LaTeX News, Issues 1–20

Contents

LATEX News

Issue 1, June 1994

Welcome to LATEX News

An issue of *LATEX News* will accompany every future release of LATEX. It will tell you about important events, such as major bug fixes, newly available packages, or any other LATEX news.

LATEX 2ε—the new LATEX release

The most important news is the release of LATEX 2ε, the new version of the LATEX software. This version has better support for fonts, graphics and colour, and will be actively maintained by the LATEX3 project team. Upgrades will be issued every six months, in June and December.

Why a new LATEX?

Over the years many extensions have been developed for LATEX. This is, of course, a sure sign of its continuing popularity but it has had one unfortunate result: incompatible LATEX formats came into use at different sites. Thus, to process documents from various places, a site maintainer was forced to keep LATEX (with and without NFSS), SLITEX, AMS-LATEX, and so on. In addition, when looking at a source file it was not always clear for which format the document was written.

To put an end to this unsatisfactory situation a new release of LATEX was produced. It brings all such extensions back under a single format and thus prevents the proliferation of mutually incompatible dialects of LATEX 2.09. The new release was available for several months as a test version, and the final release of 1 June officially replaces the old version.

Processing documents with LATEX 2ε

Documents written for LATEX 2.09 will still be read by LATEX 2ε. Any such document is run in *LATEX 2.09 compatibility mode.*

Unfortunately, compatibility mode comes with a price: it can run up to 50% slower than LATEX 2.09 did. If you want to run your document in the faster *native mode*, you should try replacing the line:

    \documentstyle[*options*,*packages*]{*class*}

with:

    \documentclass[*options*]{*class*}
    \usepackage{latexsym,*packages*}

Unfortunately, this will not always work, because some LATEX 2.09 packages will only work in LATEX 2ε compatibility mode. You should find out if there is a LATEX 2ε version of the package available.

LATEX 2ε native mode also gives access to the new features of LATEX 2ε, described in *LATEX 2ε for authors.*

New packages

LATEX 2ε has much better support for graphics, colour, fonts, and multi-lingual typesetting. The following software should be available from the distributor who brought you LATEX 2ε:

babel, for typesetting in many languages.

color, for colour support.

graphics, for including images.

mfnfss, for using bitmap fonts.

psnfss, for using Type 1 fonts.

tools, other packages by the LATEX3 team.

The packages come with full documentation, and are also described in *LATEX: A Document Processing System* or *The LATEX Companion.*

Further information

More information about LATEX 2ε is to be found in:

LATEX: A Document Preparation System, Leslie Lamport, Addison Wesley, 2nd ed, 1994.

The LATEX Companion, Goossens, Mittelbach and Samarin, Addison Wesley, 1994.

The LATEX distribution comes with documentation on the new features of LATEX:

LATEX 2ε for authors, describes the new features of LATEX documents, in the file `usrguide.tex`.

LATEX 2ε for class and package writers, describes the new features of LATEX classes and packages, in the file `clsguide.tex`.

LATEX 2ε font selection, describes the new features of LATEX fonts for class and package writers, in the file `fntguide.tex`.

For more information on TEX and LATEX, get in touch with your local TEX Users Group, or the international TEX Users Group, P. O. Box 869, Santa Barbara, CA 93102-0869, USA, Fax: +1 805 963 8358, EMail: tug@tug.org.

LATEX News

Issue 2, December 1994

Welcome to LATEX News 2

An issue of *LATEX News* will accompany every future release of LATEX. It will tell you about important events, such as major bug fixes, newly available packages, or any other LATEX news.

December 1994 release of LATEX

December 1994 sees the second release of LATEX 2_ε. We are on schedule to deliver a release of LATEX every six months, in December and June.

This release has seen quite a lot of activity, which is not too surprising as it's only been a year since the first test release of LATEX 2_ε. We don't expect so much activity in the next six months.

Many of the changes are minor improvements and bug-fixes—see *LATEX 2_ε for authors* (`usrguide.tex`), *LATEX 2_ε font selection* (`fntguide.tex`) and our change log (`changes.txt`) for more details.

However, there are two important new packages available for LATEX: `inputenc` and AMS-LATEX.

Accented input

One of the problems with writing non-English documents in LATEX is the accent commands. Reading documents containing text like `na\"\i ve` is frustrating, especially if your keyboard allows you to type `naïve`.

In the past, LATEX has not supported input containing accented characters such as `ï`, because Windows, Macintosh and Unix all have different ways of dealing with accented input, called *input encodings*.

However, the `inputenc` package allows you to specify which input encoding your document is written with, for example to use the ISO Latin-1 encoding, you type:

```
\usepackage[latin1]{inputenc}
```

At the moment, `inputenc` supports the `ascii` and `latin1` input encodings, but more will be added with future releases.

The `inputenc` package is currently a test release. The user interface for the full release will be upwardly compatible with the test version.

AMS-LATEX

AMS-LATEX is a set of miscellaneous extensions for LATEX distributed by the American Mathematical Society. They provide superior information structure and superior printed output for mathematical documents.

There are far too many features of AMS-LATEX to list here. AMS-LATEX is described in the accompanying documentation, and in *The LATEX Companion*.

Version 1.2beta of AMS-LATEX was released for testing by intrepid users in October 1994. The full release of AMS-LATEX 1.2 is expected in early January 1995.

It will be divided into two bundles:

- the `amsfonts` packages, which give access to hundreds of new mathematical symbols, and new math fonts such as blackboard bold and fraktur.

- the `amsmath` packages, which provide finer control over mathematical typesetting, such as multi-line subscripts, enhanced theorem and proof environments, and improved displayed equations,

For compatibility with older documents, an `amstex` package will be provided.

LATEX on the internet

LATEX has its own home page on the World Wide Web, with the URL:

```
http://www.tex.ac.uk/CTAN/latex/
```

This page describes LATEX and the LATEX3 project, and contains pointers to other LATEX resources, such as the user guides, the TEX Frequently Asked Questions, and the LATEX bugs database.

The electronic home of anything TEX-related is the Comprehensive TEX Archive Network (CTAN). This is a network of cooperating ftp sites, with over a gigabyte of TEX material:

```
ftp://ftp.tex.ac.uk/tex-archive/
ftp://ftp.shsu.edu/tex-archive/
ftp://ftp.dante.de/tex-archive/
```

For more information, see the LATEX home page.

Further information

For more information on TEX and LATEX, get in touch with your local TEX Users Group, or the international TEX Users Group, P. O. Box 869, Santa Barbara, CA 93102-0869, USA, Fax: +1 805 963 8358, EMail: tug@tug.org.

LaTeX News

Issue 3, June 1995

Welcome to LaTeX News 3

An issue of *LaTeX News* will accompany every future release of LaTeX. It will tell you about important events, such as major bug fixes, newly available packages, or any other LaTeX news.

June 1995 release of LaTeX

June 1995 sees the third release of LaTeX 2ε. We are on schedule to deliver a release of LaTeX every six months, in December and June.

In the last *LaTeX News*, we said "we don't expect so much activity in the next six months," which has turned out not to be true!

Additional input encodings

In the last release of LaTeX we distributed a test version of the `inputenc` package which allows the use of input characters other than just a–z and A–Z. The package has proved to be robust, so we are now distributing an expanded version. The new release comes with a number of input encodings:

- `ascii` the standard encoding,
- `latin1` the ISO Western European alphabet,
- `latin2` the ISO Eastern European alphabet,
- `cp437` the IBM codepage 437,
- `cp850` the IBM codepage 850, and
- `applemac` the Apple Macintosh encoding.

These can be used by specifying an option to the `inputenc` package, for example:

```
\usepackage[latin1]{inputenc}
```

The new input encodings are currently being tested, but we don't expect any major changes.

LaTeX getting smaller

In the past releases of LaTeX 2ε, the amount of memory LaTeX requires has increased, but we are pleased to say that this trend has been reversed. We hope that future releases of LaTeX will continue to get smaller.

For example, on this document, the December 1994 release used 52,622 words of memory, and the June 1995 release uses 51,216 words of memory, which is a 2.7% reduction.

