

The making of the 4all \TeX CD-ROM

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Abstract

In about one half year the world's first *turn-key* \TeX system on CD-ROM was produced. It contains the ms-dos \TeX workbench 4 \TeX version 3.20 in perhaps the largest form ever, plus many \TeX sources that are valuable to any \TeX user. In this article we present a look behind the scenes, so you get some insight in the course of events that mark the production of NTG's first CD-ROM.

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1 Just an idea. . .

At the NTG meeting in Den Bosch last year the idea came up to produce a CD-ROM with \TeX stuff. The idea was inspired by the Dutch Unix Users Group who presented its own CD-ROM at their conference a few months before.

Although the majority of the audience did not actually have (access to) a CD-ROM player, it seemed certain to many that they would within a year. So it seemed like a good idea to investigate the possibility of producing a CD-ROM.

As CD-ROMs were and still are becoming more popular, we were not the first to think of producing one. At the international level discussions were going on about the production of a CD-ROM that would contain runnable \TeX installations for a number of operating systems.



In spite of the good intentions, the goal of this project turned out to be too ambitious. The discussions about the set up and the contents led to nothing substantial. Too many people were talking about too many details. An agenda was never made, let alone a time table for decisions to be made.

2 Defining our own way

Still we were convinced that it should be possible to produce a CD-ROM that would be valuable to at least the Dutch \TeX community or the MS-DOS community, because all resources for such a disk are readily available — 4all \TeX , 4 \TeX , MAPS, TEX-NL etc. But a CD-ROM can contain much more, so what else is worth while?

We soon realized that this CD-ROM could easily support packages from other \TeX users groups, and so our decision to produce this CD-ROM was announced to many people all over the world. Anyone who thought he or she had a package that should be on the CD-ROM was invited to contact the 'producers', Wietse Dol and me.

Many, many suggestions came in, and most of them were accepted. Especially the contacts with East-European \TeX users groups was very fruitful.

In the mean time we contacted a cd-manufacturer to discuss technical and financial details. By this time it was clear from the presells that we should produce at least 350 copies.

As the word was being spread, The Kinch Computer Company (remember PC- \TeX ?) got interested. They wanted to become the exclusive dealer for the United States. We turned them down because we preferred distribution through local \TeX users groups. Springer Verlag wanted the rights to reproduce this CD-ROM. Naturally, we turned them down, too. Addison-Wesley, who knew about our activities from the start, failed to produce any proposal for co-operation, in spite of our repeated suggestions.

3 Preparing the data

We wanted to store the data on a network drive for two reasons. First, we don't have any large enough disk available, second, a network drive behaves much like a CD-ROM, i.e. it is read-only. That is a useful characteristic for testing purposes.

Our first estimate was that we could fill up some 200 to 300 MB on the CD-ROM (maximum is about 600 MB). It was no problem to convince the system manager of the Faculty of Economics in Groningen to grant us 300 MB on the network to store all data, but soon we passed that limit. We had to move several packages on the network disk elsewhere to make room for more CD-ROM data.

ISO 9660 defines the standard from CD-ROMs that should be readable on any operating system. The '8.3' rule for file

names comes natural to MS-DOS users, but other rules are more difficult to obey:

- only the letters A–Z, the numbers 0–9 and the underscore ‘_’ may be used in file names, nothing else;
- file extensions are like file names, except that numbers are not allowed;
- directory names cannot have extensions;
- hidden files are not allowed.

