Installing MiKTEX and MusixTEX on Windows 2000

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This document describes the process of installing MusixTEX and MiKTEX 2.1.8. The installation procedure has been tested on Windows 2000. No guarantees are given about its applicability to any other versions of Windows or MikTEX.

Contents

1. MiKTEX 2.1

1.1. Where to get it

You can obtain MiKTeX on the WWW either at a CTAN site such as ftp.dante.de, ftp.tex.ac.uk or their mirror sites, or directly from www.miktex.org.

1.2. Downloading

1. From the download site of your choice, download setup.exe.
2. Run setup.exe and click "Download".
3. Click "Small", "Large" or "Total" to select the size of your MiKTEX installation. The "Small" installation is sufficient for using MusixTEX. **The "Total" installation is STRONGLY DISCOURAGED (see below).**
4. Follow the prompts to finish downloading the install files.

1.3. Installing

1. Run setup.exe again and choose "Install".
2. Select the size of your installation (recommended: "Small") and enter the path to the directory where you saved the install files during download.

Note: *In MiKTEX 2.1.8, the "Total" option will automatically install a copy of MusixTEX. Allowing this to happen is strongly discouraged for three reasons:*

→ *This version of MusixTEX won't work as desired, since it does not contain musixflx.exe*

→ *It may be an outdated version*

→ *It will be installed in the texmf tree where any customisations you choose to undertake may be overwritten if you decide to upgrade to a more recent version of MiKTEX later.*

To end up with a working MusixTEX installation, your best bet is to install a "Small" MiKTEX and then add MusixTEX manually according to the procedure described in this document. If you later find that you need some of the things in the "Total" MiKTEX package, it's easy to add them using the "Packages" tab of the MiKTEX Options dialogue. However, if you allow Setup to install its incomplete MusixTEX version in texmf, you will have to remove it manually – or manually replace it with a working installation and run the risk of having it overwritten during a subsequent MiKTEX upgrade.

3. Accept the option to install a shared MiKTEX environment. (This is the default setting.)
4. Accept `c:\texmf` as the installation folder unless you have a good reason to put your MiKTEX installation somewhere else. Ditto in the next screen for the shortcut folder name.
5. If you are installing a TEX package for the first time, you must create a localtexmf tree. If you like – for instance, if you prefer to keep your personal data files on a separate partition – you can create the localtexmf tree on a different partition from the texmf tree. Alternatively, just accept the default path and directory name for the localtexmf tree.
6. Accept the default option not to incorporate existing texmf folder trees. You don't have any if you're installing a TEX package for the first time.
7. Click "Next" to start the installation process.

1.4. Making a local binaries directory

MusixTEX and related preprocessors come with their own .exe files, which must be placed in a directory where your operating system can find them. It's a good idea to create a separate directory to receive these files (as well as any other TEX-related executables you may find you need) rather than dumping them into c:\texmf\miktex\bin where they'll be all mixed up with the basic MiKTEX binaries and difficult to find again if you need to upgrade them.

To make a local binaries directory:

1. Create a new directory on your hard drive, e.g. `c:\texbin`.

2. Now tell Windows where it is. There are three different options for doing so:

    2.1. The old-fashioned way:
    Open your autoexec.bat and add the line: `set path=%path%;C:\texbin` . (This will preserve any pre-existing path statements in your autoexec.bat, but will also work if your autoexec is empty to start with.) Save the change and reboot.

    2.2. The Windows way: In Control Panel, open the System Properties dialogue box. Select the Advanced tab and click on *Environment Variables.* You will see a dialogue box in which you can edit the User Variables and the System Variables.

    If you want your local binaries directory to be accessible to all users on your computer, you need to edit the *Path* statement in the System Variables. To do so, select the *Path* variable in the System Properties list and click *Edit.* (You will notice that MiKTEX has already added `c:\texmf\miktex\bin` to the System Path.) In the *Variable Value* text box, place the cursor at the end of the Path entry and add the string `;c:\texbin`. Click OK as often as necessary to exit System Properties. You do not need to reboot for the change to become effective.

