MiKTeX Manual

Revision 2.9.6360

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About this Document

This is version 2.9.6360 of the MiKTeX manual. It corresponds to MiKTeX 2.9.6600 as of January 28, 2018.

Part I. User Guide

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Chapter 1. Introduction

About this Manual

This manual is about MiKTeX, a modern implementation of TeX & Friends.

If you are not yet familiar with using TeX (LaTeX), then please consider reading one of the tutorials available on the Internet.

About MiKTeX

MiKTeX (pronounced *mik-tech*) is an up-to-date implementation of TeX and related programs for Windows (all current variants). TeX is a typesetting system invented by D. E. Knuth.

MiKTeX's main features include:

- easy to install
- integrated package management: missing packages can be installed automatically (on-the-fly) during run-time
- network friendly: MiKTeX can be run directly from a shared and read-only network directory
- complete: the MiKTeX distribution contains almost all packages that are freely redistributable.
- enhanced TeX compiler capabilities
- enhanced previewer capabilities: forward/inverse DVI search, graphics, color, magnifying glass, …
- open source: MiKTeX source code is get-at-able for everyone

The MiKTeX distribution consists of the following components:

TeX, METAFONT, TeXware, METAFONTware, Computer Modern Fonts	the base TeX system
pdfTeX, XeTeX, luaTeX, Omega	various TeX derivatives
MetaPost	a METAFONT derivative for the creation of PostScript figures
Dvipdfm	converts TeX output into PDF documents
macro packages	almost all free TeX macro packages
fonts	almost all free fonts
Yap	a sophisticated viewer for TeX output
TeXify	a TeX compiler driver
MiKTeX Options	assists in configuring MiKTeX
MiKTeX Update Wizard	assists in keeping the MiKTeX system up-to-date

lots of utilities	tools for the creation of bibliographies & indexes, PostScript utilities, and more

How to Get MiKTeX

The MiKTeX installer for Windows can be downloaded from the MiKTeX download page [https://miktex.org/download].

For other platforms (macOS, Ubuntu) you can get MiKTeX via the system package manager frontend (**brew**, **apt-get**). The MiKTeX download page [https://miktex.org/download] has relevant information available.

Give Back

If you enjoy MiKTeX and want to support the project, then please become a known MiKTeX user by giving back something. It encourages me to continue, and is the perfect way to say thank you!

Visit the MiKTeX Give Back page [https://miktex.org/giveback], for more information.

The MiKTeX Project Page

The MiKTeX Project Page [https://miktex.org/] is the address to turn to for MiKTeX related news & information.

Documentation

Use the **mthelp** utility to quickly access general TeX related documentation. For example, run `mthelp memoir` to view documentation of the `memoir` package.

Chapter 2. Installing MiKTeX

Installing for Windows

You use the Basic MiKTeX Installer to install MiKTeX on your Windows computer. You can download the installer from the MiKTeX download page [https://miktex.org/download].

Please read the installation tutorial [https://miktex.org/howto/install-miktex] for a step-to-step guide.

Items in the Start Menu

MiKTeX Setup Wizard installs the following menu items in the Windows start menu:

MiKTeX 2.9 → Previewer	A shortcut to the MiKTeX previewer Yap.
MiKTeX 2.9 → TeXworks	A shortcut to TeXworks, an integrated development environment for TeX and LaTeX.
MiKTeX 2.9 → Help →FAQ	Answers to frequently asked questions.
MiKTeX 2.9 → Help → Manual	The MiKTeX manual.
MiKTeX 2.9 → Maintenance → Package Manager	A shortcut to the MiKTeX package manager.
MiKTeX 2.9 → Maintenance → Settings	A shortcut to MiKTeX Options.
MiKTeX 2.9 → Maintenance → Update	A shortcut to the MiKTeX update wizard.
MiKTeX 2.9 → Maintenance (Admin) → Package Manager (Admin)	A shortcut to the admin variant of the MiKTeX package manager.
MiKTeX 2.9 → Maintenance (Admin) → Settings (Admin)	A shortcut to the admin variant of MiKTeX Options.
MiKTeX 2.9 → Maintenance (Admin) → Update (Admin)	A shortcut to the admin variant of the MiKTeX update wizard.
MiKTeX 2.9 → MiKTeX on the Web → Known Issues	An Internet shortcut to the MiKTeX issues page.
MiKTeX 2.9 → MiKTeX on the Web → MiKTeX Project Page	An Internet shortcut to the MiKTeX project page.
MiKTeX 2.9 → MiKTeX on the Web → Registration	An Internet shortcut to the MiKTeX registration page.

MiKTeX 2.9 → MiKTeX on the Web → Support	An Internet shortcut to the MiKTeX support page.

Removing MiKTeX

MiKTeX can be removed from your computer in the following way:

1. Open Control Panel.
2. Double-click Add or Remove Programs.
3. Click MiKTeX 2.9.
4. Click Change/Remove.

Installing for macOS

MiKTeX can be installed via the Homebrew package manager.

Install Homebrew

If you don't already have Homebrew installed, you can install it by pasting

```
$ /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/instal
```

in a Terminal prompt. Please visit the Homebrew homepage [https://brew.sh] for more detailed instructions.

Install MiKTeX

MiKTeX can then be installed by pasting these commands:

```
$ brew tap miktex/miktex
$ brew install miktex
```

in a Terminal prompt. The first command adds the MiKTeX repository to the list of formulae that Homebrew tracks, updates and installs from. The second command sets up a bare minimum MiKTeX, i.e., only executable files and manual pages.

From time to time, you should run

```
$ brew update
$ brew outdated miktex || brew upgrade miktex
```

This will update the MiKTeX executables, if there is a newer version available.

Installing packages

MiKTeX is pre-configured to install missing files on-the-fly, which allows you to keep your TeX installation reduced to the most necessary.

If you intend to work offline, you can upgrade your TeX installation by runnning

```
$ mpm --admin --package-level=basic --upgrade
```

This will upgrade to a TeX installation which consists of the most popular packages. If you want to install all available packages, then you can choose package level **`complete`**.

Directory Structure

TEXMF root directories:

`~/.miktex/texmfs/config`	User configuration data (`UserConfig`).
`~/.miktex/texmfs/data`	Recoverable user data (`UserData`).
`~/.miktex/texmfs/install`	Packages installed for the user (`UserInstall`).
`/usr/local/var/lib/miktex-texmf`	System-wide configuration data (`CommonConfig`).
`/usr/local/var/cache/miktex-texmf`	System-wide recoverable data (`CommonData`).
`/usr/local/share/miktex-texmf`	Packages installed for all users (`CommonInstall`).

Special directories:

`/usr/local/bin`	MiKTeX binaries
`/usr/local/lib/miktex`	MiKTeX internal binaries
`/usr/local/lib`	MiKTeX shared objects
`/usr/local/share/man/man`*`N`*	MiKTeX man pages

Installing for Linux

Chapter 3. Using MiKTeX

Getting Started

If you have never used TeX before, then it is recommendable to work through one of the TeX/LaTeX tutorials. A good starting point is this entry in the UK TeX FAQ: http://www.tex.ac.uk/faq/.

MiKTeX doesn't differ very much from any other TeX system you might have used before. Typesetting with MiKTeX involves these steps:

1. Start TeXworks (a simple TeX frontend) and edit your LaTeX document.
2. Press **Ctrl**+**T** to create a typeset view of your document.

Specialities

This section describes features that were added to the MiKTeX TeX implementation.

Automatic Package Installation

MiKTeX can be configured in such a way that missing packages are automatically installed (see the section called “Automatic Package Installation”).

It is possible to override the global configuration setting with these command line options:

`--disable-installer` Missing packages will not be installed.

`--enable-installer` Missing packages will be installed.

Finding out Package Usages

The command line option `--record-package-usages` can be used to find out which packages are used in a job.

For example, you would say

```
latex -record-package-usages=packages.txt test
```

to create the file `packages.txt`, which contains the names of the packages used by `test.tex`.

If `test.tex` looks like this:

```
\documentclass{scrartcl}
\begin{document}
Hello, world!
\end{document}
```

Then the resulting `packages.txt` would contain these lines:

```
cm
koma-script
ltxbase
```

The package list can be handed over to the package manager (see mpm(1)), e.g.

```
mpm --update-some=packages.txt
```

would ensure that you have the latest versions installed.

Suppressing Screen Output

The option `--quiet` suppresses all diagnostic messages. No screen output is produced, unless there are errors. The `--quiet` option implies `--c-style-errors` and `--interaction=batchmode`, i.e. errors will be shown in a "C style form" and do not stop the compilation process.

For example, the input file `foo.tex`

```
\documentclass{article}
\begin{document}
What's \This?
\end{documnt}
```

would cause TeX to print one error message, as in the following example:

```
> latex -quiet foo.tex
foo.tex:3: Undefined control sequence
>
```

Setting the Name of the Output File

You can change the name of all output files by using the option `--job-name=`*name*. This switch actually sets the name of the TeX job and has an effect of the output file names, because these names are derived from the job name. Look at the following example:

```
> latex -job-name=foo sample2e
This is pdfTeX, Version 3.14159265-2.6-1.40.18 (MiKTeX 2.9.6350 64-bit)
entering extended mode
("C:/Program Files/MiKTeX 2.9/tex/latex/base/sample2e.tex"
LaTeX2e <2017-04-15>
Babel <3.10> and hyphenation patterns for 75 language(s) loaded.
("C:/Program Files/MiKTeX 2.9/tex/latex/base/article.cls"
Document Class: article 2014/09/29 v1.4h Standard LaTeX document class
("C:/Program Files/MiKTeX 2.9/tex/latex/base/size10.clo")) (foo.aux)
("C:/Program Files/MiKTeX 2.9/tex/latex/base/omscmr.fd") [1] [2] [3] (foo.aux)
)
Output written on foo.dvi (3 pages, 7484 bytes).
Transcript written on foo.log.
>
```

Note the altered output file names: `foo.aux`, `foo.dvi` and `foo.log`.

Auto-insertion of Source Specials

What Are Source Specials?

Source specials are pieces of information embedded in a DVI file. They make a connection between the source file location (e.g., "line 100 in `foo.tex`") and the DVI location (e.g., "page 2 in `foo.dvi`"). Source specials can improve the edit-compile-view-edit cycle:

1. You edit the source file with a TeX editor.
2. You compile the source file.
3. You execute a special editor command to open the previewer Yap, going directly to the page that corresponds to the cursor location in your editor window.
4. You navigate through the viewed document.
5. You double-click somewhere inside the viewed document; this causes Yap to bring the editor window back to the front, moving the text cursor directly to the line that corresponds to the view location.

How to Insert Source Specials

The TeX compiler option `--src-specials` directs TeX to insert source specials into the DVI file.

You would say

```
latex -src-specials foo.tex
```

to create the DVI file `foo.dvi` with embedded source specials.

Quoted File Names

The TeX compiler can handle quoted file names. This makes it possible to specify long file names that contain spaces.

For example, to compile the input file `long file name.tex`, you start TeX as follows:

```
latex "long file name"
```

This produces the DVI file `"long file name.dvi"`. The log file is named `"long file name.log"`.

You can, to some extent, use quoted file names inside the TeX document. For example:

```
\input{"extra long file name"}
```

This would cause TeX to read the file `"extra long file name.tex"`.

Things get a little bit complicated if you want to use the LaTeX primitive `\include`. You have to write something like the following:

```
\include{"extra\space long\space file\space name"}
```

Specifying Additional Input Directories

The command-line option `--include-directory=`*`dir`* causes the program to include *`dir`* into the list of input directories.

For example:

```
latex --include-directory="C:\My Styles" foo.tex
```

This prepends `C:\My Styles` to the input search path, i.e., `C:\My Styles` will be searched first, when TeX tries to find an input file.

Specifying the Output Directory

The option `--output-directory=`*`dir`* causes TeX to create all output files in another directory.

For example:

```
> mkdir C:\texoutput
> latex -output-directory=C:\texoutput sample2e.tex
...
>
```

This ensures that all output files (`foo.dvi`, `foo.log`, …) will be created in `C:\texoutput`.

Specifying the Directory for Auxiliary Files

The option `--aux-directory=`*`dir`* causes TeX to create auxiliary files in another directory. For example:

```
> mkdir C:\texoutput
> mkdir C:\tobedeleted
> latex -output-directory=C:\texoutput -aux-directory=C:\tobedeleted foo.tex
...
>
```

This ensures that 1) `foo.dvi` will be created in `C:\texoutput` and 2) all other files (`foo.log`, …) will be created in `C:\tobedeleted`.

Running Programs From Within TeX

\write18

TeX handles output stream `18` in a special way: the token list is interpreted as a command line. If the \write18 feature is enabled (see below), then \write18{*`toklist`*} starts the system command interpreter (usually **cmd.exe** for Windows and **sh** for other systems) to carry out the command specified by *`toklist`*. For example:

```
\write18{miktex-kpsewhich sample2e.tex}
```

prints the fully qualified path to the LaTeX input file `sample2e.tex`.

Note

The \write18 feature is only partially enabled by default to avoid security problems: only well known commands are allowed. You can examine the list of allowed commands by running **`initexmf --show-config-value [Core]AllowedShellCommands[]`**. You fully enable the feature by specifying `--enable-write18` on the TeX command-line. But please keep in mind that this tears a huge security hole.

Piped Input and Output

TeX's input/output primitives can be used for unidirectional interprocess communication by prepending a pipe symbol to the file name.

If this feature is enabled, then \input "|*command*" starts the command interpreter (usually **cmd.exe** for Windows and **sh** for other systems) to carry out the command. The output of the command becomes the input of TeX. For example:

```
\input "|miktex-kpsewhich sample2e.tex"
```

typesets he fully qualified path to the LaTeX input file `sample2e.tex`.

Likewise, it is possible to let TeX write something into the input stream of a command. For example:

```
\immediate\openout1 = "|sort"
\immediate\write 1 {b}
\immediate\write 1 {a}
\immediate\write 1 {c}
\immediate\closeout1
```

Note

Piped input and output is disabled by default. You enable the feature by specifying `--enable-pipes` on the TeX command-line. But please keep in mind that this tears a huge security hole.

TCX Files: Character Translations

This section is "borrowed" from the Web2C manual.

TCX (TeX character translation) files help TeX support direct input of 8-bit international characters if fonts containing those characters are being used. Specifically, they map an input (keyboard) character code to the internal TeX character code (a superset of ASCII).

Of the various proposals for handling more than one input encoding, TCX files were chosen because they follow Knuth's original ideas for the use of the `xchr` and `xord` tables. He ventured that these would be changed in the WEB source in order to adjust the actual version to a given environment. It turned out, however, that recompiling the WEB sources is not as simple task as Knuth predicted; therefore, TCX files, providing the possibility of changing of the conversion tables on on-the-fly, has been implemented instead.

This approach limits the portability of TeX documents, as some implementations do not support it (or use a different method for input-internal reencoding). It may also be problematic to determine the encoding to use for a TeX document of unknown provenance; in the worst case, failure to do so correctly may result in subtle errors in the typeset output.

While TCX files can be used with any format, using them breaks the LaTeX `inputenc` package. This is why you should either use *tcxfile* or *inputenc* in LaTeX input files, but never both.

This is entirely independent of the MLTeX extension: whereas a TCX file defines how an input keyboard character is mapped to TeX's internal code, MLTeX defines substitutions for a non-existing character glyph in a font with a \accent construction made out of two separate character glyphs. TCX files involve no new primitives; it is not possible to specify that an input (keyboard) character maps to more than one character.

Specifying TCX files:

- You can specify a TCX file to be used for a particular TeX run by specifying the command-line option `-translate-file=`*`tcxfile`* or (preferably) specifying it explicitly in the first line of the main document:

```
%& -translate-file=tcxfile
```

- TCX files are searched for along the `TCXPath` path.
- **initex** ignores TCX files.

MiKTeX comes with at least two TCX files, `il1-t1.tcx` and `il2-t1.tcx`. These support ISO Latin 1 and ISO Latin 2, respectively, with Cork-encoded fonts (a.k.a.: the T1 encoding). TCX files for Czech, Polish, and Slovak are also provided.

Syntax of TCX files:

1. Line-oriented. Blank lines are ignored.
2. Whitespace is ignored except as a separator.
3. Comments start with **%** and continue to the end of the line.
4. Otherwise, a line consists of one or two character codes:

   src [*dest*]

5. Each character code may be specified in octal with a leading `0`, hexadecimal with a leading `0x`, or decimal otherwise. Values must be between `0` and `255`, inclusive (decimal).
6. If the *dest* code is not specified, it is taken to be the same as *src*.
7. If the same *src* code is specified more than once, it is the last definition that counts.

Finally, here's what happens: when TeX sees an input character with code *src*: it 1) changes *src* to *dest*; and 2) makes code the *dest* "printable", i.e., printed as-is in diagnostics and the log file instead of in ^^ notation.

By default, no characters are translated, and character codes between `32` and `126` inclusive (decimal) are printable. It is not possible to make these (or any) characters unprintable.

Specifying translations for the printable ASCII characters (codes `32`–`127`) will yield unpredictable results. Additionally you shouldn't make the following characters printable: **^^I** (TAB), **^^J** (line feed), **^^M** (carriage return), and **^^?** (delete), since TeX uses them in various ways.

Thus, the idea is to specify the input (keyboard) character code for *src*, and the output (font) character code for *dest*.

texify: The MiKTeX Compiler Driver

texify is a command-line utility that simplifies the creation of DVI (PDF) documents: **texify** automatically runs LaTeX (pdfLaTeX), MakeIndex and BibTeX as many times as necessary to produce a DVI (PDF) file with sorted indices and all cross-references resolved.

To run **texify** on an input file `foo.tex`, do this:

```
texify foo.tex
```

As shown in the example above, the input file names to **texify** must include any extension (`.tex`, `.ltx`, …).

There are several command line options you can use to control **texify** (see texify(1)). Here are some examples:

```
texify --clean foo.tex
```

All auxiliary files will be removed, i.e., only the output `foo.dvi` file will be left in the current folder.

```
texify --tex-option=--src foo.tex
```

Passes the option `--src` to the TeX compiler.

```
texify --run-viewer foo.tex
```

Opens the output file `foo.dvi` (unless there are compile erros).

```
texify --tex-option=--src --viewer-option="-1 -s\"200 foo.tex\"" --run-viewer foo.
```

Compiles `foo.tex` with source file information (`--src`) and then initiates forward DVI search to open `foo.dvi` at the source special location “200 foo.tex”. The previewer option `-1` re-uses an existing previewer window.

See the Yap manual, for a complete list of previewer options.

Printing

Using a Viewer to Print DVI/PDF Files

TeX output files (`*.dvi`/`*.pdf`) can be printed from within the viewer.

Using mtprint to Print DVI Files

DVI files can also be printed with the help of the command-line utility **mtprint** (MiKTeX Print Utility).

For example, run **`mtprint paper`** to send the DVI file `paper.dvi` to the default Windows printer.

See mtprint(1), for more information about **mtprint**

Chapter 4. Maintenance

Refreshing the File Name Database

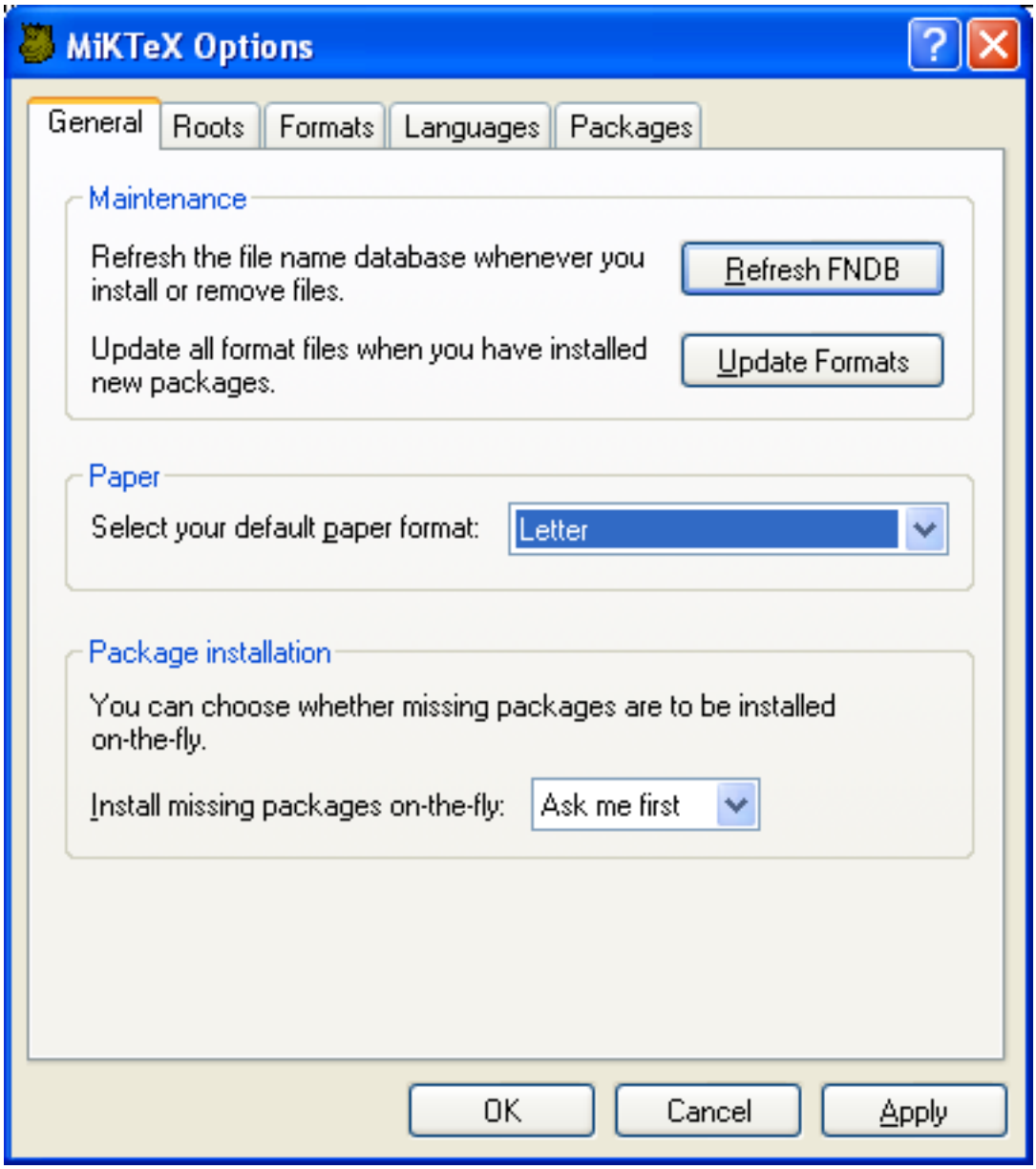
To speed up file search, MiKTeX makes use of a list of known file names. This list is called the *file name database* (FNDB).

