

are available on CD-Rom, or user groups that can be of assistance in obtaining materials.

Finally, it is customary to mention briefly the layout and design of any book about \TeX . Although the author and publisher consider this book an 'excellent example' of a beautiful book typeset with \TeX , I do not entirely agree. With the many white spaces around illustrations and headings, it is a less than felicitous idea to separate paragraphs by white space, instead of simply indenting them. Also, the only distinction between levels of headings is through font sizes. Any real size difference, however, is dwarfed by the difference between headings in all lowercase such as **xv**, and ones in the same font size but mostly uppercase such as **PBMPlus**.

In conclusion I can safely state that this book stands alone among \TeX books. It contains much that is not in print anywhere else, and its usefulness spans all types of \TeX users. Victor sez check it out.

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Book review: *L^AT_EX guide pratique*

Jacques André

Christian ROLLAND, *L^AT_EX guide pratique*. Éditions Addison-Wesley-France, Paris, 1993, 280 pages; ISBN 2-87908-025-8; in French.

Up to now, only two books have been available in French on \TeX or $L^A T_E X$: the famous *Petit livre de T_EX* by Seroul, and a translation, by Éric Cornelis, of Michael Urban's *An introduction to L^AT_EX* published as *Premier pas en L^AT_EX* by Cahiers GUTenberg. The gap between these two books is now filled.

Although it follows more or less the same road as Lamport's *L^AT_EX user's guide*, this French guide is not just a translation of it. It contains a lot of useful macros, examples, tables, index, etc. Furthermore, this book contains details on extensions that are not described in Lamport's book (such as on Makeindex, B^BT_EX, Picture, and, an important point, french.sty, etc.).

I used to have Lamport's book near my station. Now, as a French speaker, I have Rolland's: this is a good book!

However... I disagree with the publishers: I do not understand why they have published this book. I mean, why so late, or why they have not waited for Goossens and Mittelbach's *L^AT_EX Companion* translation? This book doesn't have exactly the same audience (Rolland's is more directed to beginners, not low level ones but rather, let us say, regular users, while the *Companion* is instead for advanced $L^A T_E X$ ers). No, the problem is that Rolland's book is rather old: nothing about multicolumns, nothing (or almost) about NFSS, nothing about the use of PostScript files (through psfig, pstricks, etc.). Not one Frequently Asked Question is answered here. The author is a beginner and he wrote the book he would have liked to have when learning $L^A T_E X$. On the other hand, the publisher should have asked (for example to the French TUG: Association GUTenberg) for opinions on this book. It would have been said that chapters should have been added ($L^A T_E X$ in 1994 is not the same as in 1986...). At least, let us hope that a French translation of *The Companion* will be published as soon as possible.

Typesetting on Personal Computers

Next \TeX : \TeX plus the NextStep Operating System

Alan Hoenig

I recently upgraded my computer system and now use the NextStep operating system on a 486 Intel box. I can't imagine using any other operating system. One of the many pleasures of this computer environment is the implementation of \TeX (plus METAFONT plus all other \TeX - and METAFONTware) developed by Tom Rokicki of Radical Eye Software for NextStep. The purpose of this article is to describe the unique features of *T_EXView*, the name for this system. I will not spend much time on the standard features common to all implementations. As far as I have so far been able to determine,

TEXView contains within it every standard feature you expect to be there.

Since many readers may not be familiar with NextStep, I include some comments at the end of the article. *TEXView* is a standard component of NextStep. NextStep consists of a graphical user interface on top of Unix (BSD 4.3). Windows can be opened in which different tasks may be launched. When you purchase NextStep, you get Unix and the GUI, together with *TEXView* and other packages bundled together.

1 NextTEX

It's possible to bring up a window in NextStep which accepts commands in a familiar terminal mode. All of the component programs of *TEXView* may be invoked using familiar command line options. The \TeX that is the core of *TEXView* is a "big" \TeX which contains two non-standard enhancements. If the first line of a document file is of the form

```
%&foo
```

then the vanilla command `tex myfile` automatically invokes the format file `foo.fmt`. That is, it is equivalent to the command line

```
tex &foo myfile
```

With this convention in place, a single \TeX invocation works for plain files, \LaTeX files, $\AMS\text{-}\TeX$ files, $\LAMS\text{-}\TeX$ files, and so on.

A second enhancement makes it possible to interrupt a \TeX run to execute another command. We can do so by simply writing the commands to output stream 18. Example: If the first part of a \TeX run prepares a raw index file `idx.r`, we can sort and typeset it in the same pass by issuing commands like

```
\immediate\write18{mysort <idx.r >idx.s}
\input idx.s
```

2 An Integrated System

But the most useful way to use NextTEX is not in the traditional command line mode but as part of the integrated *TEXView* environment. I begin by using the Emacs editor to create `myfile.tex`, say. When finished, I save the file to disk, but I don't exit Emacs. Since Unix is multi-tasking, I can keep Emacs 'up' so it is easy to re-enter it to make the inevitable fixes to my source file. If you prefer, just enter `e` in response to the \TeX error prompt, and this \TeX turns you and the document over to the system editor. To change the choice of editors, it is necessary only to set an environment variable.

The File Viewer is the main NextStep window which lists in icon form the files I am currently interested in. After making sure that `myfile.tex` is one of these files, I double click on it to launch *TEXView*.

(I make sure that the first line of my file is of the form `%&foo`, but purists can ensure that the default version of \TeX invokes their favorite format.)

