you click **Install** 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:

## Package Set

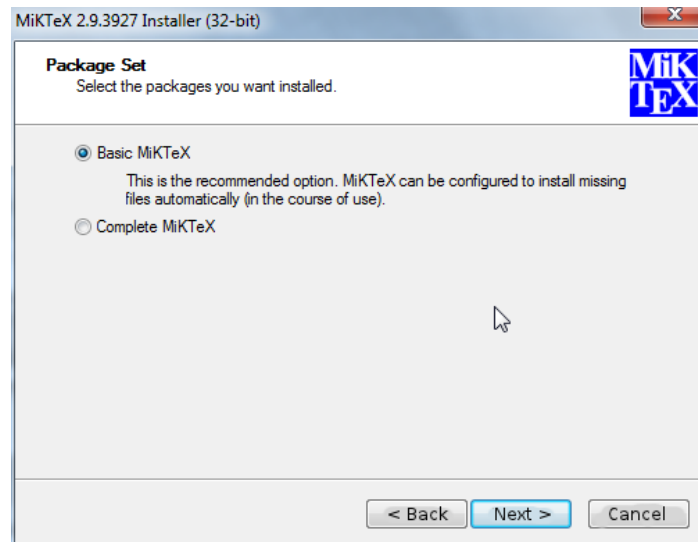


Figure 1.3: Choosing a package set.

T<sub>E</sub>X is a modular typesetting system, which means it can be extended almost infinitely by various classes, style files, and other packages. In this window, choose whether to install *all* available MiK<sub>T</sub>E<sub>X</sub> packages, or just the fifty (wild guess!) most often used packages. In my opinion, it makes most sense to install **Basic MiK<sub>T</sub>E<sub>X</sub>**, since additional packages can be installed automatically on-the-fly via the MiK<sub>T</sub>E<sub>X</sub> *Package Manager*.

→ Chapter 2.2 on page 12

## Installation Directory

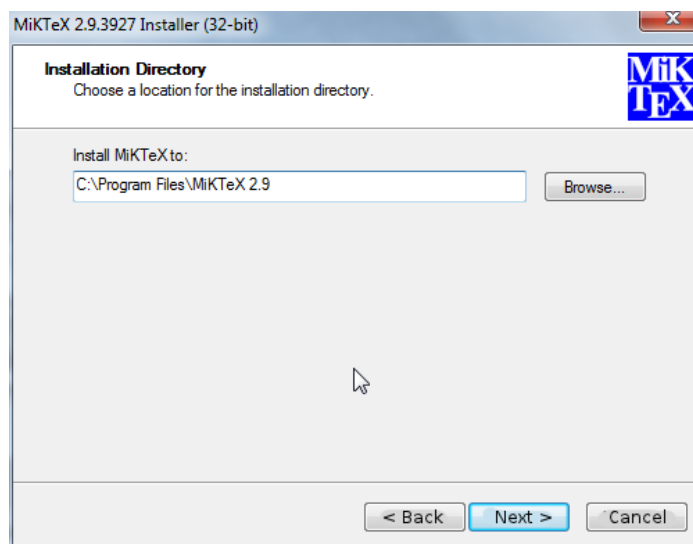


Figure 1.4: MiK<sub>T</sub>E<sub>X</sub>'s installation directory

As is typical for Windows, MiK<sub>T</sub>E<sub>X</sub> is installed into the default location `C:\Program Files`. In principle, you can install it anywhere you want, even if (in my opinion) there is no good reason to do so.

## Settings

→ Figure 1.5 on the next page

→ *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 by going to the Windows menu and selecting `Start → All Programs → MiKTeX 2.9 → Maintenance → Settings`.

### 1.6.3 Updates

→ Chapter 2.3 on page 14

MiK<sub>T</sub>E<sub>X</sub> is equipped with an *Update Wizard* that can update the whole system as well as individual packages. You can read a fuller description in the chapter titled **Using the Update Wizards**.



