Frequently Asked Questions*

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Frequently Asked Questions

This article[1] contains answers to some frequently asked questions on comp.text.tex. Please don't ask these questions again, as they've been answered many times before. Note that Guoying Chen (chenguo@spunky.cs.nyu.edu) posts the monthly document *Supplementary TEX Information* to this newsgroup containing other information and software relevant to TEX users but beyond the scope of this article.

This article includes answers to:

1. How can I get a copy of this article?
2. Where can I get a DVI to PostScript conversion program?
3. How can I include a PostScript figure in LATEX?
4. Where can I find a DVI previewer for machine Y running Q?
5. Where can I get the manual for PiCTEX?
6. What is VorTEX and where can I get it?
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33. How do I use BIBTEXwith plain TEX?
34. How do I draw Feynman diagrams in LATEX?
35. What is the New Font Selection Scheme (NFSS)?
36. In LATEX, my cross-references for floats (figures and tables) are incorrect. What's wrong?
37. I want to change the margins in LATEX. What can I do?
38. How do I find the width of a letter, word, or phrase in TEX?

These are all legitimate questions, but they seem to appear too frequently for long-time readers of the list.

Many of the answers below tell you that you can obtain something through anonymous ftp. *Ftp* stands for file transfer protocol, and is also the name of a program implementing the protocol. The program allows users to transfer files to and from remote sites, if the sites are connected via a network such as the Internet. *Anonymous ftp* indicates a user may connect to a remote site as the user *anonymous* with a password consisting of their email address, and thus be able to retrieve files from that site. Remember, anonymous ftp is a privilege and the system administrators for these sites have made these files available out of their own generosity. Therefore please restrict your ftp'ing to non-prime hours at the various sites.

*Version 1.37 for August, last changed 8/15/93.

[1] Deze bijlage bevat een recente versie van de 'Frequently asked questions' uit de Internet nieuwsgroep *comp.text.tex*. Het orgineel van dit artikel en ook de genoemde *Supplemantary TEX Information* zijn beschikbaar via *anonymous ftp* op *ftp.cs.ruu.nl*[131.211.80.17]. Ook is deze server bereikbaar als *mail*-server onder de naam *mail-server@cs.ruu.nl*. Behalve op deze server zijn veel TEX-zaken te vinden op een BITNET-machine in Nijmegen, te bereiken via het sturen van boodschappen naar *LISTSERV@HEARN.bitnet*. Ook is er sinds begin 1993 een *bulletin board* (**FGBBS**) operationeel waar zich veel TEX- en aan TEX-verwante programmatuur bevindt. Voor meer informatie zie elders in deze MAPS

I would like to acknowledge Don Hosek, Ken Yap, Tomas Rokicki, and Micah Beck, whose postings provided many of the answers. Joe Weening, Hal Perkins, Walter Carlip, Max Hailpern, Tad Guy, Raymond Chen, Henning Schulzrinne, Sebastian Rahtz, Mark James, Peter Galko, Mike Ernst, Rainer Schöpf, Oren Patashnik, Philippe Louarn, Rafal Zbikowski, Anita Marie Hoover, David Rhead, Darrell McCauley, Cameron Smith, Emma Pease, and Patrick McPhee provided additional material and criticisms. The format of this document is based on the Frequently Asked Questions appearing in comp.unix.wizards, and written by Steve Hayman. Any mistakes are mine. Send corrections, suggestions, and additions to bobby@hot.caltech.edu.

1 How can I get a copy of this article?

You're reading it aren't you? SAVE it :-). Seriously, though, this article is posted monthly to comp.text.tex and cross-posted to news.answers. It is therefore archived at any site that archives news.answers. News.answers is archived on rtfm.mit.edu (18.70.0.224), and this article is available there via anonymous ftp in the directory ./pub/usenet/news.answers/tex-faq. If you do not have anonymous ftp, send an e-mail message containing the lines *SENDME FAQ.* to fileserv@shsu.edu (fileserv@shsu.bitnet). Another way to retrieve it via email is through the mailserver at rtfm: send a message containing the lines *help* and *index* to mail-server@rtfm.mit.edu for information on how to obtain it.

Other news.answers/FAQ archives are: cnam.cnam.fr (163.173.128.6) in the anonymous ftp directory /pub/FAQ; ftp.uu.net (192.48.96.2) in the anonymous ftp directory /pub/usenet (also available via mail server requests to netlib@uunet.uu.net, or via uunet's 1-900 anonymous UUCP phone number); and ftp.cs.ruu.nl (131.211.80.17) in the anonymous ftp directory NEWS.ANSWERS (also accessible via mail server requests to mail-server@cs.ruu.nl). Many of the archives mentioned in question 22 also maintain current versions of this article.

2 Where can I get a DVI to PostScript conversion program?

Two very nice DVI to PostScript conversion programs that run under Unix are:

- **dvips** by Tomas Rokicki.
  This driver is very nice and has the ability to deal with virtual fonts. Available via anonymous ftp from labrea.stanford.edu (36.8.0.112) in ./pub. Dvips is written in C and ports easily to other operating systems. It is available for VMS via anonymous ftp from ymir.claremont.edu (134.173.4.23) in [.tex.drivers.dvips_new] and also through the DECUS library (see question 22). A precompiled version for MS-DOS is available from monu1.cc.monash.edu.au (130.194.1.101) in ./pub/dvips54.zip or from shape.mps.ohio-state.edu (128.146.110.30) in ./pub/msdos/dvips/dvips54.zip. If you wish to use postscript fonts, get dvipslib.zip as well. Documentation is available in dvips.ps.Z.
- **dvitops** by James Clark.
  Available via anonymous ftp from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.drivers.dvitops]. Dvitops is written in C and will compile under Unix, MSDOS, VMS, and Primos.

3 How can I include a PostScript figure in LaTeX?

Perhaps the best way to do this is to use the psfig macros written by Trevor Darrell. They are available via anonymous ftp from whitechapel.media.mit.edu (18.85.0.125) in ./pub/psfig. You will also need a dvi to PostScript conversion program that supports \specials. The ones mentioned in question 2 do, and the first two drivers come with a version of psfig ready to use with them. The psfig macros work best with Encapsulated PostScript Files (EPS). In particular, psfig will need the file to have a BoundingBox (see Appendix C of the *PostScript Language Reference Manual*). If you don't have an EPS file, life can be difficult. For people who don't have ftp access or can't deal with tar files, the files are also available from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.graphics.psfig].

One further note about including PostScript figures is that they are not part of the dvi file, but are included when you use a dvi to PostScript conversion program. As a result, most dvi previewers will simply show the blank space TeX has reserved for your figure, not the figure itself.

Anil K. Goel has written a long document desribing in detail how to include figures, pictures, and images in LaTeX documents. It is available via anonymous ftp from math.uwaterloo.ca (129.97.140.144) in ./pub/figsInLatex.ps.Z. A dvi file with the included PostScript files is also available.

4 Where can I find a DVI previewer for machine Y running Q?

This briefly lists some previewers available via anonymous ftp:

- **dvipage**
  For SunView. This was published in volume 15 of comp.sources.unix and is available at sites that archive this. One such source is archive.cis.ohio-state.edu (128.146.8.52).
- **xtex**
  For the X Window System.
  Available via anonymous ftp from
  ftp.cs.colorado.edu (128.138.243.151) in
  ./pub/cs/misc/SeeTeX/SeeTeX/SeeTeX-*.tar.Z.

- **dviapollo**
  For Apollo Domain.
  Available via anonymous ftp from labrea.stanford.edu (36.8.0.112) in ./pub/dviapollo.tar.Z.
- **dvidis**
  For VAXstation VWS. Available via anonymous ftp from src.doc.ic.ac.uk (146.169.2.1) in /packages/tex/dviware/dvidis.
- **xdvi**
  Also for the X Window System. Available via anonymous ftp from export.lcs.mit.edu (18.24.0.12) in ./contrib/xdvi.tar.Z.
- **dvitovdu**
  For Tektronix 4010 and other terminals under Unix. Available via anonymous ftp from wsmr-simtel20.army.mil (192.88.110.20) in the directory pd6:<unix-c.printers> as dvi2vdu.tar-z (ftp in *tenex* mode). A C version is also available from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.drivers.dvitovdu_c_1].
- **dvi2tty**
  A dvi to ASCII conversion program, for normal terminals.
  Available from ftp.cs.ruu.nl (131.211.80.17) in ./pub/TEX/DVI/dvi2tty.shar. A VMS version is available from fileserv@shsu.edu (see question 22).
- **texsgi**
  For SGI under Irix. Available via anonymous ftp from ftp.brl.mil (128.63.16.158) in ./info-iris/tex. Both a binary and source are available, but be sure to get the fonts as well.

5 Where can I get the manual for PiCTEX?

The PiCTEX manual is not free. It is available for $30 ($35 with the disk) from the TEX Users Group:

TEX Users Group
P. O. Box 869
Santa Barbara, CA 93102 (USA)
805-899-4673
tug@tug.org

The proceeds from this sale go to Michael Wichura, the author of PiCTEX, and TUG.

