teTEX Manual

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Abstract

teTEX is a distribution of TEX and related programs: pdfTEX, e-TEX, Omega, LATEX, ConTEXt, METAFONT, METAPOST, `dvips`, `xdvi`, `dvipdfm`, BIBTEX, `makeindex` etc.

teTEX aims to make using and maintaining a TEX system as easy as possible. The programs are built around the Web2c distribution by Karl Berry and Olaf Weber. A common part of many programs is `kpathsea`, a library that provides efficient access by name to files stored hierarchically.

This document describes how to use and set up the teTEX system. It does not attempt to be a comprehensive guide, instead it tries to give an overview about what software and documentation is contained in the distribution.

Contents

1 The Components of teTEX

This document cannot describe all the programs which are part of teTEX in detail, but it tries to give you an overview. This section describes the packages which form the main components of teTEX. At several places, the "main texmf tree" and the "documentation tree" are mentioned. These are the directory trees below the directories whose names are given by the commands `kpsewhich -expand-var='$TEXMFMAIN'` and `kpsewhich -expand-var='$TEXMFMAIN'/doc`, respectively.

1.1 Web2c

Web2c is a TEX implementation, originally for Unix, but also running under Windows, Macintosh, DOS, Amiga, and other operating systems. It includes TEX itself and the following programs:

- METAFONT: a font compiler intended to produce typefaces of high quality [1].
- METAPOST: a program similar to METAFONT, modified to output Postscript code instead of bitmaps. Documentation for METAPOST is available via the command: `texdoc mpman`.
- BIBTEX: a preprocessor to make bibliographies for LATEX. For documentation, see `texdoc btxdoc` and Appendix B of [2].
- utilities for converting between different font metric and bitmap formats: `gftopk`, `gftodvi`, `gftype`, `pktogf`, `pktype`, `pltotf`, `tftopl`, `vftovp`, `vptovf`.
- DVI utilities: `dvicopy, dvitomp, dvitype`.
- other tools: `patgen`, `pooltype`, `tangle`, `weave`.

Note that some default settings of "`tex`, the Web2C implementation of TEX" have changed. We determined that some extensions were in fact in conflict with the strict definition of TeX as laid down by Knuth.

The most notable change is that parsing of `%&` constructs in the first line of an input file is now disabled by default – it can be enabled in `texmf.cnf` if you desire this. In that case, tex will announce itself as "TeXk" and print an additional banner line saying that `%&`-line parsing is enabled.

We may encounter more places where the default behaviour is not what it should be, and proceed to make this optional (and by default off) in future versions of Web2C.

The main documentation for Web2c is the "Web2c manual" and the "kpathsea manual". These can be accessed via `texdoc web2c` and `texdoc kpathsea` respectively.

1.2 TEX extensions: pdfTEX, e-TEX and Omega

Besides the standard TEX program, the following extensions to TEX are included in teTEX:

pdfTeX This can optionally write Acrobat PDF format instead of DVI. The user manual can be accessed by the command `texdoc pdftexman`. The LaTeX hyperref package (`texdoc manual`) has an option "pdftex", which turns on all the program features. pdfTeX supports graphics inclusion for the following graphic formats:

- PNG (portable network graphics)
- PDF (portable document format),
- JPG (jpeg)
- MPS (metapost output)

It does not support EPS (encapsulated postscript), but if you have recent versions of `ghostscript` (version 5.10 or later) and `perl` (version 5 or later) installed, you can use the tool `epstopdf` to convert EPS graphics into PDF. When including a PDF file, pdfTeX is able to access parts of a multi-page file: a complete page or a clipped part of a page. This feature extends pdfTeX beyond its typesetting capabilities into a versatile tool for handling arbitrary generated PDF files.

e-TeX adds a small but powerful set of new primitives, and an extension for right to left typesetting. In default mode, e-TeX is 100 % compatible with ordinary TeX. See `texdoc etex-man` for details.

