
proTEXT

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July 14, 2008

<http://tug.org/protex>

The Quickest Way to a TEX System

based on MiKTeX, T_EXnicCenter, Ghostscript
and GSview

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1 Welcome to the World of T_EX

1.1 General

The fact that you've come as far as this page allows us to surmise a few fundamental assumptions about your computer life and your intentions for it. Allow me to make a few conjectures as to why you've got a *proT_EX* CD 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 basically 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 with interactivity – 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.

I have a few remarks to make, for reason of security, if you are one of those persons who first installs something, then asks *what* you've installed. You can read those remarks in [chapter 3.2 on page 19](#).

1.2 Beginners take note: T_EX is different!

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

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

A *complete* T_EX 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 CD, however, you will find everything you need (in my opinion) for a problem-free start in the T_EX world. Figure 1.1 shows an overview.

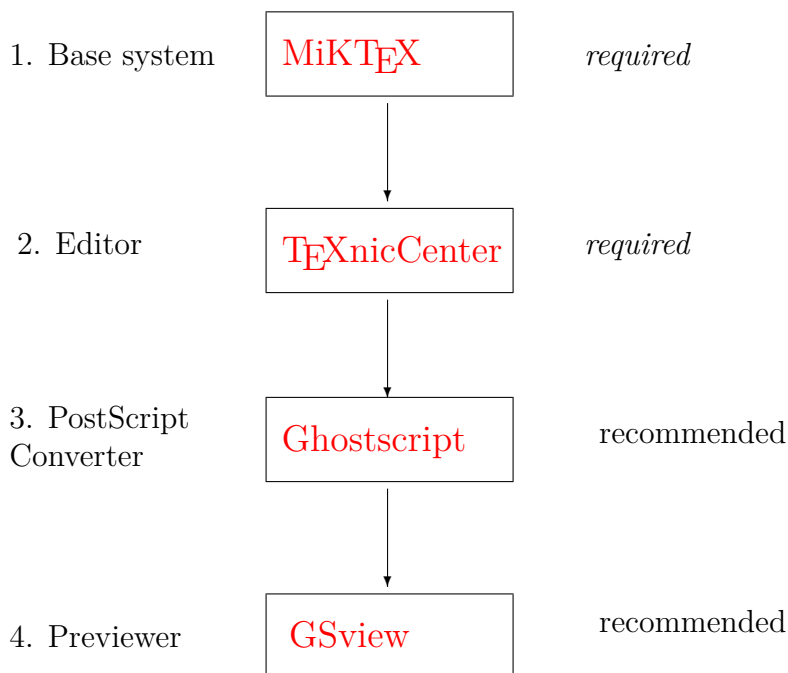


Figure 1.1: *proT_EXt*: Overview of the individual components of the installation

1.3 How to use, or: Read Me First!

You get a functioning T_EX system by installing at least the components marked in figure 1.1 as *required*; the illustration also shows the order in which you should install the components.

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

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.

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 CD 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.

Buttons : You will regularly come across buttons like the following in the course of reading this document:

[Click here to install . . .](#)

This PDF is interactive. In other words, you can click on elements in the document, and certain tasks will be performed, such as installing a component or uninstalling old software. Give it a try by clicking on the button above. It won’t hurt!

1.4 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. . .

1.5 MiKTeX

MiKTeX, a T_EX distribution by Christian Schenk is the basis of *proT_EX*. 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_EX*: *MiKTeX 2.7*

1.5.1 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 the following button:

**Click here to remove old versions of
MiKTeX**

1.5.2 Installation notes

The installer almost runs itself after launch, 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

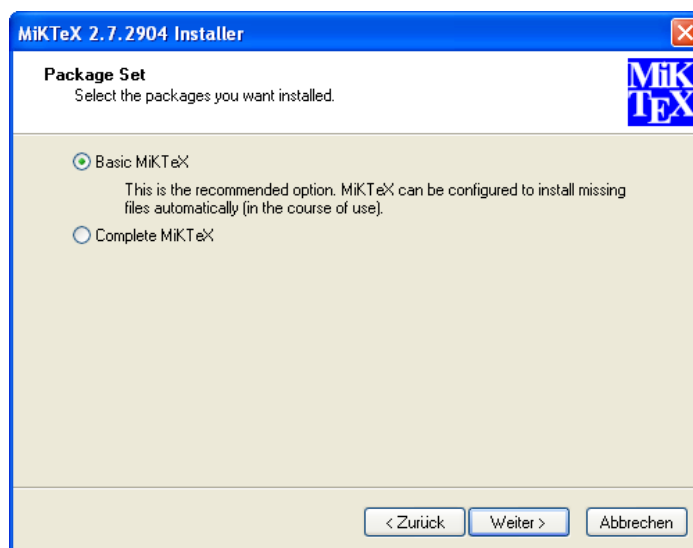


Figure 1.2: Choosing a package set.