6 What is VorTEX and where can I get it?

VorTEX is a package of programs written at the University of California. It includes several nice previewers and some Emacs modes for TEX and BibTeX. It is not free. Inquiries should be directed to vortex@ucbarpa.berkeley.edu or

Professor Michael A. Harrison
Att. Vortex Dist.
Computer Science Division
University of California
Berkeley, CA 94720

Actually, the emacs modes are freely available separate from VorTEX itself. They are available via anonymous ftp as vortex-macros.tar.Z from a.cs.uiuc.edu (128.174.252.1) in ./pub/TeX.

7 What is OzTeX and where can I get it (TeX for the Mac)?

OzTeX is a public domain version of TEX for the Macintosh. A DVI Previewer and PostScript driver are also included. It should run on any Macintosh Plus, SE, II, or newer model, but will not work on a 128K or 512K Mac. It was written by Andrew Trevorrow, and is available via anonymous ftp from from midway.uchicago.edu (128.135.12.73) in ./pub/OzTeX, which contains other public domain TEX-related software for the Mac as well, or on a floppy disk from TUG (see question 11). Questions about OzTeX may be directed to oztex@midway.uchicago.edu.

8 What is Fig and where can I get it?

Fig is a menu driven tool similar to MacDraw that allows you to draw objects on the screen of a Sun Workstation running SunView. TransFig is a set of tools which translate the code fig produces to other graphics languages including PostScript and the LATEX picture environment. Both are available via anonymous ftp from ftp.cs.cornell.edu (128.84.218.75) in ./pub/fig. Both Fig and TransFig are also available from the Clarkson archive server at sun.soe.clarkson.edu (see question 22). Both Fig and TransFig are supported by Micah Beck (beck@cs.cornell.edu). Another tool for fig conversion is fig2MF which generates METAFONT code from fig input. It is available from the CTAN archives discussed in question 22.

XFig is essentially the same program except it runs under the X Window System. It is available via anonymous ftp from export.lcs.mit.edu (18.24.0.12) in ./contrib/R5fixes/xfig-patches/xfig-2.1.*.Z.
It was written by Brian Smith.

9 How do I get WEB for C, FORTRAN, or some other language?

There is a version of WEB for C called CWEB written by Silvio Levy. It is available via anonymous ftp from princeton.edu (128.112.128.1) in the directory ./pub/cweb.

There is a version of WEB called Spidery WEB which supports many languages including ADA, awk, and C. It was written by Norman Ramsey and, while not in the public domain, is usable free. It is available via anonymous ftp from pip.shsu.edu (192.92.115.10) in tex-archive/web/spiderweb.

There is a version of WEB called FWEB for Fortran, Ratfor, and C written by John Krommes (krommes@lyman.pppl.gov). Version 1.13 is available via anonymous ftp from lyman.pppl.gov (192.55.106.129) in ./pub/fweb.

SchemeWEB is a Unix filter that translates SchemeWEB into LATEX source or Scheme source. It was written by John Ramsdell and is available from the Clarkson archive (see question 22) in ./submit/schemeweb.sh.

APLWEB is a version of WEB for APL and is available from watserv1.waterloo.edu (129.97.129.140) in ./languages/apl.

FunnelWeb is a version of WEB that is language independent. It is available via anonymous ftp from ftp.adelaide.edu.au (129.127.40.3) in ./pub/funnelweb. It also appeared in comp.sources.unix volume 26 issue 121, posted 11 April 1993.

Most of the above are also available from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.utilities].

10 How can I typeset music in TEX?

A package called MuTeX, written by Andrea Steinbach and Angelika Schofer, aids in doing this. It is available via anonymous ftp from ftp.cs.ruu.nl (131.211.80.17) in pub/TEX/MuTeX.tar.Z and from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.music.mtex]. This package allows you to typeset single-staff music and lyrics.

A more powerful package which allows the typesetting of orchestral and polyphonic music is MusicTeX, written by Daniel Taupin (taupin@frups51.bitnet). It is available via anonymous ftp from rsovax.ups.circe.fr (130.84.128.100) [.musictex]. It should also be available from the archive sites detailed in question 22.

There is a mailing list for discussion of typesetting music in TEX. To subscribe, send a request to mutex-request@stolaf.edu.

11 What is TUG and TUGboat?

TUG is the TEX Users Group. TUGboat is their newsletter, containing useful articles about TEX and METAFONT. TUG also distributes TEX-related microcomputer software on disks. Inquiries should be directed to:

TEX Users Group
P.O. Box 869
Santa Barbara, CA 93102 (USA)
805-899-4673
tug@tug.org

12 How do I convert Adobe's afm files to tfm format?

Use the afm2tfm program distributed with dvips, available via anonymous ftp from labrea.stanford.edu (36.8.0.112) in ./pub.

For the Macintosh, there is a program called EdMetrics which does the job (and more). It is available free from:

Blue Sky Research
534 Southwest Third Avenue
Portland, Oregon 97204 (USA)
800-622-8398 or 503-222-9571

13 In LATEX, how do I get a double-spaced document?

Are you producing a thesis, and trying to obey regulations that were drafted in the typewriter era? LATEX is a typesetting system, so the appropriate design conventions are for *real books*. Find whoever is responsible for the regulations, and try to get the wording changed to cater for typeset theses (e.g., to say *if using a typesetting system, aim to make your thesis look like a well-designed book*).

If you fail to convince your officials, or want some inter-line space for copy-editing:

- Try changing \baselinestretch: `\renewcommand{\baselinestretch}{1.2}` may be enough to give officials the impression you've kept to their regulations. Don't try changing \baselineskip: its value is reset at any size-changing command.
- Alternatively, get doublespace.sty from ./pub/tex/latex-style at sun.soe.clarkson.edu, or, if you are using the new font selection scheme, get doublespace.sty from ymir.claremont.edu (134.173.4.23) in [anonymous.tex.inputs.latex-contrib]. There's a setspace.sty from fileserv@shsu.edu which is more flexible, and consistent with the latest release of LATEX. See question 22.

It's not worth going to a lot of trouble. (If officials won't allow standard typographic conventions, you won't be able to produce an aesthetically pleasing document anyway!)

14 In LATEX, how do I include a file in the verbatim environment?

A good way to do this is to use Rainer Schöpf's verbatim.sty, which provides the command \verbatiminput that takes a file as an argument. This file is available from both the Aston archive (see question 22) and ymir.claremont.edu (134.173.4.23). Several files are needed. From ymir.claremont.edu, get the file [tex.inputs.latex-mainz]verbatim.readme to find out what other files you will need.

Another way to do this is to use the alltt environment defined in the style file alltt.sty available in ./pub/tex/latex-style from sun.soe.clarkson.edu (see question 22).

15 In LaTeX, how do I do Y?

If you can't figure out how to do something in LaTeX after you have read the manual very carefully, asked your local LaTeX guru, and thought about it, there is a LaTeX help service available. Please note that the way to accomplish something in LaTeX is often by using an appropriate style file, so please check this also (see question 16). If none of this works, send mail in English describing your problem to latex-help@cs.stanford.edu. If you haven't gotten a reply to your problem within about a week, send mail to latex-help-coordinator@cs.stanford.edu.

16 Where can I find a TeX macro or LaTeX style file for doing Y?

Before you ask for a TeX macro or LaTeX style file to do something, please search the TeX macro index written by David M. Jones (dmjones@theory.lcs.mit.edu) and available via anonymous ftp from theory.lcs.mit.edu (18.52.0.92) in ./pub/tex/TeX-index. Those without access to anonymous ftp can send a message containing the line *send tex TeX-index* to archive-server@theory.lcs.mit.edu. The index is an excellent reference document with plenty of cross-references. Also, many of the archive sites mentioned in question 22 maintain extensive LaTeX style collections, which you can look through if you need something not in the index.

17 How do I generate an index in TeX/LaTeX?

Making an index is not trivial. There are several indexing programs which aid in doing this. Some are:

- **makeindex**
  For LaTeX under Unix (but runs under other OS's without changes). Available via anonymous ftp from ymir.claremont.edu (134.173.4.23, VMS) in the directory [.tex.utilities.makeindex]. A version for the Macintosh is available from Johnny Tolliver at tolliver%atf.mfenet@nmfecc.llnl.gov. The Makeindex documentation is a pretty good source of information on how to create your own index.
- **idxtex**
  For LaTeX under VMS. Available via anonymous ftp from ymir.claremont.edu in the directory [.tex.utilities.idxtex].
- **texix**
  For TeX on CMS and Macintosh machines. Available via anonymous ftp from ymir.claremont.edu in the directory [.tex.utilities.texix].
- **indexor**
  For LaTeX under Unix, VMS, and DOS. Available via anonymous ftp from ymir.claremont.edu in [.tex.utilities.indexor].
- **texindex**
  For LaTeX under Unix. Available from comp.sources.misc archives in Volume 23.

