Linux kernel licensing rules

The Linux Kernel is provided under the terms of the GNU General Public License version 2 only (GPL-2.0), as provided in LICENSES/preferred/GPL-2.0, with an explicit syscall exception described in LICENSES/exceptions/Linux-syscall-note, as described in the COPYING file.

This documentation file provides a description of how each source file should be annotated to make its license clear and unambiguous. It doesn't replace the Kernel's license.

The license described in the COPYING file applies to the kernel source as a whole, though individual source files can have a different license which is required to be compatible with the GPL-2.0:

```
GPL-1.0+  :  GNU General Public License v1.0 or later
GPL-2.0+  :  GNU General Public License v2.0 or later
LGPL-2.0  :  GNU Library General Public License v2 only
LGPL-2.0+ :  GNU Library General Public License v2 or later
LGPL-2.1  :  GNU Lesser General Public License v2.1 only
LGPL-2.1+ :  GNU Lesser General Public License v2.1 or later
```

Aside from that, individual files can be provided under a dual license, e.g. one of the compatible GPL variants and alternatively under a permissive license like BSD, MIT etc.

The User-space API (UAPI) header files, which describe the interface of user-space programs to the kernel are a special case. According to the note in the kernel COPYING file, the syscall interface is a clear boundary, which does not extend the GPL requirements to any software which uses it to communicate with the kernel. Because the UAPI headers must be includable into any source files which create an executable running on the Linux kernel, the exception must be documented by a special license expression.

The common way of expressing the license of a source file is to add the matching boilerplate text into the top comment of the file. Due to formatting, typos etc. these "boilerplates" are hard to validate for tools which are used in the context of license compliance.

An alternative to boilerplate text is the use of Software Package Data Exchange (SPDX) license identifiers in each source file. SPDX license identifiers are machine parsable and precise shorthands for the license under which the content of the file is contributed. SPDX license identifiers are managed by the SPDX Workgroup at the Linux Foundation and have been agreed on by partners throughout the industry, tool vendors, and legal teams. For further information see https://spdx.org/

The Linux kernel requires the precise SPDX identifier in all source files. The valid identifiers used in the kernel are explained in the section License identifiers and have been retrieved from the official SPDX license list at https://spdx.org/licenses/ along with the license texts.

License identifier syntax

1. Placement:

   The SPDX license identifier in kernel files shall be added at the first possible line in a file which can contain a comment. For the majority of files this is the first line, except for scripts which require the '#!PATH_TO_INTERPRETER' in the first line. For those scripts the SPDX identifier goes into the second line.

2. Style:

   The SPDX license identifier is added in form of a comment. The comment style depends on the file type:

   ```
   C source: // SPDX-License-Identifier: <SPDX License Expression>
   C header: /* SPDX-License-Identifier: <SPDX License Expression> */
   ASM:      /* SPDX-License-Identifier: <SPDX License Expression> */
   scripts:  # SPDX-License-Identifier: <SPDX License Expression>
   .rst:     .. SPDX-License-Identifier: <SPDX License Expression>
   .dts{i}:  // SPDX-License-Identifier: <SPDX License Expression>
   ```

   If a specific tool cannot handle the standard comment style, then the appropriate comment mechanism which the tool accepts shall be used. This is the reason for having the "/* */" style comment in C header files. There was build breakage observed with generated .lds files where 'ld' failed to parse the C++ comment. This has been fixed by now, but there are still older assembler tools which cannot handle C++ style comments.

3. Syntax:

   A <SPDX License Expression> is either an SPDX short form license identifier found on the SPDX License List, or the combination of two SPDX short form license identifiers separated by "WITH" when a license exception applies. When multiple licenses apply, an expression consists of keywords "AND", "OR" separating sub-expressions and surrounded by " (", ")" .

License identifiers for licenses like [L]GPL with the 'or later' option are constructed by using a "+" for indicating the 'or later' option.:

```
// SPDX-License-Identifier: GPL-2.0+
// SPDX-License-Identifier: LGPL-2.1+
```

WITH should be used when there is a modifier to a license needed. For example, the linux kernel UAPI files use the expression:

```
// SPDX-License-Identifier: GPL-2.0 WITH Linux-syscall-note
// SPDX-License-Identifier: GPL-2.0+ WITH Linux-syscall-note
```

Other examples using WITH exceptions found in the kernel are:

```
// SPDX-License-Identifier: GPL-2.0 WITH mif-exception
// SPDX-License-Identifier: GPL-2.0+ WITH GCC-exception-2.0
```

Exceptions can only be used with particular License identifiers. The valid License identifiers are listed in the tags of the exception text file. For details see the point Exceptions in the chapter License identifiers.