Omega (Ω) Omega works internally with 16-bit Unicode characters; this allows it to work directly with almost all the world's scripts simultaneously. It also supports dynamically loaded "Ω Translation Processes" (OTPs), which allow the user to define complex transformations to be performed on arbitrary streams of input. Documentation: `texdoc doc-1.12`.

1.3 DVI drivers: dvips, dvilj, xdvi, dvipdfm

For printing and previewing DVI files, you need to use one of the DVI drivers that are available:

dvips This driver converts DVI files into Postscript. Postscript is a page description language that many laser printers directly support. With the help of the utility `ghostscript`, it is possible to view Postscript documents on screen and to print Postscript documents on non-Postscript printers. This version of `dvips` supports hypertex and partial font downloading. In this release, the search path for config files have been changed: the current directory is no longer searched by default. Additionally, secure mode has been turned on by default. For details, consult the documentation: `texdoc dvips`.

dvilj This is a family of drivers to support HP LaserJet (and compatible) printers: `dvilj, dvilj2p, dvilj4, dvilj4l, dvilj6`. These drivers are faster than the `dvips + ghostscript` alternative (which can also be used to print DVI files on HP LaserJet printers), but they lack a few features like support for virtual fonts, rotated or scaled graphics, etc.

xdvi This is a previewer for DVI files under the X Window System. It has support for Postscript specials through Display Postscript, NeWS and `ghostscript`. Hypertex support was also added for this version of `xdvi`. A link can be followed by clicking with Button-1 or Button-2 (open link in a new window) on it. With the help of source specials, xdvi can interact with most editors in some way. For details, visit the project page.

dvipdfm This program can convert dvi files into pdf format, while supporting a rich set of features (via TeX's \special scheme): hyperlinks, bookmarks, thumbnails, image inclusion etc. For details consult the documentation `texdoc dvipdfm` and the web page.

1.4 Makeindex

`makeindex` is a general purpose hierarchical index generator; it accepts one or more input files (often produced by a text formatter such as TeX or `troff`), sorts the entries, and produces an output file which can be formatted. The formats of the input and output files are specified in a style file; by default, input is assumed to be an `idx` file, as generated by LaTeX. Documentation: `texdoc makeindex`

1.5 Texinfo

`texinfo` is a documentation system. It produces online or printed output from a single source. It uses TeX to typeset documents for printing (`texdoc texinfo`).

1.6 UNIX Scripts / Tools

If you are using teTeX under UNIX, you can use the following scripts. More documentation for a specific tool can either be obtained from its UNIX manual page or by running the program with the option `-help`.

texdoc allows you to easily access documentation included with teTeX. You only have to remember the file name of the document that you want to access, without the directory part. If you do not specify a file name extension (such as `.dvi`) `texdoc` will try a few default extensions. After searching the file, `texdoc` starts an appropriate viewer. The command `texdoc -help` gives you a list of available command line options. While `texdoc` is a fast and efficient tool if you exactly know what you are searching for, it is of limited use if you don't know the exact name of the documentation file.

texdoctk This `perl/tk` based tool allows you to browse through the available documentation by some topics and to search for keywords. It uses a simple database file for its configuration (named `texdoctk.dat`), which you can customize and extend easily.

texconfig allows you to carry out the most common configuration tasks in teTeX. The program can be used in command mode or in interactive mode. For the interactive mode (which is invoked by calling `texconfig` without arguments), a curses based utility is used for user interaction (menus, check boxes, ...). The command `texconfig -help` shows you a list of available command line options (command mode).

