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# proTeXt

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(English translation by Steve Peter)  
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<http://tug.org/protext>

## An entire T<sub>E</sub>X environment

based on MiK<sub>T</sub>E<sub>X</sub>, WinEdt, T<sub>E</sub>XnicCenter  
and friends

**Read this before you install,  
install while you're reading!**

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# 1 The basic systems

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## 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. For example:

- You’re fed up with having to tweak *Word* (or *WordPerfect*, *StarOffice*, etc.), just because your document has crossed the magical border of 30 pages.
- You’re basically a fan of one of these products, but your studies or work unfortunately require you to set mathematics (and thus you need T<sub>E</sub>X).
- You’ve considered one of the *formula editors* provided with the above-named products, but someone has “forced” you to use T<sub>E</sub>X.
- You are interested in producing first-class PDF documents, possibly even with interactivity – like this document. In this case, you have possibilities through the use of PDFL<sup>A</sup>T<sub>E</sub>X that the users of the above-named word processors can’t even dream of.

It doesn’t matter if all or none of these apply to you. In any case, I assume you know at least something about the functionality of T<sub>E</sub>X/L<sup>A</sup>T<sub>E</sub>X, and that I can leave out a general description of the program, because:

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

It tries as simply as possible to allow you to install T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X on your computer.

If you are one of those persons who first installs something, then asks *what* you’ve installed, then I have a few remarks to make, just for security, which you can read below.

## 1.2 Read me first!

T<sub>E</sub>X is a system that consists of several individual components, which need to be installed separately. You can see an overview of the components in figure 1.1 on page 6.

I have tried to put the necessary steps for the installation in the chronologically correct order. As a further simplification for you, you can install the components directly from this guide.

! → Note the following points to insure a smooth installation:

- Please read my notes *before* each step of the installation. Things are discussed there that are also important for other installations.

*Tip!* → Even if you don't understand everything in this guide right now, it wouldn't hurt to print it out and read it through before you install anything.

When you see a hyperreference to other installation notes, it is *helpful* (but not strictly speaking necessary) to have a look at those as well.

- Let's kick off the first step of the installation by clicking on the link below

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

- Go through each step of the installation one by one just like this. Normally you'll have a working T<sub>E</sub>X system on your computer faster than Word would have printed those 30 pages.

Still have questions? Then let's get started...

## 1.3 Installing the basic systems

### 1.3.1 Out with the old

If you have already tried to install T<sub>E</sub>X on your computer, or have an older version of one of the other products included on the CD, there may be complications.<sup>1</sup>

In short, it isn't possible at present to update a previously-installed version. In order to avoid version conflicts, it is best that you completely remove any older T<sub>E</sub>X installs from your computer. To do this:

1. Open Start → Control Panels<sup>2</sup> and double-click the Add or Remove Programs icon.

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<sup>1</sup> If you are a complete beginner, you can happily skip this section and go directly to section 1.3.2 on page 7 to start installing T<sub>E</sub>X.

<sup>2</sup> The menu paths shown in this guide are from Windows XP. Your version may be slightly different.

2. Look for all programs or entries that match the following:

- all entries beginning with *AFPL Ghostscript*
- MiKTeX
- GSView
- WinEdt
- T<sub>E</sub>XnicCenter

Check *each* of the programs found, and click the **Remove** button.

- ! → Even when Windows reports that the software has been completely removed, it may occur that there are still some files left on your hard drive. So use your Windows-Explorer to look for leftover files and directories and *delete them manually!*
- ! → In case you *licensed the editor WinEdt*, make sure you have got a valid license key. It is possible to use license data from an older version, but you will have to explicitly reregister for version 5.4, which is on this CD.

Let me remind you of something at this point: It is possible (yet not likely) that there are mistakes even in this document. You will find a list of known issues on <http://www.tug.org/protext/bugs.html>.

After you've prepared the foundation for the new installation, it's time for general (re-?)construction.