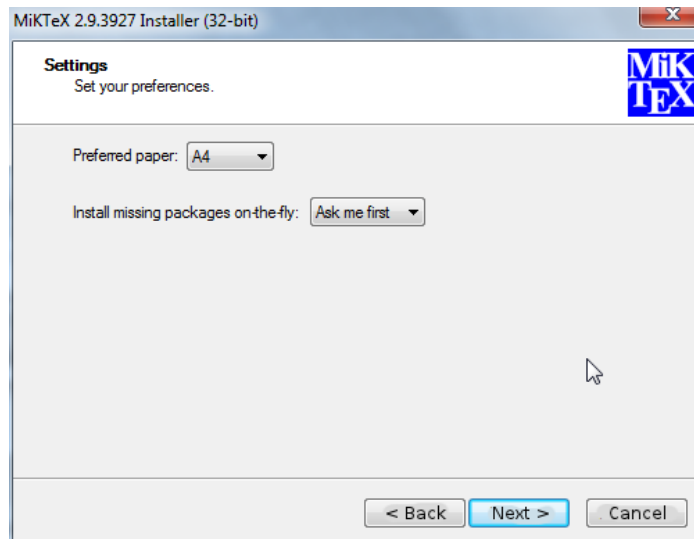


Figure 1.5: Letter or A4?

#### 1.6.4 Whither my own packages, classes, and configurations?

The `Local TEXMF Tree` you might remember from older versions of MiKTeX is unfortunately *no longer supported*. You can place your own packages, classes, and configuration files one of three directories grouped together in `C:\Documents and Settings`.

You can find the exact path via the Windows menu `Start → All Programs → MiKTeX 2.9 → Maintenance → Settings`. In the window that appears, click on the tab labelled `Roots`.

→ *Tip*

You can also add an existing `Local TEXMF Tree` (normally located in `C:\localtexmf`) to MiKTeX 2.9's search path with the same `Roots` tab.

### 1.7 TeXstudio

As you already know from the introduction, in addition to the TeX 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 MiKTeX. 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 1.6 on the next page

For these reasons, we've included in *proTeXt* the *TeXstudio* editor. TeXstudio is an editor that 'supports TeX'. What that means is that you still have to write the necessary code just like you did before, but TeXstudio provides you with the ability to write certain constructs like

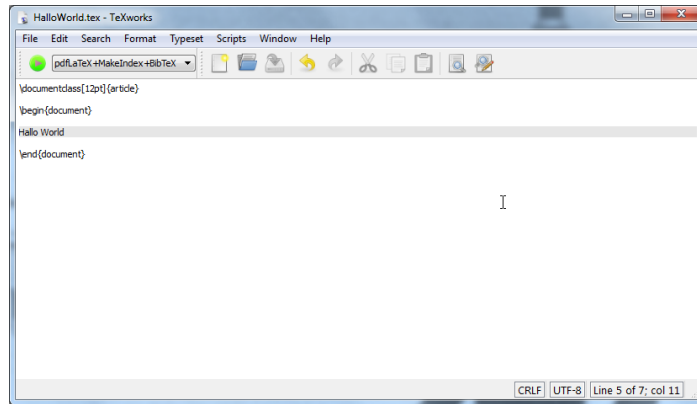


Figure 1.6: *TeXworks* is a compact text editor for beginners.

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.

*proTEXT* currently contains *TeXstudio 2.5.2 (SVN 3661)*

### 1.7.1 Removing old versions

If you've already worked with an older version of  $\text{TeXstudio}$ , you should remove it from your system before installing a new version. You can do this in *proTEXT*'s setup by selecting the **Uninstall** button next to the  $\text{TeXstudio}$  label .

