

Frequently Asked Questions about \LaTeX

Wietse Dol

Landbouw-Economisch Instituut (LEI-DLO)
 P.O.Box 29703
 2502 LS Den Haag
 The Netherlands
 w.dol@lei.agro.nl

Introduction

Since the presentation of \LaTeX last year, many people who tried to install the system on their PC encountered some problems. All these problems are often solved easily with the help of a few tips (i.e. knowing the correct settings of the variables). We thank all the people who took their time trying to install \LaTeX and reporting their problems. We are not able to test everything and are therefore depending on users to report errors and problems.

To have some kind of quick response on problems we decided to open a discussion list. This discussion list is only for asking \LaTeX , \LaTeX and \LaTeX questions. If you want to subscribe to `4tex@nic.surfnet.nl` send an e-mail to `listserv@nic.surfnet.nl` containing just one line:

```
subscribe 4tex Foo Bar
```

where 'Foo Bar' is your real name. Note that you should *not* send your request for subscription to `4tex@nic.surfnet.nl`, because this is the mailing list itself. In that case your request would be distributed to all subscribers, which will not be appreciated. You are also invited to mail your suggestions to this discussion list. We are proud to say that we already have more than 65 participants from all over the world (yes the only continent we are missing is Africa).

The \LaTeX discussion list is *not* only for specialist. We intend it to be an open list i.e. everyone with whatever question should be able to get a quick and satisfactory answer. So please anyone, ask your questions. You may think they are stupid, but we really like them and also get to know the weak points of our system. This means: points for future updates. . . So keep on asking.

In the sections below we will present some questions and tips from the discussion list, hoping that they are useful to anyone who wants to use \LaTeX .

Questions and tips

1. Out of memory error when previewing a document
2. The `MODE` command in `autoexec.bat`
3. `ansi.com` and the screendisplay of the \LaTeX menu
4. Undocumented TSE feature
5. Double side PostScript Printing
6. `config.sys` and `QEMM`
7. VCPI error messages
8. \TeX capacity exceeded, save set = 1000
9. Some OS/2 remarks

10. Eight magic spaces in `loadpars.btm`
11. Problems with `dvips32`
12. Problems with the T: drive

1 Out of memory error when previewing a document

With \LaTeX there are two programs to view `.DVI` files: `DVISCRC` and `DVISCRS`. `DVISCRC` needs some more memory than `DVISCRS` but is also faster. When you have memory problems you should use `DVISCRS`. With \LaTeX it is possible to select which viewer you would like to use. This is possible by pressing `CTRL-D` in the main menu (i.e. this is a toggle selecting between `DVISCRC` and `DVISCRS`). If you always prefer `DVISCRS` you can add `VIEWSIZE=S` to your `texuser.set` (`VIEWSIZE=` will select `DVISCRC`).

2 The `MODE` command in `autoexec.bat`

I'm using a memory management system resulting in 634 kbytes free RAM. After using \LaTeX I notice a decrease of available free RAM of 27k!! A memory map shows me that after the \LaTeX session, 26k free memory was encapsulated by a resident 4DOS part (0.3k) and a resident `MODE` program (0.5k) resulting in an unavailable RAM part of 27k.

However after including the following line into the `autoexec.bat` file: `MODE LPT1 retry=r` the amount of available free RAM remains now unchanged: 634k *also* after the \LaTeX session.

3 `ANSI.COM` and the screendisplay of the \LaTeX menu

We have had some problems with `ansi.com`. Normally \LaTeX checks if `ansi.sys` is loaded (in the `config.sys`). If not it will load `ansi.com`. However, if you have installed `ansi.com` (e.g. in the `autoexec.bat`) and you have loaded it into high memory (e.g. with the `LOADHI` command) than you are in real trouble. `ansi.com` doesn't recognize itself (when loaded high) and the result of a \LaTeX session will be a screen with a lot of rubbish. So, add `ansi.sys` to your `config.sys` (there are more programs that use `ansi`) or leave it out completely (\LaTeX will load `ansi.com` and unload it when leaving \LaTeX).