In a moment, a small \TeX Command Window opens up; this acts as the console which displays the contents of the `log` file and prompts for corrections when necessary. Just as soon as \TeX ships out the first page, the *TEXView* previewer displays this page in a new, large window. It's not necessary to wait for the rest of the job to finish — you can begin scrutiny of your document right away. This preview window is so central to this implementation that it's no wonder Tom calls it *TEXView*.

3 Previewing

NextStep incorporates Display PostScript technology, and this is fully integrated into *TEXView*. So, if your document contains references to outline fonts, or encapsulated PostScript files, they will be fully visible in the preview window. For me, this feature alone is worth the price of admission. (I have been reminded, though, that Amiga \TeX has possessed this capability since 1990.)

You can use the mouse to scroll or drag the preview display, and the size of the preview window is itself easily adjusted. A single click of the mouse zooms and unzooms the image, and you have access to a huge range of zoom magnifications as part of options to a Window Command.

A single click on the preview image reports the current position of the mouse. If you click on two different points of the previewed document, *TEXView* will report on the real distance between these points in units either of inches, centimeters, real points, PostScript (big) points, or pico-light-seconds. (I learned from this that a pico-light-second is about 17% larger than a point.) You can improve the accuracy of the click by zooming the preview. I was surprised at how quickly I came to rely on this feature. Whenever a printed element doesn't appear quite where I intended — a frequent occurrence — the double click gives a good idea of the magnitude of the displacement. Having this magnitude in hand often provides a vital clue for correcting the problem, and it's nice to be able to get this hint without printing the document.

TEXView does color. Courtesy of PostScript and of the latest version of `dvips` (which is of course part of the package) it's possible to include color in your document. With a color monitor, you can preview in color. (Otherwise, the colored regions appear in a suitable shade of gray.)

4 Printing the Document

To print the document, I simply click the Print button in the *TEXView* menu. Both *TEXView* (and NextStep, for that matter) expect to print to a PostScript printer. (If your printer is not color, any colored regions appear as a shade of grey on the printed document.) You can also 'print' to fax by pressing a 'fax' button.

5 The Integrated Product

A description of any integrated software system, even when scrupulously accurate, may fail to convey a feel for the success of the implementor in creating an integrated environment which feels right, like an old baseball glove. I don't quite know how such a concept could possibly be quantified, but it is my opinion that *TEXView* succeeds in this endeavor, and succeeds admirably. I have become dependent on *TEXView*'s special features, and my hand has begun to creep naturally toward the mouse at appropriate points in the *TEXView* cycle. It is largely for this reason that I refrain from presenting a table of performance statistics for *TEXView*. What's the point? Normally, it's nice to know speed stats so you know how long you have to wait before you can print or preview. But since *TEXView*'s preview begins long before the \TeX compilation is complete, such a consideration is irrelevant. (Subjectively, though, Next \TeX seems speedy to me.)

Bringing up NextStep and *TEXView* demands a little more in terms of CPU power and expense than the typical PC user may be used to (see below). Nevertheless, if \TeX is a critical part of your computer operations, you might well consider making the switch if only to have access to *TEXView*.

A The NextStep Operating Environment

NextStep is a persnickety operating system. Not just any 486 will do, but only those for whom NextStep has been appropriately tweaked. To find out which computers will work, you will need to call NeXT Computer and ask for their hardware compatibility guide ([800] TRY-NEXT or [800] 848-NEXT).

I am running NextStep on a Logisys computer whose chip is a 486 running at 66 mhz. I have 32 meg of ram and an 820 meg hard disk. NextStep systems don't have to be quite this powerful, but I wanted to indulge myself. In addition, you will need a SCSI CD-ROM drive (the operating system is distributed on a CD-ROM). My system, which includes a Nanao 17 inch SVGA monitor, costs about \$5500 all told. At the time of the purchase, the Logisys (with which I am very pleased) was the cheapest NextStep desktop system by quite a bit. It wouldn't

surprise me if the situation has changed. In addition to NeXT's hardware compatibility guide, you should check the ads in the journal *NextWorld* (which I can find at the larger newsstands in my home town) for information about competitively priced systems. (Or just wait. Computer power continues to get ever cheaper, and NextStep-able computers will in a year or two surely cost a fraction of their current price.)

In addition to the hardware, you'll need to purchase NextStep. The full package, including developer's version, runs about \$1700, which may make DOS users gasp, but appears to be quite competitive with other versions of Unix for the PC. It is possible to get the regular version of NextStep for about \$700. If your timing is right and special promotional sales are under way, this might reduce the price further. I purchased NextStep in the fall of 1993, at which time there was a very attractive introductory offer that I was able to take advantage of. I do not know what (if any) special offers might still apply, but you should ask the folks at NeXT when you request the hardware guide.

There are two major FTP sites for NextStep software, although much of this material runs on the now-discontinued Motorola NeXT computers. There are at least half-a-dozen active news groups devoted to NextStep, and the Internet community has proven to be unfailingly courteous and helpful the many times I bugged total strangers while setting up my system.

Any discussion of NextStep, no matter how brief, would be remiss if it did not include some mention of NextStep's graphics. They are stunning. NextStep introduces and demands new aesthetic standards for graphic user interfaces. Graphics aside, the interface itself is far more useful than that of the Macintosh or OS/2, and substantially more so than Microsoft *Windows*. (A third-party *Windows* emulator runs under NextStep so your mountains of *Windows* and DOS software are still usable under NextStep.)

It is too much to hope that this upstart operating system will make much headway against *Windows*. I am having so much fun with it, that I can't help rooting for it anyway.

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