→ figure 1.1 on page 5

### 1.7.2 Installation notes

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

### 1.7.3 After the installation

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

→ figure 1.7 on the next page

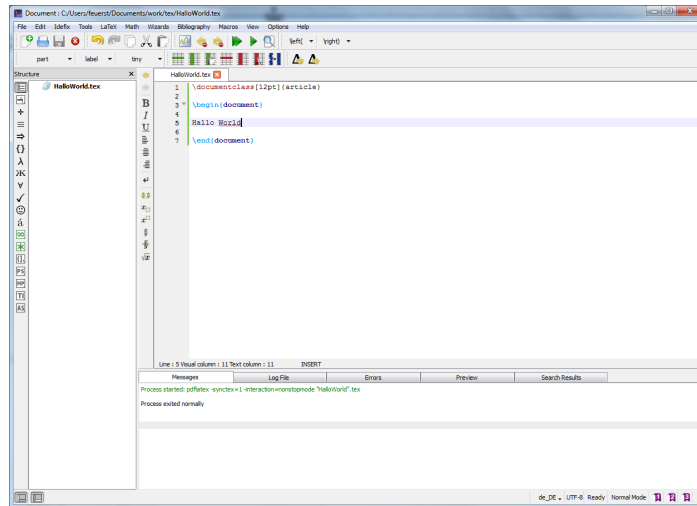


Figure 1.7:  $\text{T}_{\text{E}}\text{Xstudio}$ 's first run.

#### 1.7.4 Alternative editors

No other component of a  $\text{T}_{\text{E}}\text{X}$  system is as personal as the choice of an editor. If you feel that you and  $\text{T}_{\text{E}}\text{Xstudio}$  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  $\text{T}_{\text{E}}\text{X}$  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>

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## 2 Extensions

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### 2.1 General

If you have some experience with  $\text{T}_{\text{E}}\text{X}/\text{L}\text{A}\text{T}_{\text{E}}\text{X}$ , then you probably already know that the base system can be extended by a number of so-called packages and style files.

When you read the next few steps, keep this in mind: this chapter is called ‘Extensions’, which means that you *can* install these packages, *but you don't have to*. In fact, if you don't know for certain you need the following packages, it is best to leave them where they are, namely on the DVD.

So how can you extend your installation?  $\text{M}\text{i}\text{K}\text{T}_{\text{E}}\text{X}$  has its own package format, via which you can add or remove packages. You originally chose how ‘extended’  $\text{T}_{\text{E}}\text{X}$  was installed when you selected the **Package Set**.

### 2.2 Using the Package Manager

#### 2.2.1 Automatic activation

With  $\text{M}\text{i}\text{K}\text{T}_{\text{E}}\text{X}$ 's Package Manager you can extend your installation via additional packages (classes or style files, as the case may be). The Package Manager is automatically activated when you try to  $\text{T}_{\text{E}}\text{X}$  a file that depends on a package or file that was not previously installed. The missing bits are installed on-the-fly.

The first time it is run, the Package Manager will ask you to locate your *Package Repository*. Proceed like this:

- In the window that opens, you select **Packages shall be installed from a directory** (see Figure 2.1 on the following page) and *not, as you might guess, Packages shall be installed from a  $\text{M}\text{i}\text{K}\text{T}_{\text{E}}\text{X}$  CD/DVD*.

Having this done, click on the button

- In the next window make sure to set the correct path to the **Package Repository**. You might locate this path as follows:
- First click the button labeled
- In the window that appears, click on **My Computer**.

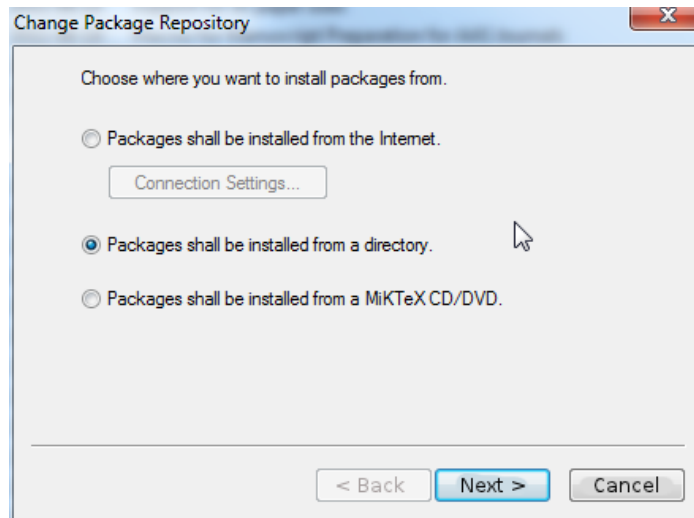


Figure 2.1: Choosing a Package Repository.

