

## Release Notes for XXICC revision 0.0c

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This document describes enhancements and bug fixes for XXICC revision 0.0c, released in early November 2011. 0.0c is a major release adding variable attributes to the GalaxC compiler implementation. It also has a number of compiler and XOE improvements and bug fixes.

### 1. GalaxC Language

- Revision 0.0c makes major changes to variable attributes -- `const`, `volatile`, etc. -- with details in the new Appendix A of *Programming in the GalaxC Language* revision 0.0c. `Vattr register` has been removed from the language, though there are some notes about `register` in Appendix A in case it's ever reconsidered. Variable attributes are no longer reserved words, so there are minor changes to token and expression syntax (§2.6 and §3.3).
- Type `string` is now read-only, i.e., it is implemented as `@(const char)`. This includes literal character strings like `"cat"`. This helps prevent “clobbering the constant” by writing over a string constant. For writable strings, use `wstring` (§8.4.1 of *Programming in the GalaxC Language*).
- PSI now has opcodes for `volatile` load, store, and increment. The `stable` opcodes can be used by a future optimizing compiler to eliminate unnecessary loads and stores.

### 2. XOE

- In XOE, if you read a `.xoe` file created with XOE 0.0b or earlier, list items preceded by `BREAK` lose their list item flags and become list item successors. You will need to toggle those list items back manually using `ctl-L`.
- XOE saves `.xoe` files more efficiently, especially if they have `BREAK`. This should not affect behavior: it just reduces the number of `PSTYLE` XOs.
- There is a slight chance that saving an old file with `BREAK` before a list item may cause Copy Overflow. If this happens, cut and paste the first paragraph in the file and then try re-saving. If that doesn't work, copy and paste the old file to a new file. In either case, please report the error.
- If you change a outdented paragraph (that is now at the left margin) to a list item or quote, XOE automatically re-indent. This also occurs if it's an outdented list item and you toggle it with `ctl-L`.
- XOE source code: Removed XOE variable `lastPstyle` and added `exPstyle` for “expected Pstyle”. Also improved use of `dstPC`, cleaning up a lot of code using `replace selection`. These were fairly major changes, but everything related to the changes seems to work.

### 3. Bug Fixes

- Issue #1 “In XOE, indentation may sometimes affect rest of file” is probably fixed.

- Issue #2 “In XOE, changing new list item to a different kind of list item fails” is probably fixed. This was a fairly major change but seems to work during moderate testing.
- Issue #9 “Automatic make may fail when reading .gi file” is probably fixed.
- Fixed minor XOE bug where `BREAK` caused the following list item to become a list item successor when saving.
- Fixed minor XOE bug where you could not toggle a single list item if preceded by `BREAK`.
- Fixed minor XOE bug where toggling a nested item unindented it.