T_EX 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_TE_X packages, or just the fifty (wild guess!) most often used packages. In my opinion, it makes most sense to install Basic MiK_TE_X, since additional packages can be installed automatically on-the-fly via the MiK_TE_X *Package Manager*.

→ Chapter 2.2 on page 14

Installation Directory

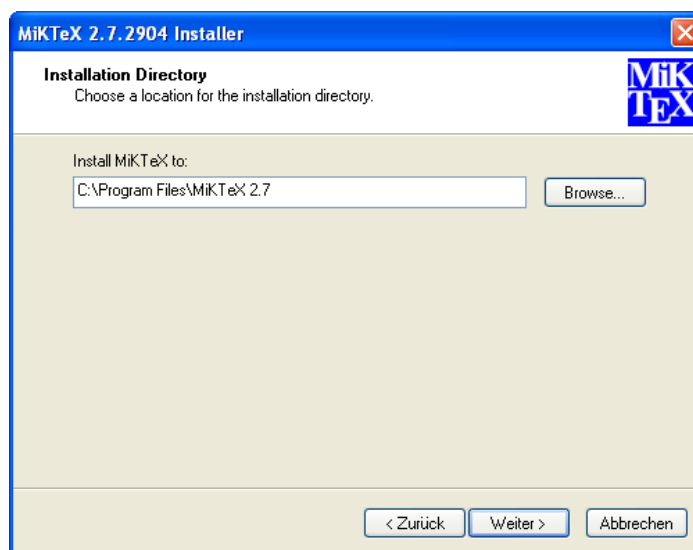


Figure 1.3: MiK_TE_X's installation directory

As is typical for Windows, MiK_TE_X 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 1.4 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 2.7 → Settings`.

[Click here to install MiK_TE_X](#)

1.5.3 Updates

→ Chapter 2.3 on page 16

MiK_TE_X is equipped with an *Update Wizard* that can update the whole system as well as individual packages. You can read a fuller

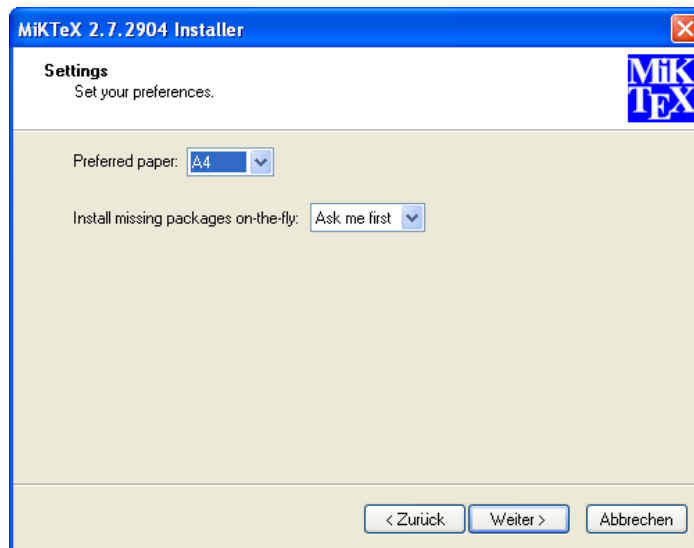


Figure 1.4: Letter or A4?

description in the chapter titled **Using the Update Wizards**.

1.5.4 Whither my own packages, classes, and configurations?

Starting with this version of MiKTeX, the Local TEXMF Tree you might remember from older versions 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 2.7 → Settings. In the window that appears, click on the tab labelled Roots.

→ *Tip*

You can also add an already present Local TEXMF Tree (normally in C:\localtexmf) to MiKTeX 2.7's search path with the same Roots tab.

1.6 T_EXnicCenter

T_EXnicCenter is an editor with enhanced T_EX support. That means that you write your T_EX code as you did before, but T_EXnicCenter offers you many possibilities to insert frequently-used code snippets (standard formatting commands, super- and subscripts and other constructs like formulas, tables, etc.) via buttons or menus. You can also run T_EX and view the results with a couple of simple clicks.