- If you are installing MiKTeX from a *proTeXt* DVD, select the letter of your DVD drive.
- If you downloaded *proTeXt* as an .exe-file from a server and unpacked it in a new directory, select that directory.
- If you've done everything correctly, you should now see the MiKTeX directory. Double-click to get to the subdirectories `tm` and `packages`.
- After selecting the `packages` directory, close the window by clicking `OK` to return to the previous window.

### 2.2.2 Manual use

You can also run the Package Manager manually. Among other things, you can use it to uninstall packages you no longer need. It works like this:

1. Start the Package Manager with the Windows menu `Start` → `All Programs` → `MiKTeX 2.9` → `Maintenance` → `Package Manager`; the window in figure 2.2 on the next page is shown.

As you can easily see in the figure, the packages `adobestd` and `amstex`, among others, are already installed.

2. If you are using the Package Manager *for the first time* select, as already shown above, the location where the Package Manager can find installed packages via the `Repository` → `Change Package Repository...` menu.

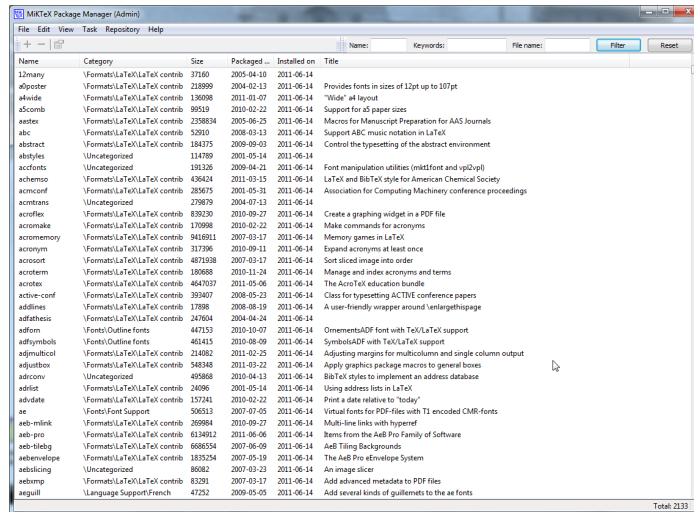


Figure 2.2: The *Package Manager*. Comprehensive management of packages.

3. Click the checkbox for the packages you wish to install and click the  button to start the installation.

*Note:* If you aren't sure of the name of a package you want to install, or if for example you are looking for a style file that is part of a larger package, you can search for them. Type part of the name of the package into the **Name:** field, or type the name of the style file into **Filename:** and click **Filter**. Install the packages thus found as described above.

## 2.3 Using the Update Wizard

You can keep your installation consistently up to date by using the MiKTeX Update Wizard, without having to wait for the next release of our DVD. The updates apply to both the packages installed via the Package Manager as well as the system components of your TeX system.

Start the Update Wizard via the Windows menu **Start** → **All Programs** → **MiKTeX 2.9** → **Maintenance** → **Update**.

As with the Package Manager, you need to set an installation source the first time you run it. Naturally, for an update you'll want to specify the *Internet*. See the settings shown in figure 2.3 on the following page.

→ Figure 2.4 on the next page Click the  button. Depending on how fast your net connection is, it might take some time for the overview of updates to appear.

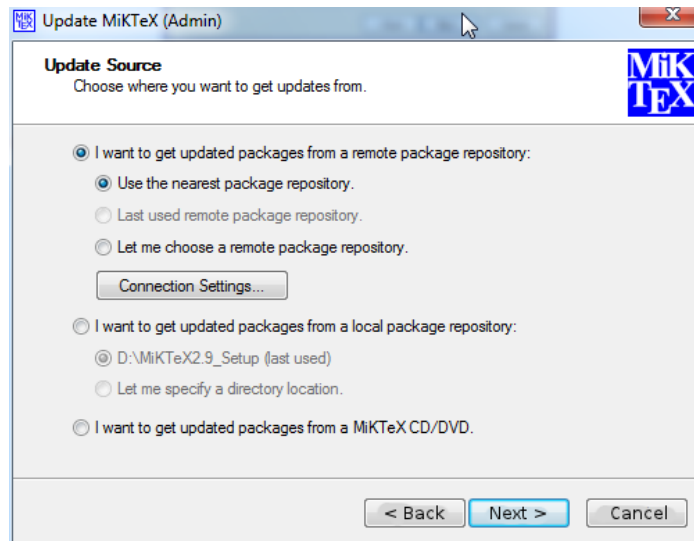


Figure 2.3: The *Update Wizard*, updates fresh from the internet.