It is necessary that you refresh the file name database whenever you manually install TeX/LaTeX-related files in a user-managed TEXMF directory.

You update the file name database with the help of MiKTeX Options.

Click Start → Programs → MiKTeX 2.9 → Maintenance → Settings to open the MiKTeX Options window (see Figure 4.1, “MiKTeX Options: General Settings”).

Figure 4.1. MiKTeX Options: General Settings



Click Refresh FNDB to refresh the file name database.

Setting the Preferred Paper Format

You can set the preferred paper format with the help of MiKTeX Options.

Click Start → Programs → MiKTeX 2.9 → Maintenance → Settings to open the MiKTeX Options window (see Figure 4.1, “MiKTeX Options: General Settings”). Select your preferred paper format from the drop-down list and click OK.

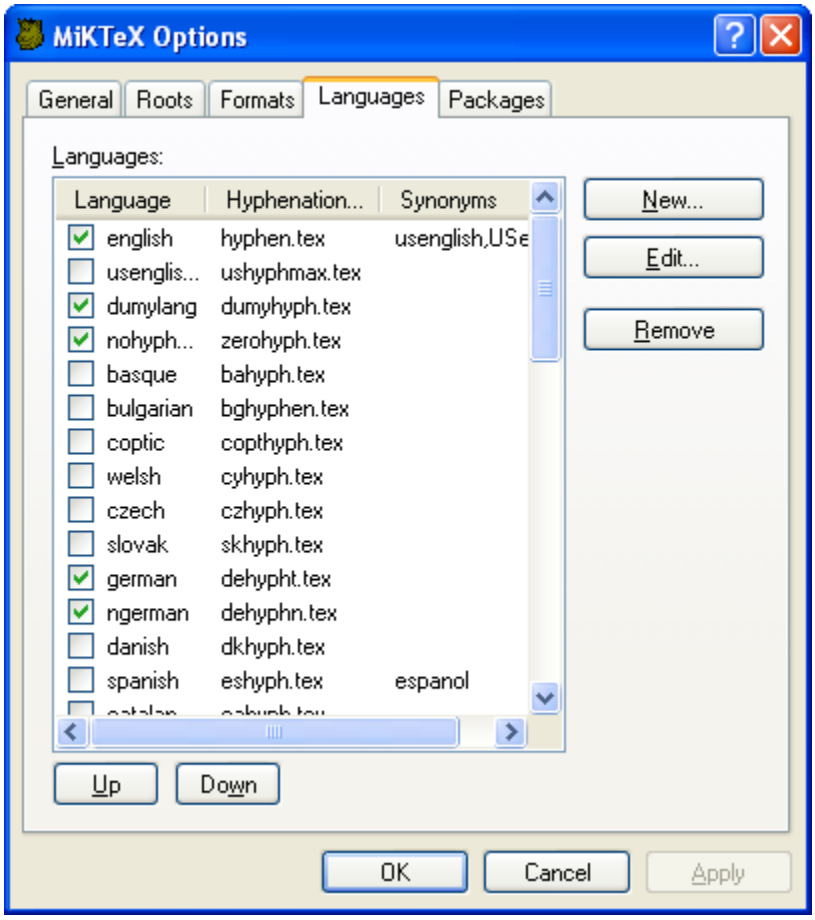
Selecting Languages

You can control the loading of hyphenation patterns with the help of MiKTeX Options.

Click Start → Programs → MiKTeX 2.9 → Maintenance → Settings to open the MiKTeX Options window (see Figure 4.1, “MiKTeX Options: General Settings”).

Click on the Languages tab. You will presented with the list of available languages (Figure 4.2, “MiKTeX Options: Languages”). Mark the languages, whose hyphenation patterns are to be loaded by the TeX engines.

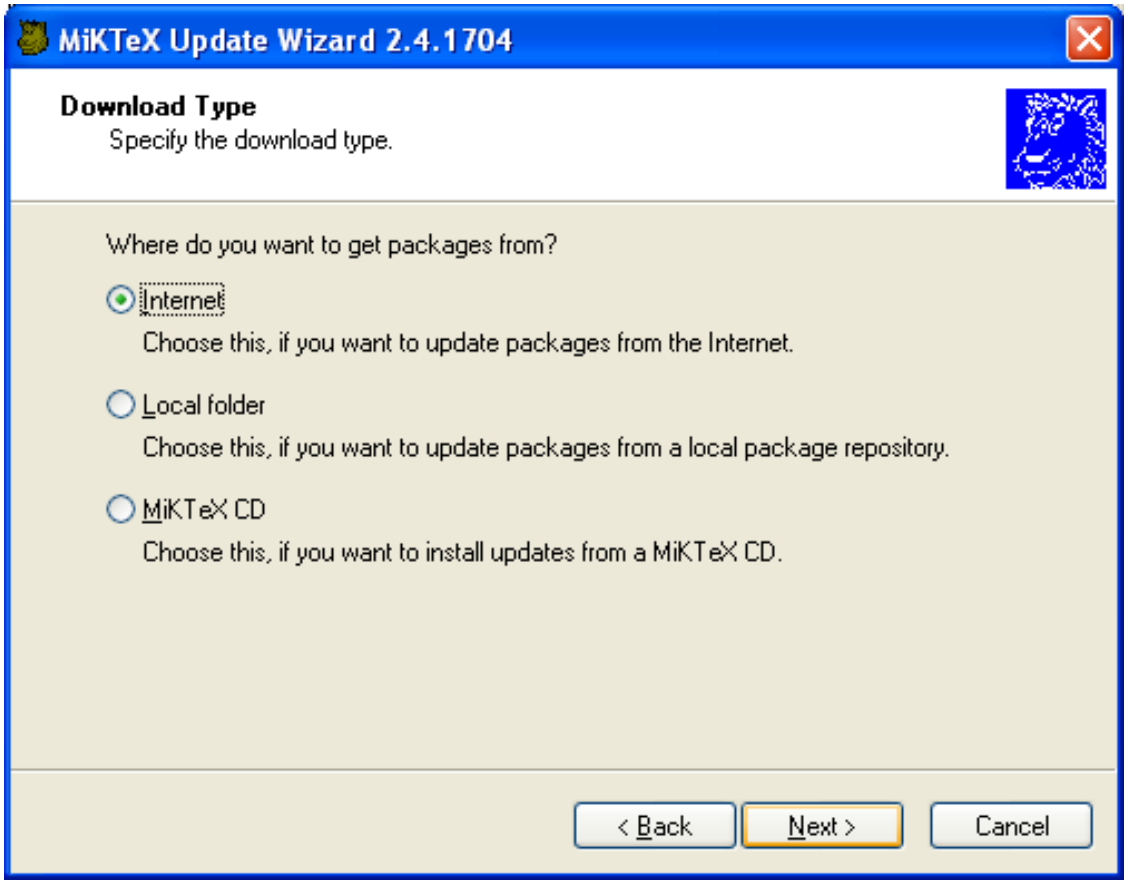
Figure 4.2. MiKTeX Options: Languages



Installing Updates

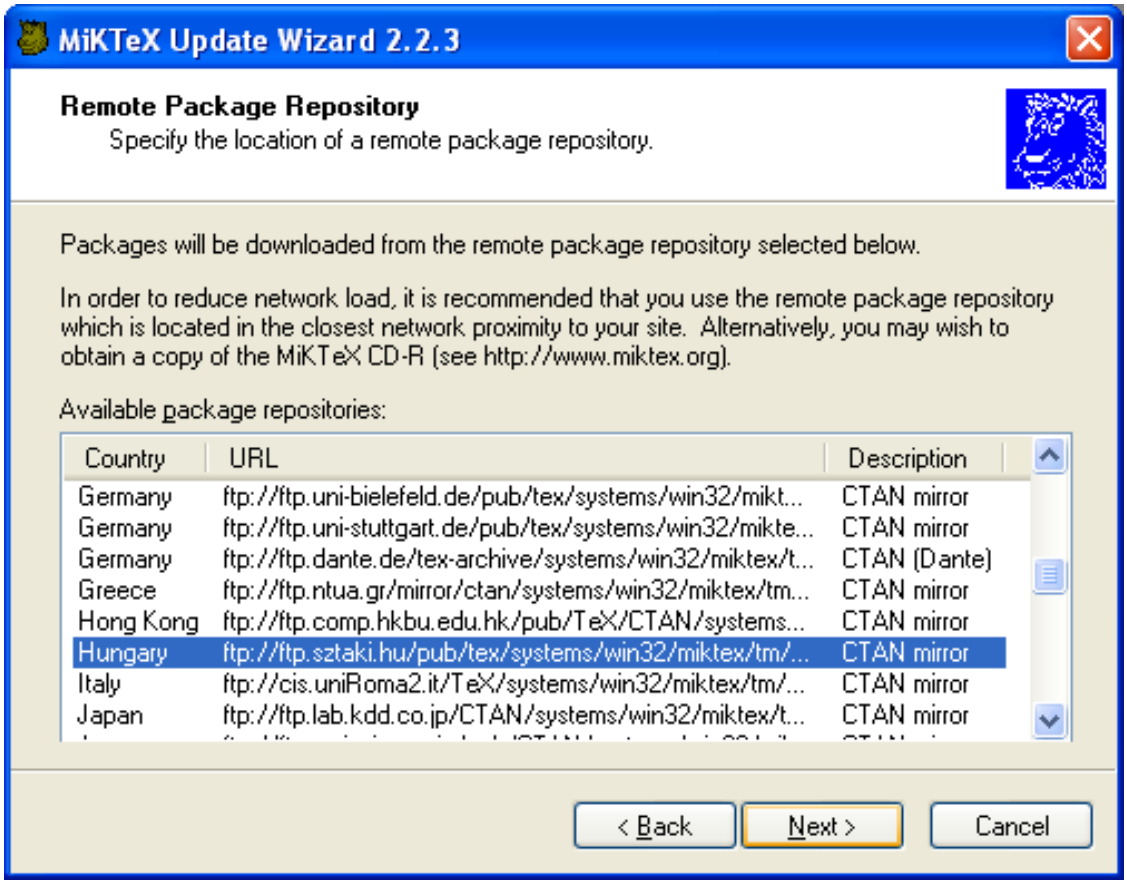
You can use the MiKTeX update wizard to install the latest MiKTeX updates.

To start the wizard, click Start → Programs → MiKTeX 2.9 → Update. The wizard asks you to choose an update source:



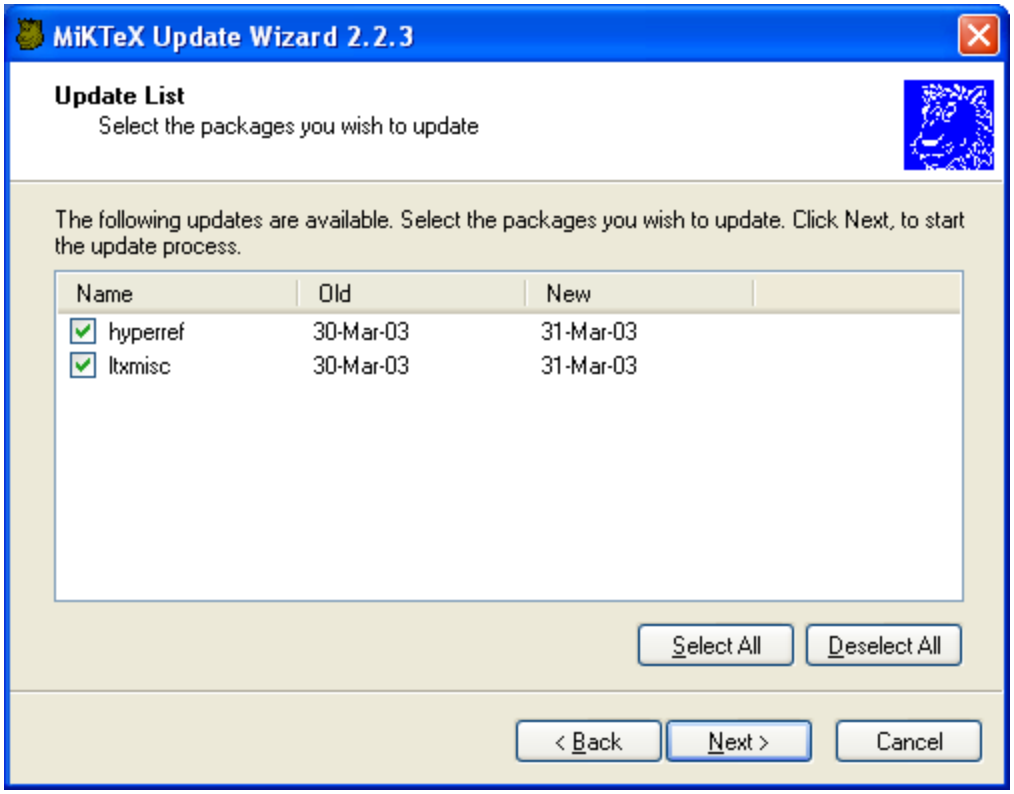
Choose to install updates from a remote package repository. Choose Local folder, if you are mirroring a remote package repository on your computer. Chosse MiKTeX CD, if you have a new edition of the MiKTeX CD. Click Next > to continue.

If you have chosen to install packages from a remote package repository, MiKTeX Update Wizard lists the available package repositories. Choose the nearest repository:



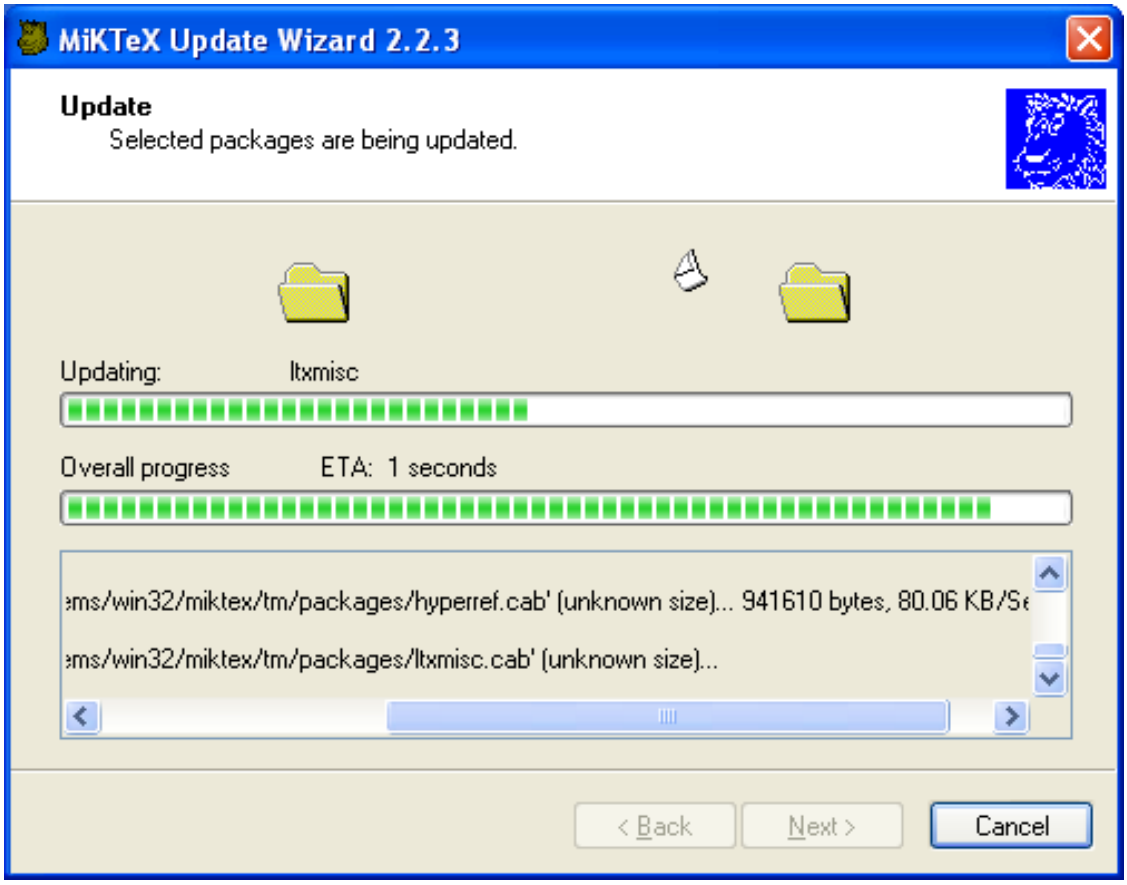
Click Next > to continue.

A list of updateable packages is displayed. Choose the packages you wish to update:



Click Next > to start the update process.

MiKTeX Update Wizard now updates the selected packages:



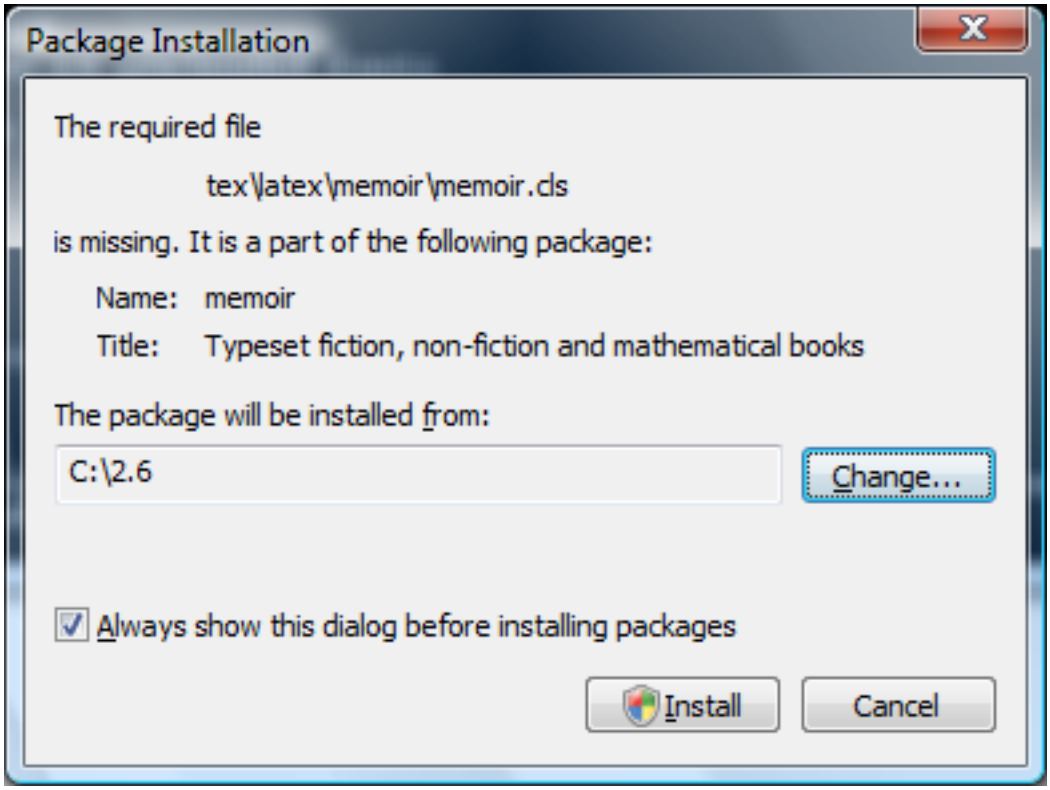
When the update operation is complete, click Next > and then Finish.

Automatic Package Installation

MiKTeX has the ability to automatically install missing packages.

MiKTeX asks your permission before installing a package (see Figure 4.3, “Automatic Package Installation”.

Figure 4.3. Automatic Package Installation



Click Install to start the installation of the package. Click Cancel, to cancel the installation. If you do not want to see this dialog in the future, clear the mark from the check box Always show this dialog before installing packages. Your decision will be remembered.

Integrating Local Additions

If you have files that you want to integrate into the MiKTeX setup, you have several options:

Use the command-line option `--include-directory=`*`dir`*

For example:

```
latex --include-directory=C:\path\to\my\style\files thesis.tex
```

See the section called “Specifying Additional Input Directories”, for more information.

Set environment variables

For example:

```
set TEXINPUTS=C:\path\to\my\style\files
latex thesis.tex
```

See Chapter 8, *Environment variables*, to learn more about MiKTeX environment variables.

Register a user-managed TEXMF directory

Register the root of the directory tree which contains your files. The directory tree must conform to the TDS standard, i.e., you must imitate the directory tree in the MiKTeX installation directory (usually `C:\Program Files\MiKTeX 2.9`).

Tip

This is the recommended method. The rest of this section explains how you can register your own root directory.