We are currently experimenting with other ways of reducing the size of LaTeX. For example, we are experimenting with an option to remove the `picture` and `tabbing` environments from the LaTeX kernel, and to load them from a file the first time they are used. This should help LaTeX to run on machines with limited memory. See `autoload.txt` for details.

Distribution and modification

One topic of discussion that has kept us busy is the distribution and modification conditions of LaTeX. We are committed to keeping LaTeX as free reliable software, and ensuring that (as far as possible) LaTeX documents will produce the same results on all systems.

The modification conditions are currently under discussion, and we would like to hear from anyone interested. Please read `modguide.tex` for more information.

AMS-LaTeX full release

The AMS-LaTeX packages were still in beta test in the December 1994 release of LaTeX, and the full release came out in January 1995.

AMS-LaTeX is described in the *User's Guide* (`amsldoc.tex`) and in *The LaTeX Companion*.

PostScript fonts

There is a new test release of the PSNFSS packages for accessing PostScript fonts in LaTeX 2ε. This includes an update to all of the fonts, to remove many of the underfull and overfull `\hbox` warnings, and improve the setting of non-English languages.

The new release of LaTeX removes all of the 'hidden' uses of Computer Modern mathematics. For example, the footnote markers used to use math mode, so always used Computer Modern digits rather than ones from the current text font. This has now been fixed.

Further information

For more information on TeX and LaTeX, get in touch with your local TeX Users Group, or the international TeX Users Group, P. O. Box 869, Santa Barbara, CA 93102-0869, USA, Fax: +1 805 963 8358, EMail: tug@tug.org.

The LaTeX home page is `http://www.tex.ac.uk/ctan/latex/` and contains links to other WWW resources for LaTeX.

LATEX News

Issue 4, December 1995

Welcome to LATEX News 4

An issue of *LATEX News* will accompany every future
release of LATEX. It will tell you about important
events, such as major bug fixes, newly available
packages, or any other LATEX news. This issue
accompanies the fourth release of LATEX 2_ε.

LATEX getting smaller

The last release in June started a trend of LATEX
becoming smaller, we are pleased to announce that this
has continued with this release. In particular the
experimental 'autoload' version described in
`autoload.txt` is much smaller as more parts of LATEX
are autoloaded.

New 'concurrent' docstrip

The time taken to 'unpack' this release from the
documented sources should be much reduced (roughly
half the time, depending on installation conditions).
This is due to an improved version of the docstrip
program that has been contributed by Marcin Woliński.
This can write up to 16 files at once. The previous
version could only write one file at a time which meant
that it was very slow when producing many small files
from the same source file as the source needed to be
re-read for each file written.

New T1 encoded fonts

This year Jörg Knappen has completed a new release of
the 'Cork' (T1) encoded Computer Modern fonts: the
dc fonts release 1.2.

This release of the dc fonts fixes many bugs
(including the missing `?`` (¿) and `!`` (¡) ligatures) and
improves the fonts in many other ways. It is strongly
recommended that you upgrade as soon as possible if
currently you are using the old dc fonts, release 1.1 or
earlier. The new fonts are available from the CTAN
archives, in `tex-archive/fonts/dc`.

The names of the font files are *different*. This does
not affect LATEX documents but *does* affect the
installation procedure as it assumes that you have the
new fonts, and will write suitable 'fd' files for those
fonts. If you have not yet upgraded your dc fonts then,
after unpacking the distribution, you *must*
`latex olddc.ins` to produce 'fd' files for the old dc
fonts. This must be done *before* the format is made.
Running the test document at `ltxcheck.tex` the end of

the installation will inform you if the wrong set of 'fd'
files has been installed.

Note that this change does not affect the standard
'OT1' Computer Modern fonts that LATEX uses by
default.

More robust commands

The commands `\cite` and `\sqrt` are now robust.

Although most commands with optional arguments
are fragile, as documented, such commands defined
using the second optional argument of `\newcommand`
and its derivatives are now *robust*.

New Interface to building 'extension' classes

The mechanism provided by `\DeclareOption`,
`\ProcessOptions` and `\LoadClass` has proved to be a
powerful and expressive means of defining one class in
terms of another 'base' class. However there have been
some requests to simplify the declaration of the
common case where you want the 'base' class to be
called with *all* the options that were specified to the
extension class. This is now provided by the new
command `\LoadClassWithOptions`. A similar
command `\RequirePackageWithOptions` is provided
for package use. More details of this feature are
provided in `clsguide.tex` and `ltclass.dtx`.

More Input Encodings

The experimental `inputenc` package allows a more
natural style of input of accented and other characters.

Three new input encodings are now supported.

- `ansinew` the Windows ansi encoding, as used in
  Microsoft Windows 3.x.
- `cp437de` a variant of `cp437`, which uses ß rather
  than β in the appropriate slot.
- `next` the encoding used on Next computers.

Further information

For more information on TEX and LATEX, get in touch
with your local TEX Users Group, or the international
TEX Users Group, 1850 Union Street, #1637, San
Francisco, CA 94123, USA, Fax: +1 415 982 8559,
EMail: tug@tug.org. The LATEX home page is
`http://www.tex.ac.uk/ctan/latex/` and contains
links to other WWW resources for LATEX.

LaTeX News

Issue 5, June 1996

Welcome to LaTeX News 5

This issue of *LaTeX News* accompanies the fifth release of the new standard LaTeX, LaTeX 2_ε.

Extra possibilities for section headings

Most LaTeX sectioning commands are defined using `\@startsection`. For example, the article class defines:

```
\newcommand\section{\@startsection
 {section}{1}{0pt}{-3.5ex plus-1ex minus-.2ex}%
 {2.3ex plus.2ex}{\normalfont\Large\bfseries}}
```

The last argument specifies the style in which the section heading is to be typeset.

The new feature added at this release is that at the *end* of this argument you may specify a command that *takes an argument.* This command will be applied to the section number and heading. For example, one could use the `\MakeUppercase` command to produce uppercase headings. A package or class file could contain:

```
\renewcommand\section{\@startsection
 {section}{1}{0pt}{-3.5ex plus-1ex minus-.2ex}%
 {2.3ex plus.2ex}{\normalfont\Large\MakeUppercase}}
```

to produce section headings using uppercase medium weight text, rather than the bold text used by article. Note that, like the font choice, the uppercasing applies only to the actual heading (including any automatically generated section number), not to the text as it may appear in the running head or table of contents.

The 'openany' option in the 'book' class

The openany option allows chapter and similar openings to occur on left hand pages. Previously this option only affected `\chapter` and `\backmatter`. It now also affects `\part`, `\frontmatter` and `\mainmatter`.

More font (output) encodings

The font encoding name `T3` has been allocated to the encoding used in the new 256-character IPA fonts (for the phonetic alphabet) produced by Rei Fukui. His package, tipa, gives access to these fonts and should soon be available. (The encoding named `OT3` is the 128-character encoding used in the IPA fonts produced by Washington State University.)

More input encodings supported

The inputenc package now supports the IBM codepage 852 used in Eastern Europe, with the option `[cp852]` contributed by Petr Sojka.

Also, the inputenc package now activates most 'control codes' with ASCII values below 32. Currently none of the encodings in the standard distribution makes use of these positions.

Fixes and improvements

The LaTeX kernel has only had minor changes, apart from `\@startsection` mentioned above. However, some small fixes have been incorporated removing the following problems:

- In tabular and array, previous versions of LaTeX 'lost' the inter-column space from an 'l'-column, when that column was completely empty.
- Previously, the use of the `\nofiles` command could change the *vertical spacing* in a document. A side effect of fixing this is that when `\nofiles` is used, `\label` puts a blank line in the log file.
- LaTeX often loads fonts 'on demand'. Previously, this could happen inside the argument of an accent command and this would cause the accent to appear in the wrong place.

