LaTeX News

Issue 21, May 2014 (LaTeX release 2014-05-01)

Scheduled LaTeX bug-fix release

This issue of LaTeX News marks the second bug-fix
release of LaTeX 2ε (standard LaTeX) since shifting to a
new build system in 2009. Provided sufficient changes
are made, we expect to make such releases yearly or
every two years, in sync with TeX Live.

Release notes

This release makes no changes to the core code in the
LaTeX 2ε format but there are a small number of
documentation fixes (not listed here). In addition
several packages in the base and required areas have
been updated as detailed below.

This has been done in accordance with the
philosophy of minimising problems in both forwards
and backwards compatibility, so most of these changes
should not be noticed by the regular LaTeX user.

References in the text below of the form
"graphics/3873" are to bug reports listed at:
http://latex-project.org/cgi-bin/ltxbugs2html

fixltx2e updates

There are a number of bugs and faulty design decisions
in LaTeX 2ε that should have been corrected long ago in
the kernel code. However, such corrections cannot be
done as this would break backwards compatibility in
the following sense. A large number of documents exist
by now that have worked around the bug or have even
made use of a particular misfeature. Thus changing the
kernel code would break too many existing documents.

The corrections for these types of bug have therefore
been collected together in a package that can be loaded
only when needed; its name is fixltx2e. For this release
we made the following changes to this package:

- Misspelled float placement specifiers such as
  \begin{figure}[tv] instead of tb are silently
  ignored by the kernel code. Now we test for such
  letters and issue an error message.

- LaTeX's float handling algorithm can get out of
  sync if you mix single and double-column floats (as
  they are placed independently of each other). This
  was corrected in fixltx2e a few years ago but the fix
  was not perfect as one situation using
  \enlargethispage generated a low-level TeX error.
  This behaviour of the package is now improved.

New fltrace package

For years the file ltoutput.dtx contained some hidden
code to trace the detailed behaviour of the float
placement algorithm of LaTeX. Prompted by questions
on StackExchange we now extract this code into a new
fltrace package. To see the float algorithm in action (or
to understand why it decides to place all your floats at
the very end of the document) use

```
\usepackage{fltrace} \tracefloats
```

To stop tracing somewhere in the document use
\tracefloatsoff and to see the current value of
various float parameters use \tracefloatvals. As the
package is identical to the kernel code with tracing
added, it may or may not work if you load any other
package that manipulates that part of the kernel code.
In such a case your best bet is to load fltrace first.

inputenc package updates

The inputenc package allows different input encodings
for LaTeX documents to be specified including the
important utf8 option used to specify the Unicode
UTF-8 encoding. A common mistake in documents has
been to also include this option when using the
Unicode-based TeX engines LuaTeX and XeTeX
producing strange errors as these engines natively deal
with UTF-8 characters.

If a document stored in an 8bit encoding is processed
by pdfTeX, it needs the inputenc package to work
correctly. However, if such a document is processed
unchanged by LuaTeX or XeTeX, then accented
characters may silently get dropped from the output.

The package has been modified so that if used with
LuaTeX or XeTeX, then it just issues a warning if utf8
or ascii is specified, and stops with an error for any
other encoding requested.

One further improvement has been made to the
encoding definition files (.def) used by inputenc: the
catcode of @ is now saved and restored when reading
them instead of always using \makeatother inside the
files (latex/4192).

The tools directory

In the past each of the sub-directories in the "required"
section of the LaTeX distribution contained a single
.ins file to generate the code files from the source files.
We have now started to provide individual .ins files for
each of those packages that are likely to require updates
outside a major LaTeX release.

multicol updates

Version 1.8 of multicol implements some improvements/fixes and one extension. In the past the balancing algorithm enlarged the column height until it found a solution that satisfied all constraints. If there were insufficient break points then the final column height could have been much larger than expected and if that happened near the end of the page it resulted in the text overflowing into the bottom margin. This situation is now detected and in that case a normal page is cut and balancing is resumed on the next page. Some overflow is still allowed and controlled via the parameter `\maxbalancingoverflow`.

The use of `\enlargethispage` is now properly supported within the environment. Finally a new command `\docolaction` was added to allow the execution of code depending on the column in which the command is executed. See the documentation for details.

Bug fixes: the new version fixes both a color leak that could happen in certain situations and the problem that multicols could mess up the positioning of `\marginpars` that followed the environment.

tabularx updates

The restrictions on embedding `\tabularx` `\endtabularx` into the definition of a new environment have been relaxed slightly. See the package documentation for details.

showkeys updates

The showkeys package has been updated to fix problems if used at the start of list items, and to work if brace groups ({ and }) are used in the optional argument of `\cite`. (tools/4162, tools/4173)

color updates

The `\nopagecolor` command suggested by Heiko Oberdiek, available for some years in the `pdftex` option, has been added to the core package as suggested in graphics/3873. Currently this is supported in the driver files for dvips and pdftex. Patches to support other drivers are welcome.

graphicx updates

The graphicx version of `\rotatebox` now allows `\par` (and blank lines) in values, to match the change made to the graphics version some years ago. See graphics/4296.

keyval updates

All parsing used in the keyval package has been changed to allow `\par` (and blank lines) in values. (A second change, to parsing of brace groups in a construct such as `key={{{value}}}`, was reverted in v1.15.) See graphics/3446.

Standard LaTeX (LaTeX 2ε) and expl3

The substantial collection of innovative code in expl3 implements a new programming language that has for a while now been used by some writers of LaTeX 2ε packages. This code has recently also been made available for use on top of plain TeX or ConTeXt, largely to support generic packages that are supposed to work with different flavours of TeX. These uses in no way affect authors of LaTeX documents and such LaTeX 2ε packages will continue to work as advertised by their authors with standard LaTeX.

This code base will also become an important foundation for the kernel of LaTeX3 and so the new programming language can be described as 'The LaTeX3 Programming Language'. However, if you see or hear that a package 'uses LaTeX3' then it remains very unlikely (as yet) to mean that the package is part of some 'new version of LaTeX'.

News about the development and use of expl3 and about other developments in the LaTeX3 code base is reported regularly in the LaTeX3 News series (http://latex-project.org/l3news/), the most recent issue of which was published in March 2014.