Note: *If tampering with the System Path makes you nervous, you might want to select the entire System Path string and copy it into a text file before you make your change, so that you can restore the original entry if anything goes wrong. But don't be overly scared – even if you make a complete mess of the Path statement, your computer won't come to a grinding halt. Windows won't be able to find command-line programs any more, but the operating system as such will still function.*

    2.3. If you are the only person using your computer and/or if you have a strong aversion to altering the System Path, you can create a User Path instead. To do so, click *New* below the list of User Variables. In the *Variable* text box, enter the word `Path`. In the *Variable Value* text box, enter the string `c:\texbin`. Click OK as often as necessary to exit System Properties. You do not need to reboot for the change to become effective.

2. MusixTEX and friends

2.1. Where to get them

2.1.1. MusixTEX

You can obtain MusixTEX from the software pages of the Icking Music Archive (http://icking-music-archive.org/software). Look for a file called musixtex.zip.

2.1.2. Additional packages

In addition to basic MusixTEX, a package of extensions and preprocessors is available which you may find useful or even indispensable for your music typesetting. All these add-ons are now bundled in the archive muswin.zip, which is also available from the software pages of the Icking Music Archive and which contains the following packages:

- **musixlyr**, for typesetting vocal music with lyrics
- **musixser**, which offers the option of entering music one voice at a time
- **PMX**, a preprocessor for MusixTEX which simplifies the process of music coding
- **M-Tx**, a preprocessor for **PMX** which includes the option of entering lyrics
- the **psslur-K** archive containing utilities for Postscript slurs.

2.2. Installing

1. Use your favourite unzipping tool to unpack **both** musixtex.zip and muswin.zip into **the same** temporary directory, for example `c:\musixtemp`.

2. Unzipping muswin.zip yields several subsidiary zip archives: pmx*.zip, mtx*.zip, musixser*.zip, musixlyr*.zip, and psslur-k.zip. Unzip each of these archives into `c:\musixtemp`.

You should now find that several new subdirectories have been created in your temporary directory: `bin`, `doc`, `dvips`, `metafont`, `pmxab`, `prepmx`, `scor2prt`, `tex`, and `tfm`.

3. In your localtexmf tree, create a series of subdirectories to receive MusixTEX files.

   3.1. In `localtexmf`, create a subdirectory called `tex`. In `tex`, create a subdirectory called `generic`. In `generic`, create a subdirectory called `musixtex`. You should now have a directory path that looks like this:

   `c:\localtexmf\tex\generic\musixtex`.

   (**Note:** *Strictly speaking, you can skip the directory "generic" if you like. I put it in for the sake of tradition and symmetry – it reflects both the structure of the local texmf tree under previous versions of MiKTEX and the structure of the texmf tree under MiKTEX 2.1. What is crucial is that the "musixtex" directory MUST be located below the* `localtexmf\tex` *folder for TEX to be able to find the MusixTEX macro files.*)

   3.2. In `localtexmf\fonts\source`, create a subdirectory called `public`. In `public`, create a subdirectory called `musixtex`. You should now have a directory path that looks like this:

   `c:\localtexmf\fonts\source\public\musixtex`.

   3.3. In `localtexmf\fonts\tfm`, create a subdirectory called `public`. In `public`, create a subdirectory called `musixtex`. You should now have a directory path that looks like this:

   `c:\localtexmf\fonts\tfm\public\musixtex`.

   3.4. In `localtexmf`, create a subdirectory called `doc`.

4. Move the MusixTEX files from your temporary directory to their destined locations.

   4.1. Move all *.exe files from `c:\musixtemp\bin` to your local binaries directory if you created one while installing MiKTEX. If you prefer not to use a local binaries directory, move the *.exe files to `c:\texmf\miktex\bin`.

   4.2. Move all *.tex and *.sty files from `c:\musixtemp\tex` to `c:\localtexmf\tex\generic\musixtex`.

   4.3. Move all *.mf files from `c:\musixtemp\metafont` to `c:\localtexmf\fonts\source\public\musixtex`.

   4.4. Move all *.tfm files from `c:\musixtemp\tfm` to

```
                   c:\localtexmf\fonts\tfm\public\musixtex.
```

    4.5. Move the file psslurs.pro from `c:\musixtemp\dvips` to `c:\localtexmf\dvips\base` (if this directory doesn't exist in your localtexmf tree, create it) .