4 Undocumented TSE feature

Just for the people who are using the TSE editor: there is an undocumented toggle (CTRL-B in the main menu). This allows you to switch between single error mode and multiple error mode for the compiler. Compiling a document will try to compile the whole document (not stopping for errors) and when errors occur the editor is called and the errors are displayed (one for one).

5 Double side PostScript Printing

Is it possible within \LaTeX to send \TeX PostScript output to a twoside page PostScript printer (not by using the \LaTeX two-pass method). This means starting the PostScript file with:

```

%!PS-Adobe-2.0
statusdict begin true setduplexmode end
%!PS....
%The actual PS file...

```

```

REM twoprtps.btm
@echo off
pushd
cdd %TEXFILES
set OLDPRNDEST=%PRNDEST
iff not exist %FNAME.ps then
  cls whi on bla
  echo The PostScript file %TEXFILES%\FNAME.ps doesn't exist!
  echo We first make the Postscript file and then print it
  echo on a twoside page PostScript printer.
  echo.
  pause
  set PRNDEST=%FNAME.ps
  ctty nul
  %P_PRE
  ctty con
  call %DRIVE\btm\output.btm postscr
  ctty nul
  %P_POST
  ctty con
endiff
iff %@line[%FNAME.ps,1] ne "statusdict begin true setduplexmode end" then
  del _dump_ >& nul
  echo %!PS-Adobe-2.0 > _dump_
  echo statusdict begin true setduplexmode end >> _dump_
  copy _dump_+%FNAME.ps /a _dump_.ps /a
  del _dump_ >& nul
  move _dump_.ps %FNAME.ps >& nul
  set PRNDEST=LPT1
  : change this to specify the correct printer
  call %DRIVE\btm\output.btm %DVICLASS
endiff

:quit
set PRNDEST=%OLDPRNDEST
unset /q OLDPRNDEST
popd

```

6 CONFIG.SYS and QEMM

For QEMM users: take care not to handle `command.com` loading by QEMM: elsewhere all your environment variables and path are lost by leaving \LaTeX and coming back to your starting MS-DOS shell!! This is part of my local `config.sys` file:

```
....
```

Answer: There is always a problem that people want more of a package than the package offers (yes a new update and a lot of money can help but we don't think that is the right answer...) We can not and will not support all possible printer gadgets (It would become a never ending story). However, just to proof how flexible \LaTeX really is I will prompt a solution to your question. Note that this is not \LaTeX and therefore you can use it at your own risk.

To overcome a lot of questions to add utilities we developed a user menu system that can add/remove/run user utilities. This is invoked by pressing the F5 key (did anyone know that? I am interested if anyone uses this utility, I do!) What you want is what I would call a user utility. Therefore press F5 and add the following utility: I would call it `twoprtps.btm` (see below).

I didn't test it (we do not have a postscript printer!) and I suggest you can perfect the batch file yourself. Note that I use (parts) of batch files already used by \LaTeX .

```

; 4TeX does not reset the old DOS
; set environment (incl path)
; using next line:
; SHELL=C:\QEMM\LOADHI.COM /R:2
; C:\DOS\COMMAND.COM C:\DOS\ /e:1536 /p
; SHELL=c:\dos\command.com c:\dos\ /e:1536 /p
....

```

But, using \LaTeX as your standard shell, you can include the following line into your `config.sys` without any problem: `SHELL=c:\qemm\loadhi.com /r:1 /lo c:\emtex\utils\4dos.com`

7 The `TEXINPUT` environment variable

This variable in the \LaTeX workbench is defined as: `TEXINPUT=t:\texinput!;.c:\texfiles\texinput!` The search sequence is in my opinion different from what a user should expect:

1. the current directory,
2. the user `texinput` directory,
3. the general \LaTeX `texinput` directory.

Answer:

- \emTeX always looks in the current directory first. You don't need to include the '.' directory! You even can't get \emTeX to look in, say, `t:\texinput` first.
- `t:\texinput!` comes first to discourage users to name their style file identical to official ones. We hate to see people use styles like `article` as a \LaTeX style if they have a personal version. Sooner or later it will become incompatible, while other users have no problem running the very same file. Confusion all around!
- It should make no difference that the user input directory is at the end. If your style file has a unique name, \emTeX will find it anyway. That is the key: unique names prevent confusion. We don't want two or more styles with identical names. However, we can't stop you from using an `article.sty` in the current directory, as explained above – in fact, we use this feature myself for testing purposes.
- Only the TeX compilers (version 3c-beta9 and higher) handle the '!' by themselves – \emTeX is great! Some other programs use `TEXINPUT` (e.g. `bibtex`, `metafont`), so \LaTeX expands `TEXINPUT` before running them. For those who like to know how this is done in 4DOS, have a look at `expand.btm`.