OR should be used if the file is dual licensed and only one license is to be selected. For example, some dtsi files are available under dual licenses:

```
// SPDX-License-Identifier: GPL-2.0 OR BSD-3-Clause
```

Examples from the kernel for license expressions in dual licensed files:

```
// SPDX-License-Identifier: GPL-2.0 OR MIT
// SPDX-License-Identifier: GPL-2.0 OR BSD-2-Clause
// SPDX-License-Identifier: GPL-2.0 OR Apache-2.0
// SPDX-License-Identifier: GPL-2.0 OR MPL-1.1
// SPDX-License-Identifier: (GPL-2.0 WITH Linux-syscall-note) OR MIT
// SPDX-License-Identifier: GPL-1.0+ OR BSD-3-Clause OR OpenSSL
```

AND should be used if the file has multiple licenses whose terms all apply to use the file. For example, if code is inherited from another project and permission has been given to put it in the kernel, but the original license terms need to remain in effect:

```
// SPDX-License-Identifier: (GPL-2.0 WITH Linux-syscall-note) AND MIT
```

Another other example where both sets of license terms need to be adhered to is:

```
// SPDX-License-Identifier: GPL-1.0+ AND LGPL-2.1+
```

License identifiers

The licenses currently used, as well as the licenses for code added to the kernel, can be broken down into:

1. Preferred licenses:

   Whenever possible these licenses should be used as they are known to be fully compatible and widely used. These licenses are available from the directory:

   ```
   LICENSES/preferred/
   ```

   in the kernel source tree.

   The files in this directory contain the full license text and Metatags. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

   Examples:

   ```
   LICENSES/preferred/GPL-2.0
   ```

   Contains the GPL version 2 license text and the required metatags:

   ```
   LICENSES/preferred/MIT
   ```

   Contains the MIT license text and the required metatags

   Metatags:

   The following meta tags must be available in a license file:

   - Valid-License-Identifier:

     One or more lines which declare which License Identifiers are valid inside the project to reference this particular license text. Usually this is a single valid identifier, but e.g. for licenses with the 'or later' options two identifiers are valid.

   - SPDX-URL:

The URL of the SPDX page which contains additional information related to the license.

- Usage-Guidance:

  Freeform text for usage advice. The text must include correct examples for the SPDX license identifiers as they should be put into source files according to the License identifier syntax guidelines.

- License-Text:

  All text after this tag is treated as the original license text

File format examples:

```
Valid-License-Identifier: GPL-2.0
Valid-License-Identifier: GPL-2.0+
SPDX-URL: https://spdx.org/licenses/GPL-2.0.html
Usage-Guide:
  To use this license in source code, put one of the following SPDX
  tag/value pairs into a comment according to the placement
  guidelines in the licensing rules documentation.
  For 'GNU General Public License (GPL) version 2 only' use:
    SPDX-License-Identifier: GPL-2.0
  For 'GNU General Public License (GPL) version 2 or any later version' use:
    SPDX-License-Identifier: GPL-2.0+
License-Text:
  Full license text

SPDX-License-Identifier: MIT
SPDX-URL: https://spdx.org/licenses/MIT.html
Usage-Guide:
  To use this license in source code, put the following SPDX
  tag/value pair into a comment according to the placement
  guidelines in the licensing rules documentation.
    SPDX-License-Identifier: MIT
License-Text:
  Full license text
```

2. Deprecated licenses:

   These licenses should only be used for existing code or for importing code from a different project. These licenses are available from the directory:

   ```
   LICENSES/deprecated/
   ```

   in the kernel source tree.

   The files in this directory contain the full license text and Metatags. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

   Examples:

   ```
   LICENSES/deprecated/ISC
   ```

   Contains the Internet Systems Consortium license text and the required metatags:

   ```
   LICENSES/deprecated/GPL-1.0
   ```

   Contains the GPL version 1 license text and the required metatags.

   Metatags:

   The metatag requirements for 'other' licenses are identical to the requirements of the Preferred licenses.

   File format example:

   ```
   Valid-License-Identifier: ISC
   SPDX-URL: https://spdx.org/licenses/ISC.html
   Usage-Guide:
     Usage of this license in the kernel for new code is discouraged
     and it should solely be used for importing code from an already
     existing project.
     To use this license in source code, put the following SPDX
     tag/value pair into a comment according to the placement
     guidelines in the licensing rules documentation.
       SPDX-License-Identifier: ISC
   License-Text:
     Full license text
   ```

3. Dual Licensing Only

   These licenses should only be used to dual license code with another license in addition to a preferred license. These

licenses are available from the directory:

```
LICENSES/dual/
```

in the kernel source tree.

The files in this directory contain the full license text and Metatags. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

Examples:

```
LICENSES/dual/MPL-1.1
```

Contains the Mozilla Public License version 1.1 license text and the required metatags:

```
LICENSES/dual/Apache-2.0
```

Contains the Apache License version 2.0 license text and the required metatags.

Metatags:

The metatag requirements for 'other' licenses are identical to the requirements of the Preferred licenses.