Changes to the 'tools' packages

- The longtable package now uses a modified algorithm, contributed by David Kastrup, to align the 'chunks' of a table. It is now unnecessary to edit the document to add `\setlongtables` before the final run of LaTeX. In certain cases of overlapping `\multicolumn` entries, the new algorithm will produce better column widths than the old (at the price of extra passes through LaTeX).
- The dcolumn package now has the extra possibility of specifying the number of digits both *before* and after the 'decimal point'. This makes it easy to centre the column of numbers under a wide heading.

New copy of the LaTeX bug database

`http://www.tex.ac.uk/ctan/latex/bugs.html` will soon have links to a copy of the searchable LaTeX bugs database at Mainz (Germany) as well as the original copy at Sussex (England).

LaTeX News

Issue 6, December 1996

Welcome to LaTeX News 6

This issue of *LaTeX News* accompanies the sixth release of the new standard LaTeX, LaTeX 2_ε.

Mono-case file names

Previously LaTeX has used some files with 'mixed-case' file names such as `T1cmr.fd` and `T1enc.def`.

These file names cause problems on some systems (in particular they are illegal on the ISO 9660 CDROM format) and so in this release all file names have been made lowercase (for example `t1cmr.fd` and `t1enc.def`).

This change should *not* affect any document. Within LaTeX, encodings still have the usual uppercase names in uses such as `\usepackage[T1]{fontenc}` and `\fontencoding{T1}`. LaTeX will automatically convert to the lowercase form while constructing the file name. LaTeX will input the 'fd' file under the old name if it fails to find the file with the new name, so existing collections of fd files should still work with this new release.

The change *does* affect the configuration files that may be used to make the LaTeX format with initex. For example, the file `fonttext.ltx` previously specified `\input{T1cmr.fd}`. It now has `\input{t1cmr.fd}`. If you use a local file `fonttext.cfg` you will need to make similar changes, as `\input{T1cmr.fd}` will not work as `T1cmr.fd` is no longer in the distribution.

The files affected by this change all have names of the form `*.fd` or `*enc.def`.

Another input encoding

Thanks to work by Søren Sandmann, the `inputenc` package now supports the IBM codepage 865 used in Scandinavia.

Better user-defined math display environments

Suppose that you want to define an environment for displaying text that is numbered as an equation. A straightforward way to do this is as follows:

```
\newenvironment{texteqn}
  {\begin{equation}
     \begin{minipage}{0.9\linewidth}}
   {\end{minipage}
  \end{equation}}
```

However, if you have tried this then you will probably have noticed that it does not work perfectly when used in the middle of a paragraph because an inter-word space appears at the beginning of the first line after the environment.

There is now an extra command (with a very long name) available that you can use to avoid this problem; it should be inserted as shown here:

```
\newenvironment{texteqn}
  {\begin{equation}
     \begin{minipage}{0.9\linewidth}}
   {\end{minipage}
  \end{equation}
  \ignorespacesafterend}
```

Docstrip improvements

The `docstrip` program that is used to unpack the LaTeX sources has undergone further development. The new version should be able to process all old 'batchfiles' but it allows a simpler syntax in new 'batchfiles' (no need to define `\def\batchfile{…}`).

It also allows 'target' directories to be specified when writing files. This directory support is disabled by default unless activated in a local `docstrip.cfg` configuration file. See `docstrip.dtx` for details.

AMS LaTeX update

Since the last LaTeX release in June, the American Mathematical Society have re-issued the 'AMSLaTeX' classes and packages, fixing several reported problems.

Graphics package update

The LaTeX color and graphics packages have been updated slightly, principally to support more dvi drivers, see the readme file in the `graphics` distribution.

EC Fonts released

The first release of the Extended Computer Modern fonts has just been made. (In January 1997.)

This release of LaTeX does *not* default to these 'ec' fonts as its T1 encoded fonts. By default it will use the 'dc' fonts if the T1 encoding is requested.

As noted in `install.txt` you may run TeX on the install file `ec.ins` *after* unpacking the base distribution but *before* making the LaTeX format. This will produce suitable 'fd' files making LaTeX (including, for the first time, the slides class) use the 'ec' fonts as the default T1 encoded font set.

LATEX News

Issue 7, June 1997

T1 encoded Computer Modern fonts

As in the last release the base LATEX distribution contains three different sets of 'fd' files for T1 encoded fonts.

In this release the default installation uses `ec.ins` and so installs files suitable for the current 'EC fonts' distribution. If you have still not updated to the EC fonts and are using the earlier test versions, known as DC then you should unpack `newdc.ins` (for DC release 1.2 or later) or `olddc.ins` (for the original releases of the DC fonts). This should be done after unpacking `unpack.ins` but before making the format by running iniTEX on `latex.ltx`. There are further details in `install.txt`.

T1 encoded Concrete fonts

The Metafont sources for T1 encoded 'Concrete' fonts have been removed from the mfnss distribution as they were based on the now obsolete DC fonts release 1.1. Similarly the `cmextra.ins` install file in the base distribution no longer generates fd files for the 'Concrete' fonts. To use these fonts in either T1 or OT1 encoding it is recommended that you obtain Walter Schmidt's ccfonts package and fonts from CTAN `macros/latex/contrib/supported/ccfonts`.

Further input encodings

Two more inputenc packages have been added: for latin5, thanks to H. Turgut Uyar; and for latin3, thanks to Jörg Knappen.

Normalising spacing after punctuation

The command `\normalsfcodes` was introduced at the last patch release. This is normally given the correct definition automatically and so need not be explicitly set. It is used to correct a problem, reported by Donald Arseneau, that punctuation in page headers has always (in all known TEX formats) been potentially incorrect if the page break happens while a local setting of the space codes (for instance by the command `\frenchspacing`) is in effect. A common example of this happening in LATEX is in the verbatim environment.

Accessing Bold Math Symbols

The tools distribution contains a new package, bm, which defines a command `\bm` that allows individual bold symbols to be accessed within a math expression (in contrast to `\boldmath` which makes whole math expressions default to bold fonts). It is more general than the existing amsbsy package; however, to ease the translation of documents between these two packages, bm makes `\boldsymbol` an alias for `\bm`.

This package was previously made available from the 'contrib' area of the CTAN archives, and as part of Y&Y's LATEX support for the MathTime fonts.

Policy on standard classes

Many of the problem reports we receive concerning the standard classes are not concerned with bugs but are suggesting, more or less politely, that the design decisions embodied in them are 'not optimal' and asking us to modify them.

There are several reasons why we have decided not to make such changes to these files.

- However misguided, the current behaviour is clearly what was intended when these classes were designed.

- It is not good practice to change such aspects of 'standard classes' because many people will be relying on them.

We have therefore decided not to even consider making such modifications, nor to spend time justifying that decision. This does not mean that we do not agree that there are many deficiencies in the design of these classes, but we have many tasks with higher priority than continually explaining why the standard classes for LATEX cannot be changed.

We would, of course, welcome the production of better classes, or of packages that can be used to enhance these classes.

New addresses for TUG

For information about joining the TEX Users Group, and about lots of other LATEX-related matters, please contact them at their new address:

> TEX Users Group, P.O. Box 1239,
> Three Rivers, CA 93271-1239, USA
> Fax: +1 209 561 4584
> E-mail: `tug@mail.tug.org`
> URL: `http://www.tug.org/`

LaTeX News

Issue 8, December 1997

New supported font encodings

Two new font encodings are supported as options to the fontenc package:

OT4 This is a seven-bit encoding designed for Polish. The LaTeX support was developed by Mariusz Olko.

TS1 This is the 'Text Companion Encoding'; it contains symbols designed to be used in text, as opposed to mathematical formulas, and some accents designed for uppercase letters. It is currently supported by the 'tc' fonts, which match the T1 encoded 'ec' text fonts. A subset of the glyphs in this encoding is supported by virtual fonts distributed with the PostScript font metrics on the CTAN archives. (This is the '8c' encoding in Karl Berry's fontname scheme.) The textcomp package provides access to this encoding but here is a warning to current users of that package: some of the internal names for the characters have changed.

New input encodings

These additions to the inputenc package are `decmulti` (the DEC Multinational Character Set, contributed by M. Y. Chartoire) and `cp1250` (an MS-Windows encoding for Central and Eastern Europe, contributed by Marcin Woliński). There is also a `cp1252` encoding that is identical to `ansinew`.