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## Overview of the individual components

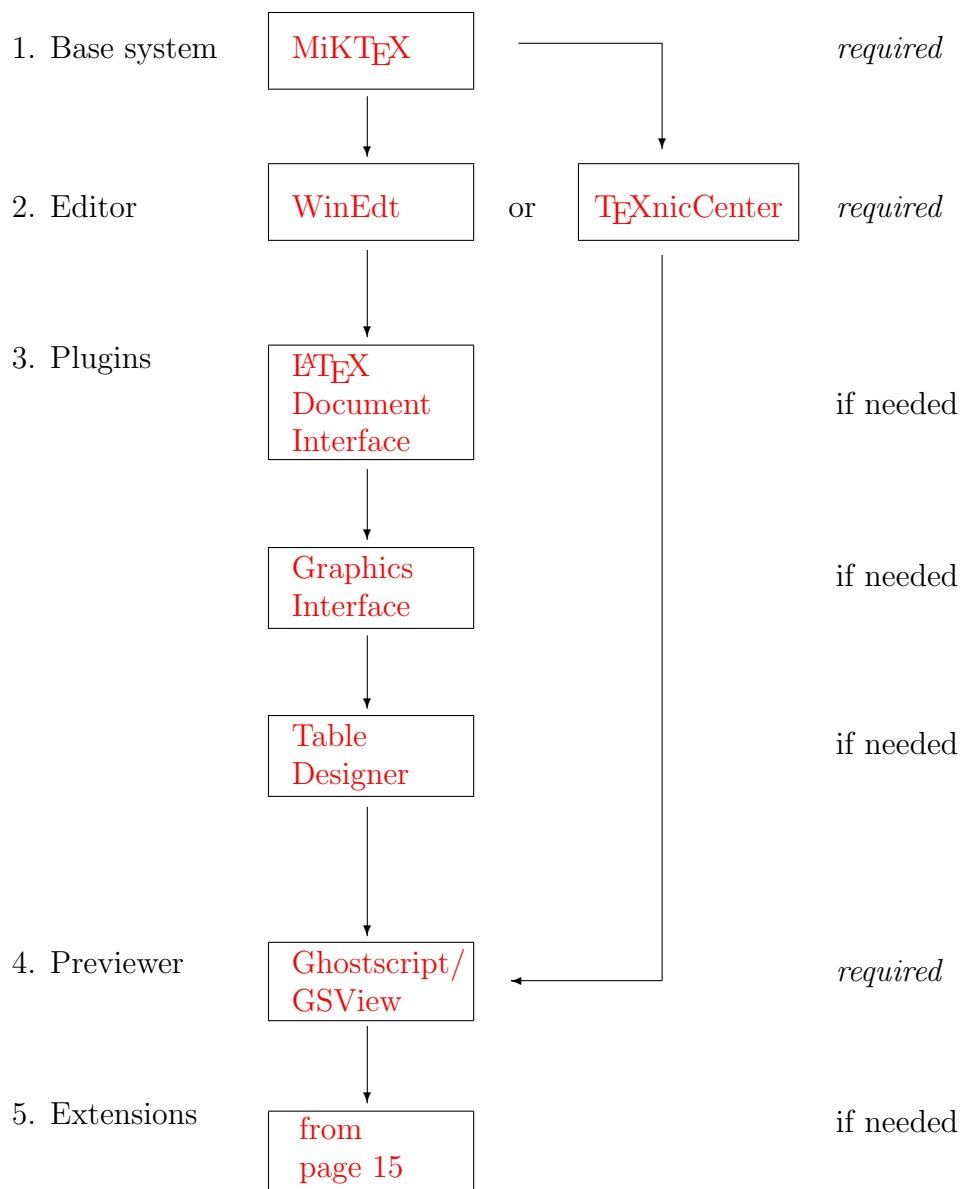


Figure 1.1: The individual components of ProTeXt

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### 1.3.2 Installing MiKTeX

The  $\text{T}_{\text{E}}\text{X}$  distribution MiKTeX by Christian Schenk is what you might call the engine of the whole installation.

! → If you have already used an older version of MiKTeX, you should definitely uninstall it. See section 1.3.1 above.