8 VCPI error messages

After installing disk 1 through 4 \LaTeX and \LaTeX were running without problems. After installation of disk 5 (\TeX for 386 and up) I tried to run \LaTeX (or compiling in \LaTeX) but all I got was the following error message `VIRTUAL MODE NOT SUPPORTED WITHOUT VCPI` What's wrong here?

Answer: The 386 version of the \emTeX compiler uses the dos-extender EMX. The documentation of EMX explains the above error message as follows:

A VCPI server is required to run EMX if the CPU is in virtual mode. You'll get this message if you're using an EMS driver (EMS emulator) which doesn't support VCPI or if you've disabled EMS. Remedy: remove the EMS driver, use an EMS driver which supports VCPI or enable EMS

if it has been disabled (for instance, remove the `NOEMS` keyword from the command line of the EMS driver).

It means that you probably have the following line in your `config.sys`: `device = c:\dos\emm386.exe noems` You will have to remove the 'noems' option, or replace the line by: `device = c:\dos\himem.sys` or, if you have `QEMM`: `device = c:\qemm\qemm386.sys ram`

`QEMM` is a much better memory manager that will give you both XMS and EMS on demand. Highly recommended (though commercial) software.

9 Some OS/2 remarks

\LaTeX has an excellent feature to create .PK versions of postscript fonts 'on-the-fly' using the `PS2PK` program. This feature can be extremely useful for previewing or printing on a non-PS printer. \LaTeX however does not contain the standard postscript fonts in a decent format, since these fonts are payware.

People who are using OS/2 have gotten some postscript fonts for free, due to a build in version of the Adobe Type Manager. These fonts however have different names as suggested in `\emtex\ps\fonts\psfonts.inf`, they are located in another directory (`\psfonts`) and do not have associated .AFM files (OS/2 uses a binary file with the extension .OFM for the font metrics).

With some fiddling it is possible to use these fonts in \LaTeX :

- Change the `PSFONTS` directory in `texuser.set` to the directory where OS/2 stores the postscript fonts (e.g. `d:\psfonts`) and restart \LaTeX to reload the `texuser.set` file.
- Copy the relevant .AFM files from `\EMTEX\TEXTFONTS\PS`

```
PTMR.AFM  PTMRI.AFM  PTMB.AFM  PTMBI.AFM
PCRR.AFM  PCRR0.AFM  PCRBAFM  PCRBO.AFM
PHVR.AFM  PHVRO.AFM  PHVBAFM  PHVBO.AFM
PSYR.AFM
```

- Put this version of `psfonts.inf` into your Postscript-font directory (you also can modify the existing `\emtex\ps\fonts\psfonts.inf` and copy that version to the Postscript-font directory):

```
* Courier:
rpcrr    -apcrr.afm  cour.pfb
rpcb    -apcrb.afm  courb.pfb
rpcrro   -apcrro.afm  couri.pfb
rpcb0    -apcrbo.afm  courbi.pfb
* Helvetica:
rphvr    -aphvr.afm  helv.pfb
rphvb    -aphvb.afm  helvb.pfb
rphvro   -aphvro.afm  helvi.pfb
rphvbo   -aphvbo.afm  helvbi.pfb
rphvrrn  -aphvr.afm  -E0.82 helv.pfb
rphvbrn  -aphvb.afm  -E0.82 helvb.pfb
rphvron  -aphvro.afm  -E0.82 helvi.pfb
rphvbon  -aphvbo.afm  -E0.82 helvbi.pfb
* Symbol:
rpsyr    -apsyr.afm  symb.pfb
rpsyro   -apsyr.afm  -S0.167 symb.pfb
psyr     -apsyr.afm  symb.pfb
psyro    -apsyr.afm  -S0.167 symb.pfb
* Times:
rptmr    -aptmr.afm  tnr.pfb
rptmb    -aptmb.afm  tnrb.pfb
```

```
rptmri -aptmri.afm tnr1.pfb
rptmbi -aptmbi.afm tnrbi.pfb
rptmrrn -aptmr.afm -E0.8 tnr.pfb
rptmrre -aptmr.afm -E1.2 tnr.pfb
rptmro -aptmr.afm -S0.167 tnr.pfb
```