Tools

The calc package (used in many examples in *The LaTeX Companion*) has been contributed to this distribution by Kresten Krab Thorup and Frank Jensen. This is essentially the same as the version that has been available from the CTAN archives for some time, with one minor change: to use LaTeX-style error messages. It enables the use of arithmetic expressions within arguments to standard LaTeX commands where a length or a counter value is required. For example:

```
\setcounter {page} { \value{page} * 2 + 1 }
\parbox { 3in - ( 2mm + \textwidth / 9 ) }
```

There have also been some improvements to several other packages in this collection. In particular, bm now works correctly with constructions such as `\bm{f'}` involving ' or other characters which use TeX's special "\mathcode"8000" feature. Also, multicol sets the length `\columnwidth` to an appropriate value; this enables it to work with classes that support two-column setting, e.g., the AMS classes.

Graphics

The special `oztex.def` driver file has been removed, and OzTeX support has been merged with dvips, following advice from Andrew Trevorrow about OzTeX 3.x.

The keyval package has had some internal improvements: to use LaTeX format error messages; and to avoid '# doubling'. This latter change means that the `command` key for the graphicx version of `\includegraphics` should now be used with one `#` rather than two. For example, `command = `gunzip #1`. Fortunately this key is almost never used in practice, so few if any documents should be affected by this change.

LaTeX3 experimental programming conventions

As announced at the TeX Users Group meeting (Summer 1997), a group of highly experimental packages will soon be released to allow experienced TeX programmers to experiment with, and comment on, a proposed set of syntax conventions and basic data-types that might form the basis for programming large scale projects in TeX. They will be located in this CTAN directory:

```
CTAN:macros/latex/packages/expl3
```

The documentation of this material is as follows: individual package files provide outline, draft documentation; there is an article that gives an overview of the syntax and related concepts; there is a `readme.txt` file containing a brief description of the collection.

All aspects of these packages are liable, indeed likely, to change. They should not be used at this stage for anything that requires a stable system. However, we do encourage people to experiment with these packages, and to send comments on them to the `LaTeX-L` mailing list. To subscribe to this list, mail to:

```
listserv@urz.uni-heidelberg.de
```

the following one line message:

```
subscribe LATEX-L <first-name> <second-name>
```

LaTeX News

Issue 9, June 1998

New math font encodings

A joint working group of the TeX Users Group and the LaTeX3 Project is developing a new 8-bit math font encoding for TeX. It is designed to overcome several limitations and implementation problems of the old math font encodings and to simplify switching between different sets of math fonts, much as the LaTeX font selection interface has simplified switching between text fonts.

Since the work on this project relies entirely on volunteer work, we cannot give a specific release date yet. However, a prototype implementation already exists. This contains several sets of virtual fonts, some LaTeX packages and a kernel module; we hope to integrate it into the main LaTeX distribution for the next release.

Documents using only standard LaTeX commands for math symbols should not be affected by switching to the new math font encodings However, documents, classes or packages making specific assumptions about the encoding of math symbol fonts are likely to break.

Further information about the Math Font Group may be found on the World Wide Web at `http://www.tug.org/twg/mfg/`.

A new math accent

A new math accent, `\mathring`, has been added. This is a math mode version of the ring accent (˚) which is available in text mode with the command `\r`.

Extended `\DeclareMathDelimiter`

The command `\DeclareMathDelimiter` has been extended. Normally this command takes six arguments. Previously, when being used to declare a character (such as `[`) as a delimiter, a variant form was used with only five arguments. The argument specifying the default 'math class' was omitted. Now the full six-argument form may be used in this case. The extra information is used to implicitly declare the character via `\DeclareMathSymbol` for use when the symbol is not used with `\left` or `\right`.

The old five-argument form is detected and will work as before.

Tools distribution

The `multicol` package now supports the production of multiple columns without balancing the last page. To get this effect use the `multicols*` environment.

The `layout` package was partly recoded by Hideo Umeki to display page layout effects in a better way.

As suggested by Donald Arseneau, the `calc` package was extended to support the new commands `\widthof{`*text*`}`, `\heightof{`*text*`}`, and `\depthof{`*text*`}` within a `calc`-expression. At the same time we modified a few kernel commands so that `calc`-expressions can now be used in various useful places such as the dimension arguments to the `tabular` environment and the `\rule` command. For many other standard LaTeX commands this was already possible.

Support for Cyrillic encodings

We are very pleased that, after a lengthy period of development, a set of fonts, encodings and support files for using LaTeX with Cyrillic characters will soon be available.

Test versions of the 'LH' fonts for these Cyrillic encodings, based on the Computer Modern design, are available from CTAN archives in the directory `fonts/cyrillic/lh-test`. The LaTeX support files (by Werner Lemberg and Vladimir Volovich) are also available from CTAN archives in `macros/latex/contrib/supported/t2`

Default docstrip header

Many LaTeX users now distribute packages in documented source form using the `docstrip` system. Docstrip allows a header to be placed on generated package files, suitable for giving copyright information, or distribution conditions.

We have changed the default version of this header so that it allows stripped files to be distributed in ready-to-run installations such as the TeXLive CD. If you use the default header for distributing your files you should check that the new copyright text is acceptable to you. The file `docstrip.dtx` explains how to produce your own header if you wish to do so.

LaTeX News

Issue 10, December 1998

Five years of LaTeX 2ε

Since this is the 10th edition of LaTeX News, the (no longer) New Standard LaTeX must have hit the streets almost this long ago. In fact it was only the beta-version that some people got just in time for Christmas 1993, and since then there has been a lot of tidying-up and smoothing of rough edges (not to mention a few bug fixes!).

Maybe it is time for something more radically different to emerge and be hungrily adopted by the world; but don't panic, we shall be maintaining what you have now for a long time yet. Amongst the more polite things that have been written about our efforts, we found that this quote (somewhat censored to protect the guilty) well reflects some of our feelings about working on LaTeX over the years: *the mere existence of LaTeX 2ε is a great miracle.*

Restructuring the LaTeX distribution

Since the (once) 'new' standard LaTeX has reached such a venerable age, we are reviewing the way in which the system is presented to the world.

An early intention is to define, given the wide variety of good packages now available, what now constitutes a useful installation of LaTeX. We also hope that such a definition will help document portability if it leads to a future in which a LaTeX class designer can reasonably assume that a known list of facilities will be there for all users (so that each class need not supply them).

As a first small step towards this definition, we shall replace the `latex/packages` subdirectory on CTAN. This directory was a curious mixture of the important, such as the LaTeX `tools`, that any self-respecting LaTeX installation ought to have, and the esoteric or experimental.

The esoterica from `packages` will be moved to new locations, as follows:

```
expl3 to latex/exptl/project
mfnfss to latex/contrib/supported/mfnfss
```

The subdirectory that replaces `packages` will be called `latex/required`; all the other sub-directories of `packages` will be moved there.

LaTeX Project on the Internet

A new `latex-project.org` domain has been registered. The web site is not yet fully functional but the old LaTeX pages from CTAN are available at `http://www.latex-project.org/` and the LaTeX bug reporting address has been changed to `latex-bugs@latex-project.org`.

Restructuring the LaTeX package licenses

Several people have requested an easy mechanism for the distribution of LaTeX packages and other software "under the same conditions as LaTeX". The old `legal.txt` file was unsuitable as a general licence as it referred to specific LaTeX authors, and to specific files.

Therefore, in this release `legal.txt` contains just the copyright notice and a reference to the new *LaTeX Project Public License* (LPPL) for the distribution and modification conditions. The `tools`, `graphics`, and `mfnfss` packages also now refer to this license in their distribution notices.

Support for Cyrillic encodings

Basic Cyrillic support, as announced in LaTeX News 9, is now finally an official part of LaTeX. It includes support for the following standard Cyrillic font encodings (this list may grow): T2A T2B T2C X2.

It also includes various Cyrillic input encodings (20 in total, including commonly used variants and Mongolian Cyrillic encodings). This provides platform independent and sophisticated basic support for high-quality typesetting in various Cyrillic-based languages.

