

3.2 Release Notes: NeXT TeX

The following sections describe new features, changes, and known problems associated with this release of NeXT TeX 3.1.

The NeXT TeX package is distributed on the *NEXTSTEP Release 3.2* CD-ROM in **/NextCD/Packages/NeXTTeX.pkg**. This package contains more documentation in the files **/usr/tex/ntman.dvi** and **/NextLibrary/TeX/tex/inputs/dvips.tex**, and in the Hints panel of **TeXview**.

Notifying the author

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New features

The following new features have been added to the main TeX executable since Release 2.0.

- TeX now supports character remapping, so that the character encoding of the NeXT computer can be mapped to whatever encoding is appropriate for the TeX fonts being used. This is supported through a file called **tex.remap** which is searched for in the current directory, the user's home directory, and then **/usr/lib/tex**. This file is a list of lines, each of the following form:

ext: int int int ...

where ext is the external character code (1 through 255) and the int's represent the internal code for that (and the successive) external characters. Thus, to remap character 128 (externally) to 200 and 129 to 211, a line such as

128: 200 211

would do. If you use such remapping, be sure to run **initex** to create new format files. The dvips and afm2tfm programs also support such remappings to make additional characters visible and accessible; see the dvips

documentation for more information on those features.

- Many array dimensions inside of TeX and METAFONT and various other programs have been increased; the hyphenation trie specifically has been increased for support of multiple simultaneous foreign languages.
- While this isn't a new feature, the use of `%& formatname` on the first line of your TeX source file is an even better idea now that **TeXview** can invoke **TeX** directly; if you do not use this convention, **TeX** will not know what format to load.

New features: dvips and TeXview

Many features have been added to both **TeXview** and **dvips**; this is a list of the new features they share. Much more extensive documentation is given in **`/usr/lib/tex/inputs/dvips.tex`**.

- Included epsf images can be scaled such that their aspect ratio is distorted; simply give both a horizontal and vertical size (with **`epsfxsize`** and **`epsfysize`**) and the graphic will be scaled to fit.
- Included graphics may be clipped to their bounding box by giving the command **`\epsfclipon`**; note that this may cause some graphics to get 'shaved' if they give a bounding box that is incorrect.

- Included graphics file names that start with a back tick are interpreted instead as commands to run, and the actual data will be taken from stdout.
- A new MAKETEXPK environment variable is supported.
- There is now color support! Color in imported graphics was always supported, but now you can set the color for your TeX text, rules, and equations as well.
- MSDOS-style .pfb files are now supported; they are converted to hex in the output PostScript file. (Note that such files can not, of course, be distributed, since they contain copyrighted font code. This is not true if public domain fonts are used instead.)
- The configuration file option `p+' has been added, meaning `add these additional fonts to the resident font list'. This is in addition to the old `p' option, which gave a file name that completely replaced the resident font list.
- The memory required by resident PostScript fonts has been dramatically reduced.
- PostScript fonts can now be reencoded both at the PostScript and the virtualfont level.

- The desired paper size can be specified in the TeX source file; both **dvips** and **TeXview** will recognize these commands and attempt to comply with them.

New features: dvips only

The following new features have been added to **dvips** since Release 2.0. These are the extensions that apply only to **dvips** and **afm2tfm**; more information can be found in **/usr/lib/tex/inputs/dvips.tex**.

- Horizontal and vertical offsets can be specified in the configuration file.
- Sequential page numbers can be specified by preceding the number with '='.
- Paper size specials are now supported, as is paper size information in the configuration file that can be used to map requested paper sizes to available paper sizes. This is especially important for typesetters where wasted film can be expensive.
- There is built-in command line help; just type **dvips** at a command line for a list of the options.
- The ability to limit the number of pages in each section, and to put each

section into a separate file, has been added. This makes it trivial to separate that 500 page book into sections of 20 pages each for the linotronic.

- Crop marks can now be printed.
- The desired page size can also be specified on the command line.
- A new -E option will attempt to create an epsf file. This only works for documents in which you've selected one page. The calculated bounding box just takes into account rules and characters drawn on the page; no graphics are currently taken into account.
- The **afm2tfm** program now prints out the entry in **psfonts.map** that should be added.
- The **dvips** program now looks for a **%%VMUsage** comment and uses it; otherwise it approximates the amount of printer VM required by an included header or epsf file by the total size of the file.
- A new **-b** option provides facilities for color separation, n-up printing, or poster printing.
- Ligatures have now been turned off in all fixed-spaced fonts (**afm2tfm**).
- Bad kern pairs in AFM files are now a warning rather than an error.

- Accent ligatures in PostScript fonts have been removed.

New features: TeXview only

The following new features have been added to **TeXview** since Release 2.0. There is some sketchy documentation in the Hints panel; extensive documentation is in the manual found by selecting the menu item 'Info/View Manual'

- There is now a Hints panel with some commonly-overlooked features of TeXview mentioned.
- Graphics can be 'mocked'; if the hide graphics option is selected in Preferences, then gray boxes will be drawn instead of included graphics. This is for speed when the included graphics are very complex or use inefficient PostScript.
- A console window has been added; this displays the results of any runs of **dvips** or **METAFONT** needed by **TeXview**. It automatically pops to front if a command takes longer than a few seconds, so the user no longer wonders why **TeXview** isn't as responsive.
- A 'tex' window has been added; this displays runs of **TeX**. Yes, now you can

invoke **TeX** from within **TeXview**!

