

# L<sup>A</sup>T<sub>E</sub>X News

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## *LuaT<sub>E</sub>X*

This L<sup>A</sup>T<sub>E</sub>X release sees several internal changes designed to ensure that the system is still usable with LuaT<sub>E</sub>X 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 pdfT<sub>E</sub>X. Also the lists of Lua callbacks handled by the callback allocation mechanism has been updated to match the callbacks defined in LuaT<sub>E</sub>X version 0.90.

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

This is the first release of L<sup>A</sup>T<sub>E</sub>X for which the test suite reports no failures when used with LuaT<sub>E</sub>X.

## *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 LuaT<sub>E</sub>X.

## *amsmath*

Since the launch of L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> in 1993, the `amsmath` bundle has been part of the *required* packages in the core L<sup>A</sup>T<sub>E</sub>X distribution, with bug reports handled by the L<sup>A</sup>T<sub>E</sub>X bug database at <https://latex-project.org/bugs-upload.html>.

The `amsmath` packages and the `amscs` 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 L<sup>A</sup>T<sub>E</sub>X3 project. The L<sup>A</sup>T<sub>E</sub>X3 project will take over maintenance of the `amsmath` bundle, with the American Mathematical Society retaining maintenance of `amscs`.

The recommended installation of these files in the T<sub>E</sub>X directory structure remains unchanged as `tex/latex/amsmath` and `tex/latex/amscs` respectively.

This release of `amsmath` includes several updates so that `amsmath` does not generate errors when `math` is used with LuaT<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X 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 T<sub>E</sub>X Live repository, and were not available on CTAN.)