4DOS, the powerful command.com replacement, proved very helpful here. In stead of writing a program to check for ISO 9660 compliancy, we could find all deviating files and directories by entering a single command:

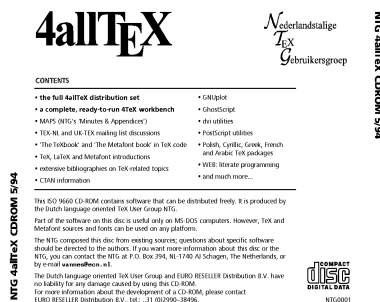
```
DIR * [ !A-Z0-9_ ] * * . * [ !A-Z_ ] * /AD . [ ! ] *
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The first part lists file names that contain illegal characters; the second lists files with extensions that contain illegal characters; the third lists directories that have extensions. Impressive, isn't it?

We had to rename some files and directories in order to comply to ISO 9660. The spell-checker needed to learn a completely new naming method for dictionaries.

4 Last minute decisions

Should $\text{\LaTeX}2_{\epsilon}$ be on this CD-ROM? No, say the authors, because it is a beta version. Yes, absolutely, say many others. Nobody likes to be a guinea pig, and so few people even attempted to install $\text{\LaTeX}2_{\epsilon}$. If this CD-ROM would contain a complete, installed version they will give it a try. We decided that the user's requests should prevail. On the CD-ROM you will find an installed version, but no installation files. When using \LaTeX , the main menu will show clearly that this is a test version.



The time table we had in mind when we started this project turned out to be a good guess. Of course too many things had to be done on the last days. Michel Lavaud reported that he had forgotten to update some of the files in the French PC-Gutenberg distribution set; Johannes Braams sent us bug fixes to $\text{\LaTeX}2_{\epsilon}$ that forced us to generate new formats; Luigi Bianchi sent updates of his Italian spell-check dictionary; Gerard van Nes sent updates of the MAPS PostScript files, Piet van Oostrum sent the Auc \TeX package, . . . All of this on or just before CD-Day. I guess that is inevitable when you set a deadline.

We deliberately took a month time for the actual production, although theoretically two weeks is enough. After all, it is better to be on the safe side if you are new in this

business. Besides, it gave us some more time to complete the documentation.

5 Transferring the data to cd-rom

We had set a deadline for any contributions to May 2, because May 3 the cd-manufacturer, Euroreseller Distribution BV, would come to collect the data.

The data was transferred to Wim Maasdam's PC through a network card that we installed for the occasion. The transfer took more time than expected because the network performance was rather low that day.

What really puzzled us for a while was that Wim's hard disk showed about 700 files more than the original, although the total number of bytes occupied by all files matched. What is wrong here? Nothing, we deduced. The Novell network doesn't show the '.' and '..' directories. MS-DOS on Wim's computer does show them as directories, but counts them as files! How I love MS-DOS. Unfortunately Wim did not get home in time for the elections that day.

The next day Wim called me to inform me about two files (out of more than 18,000) that did not comply to ISO 9660. That was easily fixed. He would try to make the so-called 'gold-cd' that afternoon. The 'gold-cd' or 'master-cd' is a gold-colored cd from which the normal 'silver-cd's are replicated, after verification of the contents.

There is more. Accidentally we discovered a serious bug in the software that writes the gold-cd. It turned out that the number of files per directory was limited to 650. We had one directory that contains 651 files! Luckily, the software dealer sent an update in just two days.

6 Testing the gold-cd

Immediately after having received the gold-cd, I loaded it into the CD-ROM-player and browsed through the directories. All looked well, and the installation script run just fine. Within 40 seconds I had installed \LaTeX , compiled the sample file, and was viewing the output!

Wietse and I decided we needed two gold-cd's, to be able to test independently. So Euroreseller also sent a copy to Wietse. Unfortunately, they made a terrible mistake. Wietse's CD-ROM could only generate the infamous message 'DRIVE NOT READY. (A)BORT, (R)ETRY, (I)GNORE'. At first Euroreseller wouldn't believe it, but eventually they had to admit that they had sent a completely empty CD-ROM. Deeply embarrassed they personally delivered a new, working gold-cd.

We could find only a few minor glitches, but we considered them important enough to correct in a new gold-cd. Wietse tested this last version and then made the order to produce 600 copies.

7 The final production

Meanwhile Siep Kroonenberg designed the label for the CD-ROM, the back-inlay of the cd-box, and the front page