`texconfig` can be used to set up TeX format files and their hyphenation patterns, to set up printers (for `dvips`), to set preferences for automatic font generation, to set up the default resolution for previewing (for `xdvi`) and for a few other things. It manipulates configuration files to store the configuration changes.

updmap Some tools in teTeX support Postscript Type 1 fonts: `dvips`, `pdfTeX`, `xdvi`, `dvipdfm` and `gsftopk`, `ps2pk`. The last two in this list just convert outline fonts into a bitmap format which is helpful for applications that don't directly support outline fonts. In an ideal world, all of these programs would share a common configuration file to set up their outline fonts. The reality is different, however, and each tool needs its own configuration. The `updmap` utility was developed to generate these configuration files from a central repository. Adding font definitions for all supported applications from a map file `foo.map` can be as easy as `updmap --enable Map foo.map`. For details, please consult the manual page of `updmap`.

dvired This script can be used to print documents formatted for A4 paper 2-up (i.e. two logical pages to one physical page of paper) by scaling the pages to 70.7 % of their original size. `dvired` can just be used in the same way as `dvips` (same command line options).

dvi2fax This script converts DVI files into FAX G3 format. It uses `ghostscript` (see: `http://www.cs.wisc.edu/~ghost/`) which is not part of teTeX. The DVI file is first converted to Postscript (204×196 dpi or 204×98 dpi) and then to FAX G3 using `ghostscript` (`faxg3` device).

allcm, allec, allneeded teTeX's DVI drivers generate missing bitmap fonts on demand (the first time they are needed). If you start with a fresh installation, you don't have any bitmap fonts and the delay caused by font generation might be too annoying for you. In that case, the three scripts `allcm, allec and allneeded` can help you. `allcm` and `allec` create a few DVI files (using LaTeX) which use lots of fonts at various sizes and run these DVI files through `dvips`. This triggers the generation of the most commonly used Computer Modern (`allcm`) and European Computer Modern (`allec`) fonts respectively. You might already have DVI files and want to generate just the bitmap fonts needed by these documents. This can be done by the `allneeded` script. This script will search a given set of directories for DVI files and run them through `dvips`. All these scripts just trigger font generation. LaTeX and DVI files generated by `allcm/allec` are removed when the program terminates. Postscript output that is generated by `dvips` is sent to `/dev/null`.

These programs accept the command line option "`-r`" (must be the first option) to generate files for the magnification 707/1000 which is used by `dvired`. `allneeded` passes options which correspond to existing file or directory names to `find` (for locating DVI files). All other options given to any of these three utilities are passed to `dvips`. So, by passing `-D` *`NNN`* `-mfmode` *`some-mode`* or `-P` *`some-printer`*, you can generate fonts for a specific resolution (*`NNN`*) and mode (*`some-mode`*) or for a specific printer (*`printer`*).

fontimport This script can be used to import TFM (TeX Font Metric) and PK (Packed Bitmap) files to their proper location in teTeX's font tree.

2 Concepts and configuration

2.1 The TeX Directory Structure (TDS)

teTeX's support tree with fonts, macros, documentation and other files (from now on called the "main texmf tree") follows a certain structure: the TeX Directory Structure (TDS). This is a standard developed by a TeX Working Group of TUG. The TDS is defined in a way so that can be used by different implementations of TeX on different platforms. Today, several TeX distributions follow this standard: teTeX, TeX Live, fpTeX and miktex, only to mention some. You need to understand this structure if you want to build your own texmf tree (e.g., with all your local additions) or add files into an existing texmf tree. The list of all texmf trees (optionally using some notation called "brace expansion" and `!!` modifiers; the kpathsea manual explains this in detail) can be obtained by:

```
kpsewhich -expand-var='$TEXMF'
```

Table 1 gives a short overview of the TDS. It shows the proper location inside the TDS tree for several kind of files. The complete documentation for TDS can be accessed by `texdoc tds`. If you want to see some examples, just look at the main texmf tree of teTeX. It has several thousand files.

TeX macros	tex/⟨*format*⟩/⟨*package*⟩/
font files	fonts/⟨*type*⟩/⟨*supplier*⟩/⟨*typeface*⟩/
METAFONT files	metafont/⟨*package*⟩/
documentation	doc/⟨*package*⟩/
sources	source/⟨*package*⟩/
BibTeX files	bibtex/{bst,bib}/⟨*package*⟩/

Table 1: TDS: an overview

The replaceable parts in this table mean:

⟨***format***⟩ The name of the TEX format, e.g., `latex` or `amstex`.