A Short Excursion: The TeX Directory Structure (TDS)

Here is a brief summary of the TDS standard:

`*.afm` go in *root*`\fonts\afm\`*supplier*`\`*font*

`*.dvi`, `*.ps` or `*.pdf` go in *root*`\doc\latex\`*package*

`*.enc` go in *root*`\fonts\enc\`*syntax*`\`*bundle*

`*.map` go in *root*`\fonts\map\`*syntax*`\`*bundle*

`*.mf` go in *root*`\fonts\source\`*supplier*`\`*font*

`*.pfb` go in *root*`\fonts\type1\`*supplier*`\`*font*

`*.sty`, `*.cls` or `*.fd` go in *root*`\tex\latex\`*package*

`*.tfm` go in *root*`\fonts\tfm\`*supplier*`\`*font*

`*.ttf` go in *root*`\fonts\truetype\`*supplier*`\`*font*

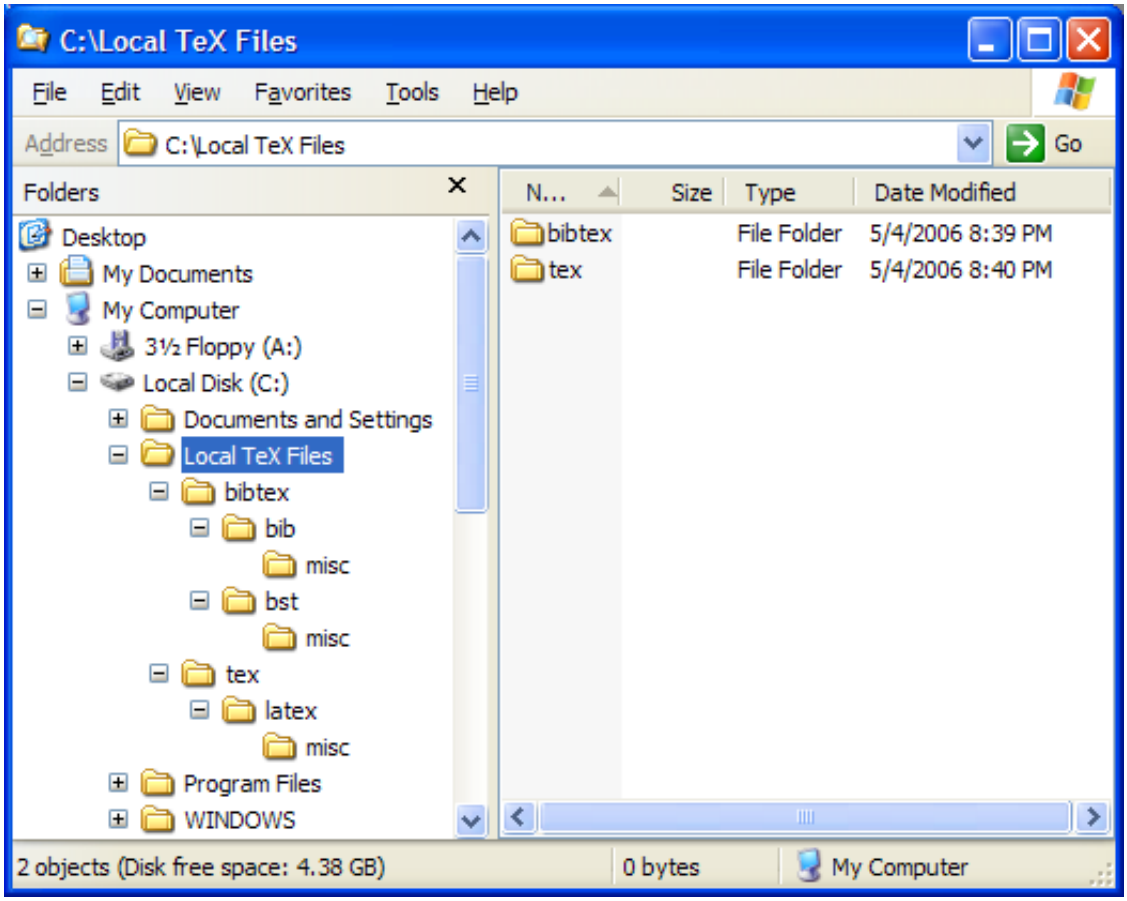
`*.vf` go in *root*`\fonts\vf\`*supplier*`\`*font*

Please run **`mthelp tds`** to learn more about the TDS.

Walkthrough: Registering a User-Managed TEXMF Directory

In this walkthrough, we assume that your own additions are located in the directory tree rooted at `C:\Local TeX Files`. This tree might look as follows:

Figure 4.4. Sample TeX Directory Structure



In our example, the input files are distributed over three directories:

`C:\Local TeX Files\bibtex\bib\misc` — Contains `.bib` files.

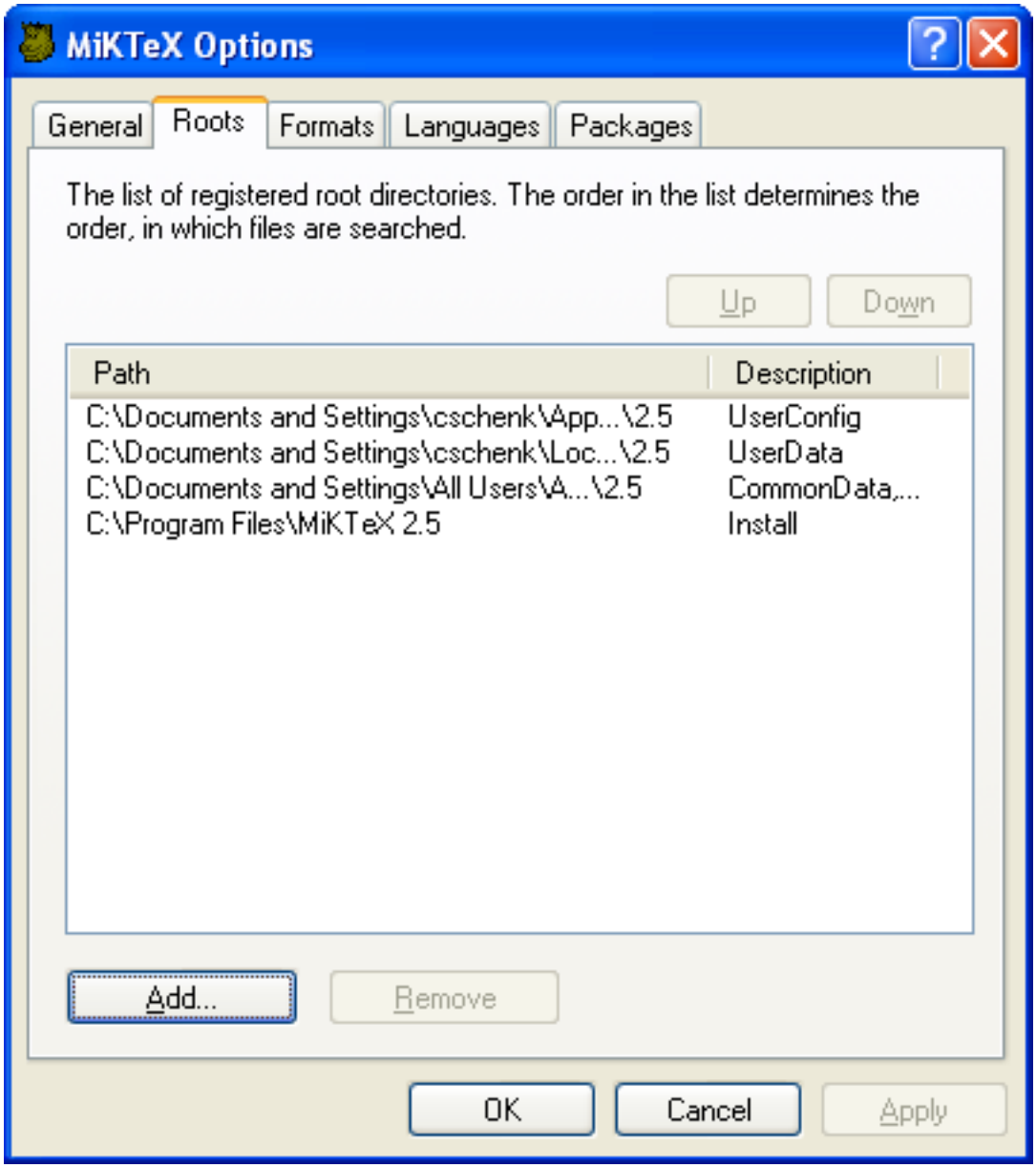
`C:\Local TeX Files\bibtex\bst\misc` — Contains `.bst` files.

`C:\Local TeX Files\tex\latex\misc` — Contains LaTeX input files (`*.sty`, `*.cls`, …).

You use MiKTeX Options to register `C:\Local TeX Files`. Click Start → Programs → MiKTeX 2.9 → Maintenance → Settings to open the MiKTeX Options window (see Figure 4.1, “MiKTeX Options: General Settings”).

Click on the Roots tab. The Roots page (see Figure 4.5, “MiKTeX Options: Roots”) shows the list of currently registered root directories.

Figure 4.5. MiKTeX Options: Roots

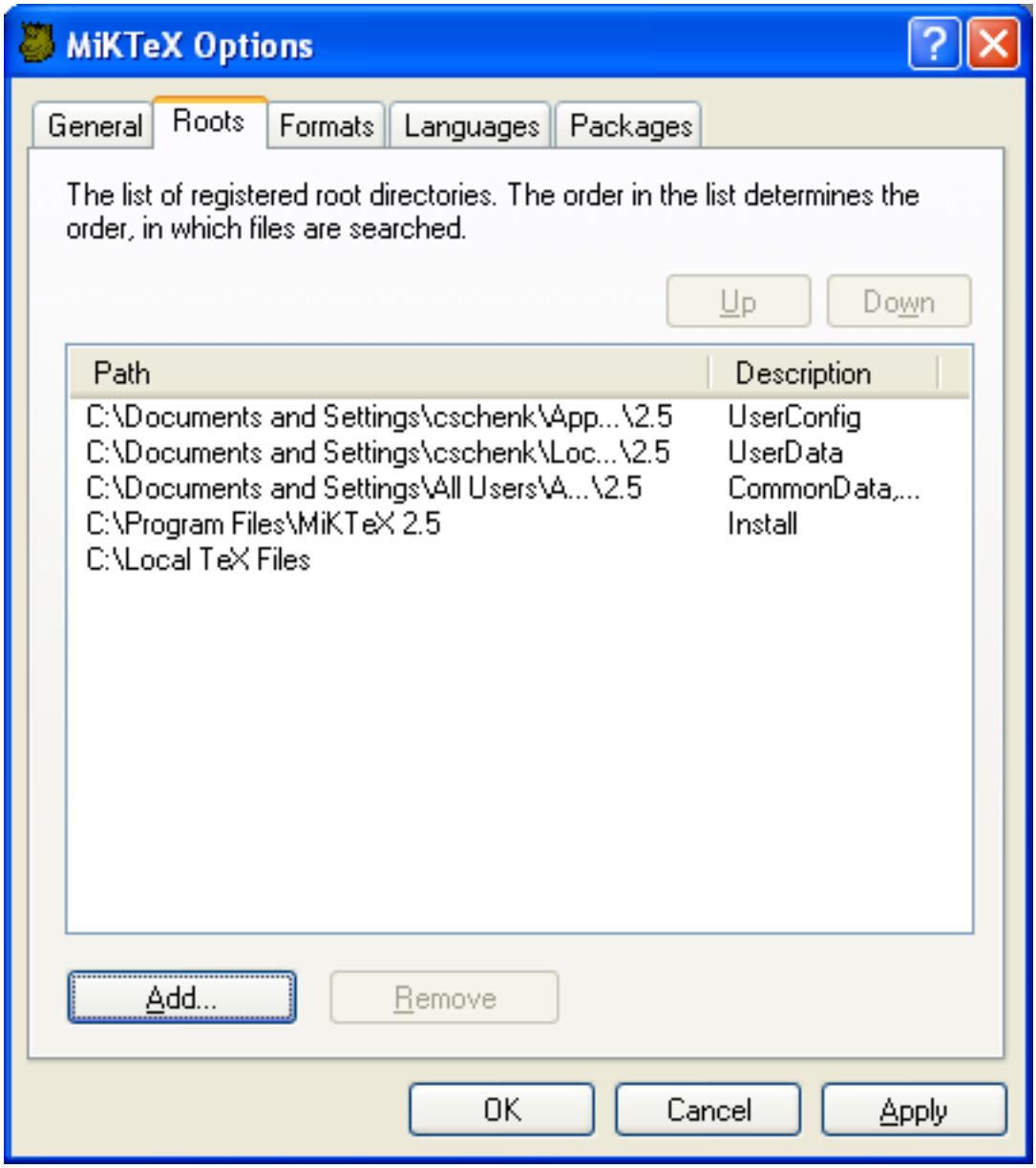


Click Add. In the following dialog box (Figure 4.6, “Browsing to a Root Directory”), browse to `C:\Local TeX Files` and click OK.

Figure 4.6. Browsing to a Root Directory

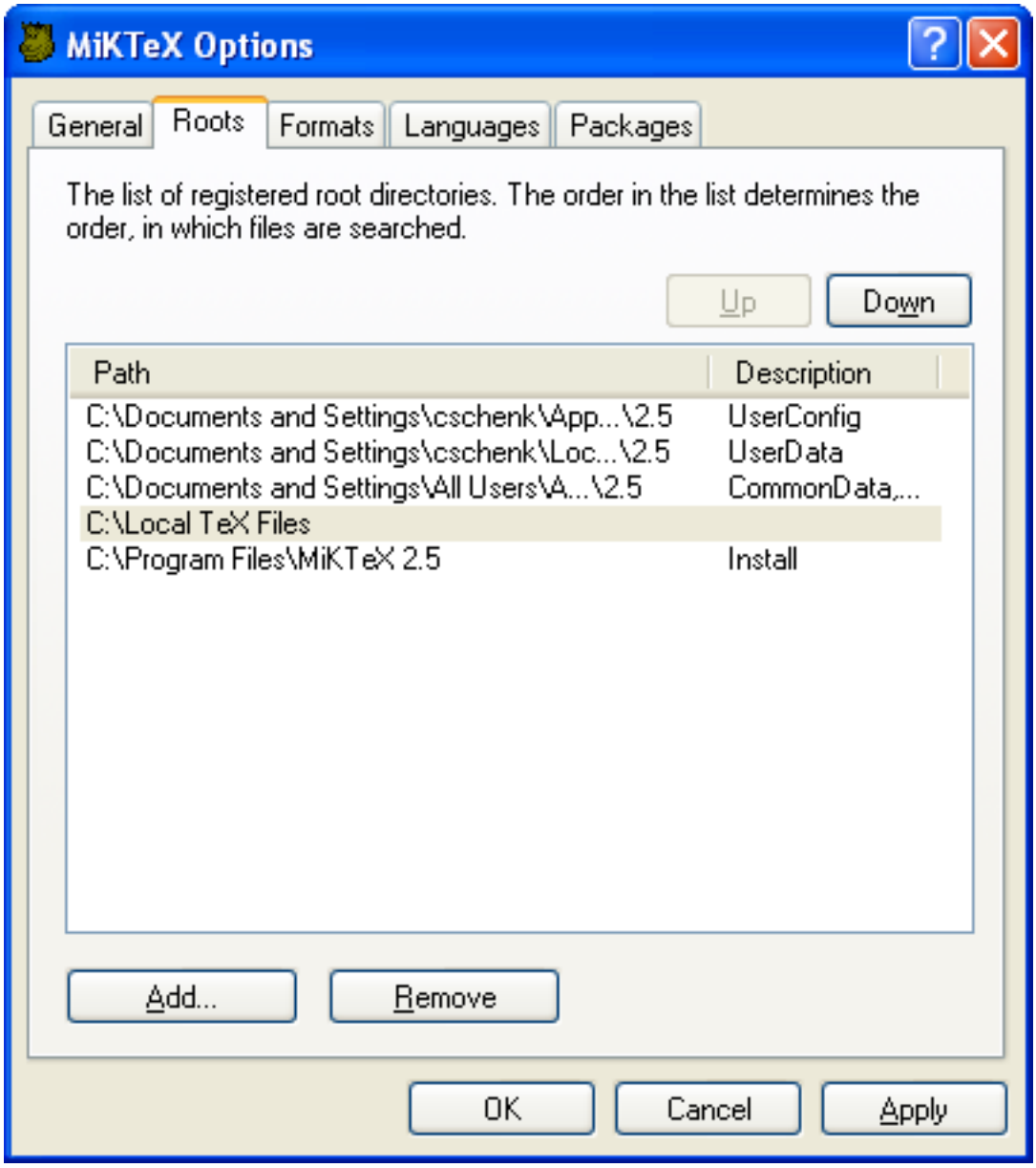
The root directory will be appended to the list (Figure 4.7, “MiKTeX Options: Root Directory Added”).

Figure 4.7. MiKTeX Options: Root Directory Added



You can move `C:\Local TeX Files` before the installation directory, if you want to prioritize your own files. Click C:\Local TeX Files to select the list entry. Then click Up to move it before the installation directory (Figure 4.8, “MiKTeX Options: Root Directory Moved”).

Figure 4.8. MiKTeX Options: Root Directory Moved



Click OK to close MiKTeX Options The file name database will be refreshed. Your files in `C:\Local TeX Files` are now available to MiKTeX.

Chapter 5. Advanced Topics

Managing Font Map Files

Information about outline fonts is stored in a file by the name of `psfonts.map`. This file is normally created automatically. It can be manually created by running **`initexmf --mkmaps`**.

`psfonts.map` depends on the file `updmap.cfg`. This configuration file contains declarative instructions (see updmap.cfg(5)), which will be used to build `psfonts.map`.

Caution

The contents of `psfonts.map` should never be edited directly. Your modifications get lost when you install new packages.

For example, follow these steps if you want to add an entry for the font map file `xyz.map`:

1. Run **`initexmf --edit-config-file updmap`**.
2. Insert the following line at the end of the file:

   ```
   Map xyz.map
   ```

3. Save the file and close the editor.
4. Run **`initexmf --mkmaps`** to rebuild the font map files.

Working With the Package Manager

You use MiKTeX Package Manager (MPM) to install and remove packages.

The package manager can be run in two modes: batch and windowed.

MPM runs in batch mode if you specify command-line options such as `--install` and `--update` (see mpm(1) for a list of available command-line options).

To start the package manager in windowed mode, click Start → Programs → MiKTeX 2.9 → Browse Packages). You will see a window similar to this:

Installing Packages

You install packages as follows:

1. Select all wanted packages in the list view.
2. Click on + to install the packages.

For example: you want to install the memoir package:

1. Locate and select the memoir package in the list view, e.g., type the key sequence **M E M O I R**.
2. You can now click + to install the package.

Searching Packages

Sometimes you don't know the name of a package, but you know the name of a file that belongs to the wanted package. In this case, enter the file name information in the file name edit control. Note that the file name information can include wildcard characters (`*?`).

For example: you need the file `musixflx.lua`:

1. Enter **`musxflx.lua`** in the file name edit control.
2. Click the Filter button.

The list view will be reduced to contain only the `musixtex` package. Selecting `musixtex` and pressing + will install the package.

Managing Memory Dump Files

In typical use, TeX, METAFONT and MetaPost require a large number of macros to be predefined; therefore, they support *memory dump* files, which can be read much more efficiently than ordinary source code.

For example, LaTeX macros are stored in the file `latex.fmt`. This file is loaded by pdfTeX, when you start **latex**.

MiKTeX Options can assist you in defining a new memory dump file:

Click Start → Programs → MiKTeX 2.9 → Maintenance → Settings to open the MiKTeX Options window (see Figure 4.1, “MiKTeX Options: General Settings”).

Click on the Formats tab. You are presented with a list of known memory dump files. To add an entry to this list, click New....

In the Format Definition dialog box, enter the following information:

Format name	The name of the memory dump file without an extension.
Compiler	The program which creates and loads the memory dump file.
Input file	The name of the main input file.
Preloaded format	Optional: The name of another memory dump file, which must be loaded before the actual memory dump file is being created.
Descriptioin	A one-line comment which describes the new memory dump file.

A new executable file with the name of the memory dump will be installed in the MiKTeX bin directory. This executable serves as a short-cut for ***`compiler "&name"`***. For example, these two commands are equivalent:

```
latex sample2e
pdftex "&latex" sample2e
```

Changing TEXMF run-time parameters

You can control a number of run-time parameters (in particular, array sizes) on the command-line or in a configuration file.

Some of the more interesting paramaters:

main_memory — Total words of memory available, for TeX, METAFONT, and MetaPost. You must remake the format file after changing (see the section called “Managing Memory Dump Files”).

extra_mem_bot — Extra space for large TeX data structures: boxes, glue, breakpoints, et al.

font_mem_size — Words of font info available for TeX.

See Chapter 10, *Run-Time Defaults*, for a complete list of the TEXMF run-time parameters.

Here is a typical example of a configuration file:

```
main_memory=2000000
extra_mem_bot=2000000
font_mem_size=2000000
```

The name of the configuration file is that of the engine (e.g., **miktex-pdftex**) or format (e.g, **miktex-pdflatex**). You use the `--edit-config-file` option of **initexmf** to edit the configuration file, e.g.:

```
> initexmf --edit-config-file=pdflatex

>
```

Part II. Reference

Table of Contents

Chapter 6. Programs

Name

miktex-bibtex — make a bibliography for LaTeX

Synopsis

`miktex-bibtex` [*`option`*...] [*`auxname`*]

Description

BibTeX reads the top-level auxiliary (`.aux`) file that was output during the running of **miktex-latex** or **miktex-tex** and creates a bibliography (`.bbl`) file that will be incorporated into the document on subsequent runs of LaTeX or TeX. The *`auxname`* on the command-line must be given without the `.aux` extension. If you don't give the *`auxname`*, the program prompts you for it.

BibTeX looks up, in bibliographic database (`.bib`) files specified by the \bibliography command, the entries specified by the \cite and \nocite commands in the LaTeX or TeX source file. It formats the information from those entries according to instructions in a bibliography style (`.bst`) file (specified by the \bibliographystyle command, and it outputs the results to the `.bbl` file.

The LaTeX reference manual explains what a LaTeX source file must contain to work with BibTeX. Appendix B of the manual describes the format of the `.bib` files. The *BibTeXing* document describes extensions and details of this format, and it gives other useful hints for using BibTeX.