For further information see the file `cyrguide.tex`.

Tools distribution

The `varioref` package has been extended to support textual page references to a range of objects: e.g., if `eq-first` and `eq-last` are the label names for the first and last equation in a sequence, then you can now write

```
see~\vrefrange{eq-first}{eq-last}
```

This results in different text depending on whether both labels fall on the same page.

Some additional user commands, as well as building-blocks for writing private extensions, are described in the accompanying documentation.

LaTeX News

Issue 11, June 1999

Back in sync

The last release of LaTeX was delayed even longer than you have come to expect. We hope that it proved worth waiting for. It required a major integration of the code from several people and, independently, the introduction of the LPPL (see LaTeX News 10) plus several related changes to our internal systems. It therefore seemed sensible to wait until everything was complete rather than do things in too much hurry.

This seem to have been a successful strategy as the recent patch release was related to an isolated change that was done many months previously. If this release does not appear a lot closer to its nominal date then ... well, you will not be reading this sentence!

Yearly release cycles

With the year 2000 rapidly approaching, we intend to switch to a release frequency of just one per year (with patches if necessary) for the core of LaTeX 2_ε. These days the system is sufficiently stable that the original update policy is costing everybody more time than is now warranted.

LPPL update

Thanks to extensive and valuable input from Matt Swift (`swift@alum.mit.edu`) we now have a clearer and more detailed form of the LaTeX Project Public Licence. This release contains both the original version (in `lppl-1-0.txt`) and the updated version, LPPL 1.1.

The future of SliTeX

We still get a very small trickle of reports about this part of the system (if you are no longer able to recall LaTeX 2.09 then you will know it as the `slides` class). We have not classified them (in our minds at least) as bugs since we have always known that there are many problems with this class. It is clear to us that the only sensible action would be to redesign the system completely; in particular, to remove much of its complexity whose purpose is to support 10-year-old overlay technology. However, this would take a lot too much time and would be completely out of proportion to its current usage.

We are therefore planning to make the `slides` class unsupported in the sense that any problem related to the use of invisible fonts is considered to be a feature (The LaTeX 2_ε manual by Leslie Lamport doesn't even describe this part of the class any more). Of course, if it still has its enthusiasts then we are happy to cede it to their loving care (somewhat like a preserved steam locomotive, in some parts of the world).

Fontenc package peculiarities

The `\usepackage` interface normally ensures that a package is loaded only once. The fontenc package has become an exception to this rule: it can be loaded several times using different options, e.g., allowing the user to add a font encoding in the preamble. This comes at a price for package writers: the low-level commands (see `ltclass.dtx`) used to check if a package was loaded, and with which options, do not work for the fontenc package.

New math font encodings

As we announced in LaTeX News 9, a joint working group of the TeX Users Group and the LaTeX3 Project has developed a new 8-bit math font encoding for TeX. The reason why this work is not yet released is because of other exciting developments in the world of math fonts and math characters. It is obviously wise to ensure that the encoding work is fully integrated with the available fonts.

Those interested are reminded that further information about the Math Font Group may be found on the World Wide Web at: <http://www.tug.org/twg/mfg/>.

Tools distribution

The multicol package has now got a small but useful extension which allows you to force a column break where this is really necessary. This is done with the command `\columnbreak`, which can be used like `\pagebreak` (e.g., within paragraphs) except that it cannot have an optional argument and thus it always forces a new column.

Coming soon

Major work on a new class file structure to support flexible designs is well under way; some of this work will be presented at the TUG'99 conference in Vancouver, Canada. With a bit of luck much of this work could be ready for integration into the next release—so watch this space!

LaTeX News

Issue 12, December 1999

LPPL update

Since the release of the LaTeX Project Public Licence version 1.1, we have received a small number of queries which resulted in some minor changes to improve the wording or explain the intentions better. As a consequence this release now contains LPPL 1.2 in the file `lppl.txt` and the previous versions as `lppl-1-0.txt` and `lppl-1-1.txt`.

fixltx2e package

This package provides fixes to LaTeX 2_ε which are desirable but cannot be integrated into the LaTeX 2_ε kernel directly as they would produce a version incompatible to earlier releases (either in formatting or functionality).

By having these fixes in the form of a package, users can benefit from them without the danger that their documents will fail, or produce unexpected results, at other sites; this works because a document will contain a clear indication (the `\usepackage` line, preferably with a required date) that at least some of these fixes are required to format it.

Outcome of TUG '99 (Vancouver)

The slides from the TUG'99 presentation we gave on *a new interface for LaTeX class designers* are available from the LaTeX Project website; look for the file `tug99.pdf` at:

> http://www.latex-project.org/talks/

Please note that this document was intended only to be informal "speaker's notes" for our own use. We decided to make them available (the speaker's notes as well as the slides that were presented) because several people requested copies after the talk. However, they are *not* in a polished copy-edited form and are not intended for publication.

Prototype implementations of parts of this interface are now available from:

> http://www.latex-project.org/code/
> experimental/

We are continuing to add new material at this location so as to stimulate further discussion of the underlying concepts. As of December 1, 1999 the following parts can be downloaded.

xparse Prototype implementation of the interface for declaring document command syntax. See the `.dtx` files for documentation.

template Prototype implementation of the template interface (needs parts of `xparse`).

The file `template.dtx` in that directory has a large section of documentation at the front describing the commands in the interface and giving a 'worked example' building up some templates for caption formatting.

xcontents Interface description for table of contents data (no code yet). Coding examples have been thoroughly discussed on the `latex-l` list.

xfootnote Working examples for generating footnotes, etc. Needs `xparse` and `template`.

All examples are organised in subdirectories and additionally available as `gzip tar` files.

Please remember that this material is intended only for experimentation and comments; thus any aspect of it, e.g., the user interface or the functionality, may change and, in fact, is very likely to change. For this reason it is explicitly forbidden to place this material on CD-ROM distributions or public servers.

These concepts, as well as their implementation, are under discussion on the list `LATEX-L`. You can join this list, which is intended solely for discussing ideas and concepts for future versions of LaTeX, by sending mail to `listserv@URZ.UNI-HEIDELBERG.DE` containing the line

> SUBSCRIBE LATEX-L *Your Name*

This list is archived and, after subscription, you can retrieve older posts to it by sending mail to the above address, containing a command such as:

> GET LATEX-L LOGyymm

where yy=Year and mm=Month, e.g.

> GET LATEX-L LOG9910

for all messages sent in October 1999.

LATEX News

Issue 13, June 2000

Yearly release cycle

We announced in *LaTeX News 11* that we intended to switch to a 12-monthly release schedule. With the present (June 2000) release, this switch is being made: thus the next release of LaTeX will be dated June 2001. We shall of course continue, as in the past, to release patches as needed to fix significant bugs.

PSNFSS: *Quote of the Month*

> You should say in the LaTeX News that Walter Schmidt has taken over PSNFSS from me. It gives me a certain pleasure to be able to draw a line under that part of my life…
>
> Sebastian Rahtz

The PSNFSS material, which supports the use of common PostScript fonts with LaTeX, has been thoroughly updated. Most noticeably, the `mathpple` package, which used to be distributed separately, is now part of the basic PSNFSS bundle; this package provides mathematical typesetting with the Palatino typeface family. In addition, numerous bugs and flaws have been fixed and the distribution has been 'cleaned up'. The file `changes.txt` contains a detailed list of these changes.

The documentation (in `psnfss2e.pdf`) has been completely rewritten to provide a comprehensive introduction to the use of PostScript fonts.

Notice that the new PSNFSS needs updated files for font metrics, virtual fonts and font definitions. If you received the new version (8.1) as part of a complete TeX system then these new font files should also have been installed. However, if you intend to install or update PSNFSS yourself, please read the instructions in the file `00readme.txt` of the new PSNFSS distribution.

Support for commercial PostScript fonts, such as Lucida Bright, has been removed from the basic distribution; it is now available from CTAN: `http://www.tex.ac.uk/tex-archive/macros/latex/contrib/supported/psnfssx`.

