

Setting up Emacs, LaTeX for Windows

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Abstract

This document has been re-written, with the author's permission, from Claus Dethlefsen's Web Site at <http://www.math.auc.dk/~dethlef/Tips/introduction.html>, for the LaTeX Workshop at the Student Learning Centre (SLC).

Preparation

System requirements

- A PC with a 486 processor or better
- Windows 95/98, Windows ME, Windows NT 4.0, Windows 2000 or Windows XP (you need administrator privileges to install MikTeX).
- Plenty of space on your hard-drive (500Mb or more) .
- A fast CD-ROM to read the workshop CD.

Software requirements

- Some kind of (un)zip-utility [PowerArchiver](#), [Iceows](#), or [WinZip](#).
- [Acrobat Reader](#) if you want to use the PDF facilities.
- Previous versions of Emacs, MiKTeX, GSview, Ghostscript should be [removed](#) before installation.

Temporary Directory

Create a directory called `C:\tmp` and another called `C:\Temp` (both directories seem necessary).

Microsoft Visual C++ run-time files

If you have Win95/98/NT, you will need to download and install these if they are not on your system already. You may simply carry on with the installation, and if the MikTeX Setup fails with the message "Please download and execute comctl32....." then return here.

[50comupd.exe \(x86\)](#). See [The MiKTeX manual](#).

Environment

Windows 95/98:

- Include the following in your `c:\autoexec.bat` (eg. using notepad)
 - ✓ `set TEMP=C:\TEMP`
 - ✓ `set TMP =C:\TEMP`
 - ✓ `set HOME=C:\`
 - ✓ `set DICTDIR=C:\usr\local\lib`
 - ✓ `set PATH=%PATH%;c:\usr\local\bin;`
 - ✓ `set PATH=%PATH%;c:\program files\emacs\bin;`
 - ✓ `set PATH=%PATH%;c:\program files\ghostgum\ghostview\gsview\;`
- Restart the computer.

Test: At a dos-prompt, run "set" which shows the environment variables. Path, TMP, TEMP and HOME should be as stated above.

Note: Some systems do not like long filenames, so you might need to change the last two lines to

```
set PATH=%PATH%;c:\progra~1\emacs\bin;
set PATH=%PATH%;c:\progra~1\ghostgum\ghostview\gsvie~1\;
```

Note 2: Some systems do not like if the PATH is longer than 256 characters.

Windows NT/2000/XP:

- Right-click on the "My computer" icon and choose Properties. (For Win2000, click the 'Advanced' tab). Select the "Environment" tab.
- Create a "user variable" called "Path" with the following value in one line (here I have broken the line).

```
✓ c:\program files\emacs\bin;
✓ c:\program files\ghostgum\ghostview\gsvie~1\;
✓ c:\usr\local\bin;
```

If the Path variable exists, append the above to it.

- Create a "user variable" called HOME with value c:\
- Create a "user variable" called DICTDIR with value c:\usr\local\lib
- Create a "user variable" called TMP with value c:\Temp (if it is not there already).
- Create a "user variable" called TEMP with value c:\Temp (if it is not there already).
- Restart the computer. (This might not be necessary - try the test below).

Test: At a dos-prompt, run "set" which shows the environment variables. Path, TMP, TEMP and HOME should be as stated above.

Installation

Follow these steps to get a working emacs/latex environment. Choose any drive and directories for installation you want (but you may have to change the [environment](#) variables). I will assume that you install according to:

```
Emacs      -> c:\program files\emacs
MiKTeX     -> c:\texmf
localtexmf -> c:\localtexmf (local TEXMF tree)
Ghostscript -> c:\program files\ghostgum\gs
Ghostview  -> c:\program files\ghostgum\ghostview
Auctex     -> c:\program files\emacs\site-lisp\auctex
ispell     -> c:\usr\local\bin (This CANNOT be changed)
.emacs     -> c:\.emacs (the value of HOME)
```

If you install Auctex to a different place, you need to make an obvious change in your .emacs file.

Have you done all the [preparations](#)?

Emacs 21.2

- Unzip the emacs-21.3.zip file to c:\program files\ (1876 files)
- Rename the c:\program files\emacs-21.3 directory to c:\program files\emacs
- Run the file c:\program files\emacs\bin\addpm.exe

Test: Open the Start Menu/Programs/Gnu Emacs/Emacs. Emacs should start up.