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes`
: Disable input (output) from (to) child processes.

`--enable-installer`
: Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-pipes`
: Enable input (output) from (to) child processes.

`--help`
: Give help and exit.

`--hhelp`
: This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*`dir`*
: Add the directory *`dir`* to the head of the list of directories to be searched for input files.

`--min-crossrefs=`*`n`*
: Defines the minimum number of **crossref**s required for automatic inclusion of the crossref'd entry on the citation list; the default is two.

`--quiet`	Suppress all output, except errors.
`--record-package-usages=`*`file`*	Record all package usages and write them into *`file`*.
`--trace[=`*`tracestreams`*`]`	Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).
`--version`	Show version information and exit.

Environment

`BIBINPUTS`
: Extra paths to locate `.bib` files.

`BSTINPUTS`
: Extra paths to locate `.bst` files.

`MIKTEX_TRACE`
: Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

See Also

BibTeXing	Run **`mthelp btxdoc`**
Designing BibTeX Styles	Run **`mthelp btxhak`**
LaTeX: A Document Preparation System	ISBN 0-201-52983-1

Name

miktex-dvicopy — produce modified copy of DVI file

Synopsis

`miktex-dvicopy` [*option*...] *indvi outdvi*

Description

miktex-dvicopy reads a DVI file, expands any references to virtual fonts to base fonts, and writes the resulting DVI file. Thus you can use virtual fonts even if your DVI processor does not support them, by passing the documents through **miktex-dvicopy** first.

Options

`--alias=`*name*
: Pretend to be program *name*, i.e., set program (and memory dump) name to *name*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *name* and invoking *name*.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes`
: Disable input (output) from (to) child processes.

`--enable-installer`
: Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-pipes`
: Enable input (output) from (to) child processes.

`--help`
: Give help and exit.

`--hhelp`
: This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*dir*
: Add the directory *dir* to the head of the list of directories to be searched for input files.

`--mag=`*mag*
: Override existing magnification with *mag*.

`--max-pages=`*n*
: Process *n* pages; default one million. This option cannot be used together with `--select`.

`--page-start=`*pagespec*
: Start at *page-spec*, for example 2 or 5.*.-2. This option cannot be used together with `--select`.

`--record-package-usages=`*file*
: Record all package usages and write them into *file*.

`--select=`*`sel`*

Select pages to be copied.

The syntax for *`sel`* is: *`start`* `[`*`n`*`]`, where *`start`* is the starting page specification (for example **`2`** or **`5.*.-2`**) and *`n`* (optional) is the maximum number of pages to be copied.

You can use up to `10` `--select` options. This option cannot be used together with `--max-pages` or `--page-start`.

`--trace[=`*`tracestreams`*`]`

Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--version`

Show version information and exit.

Environment

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

Name

miktex-dvips — convert a DVI file to PostScript

Synopsis

`miktex-dvips` [*`option`*...] *`dvifile`*

Description

Dvips takes a DVI file produced by TeX (or by some other processor such as **miktex-gftodvi**) and converts it to PostScript. The DVI file may be specified without the `.dvi` extension.

Options

Many of the parameterless options listed here can be turned off by suffixing the option with a zero (`0`); for instance, to turn off page reversal, use `-r0`. Such options are marked with a trailing `*`.

`-` Read additional options from standard input after processing the command line.

`--help` Print a usage message and exit.

`--version` Print the version number and exit.

`-a*` Conserve memory by making three passes over the DVI file instead of two and only loading those characters actually used. Generally only useful on machines with a very limited amount of memory.

`-A` Print only the odd pages. This option uses TeX page numbers, not physical page numbers.

`-b` *`num`* Generate *`num`* copies of each page, but duplicating the page body rather than using the **/#copies** PostScript variable. This can be useful in conjunction with a header file setting **bop-hook** to do color separations or other neat tricks.

`-B` Print only the even pages. This option uses TeX page numbers, not physical page numbers.

`-c` *`num`* Generate *`num`* consecutive copies of every page, i.e., the output is uncollated. This merely sets the builtin PostScript variable **/#copies**.

`-C` *`num`* Generate *`num`* copies, but collated (by replicating the data in the PostScript file). Slower than the `-c` option, but easier on the hands, and faster than resubmitting the same PostScript file multiple times.

`-d` *`num`* Set the debug flags, showing what Dvips (thinks it) is doing. See the Dvips manual, for the possible values of *`num`*. Use `-d -1` as the first option for maximum output.

`-D` *`num`* Set both the horizontal and vertical resolution to *`num`*, given in dpi (dots per inch). This affects the choice of bitmap fonts that are loaded and also the positioning of letters in resident PostScript fonts. Must be between 10 and 10000. This affects both the horizontal and vertical resolution. If

a high resolution (something greater than 400 dpi, say) is selected, the `-Z` flag should probably also be used. If you are using fonts made with METAFONT, such as Computer Modern, **makepk** needs to know about the value for *num* that you use or METAFONT will fail. See the file `modes.mf` for a list of resolutions and mode names for most devices.

`-e` *num*
: Maximum drift in pixels of each character from its "true" resolution-independent position on the page. The default value of this parameter is resolution dependent (it is the number of entries in the list [100, 200, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2400, 2800, 3200, …] that are less than or equal to the resolution in dots per inch). Allowing individual characters to "drift" from their correctly rounded positions by a few pixels, while regaining the true position at the beginning of each new word, improves the spacing of letters in words.

`-E*`
: Generate an EPSF file with a tight bounding box. This only looks at marks made by characters and rules, not by any included graphics. In addition, it gets the glyph metrics from the TFM file, so characters that print outside their enclosing TFM box may confuse it. In addition, the bounding box might be a bit too loose if the character glyph has significant left or right side bearings. Nonetheless, this option works well enough for creating small EPSF files for equations or tables or the like. (Of course, Dvips output, especially when using bitmap fonts, is resolution-dependent and thus does not make very good EPSF files, especially if the images are to be scaled; use these EPSF files with care.) For multiple page input files, also specify `-i` to get each page as a separate EPSF file; otherwise, all the pages are overlaid in the single output file.

`-f*`
: Read the DVI file from standard input and write the PostScript to standard output. The standard input must be seekable, so it cannot be a pipe. If your input must be a pipe, write a shell script that copies the pipe output to a temporary file and then points Dvips at this file. It turns off the automatic sending of control-D if it was turned on with the `-F` option or in the configuration file; use `-F` after the `-f` to send it anyway.

`-F*`
: Write control-D (ASCII code 4) as the very last character of the PostScript file. This is useful when Dvips is driving the printer directly instead of working through a spooler, as is common on personal systems. On systems shared by more than one person, this is not recommended.

`-G`
: Shift non-printing characters (ASCII 0-32, 127) to higher-numbered positions. This was useful to work around bugs in old versions of Adobe's PDF reader. It's more likely to cause problems nowadays.

`-h` *name*
: Prepend *name* as an additional header file, or, if *name* is `-`, suppress all header files. Any definitions in the header file get added to the PostScript `userdict`.

`-i*`
: Make each section be a separate file; a *section* is a part of the document processed independently, most often created to avoid memory overflow. The filenames are created replacing the suffix of the supplied output file name by a three-digit sequence number. This option is most often used in conjunction with the `-S` option which sets the maximum section length in pages; if `-i` is specified and `-S` is not, each page is output as a separate file. For instance, some phototypesetters cannot print more than ten or so

consecutive pages before running out of steam; these options can be used to automatically split a book into ten-page sections, each to its own file.

On the other hand, if your document uses very large fonts or very large included figures, Dvips might take it upon itself to split the output into unwanted sections, to try to avoid overflowing printer memory.

`-j*` Download only needed characters from Type 1 fonts. This is the default. Some debugging flags trace this operation. You can also control partial downloading on a per-font basis (by editing `updmap.cfg`). See the section called “Managing Font Map Files”.

`-k*` Print crop marks. This option increases the paper size (which should be specified, either with a paper size special or with the `-T` option) by a half inch in each dimension. It translates each page by a quarter inch and draws cross-style crop marks. It is mostly useful with typesetters that can set the page size automatically. This works by downloading `crop.pro`.

`-K*` Remove comments in included PostScript graphics, font files, and headers; only necessary to get around bugs in spoolers or PostScript post-processing programs. Specifically, the **%%Page** comments, when left in, often cause difficulties. Use of this flag can cause other graphics to fail, however, since the PostScript header macros from some software packages read portion the input stream line by line, searching for a particular comment.

`-l [=]`*num* The last page printed will be the first one numbered *num*. Default is the last page in the document. If *num* is prefixed by an equals sign, then it (and the argument to the `-p` option, if specified) is treated as a physical (absolute) page number, rather than a value to compare with the TeX \count0 values stored in the DVI file. Thus, using `-l =9` will end with the ninth page of the document, no matter what the pages are actually numbered.

`-m*` Specify manual feed, if supported by the output device.

`-mode` *mode* Use *mode* as the METAFONT device name for path searching and font generation. This overrides any value from configuration files. With the default paths, explicitly specifying the mode also makes the program assume the fonts are in a subdirectory named mode.

`-M*` Turns off automatic font generation.

`-n` *num* Print at most *num* pages. Default is 100000.

`-n` *num* Print at most *num* pages. Default is 100000.

`-N*` Turns off generation of structured comments such as **%%Page**; this may be necessary on some systems that try to interpret PostScript comments in weird ways, or on some PostScript printers. Beware: This also disables page movement, etc., in PostScript viewers such as GSview.

`-noomega` Disable the use of Omega extensions when interpreting DVI files. By default, the additional opcodes 129 and 134 are recognized by Dvips as Omega or pTeX extensions and interpreted as requests to set 2-byte characters.

`-noptex` Disable the use of pTeX extensions when interpreting DVI files. By default, the additional opcodes 130 and 135 are recognized by Dvips as Omega extensions and interpreted as requests to set 3-byte characters, and 255 as request to change the typesetting direction.

The only drawback is that the virtual font array will (at least temporarily) require 65536 or more positions instead of the default 256 positions, i.e., the memory requirements of Dvips will be somewhat larger. If you find this unacceptable or encounter another problem with the Omega or pTeX extensions, you can switch off the pTeX extension by `-noptex`, or both by `-noomega`.

`-o` *`name`* Send output to the file *`name`*. If `-o` is specified without *`name`*, the default is *`file`*`.ps` where the input DVI file was *`file`*`.dvi`. If `-o` isn't given at all, the configuration file default is used.

If *`name`* is `-`, output goes to standard output. If the first character of *`name`* is `!` or `|`, then the remainder will be used as an argument to `popen`; thus, specifying `|lpr` as the output file will automatically queue the file for printing as usual. Dvips will print to the local printer device `PRN` when *`name`* is `|lpr` and a program by that name cannot be found.

`-o` turns off the automatic sending of control-D. See the `-f` option for how to override this.

`-O` *`x-offset`*`,`*`y-offset`* Move the origin by *`x-offset`*`,`*`y-offset`*, a comma-separated pair of dimensions such as `.1in,-.3cm`. The origin of the page is shifted from the default position (of one inch down, one inch to the right from the upper left corner of the paper) by this amount. This is usually best specified in the printer-specific configuration file.

This is useful for a printer that consistently offsets output pages by a certain amount. You can use the file `testpage.tex` to determine the correct value for your printer. Be sure to do several runs with the same `O` value-some printers vary widely from run to run.

If your printer offsets every other page consistently, instead of every page, your best recourse is to use **bop-hook** (see the Dvips manual for more information).

`-p [=]`*`num`* The first page printed will be the first one numbered *`num`*. Default is the first page in the document. If *`num`* is prefixed by an equals sign, then it (and the argument to the `-l` option, if specified) is treated as a physical (absolute) page number, rather than a value to compare with the TeX \count0 values stored in the DVI file. Thus, using `-p =3` will start with the third page of the document, no matter what the pages are actually numbered.

`-pp` *`first-last`* Print pages *`first`* through *`last`*; equivalent to `-p` *`first`* `-l` *`last`*, except that multiple `-pp` options accumulate, unlike `-p` and `-l`. The `-` separator can also be `:`.

`-P` *`printer`* Read the configuration file `config.`*`printer`*, which can set the output name (most likely `o |lpr -P`*`printer`*), resolution, METAFONT mode, and perhaps font paths and other printer-specific defaults. It works best to put sitewide defaults in the one master `config.ps` file and

only things that vary printer to printer in the `config.`*`printer`* files; `config.ps` is read before `config.`*`printer`*.

A configuration file for eventual creation of Adobe PDF files is provided in `config.pdf` and thus can be loaded with `-Ppdf`. It will try to include Type 1 outline fonts into the PostScript file.

`-q*` Run quietly. Don't chatter about pages converted, etc. to standard output; report no warnings (only errors) to standard error.

`-r*` Output pages in reverse order. By default, page 1 is output first.

`-R` Run securely. `-R2` disables both shell command execution in \special (via `` ` ``) and config files (via the `E`), pipes as output files, and opening of any absolute or `..`-relative filenames. `-R1`, the default, forbids shell escapes but allows absolute filenames. `-R0` allows both.

`-s*` Enclose the output in a global save/restore pair. This causes the file to not be truly conformant, and is thus not recommended, but is useful if you are driving a deficient printer directly and thus don't care too much about the portability of the output to other environments.

`-S` *`num`* Set the maximum number of pages in each “section”. This option is most commonly used with the `-i` option; see its description above for more information.

`-t` *`papertype`* Set the paper type to *`papertype`*, usually defined in one of the configuration files, along with the appropriate PostScript code to select it. You can also specify a *`papertype`* of `landscape`, which rotates a document by 90 degrees. To rotate a document whose paper type is not the default, you can use the `-t` option twice, once for the paper type, and once for `landscape`.

In general, you should not use any `-t` option when using a papaersize special, which some LaTeX packages (e.g., `hyperref`) insert

One exception is when using a nonstandard paper size that is not already defined in `config.ps`; in this case, you need to specify `-t unknown`.

Another exception is when producing multi-page files for further processing; use `-t nopaper` to omit any paper size information in the output. (If you just have a single page document, you can use `-E` to get pure EPSF output.)

`-T` *`hsize,vsize`* Set the paper size to (*`hsize`*,*`vsize`*), a comma-separated pair of dimensions such as `.1in,-.3cm`. It overrides any paper size special in the DVI file. Be careful, as the paper size will stick to a predefined size if there is one close enough. To disable this behavior, use `-tunknown`

`-u` *`psmapfile`* Set *`psmapfile`* to be the file that Dvips uses for looking up PostScript font aliases. If *`psmapfile`* starts with a `+` character, then the rest of the name is used as the name of the map file, and the map file is appended to the list of map files (instead of replacing the list). In either case, if the name has no extension, `.map` is added at the end.

`-U*` Disable a PostScript virtual memory-saving optimization that stores the character metric information in the same string that is used to store the

bitmap information. This is only necessary when driving the Xerox 4045 PostScript interpreter, which has a bug that puts garbage on the bottom of each character. Not recommended unless you must drive this printer.

`-v` Print the Dvips version number and exit.

`-V*` Download non-resident PostScript fonts as bitmaps. This requires use of `makepk` to generate the required bitmap fonts. The bitmap must be put into `psfonts.map` as the downloadable file for that font. This is useful only for those fonts for which you do not have real outlines, being downloaded to printers that have no resident fonts, i.e., very rarely.

`-x` *num* Set the x magnification ratio to *num*/1000. Overrides the magnification specified in the DVI file. Must be between 10 and 100000. It is recommended that you use standard magstep values (1095, 1200, 1440, 1728, 2074, 2488, 2986, and so on) to help reduce the total number of PK files generated. *num* may be a real number, not an integer, for increased precision.

`-X` *num* Set the horizontal resolution in dots per inch to *num*.

`-y` *num* Set the y magnification ratio to *num*/1000. See `-x` above.

`-Y` *num* Set the vertical resolution in dots per inch to *num*.

`-z*` Pass `html` hyperdvi specials through to the output for eventual distillation into PDF. This is not enabled by default to avoid including the header files unnecessarily, and use of temporary files in creating the output.

`-Z*` Compress bitmap fonts in the output file, thereby reducing the size of what gets downloaded. Especially useful at high resolutions or when very large fonts are used. May slow down printing, especially on early 68000-based PostScript printers. Generally recommend today, and can be enabled in the configuration file.

Environment

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

See Also

Dvips: A DVI-to-PostScript Translator	Run **`mthelp dvips`**

Name

findtexmf — search files in MiKTeX directories

Synopsis

`findtexmf` [*`option`*...] *`file`*...

Description

findtexmf can be used to find files in the MiKTeX directories. When the `-file-type` option is not given, the search path used when looking for a file is inferred from the name given, by looking for a known extension. If no known extension is found, the search path for TeX source files is used.

Options

`--alias=`*`name`*
: Pretend to be *`name`* when finding files.

`--help`
: Give help and exit.

`--file-type=`*`filetype`*
: Use the specified file type (see below).

`--list-file-typse`
: Print known file types.

`--must-exist`
: Allow installation of a packacke, if a file should exist because it is a part of the package.

`--show-path=`*`filetype`*
: Print the search path for the specified file type (see below).

`--start`
: Start the associated program, if the file was found.

`--the-name-of-the-game=`*`name`*
: Set the name of the engine. Relevant when searching for format files.

`--version`
: Show version information and exit.

File Types

```
afm (.afm)
base (.base)
bib (.bib)
bst (.bst)
cid maps (.cid;.cidmap)
clua (.dll;.so)
cweb (.w)
dvi (.dvi)
enc (.enc)
```

```
executables (.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC)
font feature files (.fea)
fmt (.fmt)
hbf (.hbf)
graphic/figure (.eps;.epsi;.png)
gf (.gf)
ist (.ist)
lig files (.lig)
lua (.lua;.luatex;.luc;.luctex;.texlua;.texluc;.tlu)
map (.map)
mem (.mem)
mf (.mf)
mfpool (.pool)
mft (.mft)
mlbib (.mlbib;.bib)
mlbst (.bst)
mp (.mp)
mppool (.pool)
ocp (.ocp)
ofm (.ofm;.tfm)
opl (.opl)
opentype fonts (.otf)
otp (.otp)
ovf (.ovf)
ovp (.ovp)
pk (.pk)
PostScript header (.pro;.enc)
subfont definition files (.sfd)
tcx (.tcx)
tex (.tex)
texpool (.pool)
TeX system documentation (.pdf;.html;.md;.txt;.ps;.dvi)
tfm (.tfm)
truetype fonts (.ttf;.ttc)
type1 fonts (.pfb;.pfa)
type42 fonts (.t42;.T42)
vf (.vf)
web (.web)
```

Name

miktex-gftodvi — make proof sheets from generic font files

Synopsis

`miktex-gftodvi` [*option*...] [*gffile*]

Description

The **miktex-gftodvi** program converts a generic font (GF) file output by, for example, METAFONT, to a device independent (DVI) file (that can then be typeset using the same software that has already been written for). The characters in the GF file will appear one per page, with labels, titles, and annotations as specified in Appendix H (Hardcopy Proofs) of *The METAFONTbook*.

miktex-gftodvi uses other fonts in addition to the main GF file. A “gray” font is used to typeset the pixels that actually make up the character. (We wouldn't want all the pixels to be simply black, since then labels, key points, and other information would be lost.) A “title” font is used for the information at the top of the page. A “label” font is used for the labels on key points of the figure. A “slant” font is used to typeset diagonal lines, which otherwise have to be simulated using horizontal and vertical rules. The default gray, title, and label fonts are `gray`, `cmr8`, and `cmtt10`, respectively; there is no default slant font.

To change the default fonts, you can give special commands in your source file, or you can change the fonts on the command-line.

The GF file name on the command-line must be complete. Because the resolution is part of the extension, it would not make sense to append a default extension as is done with other DVI-reading software. The output file name defaults to the same root as the GF file, with the `.dvi` extension added. For example, the input file `cmr10.2602gf` would become `cmr10.dvi`.

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-installer`
: Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--gray-font=`*`font`*
: Sets the “gray” font. Default is `gray`.

`--help`
: Give help and exit.

`--hhelp`
: This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*`dir`*
: Add the directory *`dir`* to the head of the list of directories to be searched for input files.

`--label-font=`*`font`*
Sets the “label” font. Default is `cmtt10`.

`--logo-font=`*`font`*
Sets the “logo” font. Default is `logo8`.

`--overflow-label-offset=`*`real`*
Specifies the distance from the right edge of the character bounding box at which the overflow equations (if any) are typeset. The value is given in points. The default is a little over two inches.

`--record-package-usages=`*`file`*
Record all package usages and write them into *`file`*.

`-slant-font=`*`font`*
Sets the “slant” font. There is no default.

`-title-font=`*`font`*
Sets the “title” font. Default is `cmr8`.

`--trace[=`*`tracestreams`*`]`
Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--version`
Show version information and exit.

Environment

`MIKTEX_TRACE`
Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

Documentation

The METAFONTbook ISBN 0-201-13444-6

Name

initexmf — MiKTeX configuration utility

Synopsis

`initexmf` [*option*...]

Description

initexmf is used to configure MiKTeX.

User mode vs. administrative mode

This utility can be run in two modes:

User mode (default)	MiKTeX operates on user-scoped configuration and data files.
Administrative mode	Only system-wide MiKTeX configuration and data files are modified, assuming that the MiKTeX setup is shared by all users. The utility must be run with administrator privileges.

By default, the utility runs in user mode. You can turn on administrative mode with the `--admin` option. For example, if you want to update the system-wide file name database, you invoke the utility as follows:

```
> initexmf --admin --update-fndb
```

Options

`--admin`

Run in administrative mode:

- Operate on the system-wide MiKTeX configuration data store.
- Install packages for all users.

Using this option requires a shared MiKTeX setup, i.e., MiKTeX must have been set up for all users. The program must be run with administrator privileges.

`--default-paper-size=`*paper*

`--disable-installer`

Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--dump`

`--dump=`*name*

Dump the specified memory dump file.

`--edit-config-file=`*configfile*

Open the specified config file in a text editor.

