

FDR3

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FDR 3.0

FDR3, which has been under development for around two years has:

- Dramatically improved error messages thanks to a built-in typechecker (no more `<> is not a set`).
- A completely redesigned user interface with an interactive prompt (for experimentation), an integrated version of ProBE and errors displayed in sensible places (i.e **no longer hides its error messages in a hidden window**)!
- Is able to generate *better* labelled-transition systems for a large class of CSP processes (primarily those involving `;` and Θ_A) than FDR2, resulting in decreased compilation time.

Performance

The main breakthrough in FDR3 is its performance for checks done in the traces and failures models.

On a single core FDR3 will typically outperform FDR2 by a factor of 2.5.

FDR3 also includes a parallel mode that, on desktop machines at least, scales almost linearly as the number of cores increases.

To complete a series of checks (that includes Dining Philosophers which has around 4 million states and Solitaire which has 170 million states):

FDR2: 2695s

FDR3 Single Threaded: 1033s

FDR3 Parallel: 312s

Demonstration

Availability

FDR3.0-beta-4 is available from

<https://www.cs.ox.ac.uk/projects/fdr/>. A full release will follow by the middle of October.

Part of FDR3 (consisting of the parser, type-checker and evaluator) has been open-sourced and is available from

<https://github.com/tomgr/libcspm>.