New rules for reporting bugs in the LaTeX core software (as maintained by the LaTeX Project Team)

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Abstract

Software has bugs and LaTeX unfortunately is no exception. If somebody encounters a bug then it helps if that bug gets reported to the right people so that the bug can be resolved (or a workaround documented or whatever is most appropriate). The problem is to know to whom to report the bug. For this the `latexbug` package has been developed to help in addressing the right group of maintainers.

The LaTeX Project Team maintains a bug database for its own code base (which consists of the LaTeX kernel and some packages that have been written by people in the LaTeX Project Team).

In this article we describe how to report bugs in the core LaTeX software or search through already known issue reports in that database. The article also explains where to find the development version of LaTeX if that ever becomes necessary.

Thank you for taking the time to report a bug and prepare a test file showing it!

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1 The LaTeX kernel sources

LaTeX (or more precisely LaTeX 2_ε the current standard) is part of every major TeX distribution, e.g., TeX Live, MikTeX or MacTeX to name a few. The official releases of LaTeX are all published on CTAN (the Comprehensive TeX Archive Network) where they can be downloaded if necessary and from there they usually find their way into the major distributions within a few days.

Until recently the LaTeX Project Team has maintained the development version of LaTeX 2_ε in an SVN (Subversion) repository with read-only access for the public from the LaTeX Project website. We have now switched to a Git repository[1] located at

`https://github.com/latex3/latex2e`

and from that browser page you can explore the files in the development version.

If necessary, the most recent (unreleased) development version can be downloaded from there in a `.zip` archive (roughly 25Mb) by using the appropriate button. If you are familiar with Git or SVN you can also clone the repository using the command line or your favorite Git frontend tool or alternatively do a checkout using an SVN tool.

1.1 A note on Git pull requests

Git repositories (somewhat in contrast to SVN ones) support widely distributed development and allow people to provide change sets that are made available through so called *pull requests*, so that the maintainers of a program can "pull the suggested changes" into the main repository.

While we appreciate contributions, we think that for the core LaTeX software pull requests are usually not a good approach (unless the change has been previously discussed and agreed upon).

The stability of LaTeX is very important and this means that changes to the kernel are necessarily very conservative. It also means that a lot of discussion has to happen before any changes are made. So if you do decide to post a pull request, please bear this in mind: we do appreciate ideas, but cannot always integrate them into the kernel and it is quite likely that we reject updates made in this way.

If you want to discuss a possible contribution before (or instead of) making a pull request, we suggest you raise the topic first on the LATEX-L list (see links below) or drop a line to the team.

2 Policy on layout and interface deficiencies

Upfront we should probably stress that "deficiencies" in the design of of the standard document classes (`article`, `report` and `book`) as well a questionable but long established interface behavior of commands is something that we will normally not change, even if we can all agree that a different behavior or a different layout would have been a better choice. You are, of course, welcome to report issues in these areas, using the procedure explained below, but in all likelihood such reports will get suspended.

[1] Please note, that if you have previously bookmarked the old SVN repository you should update that bookmark to the new Git repository as the SVN repository is frozen and no longer up-to-date and will soon vanish!

The reason is is that the kernel interfaces and the document classes have been used for many years in essentially all documents (even documents using different classes often build them upon the standard classes in the background) and thus such changes would break or as a minimum noticeably change nearly all existing documents.

3 The bug database for the LaTeX kernel and core packages

Throughout the last two decades the LaTeX Project Team has maintained a bug database using GNATS, a free software system from the FSF. While this has served us well in the past, it has its problems and with our move to Git-based source control its workflow doesn't any longer fit. We have therefore decided to switch to a new tracking system and the natural choice was to use the one already provided as part of the GitHub setup (the place where the sources are now hosted), namely the Issue Tracker.

Unfortunately, it is not possible for a number of reasons to automatically transfer the old bug reports to the new system so we are in a slightly awkward position that we have old bugs in one system and the new ones in another. Thus for searching through already reported bugs it is necessary to search two systems:

- GNATS for bugs reported before 2018;
- The Github Issue Tracker for LaTeX 2_ε for bugs reported 2018 and later.

Over time we hope that the bugs listed in GNATS will be all only of historical interest, but right now it is probably helpful to look in both places (see links below) — sorry for that.

4 The `latexbug` package

So far we have talk about where to find the core LaTeX software and how to report issues with it. However, the LaTeX universe consists of several thousand contributed packages maintained by individuals all over the world. And if a bug happens in one of those packages it doesn't help anybody if it is dumped at the LaTeX Project's doorstep.

For one, we can't actually change other people's code even if we are able to identify the issue. Furthermore we are only a few people and simply do not have the bandwidth to analyze bugs in other people's work.

We have therefore written this little package called `latexbug` that should help in identifying the rightful addressee for a bug report. We ask that it will be loaded in any test file that is intended to be sent to the LaTeX bug database as part of a bug report.

The package will determine if the test file is in a suitable state to be sent to us or if it should be modified first or if it should be sent to somebody else because the bug is (likely) to be in code not maintained by the LaTeX Project Team.

Bug reports sent to the LaTeX bug database without that prior verification are likely to get closed without being looked at at our end in the future.

4.1 The user interface

The interface is simple: the package has no options and doesn't define any new commands to be used.

All that is required is that the package is loaded as the very first step in the test file that shows the bug — in other words before the line loading the `\documentclass`. For that reason it must be loaded using `\RequirePackage` instead of the usual `\usepackage` that is used in the preamble of a document.