`--enable-installer`

Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--engine=`*engine*

Engine to be used when generating format files.

`--force`

Force `--mklinks` to overwrite existing executables.

`--list-formats`

List all known formats.

`--list-modes`

`--mklinks`

Create all possible links.

`--mklinks=`*`category`*

Create links for the specified *`category`*, which must be one of:

`formats` Create links from format names to TeX engines. For example, `latex.exe` will become a link to `miktex-tex.exe` and invoking `latex.exe` will cause TeX to load the format file `latex.fmt`.

`miktex` Create links from standard program names to `miktex-` executables. For example, `tex.exe` will become a link to `miktex-tex.exe`.

`scripts` Create executable links from script names to script wrappers. For example, `latexmk.exe` will become a link to the internal Perl wrapper `runperl.exe` and invoking `latexmk.exe` will eventually execute the Perl script `latexmk.pl`.

`--mkmaps`

`--print-only`

Print what would be done. Nothing is changed.

`--quiet`

Suppress screen output.

`--register-root=`*`dir`*

`--remove-links`

Remove the links which were created by `--mklinks`.

`--report`

Write a MiKTeX configuration report.

`--set-config-value=[`*`section`*`]`*`valuename`*`=`*`value`* Set a configuration value.

`--show-config-value=[`*`section`*`]`*`valuename`* Show a configuration value.

`--unregister-root=`*`dir`*

`--update-fndb`

`--update-fndb=`*`dir`* Refresh the file name database for a specific TEXMF tree.

`--user-roots=`*`directories`* Register user root directories.

`--verbose`

Print information on what is being done.

`--version`

Print the version number and exit.

See also

MiKTeX Project Page [https://miktex.org/]

Name

miktex-luatex — an extended version of pdfTeX using Lua as an embedded scripting language

Synopsis

`miktex-luatex` [*`option`*...] [[*`command`*...] | [*`file`*]]

Description

Run the luaTeX typesetter on *`file`*, usually creating `file.pdf`. Any remaining commands are processed as luaTeX input, after *`file`* is read.

Alternatively, if the first non-option argument begins with a backslash, interpret all non-option arguments as a line of luaTeX input.

Alternatively, if the first non-option argument begins with a &, the next word is taken as the *`format`* to read, overriding all else. Any remaining arguments are processed as above.

If no arguments or options are specified, prompt for input.

If called as **miktex-texlua** it acts as Lua interpreter. If called as **miktex-texluac** it acts as Lua bytecode compiler.

luaTeX is an extended version of pdfTeX with Unicode and OpenType font support, embeded Lua scripting language, the eTeX and Omega extensions, as well as integrated MetaPost engine, that can create PDF files as well as DVI files.

You can read the luaTeX manual using the MiKTeX Help Utility (run **`mthelp luatex`**).

All luaTeX text input and output is considered to be Unicode text.

In DVI mode, luaTeX can be used as a complete replacement for the TeX engine.

In PDF mode, luaTeX can natively handle the PDF, JPG, JBIG2, and PNG graphics formats. luaTeX cannot include PostScript or Encapsulated PostScript (EPS) graphics files; first convert them to PDF using **miktex-epstopdf** (consult the miktex-epstopdf(1) manual page).

Options

When the luaTeX executable starts, it looks for the `--lua` commandline option. If there is no `--lua` option, the commandline is interpreted in a similar fashion as in traditional pdfTeX. But if the option is present, luaTeX will enter an alternative mode of commandline parsing in comparison to the standard MiKTeX programs. The presence of `--lua` makes most of other options unreliable, because the Lua initialization file can disable path searching and/or hook functions into various callbacks.

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--aux-directory=`*`dir`*
: Set *`dir`* as the directory to which auxiliary files are written. Also look for input files in *`dir`* first, before along the normal search path.

`--c-style-errors`
: Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--credits`	Display credits and exit.
`--debug-format`	Enable format debugging.
`--disable-installer`	Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.
`--disable-write18`	
`--draftmode`	Switch on draft mode. luaTeX; doesn't write a PDF and doesn't read any included images, thus speeding up execution.
`--enable-installer`	Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.
`--enable-write18`	
`--halt-on-error`	Quit after the first error.
`--help`	Give help and exit.
`--include-directory=`*`dir`*	Add the directory *`dir`* to the head of the list of directories to be searched for input files.
`--initialize`	Become the *INI* variant of the program.
`--interaction=`*`mode`*	Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The meaning of these modes is the same as the corresponding commands.
`--job-name=`*`name`*	Set the name of the job (\jobname). This has an affect on the output file names.
`--lua=`*`file`*	Load and execute a Lua initialization script.
`--no-c-style-errors`	Don't change the way, error messages are printed.
`--nosocket`	Disable the Lua socket library.
`--output-comment=`*`string`*	Use *`string`* for DVI file comment instead of date.
`--output-directory=`*`dir`*	Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.
`--output-format=`*`format`*	Use *`format`* for job output (one of: `dvi`, `pdf`).
`--recorder`	Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.
`--restrict-write18`	
`--safer`	Disable easily exploitable Lua commands.
`--synctex=`*`n`*	Generate SyncTeX data for previewers. If *`n`* is zero, no `.synctex` file is created. If *`n`* is negative, the `.synctex` file is a text file. If *`n`* is positive, the `.synctex` file is compressed with **gzip** and the `.gz` file name extension is added.
	Furthermore, *`n`* is interpreted as a bit field:

	Bit 1 (*n* AND 2)	Don't add the `.gz` file name extension.
	Bit 2 (*n* AND 4)	Activate form support.
	Bit 3 (*n* AND 8)	Activate better compression.

`--undump=`*name* Use *name* as the name of the format to be used, instead of the name by which the program was called or a

`%&`

line.

`--utc` Init time to UTC.

`--version` Show version information and exit.

Environment

`MIKTEX_EDITOR`

The editor to use when selecting **e** in the error prompt menu.

The value can contain these placesholder:

`%f` The name of the file, which contains the erroneous line of TeX code.

`%l` The line number.

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

Name

miktex-mf — METAFONT, a language for font and logo design

Synopsis

`miktex-mf` [*`option`*...] [[*`command`*...] | [*`file`*]]

Description

METAFONT reads the program in the specified files and outputs font rasters (in GF format) and font metrics (in TFM format). The METAFONT language is described in *The METAFONTbook*.

Like TeX, METAFONT is normally used with a large body of precompiled macros, and font generation in particular requires the support of several macro files. METAFONT looks at its command line to see what name it was called under. Both **inimf** and **virmf** are linked to the **miktex-mf** executable. When called as **inimf** (or when the `--initialize` option is given) it can be used to precompile macros into a `.base` file. When called as **virmf** it will use the plain base. When called under any other name, METAFONT will use that name as the name of the base to use. For example, when called as **miktex-mf** the mf base is used, which is identical to the plain base. Other bases than plain are rarely used.

The commands given on the command line to the METAFONT program are passed to it as the first input line. (But it is often easier to type extended arguments as the first input line, since shells tend to gobble up or misinterpret METAFONT's favorite symbols, like semicolons, unless you quote them.) As described in *The METAFONTbook*, that first line should begin with a filename, a \controlsequence, or a &*`basename`*.

The normal usage is to say **`miktex-mf \mode=`*`printengine`*`; input `*`font`** to start processing *`font`*`.mf`. (Or you can just say **miktex-mf** and give the other stuff on the next line.) Other control sequences, such as **`batchmode`** (for silent operation) can also appear. The name *`font`* will be the “job name”, and is used in forming output file names. If METAFONT doesn't get a file name in the first line, the job name is `mfput`. The default extension, `.mf`, can be overridden by specifying an extension explicitly.

A log of error messages goes into the file *`font`*`.log`. The output files are *`font`*`.tfm` and *`font`*`.`*`number`*`gf`, where *`number`* depends on the resolution and magnification of the font. The mode in this example is shown generically as *`printengine`*, a symbolic term for which the name of an actual device or, most commonly, the name `localfont` must be substituted. If the mode is not specified or is not valid, METAFONT will default to proof mode which produces large character images for use in font design and refinement. Proof mode can be recognized by the suffix `.2602gf` after the job name. Examples of proof mode output can be found in *Computer Modern Typefaces* (Volume E of Computers and Typesetting). The system of magsteps is identical to the system used by TeX, with values generally in the range 0.5, 1.0, 2.0, 3.0, 4.0 and 5.0.

Magnification can also be specified not as a magstep but as an arbitrary value, such as 1.315, to create special character sizes.

Before font production can begin, it is necessary to set up the appropriate base files. The minimum set of components for font production for a given printengine is the `plain.mf` macro file and the local mode_def file. The macros in `plain.mf` can be studied in an appendix to *The METAFONTbook*; they were developed by Donald E. Knuth, and this file should never be altered. Each mode_def specification helps adapt fonts to a particular printengine. The local ones in use on this computer should be in `modes.mf`.

The **e** response to METAFONT's error prompt causes the default editor to start up at the current line of the current file. The configuration value *`Editor`* can be used to change the editor used. It may contain a string with `%f` indicating where the filename goes and `%l` indicating where the decimal line number (if any) goes.

A convenient file is `null.mf`, containing nothing. When METAFONT can't find the file it thinks you want to input, it keeps asking you for another file name; responding **`null`** gets you out of the loop if you don't want to input anything.

Online Graphics Output

You can see METAFONTs output without printing. Chapter 23 of *The METAFONTbook* describes what you can do. You enable screen ouput by giving `--screen` on the command-line.

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--aux-directory=`*`dir`*
: Set *`dir`* as the directory to which auxiliary files are written. Also look for input files in *`dir`* first, before along the normal search path.

`--bistack-size=`*`n`*
: Set the size of the stack for bisection algorithms.

`--buf-size=`*`n`*
: Set the the maximum number of characters simultaneously present in current lines of open files and in control sequences between \csname and \endcsname. TeX uses the buffer to contain input lines, but macro expansion works by writing material into the buffer and reparsing the line. As a consequence, certain constructs require the buffer to be very large, even though most documents can be handled with a small value.

`--c-style-errors`
: Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes`
: Disable input (output) from (to) child processes.

`--dont-parse-first-line`
: Disable checking whether the first line of the main input file starts with %&.

`--enable-installer`
: Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-pipes`
: Enable input (output) from (to) child processes.

`--error-line=`*`n`*
: Set the width of context lines on terminal error messages.

`--half-error-line=`*`n`*
: Set the width of first lines of contexts in terminal error messages.

`--halt-on-error`
: Quit after the first error.

`--help`

`--hhelp`
: Give help and exit.

	This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.
`--include-directory=`*`dir`*	Add the directory *`dir`* to the head of the list of directories to be searched for input files.
`--initialize`	Become the *INI* variant of the program.
`--interaction=`*`mode`*	Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The meaning of these modes is the same as the corresponding commands.
`--job-name=`*`name`*	Set the name of the job (\jobname). This has an affect on the output file names.
`--job-time=`*`file`*	Set the time-stamp of all output files equal to *`file`*'s time-stamp.
`--lig-table-size=`*`n`*	Set the maximum number of ligature/kern steps. Must be at least 255 and at most 32510.
`--main-memory=`*`n`*	Change the total size (in memory words) of the main memory array. Relevant only while creating memory dump files.
`--max-print-line=`*`n`*	Set the width of longest text lines output; should be at least `60`.
`--max-strings=`*`n`*	Set the maximum number of strings.
`--max-wiggle=`*`n`*	Set the number of autorounded points per cycle.
`--move-size=`*`n`*	Set the the space for storing moves in a single octant.
`--no-c-style-errors`	Don't change the way, error messages are printed.
`--output-directory=`*`dir`*	Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.
`--param-size=`*`n`*	Set the the maximum number of simultaneous macro parameters.
`--parse-first-line`	Check whether the first line of the main input file starts with %&, and parse if it does. This can be used to specify extra command-line options.
`--path-size=`*`n`*	Set the the maximum number of knots between breakpoints of a path.
`--pool-size=`*`n`*	Set the maximum number of characters in strings, including all error messages and help texts, and the names of all fonts and control sequences.
`--quiet`	Suppress all output, except errors.
`--record-package-usages=`*`file`*	Record all package usages and write them into *`file`*.

`--recorder` Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.

`--screen` Enable screen output.

`--stack-size=`*`n`* Set the maximum number of simultaneous input sources.

`--string-vacancies=`*`n`* Set the minimum number of characters that should be available for the user's control sequences and font names, after the compiler's own error messages are stored. Must be at least 25000 less than `pool_size`, but doesn't need to be nearly that large.

`--tcx=`*`tcxname`*

`--time-statistics` Show processing time statistics.

`--trace[=`*`tracestreams`*`]` Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--undump=`*`name`* Use *`name`* as the name of the format to be used, instead of the name by which the program was called or a

`%&`

line.

`--version` Show version information and exit.

Environment

`MFINPUTS`
Extra paths to locate METAFONT input and openin files.

`MIKTEX_EDITOR`
The editor to use when selecting **e** in the error prompt menu.

The value can contain these placesholder:

`%f` The name of the file, which contains the erroneous line of TeX code.

`%l` The line number.

`MIKTEX_TRACE`
Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

See also

The METAFONTbook ISBN 0-201-13444-6

Name

miktexsetup — MiKTeX setup utility

Synopsis

`miktexsetup` [*`options`*] download

`miktexsetup` [*`options`*] install

`miktexsetup` [*`options`*] uninstall

Description

The MiKTeX Setup Utility is used to download, install and uninstall MiKTeX. This utility is the command line counterpart of the MiKTeX Setup Wizard (see setupwiz(1)), i.e., it is suitable for unattended setup tasks.

The **`download`** task creates a local package package repository which is a mirror of the remote package repository. It is possible to run the task on a regular basis in order to maintain an up-to-date package repository.

The **`install`** task installs MiKTeX from the local package repository.

The **`uninstall`** task removes MiKTeX.

Options

`--common-config=`*`dir`*	Set the location of the common configuration directory. This option requires administrator privileges.
`--common-data=`*`dir`*	Set the location of the common data directory. This option requires administrator privileges.
`--common-install=`*`dir`*	Set the common installation directory. This option requires administrator privileges.
`--common-roots=`*`dirs`*	Register additional directories for all users. *`dirs`* must be a semicolon-separated list of fully qualified path names. This option requires administrator privileges. Environment variables (<VARNAME>) can be used.
`--list-repositories`	Download the list of known package repository URLs, then print the list.
`--local-package-repository=`*`dir`*	Download into (install from) the specified directory.
`--modify-path`	Add MiKTeX to `PATH`.
`--modify-path=no`	Don't add MiKTeX to `PATH`.
`--modify-path`	Add MiKTeX to `PATH`.
`--package-set=`*`set`*	Download/Install the specified package set. This must be one of `essential`, `basic`, `complete`.

`--portable=`*`dir`*	Setup MiKTeX for use on a portable device.
`--print-info-only`	Print information about what would be done then exit.
`--program-folder=`*`name`*	Add shortcuts to the specified program folder.
`--quiet`	Suppress all output, except errors.
`--remote-package-repository=`*`url`*	Download from the specified URL. Use `--list-repositories` to download an up-to-date list of possible repositories.
`--shared`	Run the task for all users. This option requires administrator privileges.
`--shared=no`	Run the task for current user only.
`--trace[=`*`tracestreams`*`]`	Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).
`--use-registry`	Write configuration settings into the Windows registry.
`--use-registry=no`	Don't write configuration settings into the Windows registry. Use configuration files instead.
`--user-config=`*`dir`*	Set the location of the configuration directory for the current user. Environment variables (<VARNAME>) can be used. See the example below.
`--user-data=`*`dir`*	Set the location of the data directory for the current user. Environment variables (<VARNAME>) can be used. See the example below.
`--user-install=`*`dir`*	Set the user installation directory. Environment variables (<VARNAME>) can be used. See the example below.
`--user-roots=`*`dirs`*	Register additional directories for the current user. *`dirs`* must be a semicolon-separated list of fully qualified path names. Environment variables (<VARNAME>) can be used.
`--verbose`	Turn on verbose output mode.
`--version`	Show version information and exit.

Examples

Downloading

The first task is to download MiKTeX into a local package repository:

```
> miktexsetup ^
  --verbose ^
  --local-package-repository=C:\miktex-repository ^
  --package-set=complete ^
  download
```

This command will create a local package repository in `C:\miktex-repository`.

It is possible to interrupt (Control+C) this operation at anytime and resume it later by running the same command again.

Installing for all users

In this example, MiKTeX is installed for all users from the local package repository `C:\miktex-repository`. User directories are specified by using environment variables (<VARNAME>) which are expanded at run-time (delayed expansion).

You can first specify `--print-info-only` in order to perform a dry run:

```
> miktexsetup ^
  --verbose ^
  --local-package-repository=C:\miktex-repository ^
  --shared ^
  --user-config="<APPDATA>\MiKTeX\2.9" ^
  --user-data="<LOCALAPPDATA>\MiKTeX\2.9" ^
  --user-install=<APPDATA>\MiKTeX\2.9" ^
  --print-info-only
  install
setup task: install from local package repository
local package repository: C:\miktex-repository
package level: complete
install for all users?: yes
use registry?: yes
modify path?: yes
common install root: "C:\Program Files (x86)\MiKTeX 2.9"
user install root: <APPDATA>\MiKTeX\2.9
user config root: <LOCALAPPDATA>\MiKTeX\2.9
user data root: <APPDATA>\MiKTeX\2.9
program folder name: "MiKTeX 2.9"
```

Uninstalling

MiKTeX can be removed by selecting the **`uninstall`** task. `--shared` should be specified, if MiKTeX is installed for all users.

```
> miktexsetup --verbose --shared uninstall
```

Name

mpm — MiKTeX package manager

Synopsis

`mpm` [*`option`*...]

Description

MPM (MiKTeX Package Manager) is used to install packages from a MiKTeX package repository.

MPM starts in windowed mode, if you do not specify any command-line options.

User mode vs. administrative mode

This utility can be run in two modes:

User mode (default)	MPM operates on the user installation directory (usually `%LOCALAPPDATA%\Programs\MiKTeX 2.9`).
Administrative mode	MPM operates on the system-wide installation directory (usually `C:\Program Files\MiKTeX 2.9`), assuming that the MiKTeX setup is shared by all users. MPM must be run with administrator privileges.

By default, MPM runs in user mode. You can turn on administrative mode with the `--admin` option. For example, if you want to install a package for all users, you invoke MPM as follows:

```
> mpm --admin --install=a0poster
```

Options

`--admin`

Run in administrative mode:

- Operate on the system-wide MiKTeX configuration data store.
- Install packages for all users.

Using this option requires a shared MiKTeX setup, i.e., MiKTeX must have been set up for all users. The program must be run with administrator privileges.

`--find-updates`

Check the package repository for updates, then print the list of updateable packages.

`--find-upgrades`

Search for packages that must be installed in order to complete the MiKTeX setup (can be used in conjunction with `--package-level`). Then print the package list.

`--help`

Give help and exit.

`--hhelp`

This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--import=`*`package`*

Import the specified package from another MiKTeX installation. The root directory must be specified via `--repository=`*`dir`*.

`--import-all`

Import all packages from another MiKTeX installation. The root directory must be specified via `--repository=`*`dir`*.

`--install=`*`packagelist`*

Install the specified packages.

`--install=@`*`listfile`*

Install packages. Package names are read from *`listfile`*.

`--list`

List the contents of the package database: for each package, print the installation status, the number of files, the size, and the name.

`--list-package-names`

List the package names.

`--list-repositories`

Download the list of known package repository URLs, then print the list.

`--max-count=`*`num`*

Stop after *`num`* packages.

`--package-level=`*`level`*

Use the specified package level (to be used in conjunction with `--find-upgrades` and `--upgrade`).

`level` must be one of:

`essential` Includes mandatory packages.

`basic` Includes popular packages.

`complete` Includes all available packages.

`--pick-repository-url`

Pick up a suitable URL from the package repository list and print it.

`--print-package-info=`*`package`*

Print detailed information about the specified package.

`--quiet`

Suppress all output, except errors.

`--require=`*`packagelist`*

Install packages which are not already installed.

`--require=@`*`listfile`*

Install packages which are not already installed. Package names are read from *`listfile`*.

`--repository=`*`location`*

Use the specified location as the package repository. The location can be either a fully qualified path name (a local package

repository) or an URL (a remote package repository). You can use the `--list-repositories` to retrieve a list of working package repository URLs.

`--repository-release-state=`*`state`*
: Select the release state of the remote package repository. The release state is relevant for finding appropriate package repositories (`--list-repositories`, `--pick-repository-url`). The release state must be one of `stable` or `next`.

`--reverse`
: Reverse the result of comparisons (when listing packages).

`--set-repository=`*`location`*
: Store the location of the default package repository in the MiKTeX configuration data store. The location can be either a fully qualified path name (a local package repository) or an URL (a remote package repository).

`--trace[=`*`tracestreams`*`]`
: Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--uninstall=`*`package`*
: Uninstall the specified package.

`--update`
: Update all installed packages.

`--update=`*`packagelist`*
: Update the specified packages.

`--update=@`*`listfile`*
: Update packages. Package names are read from *`listfile`*.

`--update-db`
: Synchronize the local package database with the package repository.

`--upgrade`
: Upgrade the MiKTeX setup to a package level (can be used in conjunction with `--package-level`). This will install all the missing packages.

`--verify`
: Verify the integrity of all installed packages.

`--verify=`*`packagelist`*
: Verify the integrity of the specified packages.

`--verify=@`*`listfile`*
: Verify the integrity packages. Package names are read from *`listfile`*.

`--verbose`
: Turn on verbose output mode.

`--version`
: Show version information and exit.

Package Database

All package information is retrieved from the package database, which must have been properly installed by running MPM with the `--update-db` option.