- After these modifications you should be able to use the Courier, Times, Helvetica and Symbol fonts in your documents without using a postscript printer (or using those ugly Ghostscript fonts). However the font metrics will probably be imperfect, since the .AFM and .PFB come from different manufacturers.

10 Eight magic spaces in loadpars.btm

After starting \LaTeX I get the following errors

```
ECHO is OFFx
ECHO is OFFx
```

```
Invalid Parameter "@index[%file,%empty]"
USAGE: IF [not] condition ... es
```

Answer: These errors are caused by an undefined environment variable %EMPTY. Normally, this is set at startup in loadpars.btm and is equal to 8 'spaces', that is, equal to 8 times ALT-255. Some editors (like the Norton Editor) change these hard spaces into normal spaces (i.e. they

change ALT-255 in 32). So, check the variable %EMPTY in the file loadpars.btm and restart \LaTeX .

11 \TeX capacity exceeded, save set = 1000

Sometimes when preparing your document you get (when compiling your code) the 'TEX capacity exceeded' error. This doesn't mean that you made a mistake (it is possible though) but that the default memory settings are not large enough. The default memory settings depend on whether you use BIG or normal \emTeX and the default values can be found in tables (tex.doc and tex386.doc) Just as an example we present the table for normal \emTeX .

Here we see that 'the save size' is by default 600 (and for big=1000). So if this is not enough you can enlarge this (maximum 16000). How?

1. by adding the statement /ms16000 to the variable EM-TEXOPT. So in the \LaTeX main menu give the 'D' for MS-DOS-command and type ESET EMTEXOPT and add the /ms16000
2. in the system.set file there is the variable COMPILEROPT add to this /ms16000, e.g. COMPILEROPT=/MA200 /MS16000

Both should work (do not forget to restart \LaTeX with the /R option).

Option	Removes this TeX error message: TeX capacity exceeded, sorry [...=###]	Range min-max	Default DOS / OS/2
/ma#	parameter stack (macro parameters)	60-1000	60
/mf#	font memory (font metric data)	5000-65500	32766
/mn#	semantic nest size (mode nesting)	20-3000	40 / 100
/mp#	pool size (strings)	20000-65500	50000
/ms#	save size (values saved by grouping)	100-16000	600
/mt#	pattern memory (hyphenation)	5000-65500	10000

Table 1: Memory sizes for \emTeX

12 Problems with DVIPS32

I sometimes have a problem with DVIPS (in about 5% of the cases). Sometimes the task is not finished (all pages are printed to the printer or to file but he gets stuck afterwards) and so now and then he quarrels with QEMM (result: QEMM Exception errors). In both cases the computer has to be rebooted.

Answer: With a 386 machine or higher \LaTeX uses the DVIPS 32 bits program which has his own memory manager. This can cause problems with e.g. QEMM. Solution: I think there will be a new version of dvips32.exe on the CD-ROM. But that is not the straight solution. You can also rename the dvips.exe to dvips32.exe. Now you will use the normal DVIPS instead of the 32 bits version and is therefore a little bit slower (what is slow). Try this and probably no errors will occur. Just remember: \LaTeX is not causing the problem: DVIPS is.

13 Problems with the T: drive

We get a lot of e-mail from people nowadays having problems with the LASTDRIVE=T and especially with the SUBST or MAP commands. The problem arises when someone wants to install \LaTeX on a stand-alone bases with a Novell network attached. Novell claims all the drives from the G: upwards, so it becomes not possible to use the SUBST command. A real problem and not so simple to solve because many of the applications we use need the T: drive.

However, we are always trying to get the most out of the PC and yes I think we are almost ready to have a \LaTeX version that doesn't need a T: drive (and also not a LASTDRIVE=T). We are testing it and looking where problems might occur. It will be on the CD-ROM.