Although T_EXnicCenter established itself in a sense as a standard editor for Windows T_EX users, it still is designated officially as 'beta'.

However, our testing has not revealed any problems. If you do encounter any issues, there is help available on the developer's website at <http://www.toolscenter.org>.

Version contained in *proTEX*: *TEXnicCenter Version 1 Beta 7.50*

1.6.1 Removing old versions

If you've used an older version of TEXnicCenter, 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 the following button:

**[Click here to remove old versions of
TEXnicCenter](#)**

1.6.2 Installation notes

You really can't do anything wrong during the installation. You should make sure, though, that you've installed *MiKTeX first*, which will be the case if you've followed the instructions in this guide.

[Click here to install TEXnicCenter](#)

1.6.3 After the installation

Basic configuration The first time you run TEXnicCenter, the basic interplay between the editor and TEX is configured. This is shown in the following window (Figure 1.5 on the next page).

! → The 'directory, where the executables...are' refers to the **Installation Directory** you set up when you installed MiKTeX (normally C:\Program Files\MiKTeX 2.7), that will provide the path `miktex\bin`.

First run Although the installation of TEXnicCenter is very straightforward, the first run can be a bit rough.

As far as I can tell, the cause for this is an (otherwise praiseworthy) attempt by the developer to free the user from as many steps from entry to (print-)ready document. Also, the icons and symbols used for designating common tasks (running L^AT_EX, starting the previewer, etc.) are to my taste not particularly expressive.

After you get used to TEXnicCenter, though, you will find it offers many polished and helpful aspects. To get going:

1. Start TEXnicCenter, and compose your document.

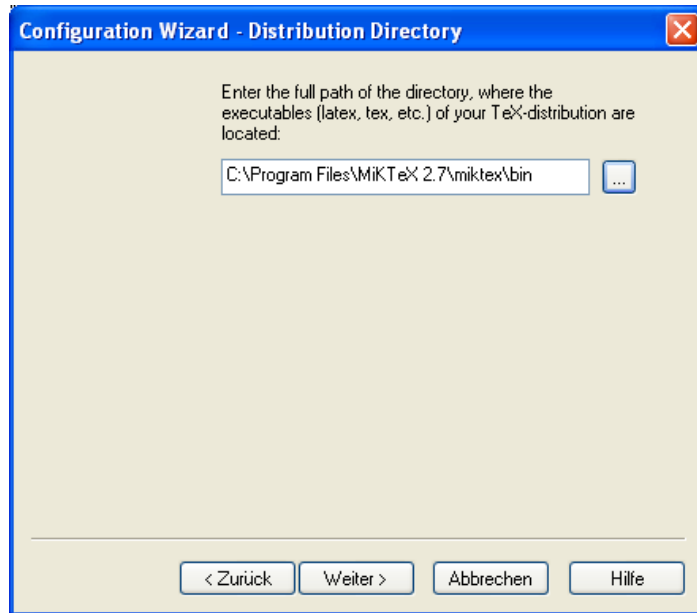


Figure 1.5: Configuring T_EXnicCenter

2. Select an *Output Profile* from the pop-up menu at the top of the toolbars (1). Normally, you can choose among DVI, PDF, or PS as your output type.
3. Click on the icon for *Build current file* (2), or simply press **Ctrl+F7**. Do this as many times as may be needed to correctly resolve all cross-references (indices, toc, etc.) and until you don't get any more error messages.
4. To view the document, click the icon for *View Output* (3), or simply press **F5**. Depending on the Output Profile you selected earlier, your previewer (Yap (DVI), GSview (PS; see also chapter 1.8 on page 13), or Adobe Reader (PDF)) will launch, from which you can also print the document.

! → The last two steps can be performed together by clicking on the icon *Build and view current file* (4), or simply press **Ctrl+Shift+F5**.

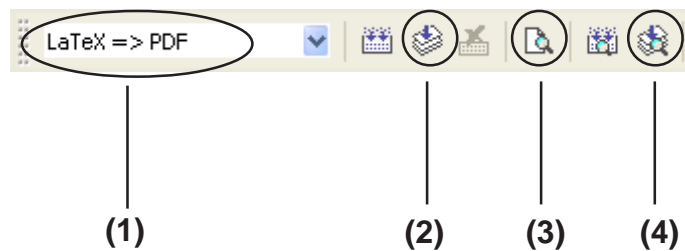


Figure 1.6: T_EXnicCenter's User Interface.