New AMS-LATEX

Version 2.0 of AMS-LaTeX was released on December 1, 1999. It can be obtained via `ftp://ftp.ams.org/pub/tex/` or `http://www.ams.org/tex/amslatex.html`, as well from CTAN: `http://www.tex.ac.uk/tex-archive/macros/latex/required/amslatex`.

This release consists chiefly of bug fixes and consolidation of the existing features. The division of AMS-LaTeX into two main parts (the math packages; the AMS document classes) has been made more pronounced. The files `diffs-m.txt`, `diffs-c.txt`, `amsmath.faq`, and `amsclass.faq` describe the changes and address some common questions.

The primary documentation files remain `amsldoc.tex`, for the amsmath package, and `instr-l.tex`, for the AMS document classes. The documentation for the amsthm package, however, has been moved from `amsldoc.tex` to a separate document `amsthdoc.tex`.

New input encoding latin4

The package `inputenc` has, thanks to Hana Skoumalová, been extended to cover the latin4 input encoding; this covers Baltic and Scandinavian languages as well as Greenland Inuit and Lappish.

New experimental code

In *LaTeX News 12* we announced some ongoing work towards a 'Designer Interface for LaTeX' and we presented some early results thereof. Since then, at Gutenberg 2000 in Toulouse and TUG 2000 in Oxford, we described a new output routine and an improved method of handling vertical mode material between paragraphs. In combination these support higher quality *automated*[1] page-breaking and page make-up for complex pages—the best yet achieved with TeX!

A paper describing the new output routine is at `http://www.latex-project.org/papers/xo-pfloat.pdf` All code examples and documentation are available at `http://www.latex-project.org/code/experimental/`

This directory has been extended to contain

galley Prototype implementation of the interface for manipulating vertical material in galleys.

xinitials Prototype implementation of the interface for paragraph initials (needs the `galley` package.

xtheorem Contributed example using the `template` package to provide a designer interface for theorem environments.

xoutput A prototype implementation of the new output routine as described in the `xo-pfloat.pdf` paper. Expected availability: at or shortly after the TUG 2000 conference.

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[1] The stress here is on automated!

LaTeX News

Issue 14, June 2001

Future releases

We are currently exploring how to best support the very large community of individuals, organisations and enterprises that depend on the robustness and availability of the current standard LaTeX distribution. The results of this may lead to some changes in the regular release schedule and the handling of bug reports during the next year.

New release of Babel (required)

Earlier this year a new release of Babel (3.7) became available. You can read about its new features in

`http://www.ctan.org/tex-archive/macros/`
`        latex/required/babel/announce.txt`

One of the bugs that got fixed in this release deals with how labels are handled by LaTeX. Because this part of the kernel is modified by babel, the relevant changes need to be coordinated. Therefore to use Babel with this release of LaTeX you will need to update your version of babel to at least 3.7.

New input encoding latin9

The package inputenc has, thanks to Karsten Tinnefeld, been extended to cover the latin9 input encoding. The ISO-Latin 9 encoding is a useful modern replacement for ISO-Latin 1 that contains a few characters needed for French and Finnish. Of wider interest, it also contains the euro currency sign; this could be the killer argument for many 8-bit texts to use Latin-9 in the future.

According to a Linux manpage, ISO Latin-9 supports Albanian, Basque, Breton, Catalan, Danish, Dutch, English, Estonian, Faroese, Finnish, French, Frisian, Galician, German, Greenlandic, Icelandic, Irish Gaelic, Italian, Latin, Luxemburgish, Norwegian, Portuguese, Rhaeto-Romanic, Scottish Gaelic, Spanish and Swedish. The characters added in latin9 are (in LaTeX notation):

` \texteuro  \v S  \v s  \v Z  \v z  \OE  \oe  \" Y`

They displace the following characters from latin1:

` \textcurrency  \textbrokenbar  \"{}   \'{}   \c{}`
` \textonequarter  \textonehalf  \textthreequarters`

New tools

The new package trace provides many commands to control LaTeX's tracing and debugging output, including the excellent new information available with ε-TeX such as the extremely useful tracing of local assignments. You will find it in the tools distribution.

It offers the command `\traceon`, which is similar to `\tracingall` but suppresses uninteresting stuff such as font loading by NFSS (which can go on for pages if you are unlucky). It also offers `\traceoff` to … guess what! Full details are in the documented source file, `trace.dtx`.

In the base ifthen package we have added the uppercase synonyms `\NOT \AND` and `\OR`.

New experimental code

In *LaTeX News 12* we announced some ongoing work towards a 'Designer Interface for LaTeX' and we presented some early results thereof. Since then, at Gutenberg 2000 in Toulouse and TUG 2000 in Oxford, we described a new output routine and an improved method of handling vertical mode material between paragraphs. In combination these support higher quality *automated*[1] page-breaking and page make-up for complex pages—the best yet achieved with TeX!

More recently we have added material to handle the complex front matter requirements of journal articles; this was presented at Gutenberg 2001 in Metz.

A paper describing the new output routine is at
`http://www.latex-project.org/papers/xo-pfloat.pdf`
All code examples and documentation are available at
`http://www.latex-project.org/code/experimental`
This directory has been extended to contain the following.

galley Prototype implementation of the interface for manipulating vertical material in galleys.

xinitials Prototype implementation of the interface for paragraph initials (needs the `galley` package).

xtheorem Contributed example using the `template` package to provide a designer interface for theorem environments.

xor A prototype implementation of the new output routine as described in the `xo-pfloat.pdf` paper.

xfrontm A prototype version of the new font matter interface.

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[1] The stress here is on automated!

LaTeX News

Issue 15, December 2003

Anniversary release

Yes, it's now 10 years since the first release in this series and, for Knuthists, this release also contains *Issue 16*!

Meanwhile this *Issue 15* describes the major new features in the current release whilst *Issue 16* looks a little way into the future of LaTeX.

LPPL – new version

Most importantly, there is now a new version, 1.3, of the LaTeX Project Public Licence. Many of you will be thrilled to know that, following the exchange of over 1600 e-mail messages dissecting various aspects of its philosophy such as 'how many angels can appear in the name of a file before it becomes non-free', this version is now officially a DFSG (Debian Free Software Guidelines) approved license. The discussions start at http://lists.debian.org/debian-legal/2002/debian-legal-200207/threads.html with high traffic throughout August to October 2002 and further heated discussions starting in April 2003 and concluding around June at http://lists.debian.org/debian-legal/2003/debian-legal-200306/msg00206.html.

The important features of the new version are useful clarifications in the wording, and revised procedures for making a change to the Current Maintainer of a package. Special thanks to all those people from Debian Legal who worked constructively with us on this onerous task, especially but not exclusively Jeff Licquia and Branden Robinson.

Small updates to varioref

The English has been corrected in `\reftextbefore` (an incompatible change). There are other extensions such as `\labelformat`, `\Ref`, `\Vref` and `\vpagerefnum`. Some Dutch text has also been changed and two new options added: slovak and slovene.

New and more robust commands

Many of the math mode commands for compound symbols have been made robust and a new robust command has been added: `\nobreakdashes`. This last is a low-level command, borrowed from the amsmath package, for use only before hyphens or dashes. It prevents the line break that is normally allowed after the following sequence of dashes.

Fixing font sizes

The new fix-cm package, by Walter Schmidt, changes the CM font definition (`.fd`) files so that similar design sizes are used in both the OT1 and T1 encodings.

Font encodings

A number of options have been added to the textcomp package, enabling only available glyphs to be used. Also, the 'NFSS font families' are now divided into five different groups according to the subset of glyphs each provides from the full collection of symbols in the TS1 encoding. Given sufficient information about a font family textcomp will use this in order to limit the typesetting to those glyphs that are available.

Use of this mechanism has also enhanced `\oldstylenums` to use the current font if possible.

Displaying font tables

With the nfssfont package you can now specify the font to display by giving its 'NFSS classification', rather than needing to know its external font file's name. It is also now possible to generate large collections of font tables in batch mode by providing a suitable input file.