The installer almost runs itself after launch, which is to say, you can and should accept the default settings. However, be careful at the following points:

#### Setup Task

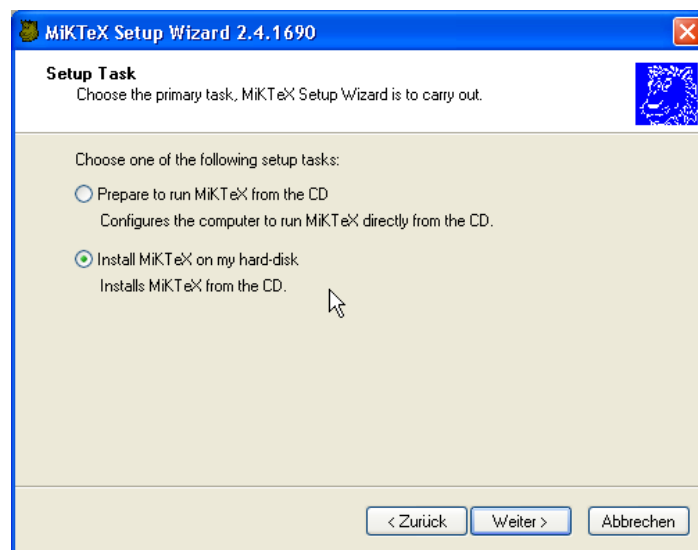


Figure 1.2: Choosing the setup task.

MiKTeX may be used directly from the CD. On the one hand this means you will not have to install anything to your hard disk, but on the other hand it will be much slower than an MiKTeX harddisc installation.

If you do not have a particular reason not to install MiKTeX do yourself a favour and install the software on your computer. It will be much faster and of course it will not block your CD drive.

The setup process will start after choosing the option **Install MiKTeX on my hard-disk**.

#### Package Set

$\text{T}_{\text{E}}\text{X}$  is a modular typesetting system, which means it can be extended almost infinitely by various classes, style files, and other packages. If

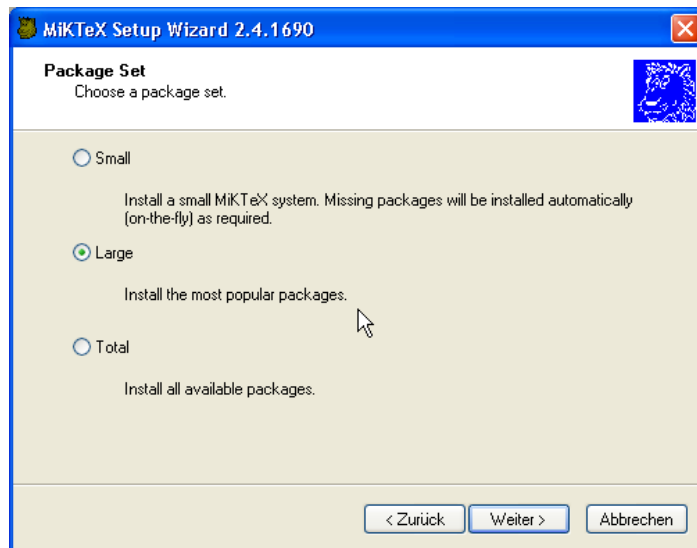


Figure 1.3: Choosing a package set

you're just getting started, the option shown above, **Large**, should be ideal. If you nonetheless find that you require additional packages, you can manually install them later.

! → Choose the default **Total** option only if you really have 500 MB of disk space to spare!

## Installation Folder

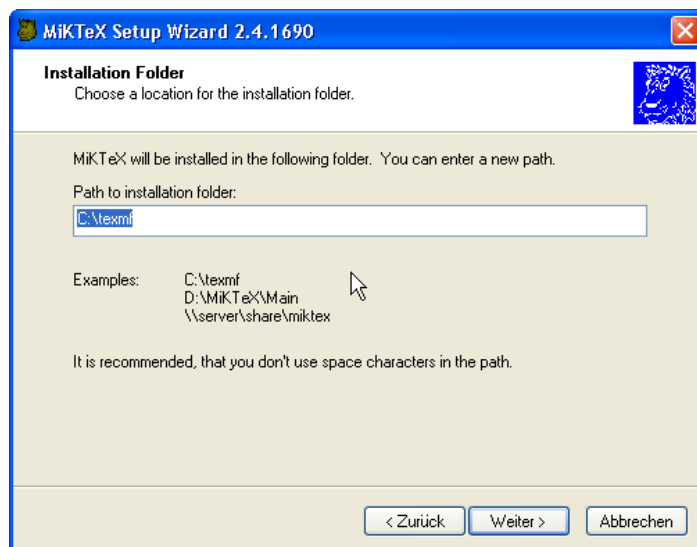


Figure 1.4: Installation folder

→ For **Installation Folder**,  
I chose: `C:\texmf`

Almost since the beginning, MiKTeX supports the venerable  $\text{\TeX}$



Directory Structure (TDS). For you as a user, this means, among other things:

- The directory recommended here, `c:\texmf`, is set up as a *system directory*. As a user, you should not install any of your files here, or change any of the files already there.
- If you have moved the **Installation Folder**, for whatever reason, note its location, since further steps of the installation may need to access it.

## Local TEXMF Tree

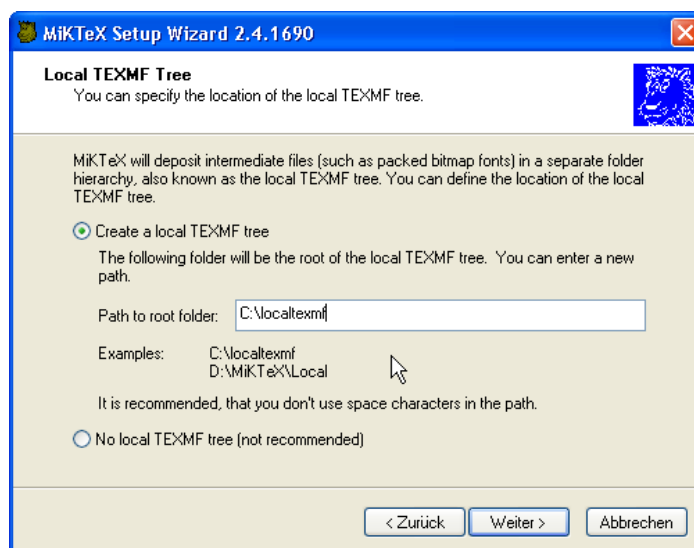


Figure 1.5: Local TEXMF Tree

→ For Local TEXMF tree,  
I chose: `C:\localtexmf`

TeX packages you install manually should go into the **Local TEXMF Tree** (Figure 1.5).

If you can't or don't want to use the defaults, at least make note of the **Local TEXMF Tree** to avoid further complications.

! → You will definitely need the **Local TEXMF Tree**, if you're going to select *letter* as default paper size. See Section 1.3.3 on the following page for more detailed information!

## Additional TEXMF Folder Trees

In case locally installed packages remain from an earlier MiKTeX install (for example in `C:\local TeXMF`), you can add these to the search path of the new version (Figure 1.6). Before you do that, consider whether adding them to the path is really necessary.

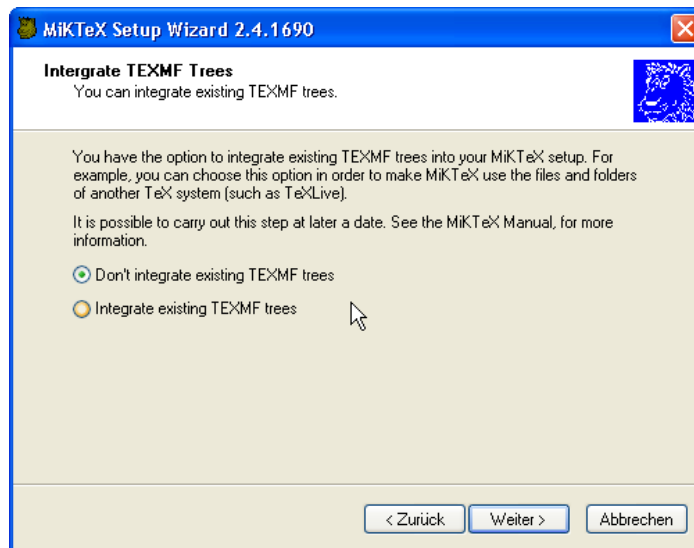


Figure 1.6: Defining additional search paths

- Packages from earlier  $\text{T}_{\text{E}}\text{X}$  installs are often already present in the **Installation Folder** or can at least be installed afterwards. In any case you are better off using a current version.
- The remaining packages can also simply be copied to the new **Local TEXMF Tree**, which makes adding additional search paths moot.