18 How do I get METAFONT to do what I want it to do?

METAFONT allows you to create your own fonts, and ordinary TeX users will never need to use it. METAFONT, unlike TeX, requires some customization. Each output device for which you will be generating fonts needs a mode associated with it. Modes are defined using the mode_def convention described on page 94 of *The METAFONTbook*. So first create a file, which we will call local.mf, containing all the mode_defs you will be using. The file modes.mf by Karl Berry, available via anonymous ftp from ftp.cs.umb.edu (158.121.104.33) in ./pub/tex is a good starting point for this. Listings of settings for various output devices are also published periodically in TUGboat (see question 11). Now create a plain base file using inimf, plain.mf, and local.mf:

```
% inimf
This is METAFONT....
plain # you type plain
(output)
input local # you type this
(output)
dump # you type this
Beginning to dump on file plain....
(output)
%
```

This should create a base file named plain.base (or something close) and should be moved to the directory containing the base files on your system.

Now you need to make sure METAFONT loads this base when it starts up. If METAFONT loads the plain base by default on your system, then you're ready to go. Under Unix, we might, for instance define a command mf which executes *virmf &plain,* loading the plain base file.

The usual way to create a font with plain METAFONT is to then start it with the line
`\mode=`**mode name**`; mag=`**magnification**`;`
`input` **font file name**

in response to the * prompt or on the METAFONT command line. If **mode name** is unknown or omitted, then the mode defaults to proof mode. If this has happened METAFONT will produce an output file called **font file name**.2602gf. The **magnification** is a floating point number or magstep (magsteps are defined in *The METAFONTbook* and *The TeXbook*). If mag=**magnification** is omitted, then the default is 1. For example, to generate cmr10 at 12pt for an epson printer you would type

```
mf \mode=epson; mag=1.2; input cmr10
```

Note that under Unix the '\' and ';' characters must usually be escaped, so this would typically look something like

```
mf \mode=epson; mag=1.2; input cmr10
```

If you don't have inimf or need a special mode that isn't in the base, you can put its commands in a file (e.g., ln03.mf) and invoke it on the fly with the \smode command. For example, to create ln03.300gf for an LN03 printer, using the file

```
\% This is ln03.mf as of 2/27/90
\% mode_def courtesy of John Sauter
proofing:=0;
fontmaking:=1;
tracingtitles:=0;
pixels_per_inch:=300;
blacker:=0.65;
fillin:=-0.1;
o_correction:=.5;
```

(note the absence of the mode_def and enddef commands), you would type

```
mf \smode=ln03; input cmr10
```

19 Where do I get TEX/LATEX for machine Y running Q?

- **Unix**
  The Unix TEX distribution is via anonymous ftp from any CTAN archive (see question 22).If you don't want to do this, you can order it from the University of Washington, for a small fee. Contact:

  Director
  Northwest Computing Support Center
  Thomson Hall, Mail Stop DR-10
  University of Washington
  Seattle, WA 98195 (USA)
  (206)543-6259

  or send electronic mail to Elizabeth Tachikawa at elisabet@max.u.washington.edu (note the *s*). The fee charged for getting the TEX distribution through the University of Washington helps fund the further development of Unix TEX, so it's a good idea to order it this way. This distribution compiles under Ultrix. Executables for the 386/ix are available via anonymous ftp from tik.vtt.fi (130.188.52.2) in ./pub/tex/bin-386ix and from math.berkeley.edu (128.32.183.94) in ./pub/tex386ix.tar.Z.
  The following discussion is a bit outdated, and explains how to retrieve TEX from many different archive sites. It is probably easiest retrieve them all from the CTAN site or mirror nearest you. To get TEX via anonymous ftp, first get the current web2c and web distributions from ftp.cs.umb.edu (192.12.26.23) in ./pub/tex. If you plan on using METAFONT, also grab the current version of modes.mf (see question 18). The web2c distribution will allow you to create initex, virtex, inimf, virmf, bibtex, and several programs for manipulating fonts. Next you will need the basic TEX and METAFONT macro files, available from labrea.stanford.edu (36.8.0.112) in ./pub/tex/lib. The basic BibTeX style files are here as well, in ./pub/tex/bibtex. If you want LATEX, the current distribution is available from rusinfo.rus.uni-stuttgart.de (129.69.1.12) in ./soft/tex/latex. I recommend LATEX be installed with the New Font Selection Scheme (NFSS) (see question 35). It resides in ./soft/tex/macros/latex/distribs/nfss. If you want AMSLATEX or AMSTeX, get them from e-math.ams.com (130.44.1.100) in ./ams. Finally, you need fonts. TEX itself needs font files with the extension *.tfm*. Your output device driver needs fonts in a different format, probably *.pk*. Both ymir.claremont.edu (134.173.4.23) and rusinfo.rus.uni-stuttgart.de maintain collections of fonts in these formats. These collections contain the necessary fonts for the plain format and LATEX, and other fonts you might want. Alternatively, the necessary font formats can be generated from the METAFONT source, either by you, or automatically if you use the dvips driver mentioned in question 2. The METAFONT sources are available from the ymir and rusinfo archives. Note that I have tried to mention the definitive sources for all the programs above.
  Note the Unix version of TEX allows your 'macros' or 'inputs' and 'fonts' directories to be hierarchically organized with further subdirectories, rather than dumping everything into one directory. This can cause TEX to start very slowly. The cure for this problem is to insure each subdirectory contains either only directories or only files.
- **AIX**
  TEX for the IBM RS6000 running AIX can be found on rusinfo.rus.uni-stuttgart.de (129.69.1.12) in ./soft/tex/systems/unix/aix3.1.
- **PC**
  A TEX package for the PC, including LATEX, BIBTEX, previewers, and drivers is available via anonymous ftp from vax.eedsp.gatech.edu (130.207.226.24) in ./pub/TeX. The variety here is sbtex version 30 by Wayne Sullivan. EmTEX, another TEX package for the PC by Eberhard Mattes, is available via anonymous ftp from rusinfo.rus.uni-stuttgart.de (129.69.1.12) in ./soft/tex/systems/msdos/emtex and also from niord.shsu.edu (192.92.115.8) in [.emtex]. This package includes LATEX, METAFONT, BibTeX, etc., as well. Documentation is available in both German and English.
  All Public Domain TEX software for the PC is also available through TUG. A catalog is available free from them at the address given in question 11. This collection is maintained by Jon Radel, who will answer technical questions on the material (with no service guarantee). Send electronic mail to jon@radel.com.
- **Mac**
  See question 7 for a public domain version (OzTeX). Another version CMacTEX, which has TEX

3.14, METAFONT 2.7, a screen previewer, dvips, a PostScript printing utility for the LaserWriter, and some font managing utilities. It is available from the CTAN archives discussed in question 22.

- **TOPS-20**
  TEX was originally written on a DEC-10 under WAITS, and so was easily ported to TOPS-20. A Distribution that runs on TOPS-20 is available via anonymous ftp from science.utah.edu (128.110.198.2) in ./pub/tex/pub/web.
- **VAX/VMS**
  VMS executables are available via anonymous ftp from ymir.claremont.edu (134.173.4.23) in [.tex.exe]. Source is available in [.tex.sources]. Version 3.1 is available in [.tex.sources.tex3_1]. Ymir has a mailserver for those without ftp access, although executables are not available through it. Send a message containing the line *help* to mailserv@ymir.claremont.edu. Standard tape distribution is through DECUS or Maria Code.
- **Atari**
  TEX is available for the Atari ST from atari.archive.umich.edu (141.211.165.41) in ./atari/tex. If anonymous ftp is not available to you, send a message containing the line *help* to atari@atari.archive.umich.edu. The mail server can uuencode binary files. Another version can be obtained via anonymous ftp from ifi.informatik.uni-stuttgart.de (129.69.211.1) in ./pub/atari.st/tex. There is also lots of TEX stuff for the Atari on the rusinfo and ftp.cs.ruu.nl archives mentioned in question 22.
- **Amiga**
  A full implementation of TEX 3.1 call PasTeX and METAFONT 2.7 are available via anonymous ftp from merlin.etsu.edu (192.43.199.20) in ./ab20/AMIGA. It is also available via anonymous ftp from forwiss.uni-passau.de (132.231.20.10) in ./pub/amiga/tex. You can also order a CDROM containing this and other amiga software from Walnut Creek CDROM, (510) 947-5997.
- **Tandy 6000**
  If you are interested in building TEX on this machine contact Ken Yap (ken@syd.dit.csiro.au), and he'll help you.

20 Where can I get a thesis style for LATEX?

Thesis styles are usually very specific to your University, so it's usually not profitable to ask the whole newsgroup for one. If you want to write your own, a good place to start is the ucthesis style available in the LATEX style collection at sun.soe.clarkson.edu (see question 22).

21 How do I get symbols for 'the real numbers', 'the complex numbers', and so on?

These symbols are known as *blackboard bold* and are available in the AMS fonts *msam* (e.g., *msam10* for 10pt) and *msbm*. They replace the older *msxm* and *msym*. The fonts have a large number of mathematical symbols to supplement the ones provided by TEX. The fonts are available via anonymous ftp from e-math.ams.com (130.44.1.100) in the directory ./ams/amsfonts. Two files which load the fonts and define the symbols are provided, and both work with either TEX or LATEX. Questions or suggestions regarding these fonts should be directed to tech-support@math.ams.com.