New input encodings

The inputenc package has been extended as follows: macce input encoding (Apple Central European), thanks to Radek Tryc and Marcin Wolinski; cp1257 for Baltic languages; latin10, thanks to Ionel Ciobîcă. The euro symbol has by now been added to several encodings: ansinew, cp1250 and cp1252 (which also has another addition), whilst cp858 adds it to cp850.

Unicode input

Partial, experimental support for text files that use the Unicode encoding form UTF-8 is now provided by the option utf8 for the inputenc package.

The only Unicode text file characters supported by the current version are those based on the most common inputs for glyphs from the small collection of standard LaTeX Latin encodings.

And finally … pict2e

The old, non-functional version of this package has been removed as there is now a fully working version from Hubert Gäßlein and Rolf Niepraschk. It is described in *The LaTeX Manual*.

LaTeX News

Issue 16, December 2003

Anniversary news

This anniversary *Issue 16* takes a brief look into the future work of the LaTeX3 Project Team, both short and and longer range. Please let us know if you want to get involved with us in any of this work (see below).

An overview of the 10th Anniversary Release, dated 2003/12/01, is can be found in *Issue 15*.

TLC2: The LaTeX Companion – 2nd edition!

Since you are reading this newsletter, there is a good chance that you, or a friend, has already bought this encyclopedic volume: the incomparable Second Edition of this work that is every LaTeXie's ultimate lucky charm.

If by some chance you have not yet purchased your own copy then get into training, get shopping, and get flexing your muscles (both physical—it's 1100+ pages, and intellectual) by using it to discover masses of invaluable 'insider information' about:

- the latest release of Standard LaTeX;
- over 200 extension packages;
- plus related software and systems.

For more information on this all new (??…OK, not *all*, but over 90%!!), all accurate (we hope!) 10th Anniversary Edition, check out <http://www.awprofessional.com/titles/0201362996>.

Future maintenance

We are currently exploring how best to support the very large and rapidly growing community of individuals, organisations and enterprises that depend on the robustness and availability of the current standard LaTeX distribution. Although we remain firmly resolved not to make changes in the base distribution (the kernel) of Standard LaTeX, there is still much that needs doing to maintain its reliability and utility and to keep up the necessary level of communication with users and supporters. Also, as with all advanced software systems, bugs are still turning up occasionally so some fixes are still essential.

One major impediment to providing adequate service levels in this area is, of course, the difficulties inherent in obtaining the time and commitment of skilled minds—hence the appeal above to anyone interested in getting involved.

LPPL certification

There are still some outstanding diplomatic tasks around the LaTeX Project Public Licence: these include e.g., getting it 'OSF certified' and ensuring that it gains more support and wider use, even in the FSF world where it has long been tolerated.

Use of ε-TeX/pdfTeX

We expect that within the next two years, releases of LaTeX will change modestly in order to run best under an extended TeX engine that contains the ε-TeX primitives, e.g., ε-TeX or pdfTeX. The details of this possible upgrade need further work so we are not making a definite announcement yet.

Although the current release does not *require ε-TeX* features, we certainly recommend using an extended TeX, especially if you need to debug macros.

End of 'autoload' support

As computer systems generally grow in capacity, requirements change and so we believe that the `autoload` variant of LaTeX is no longer required. Thus, although the code remains it is no longer supported. We hope this does not cause any problems.

New models, new code

In the period 1999–2001 we published many results of our work over the previous decade on the development of new concepts and models for automated typesetting based on TeX as the underlying platform. These can be found at <http://www.latex-project.org/papers/> and <http://www.latex-project.org/code/experimental/>.

Since then a very large proportion of the The Team's efforts have been diverted to provide the core author team for TLC2, which provides over 1000 pages of carefully researched and tested documentation of many aspects of the vast world of LaTeX related software that was developed over that same time period and that continues to grow and improve prodigiously.

Completion of that task … until TLC3!! … presents the possibility of getting back to this more exciting development work, or even to more radical work on non-TeX-based models and implementations.

Of course, any such ideas are predicated on our ability to organise (with you, we hope) an efficient but responsive maintenance and support system for Standard LaTeX.

LaTeX News

Issue 17, December 2005

Project licence news

The LaTeX Project Public License has been updated slightly so that it is now version 1.3c. In the warranty section the phrase "unless required by applicable law" has been reinstated, having got lost at some point. Also, it now contains three clarifications: of the difference between "maintained" and "author-maintained"; of the term "Base Interpreter"; and when clause 6b and 6d shall not apply.

Following requests, we now also provide the text of the licence as a LaTeX document (in the file `lppl.tex`). This file can be processed either as a stand-alone document or it can be included (without any modification) into another LaTeX document, e.g., as an appendix, using `\input` or `\include`.

New guide on font encodings

Way back in 1995 work was started on a guide to document the officially allocated LaTeX font encoding names. However, for one reason or another this guide (named *LaTeX font encodings*) was, until now, not added to the distribution. It describes the major 7-bit and 8-bit font encodings used in the LaTeX world and explains the restrictions required of conforming text font encodings. It also lists all the 'encoding specific commands' (the LICR or LaTeX Internal Character Representation) for characters supported by the encodings `OT1` and `T1`.

When the file `encguide.tex` is processed by LaTeX, it will attempt to typeset an encoding table for each encoding it describes. For this to be possible, LaTeX must be able to find `.tfm` files for a representative example font for each encoding. If LaTeX cannot find such a file then a warning is issued and the corresponding table is omitted.

Robust commands in math

The font changing commands in text-mode have been robust commands for years, but the same has not been true for the math versions such as `\mathbf`. While the math-mode commands worked correctly in section heads, they could cause problems in other places such as index entries. With this release, these math-mode commands are now robust in the same way as their text-mode counterparts.

Updates of required packages

Several of the packages in the `tools` bundle have been updated for this release.

The `xspace` package has some new features. One is an interface for adding and removing the exceptions it knows about and another is that it works with active characters. These remove problems of incompatibility with the `babel` system.

In *LaTeX News 16* we announced that some packages might begin to take advantage of ε-TeX extensions on systems where these are available: and the latest version of `xspace` does just that. Note also that fixltx2e will make use of the facilities in ε-TeX whenever these are present (see below).

The `calc` package has also been given an update with a few extra commands. The commands `\maxof` and `\minof`, each with two brace-delimited arguments, provide the usual numeric max and min operations. The commands `\settototalheight` and `\totalheightof` work like `\settoheight` and `\heightof`. There are also some internal improvements to make `calc` work with some more primitive TeX constructs, such as `\ifcase`.

The `varioref` package has acquired a few more default strings but there are still a number of languages for which good strings are still missing.

The `showkeys` package has also been updated slightly to work with more recent developments in `varioref`. Also, it now provides an easy way to define the look of the printed labels with the command `\showkeyslabelformat`.

Work on LaTeX fixes

The package known as fixltx2e has three new additions. A new command `\textsubscript` has been added as a complement to the command `\textsuperscript` in the kernel. Secondly, a new form of `\DeclareMathSizes` that allows all of its arguments to have a dimension suffix. This means you can now use expressions such as `\DeclareMathSizes{9.5dd}{9.5dd}{7.4dd}{6.6dd}`.

The third new addition is the robust command `\TextOrMath` which takes two arguments and executes one of them when typesetting in text or math mode respectively. This command also takes advantage of ε-TeX extensions if available; more specifically, when the ε-TeX extensions are available, it does not destroy kerning between previous letters and the text to be

typeset. The command is also used internally in fixltx2e to resolve a problem with `\fnsymbol`.

Also, further work has been done on reimplementing the command `\addpenalty`, which is used internally in several places: we hope it is an improvement!

The graphics bundle

The graphics bundle now supports the dvipdfmx post-processor and Jonathan Kew's XETEX program. By support we mean that the graphics packages recognize the new options `xetex` and `dvipdfmx` but we do not distribute the respective driver files.

This leads elegantly to a description of the new policy concerning such driver files in the graphics bundle. Most driver files for our graphics packages are maintained by the developers of the associated post-processor or TEX programs. The teams developing these packages are working very hard: their rapid development offers a stark contrast to the current schedule of LATEX releases. It is therefore no longer practical for the LATEX Team to be responsible for distributing the latest versions of these driver files.

