

Bringing kconfig to EGLIBC

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EGLIBC ?

- Variant of GNU C library for Embedded systems
- Binary compatible with GNU C library
- Aims to be reducing size, configurable, better cross-compilable
- Used in major distributions e.g. Debian, OpenEmbedded etc.
- <http://www.eglibc.org>

Configurability

- Home-grown mechanism for configuration handing
- Option Groups
 - based on POSIX.1-2001 specification
- Resembles kconfig somewhat

Option Groups

- Documented in `libc/option-groups.def`
- `option-groups.config` at top-level
 - Enable `OPTION_GROUP_NAME = y`
 - Disable `OPTION_GROUP_NAME = n`
- Default defconfig is `option-groups.defaults`
 - Default is to enable all groups

Option Groups at work

- size of libc-2.17.so reduced from 1.2M -> 830K
- size of ld-2.17.so 128K -> 120K
- libm-2.17.so 610K -> 580K

Whats missing

- No sanity checking of eglbc config

kconfig eglIBC patch

- kconfig support patches are on eglIBC-patches ml
 - OpenEmbedded has been forward porting them since 2.15

kconfig in EGLIBC

- Requires kconfig-frontends
 - Provides out-of-tree kconfig infrastructure
 - Supports conf, mconf, nconf, gconf and qconf
 - Releases with every major kernel release

Enabling kconfig in EGLIBC

- Configure EGLIBC with `--with-kconfig=<path/to/kconfig>`
- `make config`

kconfig EGLIBC

- Preprocessing tool
 - `libc/options-config/config-preproc.pl`
 - Replace “CONFIG_” with “OPTION_”

kconfig EGLIBC

- Post-processing tool
 - `libc/options-config/config-postproc.pl`
 - Converts “# CONFIG_FOO is not set” -> “CONFIG_FOO =
“n”
 - “CONFIG_” is converted back to “OPTION_”

Current State

- Patches discussed on EGLIBC mailing lists
- Pending addressing the reviews
- Could be a good feature for GNU libc

Thank you