## Click here to install MiK $\text{T}_{\text{E}}\text{X}$

One last thing: MiK $\text{T}_{\text{E}}\text{X}$  is a project that is under constant development. You can check on its current status on the [MiK \$\text{T}\_{\text{E}}\text{X}\$  Project Page](http://www.miktex.org) (<http://www.miktex.org>).

### 1.3.3 Highly needed postinstalling steps

#### Setting letter paper size

By default, the installation is set up for the A4 paper size. To switch to *letter*:

## Click here to install letter paper size

In (the unlikely) case the procedure fails, check the following configuration files and/or do the following steps manually.

→ The Local TEXMF tree,  
Normally: C:\localtexmf

All the paths here are relative to the Local TEXMF tree (short *ltx*, see the subsection just above by that name) — do not edit the original files in the main installation folder. If any of the directories do not exist, simply create them first in the Explorer interface.

*pdfTEX* : Using Notepad, edit or create the local configuration file  
*ltx\pdftex\config\pdftex.cfg*. Insert these two lines at the beginning of the file:

```
page_height 11 true in
page_width 8.5 true in
```

*Dvips* : (a) Copy the file *dvips\config\config.ps* from the main installation folder to the local TEXMF tree.  
(b) Using Notepad, edit the new local file  
*ltx\dvips\config\config.ps*. Insert this line at the beginning of the file:

```
@ letterSize 8.5in 11in
```

*Dvipdfm* / *Dvipdfmx* : Using Notepad, edit or create the local configuration files  
*ltx\dvipdfm\config\config*<sup>3</sup> and  
*ltx\dvipdfm\config\dvipdfmx.cfg*.<sup>4</sup> Insert this line at the beginning of each file:

```
p letter
```

After making these changes, update the filename database:  
Start → Programs → MiKTeX → MiKTeX Options → Refresh now.

### 1.3.4 WinEdt

The WinEdt editor can be viewed as a kind of interface to the T<sub>E</sub>X system. With the help of WinEdt, you can create your T<sub>E</sub>X documents, as well as run L<sup>A</sup>T<sub>E</sub>X on the current document, preview it, and print it.

! → *WinEdt is shareware. That means you must register it at the latest after 30 days by paying the author a registration fee.*<sup>5</sup>

You have the two following options for registration:

<sup>3</sup> Yes you're right. Its really a file named **config** inside a directory with the same name!

<sup>4</sup> Its also a good idea to take the existing originals from the main installation folder.

<sup>5</sup> Before you try it: Uninstalling WinEdt and reinstalling it doesn't help you in this case.

- You can get a license directly from WinEdt's author at [www.winedt.com](http://www.winedt.com).
- You can join Dante e.V. or TUG (see in the appendices, page 21) and get, among other benefits, a reduced registration fee.

The following table gives an overview of the current license prices.

	<a href="http://www.winedt.com">www.winedt.com</a>	Dante e.V.	TUG
Commercial	US-\$70	€20	US-\$50
Educational	US-\$40	€15	US-\$30
Students	US-\$30	€10	US-\$20

You can get more information about WinEdt from the company's web site at <http://www.winedt.com>.

→ For Destination Directory,  
I chose: C:\Programs\  
WinEdt Team\WinEdt

As with all installers, WinEdt asks you into which directory on your hard drive (Destination Directory) it should be installed. It is recommended to accept the system default.

**[Click here to install WinEdt](#)**

### 1.3.5 Plugins for WinEdt

The already very user-friendly interface of WinEdt, optimized with the needs of  $\text{\TeX}$  in mind, can be enhanced by the use of plugins<sup>6</sup>. Even complicated  $\text{\LaTeX}$  environments (`tabular`, `graphicx`) can be inserted into a document comfortably and error-free via plugins.