⟨***package***⟩ The name of the package to which the file belongs, e.g., `babel` or `seminar`.

⟨***type***⟩ The name of the type of a font file, e.g., `pk` (packed bitmap), `tfm` (tex font metric), `afm` (adobe font metric), `vf` (virtual font), or `source` (METAFONT source).

⟨***supplier***⟩ The name of the font supplier (to whom the font file belongs), e.g., `adobe` or `urw`.

⟨***typeface***⟩ The name of the typeface name (for this font file), e.g., `times` or `cm` (for Computer Modern).

It is important to know that the default search paths in teTEX rely on this directory structure. So, if you add a file to the wrong directory tree, e.g., a TeX macro somewhere in the `fonts` subtree, that file will not be found correctly.

2.2 The file name database (ls-R)

texmf trees can get very large and to speed up searching in such a tree, a file name database is used. A file name database exists in the root of each texmf tree and has the name `ls-R`. It should list each file in the texmf tree. The command `texhash` can be used to build an up-to-date file name database for each texmf tree. It should be used after files have been added to a texmf tree. However, you don't need to run `texhash` for files added by the automatic font generation or the `texconfig` utility.

2.3 Runtime configuration (texmf.cnf file)

Search paths and other definitions (e.g., the static sizes of some arrays in TEX or other programs) can be set up in configuration files named `texmf.cnf`. By changing the definitions in these configuration files (teTEX's main `texmf.cnf` is `web2c/texmf.cnf` in the main texmf tree), the behavior of programs can be changed without recompiling them. Chapters 3 and 4 of the kpathsea manual (`texdoc kpathsea`) describe the path searching configuration in detail. Section 2.5 of the Web2c manual (`texdoc web2c`) describes some interesting runtime parameters that you might want to change.

Some changes to the array sizes require you to rebuild the dump files that the program uses. Run the command `texconfig init` to rebuild all dump files after you have changed one of the array sizes.

This implementation of TEX can read and write files (as can every implementation of TEX) and it can also call external commands (via the `\write18` stream). Some variables in the `texmf.cnf` file control access to these features. The possibility to call external commands can be turned on or off (default is off). Access to file beginning "`.`" is disallowed in restricted mode (default for reading files). In paranoid mode, file access is even more restricted and you cannot access files outside the current directory tree (default for writing files). If the first line of a document starts with `%&`, it can be used to pass the name of the format file and/or a TCX file. Parsing the first line, is an extension that can be turned on or off (default is off) in the `texmf.cnf` file.

2.4 Using Postscript type 1 fonts

For every font you use with TeX, a TFM (TeX font metric) file is needed. Type 1 fonts usually do not have the same encoding that is used by TeX, so additional metrics that do some re-encoding (virtual font files) are often needed. For a lot of font families, these font metric files and additional map files that you need (see below) can be found on CTAN servers in the directory `fonts`. If support for your fonts cannot be found there, you can use the `fontinst` utility (documentation: `texdoc fontinst`) to create these.

Postscript type 1 fonts can be used by `dvips`, `dvipdfm`, `xdvi`, `gsftopk`, `ps2pk` and pdfTeX. All of these programs require that you set up map files for these fonts. To ease the process of adding map file entries to the configuration files that are used by these tools, you should follow the following steps:

- if your fonts already come with a map file, put that file into the `dvips/misc` directory in the main texmf tree.
- otherwise, you will need to create a map file yourself, using the syntax as described in the dvips manual (`texdoc dvips`); make sure to set up these fonts as "download fonts", not as "built in" fonts.
- run the command `texhash` and then make the map file known to `updmap` by running the command `updmap --enable Map file.map` (where `file.map` denotes the filename of your map file)

The programs `gsftopk` and `ps2pk` convert Postscript type 1 fonts into bitmap fonts and make these fonts accessible to DVI drivers that do not directly support Postscript type 1 fonts. This conversion is automatically invoked by the `mktexpk` script. That script calls `gsftopk` by default. If you do not have installed the `ghostscript` program (which `gsftopk` needs), or if you want to use `ps2pk` for other reasons (e.g., because it is usually faster) you just need to define the variable `ps_to_pk` to `ps2pk`. This variable can be set in your environment or in the `mktex.cnf` file (see below).

