


# Terrapin Logo Release Notes

We take some pride in providing frequent updates to *Terrapin Logo* so bug fixes and new features can reach you as quickly as possible. Some of the bug fixes are “silent releases” with the same version number. Therefore, if you experience a problem, it may be a good idea to download and install Logo once again; your problem may already have been fixed!

 **Note:** We update Terrapin Logo as soon as we find and fix a bug. We do not increase the version number, because we do not want people having to download a new version even if the bug does not affect them.

## Version 4.1.1

Latest version: March 6, 2016.

- Logo was unable to detect tail recursion if the last lines of a procedure were empty lines.
- Terrapin Logo runs on OSX El Capitan. Please update to this release if you see Logo crashes.
- On the Mac, licenses are stored in globally readable locations so users of other accounts can launch Logo. Also, Logo did not launch for other users due to permission restrictions.
- The '!' and '>' characters needed a space after them under certain circumstances.
- `-PI * 155` caused an error because the infix minus was treated incorrectly.
- `:A*:B*C+:D` computation stopped after `:C` because “+” was incorrectly recognised as a unary plus sign. This happened only if no spaces were used.
- a new command `MILLISECONDS` reports the number of milliseconds elapsed since January 1, 1970.

## Version 4.1.0

- Terrapin Logo 4.1 now has a prompt! The default prompt is “>”, but you can change it in the Appearance dialog, or by setting the PROMPT property of the Prefs object to something else.
- A bug in the GO/LABEL commands prevented tail recursion.
- Stack traces now display line numbers.
- Saving the workspace did not escape vertical bars correctly.

## Version 4.0.5

- Split `REMAINDER` and `MODULO` into two separate commands; `REMAINDER` calculates the symmetric result, while `MODULO` calculates the mathematical result.
- (`FILL` color) fills up to a given boundary color.
- On Macs, absolute paths leading to a mounted volume like an USB stick does not need the `/Volume` prefix anymore.

## Version 4.0.4

- Support for UNC path names on Windows added so you can address shares on remote servers.
- Support for a central installation on a Windows server added (see [Instructions](#)).
- Improved Graphics screen refreshing.
- The expression `(2+2)+2` was evaluated incorrectly because the last “+” sign was treated as a unary operator.

## Version 4.0.3

- Fixed an issue that forced multiple license installations.

## Version 4.0.2

- `IS.A` wrongly identified controls and bitmaps to be TURTLES.
- `SUBST 1 1 123` hung.
- Under certain circumstances, `PPROP` crashed Logo.
- `CPROP` “LOAD on a bitmap did not refresh the screen properly.
- Unary operators: `-:x + 10` applied the unary - to the entire expression.
- Removed quotes from optional input values if they were present.

**Version 4.0.1**

- **SPEED**, **SETSPEED**, **VELOCITY** and **SETVELOCITY** have been fixed.
- **BUTMEMBER** hung if the search string was empty.
- Better file/line numbers for missing closing brackets.
- In the Bitmap and Turtle centers, empty text fields have the value 0.