Examples

Print the list of known package repository URLs:

```
> mpm --list-repositories
```

Retrieve the package database files from the FTP server `some.server` (assuming this a registered URL):

```
> mpm --repository=ftp://some.server/miktex/packages/ \
  --verbose --update-db
```

Print information about package a0poster:

```
> mpm --print-package-info a0poster
```

Install package a0poster:

```
> mpm --verbose --install a0poster
```

Update all installed packages:

```
> mpm --verbose --update
```

Print the list of installed packages:

```
> mpm --list | grep ^i
```

Upgrade the MiKTeX setup to the highest level:

```
> mpm --verbose --package-level=complete --upgrade
```

Environment

`MIKTEX_REPOSITORY`
: Location of the default package repository. This can be either a fully qualified path name (a local package repository) or an URL (a remote package repository).

`MIKTEX_TRACE`
: Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`http_proxy`
: The proxy server to be used for HTTP.

`FTP_PROXY`
: The proxy server to be used for FTP.

`ALL_PROXY`
: The proxy server to be used, if no protocol-specific proxy is set.

`NO_PROXY`
: Comma-separated list of host names that should not go through any proxy.

See also

MiKTeX Project Page [https://miktex.org/]

Name

miktex-mpost — MetaPost, a system for drawing pictures

Synopsis

`miktex-mpost` [*`option`*...] [[*`command`*...] | [*`file`*]]

Description

MetaPost (installed as **miktex-mpost**) interprets the MetaPost language and produces PostScript (EPS) or Scalable Vector Graphics (SVG) pictures. The MetaPost language is similar to Knuth's METAFONT with additional features for including TeX commands and accessing features of PostScript not found in METAFONT.

MetaPost is normally used with some preloaded macros, and it will use its executable name as the name of the preload file to use. For example, when called as **miktex-mpost** the `mpost.mp` file is used, which is identical to `plain.mp`. When the `--initialize` option is given, preloading does not happen.

The *`commands`* given on the command line to the MetaPost program are passed to it as the first input line. (But it is often easier to type extended arguments as the first input line, since shells tend to gobble up or misinterpret MetaPost's favorite symbols, like semicolons, unless you quote them.) The normal usage is to say mpost figs to process the file `figs.mp`. The basename of *`figs`* becomes the “jobname”, and is used in forming output file names. If no file is named, the jobname becomes `mpout`. The default extension, `.mp`, can be overridden by specifying an extension explicitly.

When the `--dvitomp` option is given, MetaPost acts as DVI-to-MPX converter only. Run **`%miktexmpost; --dvitomp --help`** for option explanation.

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--c-style-errors`
: Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--debug`
: Print debugging info and leave temporary files in place.

`--halt-on-error`
: Quit after the first error.

`--help`
: Give help and exit.

`--initialize`
: Become the *INI* variant of the program.

`--interaction=`*`mode`*
: Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The meaning of these modes is the same as the corresponding commands.

`--job-name=`*`name`*
: Set the name of the job (\jobname). This has an affect on the output file names.

`--no-c-style-errors` Don't change the way, error messages are printed.

`--numbersystem=`*`string`* Set number system mode (*`string`* one of: `scaled`, `double`, `binary`, `decimal`).

`--output-directory=`*`dir`* Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.

`--recorder` Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.

`--restricted` Be secure: disable **tex**, **makempx** and editor commands.

`-s` *`internal`*`="`*`string`*`"` Set *`internal`* to the *`string`* value.

`-s` *`internal`*`=`*`number`* Set *`internal`* to the *`number`* value.

`--tex=`*`texprogram`*

Use *`texprogram`* instead of **miktex-tex** when compiling text labels.

This flag overrides the environment variable `TEX`.

`--troff`

Set **prologues:=1** and assume `--tex=troff`.

`--undump=`*`name`* Use *`name`* as the name of the format to be used, instead of the name by which the program was called or a

`%&`

line.

`--version`

Show version information and exit.

Environment

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`MPINPUTS`

Extra paths to locate MetaPost input files.

`MPINPUTS`

Extra paths to locate MetaPost input files.

See also

AT&T technical report CSTR-162 Run **`mthelp mpman`**

Name

mthelp — MiKTeX help utility

Synopsis

`mthelp` [*`option`*...] {*`name`*...}

Description

mthelp is a utility to look up MiKTeX related documentation.

mthelp creates an HTML page which contains a short description of the package together with links to all documentation files. An HTML viewer is started to view the page.

You can use the `--view` to bypass the intermediate HTML file.

`name` should be the name of a package in the TeX distribution.

Options

`--list-only` List documentation files, but do not start a viewer.

`--print-only` Print the command that would be executed to view the documentation, but do not start the command.

`--quiet` Suppress all output, except errors.

`--version`
Show version information and exit.

`--view` Open the main documenation file in a viewer.

Environment

`MIKTEX_TRACE`
Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`MIKTEX_VIEW_dvi` DVI viewer.

`MIKTEX_VIEW_pdf` PDF viewer.

`MIKTEX_VIEW_ps` PostScript viewer.

`MIKTEX_VIEW_html` HTML viewer.

`MIKTEX_VIEW_txt` Text viewer.

The environment variables should be set with a “%f” as a placeholder for the name of the file. For example:

```
> MIKTEX_VIEW_pdf="gv %f"
```

Files

The intermediate HTML file (*package*`.html`) is stored in the directory `miktex/mthelp` relative to the data TEXMF data root (usually `%LOCALAPPDATA%\MiKTeX\2.9`).

See also

MiKTeX Project Page [https://miktex.org/]

Environment

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

Name

mtprint — MiKTeX print utility

Synopsis

`mtprint` [*`option`*...] *`file`*...

Description

mtprint sends TeX output files to a printing device.

Options

`--even-only`
: Prints only even TeX pages.

`--landscape`
: Selects landscape output format.

`--odd-only`
: Prints only odd TeX pages.

`--page-range=`*`range`*
: Selects a TeX page range (e.g., 20–21). Multiple `--page-range` options accumulate

--print-method=*`method`*
: Selects a print method. One of

  `psbmp` This method uses Dvips and Ghostscript to produce the print output.

  `ps` This method uses Dvips to produce an intermediate PostScript file which will be sent to the printer. This only works for PostScript printers.

`--print-nothing`
: Simulates printing.

--printer=*`printer`*
: Selects a printing device. The default printer is used, if this option is omitted.

Name

miktex-pdftex — DVI/PDF output from TeX

Synopsis

`miktex-pdftex` [*`option`*...] [[*`file`*] | [*`command`*...]]

Description

Run the pdfTeX typesetter on *`file`*, usually creating `file.pdf`. If the file argument has no extension, `.tex` will be appended to it. Instead of a file name, a set of pdfTeX commands can be given, the first of which must start with a backslash.

pdfTeX is a version of TeX that can create PDF files as well as DVI files.

In DVI mode, pdfTeX can be used as a complete replacement for the TeX engine.

The typical use of pdfTeX is with a pregenerated formats for which PDF output has been enabled. The **miktex-pdftex** command uses the equivalent of the plain TeX format, and the **miktex-pdflatex** command uses the equivalent of the LaTeX format. To generate formats, use the `-initialize` switch.

In PDF mode, pdfTeX can natively handle the PDF, JPG, JBIG2 and PNG graphics formats. pdfTeX cannot include PostScript or Encapsulated PostScript (EPS) graphics files; first convert them to PDF using epstopdf(1).

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--aux-directory=`*`dir`*
: Set *`dir`* as the directory to which auxiliary files are written. Also look for input files in *`dir`* first, before along the normal search path.

`--buf-size=`*`n`*
: Set the the maximum number of characters simultaneously present in current lines of open files and in control sequences between \csname and \endcsname. TeX uses the buffer to contain input lines, but macro expansion works by writing material into the buffer and reparsing the line. As a consequence, certain constructs require the buffer to be very large, even though most documents can be handled with a small value.

`--c-style-errors`
: Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--disable-8bit-chars`
: Make only 7-bit characters printable.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes`
: Disable input (output) from (to) child processes.

`--disable-write18`

`--dont-parse-first-line` Disable checking whether the first line of the main input file starts with %&.

`--draftmode` Sets \pdfdraftmode so pdfTeX doesn't write a PDF and doesn't read any included images, thus speeding up execution.

`--enable-8bit-chars` Make all characters printable.

`--enable-enctex` Enable encTeX extensions such as \mubyte.

`--enable-etex` Enable eTeX extensions.

`--enable-installer` Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-mltex` Enable MLTeX extensions such as \charsubdef.

`--enable-pipes` Enable input (output) from (to) child processes.

`--enable-write18`

`--error-line=`*n* Set the width of context lines on terminal error messages.

`--extra-mem-bot=`*n* Set the extra size (in memory words) for large data structures like boxes, glue, breakpoints, et al. Relevant only after the memory dump file has been read.

`--extra-mem-top=`*n* Set the extra size (in memory words) for chars, tokens, et al. Relevant only after the memory dump file has been read.

`--font-max=`*n* Set the maximum internal font number.

`--font-mem-size=`*n* Set the size, in TeX memory words, of the font memory.

`--half-error-line=`*n* Set the width of first lines of contexts in terminal error messages.

`--halt-on-error` Quit after the first error.

`--hash-extra=`*n* Set the extra space for the hash table of control sequences (which allows 10K names as distributed).

`--help` Give help and exit.

`--hhelp` This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*dir* Add the directory *dir* to the head of the list of directories to be searched for input files.

`--initialize` Become the *INI* variant of the program.

`--interaction=`*mode* Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The

meaning of these modes is the same as the corresponding commands.

`--job-name=`*`name`* Set the name of the job (\jobname). This has an affect on the output file names.

`--job-time=`*`file`* Set the time-stamp of all output files equal to *`file`*'s time-stamp.

`--main-memory=`*`n`* Change the total size (in memory words) of the main memory array. Relevant only while creating memory dump files.

`--max-in-open=`*`n`* Set the maximum number of input files and error insertions that can be going on simultaneously.

`--max-print-line=`*`n`* Set the width of longest text lines output; should be at least `60`.

`--max-strings=`*`n`* Set the maximum number of strings.

`--nest-size=`*`n`* Set the maximum number of semantic levels simultaneously active.

`--no-c-style-errors` Don't change the way, error messages are printed.

`--output-directory=`*`dir`* Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.

`--output-format=format` Set the output format mode, where *`format`* must be either `dvi` or `pdf`. This also influences the set of graphics formats understood by pdfTeX.

`--param-size=`*`n`* Set the the maximum number of simultaneous macro parameters.

`--parse-first-line` Check whether the first line of the main input file starts with %&, and parse if it does. This can be used to specify extra command-line options.

`--pool-free=`*`n`* Set the minimum pool space left after loading the format.

`--pool-size=`*`n`* Set the maximum number of characters in strings, including all error messages and help texts, and the names of all fonts and control sequences.

`--quiet` Suppress all output, except errors.

`--record-package-usages=`*`file`* Record all package usages and write them into *`file`*.

`--recorder` Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.

`--restrict-write18`

`--save-size=`*`n`* Set the the amount of space for saving values outside of current group.

`--src-specials` Embed source file information (source specials) in the DVI file.

`--stack-size=`*`n`* Set the maximum number of simultaneous input sources.

`--string-vacancies=`*`n`* Set the minimum number of characters that should be available for the user's control sequences and font names, after the compiler's

own error messages are stored. Must be at least 25000 less than `pool_size`, but doesn't need to be nearly that large.

`--synctex=`*n*

Generate SyncTeX data for previewers. If *n* is zero, no `.synctex` file is created. If *n* is negative, the `.synctex` file is a text file. If *n* is positive, the `.synctex` file is compressed with **gzip** and the `.gz` file name extension is added.

Furthermore, *n* is interpreted as a bit field:

Bit 1 (*n* AND 2)	Don't add the `.gz` file name extension.
Bit 2 (*n* AND 4)	Activate form support.
Bit 3 (*n* AND 8)	Activate better compression.

`--tcx=`*tcxname*

`--time-statistics`

Show processing time statistics.

`--trace[=`*tracestreams*`]`

Enable trace messages. The *tracestreams* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--trie-size=`*n*

Set the amount of space for hyphenation patterns.

`--undump=`*name*

Use *name* as the name of the format to be used, instead of the name by which the program was called or a

%&

line.

`--version`

Show version information and exit.

Files

`pdftex.cfg` The MiKTeX-pdfTeX configuration file.

Environment

`MIKTEX_EDITOR`

The editor to use when selecting **e** in the error prompt menu.

The value can contain these placesholder:

`%f` The name of the file, which contains the erroneous line of TeX code.

`%l` The line number.

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`TEXINPUTS`

Extra paths to locate TeX \input and \openin files.

`TEXINPUTS`
: Extra paths to locate TeX \input and \openin files.

`TFMFONTS`
: Extra paths to locate TeX font metric files

See also

The pdfTeX user manual (A4 version)	Run **`mthelp pdftex-a`**

Name

setupwiz — MiKTeX setup wizard

Synopsis

`basic-miktex-2.9.`*`xxxx`*`.exe` [*`options`*]

`setup-2.9.`*`xxxx`*`.exe` [*`options`*]

Description

MiKTeX Setup Wizard is used to install MiKTeX.

There a two instances of the installer:

Basic MiKTeX Installer (**basic-miktex-2.9.*xxxx*.exe**)	*Basic MiKTeX Installer* is used to set up a basic MiKTeX system. All required resources are embedded in the installer, i.e., nothing else needs to be downloaded from the Internet.
MiKTeX Net Installer (**setup-2.9.*xxxx*.exe**)	*MiKTeX Net Installer* is used to set up a complete MiKTeX system. In a first step, all required resources will be downloaded from the Internet. In a second step, a complete MiKTeX system is installed.

Both installers read command-line options from the file `setupwiz.opt`, if it exists.

Options

`--allow-unattended-reboot`	Restart the system, if necessary.
`--common-config=`*`dir`*	Set the location of the common configuration directory. This option requires administrator privileges.
`--common-data=`*`dir`*	Set the location of the common data directory. This option requires administrator privileges.
`--common-install=`*`dir`*	Set the common installation directory. This option requires administrator privileges.
`--common-roots=`*`dirs`*	Register additional directories for all users. *`dirs`* must be a semicolon-separated list of fully qualified path names. This option requires administrator privileges. Environment variables (<VARNAME>) can be used.
`--download-only`	Download all required packages, but do not otherwise install MiKTeX.
`--dry-run`	Simulate. No files shall be downloaded and/or installed.
`--install-from-local-repository`	Install MiKTeX from a directory (to be specified with the `--local-package-repository` option).
`--local-package-repository=`*`dir`*	Download into (Install from) the specified directory.

`--no-additional-roots`	Do not integrate additional TEXMF root directories into the MiKTeX setup.
`--no-registry`	Do not store path information in the Windows Registry but write the startup configuration file (`miktexstartup.ini`).
`--package-set=`*`set`*	Download/Install the specified package set. This must be one of `basic`, `complete`.
`--portable`	Setup MiKTeX Portable.
`--private`	Install MiKTeX for the current user only.
`--program-folder=`*`name`*	Add shortcuts to the specified program folder.
`--remote-package-repository=`*`url`*	Download from the specified the URL.
`--shared`	Install MiKTeX for everyone using this computer. This option requires administrator privileges.
`--unattended`	Run in unattended mode.
`--user-config=`*`dir`*	Set the location of the configuration directory for the current user. Environment variables (<VARNAME>) can be used. See the example below.
`--user-data=`*`dir`*	Set the location of the data directory for the current user. Environment variables (<VARNAME>) can be used. See the example below.
`--user-install=`*`dir`*	Set the user installation directory. Environment variables (<VARNAME>) can be used. See the example below.
`--user-roots=`*`dirs`*	Register additional directories for the current user. *`dirs`* must be a semicolon-separated list of fully qualified path names. Environment variables (<VARNAME>) can be used.

Examples

In this example, MiKTeX is installed from a network share (`\\server\miktex\repository`). User directories are specified by using environment variables (<VARNAME>) which are expanded at run-time.

```
> setupwiz --install-from-local-repository ^
  --local-package-repository=\\server\miktex\repository ^
  --package-set=complete ^
  --shared ^
  --user-config=^<APPDATA^>\MiKTeX\2.9 ^
  --user-data=^<LOCALAPPDATA^>\MiKTeX\2.9 ^
  --user-install=^<APPDATA^>\MiKTeX\2.9
```

Name

miktex-tex — text formatting and typesetting

Synopsis

`miktex-tex` [*`option`*...] [[*`file`*] | [*`command`*...]]

Description

Run the TeX typesetter on *`file`*, usually creating *`file`*`.dvi`. If the file argument has no extension, `.tex` will be appended to it. Instead of a filename, a set of TeX commands can be given, the first of which must start with a backslash. With a `&format` argument TeX uses a different set of precompiled commands, contained in *`format`*`.fmt`; it is usually better to use the `-undump=`*`format`* option instead.

TeX formats the interspersed text and commands contained in the named files and outputs a typesetter independent file (called DVI, which is short for DeVice Independent). TeX's capabilities and language are described in *The TeXbook*. TeX is normally used with a large body of precompiled macros, and there are several specific formatting systems, such as LaTeX, which require the support of several macro files.

This version of TeX looks at its command-line to see what name it was called under. Both **initex** and **virtex** are linked to the **miktex-tex** executable. When called as **initex** (or when the `-initialize` option is given) it can be used to precompile macros into a `.fmt` file. When called as **virtex** it will use the plain format. When called under any other name, TeX will use that name as the name of the format to use. For example, when called as **miktex-tex** the tex format is used, which is identical to the plain format. The commands defined by the plain format are documented in *The TeXbook*.

The non-option command line argiments to the TeX program are passed to it as the first input line. (But it is often easier to type extended arguments as the first input line, since shells tend to gobble up or misinterpret TeX's favorite symbols, like backslashes, unless you quote them.) As described in *The TeXbook*, that first line should begin with a file name, a \controlsequence, or a &*`formatname`*.

The normal usage is to say **`miktex-tex paper`** to start processing `paper.tex`. The name “paper” will be the “job name”, and is used in forming output file names. If TeX doesn't get a file name in the first line, the job name is `texput`. When looking for a file, TeX looks for the name with and without the default extension (`.tex`) appended, unless the name already contains that extension. If paper is the “job name”, a log of error messages, with rather more detail than normally appears on the screen, will appear in `paper.log`, and the output file will be in `paper.dvi`.

This version of TeX will look in the first line of the file `paper.tex` to see if it begins with the magic sequence **`%&`**. If the first line begins with **`%&format --translate-file tcxname`**, then TeX will use the named format and transation table *`tcxname`* to process the source file. Either the format name or the `--translate-file` specification may be omitted, but not both.

The **`e`** response to TeX's error prompt causes the default editor to start up at the current line of the current file. The configuration value *`Editor`* can be used to change the editor used. It may contain a string with `%f` indicating where the file name goes and `%l` indicating where the decimal line number (if any) goes.

A convenient file is `null.tex`, containing nothing. When TeX can't find a file it thinks you want to input, it keeps asking you for another file name; responding **`null`** gets you out of the loop if you don't want to input anything. You can also type your EOF character (usually Control+Z).

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values

used. Using this option is equivalent to copying the program file to *name* and invoking *name*.

`--aux-directory=`*dir* Set *dir* as the directory to which auxiliary files are written. Also look for input files in *dir* first, before along the normal search path.

`--buf-size=`*n* Set the the maximum number of characters simultaneously present in current lines of open files and in control sequences between \csname and \endcsname. TeX uses the buffer to contain input lines, but macro expansion works by writing material into the buffer and reparsing the line. As a consequence, certain constructs require the buffer to be very large, even though most documents can be handled with a small value.

`--c-style-errors` Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--disable-8bit-chars` Make only 7-bit characters printable.

`--disable-installer` Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes` Disable input (output) from (to) child processes.

`--disable-write18`

`--dont-parse-first-line` Disable checking whether the first line of the main input file starts with %&.

`--enable-8bit-chars` Make all characters printable.

`--enable-enctex`
Enable encTeX extensions such as \mubyte.

`--enable-installer` Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-mltex`
Enable MLTeX extensions such as \charsubdef.

`--enable-pipes` Enable input (output) from (to) child processes.

`--enable-write18`

`--error-line=`*n* Set the width of context lines on terminal error messages.

`--extra-mem-bot=`*n* Set the extra size (in memory words) for large data structures like boxes, glue, breakpoints, et al. Relevant only after the memory dump file has been read.

`--extra-mem-top=`*n* Set the extra size (in memory words) for chars, tokens, et al. Relevant only after the memory dump file has been read.

`--font-max=`*n* Set the maximum internal font number.

`--font-mem-size=`*n* Set the size, in TeX memory words, of the font memory.

`--half-error-line=`*n* Set the width of first lines of contexts in terminal error messages.

`--halt-on-error` Quit after the first error.

`--hash-extra=`*`n`* Set the extra space for the hash table of control sequences (which allows 10K names as distributed).

`--help` Give help and exit.

`--hhelp` This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*`dir`* Add the directory *`dir`* to the head of the list of directories to be searched for input files.

`--initialize` Become the *INI* variant of the program.

`--interaction=`*`mode`* Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The meaning of these modes is the same as the corresponding commands.

`--job-name=`*`name`* Set the name of the job (\jobname). This has an affect on the output file names.

`--job-time=`*`file`* Set the time-stamp of all output files equal to *`file`*'s time-stamp.

`--main-memory=`*`n`* Change the total size (in memory words) of the main memory array. Relevant only while creating memory dump files.

`--max-in-open=`*`n`* Set the maximum number of input files and error insertions that can be going on simultaneously.

`--max-print-line=`*`n`* Set the width of longest text lines output; should be at least `60`.

`--max-strings=`*`n`* Set the maximum number of strings.

`--nest-size=`*`n`* Set the maximum number of semantic levels simultaneously active.

`--no-c-style-errors` Don't change the way, error messages are printed.

`--output-directory=`*`dir`* Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.

`--param-size=`*`n`* Set the the maximum number of simultaneous macro parameters.

`--parse-first-line` Check whether the first line of the main input file starts with %&, and parse if it does. This can be used to specify extra command-line options.

`--pool-free=`*`n`* Set the minimum pool space left after loading the format.

`--pool-size=`*`n`* Set the maximum number of characters in strings, including all error messages and help texts, and the names of all fonts and control sequences.