AucTeX 11.13

- Unzip auctex-11.13.zip to c:\program files\emacs\site-lisp (80 files)
- Rename c:\program files\emacs\site-lisp\auctex-11.13 to c:\program files\emacs\site-lisp\auctex
- Unzip startup1.zip to c:\ (the value of your HOME variable). This creates the startup file c:\.emacs. You must edit this file, if you install AucTeX to a different place.

Test: (Re)Start Emacs. In emacs, call M-x latex-mode. You should see the "Command" and "LaTeX" menus. Also the "Ref" menu is shown (RefTeX is also activated).

Ispell 3.2.06

- Unzip ispell-3.2.06.zip to c:\ (the directory cannot be changed) (22 files)
- Put cygwin1.dll into c:\usr\local\bin

Test: At a Command prompt, type `ispell`. Please note that `c:\tmp` must exist and that the `DICTDIR` variable should be defined.

Ghostscript 8.00

- Run `GhostScript 8.00.exe`
- Choose `c:\program files\ghostgum\gs` as installation directory
- Accept everything else

Ghostview 4.4

- Run `GSView 4.4.exe`
- Choose `c:\program files\ghostgum\ghostview` as installation directory
- Accept everything else

MikTeX 2.2

- Run `setup.exe` from the `D:\MikTeX\setup`. If there is an error about repository during the installation, move the entire `D:\MikTeX` folder into `C:\Temp` and re-run `setup.exe`.
- You may wish to use `Total` installation, but choose `Large` if you don't have enough free space.
- On the "Path to local package repository", choose `D:\MikTeX\packages`.
- Choose to "Install a private MikTeX environment".
- When prompted for "Path to installation folder", choose `c:\texmf`
- When prompted for "Create local TEXMF tree", choose `c:\localtexmf` as "Path to root folder"
- Accept everything else
- Restart (might not be needed if using Windows NT/2000/XP)

Test: You should now be able to go through the [test](#).

Test

- **C** the directory `c:\localtexmf\tex\latex`
- **Unzip** `lshort-4.12.zip` to `c:\localtexmf\tex\latex`.
- **Open Emacs and choose Files/Open file and get the file**
`c:\localtexmf\tex\latex\lshort-4.12\src\lshort.tex`
- **Press C-c C-c <Return>** to run latex
- **Press C-c C-l** to view results of the compilation
- **Press C-c C-c <Return>** to run latex again
- **Press C-c C-c <Return>** to run latex again, again
- **Press C-c C-c <Return>** to run View
- **Press C-c C-c FILE <Return> <Return>** to run dvips.
- **Press C-c C-c Print <Return> <Return>** to run GSview
- **If you want to print the document, do it from GSview.**

Tuning

The following is not necessary for getting a running system. It should not be carried out if your system cannot go through the test after the installation. It is a more experimental section, and is biased towards my preferences, so you should pick the steps you like. I have not documented the instructions in great detail, so you will need to be an advanced user of windows

The uninstall instructions do not cover all of the additions described here.

Adding packages to MiKTeX

The intention is that the localtexmf directory be the root of the place where all local files (e.g., .sty and .bib files) (as opposed to MiKTeX package distributions) live. So local

```
.bib files go in localtexmf\bibtex
.sty files go in localtexmf\miktex\tex\latex
```

Each time you add a file to one of those directories, you must run MiKTeX Options and select "Refresh Now" under file name database on the general tab.

An example .emacs

This assumes that you have installed everything to c:\ as described and have gone through most of the steps below. I have tried to write explanations to most of the content, so you should be able to edit it to your own needs. If you copy it, you will not need to do the 'insert the following lines into your c:\.emacs instructions below. Since emacs will not startup properly with this .emacs until all the packages are installed, some of the tests will fail.

- Unzip startup2.zip to c:\ (the value of HOME)
- Insert the commands you wish from the created file ".emacs.advanced" into your .emacs file.

Gnuserv

- Unzip gnuserv.zip to c:\program files\emacs\site-lisp\
- Move c:\program files\emacs\site-lisp\gnuserv*.exe to c:\program files\emacs\bin (4 files)
- Insert the following lines in your c:\.emacs

```
(require 'gnuserv)
(gnuserv-start)
(setq gnuserv-frame (selected-frame))
```

Emacs shortcut (gnuserv)

- Create a shortcut to `c:\program files\emacs\bin\gnuclientw.exe`
- Edit the shortcut properties to be

```
Target:      "C:\program files\emacs\bin\gnuclientw.exe"
Start in:    c:\
```

- Copy the shortcut to your profiles "Send to" folder (eg. located in `c:\winnt\profiles\administrator\send to`).