1.6.4 Alternatives

No other component of a T_EX system is so dependent on personal taste as the text editor. If you have decided that T_EXnicCenter and you simply cannot be friends, try one of the following alternatives:

WinEdt : In many ways the granddaddy of all Windows T_EX editors. Very feature-rich, but unfortunately *Shareware*. The upshot: after 30 days at most, you have to pay or the editor won't work. (TUG members can purchase a license at reduced cost. See <http://www.tug.org/winedt/> for details.)

More information: <http://www.winedt.com>

Texmaker : The famous Unix editor is now available for Windows. Texmaker works very much like WinEdt, but is free for personal use. A few additional setup steps are needed before you can use it with T_EX. If you want to try it out, the installer is located in the **unsupported** folder of the CD.

More information: <http://www.xmlmath.net/texmaker/>

1.7 Ghostscript

Ghostscript is a tool for displaying PostScript files on your screen, as well as allowing you to convert PostScript files for a non-PostScript printer.

You can find additional notes at <http://www.ghostscript.com>

Version contained in **proT_EX**: *GPL Ghostscript 8.62*

1.7.1 Removing old versions

If you've used an older version of Ghostscript, 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 the following button:

**Click here to remove old versions of
Ghostscript**

! → Ghostscript is always installed as *one program*, but you should uninstall *two programs* (AFPL/GPL Ghostscript **and** AFPL/GPL Ghostscript Fonts).

1.7.2 Installation notes

The actual installation should proceed without problems and won't be commented on further.

[Click here to install Ghostscript](#)

→ Chapter [1.8](#)

Since Ghostscript is a bit complicated to use, there is a user friendlier graphical front end called *GSview* that allows you to use Ghostscript functions more easily.

1.8 GSview

→ Chapter [1.7 on the preceding page](#)

GSview is the graphical user interface to the Postscript interpreter Ghostscript. Although GSview has licensing terms similar to AFPL Ghostscript (cf. <http://www.ghostgum.com.au/>), the author has allowed us to distribute it on this CD – so at this point we wish to give a heartfelt thanks to Russell Lang.

Version contained in *proTEXT*: *GSview 4.9*

1.8.1 Removing old versions

If you've used an older version of GSview, 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 the following button:

[Click here to remove old versions of GSview](#)

1.8.2 Installation notes

Just like with the installation of Ghostscript, there's nothing in particular to watch out for.

[Click here to install GSview](#)

! → When you start GSview, the GSview Registration window will open, asking you to register. You can use GSview for free without any functional restrictions by clicking the Ok button. By paying a 'support fee' of AU-\$40, you can make the annoying registration window disappear permanently.

2 Extensions

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 CD.

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** (cf. [Figure 2.1 on the next page](#)) and *not*, *as you might guess*, **Packages shall be installed from a MiKTeX CD/DVD**.

Having this done, please 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**.

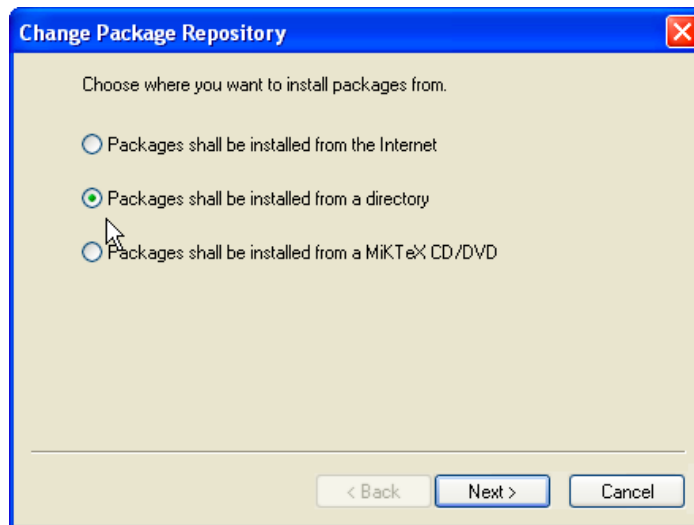


Figure 2.1: Choosing a Package Repository.

- If you are installing MiKTeX from a *proTeXt* CD, select the letter of your CD drive.
- If you downloaded *proTeXt* as a ZIP archive 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 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 2.7** → **Browse Packages**; the window in figure 2.2 on the following 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.

