

4TEX 3.20 a technical note

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Introduction

With the release of the CD-ROM there will also be a new release of the 4TEX workbench (version 3.20). In this note I will try and explain what will be different from the earlier versions (e.g. installed with 4allTEX).

All changes are such that a novice 4TEX user wouldn't see the difference. I.e. the updates are all more or less of a technical nature. This note is therefor for those people who want to know more about the inside of 4TEX and perhaps want to (or need to) change the batchfiles to suit their own preferences. This note will be far from complete but is a first attempt to make some kind of technical reference.

lastdrive=t:

The most important update (we considered this a giant step forward for 4TEX) is that it is now no longer necessary to add the line LASTDRIVE=T to the `config.sys`. This means that 4TEX no longer uses the SUBST or MAP command. This solves many problems for those who want to use 4TEX and also have a network attached to their PC. Instead of using the driveletter T:, we have introduced the environment variable EMTEXDIR. This variable indicates where the root directory of the emTEX system will be (e.g. EMTEXDIR=C:\EMTEX) and is defined in the file `texuser.set`. Because of making 4TEX T: drive independent, the configuration files (`system.set` and `texuser.set`) changed a bit and the Qedit editor macros need to be recompiled. People who install the new 4TEX only need to run a batch file (`inst4tex`) and all the necessary things for a 4TEX installation will be done automatically. So, even the installation becomes simple (on my computer the installation of 4TEX from CD-ROM only takes 45 seconds). People who want to use Graphic Work Shop (GWS) have to install the program and specify the path where to find GWS. This is done by running the installation program `gwsinst.exe`.

emTEX version 11 and DVIxxx version 1.5a

Of course we integrated the new emTEX releases, i.e. beta 11 versions of the TEX compilers and the 1.5a DVI drivers. This means even more printers to select and more advanced features within 4TEX. E.g. the TFM files and TEXINPUT style files can be stored in several subdirector-

ies and with emTEX version 11 it is possible to scan a directory and all its subdirectories simply by adding an '!' to your variable. I.e. `TEXINPUT=C:\EMTEX\TEXINPUT!` will scan `C:\EMTEX\TEXINPUT` and all its subdirectories. Note that this directory expansion is not yet available for the METAFONT programs. With 4TEX we have also made it possible to add directory expansion to several METAFONT variables (e.g. MFINPUT variable), however, this expansion shouldn't be to long. To use this feature you have to set the variable `EXPANDDIR=Y` in the `tex-user.set`. 4TEX will use the batch file `expand.btm` to add all subdirectories of the directories with an '!', and will give a warning when the variable becomes to long.

Utilities

With 4TEX version 3.20 it also becomes possible to add your own utilities to the 'run Utility' option of the main menu. This can be simply done by adding a batch file (.btm) in the directory `\EMTEX\BTM\UTILS`. The first line of the batch file is displayed in the 'utility selection' menu. We advise you to make the first line of your batchfile a comment string (e.g. the first line could look like `: Start my own utility`). After this you can do whatever you like. Do not forget that when you run batchfiles within your batchfile they should be proceeded with the CALL statement. Just take a look at all those utilities already available and making your own utility should be simple. Of course you can add, modify and run user specific utilities by pressing the F5 key anywhere in 4TEX.

Printers and viewers

Adding a new printer or viewer type is really simple. You only have to create a file in the directory `\EMTEX\PRNDEST` specifying the printer and some configuration settings and the printer can be selected from the output menu. Just take a close look at the file `\EMTEX\PRNDEST\EXAMPLE` and you see all the possibilities. After looking at several printer definitions, you can easily make your own. Remember that printer definitions have the file extension .prd. The first line of the printer definition is displayed when you want to select a printer in the output menu. To add a viewer type, just create a file with the extension .vie containing only one line

with the description of the viewer type. This description is displayed in the selection menu and for definitions and variable settings, the printer definition with the same name as the viewer definition is used.

Format files

In the directory `\EMTEX\FORMATS` you will find all kinds of format files that can be generated with 4TEX. The CD-ROM, for instance, contains 31 format files, ready to use. If you want to add your own format, or change an existing one, here's how to do it. The utility `FORMATS` will look in the `\EMTEX\FORMATS` directory for files with the extension `.for`. These files are used within 4TEX to generate a format. As an example we will discuss the `lplain.for` file:

```
% lplain           : LaTeX + Babel
% format options   :
lplain
babel.hyp
lfonts.old
\dump
```

The first line contains the name of the format file to be generated (the % sign is a comment sign and the whole line after the % is ignored by `iniTEX`) and the description

of that format file. In this case `lplain` is the `LaTeX` format and the description will be 'LaTeX + Babel'. The second line contains the `iniTEX` format options necessary to generate the format. This will often be empty but some languages (e.g. Cyrillic or Greek) need specific `iniTEX` settings. After these two lines the rest of the file contains the commands that are given within `iniTEX` to generate the format. In this case the file `lplain.tex` is used for the format definition and after a while this file wants to load the hyphenation file. Because it will not find the specified `hyphen.tex`, `iniTEX` will prompt for another hyphenation file. In this case the file `babel.hyp` will be used to specify the hyphenation patterns to be loaded. After a while `iniTEX` will prompt for the font definition file and `lplain.for` will use `lfonts.old`. After this the command `\dump` will create the format file. After the format file creation, 4TEX will create a format selection file `\emtex\compiler\lplain.frm` with all the settings necessary for choosing the format. 4TEX will also store the newly created format file in the appropriate directory (`\EMTEX\TEXFMTS` or `\EMTEX\BTEXFMTS`).

Knowing about the `.for` files also explains how 4TEX knows which formats are available and how to generate them.