

Programming Language

The kernel is written in the C programming language [\[c-language\]](#). More precisely, the kernel is typically compiled with `gcc` [\[gcc\]](#) under `-std=gnu11` [\[gcc-c-dialect-options\]](#): the GNU dialect of ISO C11. `clang` [\[clang\]](#) is also supported, see docs on [ref: Building Linux with Clang/LLVM <kbuild_llvm>](#).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\process\linux-master) (Documentation) (process)programming-language.rst, line 6); [backlink](#)

Unknown interpreted text role "ref".

This dialect contains many extensions to the language [\[gnu-extensions\]](#), and many of them are used within the kernel as a matter of course.

There is some support for compiling the kernel with `icc` [\[icc\]](#) for several of the architectures, although at the time of writing it is not completed, requiring third-party patches.

Attributes

One of the common extensions used throughout the kernel are attributes [\[gcc-attribute-syntax\]](#). Attributes allow to introduce implementation-defined semantics to language entities (like variables, functions or types) without having to make significant syntactic changes to the language (e.g. adding a new keyword) [\[n2049\]](#).

In some cases, attributes are optional (i.e. a compiler not supporting them should still produce proper code, even if it is slower or does not perform as many compile-time checks/diagnostics).

The kernel defines pseudo-keywords (e.g. `__pure`) instead of using directly the GNU attribute syntax (e.g. `__attribute__((__pure__))`) in order to feature detect which ones can be used and/or to shorten the code.

Please refer to `include/linux/compiler_attributes.h` for more information.

[c-language] <http://www.open-std.org/jtc1/sc22/wg14/www/standards>

[gcc] <https://gcc.gnu.org>

[clang] <https://clang.llvm.org>

[icc] <https://software.intel.com/en-us/c-compilers>

[gcc-c-dialect-options] <https://gcc.gnu.org/onlinedocs/gcc/C-Dialect-Options.html>

[gnu-extensions] <https://gcc.gnu.org/onlinedocs/gcc/C-Extensions.html>

[gcc-attribute-syntax] <https://gcc.gnu.org/onlinedocs/gcc/Attribute-Syntax.html>

[n2049] <http://www.open-std.org/jtc1/sc22/wg14/www/docs/n2049.pdf>