

kconfig.txt

This file contains some assistance for using "make *config".

Use "make help" to list all of the possible configuration targets.

The xconfig ('qconf') and menuconfig ('mconf') programs also have embedded help text. Be sure to check it for navigation, search, and other general help text.

General

New kernel releases often introduce new config symbols. Often more important, new kernel releases may rename config symbols. When this happens, using a previously working .config file and running "make oldconfig" won't necessarily produce a working new kernel for you, so you may find that you need to see what NEW kernel symbols have been introduced.

To see a list of new config symbols when using "make oldconfig", use

```
cp user/some/old.config .config
yes "" | make oldconfig >conf.new
```

and the config program will list as (NEW) any new symbols that have unknown values. Of course, the .config file is also updated with new (default) values, so you can use:

```
grep "(NEW)" conf.new
```

to see the new config symbols or you can 'diff' the previous and new .config files to see the differences:

```
diff .config.old .config | less
```

(Yes, we need something better here.)

Environment variables for '*config'

KCONFIG_CONFIG

This environment variable can be used to specify a default kernel config file name to override the default name of ".config".

KCONFIG_OVERWRITECONFIG

If you set KCONFIG_OVERWRITECONFIG in the environment, Kconfig will not break symlinks when .config is a symlink to somewhere else.

KCONFIG_NOTIMESTAMP

If this environment variable exists and is non-null, the timestamp line in generated .config files is omitted.

Environment variables for ' {allyes/allmod/allno/rand}config'

KCONFIG_ALLCONFIG

(partially based on lkml email from/by Rob Landley, re: miniconfig)

The allyesconfig/allmodconfig/allnoconfig/randconfig variants can also use the environment variable KCONFIG_ALLCONFIG as a flag or a filename that contains config symbols that the user requires to be set to a specific value. If KCONFIG_ALLCONFIG is used without a filename, "make *config" checks for a file named "all{yes/mod/no/random}.config" (corresponding to the *config command that was used) for symbol values that are to be forced. If this file is not found, it checks for a file named "all.config" to contain forced values.

This enables you to create "miniature" config (miniconfig) or custom config files containing just the config symbols that you are interested in. Then the kernel config system generates the full .config file, including symbols of your miniconfig file.

This 'KCONFIG_ALLCONFIG' file is a config file which contains (usually a subset of all) preset config symbols. These variable settings are still subject to normal dependency checks.

Examples:

```
KCONFIG_ALLCONFIG=custom-notebook.config make allnoconfig
or
KCONFIG_ALLCONFIG=mini.config make allnoconfig
or
make KCONFIG_ALLCONFIG=mini.config allnoconfig
```

These examples will disable most options (allnoconfig) but enable or disable the options that are explicitly listed in the specified mini-config files.

Environment variables for 'silentoldconfig'

KCONFIG_NOSILENTUPDATE

If this variable has a non-blank value, it prevents silent kernel config updates (requires explicit updates).

KCONFIG_AUTOCONFIG

This environment variable can be set to specify the path & name of the "auto.conf" file. Its default value is "include/config/auto.conf".

KCONFIG_TRISTATE

This environment variable can be set to specify the path & name of the "tristate.conf" file. Its default value is "include/config/tristate.conf".

KCONFIG_AUTOHEADER

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This environment variable can be set to specify the path & name of the "autoconf.h" (header) file.
Its default value is "include/generated/autoconf.h".

menuconfig

SEARCHING for CONFIG symbols

Searching in menuconfig:

The Search function searches for kernel configuration symbol names, so you have to know something close to what you are looking for.

Example:

/hotplug

This lists all config symbols that contain "hotplug",
e.g., HOTPLUG, HOTPLUG_CPU, MEMORY_HOTPLUG.

For search help, enter / followed TAB-TAB-TAB (to highlight <Help>) and Enter. This will tell you that you can also use regular expressions (regexes) in the search string, so if you are not interested in MEMORY_HOTPLUG, you could try

/^hotplug

User interface options for 'menuconfig'

MENUCONFIG_COLOR

It is possible to select different color themes using the variable MENUCONFIG_COLOR. To select a theme use:

make MENUCONFIG_COLOR=<theme> menuconfig

Available themes are:

mono => selects colors suitable for monochrome displays
blackbg => selects a color scheme with black background
classic => theme with blue background. The classic look
bluetitle => a LCD friendly version of classic. (default)

MENUCONFIG_MODE

This mode shows all sub-menus in one large tree.

Example:

make MENUCONFIG_MODE=single_menu menuconfig

xconfig

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Searching in xconfig:

The Search function searches for kernel configuration symbol names, so you have to know something close to what you are looking for.

Example:

Ctrl-F hotplug

or

Menu: File, Search, hotplug

lists all config symbol entries that contain "hotplug" in the symbol name. In this Search dialog, you may change the config setting for any of the entries that are not grayed out. You can also enter a different search string without having to return to the main menu.

gconfig

Searching in gconfig:

None (gconfig isn't maintained as well as xconfig or menuconfig); however, gconfig does have a few more viewing choices than xconfig does.

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