A set of LATEX macros for a *lazy person's* blackboard bold are:

```
\newcommand{\R}{{\sf R\hspace*{-0.9ex}%
  \rule{0.15ex} {1.5ex}\hspace*{0.9ex}}}
\newcommand{\N}{{\sf N\hspace*{-1.0ex}%
  \rule{0.15ex} {1.3ex}\hspace*{1.0ex}}}
\newcommand{\Q}{{\sf Q\hspace*{-1.1ex}%
  \rule{0.15ex} {1.5ex}\hspace*{1.1ex}}}
\newcommand{\C}{{\sf C\hspace*{-0.9ex}%
  \rule{0.15ex} {1.3ex}\hspace*{0.9ex}}}
```

22 What repositories of TEX material are available, and how can I access them?

To better facilitate the archiving of TEX material, a TUG working group developed the Comprehensive TEX Archive Network (CTAN). Each CTAN site has identical material, and maintains authoritative copies of material archived there. All these archives contain extensive collections of TEXrelated material. In particular, almost everything mentioned in this document is archived at the CTAN sites, even if not explicitly stated.

The CTAN sites are currently ftp.uni-stuttgart.de (128.69.1.12) with the TEX root directory ./soft/tex, ftp.tex.ac.uk (134.151.44.19) with root directory ./pub/archive, and pip.shsu.edu (192.92.115.10) with root directory ./tex-archive. Under the root directory, the organization of material is identical.

To find software at a CTAN site, use anonymous ftp to the host, and then execute the command 'quote site index **search-term**'.

The mail servers of the CTAN sites are not yet identical, but this is planned. Here are the current methods of access via electronic mail:

- For the UK site, send a message to tex-server@tex.ac.uk. The first non-blank line of the message must contain a valid TEXserver command (help, directory, files, whereis, search, or path). The program will then mail you a response notifying you that your request has been received. If you fail to get a response from the TEXserver, you may need to use the *path* command to help the program out. For Internet users the return address is of the form name%site@nsfnet-relay, while for Bitnet and EARN it is name%site@earn-relay (i.e., include a line that says *path name%site@nsfnet-relay* along with a line containing *help*). Note that the old three hyphen format is obsolete, but still accepted by the program for backward compatibility.

- For ftp.uni-stuttgart.de, send a message containing the line *help* to mail-server@ftp.uni-stuttgart.de.
- For the shsu send, send a message with the line HELP to FILESERV@SHSU.BITNET. SENDME FILELIST will get an annotated listing of all packages available there.

The host nic.switch.ch (130.59.1.40) mirrors ftp.uni-stuttgart.de in /mirrors/tex.

There are several other repositories of TEX material available:

- In the US, the archive at ymir.claremont.edu (134.173.4.23) has a lot of PD TEX software Anonymous ftp is supported, as is a mail server. Unfortunately, executables are not available through the mail server. Send a message containing the line *help* to MAILSERV@ymir.claremont.edu.
- The archive at Clarkson University, although out of date, still has some things of interest. Use anonymous ftp to get files from sun.soe.clarkson.edu (128.153.12.3). An archive server is available if you can send mail to the United States. Send a one-line message *help* to archive-server@sun.soe.clarkson.edu and it will send you a file describing how to use it more fully. If you have problems, contact archive-management@sun.soe.clarkson.edu
- ftp.cs.ruu.nl (131.211.80.17) also contains a substantial TEX archive with ftp access. To use it via email, send a message containing the line *help* to mail-server@cs.ruu.nl. This mail server can send binary files in a variety of different formats.
- There are LISTSERV facilities for TEX at LISTSERV@DHDURZ1.BITNET. Send a message containing the line *help* to this address.
- For users on BITNET, access to anonymous ftp for some files can be obtained indirectly by sending mail to BITFTP@PUCC.BITNET. Send a message containing the line *help* to this address for more information.

There is also the DECUS TEX collection, a collection of TEX material for VMS, Unix, MS-DOS, and the Macintosh. It is available via anonymous ftp from wuarchive.wustl.edu (128.252.135.4) in ./decus/tex. It can also be obtained from the DECUS Library (reference number VS0058) in the US, or through your DECUS office outside of the US. To contact the DECUS Library, send mail or call:

The DECUS Program Library
219 Boston Post Road BP02
Marlboro, MA 01752-1850
(508)480-3418

or send electronic mail to the DECUS TEX Collection Editor, Ted Nieland, at decus_tex@nieland.dayton.oh.us.

Another good source of information is NETWORK SOURCES OF TEX WARE by Peter Flynn which appeared in TEXhax, volume 90, issues 45-47 (in May 1990).

23 How do I use PostScript fonts with LATEX?

The best way to do this is to install the New Font Selection Scheme (NFSS) (see question 35), and use the psnfss package written by Sebastian Rahtz. It is available from all the major archives mentioned in question 22. Unfortunately, on some it is known as soton and on others as psnfss. The definitive home for it is the UK TEX archive, tex.ac.uk (134.151.40.18) in [tex-archive.macros.latex.distribs.psnfss]. Other methods for using PostScript fonts in LATEX are cumbersome at best.

24 How can I convert from format Y to TEX or LATEX, and vice-versa?

- **troff**
  TROFF-TO-LATEX.TAR-Z is available via anonymous ftp from wsmr-simtel20.army.mil (192.88.110.20) in the directory pd2:<unix-c.textproc>. This program, written by Kamal Al-Yahya at Stanford, assists in the translation of a troff document into LATEX format. It recognizes most -ms and -man macros, plus most eqn and some tbl preprocessor commands. Anything fancier needs to be done by hand. Two style files are provided. There is also a man page (which converts very well to LATEX :-). The program is copyrighted but free. An enhanced version of this program, tr2latex, is available from ftp.informatik.rwth-aachen.de (137.226.112.172) in ./pub/TeX. The DECUS TEX distribution (see question 22) also contains a program which converts troff to TEX. If you are interested in obtaining a copy of this program without getting the entire DECUS TEX distribution, send the command: SENDME TROFFTOTEX in the body of a mail message to FILESERV@SHSU.BITNET (FILESERV@SHSU.edu), or use anonymous ftp to the directory [.TROFFTOTEX] on Niord.SHSU.edu (192.92.115.8).
- **scribe**
  Mark James has a copy of scribe2latex he has been unable to test but which he will let anyone interested have. Send email to jamesm@procor.dialogic.com. The program was written by Van Jacobson of Lawrence Berkeley Laboratory.

- **wordperfect**
  wp2latex.zip is available on wuarchive.wustl.edu (128.252.135.4) in the directory ./mirrors/msdos/tex and on wsmr-simtel20.army.mil (192.88.110.20) in the directory pd1:<msdos.tex>. This is a PC program written in Turbo Pascal by R. C. Houtepen at the Eindhoven University in the Netherlands. It converts WordPerfect 5.0 documents to LaTeX. Pascal source is included. Users find it *helpful* and *decent* in spite of some limitations. It gets high marks for handling font changes. Limitations include no indices, table of contents, margins or graphics. It also won't handle the new features of WordPerfect 5.1, in particular the equation formatter. The program is copyrighted but free.
  Glenn Geers of the University of Sydney (glenn@qed.physics.su.oz.au) is translating wp2latex into C and adding some WordPerfect 5.1 features, in particular its equation handling. This is an ongoing project; the most recent version can be retrieved via anonymous ftp from suphys.physics.su.oz.au (129.78.129.1) in ./wp2latex. It is also available by anonymous ftp from ymir.claremont.edu (134.173.4.23) in the directory [anonymous.tex.ibm_pc.front_ends.wp2latex]. It was posted to alt.sources on 8 August 1990.
- **PC-Write**
  pcwritex.arc is available on wuarchive.wustl.edu (128.252.135.4) in directory mirrors/msdos/tex and on wsmr-simtel20.army.mil (192.88.110.20) in directory pd1:<msdos.tex>. This is a print driver for PC-Write that *prints* a PC-Write V2.71 document to a TeX-compatible disk file. It was written by Peter Flynn at University College, Cork, Ireland. It is public domain.
- **runoff**
  Peter Vanroose (vanroose@esat.kuleuven.ac.be) has written a RUNOFF-to-TeX conversion program in VMS Pascal. It is available from comp.text archives (they do exist, don't they? The program was submitted in December 1987) or from the author (peter@dit.lth.se) or from Mark James (jamesm@procor.dialogic.com).
- **refer/Tib** There are a few programs for converting bibliographic data between BibTeX and refer/Tib formats. They are available via anonymous ftp from ftp.ai.mit.edu (128.52.32.11) in the directory ./pub/refer-to-bibtex. In spite of the directory name, it also contains a shell script to convert BibTeX to REFER as well. This collection is maintained by Thomas M. Breuel (tmb@ai.mit.edu).
- **RTF** A program for converting Microsoft's Rich Text Format to TeX is available via anonymous ftp from astro.princeton.edu (128.112.128.131) in ./pub/rtf2TeX.tar.Z. It was written and is maintained by Robert Lupton (rhl@astro.princeton.edu).
- **Microsoft Word**
  A rudimentary program for converting MS-Word to LaTeX is wd2latex, for MS-DOS, available via anonymous ftp from ymir.claremont.edu (134.173.4.23) in [.tex.ibm_pc.front_ends]. Probably a better idea, however, is to convert the document to RTF format and use the RTF converter mentioned above.
  In addition, a group at Ohio State University is working on a common document format based on SGML. In theory any format could be translated to or from this one. Also, Framemaker supposedly has *import filters* to aid in the translation from alien formats (presumably including TeX) to Framemaker; perhaps other desktop publishing programs have similar things.