2.5 Configuration files maintained by texconfig

The `texconfig` utility is a user interface for changing the configuration of the teTeX system. The configuration is stored in several files. This section documents the names of the configuration files, their location in the texmf tree and their content. This explains how `texconfig` works and enables you to manually configure parameters which are not supported by `texconfig`.

If the variable `$VARTEXMF` is set (in a `texmf.cnf` file or in the environment), its value is used as the name for a directory which holds the files that `texconfig` generates. `texconfig` also checks for the existence of each of the configuration files in the `$VARTEXMF` tree and copies missing files from the main texmf tree. When a `$VARTEXMF` tree is used, only the configuration files in that texmf tree are modified; those in the main tree remain unchanged.

- `tex/generic/config/language.dat`, `tex/context/config/cont-usr.tex`, `etex/plain/config/language.def` are files which are used to set up the hyphenation tables for format files. The `language.dat` file is read by all format files which use the babel package to set up their hyphenation, `language.def` is used by e-TEX's `etex` format and `cont-usr.tex` is used by the ConTEXt formats. After changing one of these three files, you need to rebuild the format files by using the command `fmtutil --all`

- `dvips/config/config.ps` stores configuration information for `dvips`. The default values are: 600 dpi resolution; ljfour METAFONT mode; A4 paper; offset for printing: 0pt,0pt; output goes to `lpr` command.

- `dvipdfm/config` defines the defaults for `dvipdfm`, e.g. the default paper size, the command to convert encapsulated postscript graphics into PDF etc.

- `pdftex/config/pdftex.cfg` This file defines the defaults for pdfTEX, e.g. the default paper size, compression level etc.

- `web2c/updmap.cfg` controls how `updmap` generates map files for all supported tools. Besides some general parameters, all active map files are listed here.

- `xdvi/XDvi` This file sets some defaults for `xdvi`. It is read via the app-default mechanism of X11. You can override these app-defaults as usual (i.e. via a file `~/.Xdefaults` or with resources managed by `xrdb`). The file sets the following defaults: 600 dpi resolution; ljfour METAFONT mode; A4 paper; initial shrink factor of 8; Netscape as the web browser; "thorough" handling of overstrike characters. The manual page `xdvi(1)` explains all of these and other parameters that can be set.

- `web2c/fmtutil.cnf` This file defines which format files are built (and how) and which file can be used to customize the hyphenation patterns that are loaded into these formats. The programs `fmtutil` and `texlinks` (which are automatically called if the formats are set up via `texconfig`) operate on this file. `fmtutil` can be used to create the format files according to the "rules" defined in `fmtutil.cnf` (for a brief description, just call `fmtutil --help`). If you define a new format file, you usually also need a symbolic link with the name for the format to the appropriate TEX engine (e.g., `latex` → `tex`). To create these links, just call the `texlinks` script.

- `web2c/mktex.cnf` This file is used by the scripts for automatic font generation. It sets some defaults for `mktextfm` and `mktexpk`: 600 dpi resolution; ljfour METAFONT mode and it defines which of the following "features" are used:

  appendonlydir Set the sticky bit on directories that have to be created. The sticky bit has the effect that a file in such a directory can only be removed by the owner of that directory or by the owner of that file.

  dosnames Use 8.3 compatible names for font files, e.g., `dpi600/cmr10.pk` instead of `cmr10.600pk`.

fontmaps Instead of deriving the location of a font in the destination tree from the location of the sources, the aliases and directory names from the Fontname distribution are used.

nomfdrivers Let `mktexpk` and `mktextfm` create METAFONT driver files in a temporary directory. These will be used for just one METAFONT run and not installed permanently.

nomode Omit the directory level for the mode name; this is fine as long as you generate fonts for only one mode.

stripsupplier Omit the font supplier name directory level.

striptypeface Omit the font typeface name directory level.

varfonts When this option is enabled, fonts that would otherwise be written in the system texmf tree go to the `VARTEXFONTS` tree instead. The default value is in `/var/tmp/texfonts`. The "Linux File System Standard" recommends `/var/tex/fonts`.