File format example:

```
Valid-License-Identifier: MPL-1.1
SPDX-URL: https://spdx.org/licenses/MPL-1.1.html
Usage-Guide:
  Do NOT use. The MPL-1.1 is not GPL2 compatible. It may only be used for
  dual-licensed files where the other license is GPL2 compatible.
  If you end up using this it MUST be used together with a GPL2 compatible
  license using "OR".
  To use the Mozilla Public License version 1.1 put the following SPDX
  tag/value pair into a comment according to the placement guidelines in
  the licensing rules documentation:
SPDX-License-Identifier: MPL-1.1
License-Text:
  Full license text
```

4. Exceptions:

   Some licenses can be amended with exceptions which grant certain rights which the original license does not. These exceptions are available from the directory:

   ```
   LICENSES/exceptions/
   ```

   in the kernel source tree. The files in this directory contain the full exception text and the required Exception Metatags.

   Examples:

   ```
   LICENSES/exceptions/Linux-syscall-note
   ```

   Contains the Linux syscall exception as documented in the COPYING file of the Linux kernel, which is used for UAPI header files. e.g. /* SPDX-License-Identifier: GPL-2.0 WITH Linux-syscall-note */:

   ```
   LICENSES/exceptions/GCC-exception-2.0
   ```

   Contains the GCC 'linking exception' which allows to link any binary independent of its license against the compiled version of a file marked with this exception. This is required for creating runnable executables from source code which is not compatible with the GPL.

   Exception Metatags:

   The following meta tags must be available in an exception file:

   - SPDX-Exception-Identifier:

     One exception identifier which can be used with SPDX license identifiers.

   - SPDX-URL:

     The URL of the SPDX page which contains additional information related to the exception.

   - SPDX-Licenses:

     A comma separated list of SPDX license identifiers for which the exception can be used.

   - Usage-Guidance:

     Freeform text for usage advice. The text must be followed by correct examples for the SPDX license identifiers as they should be put into source files according to the License identifier syntax guidelines.

   - Exception-Text:

All text after this tag is treated as the original exception text

File format examples:

```
SPDX-Exception-Identifier: Linux-syscall-note
SPDX-URL: https://spdx.org/licenses/Linux-syscall-note.html
SPDX-Licenses: GPL-2.0, GPL-2.0+, GPL-1.0+, LGPL-2.0, LGPL-2.0+, LGPL-2.1, LGPL-2.1+
Usage-Guidance:
  This exception is used together with one of the above SPDX-Licenses
  to mark user-space API (uapi) header files so they can be included
  into non GPL compliant user-space application code.
  To use this exception add it with the keyword WITH to one of the
  identifiers in the SPDX-Licenses tag:
    SPDX-License-Identifier: <SPDX-License> WITH Linux-syscall-note
Exception-Text:
  Full exception text

SPDX-Exception-Identifier: GCC-exception-2.0
SPDX-URL: https://spdx.org/licenses/GCC-exception-2.0.html
SPDX-Licenses: GPL-2.0, GPL-2.0+
Usage-Guidance:
  The "GCC Runtime Library exception 2.0" is used together with one
  of the above SPDX-Licenses for code imported from the GCC runtime
  library.
  To use this exception add it with the keyword WITH to one of the
  identifiers in the SPDX-Licenses tag:
    SPDX-License-Identifier: <SPDX-License> WITH GCC-exception-2.0
Exception-Text:
  Full exception text
```

All SPDX license identifiers and exceptions must have a corresponding file in the LICENSES subdirectories. This is required to allow tool verification (e.g. checkpatch.pl) and to have the licenses ready to read and extract right from the source, which is recommended by various FOSS organizations, e.g. the FSFE REUSE initiative.

MODULE_LICENSE

Loadable kernel modules also require a MODULE_LICENSE() tag. This tag is neither a replacement for proper source code license information (SPDX-License-Identifier) nor in any way relevant for expressing or determining the exact license under which the source code of the module is provided.

The sole purpose of this tag is to provide sufficient information whether the module is free software or proprietary for the kernel module loader and for user space tools.

The valid license strings for MODULE_LICENSE() are:

"GPL"	Module is licensed under GPL version 2. This does not express any distinction between GPL-2.0-only or GPL-2.0-or-later. The exact license information can only be determined via the license information in the corresponding source files.
"GPL v2"	Same as "GPL". It exists for historic reasons.
"GPL and additional rights"	Historical variant of expressing that the module source is dual licensed under a GPL v2 variant and MIT license. Please do not use in new code.
"Dual MIT/GPL"	The correct way of expressing that the module is dual licensed under a GPL v2 variant or MIT license choice.
"Dual BSD/GPL"	The module is dual licensed under a GPL v2 variant or BSD license choice. The exact variant of the BSD license can only be determined via the license information in the corresponding source files.
"Dual MPL/GPL"	The module is dual licensed under a GPL v2 variant or Mozilla Public License (MPL) choice. The exact variant of the MPL license can only be determined via the license information in the corresponding source files.
"Proprietary"	The module is under a proprietary license. This string is solely for proprietary third party modules and cannot be used for modules which have their source code in the kernel tree. Modules tagged that way are tainting the kernel with the 'P' flag when loaded and the kernel module loader refuses to link such modules against symbols which are exported with EXPORT_SYMBOL_GPL().