25 How do I get a file into the major style repositories?

Use anonymous ftp to rusinfo.rus.uni-stuttgart.de (129.69.1.12) and transfer the file into the directory ./soft/tex/incoming. Then send notification texinfo1@rusinfo.rus.uni-stuttgart.de. From there it will propagate to other inclusive archives. If you cannot use ftp, mail your contribution to sty-mgr@shsu.edu and it will be passed along. You will make everyone's life easier if you choose a descriptive and unique name for your submission, so it's probably good idea to browse through some of the style repositories mentioned in question 22 to insure your style file's name is not already in use.

26 Where can I get font Y?

A comprehensive list of METAFONT fonts is posted to Comp.fonts about once every six weeks by Lee Quin (lee@sq.sq.com). It contains both commercial fonts and fonts available via anonymous ftp. Most of the fonts available via anonymous ftp are available from ymir.claremont.edu (134.173.4.23). Also, the file wujastyk.txh on ymir.claremont.edu in [anonymous.tex.mf] is a copy of Dominik Wujastyk's font article, and contains information on METAFONT fonts as well.

27 Where can I get a dvi driver for the HP LaserJet?

PC - The emtex package mentioned in question 19 contains a driver for the LaserJet, dvihplj. The driver is available by itself from ymir.claremont.edu (134.173.4.23) in [.tex.ibm_pc.drivers.emtex] in the files dvidrv[123].zip.
Version 2.10 of the Beebe drivers support the LaserJet. These drivers will compile under Unix, VMS, and on the Atari ST and DEC-20's. They are available from science.utah.edu (128.110.198.2) in ./pub/tex/dvi and from ymir.claremont.edu (134.173.4.23) in [.tex.drivers.beebe2_10].

28 TEX and LATEX are hyphenating words weirdly. What can I do?

You have a version mismatch problem. The hyphenation algorithm changed between version 2.9 and 3.0. If you are using TEX version 3.0 or later, make sure you have plain.tex and lplain.tex files with a version number of at least 3.0.

For those of you curious about the change, here's what happened: in versions of TEX before 3.0 the hyphenation algorithm would not break a word if the part before the break was not at least two characters long, and the part after the break at least three characters long. Starting with version 3.0 two integer parameters, *lefthyphenmin* and *righthyphenmin*, control the length of these fragments. These are set to 2 and 3, respectively, in the new plain and lplain formats. They can be set to any value, of course, but if \lefthyphenmin + \righthyphenmin is greater than 62, all hyphenation is suppressed.

29 How can I convert a TEX or LATEX file into a plain ASCII file, with all the formatting intact, a la nroff?

Ralph Droms (droms@bucknell.edu) has a style file and a C program that provide the LATEX equivalent of nroff. Although it doesn't do a good job with tables and math, it's the best way to convert that I've seen. The software is available for anonymous ftp from sol.cs.bucknell.edu (134.82.1.8) in ./droms/txt-dist.tar.

Another possibility is to use screen.sty, available from all the major archives. However you need a program called crudetype to process the resulting dvi file. It is available from emx.utexas.edu (128.83.186.11) in ./pub/mnt/source/tex/tex-3.0/DVIware/lpr-viewers/crudetype and from rusinfo.rus.uni-stuttgart.de (129.69.1.12) in ./serv2/soft/dviware/screenview. Another possibility is to use the LATEX-to-ASCII conversion program, l2a, available from comp.sources.misc archives (one archive site is ftp.uu.net (192.48.96.9)), although this is really more of a de-TeXing program. Finally, if you are running under Unix and have C++ and perl, you might try Jonathan Monsarrat's LameTeX package (which actually does much more than this), available from wilma.cs.brown.edu (128.148.33.66) in ./pub/lametex.tar.Z.

30 How do I enlarge TEX? I keep getting 'memory capacity exceeded' errors.

Most of the time, a *memory capacity exceeded* error can be fixed without enlarging TEX. The most common causes are unmatched braces, extra-long lines, and poorly-written macros. Extra-long lines are often introduced when files are transferred incorrectly between operating systems. (The tell-tale sign of an extra-long line error is when the complaint is that the 'buf_size' has overflowed.)

If you really need to extend your TEX's capacity, the proper method varies depending on your installation. In the purest form, you change the parameters in module 11 (*The following parameters can be changed...*) In less pure forms, you might need to modify a change file, or perhaps change some environment variables. Consult the documentation that came with your particular implementation.

31 In LATEX, I used \pagestyleempty, but the first page is still numbered. What do I do?

If you see this problem, you are using the \maketitle command too. This is a bug in LATEX. The workaround is to put the command \thispagestyleempty immediately after the \title command, with no blank line between them.

32 Where do I find documentation about BibTeX?

BibTeX, a program originally designed to produce bibliographies in conjunction with LATEX, is explained in Section 4.3 and Appendix B of Leslie Lamport's LATEX manual. The *BibTeXing* document, contained in the file btxdoc.tex, gives a more complete description.

The *Designing BibTeX Styles* document, contained in the file btxhak.tex, explains the postfix stack-based language used to write BibTeX styles (.bst files). The file btxbst.doc is the template file for the four standard styles (plain, abbrv, alpha, unsrt). It also contains the documentation for them.

The current Unix-BibTeX man page, contained in the file bibtex.1, was updated in January 1992 and is about one page long. There's an old and obsolete version floating around, written in 1985 before *BibTeXing* and *Designing BibTeX Styles* appeared, that is several pages long. You should ignore it (or throw it away), since it describes BibTeX version 0.98, style files of which are incompatible with the current version, 0.99 (to be precise, 0.99c).

All files mentioned in this answer are available via anonymous ftp from labrea.stanford.edu (36.8.0.112) in the BIBTEX ftp area, tex/bibtex. All the non-Unix files should be available on any system that runs BIBTEX; if they're not on your system, please complain to your BIBTEX installer or to your distribution source.

33 How do I use BibTEX with plain TEX?

The file btxmac.tex contains TEX macros and documentation for using BIBTEX with plain TEX, either directly or with Karl Berry's Eplain package. It is available via anonymous ftp from labrea.stanford.edu (36.8.0.112) in tex/bibtex (see question 32 for more information about BIBTEX).

34 How do I draw Feynman diagrams in LaTeX?

Michael Levine's macro package for drawing Feynman diagrams in LaTeX is available via mail-server from physics.utoronto.ca. Send a message containing the line *send INDEX* to mail-server@physics.utoronto.ca for information on how to retrieve it.

35 What is the New Font Selection Scheme (NFSS)?

NFSS is an extension to LaTeX written by Frank Mittelbach and Rainer Schöpf. It is described in TUGboat, volume 10 (1989), No. 2. In traditional typesetting, fonts are described by four parameters: the family (e.g., computer modern), the series (i.e., the weight and width of the font, like light or bold), the shape (e.g., italic), and the size. NFSS is a mechanism allowing the user to change any of these independently. NFSS makes it relatively easy to use nonstandard fonts such as the PostScript ones with LaTeX, and easy to change math fonts. It also allows dynamic loading of fonts at runtime (not when the format file is created).

NFSS will be part of version 3.0 of LaTeX. Currently, you need to create a new format file to use it. It is available via anonymous ftp from all the major archives mentioned in question 22. Its home is on rusinfo.rus.uni-stuttgart.de (129.69.1.12) in ./soft/tex/macros/latex/distribs/nfss. NFSS can be used in plain TeX as well, through an interface written by Wayne Sullivan.

There is one caveat that applies to LaTeX documents written for the OLD scheme: some of them use special styles for special fonts which will not work under the NFSS.

36 In LaTeX, my cross-references floats (figures and tables) are incorrect. What's wrong?

The `label` command must come after the `caption` command, or be part of it. For example,

```
\begin{figure}
  \caption{A Figure}
 \label{fig}
\end{figure}
```

or

```
\begin{figure}
  \caption{A Figure\label{fig}}
\end{figure}
```

37 I want to change the margins in LaTeX. What can I do?

This answer first helps you change the margins throughout a document, then tells you how to change the margins in a portion of the document.

Perhaps the easiest way to get more out of a page in LaTeX is to get fullpage.sty, available from all the major archive servers mentioned in question 22. This sets the margins of the page identical to those of Plain TeX, i.e., 1-inch margins at all four sides of the paper. It also contains an adjustment for A4 paper.

Here is a brief explanation of what's going on with the page parameters in LaTeX. They are explained in section C.4.2 of the LaTeX manual (p. 163). The margin parameters represent measurements made to the DVI file. The origin in DVI coordinates is one inch from the top of the paper and one inch from the left side. This explains the *one inch less than* terminology used in the LaTeX manual. In DVI coordinates, positive horizontal measurements extend right across the page, and positive vertical measurements extend down the page. Thus, for margins closer to the left and top edges of the page than 1 inch, the corresponding parameters, e.g., *\endverbatimensidemargin, \oddsidemargin, \topmargin*, can be set to negative values.