The `varfonts` setting in `MT_FEATURES` is overridden by the environment variable `USE_VARTEXFONTS`: if set to 1, the feature is enabled, and if set to 0, the feature is disabled.

If you use the `varfonts` feature, you can forbid public write access to the fonts subdirectory in the main texmf tree by removing write permissions for "world". This can be done by the command `texconfig fonts ro`

2.6 TCX files

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).

teTeX has the TCX files `il1-t1.tcx` and `il2-t1.tcx` which 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.

All TCX files that are distributed as part of teTeX can be found in the web2c subdirectory of the main texmf tree; their file name extension is `.tcx`.

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`*. Note, however, that parsing the first line of an input file in an extension that is disabled by default and has to be turned on via command line switch (`-parse-first-line`) or in the `texmf.cnf` file (see section 2.3).

When using TCX files, you usually must not use LaTeX's `inputenc` package. The TCX file `cp8bit.tcx` is an exception to this rule. The map defined in that file is the identity, i.e. the characters are all mapped to their original position. The purpose of this TCX file is not the mapping it describes, but the side-effect that all characters (even those with positions above 127) are considered to be printable and can be written to the terminal and into log files.

2.7 Creating PDF files

If you want to create PDF documents with the help of TeX, there are at least three different ways to do this

1. translate your TeX sources directly into PDF by using pdfTeX.
2. translate DVI files generated by TeX into PDF by using the `dvipdfm` program (now included in teTeX).
3. translate a Postscript file generated by TeX and `dvips` into PDF by using Adobe Acrobat or the `ps2pdf` utility included in ghostscript.

When using `ps2pdf`, you should make sure to use at least version 6.50 of ghostscript. Earlier versions are known to have serious restrictions on creating PDF output.

No matter which approach you use, there is one common rule when creating quality PDF files: you should avoid bitmap fonts. They just display very poorly when used in PDF documents.

Using only the fonts provided by teTeX, you have more choices for which fonts to use. The following typeface families are included in Postscript type 1 format:

- Computer Modern and the AMS fonts (extended versions with polish, czech and slovak and russian letters are available, too)
- the full set of the 35 basic "LaserWriter fonts" (see psnfss documentation, supporting other fonts are pazo, tx/px fonts)
- Bitstream Charter

The EC fonts are not freely available in type 1 format. But, if you have a LaTeX document that uses EC fonts, you usually have three ways to get around this problem. The first is to stop using EC fonts—which normally means a switch back to Computer Modern. Usually, the EC fonts are activated by `\usepackage[T1]{fontenc}` or `\usepackage{t1enc}` and you just have to remove that code from your file. The second is to use the AE fonts, which are a set of virtual fonts that map from the Computer Modern fonts to (nearly) all characters of the EC fonts. This can be done by adding `\usepackage{ae}` to your document. The third is to use the CM-SUPER Type 1 fonts, not included in teTeX, but available on CTAN servers in the directory `fonts/ps-type1/cm-super`. This package is pretty huge, but it contains all EC fonts in outline format and much more.

3 Resources

This section describes where you can find further (or more up-to-date) material and support in the world of TeX.

3.1 Helpindex file for the documentation tree

The file `newhelpindex.html` in the root of teTEX's documentation tree is a guide for the documentation that is included in teTEX. It is a good point to start when you want to browse through the documentation or search for the solution of a specific problem.