Thus, a bug report test files should look like this:

```
\RequirePackage{latexbug}
\documentclass{article}
  % preamble as necessary
  % (drop anything not needed, please)
\begin{document}
  % example showing the bug
  % (as short and concise as possible)
\end{document}
```

Of course, instead of `article` you may need to load a different standard class, but do not load a third-party class as we can't accept bugs that manifest itself only when using a class we don't maintain.

If the test file runs through (showing the bug) without any complains for `latexbug` then the test file is ready to be sent to the LaTeX bug database. The procedure for uploading and the location is documented at

`https://www.latex-project.org/bugs/`

If `latexbug` does generate an error, however, then this error needs to be addressed first and the depending on the resolution the bug report may has to be sent to somebody else.

An error is generated if the test file makes use of third-party code that is not maintained by the LaTeX Project Team. For example, if your test document would load `array`, `geometry`, `footmisc` and `hyperref` you would see the following:

```
Package latexbug Error: Third-party file(s)

 This test file uses third-party file(s)
 ==============
 geometry.sty  ->  Hideo Umeki
```

```
 <latexgeometry [at] gmail [dot] com>
footmisc.sty
hyperref.sty  ->  Heiko Oberdiek
 https://github.com/ho-tex/hyperref/issues
==============
```

The `array` package is accepted as it belongs to the core packages maintained by the LaTeX Project team but the other three are not. For `geometry` and `hyperref` we have maintainer info available, so we provide that, whereas for `footmisc` this information is missing. Thus, in that case you have to search for it yourself, if it turns out that bug is related to that package.

The `latexbug` package then continues with advice to remove such third-party code from the file:

```
So you should contact the authors
of these files, not the LaTeX Team!
(Or remove the packages that load
them, if they are not necessary to
exhibit the problem).
```

If that is not possible, because the bug goes away if a package is removed, then the problem is (most likely) with this package and the bug report should be sent to the maintainer of that package and not to the LaTeX bug database.

To make life somewhat easier `latexbug` will tell you the name of the maintainer (if we know it and have added it in) and if possible also the canonical bug address for the package (like in the case of `geometry` and `hyperref`). If we don't have that information, you need to find it out for yourself by looking at the package documentation.

There may be cases where third-party code is essential to exhibit a bug in core LaTeX code maintained by the the LaTeX Team. The error text therefore finishes off with the following sentence:

```
If you think the bug is in core LaTeX
(as maintained by the LaTeX Team) but
these files are needed to demonstrate
the problem, please continue and mention
this explicitly in your bug report.
```

Please explain your reasoning why you think this is the case in detail as part of the bug report.

4.2 Bugs in `latexbug` itself

When a document is run through LaTeX it will load a number of files and bug reports that are to be sent to the LaTeX Team should only load files that we maintain and not third-party packages. Testing this and giving some appropriate advice is the main task of the `latexbug` package.

The database inside `latexbug`, if you want to call that, is simply a comma separated key value list consisting of file names = maintainer info. Most of the time the maintainer info is `us` (meaning we maintain it, so the file is fine) or `us*` (meaning it is an `expl3` package we maintain, so fine too, but should be reported in a different issue tracker) or `ignore` (meaning we do not maintain it, but it is a file that is likely to appear for one or the other reason and we should accept such a bug report nonetheless). We allow, for example, the use of `lipsum` or `blindtext` to help in making up a test file with a suitable amount of text. Also often useful is the package `etoolbox`, thus that is also silently accepted (aka ignored).

Any other file loaded in the bug report but not listed in the database will show up in the error listing flagged as "third-party" code that should be removed as explained above.

For a small number of popular third-party packages we have collected the name of the external maintainer and if available to us some extra info so that it is easier to send to the rightful addressee if you encounter a bug in such a third-party package. But to keep this manageable this is only done for a very small number of the 5000+ packages out there (though we might add one or the other over time).

It is however not impossible that we missed one or the other file that should have been listed as "maintained by us" but isn't and thus incorrectly generates an error. Another potential problem area is with the maintainer info we provide, as that might become invalid without being noticed.

If you run into one of those problems or notice an omission of that sort, please send us a bug report by opening an issue at the GitHub source of the package which is located at:

`https://github.com/latex3/latexbug`

Please note, that the fact that a particular package is written by one of the members of the LaTeX Project team does not automatically mean that `latexbug` will classify it as a core LaTeX package. Many such packages will show up as "third-party" with the request to report the bug with the respective maintainer directly.

For example, `fontspec` written by Will Robertson has its own repository so issues involving that package should normally be reported there and not with the LaTeX kernel and `latexbug` will point you in the right direction.

5 Important links

`https://www.latex-project.org`
: Website of the LaTeX Project (official site for LaTeX and LaTeX3 development).

`https://www.latex-project.org/bugs`
: Page describing how to submit a bug report for core LaTeX. It should always contain the correct up-to-date links, etc.

`https://www.latex-project.org/latex3/code/#discussing-it`
: Page describing how to join the LaTeX Project discussion list and how to retrieve old posts.

`https://www.latex-project.org/cgi-bin/ltxbugs2html`
: Place to look for bugs reported prior to 2018.

`https://github.com/latex3/latex2e/issues`
: Place to search through bug reports from 2018 onwards and to open a new bug report ("New Issue") for core LaTeX 2_ε.

`https://github.com/latex3/latex3/issues`
: Place to open a bug report for issues involving LaTeX3 or `expl3` packages.

`https://github.com/latex3/latexbug`
: Home repository for the sources of the `latexbug` package. Also contains the ready-to-use package in case it is not in your distribution.

`https://ctan.org/pkg/latex-base`
: The LaTeX kernel sources on CTAN.

`https://ctan.org/pkg/required`
: CTAN home of LaTeX core packages that are required to be present in any distribution.

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