`--quiet` Suppress all output, except errors.

`--record-package-usages=`*`file`*
: Record all package usages and write them into *`file`*.

`--recorder`
: Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.

`--restrict-write18`

`--save-size=`*`n`*
: Set the the amount of space for saving values outside of current group.

`--src-specials`
: Embed source file information (source specials) in the DVI file.

`--stack-size=`*`n`*
: Set the maximum number of simultaneous input sources.

`--string-vacancies=`*`n`*
: Set the minimum number of characters that should be available for the user's control sequences and font names, after the compiler's own error messages are stored. Must be at least 25000 less than `pool_size`, but doesn't need to be nearly that large.

`--tcx=`*`tcxname`*

`--time-statistics`
: Show processing time statistics.

`--trace[=`*`tracestreams`*`]`
: Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).

`--trie-size=`*`n`*
: Set the amount of space for hyphenation patterns.

`--undump=`*`name`*
: Use *`name`* as the name of the format to be used, instead of the name by which the program was called or a

  `%&`

  line.

`--version`
: Show version information and exit.

Environment

`MIKTEX_EDITOR`
: The editor to use when selecting **e** in the error prompt menu.

  The value can contain these placesholder:

  `%f` The name of the file, which contains the erroneous line of TeX code.

  `%l` The line number.

`MIKTEX_TRACE`
: Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`TEXINPUTS`
: Extra paths to locate TeX \input and \openin files.

`TFMFONTS`

Extra paths to locate TeX font metric files

See Also

The TeXbook ISBN 0-201-13448-9

See texify(1), for an alternative way to invoke TeX.

Name

texify — MiKTeX compiler driver

Synopsis

`texify` [*`option`*...] *`file`*...

Description

texify runs Texinfo or LaTeX input files through **miktex-tex** (**miktex-pdftex**) in turn until all cross-references are resolved, building all indices.

The directory containing each *`file`* is searched for included files. The suffix of *`file`* is used to determine its language (LaTeX or Texinfo).

makeinfo is used to perform Texinfo macro expansion before running **miktex-tex** when needed.

Options

`-@`	Use @input (instead of \input); for preloaded Texinfo.
`--batch`, `-b`	No interaction.
`--clean`, `-c`	Remove all auxiliary files.
`--expand`, `-e`	Force macro expansion using **makeinfo**.
`-I` *`dir`*	Search *`dir`* for input files.
`--help`, `-h`	Display help and exit successfully.
`--language=`*`lang`*, `-l` *`lang`*	Specify the language of input files: either `latex` or `texinfo`.
`--max-iterations=`*`n`*	Limits the number of iterations to prevent endless processing. The default for *`n`* is `5`.
`--mkidx-option=`*`option`*	Pass *`option`* to the index generator.
`--pdf`, `-p`	Use **miktex-pdftex** (or **miktex-pdflatex**) for processing.
`--quiet`, `-q`, `--silent`, `-s`	No screen output unless errors plies `--batch`).
`--run-viewer`	Run a viewer on the resulting DVI (PDF) file.
`--src`	Pass `--src-specials` to the TeX compiler.

`--texinfo=`*`cmd`*, `-t=`*`cmd`*
: Insert *`cmd`* after `@setfilename` in copy of input file. Multiple values accumulate.

`--tex-option=`*`option`*
: Pass *`option`* to the compiler.

`--verbose`, `-V`
: Print information on what is being done.

`--version`, `-v`
: Display version information and exit successfully.

`--viewer-option=`*`option`*
: Pass *`option`* to the viewer.

Environment Variables

The values of the `BIBTEX`, `LATEX` (or `PDFLATEX`), `MAKEINDEX`, `MAKEINFO`, `TEX` (or `PDFTEX`), and `TEXINDEX` environment variables are used to run those commands, if they are set.

Aliases

tex2dvi Equivalent to **texify**.

Name

miktex-xetex — Unicode-based TeX engine

Synopsis

`miktex-xetex` [*`option`*...] [[*`file`*] | [*`command`*...]]

Description

Run the XeTeX typesetter on *`file`*, usually creating `file.pdf`. If the file argument has no extension, `.tex` will be appended to it. Instead of a file name, a set of XeTeX commands can be given, the first of which must start with a backslash.

XeTeX has simple font installation; it can use any installed fonts in the operating system without configuring TeX font metric. As a result, XeTeX can access font features such as special ligatures and variable font weights.

Options

`--alias=`*`name`*
: Pretend to be program *`name`*, i.e., set program (and memory dump) name to *`name`*. This may affect the search paths and other values used. Using this option is equivalent to copying the program file to *`name`* and invoking *`name`*.

`--aux-directory=`*`dir`*
: Set *`dir`* as the directory to which auxiliary files are written. Also look for input files in *`dir`* first, before along the normal search path.

`--buf-size=`*`n`*
: Set the the maximum number of characters simultaneously present in current lines of open files and in control sequences between \csname and \endcsname. TeX uses the buffer to contain input lines, but macro expansion works by writing material into the buffer and reparsing the line. As a consequence, certain constructs require the buffer to be very large, even though most documents can be handled with a small value.

`--c-style-errors`
: Change the way, error messages are printed. The alternate style looks like error messages from many compilers and is easier to parse for some editors. This option implies \scrollmode.

`--disable-8bit-chars`
: Make only 7-bit characters printable.

`--disable-installer`
: Disable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--disable-pipes`
: Disable input (output) from (to) child processes.

`--disable-write18`

`--dont-parse-first-line`
: Disable checking whether the first line of the main input file starts with %&.

`--enable-8bit-chars`
: Make all characters printable.

`--enable-etex`
: Enable eTeX extensions.

`--enable-installer` Enable automatic installation of packages. Specifying this option overrules settings in the MiKTeX configuration data store.

`--enable-mltex` Enable MLTeX extensions such as \charsubdef.

`--enable-pipes` Enable input (output) from (to) child processes.

`--enable-write18`

`--error-line=`*n* Set the width of context lines on terminal error messages.

`--extra-mem-bot=`*n* Set the extra size (in memory words) for large data structures like boxes, glue, breakpoints, et al. Relevant only after the memory dump file has been read.

`--extra-mem-top=`*n* Set the extra size (in memory words) for chars, tokens, et al. Relevant only after the memory dump file has been read.

`--font-max=`*n* Set the maximum internal font number.

`--font-mem-size=`*n* Set the size, in TeX memory words, of the font memory.

`--half-error-line=`*n* Set the width of first lines of contexts in terminal error messages.

`--halt-on-error` Quit after the first error.

`--hash-extra=`*n* Set the extra space for the hash table of control sequences (which allows 10K names as distributed).

`--help` Give help and exit.

`--hhelp` This option is only available on Windows systems: show the manual page in an HTML Help window and exit when the window is closed.

`--include-directory=`*dir* Add the directory *dir* to the head of the list of directories to be searched for input files.

`--initialize` Become the *INI* variant of the program.

`--interaction=`*mode* Set the interaction mode. Must be one of `batchmode`, `nonstopmode`, `scrollmode` and `errorstopmode`. The meaning of these modes is the same as the corresponding commands.

`--job-name=`*name* Set the name of the job (\jobname). This has an affect on the output file names.

`--job-time=`*file* Set the time-stamp of all output files equal to *file*'s time-stamp.

`--main-memory=`*n* Change the total size (in memory words) of the main memory array. Relevant only while creating memory dump files.

`--max-in-open=`*n* Set the maximum number of input files and error insertions that can be going on simultaneously.

`--max-print-line=`*n* Set the width of longest text lines output; should be at least `60`.

`--max-strings=`*n* Set the maximum number of strings.

`--nest-size=`*n* Set the maximum number of semantic levels simultaneously active.

`--no-c-style-errors` Don't change the way, error messages are printed.

`--no-pdf` Generate XDV (extended DVI) output rather than PDF.

`--output-directory=`*dir* Write output files in *`dir`*. instead of the current directory. Look up input files in *`dir`* first, then along the normal search path.

`--output-driver=cmd` Use *`cmd`* as the XDV-to-PDF driver instead of **xdvipdfmx**.

`--papersize=string` Set PDF media size to *`string`*.

`--param-size=`*n* Set the the maximum number of simultaneous macro parameters.

`--parse-first-line` Check whether the first line of the main input file starts with %&, and parse if it does. This can be used to specify extra command-line options.

`--pool-free=`*n* Set the minimum pool space left after loading the format.

`--pool-size=`*n* Set the maximum number of characters in strings, including all error messages and help texts, and the names of all fonts and control sequences.

`--quiet` Suppress all output, except errors.

`--record-package-usages=`*`file`* Record all package usages and write them into *`file`*.

`--recorder` Enable the file name recorder. This leaves a trace of the files opened for input and output in a file with the extension `.fls`.

`--restrict-write18`

`--save-size=`*n* Set the the amount of space for saving values outside of current group.

`--src-specials` Embed source file information (source specials) in the DVI file.

`--stack-size=`*n* Set the maximum number of simultaneous input sources.

`--string-vacancies=`*n* Set the minimum number of characters that should be available for the user's control sequences and font names, after the compiler's own error messages are stored. Must be at least 25000 less than `pool_size`, but doesn't need to be nearly that large.

`--synctex=`*n* Generate SyncTeX data for previewers. If *n* is zero, no `.synctex` file is created. If *n* is negative, the `.synctex` file is a text file. If *n* is positive, the `.synctex` file is compressed with **gzip** and the `.gz` file name extension is added.

Furthermore, *n* is interpreted as a bit field:

Bit 1 (*n* AND 2) Don't add the `.gz` file name extension.

	Bit 2 (*n* AND 4) Activate form support.
	Bit 3 (*n* AND 8) Activate better compression.
`--time-statistics`	Show processing time statistics.
`--trace[=`*`tracestreams`*`]`	Enable trace messages. The *`tracestreams`* argument, if specified, is a comma-separated list of trace stream names (Chapter 9, *Trace Streams*).
`--trie-size=`*`n`*	Set the amount of space for hyphenation patterns.
`--undump=`*`name`*	Use *`name`* as the name of the format to be used, instead of the name by which the program was called or a `%&` line.
`--version`	Show version information and exit.

Environment

`MIKTEX_EDITOR`

The editor to use when selecting **`e`** in the error prompt menu.

The value can contain these placesholder:

`%f` The name of the file, which contains the erroneous line of TeX code.

`%l` The line number.

`MIKTEX_TRACE`

Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`TEXINPUTS`

Extra paths to locate TeX \input and \openin files.

`TFMFONTS`

Extra paths to locate TeX font metric files

See also

The XeTeX reference guide	Run **`mthelp xetexref`**

Chapter 7. Files

Name

miktex.ini — MiKTeX configuration file

Description

MiKTeX configurations settings are read from the file `miktex.ini`.

Syntax

The syntax follows the informal conventions of a traditional INI file [https://en.wikipedia.org/wiki/INI_file].

Settings

[MPM]AutoAdmin tbd

[MPM]AutoInstall tbd

Name

pdftex.cfg — configuration settings for MiKTeX-pdfTeX

Description

MiKTeX-pdfTeX configurations settings are read from the file `pdftex.cfg` when a format file is being created by MiKTeX-pdfTeX.

Caution

Do not edit this file directly. Run **`initexmf --edit-config-file pdftex.cfg`** to edit configuration settings for MiKTeX-pdfTeX.

Instructions

A typical `pdftex.cfg` file looks like this, setting up output for A4 paper size and the standard TeX offset of 1 inch:

```
compress_level 9
decimal_digits 3
horigin 1 true in
vorigin 1 true in
image_resolution 300
move_chars 1
output_format 1
page_width 210 true mm
page_height 297 true mm
pdf_minorversion 4
pk_resolution 600
```

The configuration file sets default values for these parameters, and they all can be overridden in the TeX source file. Dimensions can be specified as `true`, which makes them immune for magnification (when set).

compress_level
: This integer parameter specifies the level of text and in||line graphics compression. MiKTeX-pdfTeX uses Zip compression. A value of 0 means no compression, 1 means fastest, 9 means best, 2..8 means something in between. Just set this value to 9, unless there is a good reason to do otherwise; 0 is great for testing macros that use \pdfliteral.

decimal_digits
: This integer specifies the preciseness of real numbers in PDF page descriptions. It gives the maximal number of decimal digits after the decimal point of real numbers. Valid values are in range 0..5. A higher value means more precise output, but also results in a much larger file size and more time to display or print. In most cases the optimal value is 2. This parameter does *not* influence the precision of numbers used in raw PDF code, like that used in \pdfliteral and annotation action specifications.

horigin & vorigin
: These dimension parameters can be used to set the offset of the TeX output box from the top left corner of the “paper”.

image_resolution	When MiKTeX-pdfTeX is not able to determine the natural dimensions of an image, it assumes a resolution of type 72 dots per inch. Use this variable to change this default value.
move_chars	Although PDF output is claimed to be portable, especially when all font information is included in the file, problems with printing and viewing have a persistent nature. Moving the characters in range 0–31 sometimes helps a lot. When set to 1, characters are only moved when a font has less than 128 glyphs, when set to 2 higher slots are used too.
output_format	This integer parameter specifies whether the output format should be DVI or PDF. A positive value means PDF output, otherwise we get DVI output.
page_width & page_height	These two dimension parameters specify the output medium dimensions (the paper, screen or whatever the page is put on). If they are not specified, these values are calculated.
pdf_minorversion	Sets the PDF version of the generated file and the latest allowed PDF version of included PDFs. The value 3 tells MiKTeX-pdfTeX to set the PDF version to 1.3 and allows only included PDFs with versions less than 1.3. A suitable default value is 4.
pk_resolution	One can use this entry to specify the resolution for bitmap fonts. Nowadays most printers are capable to print at least 600 dots per inch, so this is a reasonable default.

Name

updmap.cfg — configuration Settings for outline fonts

Description

The configuration file `updmap.cfg` contains declarative instructions, which will be used to build font map files.

Caution

Do not edit this file directly. Run **`initexmf --edit-config-file updmap`** to edit configuration settings for outline fonts.

Instructions

`updmap.cfg` can contain the following instructions:

`dvipsPreferOutline` *`value`*
: Specifies whether Dvips prefers bitmap fonts or outline fonts if both are available. Valid values are `true` (default) and `false`.

  Independend of this setting, outlines can be forced by putting

  ```
  p psfonts_t1.map
  ```

  into a configuration file that Dvips reads. Bitmaps (for the fonts in question) can be forced by putting

  ```
  p psfonts_pk.map
  ```

  into a configuration file. Such configuration files are provided, which can be enabled via

  ```
  dvips -Poutline ...
  ```

  resp.

  ```
  dvips -Ppk ...
  ```

`LW35` *`value`*
: Specifies which fonts for the “Basic 35 LaserWriter Fonts” will be used and how their file names are chosen. Valid values:

  `URW` URW fonts with “vendor” file names (e.g., `n019064l.pfb`).

  `URWkb` URW fonts with “berry” file names (e.g., `uhvbo8ac.pfb`). `URWkb` is the default value.

  `ADOBE` Adobe fonts with “vendor” file names (e.g. `hvnbo___.pfb`).

  `ADOBEkb` Adobe fonts with “berry” file names (e.g., `phvbo8an.pfb`).

`dvipsDownloadBase35` *`value`*
: Specifies whether Dvips downloads the standard 35 LaserWriter fonts with the document. If these fonts are not downloaded, then

they must be available in the PostScript printer (interpreter). Valid values are `true` and `false` (default).

Whatever is specified here, the user can override it by specifying

```
dvips -Pdownload35 ...
```

resp.

```
dvips -Pbuiltin35 ...
```

to either download the LW35 fonts resp. use the build-in fonts.

`pdftexDownloadBase14` *`value`*

Specifies whether pdfTeX downloads the base 14 PDF fonts. Valid values are `true` (default) and `false`.

Since some configurations (PostScript / PDF tools / printers) use bad default fonts, it is safer to download the fonts. The PDF files will get bigger, though.

`dvipdfmDownloadBase14` *`value`*

Specifies whether Dvipdfm downloads the base 14 PDF fonts. Valid values are `true` (default) and `false`.

Since some configurations (PostScript / PDF tools / printers) use bad default fonts, it is safer to download the fonts. The PDF files will get bigger, though.

`Map` *`filename`*

Arranges that the contents of *`filename`* will be included in `psfonts.map`.

`MixedMap` *`filename`*

Arranges that the contents of *`filename`* will be included in `psfonts.map`, unless `dvipsPreferOutline` is set to `false`.

“Mixed” means that the fonts referenced in the file are available as bitmap and as outline.

Chapter 8. Environment variables

`BIBINPUTS`
: Extra paths to locate `.bib` files.

`BSTINPUTS`
: Extra paths to locate `.bst` files.

`MFINPUTS`
: Extra paths to locate METAFONT input and openin files.

`MIKTEX_REPOSITORY`
: Location of the default package repository. This can be either a fully qualified path name (a local package repository) or an URL (a remote package repository).

`MIKTEX_TRACE`
: Comma-separated list of trace stream names (see Chapter 9, *Trace Streams*). If this variable is set, then MiKTeX programs will write trace messages into the configured log sink.

`MFINPUTS`
: Extra paths to locate METAFONT input and openin files.

`TEXINPUTS`
: Extra paths to locate TeX \input and \openin files.

`TFMFONTS`
: Extra paths to locate TeX font metric files

Chapter 9. Trace Streams

access	file tests (`access()`, `stat()`)
config	MiKTeX configuration settings
core	MiKTeX core library
curl	cURL library
dib	device independant bitmaps
dvibitmap	DVI bitmaps
dvicolor	DVI color
dvifile	DVI files
dvigc	DVI garbage collector
dvihypertex	DVI hypertex specials
dvipage	DVI page builder
dvipkbitmap	DVI PK raster operations
dvipkchar	DVI PK characters
dvipkfont	DVI PK fonts
dvisearch	DVI source specials
dvitfm	DVI font metrics
dvivfchar	DVI virtual font characters
dvivfont	DVI virtual fonts
env	environment variables
error	error conditions
extractor	MiKTeX package archive file extractor
files	file operations
filesearch	file searching
fndb	file name database operations
fontinfo	font information retrieval
mem	TeX & Friends memory allocation
mmap	memory mapped files
mpm	package manager

mtprint	MiKTeX print utility
packages	packages
process	execution of secondary processes
tempfile	temporary files
time	execution time
values	configuration values
yap	Yap

Chapter 10. Run-Time Defaults

MiKTeX configuration settings are initialized with default values which are described in this chapter.