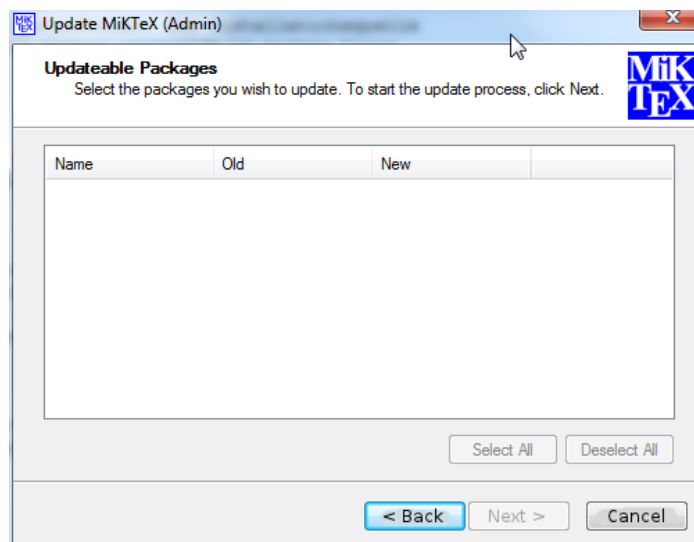


Figure 2.4: Download all selected packages.

## 2.4 Packages not controlled by the Update Wizard

What do you do when you need a package that isn't in this distribution<sup>1</sup> and you can't find it in the Package Manager?

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

<sup>1</sup> for example, one you read about in *The L<sup>A</sup>T<sub>E</sub>X Companion* (cf. chapter 3.2 on page 17)

<sup>2</sup> The Comprehensive T<sub>E</sub>X Archive Network

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.



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## 3 Addresses/References

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### 3.1 Getting off to a good start

If you have no experience whatsoever with T<sub>E</sub>X/L<sup>A</sup>T<sub>E</sub>X, 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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>](#).

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

### 3.2 Further references

Through the T<sub>E</sub>X 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<sub>E</sub>X books at <http://www.tug.org/books>. Selected titles:

Frank Mittelbach, Michel Goossens, Johannes Braams, David Carlisle, and Chris Rowley: *The L<sup>A</sup>T<sub>E</sub>X Companion*, 2nd edition; Addison-Wesley; 2004. \$59.99 (discounted to \$41.99)

Helmut Kopka and Patrick W. Daly: *Guide to L<sup>A</sup>T<sub>E</sub>X*, 4th edition; Addison-Wesley; 2003. \$49.99 (discounted to \$34.99)

Donald E. Knuth: *The T<sub>E</sub>Xbook*; Addison-Wesley; 1984. \$42.95 (discounted to \$30.07)

### 3.3 Other addresses of relevance for T<sub>E</sub>X

Because it is free software T<sub>E</sub>X 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 FAQ<sup>1</sup> for English is available at <http://www.tex.ac.uk/faq>. It has a wealth of practical information on virtually any T<sub>E</sub>X topic.

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<sup>1</sup> FAQ = Frequently Asked Questions, also with *answers!*

## Mailing lists

`texhax@tug.org`: One of several mailing lists that the T<sub>E</sub>X 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<sub>E</sub>X newsgroup.

## T<sub>E</sub>X Users Group (TUG)

TUG is the international user group for English-speaking T<sub>E</sub>X users. Membership includes a subscription to the *TUGboat* journal, software distribution on DVD and CD (*proT<sub>E</sub>Xt*, T<sub>E</sub>X Live, MacT<sub>E</sub>X, the Comprehensive T<sub>E</sub>X Archive Network), as well as discounts on conferences, publications, and software.

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

## Other T<sub>E</sub>X user groups

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

*Happy T<sub>E</sub>Xing!*