#### Plugin: *New $\text{\LaTeX}$ Document Interface*

The *New  $\text{\LaTeX}$  Document Interface* allows you to save and use pre-made template documents. So, for example, if you are writing an article using the system class `article` in a 12-point font and additionally, you're using the `ngerman` style file, you can save these preferences under whichever name you want and load it with each new document.

Installation notes:

- Install the plugin by clicking on the link at the end of this section.

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<sup>6</sup> A *plugin* is a piece of software that functionally extends a program. You can find many examples of this in the realm of the Internet, where the functional spectrum of a "normal" web browser like Netscape can be dramatically raised by the use of plugins, such as Adobe Acrobat, Shockwave, etc.

- Start WinEdt, and select Execute Macros... from the Macros menu.
- In the pop-up window that appears, select the file  
...\\WinEdt\\Plugins\\new\\New.edt .

## Click here to install New $\text{\LaTeX}$ Document Interface

### Plugin: *Graphics Interface*

The *Graphics Interface* offers a window-driven interface for including graphics via the `graphicx` package.

Installation notes:

- Install the plugin by clicking on the link at the end of this section.
- Start WinEdt, and select Execute Macros... from the Macros menu.
- In the pop-up window that appears, select the file  
...\\WinEdt\\Plugins\\graphics\\Graphics.edt .

## Click here to install Graphics Interface

### Plugin: *Table Designer*

*Table Designer* offers a comfortable way to insert arrays and tables.

Installation notes:

- Install the plugin by clicking on the link at the end of this section.
- Start WinEdt, and select Execute Macros... from the Macros menu.
- In the pop-up window that appears, select the file  
...\\WinEdt\\Plugins\\array\\Array.edt .

## Click here to install Table Designer

You can find more plugins on the WinEdt home page at <http://www.winedt.com>.

### 1.3.6 T<sub>E</sub>XnicCenter

T<sub>E</sub>XnicCenter is a relatively new product that fulfils the same functions as does WinEdt: it serves as an interface in which you can write, compile, and print your documents.

In addition, you can add formatting instructions and demanding constructions (formulas, tables, etc.) with the click of a button or via menu.

! → T<sub>E</sub>XnicCenter can thus be used *instead of* WinEdt, but is different in the following ways:

- The user interface takes somewhat more getting used to than that of WinEdt.
- T<sub>E</sub>XnicCenter is still a beta product, which is to say that in this version there may be bugs (although we haven't found any in our brief testing).
- Unlike WinEdt, T<sub>E</sub>XnicCenter is *free* (for which reason we have included it on this CD, to save you a licensing fee)

If you have any problems using T<sub>E</sub>XnicCenter, check on the developers' web site at <http://www.toolscenter.org>.

**[Click here to install T<sub>E</sub>XnicCenter](#)**

### 1.3.7 Ghostscript/GSView

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

Since using Ghostscript can be quite cumbersome, there is a graphical user interface to it called *GSView*,<sup>7</sup> which allows you to more easily run Ghostscript functions.

Installation notes:

- For the current version, Ghostscript and GSView unfortunately have to be installed in *two* separate steps – thus these two installations are stand-alone here. Click *one after the other* on the links at the end of this section.

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<sup>7</sup> On Unix systems it is also called *Ghostview*.

- *After the installation*, launch GSView via Start → Programs → Ghostgum → GSView 4.6 and follow the directions there to *configure* the program (language selection, associating the installed Ghostscript version, etc.).
- ! → If you've done everything correctly, when you configure GSView, you should have 8.14 as the highlighted Ghostscript version. If you have several versions of Ghostscript to choose from, you probably didn't uninstall an older version of Ghostscript (see chapter 1.3.1 on page 4).