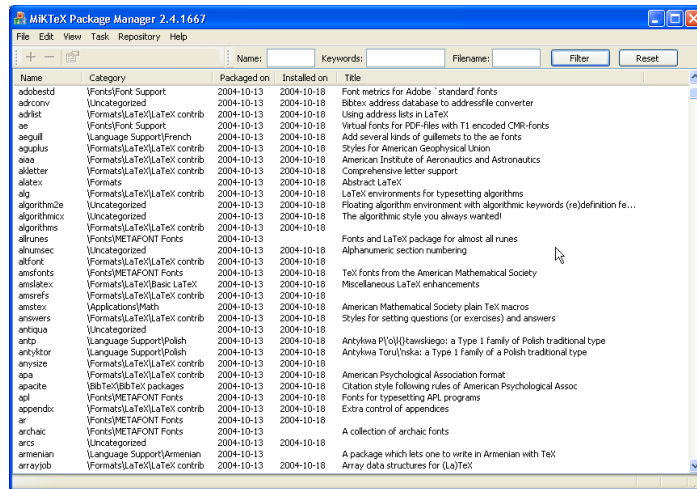


Figure 2.2: The *Package Manager*. Comprehensive management of extension.

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 . 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 CD. 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 2.7** → **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 next page.

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

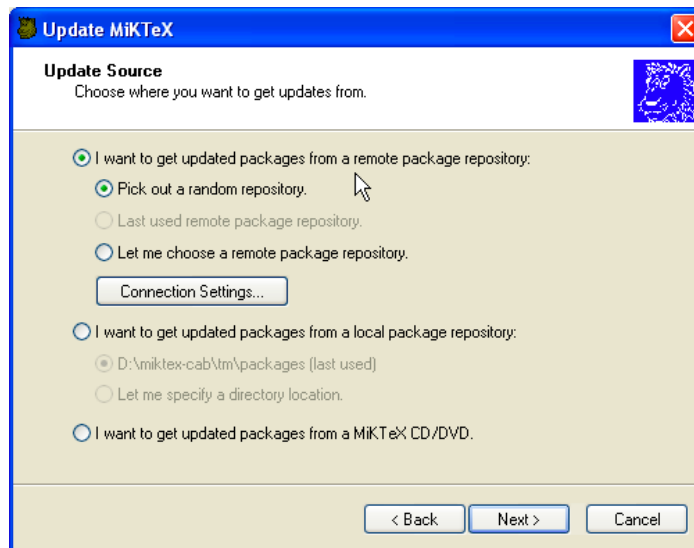


Figure 2.3: The *Update Wizard*, updates fresh from the internet.

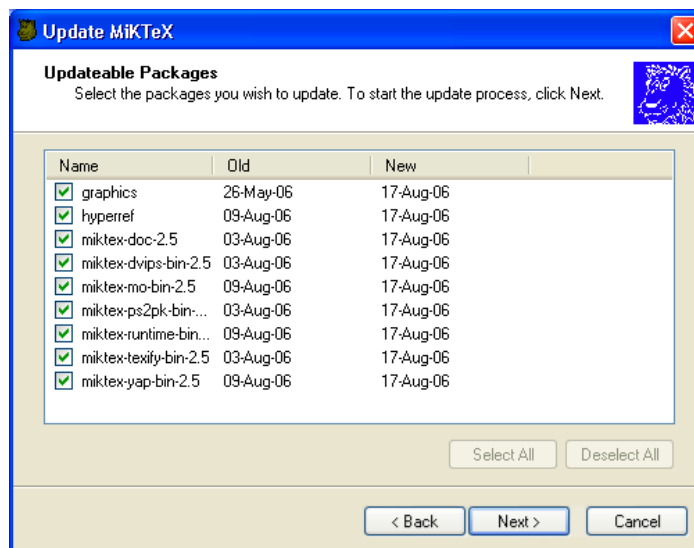


Figure 2.4: Download all selected packages.

2.4 Packages not controlled by the Update Wizard

What do you do when you need a package that isn't in this 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).

¹ for example, one you read about in *The L^AT_EX Companion* (cf. chapter 3.2 on page 19)

² The Comprehensive T_EX 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.

3 Addresses/References

3.1 For a successful start

If you have no experience whatsoever with T_EX/L^AT_EX, reading these guides (included on the CD) 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*!). The basic membership fee is \$85 per year, and the reduced fee for students, etc., is \$55. 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!