Finally, to change the margins of a document within the document, modifying the parameters listed on page 163 will not work. They can only be changed in the preamble of the document, i.e, before the *\begindocument* statement. To adjust the margins within a document we define an environment which does it:

```
\newenvironment{changemargin}[2]{%
  \begin{list}{}{
  \setlength{\topsep}{0pt}
  \setlength{\leftmargin}{0pt}
  \setlength{\rightmargin}{0pt}
  \setlength{\listparindent}{\parindent}
  \setlength{\itemindent}{\parindent}
  \setlength{\parsep}{0pt plus 1pt}
  \addtolength{\leftmargin}{#1}
    \addtolength{\rightmargin}{#2}
  }\item }{\end{list}}
```

This environment takes two arguments, and will indent the left and right margins by their values, respectively. Negative values will cause the margins to be widened, so `\begin{changemargin}{-1cm}{-1cm}` widens the left and right margins by 1cm.

38 How do I find the width of a letter, word, or phrase in TeX?

Put the word in a box, and measure the width of the box. For example,

```
\setbox0=\hbox{hi}
width=\wd0
```

Note that if the quantity in the hbox is a phrase, the actual measurement only approximates this width, since the interword glue can be adjusted in paragraph mode.

Frequently Asked Questions about emTEX*

Eberhard Mattes

October 3rd 1993

Abstract

This is an edited[1] version of a document called *emTEX-user Frequently Asked Questions*. Eberhard Mattes sent this document on october 3rd, 1993 to the `emtex-user` list. In the community of dutch TEX-users emTEX is widely spread. So questions to the *list* are probably also valuable for many emTEX-users without direct access to the list.

1 emTeX386

1.1 DPMI

emTeX386 says 'DPMI not supported'. How can I run emTeX386 under Windows?

There will be a simple solution soon.

Editor: At this moment there is a way to run emTEX386 under Windows using a different so called 'DOS-extender'. Eberhard Mattes wrote his own 'DOS-extender' which is called **EMX**, the latest version is 0.8f. There exists another 'DOS-extender' called **RSX**, which is highly compatible with EMX and runs only under 'DPMI'-systems (= MS-Windows). RSX is written by Rainer Schnitker. emTEX386 can be configured to use RSX in stead of EMX. In this way emTEX386 can be run under Windows. Regrettably there are some minor inconveniences with this method at this moment. At the time of this writing the 'simple solution' is not yet known to the editor.

2 DVI Drivers

2.1 DVISCR's 800x600 resolution

How do I get 800x600 resolution with DVISCR?

Manufacturer	Card type	DVISCR options
Acumos	AVGA2	/oa103:800:600:58
	AVGA3	/oa103:800:600:58
Advance Logic	AL2101	/oa103:800:600:2B
Ahead	V5000	/oa103:800:600:71
ATI	VGAWONDER	/oa103:800:600:54
	Graphics Ultra etc.	/oa103:800:600:54
Chips and Technologies		/oa103:800:600:6A
Cirrus Logic	CL-GD 500/600	/oa103:800:600:64
	CL-GD 5422	/oa103:800:600:58
	CL-GD 5426/5428	/oa103:800:600:58
Compaq	VGA	/oa103:800:600:59
CTI		/oa103:800:600:6A
Diamond Stealth		/oa103:800:600:4F02:0102
Everex		/oa103:800:600:70:02
Genoa	5xxx, Sigma VGA	/oa103:800:600:29
Genoa	6xxx	/oa103:800:600:6A
MXIC	MX 68010	/oa103:800:600:55
NCR	77C22	/oa103:800:600:58
OAK Technologies	OTI-067	/oa103:800:600:52
	OTI-077	/oa103:800:600:52
	OTI037C	/oa103:800:600:52
	OTI037C with NEL BIOS	/oa103:800:600:5B
Orchid Prodesigner		/oa103:800:600:29
Paradise		/oa103:800:600:58
Poach		/oa103:800:600:6A
Primus		/oa103:800:600:2A
Realtek	RT 3106	/oa103:800:600:1F
S3		/oa103:800:600:4F02:0102
Tecmar		/oa103:800:600:16
Trident	8900	/oa103:800:600:5B
Tseng	ET-3000	/oa103:800:600:29
	ET-4000	/oa103:800:600:29
VEGA		/oa103:800:600:29
VESA	compatible adapters	/oa103:800:600:4F02:0102
Video 7	SVGA	/oa103:800:600:62
WD90C11		/oa103:800:600:5C
Western Digital		/oa103:800:600:58

2.2 DVISCR and 1024x768 resolution

How do I get 1024x768 resolution with dviscr?

DVISCR does not support 1024x768. If you select a 1024x768 mode with the `/oa` option, dviscr will use the first 512 lines of the display, the remaining 256 lines will remain black.

3 HP LaserJet IV at 600DPI

How do I get 600 DPI on a HP LaserJet IV?

Here's how to obtain 600 DPI output on a LaserJet IV with dvihplj 1.4s:

- Create the file 600dpi.pcl by copying the following text to a file named 600dpi.txt:
  `ESC "&u600D"` and typing
  `makedot -b 600dpi.txt 600dpi.pcl`
- Use the following dvihplj command line options:
  `/r600 /og600 /or2 /ob+ /pi:600dpi.pcl`

This prints everything in graphics mode. Using download fonts will be supported in a future dvihplj version (1.4t).

3.1 600-DPI fonts for HP LaserJet IV

`modes.mf` 0.12 claims that:

*This is an edited version of the document Eberhard Mattes sent to the emTEX-user list.

[1] Editor: Jos Winnink.

```
mode_def laserjetIV =
  proofing:=0;
  fontmaking:=1;
  tracingtitles:=0;
  pixels_per_inch:=600;
  blacker:=0;
  fillin:=.2;
  o_correction:=.6;
enddef;
```

is the METAFONT mode to be used with the HP LaserJet IV for 600 DPI.

3.2 Automatic generation of fonts

How do I enable automatic generation of missing fonts?

Get dvidrv 1.4s and MFjob 1.1l.

3.3 Problems after generation of fonts

The driver won't find the font after generating a missing font. Why?

That's a rounding problem. As temporary fix, add the size of the font as generated by MFjob to the list of font sizes searched by the driver. For instance, if the driver wants cmr10<746.63959> and MFjob puts the font into the 746dpi directory (instead of 747dpi), use

`/fz:+747`

(You might want to add that option to the batch file or to the configuration file.)

4 LaTeX

4.1 LaTeX problems

I have a LaTeX problem. Who can help?

Please do not send general TeX, LaTeX, AMS-TeX, NFSS etc. questions to the `emtex-user list.` You should use the `info-tex@shsu.edu` list or the `comp.text.tex` newsgroup instead.

5 Miscellaneous

5.1 emTeX for ...

Is there an emTeX version for Amiga, CP/M, Linux, Macintosh, Unix, ...?

No.
emTeX is available only for OS/2, MS-DOS, and PC-DOS. There are other ports of TeX for other machines and operating systems.

5.2 Entering the emTeX-user list

Write a friendly message to
`emtex@methan.chemie.fu-berlin.de`,
requesting subscription to emtex-user.

5.3 Leaving the emTeX-user list

How do I unsubscribe from the emtex-user list?

Write a friendly message to
`emtex@methan.chemie.fu-berlin.de`,
requesting unsubscription from emtex-user.
Do not write to the list (emtex-user@...)!!!

5.4 Where to get emTeX?

Where to get emTeX, latest versions

The latest versions of emTeXare available from:

- ftp.uni-stuttgart.de [129.69.1.12]
  in: /soft/tex/systems/msdos/emtex[2]
- `ftp.tex.ac.uk` [134.151.44.19]
  in: /pub/archive/systems/msdos/emtex
- `ftp.shsu.edu` [192.92.115.10]
  in: /tex-archive/systems/msdos/emtex
- `ftp.informatik.tu-muenchen.de` [131.159.0.198]
  in: /pub/comp/os/os2/emTeX
- `ftp.cs.ruu.nl`
  in: /pub/TEX/MSDOS/emtex
- FGBBS. NTG's Bulleting Board FGBBS (085-217041).

5.5 Latest available versions

The latest versions (see betatest directory) are:

dvidrv	1.4s
emTeX386	3.141 [3c-beta8]
MF386	2.71 [3c-beta1]
MFjob	1.11

6 Questions to be answered in a future revision of this FAQ

- *Where can I get a spell checker for emTeX?*
- *How do I convert DVI files to plain text files?*
- *How do I create a Fax with emTeX?*
- *What's the best shell (user interface) for emTeX?*
- *'Fatal font file error; I'm stymied'. What to do now?*
- *How do I avoid emTeX's truncating file names to 8.3.*
- *Is there a driver for the XYZ printer?*
- *How do I avoid '2520 graphics mode not supported'?*

[2] IMPORTANT NOTE: The archive at ftp.uni-stuttgart.de will move to a new machine soon. The directory and the IP address will change, the name will remain **ftp.uni-stuttgart.de**

Frequently Asked Questions about 4TEX

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Introduction

4TEX is growing in popularity. As a shell for EMTEX and many many utilities, 4TEX is the userfriendly way to do perfect TEXing. It aims to be a complete system and is designed to shield you from all kind of parameter settings. Installing 4TEX may take some time, but you are rewarded with a open userfriendly working bench. If you donot like the way 4TEX handels things you can adjust the 'batch' files (`btm` files to be exact) or add your own utilities. Once 4TEX works on your system you will soon become addicted to it, and even simple things will be done using this shell instead of remembering all kind of parameter settings.