### Installing Ghostscript

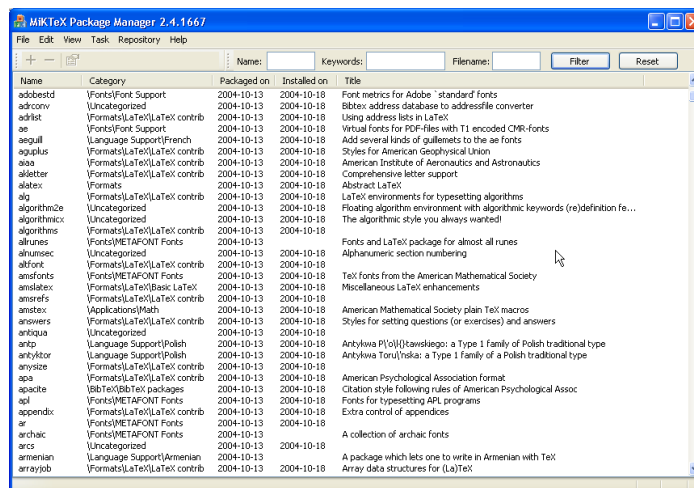
**[Click here to install Ghostscript](#)**

### Installing GSView

**[Click here to install GSView](#)**

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*. On the contrary, 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.

→ Figure 1.3 on page 8





1. Launch the Package Manager (Start → All Programs → MiKTeX → MiKTeX Package Manager). The window in figure 2.1 on the previous page appears.

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

2. If this is the *first* time you've run the Package Manager, set the location from which it will install packages by choosing Repository → Change Package Repository.... Normally, this is your CD drive (see figure 2.2).
3. Select the packages you want to install and press the + to start the installation.

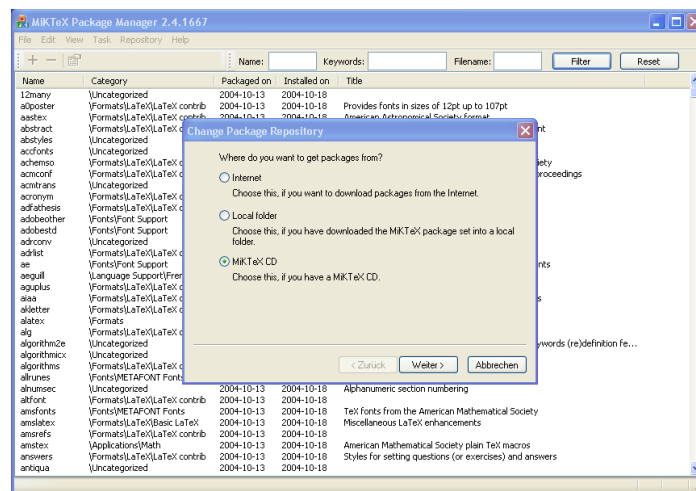


Figure 2.2: Setting the source for the installation.

*Note:* If you aren't sure what a package you want to install is called, or for example if 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 Wizards

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.

Launch the Update Wizard (Start → All Programs → MiKTeX →

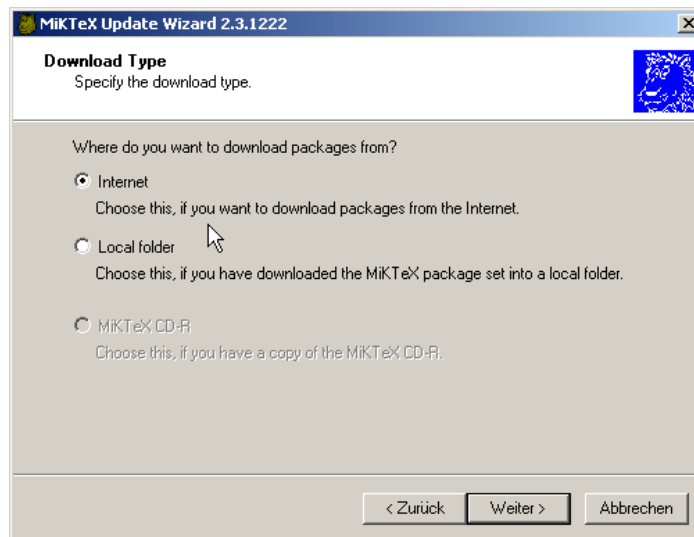


Figure 2.3: The *Update Wizard*, updating fresh from the Internet.

MiKTeX Update Wizard). 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*.

Via the Update Wizard you have access to the worldwide CTAN Servers.<sup>1</sup> Choose the one nearest you. For example, in Germany, you should choose [ftp.dante.de](http://ftp.dante.de).