All MiKTeX Programs

```
[Core]

 ;; Shell command mode.
 ;;   Forbidden: don't allow any shell commands
 ;;   Restricted: allow the commands listed in AllowedShellCommands[]
 ;;   Unrestricted: allow all shell commands
 ShellCommandMode = Restricted

 ;; The programs listed here are probably safe: they either do
 ;; not write any output files or implement restrictions
 ;; similar to or higher than
 ;; [Core]AllowUnsafeOutputFiles=true.
 ;; They also have no features to invoke arbitrary other
 ;; programs, and no known exploitable bugs.  All to the best
 ;; of our knowledge.  They also have practical use for being
 ;; called from TeX.
 AllowedShellCommands[] = miktex-bibtex
 AllowedShellCommands[] = miktex-bibtex8
 AllowedShellCommands[] = miktex-epstopdf
 AllowedShellCommands[] = miktex-gregorio
 AllowedShellCommands[] = miktex-kpsewhich
 AllowedShellCommands[] = miktex-makeindex
 AllowedShellCommands[] = bibtex
 AllowedShellCommands[] = bibtex8
 AllowedShellCommands[] = epstopdf
 AllowedShellCommands[] = extractbb
 AllowedShellCommands[] = findtexmf
 AllowedShellCommands[] = gregorio
 AllowedShellCommands[] = kpsewhich
 AllowedShellCommands[] = makeindex
 AllowedShellCommands[] = texosquery-jre8

 ;; Do we allow TeX \input or \openin on file names starting
 ;; with `.' (e.g., .rhosts) or outside the current tree (e.g.,
 ;; /etc/passwd)?
 AllowUnsafeInputFiles = true

 ;; Do we allow TeX \openout on file names starting with `.'
 ;; (e.g., .rhosts) or outside the current tree (e.g.,
 ;; /etc/passwd)?
 AllowUnsafeOutputFiles = false

[Core.FileTypes.afm]

 ;; Search path for Adobe font metric (AFM) files.
 Paths[] = .
```

```
 Paths[] = %R/fonts/afm//

 ;; Environment variables to be used for searching AFM files.
 EnvVars[] = AFMFONTS
 EnvVars[] = TEXFONTS

 ;; AFM file name extensions.
 Extensions[] = .afm

[Core.FileTypes.base]

 ;; Search path for METAFONT memory dump files.
 Paths[] = .
 Paths[] = %r/miktex/data/le

 ;; METAFONT memory dump file name extensions.
 Extensions[] = .base

[Core.FileTypes.bib]

 ;; Search path for BibTeX database files.
 Paths[] = .
 Paths[] = %R/bibtex/bib//

 ;; Environment variables to be used for searching BibTeX
 ;; databsae files.
 EnvVars[] = BIBINPUTS
 EnvVars[] = TEXBIB

 ;; BibTeX database file name extensions.
 Extensions[] = .bib

[Core.FileTypes.bst]

 ;; Search path for BibTeX style files.
 Paths[] = .
 Paths[] = %R/bibtex/{bst,csf}//

 ;; Environment variables to be used for searching BibTeX
 ;; style files.
 EnvVars[] = BSTINPUTS

 ;; BibTeX style file name extensions.
 Extensions[] = .bst

[Core.FileTypes.cid maps]

 ;; Search path for CID map files.
 Paths[] = .
 Paths[] = %R/fonts/cid//

 ;; Environment variables to be used for searching CID map
 ;; files.
 EnvVars[] = FONTCIDMAPS
```

```
 ;; CID map file name extensions.
 Extensions[] = .cid
 Extensions[] = .cidmap

[Core.FileTypes.clua]

 ;; Search path for dynamic libraries for Lua.
 Paths[] = .
 Paths[] = %R/scripts/{$progname,$engine,}/lua//

 ;; Environment variables to be used for searching dynamic
 ;; libraries for Lua.
 EnvVars[] = CLUAINPUTS

 ;; File name extensions for Lua dynamic libraries.
 Extensions[] = .dll
 Extensions[] = .so

[Core.FileTypes.cmap files]

 ;; Search path for character map files.
 Paths[] = .
 Paths[] = %R/fonts/cmap//

 ;; Environment variables to be used for character map files.
 EnvVars[] = CMAPFONTS
 EnvVars[] = TEXFONTS

[Core.FileTypes.cweb]

 ;; Search path for CWeb input files.
 Paths[] = .
 Paths[] = %R/cweb//

 ;; Environment variables to be used for searching Cweb input
 ;; files.
 EnvVars[] = CWEBINPUTS

 ;; CWeb file name extensions.
 Extensions[] = .w

[Core.FileTypes.dvi]

 ;; Search path for DVI files.
 Paths[] = .
 Paths[] = %R/doc//

 ;; DVI file name extensions.
 Extensions[] = .dvi

[Core.FileTypes.dvips config]

 ;; Search path for Dvips configuration files.
```

```
 Paths[] = .
 Paths[] = %R/dvips//

 ;; Environment variables to be used for searching Dvips
 ;; configuration files.
 EnvVars[] = TEXCONFIG

[Core.FileTypes.enc]

 ;; Search path for encoding vector files.
 Paths[] = .
 Paths[] = %R/fonts/enc//
 Paths[] = %R/miktex/config//
 Paths[] = %R/dvips//
 Paths[] = %R/pdftex//
 Paths[] = %R/dvipdfm//

 ;; Environment variables to be used for searching encoding
 ;; vector files.
 EnvVars[] = ENCFONTS
 EnvVars[] = TEXFONTS

 ;; Encoding vector file name extensions.
 Extensions[] = .enc

[Core.FileTypes.font feature files]

 ;; Search path for font feature files.
 Paths[] = .
 Paths[] = %R/fonts/fea//

 ;; Environment variables to be used for searching font feature
 ;; files.
 EnvVars[] = FONTFEATURES

 ;; Font feature file name extensions.
 Extensions[] = .fea

[Core.FileTypes.fmt]

 ;; Search path for TeX memory dump files.
 Paths[] = .
 Paths[] = %r/miktex/data/le/{$engine,}

 ;; TeX memory dump file name extensions.
 Extensions[] = .fmt

[Core.FileTypes.gf]

 ;; Search path for generic font bitmap files.
 Paths[] = .
 Paths[] = %R/fonts//

 ;; Environment variables to be used for searching generic font
```

```
 ;; bitmap files.
 EnvVars[] = GFFONTS
 EnvVars[] = GLYPHFONTS
 EnvVars[] = TEXFONTS

 ;; Generic font bitmap file name extensions.
 Extensions[] = .gf

[Core.FileTypes.bitmap font]

 ;; Search path for bitmap font files.
 Paths[] = .
 Paths[] = %R/fonts//

 ;; Environment variables to be used for searching bitmap font
 ;; files.
 EnvVars[] = GLYPHFONTS
 EnvVars[] = TEXFONTS

[Core.FileTypes.graphic/figure]

 ;; Search path for figure files.
 Paths[] = .
 Paths[] = %R/dvips//
 Paths[] = %R/pdftex//
 Paths[] = %R/tex//

 ;; Environment variables to be used for searching figure
 ;; files.
 EnvVars[] = TEXPICTS
 EnvVars[] = TEXINPUTS

 ;; Figure file name extensions.
 Extensions[] = .eps
 Extensions[] = .epsi
 Extensions[] = .png

[Core.FileTypes.hbf]

 ;; Search path for HBF files.
 Paths[] = .
 Paths[] = %R/fonts/misc/hbf//

 ;; HBF file name extensions.
 Extensions[] = .hbf

[Core.FileTypes.ist]

 ;; Search path for MakeIndex style files.
 Paths[] = .
 Paths[] = %R/makeindex//

 ;; Environment variables to be used for searching MakeIndex
 ;; style files.
```

```
 EnvVars[] = TEXINDEXSTYLE
 EnvVars[] = INDEXSTYLE

 ;; MakeIndex style file name extensions.
 Extensions[] = .ist

[Core.FileTypes.lig files]

 ;; Search path for ligature definition files.
 Paths[] = .
 Paths[] = %R/fonts/lig//

 ;; Environment variables to be used for searching ligature
 ;; definition files.
 EnvVars[] = TEXFONTS

 ;; Ligature definition file name extensions.
 Extensions[] = .lig

[Core.FileTypes.ls-R]

 ;; Search path for Web2c file name database files.
 Paths[] = %R

 ;; Environment variables to be used for searching Web2C file
 ;; name database files.
 EnvVars[] = TEXMFDBS

[Core.FileTypes.lua]

 ;; Search path for Lua files.
 Paths[] = .
 Paths[] = %R/scripts/{$progname,$engine,}/{lua,}//
 Paths[] = %R/tex/{$progname,generic,}//

 ;; Environment variables to be used for searching Lua files.
 EnvVars[] = LUAINPUTS

 ;; File name extensions for Lua files.
 Extensions[] = .lua
 Extensions[] = .luatex
 Extensions[] = .luc
 Extensions[] = .luctex
 Extensions[] = .texlua
 Extensions[] = .texluc
 Extensions[] = .tlu

 ;; Environment variables to be used for searching Lua files.
 EnvVars[] = LUAINPUTS

[Core.FileTypes.map]

 ;; Search path for font map files.
 Paths[] = .
```

```
 Paths[] = %R/fonts/map/{$progname,pdftex,dvips,}//
 Paths[] = %R/miktex/config//
 Paths[] = %R/dvips//
 Paths[] = %R/pdftex//
 Paths[] = %R/dvipdfm//

 ;; Environment variables to be used for searching font map
 ;; files.
 EnvVars[] = TEXFONTMAPS
 EnvVars[] = TEXFONTS

 ;; Font map file name extensions.
 Extensions[] = .map

[Core.FileTypes.mem]

 ;; Search path for MetaPost memory dump files.
 Paths[] = .

 ;; MetaPost memory dump file name extensions.
 Extensions[] = .mem

[Core.FileTypes.mf]

 ;; Search path for METAFONT input files.
 Paths[] = .
 Paths[] = %R/metafont//
 Paths[] = %R/fonts/source//

 ;; Environment variables to be used for searching METAFONT
 ;; input files.
 EnvVars[] = MFINPUTS

 ;; METAFONT file name extensions.
 Extensions[] = .mf

[Core.FileTypes.mfpool]

 ;; Search path for METAFONT program string files.
 Paths[] = .

 ;; Environment variables to be used for searching METAFONT
 ;; program string files.
 EnvVars[] = MFPOOL
 EnvVars[] = TEXMFINI

 ;; METAFONT program string file name extensions.
 Extensions[] = .pool

[Core.FileTypes.mft]

 ;; Search path for MFT style files.
 Paths[] = .
 Paths[] = %R/mft//
```

```
 ;; Environment variables to be used for searching MFT style
 ;; files.
 EnvVars[] = MFTINPUTS

 ;; MFT style file name extensions.
 Extensions[] = .mft

[Core.FileTypes.misc fonts]

 ;; Search path for font related files.
 Paths[] = .
 Paths[] = %R/fonts/misc//

 ;; Environment variables to be used for font related
 ;; files.
 EnvVars[] = MISCFONTS
 EnvVars[] = TEXFONTS

[Core.FileTypes.mlbib]

 ;; Search path for MlBibTeX database files.
 Paths[] = .
 Paths[] = %R/bibtex/bib/{mlbib,}//

 ;; Environment variables to be used for searching MlBibTeX
 ;; databsae files.
 EnvVars[] = MLBIBINPUTS
 EnvVars[] = BIBINPUTS
 EnvVars[] = TEXBIB

 ;; MlBibTeX database file name extensions.
 Extensions[] = .mlbib
 Extensions[] = .bib

[Core.FileTypes.mlbst]

 ;; Search path for MlBibTeX style files.
 Paths[] = .
 Paths[] = %R/bibtex/{mlbst,bst}//

 ;; Environment variables to be used for searching MlBibTeX
 ;; style files.
 EnvVars[] = MLBSTINPUTS
 EnvVars[] = BSTINPUTS

 ;; MlBibTeX style file name extensions.
 Extensions[] = .bst

[Core.FileTypes.mp]

 ;; Search path for MetaPost input files.
 Paths[] = .
 Paths[] = %R/metapost//
```

```
 ;; Environment variables to be used for searching MetaPost
 ;; input files.
 EnvVars[] = MPINPUTS

 ;; MetaPost file name extensions.
 Extensions[] = .mp

[Core.FileTypes.mppool]

 ;; Search path for MetaPost program string files.
 Paths[] = .

 ;; Environment variables to be used for searching MetaPost
 ;; program string files.
 EnvVars[] = MPPOOL
 EnvVars[] = TEXMFINI

 ;; MetaPost program string file name extensions.
 Extensions[] = .pool

[Core.FileTypes.MetaPost support]

 ;; Search path for MetaPost support files.
 Paths[] = .
 Paths[] = %R/metapost/support//

 ;; Environment variables to be used for searching MetaPost
 ;; support files.
 EnvVars[] = MPSUPPORT

[Core.FileTypes.ocp]

 ;; Search path for Omega compiled process files.
 Paths[] = .
 Paths[] = %R/omega/ocp//

 ;; Environment variables to be used for searching Omega
 ;; compiled process files.
 EnvVars[] = OCPINPUTS

 ;; Omega compiled process file name extensions.
 Extensions[] = .ocp

[Core.FileTypes.ofm]

 ;; Search path for Omega font metric files.
 Paths[] = .
 Paths[] = %R/fonts/ofm//
 Paths[] = %R/fonts/tfm//

 ;; Environment variables to be used for searching Omega
 ;; font metric files.
 EnvVars[] = OFMFONTS
```

```
 EnvVars[] = TEXFONTS

 ;; Omega font metric file name extensions.
 Extensions[] = .ofm
 Extensions[] = .tfm

[Core.FileTypes.opl]

 ;; Search path for Omega property list files.
 Paths[] = .
 Paths[] = %R/fonts/opl//

 ;; Environment variables to be used for searching Omega
 ;; property list files.
 EnvVars[] = OPLFONTS
 EnvVars[] = TEXFONTS

 ;; Omega property list file name extensions.
 Extensions[] = .opl

[Core.FileTypes.otp]

 ;; Search path for Omega translation process files.
 Paths[] = .
 Paths[] = %R/fonts/otp//

 ;; Environment variables to be used for searching Omega
 ;; translation process files.
 EnvVars[] = OTPINPUTS

 ;; Omega translation process file name extensions.
 Extensions[] = .otp

[Core.FileTypes.opentype fonts]

 ;; Search path for OpenType font files.
 Paths[] = .
 Paths[] = %R/fonts/opentype//

 ;; Environment variables to be used for searching OpenType
 ;; font files.
 EnvVars[] = OPENTYPEFONTS
 EnvVars[] = TEXFONTS

 ;; OpenType font file name extensions.
 Extensions[] = .otf

[Core.FileTypes.ovf]

 ;; Search path for Omega virtual font files.
 Paths[] = .
 Paths[] = %R/fonts/ovf//
 Paths[] = %R/fonts/vf//
```

```
 ;; Environment variables to be used for searching Omega
 ;; virtual font files.
 EnvVars[] = OVFFONTS
 EnvVars[] = TEXFONTS

 ;; Omega virtual font file name extensions.
 Extensions[] = .ovf

[Core.FileTypes.ovp]

 ;; Search path for Omega virtual property list files.
 Paths[] = .
 Paths[] = %R/fonts/ovp//

 ;; Environment variables to be used for searching Omega
 ;; virtual property list files.
 EnvVars[] = OVPFONTS
 EnvVars[] = TEXFONTS

 ;; Omega virtual property list file name extensions.
 Extensions[] = .ovp

[Core.FileTypes.pdftex config]

 ;; Search path for pdfTeX configuration files.
 Paths[] = .
 Paths[] = %R/pdftex/{$progname,}//

 ;; Environment variables to be used for searching pdfTeX
 ;; configuration files.
 EnvVars[] = PDFTEXCONFIG

[Core.FileTypes.pk]

 ;; Search path for packed bitmap font files.
 Paths[] = .
 Paths[] = %R/fonts//

 ;; Packed bitmap font file name extensions.
 Extensions[] = .pk

[Core.FileTypes.other binary files]

 ;; Search path for program binary files.
 Paths[] = .
 Paths[] = %R/$progname//

[Core.FileTypes.other text files]

 ;; Search path for program text files.
 Paths[] = .
 Paths[] = %R/$progname//

[Core.FileTypes.PostScript header]
```

```
 ;; Search path for downloadable PostScript files.
 Paths[] = .
 Paths[] = %R/miktex/config//
 Paths[] = %R/dvips//
 Paths[] = %R/pdftex//
 Paths[] = %R/dvipdfm//
 Paths[] = %R/fonts/enc//
 Paths[] = %R/fonts/type1//
 Paths[] = %R/fonts/type42//
 Paths[] = %R/fonts/type3//
 Paths[] = $psfontdirs

 ;; Environment variables to be used for searching downloadable
 ;; PostScript files.
 EnvVars[] = TEXPSHEADERS
 EnvVars[] = PSHEADERS

 ;; Downloadable PostScript file name extensions.
 Extensions[] = .pro
 Extensions[] = .enc

[Core.FileTypes.texmfscripts]

 ;; Search path for architecture-independent executables.
 Paths[] = .
 Paths[] = %R/scripts/{$progname,$engine,}//

 ;; Environment variables to be used for searching
 ;; architecture-independent executables.
 EnvVars[] = TEXMFSCRIPTS

[Core.FileTypes.subfont definition files]

 ;; Search path for subfont definition files.
 Paths[] = .
 Paths[] = %R/fonts/sfd//

 ;; Environment variables to be used for searching subfont
 ;; definition files.
 EnvVars[] = SFDFONTS
 EnvVars[] = TEXFONTS

 ;; Subfont definition file name extensions.
 Extensions[] = .sfd

[Core.FileTypes.tcx]

 ;; Search path for TCX files.
 Paths[] = .
 Paths[] = %R/miktex/config
 Paths[] = %R/miktex/web2c

 ;; TCX file name extensions.
```

```
 Extensions[] = .tcx

[Core.FileTypes.tex]

 ;; Search path for TeX input files.
 Paths[] = .
 Paths[] = %R/tex/{$progname,generic,}//

 ;; Environment variables to be used for searching TeX input
 ;; files.
 EnvVars[] = TEXINPUTS

 ;; TeX input file name extensions.
 Extensions[] = .tex

[Core.FileTypes.texpool]

 ;; Search path for TeX program string files.
 Paths[] = .

 ;; Environment variables to be used for searching METAFONT
 ;; program string files.
 EnvVars[] = TEXPOOL
 EnvVars[] = TEXMFINI

 ;; TeX program string file name extensions.
 Extensions[] = .pool

[Core.FileTypes.TeX system sources]

 ;; Search path for source files.
 Paths[] = .
 Paths[] = %R/source//

 ;; Environment variables to be used for searching source
 ;; files.
 EnvVars[] = TEXSOURCES

[Core.FileTypes.TeX system documentation]

 ;; Search path for documentation files.
 Paths[] = .
 Paths[] = %R/doc/miktex//
 Paths[] = %R/doc//

 ;; Environment variables to be used for searching
 ;; documentation files.
 EnvVars[] = TEXDOCS

 ;; Documentation file name extensions.
 Extensions[] = .pdf
 Extensions[] = .html
 Extensions[] = .md
 Extensions[] = .txt
```

```
 Extensions[] = .ps
 Extensions[] = .dvi

[Core.FileTypes.tfm]

 ;; Search path for TeX font metric files.
 Paths[] = .
 Paths[] = %R/fonts/tfm//

 ;; Environment variables to be used for searching TeX font
 ;; metric files.
 EnvVars[] = TFMFONTS
 EnvVars[] = TEXFONTS

 ;; TeX font metric file name extensions.
 Extensions[] = .tfm

[Core.FileTypes.troff fonts]

 ;; Environment variables to be used for searching Troff font
 ;; files.
 EnvVars[] = TRFONTS

[Core.FileTypes.truetype fonts]

 ;; Search path for TrueType font files.
 Paths[] = .
 Paths[] = %R/fonts/truetype//

 ;; Environment variables to be used for searching TrueType
 ;; font files.
 EnvVars[] = TTFONTS
 EnvVars[] = TEXFONTS

 ;; TrueType font file name extensions.
 Extensions[] = .ttf
 Extensions[] = .ttc

[Core.FileTypes.type1 fonts]

 ;; Search path for Type1 font files.
 Paths[] = .
 Paths[] = %R/fonts/type1//

 ;; Environment variables to be used for searching Type1 font
 ;; files.
 EnvVars[] = T1FONTS
 EnvVars[] = T1INPUTS
 EnvVars[] = TEXFONTS
 EnvVars[] = TEXPSHEADERS
 EnvVars[] = PSHEADERS

 ;; Type1 font file name extensions.
 Extensions[] = .pfb
```

```
 Extensions[] = .pfa

[Core.FileTypes.type42 fonts]

 ;; Search path for Type42 font files.
 Paths[] = .
 Paths[] = %R/fonts/type42//

 ;; Environment variables to be used for searching Type42 font
 ;; files.
 EnvVars[] = T42FONTS
 EnvVars[] = TEXFONTS

 ;; Type42 font file name extensions.
 Extensions[] = .t42
 Extensions[] = .T42

[Core.FileTypes.vf]

 ;; Search path for TeX virtual font files.
 Paths[] = .
 Paths[] = %R/fonts/vf//

 ;; Environment variables to be used for searching TeX virtual
 ;; font files.
 EnvVars[] = VFFONTS
 EnvVars[] = TEXFONTS

 ;; TeX virtual font file name extensions.
 Extensions[] = .vf

[Core.FileTypes.web2c files]

 ;; Search path for Web2c files.
 Paths[] = .
 Paths[] = %R/web2c//

[Core.FileTypes.web]

 ;; Search path for WEB input files.
 Paths[] = .
 Paths[] = %R/web//

 ;; Environment variables to be used for searching WEB input
 ;; files.
 EnvVars[] = WEBINPUTS

 ;; CWeb file name extensions.
 Extensions[] = .web

[MPM]

 ;; Install packages for all users.
 AutoAdmin = ?
```

```
 ;; Install missing packages automatically (on-the-fly).
 AutoInstall = ?

[TeXandFriends]

 ;; Create auxiliary directory if '--aux-directory=DIR' refers
 ;; to a non-existing directory.
 CreateAuxDirectory = t

 ;; Create the output directory if '--output-directory=DIR'
 ;; refers to a non-existing directory.
 CreateOutputDirectory = t

 ;; Enable file:line:error style messages.
 CStyleErrors = f
```

All TeXMF Programs

```
;; TeX uses the buffer to contain input lines, but macro expansion
;; works by writing material into the buffer and reparsing the line.
;; As a consequence, certain constructs require the buffer to be very
;; large, even though most documents can be handled with a small
;; value.
buf_size = 200000

;; Width of context lines on terminal error messages.
error_line = 79

;; Extra low memory for boxes, glue, breakpoints, etc.
extra_mem_bot = 0

;; Extra high memory for chars, tokens, etc.
extra_mem_top = 0

;; Width of first lines of contexts in terminal error messages; should
;; be between 30 and (error_line - 15).
half_error_line = 50

;; Words of inimemory available.
main_memory = 3000000

;; Width of longest text lines output; should be at least 60.
max_print_line = 79

;; Maximum number of strings.
max_strings = 500000

;; Maximum number of simultaneous macro parameters.
param_size = 10000

;; Pool space free after format loaded.
pool_free = 47500
```

```
;; Max number of characters in all strings, including all error
;; messages, help texts, font names, control sequences.  These values
;; apply to TeX and MP.
pool_size = 3250000

;; Maximum number of simultaneous input sources.
stack_size = 5000

;; Strings available after format loaded.
strings_free = 100

;; Minimum pool space after TeX/MP's own strings; must be at least
;; 25000 less than pool_size, but doesn't need to be nearly that
;; large.
string_vacancies = 90000
```

All TeX Programs

```
;; Maximum number of input files and error insertions that can be
;; going on simultaneously.
max_in_open = 50

;; Maximum number of semantic levels simultaneously active.
nest_size = 500

;; Space for saving values outside current group.
save_size = 50000

;; Space for hyphenation patterns.
trie_size = 700000

;; Total number of fonts.
font_max = 9000

;; Words of font info for TeX (total size of all TFM files,
;; approximately).
font_mem_size = 3000000

;; Extra space for the hash table of control sequences (which allows
;; 10K names as distributed).
hash_extra = 200000

;; Prime number of hyphenation exceptions.
hyph_size = 8191

;; Size of the output buffer; must be a multiple of 8.
dvi_buf_size = 8192
```

Omega

```
ocp_buf_size = 500000
ocp_listinfo_size = 1000
```

```
ocp_list_list_size = 1000
ocp_lstack_size = 1000
ocp_stack_size = 10000
trie_op_size = 35111
```

pdfTeX

```
pdf_mem_size = 10000
obj_tab_size = 1000
dest_names_size = 131072
pdf_os_buf_size = 1
```

METAFONT & MetaPost

```
;; Size of stack for bisection algorithms; should probably be left at
;; this value.
bistack_size = 1500

;; Maximum number of ligature/kern steps, must be at least 255 and at
;; most 32510.
lig_table_size = 15000

;; Maximum number of knots between breakpoints of a path.
path_size = 10000
```

METAFONT

```
;; Number of autorounded points per cycle.
max_wiggle = 1000

;; Space for storing moves in a single octant.
move_size = 20000
```

MetaPost

```
;; Number of words for TFM information for text fonts.
font_mem_size = 10000
```

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