# LATEX News

Issue 25, March 2016

# LuaTEX

This LATEX release sees several internal changes designed to ensure that the system is still usable with LuaTEX versions greater than 0.80, which have introduced many changes into the engine, most notably the removal or renaming of most of the primitive commands introduced by pdfTEX. Also the lists of Lua callbacks handled by the callback allocation mechanism has been updated to match the callbacks defined in LuaTEX version 0.90.

These changes have also required updates in tools and amsmath as described below.

This is the first release of LATEX for which the test suite reports no failures when used with LuaTeX.

# Documentation checksums

The doc package has always provided two mechanisms that were mainly intended to guard against file truncation or corruption when files were commonly distributed by email through unreliable mail gateways: a Character Table of the ASCII character set could be inserted (and checked) and a "checksum" (count of the number of backslashes in the code sections) could be checked. These features are not really needed with modern distribution mechanisms and can be a distraction when reading the source code and so have been removed. The doc package has been updated so that if you use a \CheckSum command then, as before, the number is checked; however, if you omit the command then no error or warning is given.

## Updates to inputenc

The UTF-8 support in inputenc has been further extended with support for non-breaking hyphens and more dashes.

#### Updates in Tools

The varioref package has been updated with improved documentation of multilingual support, and avoiding unnecessary warnings in some cases with \reftextfaraway.

The tabularx package's handling of \endtabularx in environment definitions has been fixed to again match its documentation.

The bm package has been updated as required by the changes to \mathchardef in LuaTFX.

### amsmath

Since the launch of IATEX  $2_{\varepsilon}$  in 1993, the amsmath bundle has been part of the *required* packages in the core IATEX distribution, with bug reports handled by the IATEX bug database at https://latex-project.org/bugs-upload.html.

The amsmath packages and the amscls classes have been maintained by the American Mathematical Society.

With this release a new arrangement has been agreed between the American Mathematical Society and the LATEX3 project. The LATEX3 project will take over maintenance of the amsmath bundle, with the American Mathematical Society retaining maintenance of amscls.

The recommended installation of these files in the TEX directory structure remains unchanged as tex/latex/amsmath and tex/latex/amscls respectively.

This release of amsmath includes several updates so that amsmath does not generate errors when math is used with LuaTeX v0.87+, which has changes to \mathchardef that are incompatible with the previous version of amsmath. It also improves \dots handling so that \long macros are correctly handled (for example, \dots \Rightarrow now uses centered dots), as well as commands expanding to character tokens (for example, \times \dots \times will use centered dots with \times defined as in the unicode-math package).

#### Related updates

In addition to the updates in the core LATEX release, some files in the CTAN "contrib" area have also been updated. Notably there have been further updates to the unicode-data files; also, the files required to build plain and LATEX formats have now been submitted to CTAN as tex-ini-files. The addition of a new luatex option for graphics-related packages (luatex-def on CTAN) has required updates to the configuration files to select a default option and these have similarly been uploaded to CTAN as graphics-cfg. (Previously these files were maintained directly in the TEX Live repository, and were not available on CTAN.)