    4.6. Move everything in the `c:\musixtemp\doc` directory to `c:\localtexmf\doc`.

5. Go to the MiKTEX Options dialogue and refresh the File Name Database to tell MiKTEX about all its beautiful new files.

6. Read the documentation.

MusixTEX, PMX, M-Tx, Musixlyr, Musixser and the Postscript slurs are now now installed and ready to use. There will be some files left over in your temporary directory, but you don't need any of them for running MusixTEX on a Windows platform.

3. Type 1 Fonts for MusixTEX

For creating PDF and Postscript versions of MusixTEX output, Type1 fonts frequently provide better results (and smaller output files) than the bitmapped fonts which are part of the regular MusixTEX package.

3.1. Where to get them

MusixTEX Type1 fonts are available from the software page of the Icking Music Archive in the file musixps.zip.

3.2. Installing

1. Unzip musixps.zip into a temporary directory. Make sure the directory structure remains intact when unzipping (check "Use folder names" in WinZip, type "unzip -a musixps.zip" if running pkzip).

When correctly unpacked, the Zip archive will yield three subdirectories: dvipdfm, dvips, and pfb. The first two directories will each contain a file called musix.map. The pfb directory will contain the Type1 font files. Of the files in the top-level directory, you should read the files *readme.txt* and *readme_mik.txt*. The batch files can be used to automate the installation process if you edit the settings for texmf, localtexmf and your local binaries directory to reflect the location of these directories on your system. You can also install the fonts by hand as follows.

2. Make sure that your texmf and localtexmf trees contain the following directories (if they don't exist, create them):

    1.1. `c:\localtexmf\fonts\type1\musixtex`

    1.2. `c:\texmf\dvips\config`

    1.3. `c:\texmf\dvipdfm\config`

2. Move the files from your temporary directory to their destined locations.

    2.1. Move all *.pfb files to `c:\localtexmf\fonts\type1\musixtex`.

    2.2. Move the file musix.map which is in the "dvips" subdirectory of your temporary directory to `c:\texmf\dvips\config`.

    2.3. Move the file musix.map which is in the "dvipdfm" subdirectory of your temporary directory to `c:\texmf\dvipdfm\config`.

3. Edit the config files.

    3.1. In `c:\texmf\dvips\config`, open `config.ps` in a text editor and add the line:

        `p +musix.map`

    3.2. In `c:\texmf\dvips\config`, open `config.pdf` in a text editor and add the line:

        `p +musix.map`

    3.3. In `c:\texmf\dvipdfm\config`, open the file `config` in a text editor and add the line:

```
f musix.map
```
    4. Refresh the MiKTEX File Name Database.

4. Upgrading an existing MusixTEX installation

To upgrade an existing MusixTEX installation, download the latest version of MusixTEX from the same place you got your previous versions and unzip to a temporary directory. Then simply overwrite the old MusixTEX files with the new ones, following the same procedure (described in II.2 above) as when you installed the package for the first time.

5. Writing MusixTEX source files

To create input files, all you really need is a text editor. However, there are many TEX editors (a.k.a. TEX shells) available that make the job a bit easier by providing syntax highlighting, toolbar buttons for easy access to TEX executables, etc. Many of these are preconfigured for MiKTEX by default. Some of them are even freeware.

Browse the links at http://www.miktex.org/links.html as a starting point to find a TEX editor you like. Some of the more popular ones are WinEdt (many bells and whistles; nagware after 30 days), TeXnicCenter (many bells and whistles; freeware), and WinTEX2000 (not quite as many bells and whistles, but more than enough for MusixTEX; easier to customise than WinEdt; timeware: locks up after 30 days' free trial).

Notes on the typesetting:

This document was typeset using TEX (as distinct from LaTEX) and my personal stylesheet containing Palatino font commands and predefined Heading, Body Text and auto-numbered List styles. The table of contents was generated using the macros in the eplain add-on macro package, slightly adapted for automatic numbering and Palatino fonts.

I will be happy to make the stylesheet file available to anyone who is interested.