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propellerforth

*Interactive ANS-subset
Forth for the Parallax
Propeller microcontroller*

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BuildSystem

Updated Dec 26, 2007 by [cbiffle](#)

*A brief overview of PropellerForth's
hosted build system*

[PropellerForth](#) is not yet completely self-hosting: it must be compiled on a host system, not on the Propeller itself. (This is simply because it's young and my time is limited, there's no technical obstacle.)

The build system consists of four main parts:

- The sources, a mixture of assembly and "Eighth" -- a limited Forth dialect.
- Preprocessing scripts for "Eighth"
- propasm, the assembler
- An outer Makefile.

About "Eighth"

[PropellerForth](#)'s Forth-like source files are written in a very limited dialect of Forth, which I refer to as "Eighth" (though it implements less than half of Forth, so perhaps "Sixteenth" would be more appropriate).

Compared to Forth, Eighth is pretty limited: it's designed to be converted directly to assembly language with no Forth implementation on the host. The Eighth preprocessor is written in Ruby, and is little more than a glorified macro-assembler frontend for propasm.

Practically, the main differences are

- Eighth can only contain definitions of colon-words, variables, and

constants -- not arbitrary code.

- Constants must be given a simple numeric value -- expressions are not valid.
- Variables cannot be allotted more than the default cell.
- Immediate words are defined using the `:I` word, rather than by adding `IMMEDIATE` after the definition.
- Forth words that conflict with propasm reserved words (such as `OUTA`) are written with a trailing underscore (e.g. `OUTA_`). The Eighth preprocessor strips the underscore when generating the dictionary. As a result, Forth word names cannot end in an underscore -- it will be removed.
- Probably other subtle semantic differences.

Eighth has exactly enough functionality to bootstrap [PropellerForth](#) and no more. It's intended as a stopgap measure until [PropellerForth](#) becomes self-hosting.

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