The "Start in" sets the initial directory for Emacs. You can have several shortcuts to Emacs with different "Start in" directories. Note that `~/` will always be `HOME`. The "Send to" enables rightclicking on any file and choosing "send to" Emacs, which will cause the file to be opened by emacs.

Inverse search in YAP

- In Yap, choose View/Options/Inverse Search, and in the Program field, choose "GNU Emacs (single instance)".

Lacheck 1.20

- Move `lacheck.exe` to `c:\program files\texmf\miktex\bin`

Test: At a DOS prompt, run `lacheck file.tex`, where `file.tex` is a latex-file. It should spit out some suggestions. In Emacs in latex-mode, choose the "Check" command from the Command menu.

Html-helper-mode

- Unzip `html-helper-mode.zip` into `c:\program files\emacs\site-lisp\html-helper`
- Insert the following in your `c:\.emacs`

```
(autoload 'html-helper-mode "html-helper-mode" "Yay HTML" t)
(setq auto-mode-alist (cons '("\\.html$" . html-helper-mode)
                             auto-mode-alist))
(setq html-helper-mode-uses-JDE nil)
(setq html-helper-mode-uses-visual-basic nil)
```

Info manuals for AUCTeX and Ispell

- Add the following lines to the file `c:\program files\emacs\info\dir`

```
* AUCTeX: (auctex).      A much enhanced LaTeX mode for GNU Emacs.
* Ispell: (ispell).     Spell checking.
```

When running 'info'-mode (C-h i) the entry 'AUCTeX' appears with the AUCTeX manual.

Speeding up lisp

- Open Emacs and call M-x load-file c:\program files\emacs\site-lisp\lpath.el
- C-u 0 M-x byte-recompile-directory c:\program files\emacs\site-lisp\lpath.el
- C-u 0 M-x byte-recompile-directory c:\program files\emacs\site-lisp\gnuserv

BIBINPUTS

- In your Autoexec.bat or System/environment, define the variable BIBINPUTS pointing to the directory where you keep your .bib files.

The BIBINPUTS is used by bib-cite which comes with auctex. Reftex also uses it. However, Bibtex does not use it, so check the miktex local guide for setting the searchpath for bibtex. (In a personal miktex.ini file).

ESS (Emacs Speaks Statistics)

- Unzip ess-5.1.24.zip to c:\program files\emacs\site-lisp
- Rename c:\program files\emacs\site-lisp\ess-5.1.24 to c:\program files\emacs\site-lisp\ess
- Add the following lines to your .emacs file

```
(add-to-list 'load-path "c:/program files/emacs/site-lisp/ess/lisp")
(require 'ess-site)
```

(to speed up ess, in Emacs, call C-u 0 M-x byte-recompile-directory and choose c:\program files\emacs\site-lisp\ess\lisp).

Matlab mode

- Put [matlab.el](#) into c:\program files\emacs\site-lisp\matlab
- Add the following lines to your .emacs

```
(autoload 'matlab-mode "matlab" "Enter Matlab mode." t)
(setq auto-mode-alist (cons ('("\\.m\\'") . matlab-mode) auto-mode-alist))
(autoload 'matlab-shell "matlab" "Interactive Matlab mode." t)
```

Uninstalling the TeX-system

Take a printout of this page for your records. It is constantly changing whenever I update the instructions.

Messing with the registry can be fatal to your system. If you don't know what you are doing, leave the entries there. You should back up any files you wish to keep.

- In the Control Panel, choose "Add/Remove programs"
- In the menu, remove: Aladdin Ghostscript 7.04, Aladdin Ghostscript Fonts, GSview 4.3
- Delete c:\program files\ghostgum (if it exists)
- Delete c:\program files\texmf
- Delete c:\localtexmf (unless you have something to retain)
- Delete c:\program files\emacs
- Delete c:\usr
- Delete c:\.emacs
- Delete GNU Emacs from the Start Menu
- Delete MiKTeX from the Start Menu
- Delete GSview from the Start Menu
- Delete Ghostgum from the Start Menu
- Remove environment variables from c:\Autoexec.bat or "systems/Environment". The variables are listed in [Prepare](#). (Don't remove the TEMP and TMP variables).
- Run regedit (this is the dangerous part)
- Delete the Software\GNU\Emacs key under HKEY_LOCAL_MACHINE (and/or HKEY_CURRENT_USER)
- Delete the Software\Mik key under HKEY_LOCAL_MACHINE (and/or HKEY_CURRENT_USER)
- Restart