3.2 Internet Newsgroups

If you encounter a problem which might not be teTEX specific, but rather a general problem with TEX or LATEX (e.g., "How can I format a section heading in a different way?"), you should not raise your question on one of the mailing lists for teTEX. In the following newsgroups, TEX-related matters are discussed:

comp.text.tex General things about TEX.

news.answers FAQs (also TEX-related FAQs).

comp.answers FAQs (also TEX-related FAQs).

de.comp.text.tex General things about TEX (German).

fr.comp.text.tex General things about TEX (French).

comp.fonts Font matters.

comp.programming.literate Literate programming.

3.3 TEX User Groups

If you enjoy TEX, you can join a TEX user group to get support and software and help the TEX community by your membership. The web site of the TEX User Group (TUG), `http://tug.org/` has the necessary contact information for several TEX user groups.

3.4 Mailing Lists

All teTEX mailing lists are hosted on the same server which is managed by Majordomo software. Administrative requests, e.g., to (un)subscribe or to get an archive of a list are handled by the address: `majordomo@dbs.uni-hannover.de` To get a list of available commands that the Majordomo server understands, just send the message "help" to the server (in the body of a message, not in the header). The lists are:

tetex General discussions + bug reports about teTEX. General TEX matters that are not teTEX-specific are not discussed. Especially general questions about TEX should *not* be directed to this list; use a newsgroup instead.

tetex-announce This (moderated, low traffic) list is used for important announcements about teTEX, such as new releases or important updates.

tetex-pretest This is used to discuss beta versions of teTEX and to report bugs in these versions. Bug reports about official (non-beta) releases should not be send here, but to the `tetex` list.

Some of the packages which are contained in teTEX (e.g., Omega and pdfTEX) have special mailing lists or web resources on their own. The web site of TUG, `http://tug.org/` has links to many of them.

3.5 Comprehensive TeX Archive Network (CTAN)

To aid the archiving and retrieval of TEX-related files, a TUG (TeX User Group) working group developed the Comprehensive TEX Archive Network (CTAN). Each CTAN site has identical material, and maintains authoritative versions of its material. These collections are extensive; in particular, almost everything mentioned in this article is archived at the CTAN sites, even if its location isn't explicitly stated.

The CTAN sites are currently `dante.ctan.org`, `cam.ctan.org` and `tug.ctan.org`. The organization of TEX files on all these sites is identical and starts at `/tex-archive`. To reduce network load, please use the CTAN site or mirror closest to you. A complete and current list of CTAN sites and known mirrors can be obtained by using the `finger` utility on 'user' `ctan@cam.ctan.org` (it also works with the other CTAN hosts); it is also available as file `help/ctan/CTAN.sites` in teTEX's documentation tree.

3.6 The TEX Catalogue

This catalogue lists many TEX, LATEX, and related packages and tools. Most are available worldwide online from CTAN, the Comprehensive TeX Archive Network. Links are provided in this catalogue to available sources and documentation. The teTEX documentation tree contains a version of this catalogue in `help/Catalogue`. The most recent online version is available at

`http://datamining.csiro.au/tex/catalogue.html`

3.7 Frequently Asked Questions (FAQs)

Documents which list frequently asked questions and their answers (in short: FAQs) are collections of solutions to many common problems. The documentation tree of teTEX contains the teTEX FAQ in the directory `tetex` and several other FAQs in the directory `help/faq`:

UKTUG TEXFAQ This FAQ is maintained by the UK TEX Users Group.

TEX FAQ This is an old and currently unmaintained FAQ about TEX.

DANTE TEX FAQ This is a German FAQ maintained by members of the German TEX users group (DANTE).

LaTeX-FAQ-francaise This is a French FAQ about LATEX.

The teTEX FAQ can be read by the command `texconfig faq`.

References

[1] Donald E. Knuth. *The METAFONTbook*. Addison-Wesley, 1984.

[2] Leslie Lamport. *LaTeX: A Document Preparation System*. Addison-Wesley, 2nd edition, 1994.