Therefore the installation files for graphics have been split: there is now `graphics.ins` to install the package files and `graphics-drivers.ins` for the driver files (located in `drivers.dtx`). There is no need to install all those provided in the file `drivers.dtx`.

Please also note that, as requested by the maintainers of PStricks, we have removed the package pstcol as current versions of PSTricks make it obsolete.

Future development

The title of this section is a little misleading as it actually describes *current* development. In 1998 the expl3 bundle of packages was put on CTAN to demonstrate a possible LATEX3 programming environment. These packages have been lying dormant for some time while the LATEX Project Team were preoccupied by other things such as developing the experimental packages xor, template, etc., (and also writing that indispensable and encyclopaedic volume, The LATEX Companion – 2nd edition).

In October 2004 work on this code base was resumed with the goal of some day turning it into a kernel for LATEX3. This work can now also make full use of the widely accepted ε-TEX extensions. Currently two areas are central to this work.

- Extending the kernel code of LATEX3.
- Converting the experimental packages such as xor, template to use the new syntax internally.

Beware! Development of expl3 is happening so fast that the descriptions above might be out of date when you read this! If you wish to see what's going on then go to http://www.latex-project.org/code.html where you can download fully working code (we hope!).

LaTeX News

Issue 18, December 2007

This news never existed.

LaTeX News

Issue 19, September 2009

New LaTeX release

This issue of LaTeX News marks the first release of a new version of LaTeX 2ε since the publication of The LaTeX Companion in 2005–2006.

Just in time for TeX Live 2009, this version is a maintenance release and introduces no new features. A number of small changes have been made to correct minor bugs in the kernel, slightly extend the Unicode support, and improve various aspects of some of the `tools` packages.

New code repository

Since the last LaTeX release, the entire code base has been moved to a public SVN repository[1] and the entire build architecture re-written. In fact, it has only been possible for us to consider a new LaTeX release since earlier this year when the test suite was finally set up with the new system. In the process, a bug in the LaTeX picture fonts distributed with TeX Live was discovered, proving that the tests are working and are still very valuable.

Now that we can easily generate new packaged versions of the LaTeX 2ε distribution, we expect to be able to roll out bug fixes in a much more timely manner than over the last few years. New versions should be distributed yearly with TeX Live. Having said this, the maintenance of the LaTeX 2ε kernel is slowing down as the bugs become fewer and more subtle. Remember that we cannot change any of the underlying architecture of the kernel or any design decisions of the standard classes because we must preserve backwards compatibility with legacy documents at all costs.

Even new features cannot be added, because any new documents using them will not compile in systems (such as journal production engines) that are generally not updated once they've been proven to work as necessary.

None of this is to say that we consider LaTeX 2ε to be any less relevant for document production than in years past: a stable system is a useful one. Moreover, the package system continues to provide a flourishing and stable means for the development of a wide range of extensions.

Babel

One area of the LaTeX 2ε code base that is still receiving feedback to be incorporated into the main distribution is the Babel system for multilingual typesetting. While the Babel sources have already been added to the SVN repository the integration of the test system for Babel is still outstanding.

The future

While work on LaTeX 2ε tends to maintenance over active development, the LaTeX3 project is seeing new life. Our goals here are to provide a transition from the LaTeX 2ε document processing model to one with a more flexible foundation. Work is continuing in the `expl3` programming language and the `xpackages` for document design. Future announcements about LaTeX3 will be available via the LaTeX Project website and in TUGboat.

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[1] <http://www.latex-project.org/svnroot/latex2e-public/>

LATEX News

Issue 20, June 2011

Scheduled LATEX bug-fix release

This issue of LATEX News marks the first bug-fix release of LATEX 2_ε since shifting to a new build system in 2009. Provided sufficient changes are made each year, we expect to repeat such releases once per year to stay in sync with TEX Live. Due to the excitement of TEX's 2^5-th birthday last year, we missed our window of opportunity to do so for 2010. This situation has been rectified this year!

Continued development

The LATEX 2_ε program is no longer being actively developed, as any non-negligible changes now could have dramatic backwards compatibility issues with old documents. Similarly, new features cannot be added to the kernel since any new documents written now would then be incompatible with legacy versions of LATEX.

The situation on the package level is quite different though. While most of us have stopped developing packages for LATEX 2_ε there are many contributing developers that continue to enrich LATEX 2_ε by providing or extending add-on packages with new or better functionality.

However, the LATEX team certainly recognises that there are improvements to be made to the kernel code; over the last few years we have been working on building, expanding, and solidifying the expl3 programming layer for future LATEX development. We are using expl3 to build new interfaces for package development and tools for document design. Progress here is continuing.

Release notes

In addition to a few small documentation fixes, the following changes have been made to the LATEX 2_ε code; in accordance with the philosophy of minimising forwards and backwards compatibility problems, most of these will not be noticeable to the regular LATEX user.

Font subsets covered by Latin Modern and TEX Gyre   The Latin Modern and TEX Gyre fonts are a modern suite of families based on the well-known Computer Modern and 'PostScript 16' families with many additional characters for high-quality multilingual typesetting.[1]

Information about their symbol coverage in the `TS1` encoding is now included in `textcomp`'s default font definitions.

Redefinition of `\enddocument`   Inside the definition of `\end{document}` the `.aux` file is read back in to resolve cross-references and build the table of contents etc. From 2.09 days this was done using `\input` without any surrounding braces which could lead to some issues in boundary cases, especially if `\input` was redefined by some package. It was therefore changed to use LATEX 2_ε's internal name for this function. As a result, packages that modify `\enddocument` other than through the officially provided hooks may need to get updated.

Small improvement with split footnotes in `ftnright`   If in the first column there is more than a full column worth of footnote material the material will be split resulting in footnotes out of order. This issue is now at least detected and generates an error but the algorithm used by the package is unable to gracefully handle it in an automated fashion (some alternatives for resolving the problem if it happens are given in the package documentation).

Improvement in `xspace` and font-switching   The `xspace` package provides the command `\xspace` which attempts to be clever about inserting spaces automatically after user-defined control sequences. An important bug fix has been made to this command to correct its behaviour when used in conjunction with font-switching commands such as `\emph` and `\textbf`. Previously, writing

```
\newcommand\foo{foo\xspace}
... \emph{\foo}  bar baz
... \emph{\foo}, bar baz
```

would result in an extraneous space being inserted after 'foo' in both cases; this has now been corrected.

RTL in `multicol`   The 1.7 release of `multicol` adds support for languages that are typeset right-to-left. For those languages the order of the columns on the page also need to be reversed—something that wasn't possible in earlier releases.

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[1]See their respective TUGboat articles for more information: http://www.tug.org/TUGboat/tb24-1/jackowski.pdf

http://www.tug.org/TUGboat/tb27-2/tb87hagen-gyre.pdf

The new feature is supported through the commands `\RLmulticolcolumns` (switching to right-to-left typesetting) and `\LRmulticolcolumns` (switching to left-to-right typesetting) the latter being the default.

Improve French `babel` interaction with `varioref`
Extracting and saving the page number turned out to be a soure of subtle bugs. Initially it was done through an `\edef` with a bunch of `\expandafter` commands inside. This posed a problem if the page number itself contained code which needed protection (e.g., pr/4080) so this got changed in the last release to use `\protected@edef`. However, that in turn failed with Babel (bug report/4093) if the label contained active characters, e.g., a ":" in French. So now we use even more `\expandafter` commands to avoid any expansion other than what is absolutely required—making the code in that space absolutely unreadable.

```
\expandafter\expandafter\expandafter
\def\expandafter\expandafter\expandafter
  #1\expandafter\expandafter\expandafter
    {\expandafter\expandafter\expandafter
      \@cdr\csname r@#2\endcsname
      \@nil}%
```

Code like this nicely demonstrates the limitations in the programming layer of LaTeX 2_ε and the advantages that expl3 will offer on this level.