When 4TEX grew in popularity we decided to open an e-mail number just for asking 4TEX and EMTEX questions. This account will shield the authors of 4TEX from extensive disturbances and lets us also select the appropriate person to answer the problem (mail). You still are invited to mail all remarks/suggestions and questions to `4tex-support@eco.RUG.nl` We also have a 4TEX mailinglist. This list is intended to inform people about the bugs, the interesting questions and suggestions, and the latest updates (as writing this note we are working on 4TEX 3.00).

In this note I have gathered some frequently asked questions and remarks. Most of the questions and answers were proposed in Dutch, so I tried to translate them into English. Blame me for (m)any bad English.

The questions

1. I cannot start 4TEX without many strange error messages.
2. Occasionally I would like to write a document using the Dutch language. How can I force 4TEX to use Dutch hyphenation patterns.
3. I try to use 4TEX under Windows and get the errormessage 'DPMI not supported'.
4. In the '4TEX local guide' I find many references to documents and articles, but where can I find them.
5. I like to automatically generate the missing fonts. How to do this in 4TEX.
6. I quickly installed `tex386.exe` and while running TEX I get the message 'cannot find format file'. I like to generate new format files, but how.
7. Does 4TEX works on our network.
8. After installing Dos 6.0, I get some errormessages when starting 4TEX.
9. Am I forced to use Qedit as an editor in 4TEX.
10. What means a `%<TeX_Marker>` in all my TEX documents.
11. Why we need the logical drives `t:` and `q:`.
12. Why is 4TEX such a slow starter. I have to wait several (precious) seconds before the main menu appears.
13. Can I use the LATEX on-line help environment of 4TEX without using 4TEX.
14. I have problems with the ASCII-beta-symbol which in my German LATEX sources denote the German character `\ss`.

1 Startup with errors

Most of the time these errors are due to wrong settings of environment variables. You should take the time (only once) looking at the two files containing all the environment settings (i.e. `\emtex\btm\texuser.set` and `c:\emtex\btm\bs system.set`). For instance not specifying the `path` correctly can result in strange errors. We try to install 4TEX in a way that it almost will work immediately, but still read the two files carefully and follow the instructions.

2 Dutch hyphenation patterns

4TEX uses Babel and by default we have installed the languages: Dutch, English (American), German and French. You can easily select one or more languages even within one document. For instance:

```
\documentstyle[german,french,english,%
                              dutch]{article}
\begin{document}
  %default language is dutch, i.e.
  %the last specified in the preamble
Dat is mooi.
```

*I thank my former colleagues Erik Frambach and Maarten van der Vlerk for their effort in making 4TEX what it is today: a complete userfriendly workbench

```
Een \chapter heet nu Hoofdstuk, enz.
\selectlanguage{english}
  This is nice.
  A \chapter is now called Chapter, etc.
\selectlanguage{german}
  Da\ss\ ist sch\"on.
  Ein \chapter hei\ss t jetzt
  Kapitel, unz.
\selectlanguage{french}
  C'est bon.
  Une \chapter s'apelle maintenant
  Chapitre, etc.
\end{document}
```

Of course there is a complete documentation of the Babel system. Read this for more information. Many languages have special options. For instance in Dutch we can use `"y` to get the ligature ij and use `"i` to get ï.

3 DPMI not supported

This is the result of E. Mattes EMX Dos-extender. The solution is simple: upgrade the `tex386.exe` and add two Dos-extenders. See this MAPS: 'Some notes about Windows'. Windows will be fully supported in 4TEX version 3.00 (released end of november 1993).

4 References in Local guide

When you have fully installed 4TEX there also will be a directory called `c:\emtex\doc\`. In this directory you will find all documents about style files etc. All these files are compressed (`.zip`) files and you need e.g. `pkunzip.exe` to unzip them. This can be done automatically in a simple menu structure using the `F3` key in any of the menus in 4TEX. Of course all these files are regular updated. So for the most resent versions one should look on any CTAN server.

5 Missing fonts

For automatically generating missing fonts you only have to set some environment variables in the file `c:\emtex\btm\texuser.set`. You need to set the following variables:

```
FONTGEN=y
MYFONTS=c:\texfiles\fonts
MYTFM=c:\texfiles\tfm
```

Take care that these directories exist (otherwise make them). 4TEX will generate the missing fonts and store them in all kind of directories. When you use for instance the Epson printer and you have just generated `cmr10<240>` this font will be stored in `c:\texfiles\fonts\epsonfx\240dpi`. When using a HP-laserjet the font `cmr10<300>` is stored in `c:\texfiles\fonts\hplaser\300dpi`. This means that 4TEX makes it possible to generate all kinds of fonts for all types of printers and that 4TEX will do all bookkeeping in storing and loading the correct fonts. Of course to generate fonts we need METAFONT and therefore automatically font generation only works when you have installed METAFONT.

In the new release of 4TEX (version 3.00) there will be some extra utilities especially for handling fonts. There will be an utility called `fontlib` to store your (`pk`) fonts in a font library. The utility `mfformat` will generate new METAFONT formats. This is for instance needed when you have added a new type of printer (e.g. the HP-laserjet 4). With the utility `metafont` you can add/modify/run your own METAFONT jobs.

6 Format files

There are two groups of format files, the ones that are used for normal TEXing (the compilers `tex86.exe`, `tex186.exe`) and the ones that are used when running BiG-versions (i.e. larger memory setting and therefore slower, like `btex86.exe`, `btex186.exe` and `tex386.exe`). The first group is installed in the directory `c:\emtex\texfmts` and the BiG-versions are stored in `c:\emtex\btexfmts`.

In the 4TEX local guide it is explained how to generate new format files. This still looks complicated. Therefore we have added (4TEX version 3.00) the utility `formats`. With this menu it becomes really simple to generate new formats (small or big or with whatever languages).

7 Does 4TEX works on our network

We have tried to make it possible to run 4TEX on almost any network. We did not test it on all possible networks, so we have to rely on comments/questions from others. In Groningen we use a Novell network and 4TEX works fine. Every user has its own `texuser.set` with his own settings and the complete TEX system is stored on a network drive.

If you do not have a Novell network, you have to change some things in order to work. All the network settings are stored in a batch file `c:\emtex\btm\network.btm`. After some trial and error most people get 4TEXworking. We know that the following networks can run 4TEX:

1. Novell network
2. Decnet Pathworks network
3. Vines/Banyan LAN-network

When you want to install 4TEX on a network and you have problems/questions mail them to `4tex-support@eco.rug.nl` We will try and answer these questions or give you the name of the person who already successfully installed 4TEX on your type of network. The nicest thing we recently heard is that an APPLE-user installed 4TEX on his APPLE machine using a Dos-emulation mode.

8 Dos 6.0 and errors

4TeX uses the programs `marknet.exe` and `relnet.exe` to store the current memory settings. These programs need some updating when running under Dos 6.0. The errors are not dangerous, you should however get the new (up-to-date) versions of the two programs mentioned above.

9 Editors

You can use whatever editor you want. The editor is set by the environment variable `EDITOR` in the file `texuser.set`. We recommend Qedit because we have written some nice macros to help you with all kinds of things (e.g. block compiling, one word spell-checking etc.)

Nowadays we use the update/upgrade of Qedit, called TSE. This program is not shareware (yet), but for everyone who is interested, we can supply the TSE macros that do the same as the Qedit macros (even more and better).

We, unfortunately, discovered that there are editors that can not use extended ASCII codes (values above ASCII 128). For instance the Norton Editor, translates extended ASCII code to normal codes. Because we use extended ASCII codes in our batch files as well as our settings files (`*.set`) we do not recommend using such an editor to change/view our files. The Norton Editor of course can be used to generate TeX documents under 4TeX.

10 %<TeX_Marker>

4TeX uses a `%<TeX_Marker>` to indicate the place (line and column) where we left our document. The next time we enter the editor, 4TeX will find the place where we left and we can start typing immediately. Because the `%<TeX_Marker>` starts with a % it will be treated as a comment when compiling the document. The same holds for a `%<Block_Marker>`

When using Qedit, there is one place where this macro gives undesired results. In a verbatim environment the `%<TeX_Marker>` will be printed, so we have to be aware not to end an editing session on a verbatim line. The TSE macro is rewritten so that it will end above the verbatim lines and therefore not will print the `%<TeX_Marker>`.

11 Logical drives

We setup 4TeX so that it could run on networks as well as on any PC without completely modifying all our batch files. Therefore we needed to assign drive letters to our batch files that could be used anywhere. We decided to use the drives `t:` and `q:`. The stand alone PC as well as a Network environment will work with some Network mappings or using the `SUBST` command for stand alone PC's. Therefore be sure you have specified `LASTDRIVE=T` in your `config.sys` file.

12 4TeX a slow starter

We tried to make 4TeX as idiot proof as possible. We therefore need to check a lot of things and write several files before we can start the main menu. On slow machines this can be quite time consuming. But it is a small price to pay compared to the joy of TeXing. Most people we know start 4TeX only once a day, and do everything within 4TeX. When they need other programs, they add it to their own utility menu (the `F5` key) or they `shell to Dos` with the `F9` key.