of the manual. Context BV, who printed the manual, also made a fine offer to produce a full color front-inlay for the cd-box. We gladly accepted, though we would have to insert the inlays by hand. . .

Up until the last day it was unclear what number should be on the CD-ROM. All CD-ROMs must have a unique number, but there is no equivalent to e.g., ISBN for CD-ROMs. We kept it simple — NTG0001 — anticipating more NTG CD-ROM productions.

8 Writing the documentation

Many things had changed since the last edition of the ‘ \TeX & \LaTeX Local Guide’. We rearranged the whole document, revised and updated large parts and added several sections.



We hope the changes and extensions will improve the readability and make the manual even more complete.

Compared to last edition's, the print quality is much higher. The manual is no longer photographically resized, but printed directly on a 600 dpi PostScript printer. In fact, it instantly prints four pages on one A4 page. Then another machine cuts the pages and binds them.

We could print the cover in full color for just the price of the paper as a commercial stunt by Context BV.

9 Looking back

The enthusiastic promotion campaign that the NTG developed almost entirely accounts for the high number of copies we could make. If it weren't for Kees van der Laan and Gerard van Nes, the CD-ROM would never have sold in such quantities. Obviously they believe in the quality of this product, and were able to convince many others, not in the least the Euro \TeX committee that will integrate the CD-ROM in the package that each congress attendant will receive.

Still, we wonder why some users groups showed so little interest. We suspect that political issues are involved here. E.g., the German users group Dante didn't even respond to our first announcement. Although $\text{em}\TeX$ is very popular in Germany, they didn't order any CD-ROMs. However, the German Buchhandlung Hofman ordered 25 copies, and several individuals ordered a copy. Surely more German \TeX users will be interested. Let's wait and see.

One special case is worth discussing in more detail. The \TeX Users Group, TUG for short, at first showed little interest. They were prepared to buy 10 copies; another 40 copies they would keep in store, and possibly return if not sold. Why are they so prudent? Surely they can easily sell at least 100. Remember that Kinch, a commercial company, already requested exclusive selling rights.

Is it money? TUG's financial situation seems weak, though Christina Thiele (the president of TUG) could not give accurate figures. So what is their strategy? Stay put, things will get better? That is silly. They can easily *make* money selling this CD-ROM, can't they see that? It took some serious discussions to convince them, thanks to Michel Goossens (vice-president of TUG) and Sebastian Ratz (UK-TUG). Still, it makes you wonder how TUG is performing at present. . .

10 Looking ahead

The NTG 4all \TeX CD-ROM is the world's first turn-key \TeX system on CD-ROM. Being the first is nice, but naturally some errors and omissions will soon be found.

This CD-ROM represents the current state-of-the-art in \TeX (related) programs for MS-DOS at, say, April 1994. Improved versions of programs will appear and new programs make others obsolete. So what is the expected life time of this CD-ROM?

There are (at least) two possible answers:

1. 25 years (a rough estimate of the life time of CD-ROM technology). \TeX is stable, so who needs updates?
2. 3 months. Soon software updates will appear. Naturally, people want the newest features.

The first answer is tempting, but a bit naive. Nobody can afford to stand still. The second is also naive because new versions are not always better. New bugs and decreased performance (because of 'featuritis') may make you to stick with the good old versions.

We have no plans as yet for producing an update of this CD-ROM, simply because of the time it costs to make one. However, when software updates are released, you can run them in combination with the software on CD-ROM, even within \LaTeX . We will not discuss this in detail here because it is beyond the scope of this article.

We hope that our initiative will encourage others to produce CD-ROMs with \TeX material. I am sure an equivalent CD-ROM for Unix would sell very well. It seems that plans are being made for producing a CTAN CD-ROM. That is good news.

Let me finish here by expressing my gratitude to the NTG that immediately saw the potentials of this project and supported it wholeheartedly. Many, many people contributed to the contents, made valuable suggestions, or promoted the CD-ROM on various occasions. The list of names would become too long, so I will just say thanks to all for your co-operation!