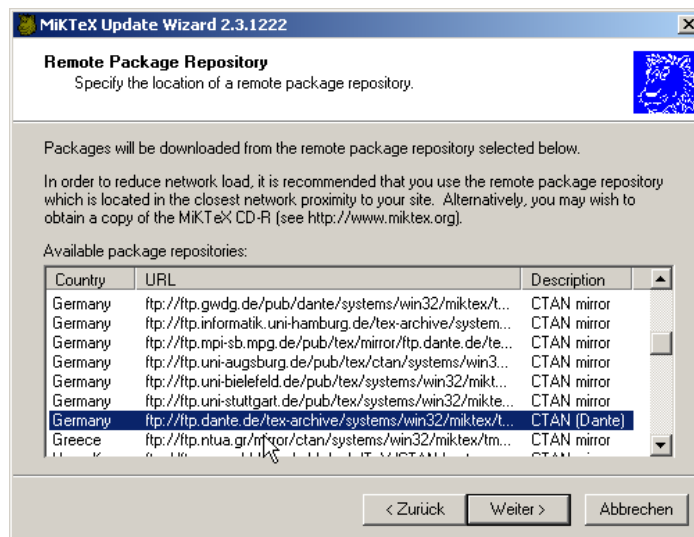


Figure 2.4: A download from [ftp.dante.de](http://ftp.dante.de).

! → Depending on how fast your network connection is, the update might

<sup>1</sup> CTAN = Comprehensive T<sub>E</sub>X Archive Network, see <http://www.ctan.org>

take some time to complete (and the network costs may be dependent on that). Make sure that only the *packages you selected* are updated.

## 2.4 Packages that aren't included in the Update Wizard

What do you do when you need a package that isn't in this distribution – for example, one you read about in *The L<sup>A</sup>T<sub>E</sub>X Companion* (cf. chapter 3.2 on the following page) – and you can't find it in the *Package Manager*?

These and many other packages are distributed free of charge via the so-called CTAN servers mentioned on the previous page, which you can also access (if you are connected to the Internet).

One 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 For a successful start

If you have no experience whatsoever with  $\text{T}_{\text{E}}\text{X}$ / $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ , 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  \$\text{L}\_{\text{A}}\text{T}\_{\text{E}}\text{X} 2\_{\epsilon}\$](#)

### 3.2 Further references

Through the  $\text{T}_{\text{E}}\text{X}$  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  $\text{T}_{\text{E}}\text{X}$  books at <http://www.tug.org/books>. Noteworthy titles:

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

Helmut Kopka and Patrick W. Daly: *Guide to  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$* , 4th edition; Addison-Wesley; 2003. \$49.99 (discounted to \$34.99)

Michel Goossens, Sebastian Rahtz and Frank Mittelbach: *The  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$  Graphics Companion*; Addison-Wesley; 1997. \$49.99 (discounted to \$34.99)

Donald E. Knuth: *The  $\text{T}_{\text{E}}\text{X}book$* ; Addison-Wesley; 1984. \$42.95 (discounted to \$30.07)

### 3.3 Other addresses of relevance for $\text{T}_{\text{E}}\text{X}$

Because it is free software  $\text{T}_{\text{E}}\text{X}$  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  $\text{T}_{\text{E}}\text{X}$  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>

## Newsgroups

`comp.text.tex`: The main T<sub>E</sub>X newsgroup.

`de.comp.text.tex`: The main German T<sub>E</sub>X newsgroup.

## Dante e.V.

*Dante* is the user group for German-speaking T<sub>E</sub>X users. For a small membership fee, you get the members' journal three times a year, as well as an invitation to the biannual members' conferences. Dante provides advice as well as offering books and software about T<sub>E</sub>X (sometimes at a discount, see for example section 1.3.4 on page 11, "WinEdt").

You can find out more information about Dante on their web site at <http://www.dante.de>.

Yearly membership fee (as of 2005)	
Individual	€40
Reduced fee (students, etc.)	€20

## 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, the Comprehensive T<sub>E</sub>X Archive Network), as well as discounts on conferences, publications, and software (including WinEdt, see section 1.3.4 on page 11, and <http://www.tug.org/winedt>).

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!). The basic membership fee is \$65 per year, and the reduced fee for students, etc., is \$35. 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!*