In 4TeX version 3.00 we have tried to speed up the startup (on my PC the startup time went from 8.3 seconds to 3.2 seconds). We also recommend the use of disk caching (e.g. `smartdrv.exe`) because we read and write a lot of files. You can also speedup things by not using the slow video-ram (as is done with e.g. `vidram`. Another environment setting that speeds up 4TeX is `SEARCHFILE=n`, i.e. 4TeX should not search for TeX files in subdirectories. If things still are to slow, try to skip the mouse (i.e. `SET MOUSE=` in the `texuser.set` file).

13 On line LaTeX help

4TeX comes with a really nice LaTeX help environment, which can be used anywhere because it is a stond-alone TSR program. You only need the two files `texhelp.exe` and `texhelp.hlp`. These can be found on the directory `c:\emtex\utils\`

14 German character \ss

In 4TeX we have redefined the higher ASCII values. This means that higher ASCII codes are translated to correct TeX statements. For instance the é (ASCII 130) is translated to `\'{e}`, also the ASCII 125 (the β) is translated to `$\beta$` etc. We use the code-page 437. When you like to change this you have to modify the file `c:\emtex\texinput\437_tex.txt` and use the program `c:\emtex\maketcp.exe` to generate the file `c:\emtex\texinput\437_tex.tcp`. After this you have to generate new format files (e.g. using the `Formats` utility from 4TeX). For instance using

```
tex386 /i /8 /c437_tex /mt:65000
                        lplain \dump
```

Gezeefd uit de TEX-NL discussielijst*

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Abstract

Hier volgt opnieuw een selektie uit de NTG TEX-NL discussielijst. Er werden enkele (korte) items uitgelicht uit de onderwerpen die aan bod gekomen zijn tussen juni en september 1993.

Inhoud

17 Een probleem met paginanummers bij een index.

In mijn TEX file staan de volgende commando's:

```
\bibliography{refs}
\bibliographystyle{...}
\addcontentsline{toc}{chapter}%
                           {Author Index}
\printindex[aut]
\addcontentsline{toc}{chapter}{Index}
\printindex
```

De bedoeling is dat ik een Author Index en daarna een gewone Index krijg. Dit lukt, maar ik wil ook de index'en in de inhoudsopgave krijgen. Dit lukt ook, echter achter de Author Index staat in de inhoudsopgave pagina 205, terwijl deze index begint op pagina 206. Het vreemde is dat het met de tweede index wel goed gaat! Hoe moet ik dit repareren?

Antwoord: De `\printindex` doet een `\twocolumn`, die op een nieuwe pagina begint. Je `\addcontentsline` staat nog op de vorige pagina, helaas.

De reden dat het in de volgende wel goed gaat is dat aan het eind van een index ook al een `\clearpage` gegeven wordt (evt. via het `\onecolumn` commando).

De oplossing is erg simpel: zet een `\clearpage` voor de eerste `\addcontentsline` en haal de zaak nog minstens 2 maal door LATEX heen.

18 Plaatjes opnemen in een slide.

Wie kan mij vertellen hoe ik het beste plaatjes (PCX-en/of EPS-formaat) kan opnemen in een 'slide'? Wij hebben niet de beschikking over een postscriptprinter.

Antwoord: Er zijn meerdere mogelijkheden om dit te doen, maar de twee die het meest voor de hand liggen, zijn

1. haal 'bm2font' op en vertaal hiermee je plaatje naar `<.pk>` formaat
2. haal 'Ghostscript' op en maak hiermee je printer (er zijn redelijk veel mogelijkheden aan drivers beschikbaar) tot een Postscript printer.
3. Gebruik het `\special` commando in EmTEX . Als je bijvoorbeeld een plaatje in een file 'pietje.pcx' hebt dan neem je die op met het commando `\special{em:graph pietje.pcx}`

19 Waar kan ik OzTEX bekomen?

Voor belangstellenden onder de NTG leden kan er via de NTG secretaris een startset van OzTEX bekomen worden. Deze is gebaseerd op versie 1.5. Inmiddels is er reeds een versie 1.6 uitgekomen (dixit Hans van der Meer) die als belangrijkste verschil met versie 1.5 de implementatie van virtuele fonts heeft.

20 Hoe een DVI file versturen per Fax-modem.

Vraag was: bestaan er sources, executables (MS-DOS, Atari, SUN of Silicon Graphics) PD of commercieel om DVI files te versturen met een Class 2 FAX modem?

*Zie de eerdere bijdrage in MAPS93.1: vraag 1–16.

emTEX

Dat is met emTEX wel te regelen want je kunt namelijk met DVIDOT een PCX file van je document maken en daarna het met je FAX-programmatuur vertalen. Leest je FAX geen PCX formaat dan kun je dit natuurlijk simpel naar een ander bitmap formaat vertalen (gebruik bv Graphic Workshop wat in het 4TEXgrafische pakket zit)

Al deze faciliteiten zullen in de nieuwe update van 4TEXopgenomen zijn (versie 2.20).

Enkele bevindingen: Configuratie: MSDOS, emTEX, (commercial) BITFAX/SR, faxmodem.

1. FAX fonts (204 dpi): met mfjob aangemaakt (zie modes.mfj: def m=[FAX])
2. Bitmap-Logo's vormen een ernstig probleem: ik heb ooit BM2FONT gebruikt om logo's te maken voor 300 dpi. Inherent aan deze oplossing is dat je TEX-source resolutie-afhankelijk wordt (omdat BM2FONT het logo splitst in een aantal karakters, afhankelijk van de breedte en hoogte). Ik heb daarom een LATEX fax style die deze logo's vervangt door wit-ruimte, jammer maar helaas.
3. De documentatie en on-line help van BITFAX zijn onvolledig, incorrect en tegenstrijdig:
   - er wordt nergens vermeld dat als een PCX-file niet exact 1728x2249 pixels telt, het programma gaat scalen (met de bekende afschuwelijke afrondingsfouten tot gevolg).
   - in de gedrukte documentatie wordt verteld dat 'fine resolution' 200 dpi is, in het configuratie scherm wordt aangegeven dat de resolutie 196 dpi is! Het is dus in werkelijkheid 204 dpi.
4. PCX-file(s) aanmaken. BITFAX verwacht voor elke pagina een PCX file.
   DOS commando:
   ```
   >dvimsp @fax.cnf <dvi-file>
                      <pcx-file>??
   ```
   Als `<pcx-file> = "page"`, dan maakt dvimsp: page01.pcx, page02.pcx,. . .
   De file FAX.CNF bevat
   ```
   % fax.cnf (204x204 FAX fonts,
   %                  see modes.mfj)
   /pd=%DVIDRVINPUT%
   /pl=%DVIDRVFONTS%;fax_0;fax_h;fax_1;
                     fax_2;fax_3;fax_4;
                      fax_5;fax_sli.fli
   /pf=%DVIDRVFONTS%\dpi$r
   /pg=%DVIDRVGRAPH%
   /r=204
   /rf=204
   /fs=1
   /op %make a PCX file
   % the following are set such that
   % the resulting PCX file
   % is exactly 1728 by 2249 pixels
   % This prevents the ugly scaling
   % of bitmaps by the BITFAX program
   /h=11.0245in
   /w=8.4706in+
   ```
5. Verzenden van fax met DOS commando
   ```
   >bitfax -Fpage01.pcx -Fpage02.pcx
            -P<phone-nr>
   ```
6. Conclusie: tevreden over de bereikte kwaliteit, de bereikte informatie dichtheid (footnotesize in 10pt document is perfect leesbaar). Ontevreden over de behandeling van bitmapped logo's. (zou opgelost zijn als BM2FONT ook .vf files zou leveren)

Opmerking:

Zelf gebruik ik QL2FAX i.p.v. BITFAX (ook met fonts van 204dpi) en dit tot volle tevredenheid. Om het probleem van het opnemen van een bedrijfslogo op te lossen heb ik de betrokken tekening gewoonweg met een scanner gedigitaliseerd aan 200dpi en opgenomen in het fax-document. . .

Atari

Er is op de Atari ook een fax programma met TEX-drivers: QFAX, van een Duitse firma. Het wordt in veel advertenties aangeboden met werkende modems. Bij dit programma worden een aantal drivers geleverd. Wel gebruiken deze 180x180 pixel fonts.

21 Input versus include

Misschien is het al eerder gevraagd, maar ik kan het niet terugvinden. Ik probeer het volgende:

```
\documentstyle[aip,multicol]{article}
\begin{document}
\include{a}
\begin{multicols}{2}
\include{b}
\include{c}
\end{multicols}
\end{document}
```

Voor dit voorbeeld bevatten `a.tex`, `b.tex`, en `c.tex` alle drie ongeveer een regel text. Toch levert dat een document van 7 pagina's, omdat na elke include een lege pagina wordt tussen gevoegd.

Doe ik iets fout of is dit een feature van multicols.sty ?

Antwoord: een include is niets anders dan
`\clearpage \input{file} \clearpage.`

Oplossing: gewoon `\input{file}` gebruiken.