- The arrow keys can now be `qualified' with shift and alternate to reduce the amount of scroll. In addition, the left and right arrow keys move the document around on the page when they are so qualified.
- Services support has been added. The initially available services are `open this file' (takes a file name, returns nothing), `reTeX the current file' (takes a file name but ignores it, just reTeX'ing the current file [this is because the current file might be a subfile---say, Chapter 2; better just to reTeX what you TeX'ed before] and returns nothing), `reload dvi file' (takes a file name, again ignoring it, and returns nothing; this is useful if you run **TeX** from within **emacs**, for instance), and `TeX eqn to EPS' that takes ASCII, runs **TeX** and **dvips -E** on it and returns a PostScript clip. These services can be extended through the use of the **TeXview.service** file.
- The **TeXview** window has a new, simpler look; the buttons have been moved to a separate command window. This way, those that want lots of big buttons can have them, and those that like a sparse, elegant interface can have that.
- The page number field is now automatically enabled when a - or any digit is pressed. To go to a particular page, just make sure the main TeXview window is key and type in the page number followed by return. (It's not enabled all the time because we want simple keystrokes to be interpreted as

command keystrokes when possible to save some pinkies out there.)

- FAX 'printing' should now work! (This was a tough one.)
- You can now scroll the page around by click-dragging.
- You can measure distances by clicking on the page; in the command window, the current click location and the distance from the last click location will be displayed. You can also change the units that these distances are displayed in. (No ultimate prepositions, Tom!)
- The size, position, and exposure status (whether the window is visible or not) is now saved in the defaults database for the main window, the tex window, the console window, and the command window. You must select 'Save Preferences' on the Preferences panel for this to take place.
- **TeXview** now can open files with extensions of **.dvi** and **.tex**.
- **TeXview** now responds to environment variables set in **~/.cshrc**. This is done by **system()**ing a **csh** and reading the output from **printenv** and using that to augment any environment variables that live in the Workspace environment. When, oh when, will the Workspace get an environment?
- No bitmapped fonts will be generated at resolutions below 69 dots per inch.

- Many, many other features and changes to the user interface. Play and enjoy!

Incompatible changes

The following incompatible changes have been made to NeXT TeX since Release 2.0.

- You cannot mix and match old and new versions of **TeXview** and **dvips**. They use many of the same header files, and these header files have changed from Release 2.0 to Release 3.
- PostScript fonts are now accessed through new, shorter (and perhaps less convenient) names; this was done in the interests of compatibility. See **/usr/lib/tex/inputs/dvips.tex** for more information.
- **TeXview** no longer accepts file names on the command line; use **open** instead.
- The **t** configuration file option (for paper size) is no longer supported. This is better done with the new paper size support.

Other changes

The following additional changes have been made to NeXT TeX since Release 2.0. In addition to the changes given below, many, many bugs, big and small, have been squashed.

- Landscape mode is now rotated 180 degrees to fit the **Preview** conventions. (Note that the landscape special, while still supported, should be done now with a papersize special.)
- The PostScript accent fixes have been added to **psfonts.sty**; note that these may change depending on how the PostScript fonts are reencoded.
- In path list expansion, any % substitutions are done on a per path element basis, rather than on the entire path list. Thus, before the path **./myfonts/%d/%n.%dpk** would always `succeed' by opening the current directory as a pk file (and then it would blow up with an illegal command in the pk file); with the current release, this path list will work as you'd expect.

Changes from 3.0 to 3.1

The following changes have been made since 3.0.

- Some kerns have been removed from the TeX versions of PostScript fonts; thus, the **tfm** and **vf** files for these fonts are somewhat different, and you

may

get checksum errors when printing or viewing a file created under 3.0 or an earlier release. Simply re-TeX the file and all will be well.

- Paper sizes are now correctly supported, both for printing and from **TeXview**.
- A new environment variable **DVIPSHEADERS** is supported; this supplies the path to search for header files or PostScript fonts in both **dvips** and **TeXview**.
- Various parameters of **TeX** have been made larger.
- The state of the 'custom' checkmark in the **TeXview** print panel is now saved in the defaults database.
- The paranoia workaround has been removed from **TeXview** since it is no longer necessary.
- A bug where a document that used more than 23 different fonts might have failed to print properly was corrected.

Known problems

The following are the known problems with NeXT TeX.

- You can't include epsf graphics that have an underscore in their name if you are also using a macro package that makes the underscore an active character. Few macro packages do this; when they do, simply use a different file name for your epsf graphic file.
- NeXT TeX stores its font files in **/LocalLibrary/Fonts/TeXFonts**. The installation process must be able to create and write to this directory. If **/LocalLibrary/Fonts** is shared with other systems, ensure that you have permission to create and write to this directory. Alternatively, the directory can be created before installation and set to be writable during the installation of NeXT TeX. In order for automatic font generation to work, the directory **/LocalLibrary/Fonts/TeXFonts/pk** must be world-writable. If you mount **/LocalLibrary/Fonts** as a shared, read-only file system, you can create a symbolic link from **/LocalLibrary/Fonts/TeXFonts/pk** to a local directory.

Future directions

The following new features are planned for future releases of NeXT TeX.

- Better integration with editors

- Support for error tracking and positioning
- **METAFONT** graphics display
- Additional utilities to make supporting PostScript fonts easier
- Full help for the **TeXview** program