Other coroutine libraries

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Xingbo Wu edited this page on 2 Feb · 32 revisions

Assorted coroutine, fibers and green thread libraries and resources

Libraries

- Low Level
  - libcoro -- very low level, just does the coroutine switching, cross-platform
  - fcontext -- x86_64 only
  - Cthreads -- Very efficient, x86_64 and x86_32 only
  - libcoroutine -- A different libcoroutine, with variadic function calls
- Coroutines
  - libconcurrent & libconcurrent homepage
  - Portable Coroutine Library (PCL)
  - libconcurrency
  - libcoroutine
  - libco
  - libaco -- A blazing fast and lightweight C asymmetric coroutine library (also with a detailed math proof).
- Fibers/Green-Threads
  - libtask
  - State Threads
  - GNU Pth
  - RIBS -- Robust Infrastructure for Backend Systems
  - threads.c (at the bottom of the page)

- Protothreads
- libfiber
- libevfibers -- based on libcoro and libev
- lthread
- fiber-framework
- rinoo
- cgreenlet
- millc -- Preprocessor that adds GoLang-like syntactic sugar to writing of user-space-threads
- Continuation Passing C - language based on C with tree transformation approach.
- qthreads - lightweight locality-aware user-level threading runtime with multiple green-thread schedulers, including an M:N one with work stealing

Unsorted

- https://github.com/mikewei/micoro
- https://github.com/Zewo/libvenice
- https://github.com/geofft/vireo

Resources

- Revisiting Coroutines by Ana Lucia de Moura and Roberto Ierusalimschy -- an expansive discussion of different coroutines and their classification and uses
- Coroutine (Wikipedia)
- Fiber (Wikipedia)
- Green Threads (Wikipedia)
- "minimal user-level thread package"
- Coroutines in C by Simon Tatham
- Coroutines in C Redux
- A Minimal User-Level Thread Package by Douglas W. Jones
- Cooperative Task Management -- A 2002 USENIX paper from Microsoft that describes the software engineering advantages and disadvantages of different concurrency models in great detail.

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https://github.com/baruch/libwire.wiki.git
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