

Open Networking Foundation  
Policies and Instructions Regarding Source File Headers, License Files, and Notice Files

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## 2 Source File Comments: General Policy

A [Copyright Notice](#) and [SPDX License Identifier](#) must be included in or with all source files, except for files listed under [Exceptions: Files That Do Not Require Copyright or License Information](#) below. If the file accommodates text-based header comments, include the [Copyright Notice](#) and [SPDX License Identifier](#) as comments in the header of the file. If the file is a type that cannot easily accommodate a text-based header (e.g., an image file, PDF, or excel spreadsheet), follow the instructions in [Files Without Text-Based Comments](#).

## 3 Contents of Source File Comments

At a minimum, a [Copyright Notice](#) and [SPDX License Identifier](#) must be associated with each source file. Additional content may also be included in the comments for each source file, but is not always required. For example, a header could include the title of the program or component, warranty disclaimers, the full text of the license that applies to the file, or [Required Third Party Notices](#).

### 1 Copyright Notice

A copyright notice must be associated with each file, except for those listed under [Exceptions: Files That Do Not Require Copyright or License Information](#) below. The copyright notice consists of the following elements in the following order:

1. **Tag:** One of the following prefixes or tags denoting a copyright notice: [Copyright](#), [©](#), [\(c\)](#), or [Copyright ©](#)

2. **Year(s) of Publication:** The year or years of publication, which may be a single year, multiple year, or range of years. Include the year in which the original version of the file was first published. If substantial modifications were made to the file, also include the year or years in which substantial modifications were published.
3. **Copyright Holder(s):** The name of the copyright holder or copyright holders. This could be an individual, legal entity, or list of individuals and/or legal entities.
4. **Contact Information:** You may also include, in angle brackets, a website URL or email address for the copyright holder. Contact information is optional and not required.

See below for examples of valid copyright notices:

© 2019 XYZ Corporation <<https://example.xyzcorporation.com>>  
 Copyright 2017, 2018 Jane Anybody <[jane@xyzcorporation.com](mailto:jane@xyzcorporation.com)>  
 Copyright (c) 2017-2019 Joe Smith  
 (c) 2015-present Jane Anybody

If there are multiple authors who modified the file in different years, there may be multiple lines to the copyright notice. For example, a file that was originally created in 2010, modified by a 2<sup>nd</sup> author in 2014, and modified by a 3<sup>rd</sup> author from 2015–2017 might have a copyright notice that reads as follows:

Copyright 2015-2017 Third Author  
 Copyright 2014 Second Author <[www.secondauthor.com](http://www.secondauthor.com)>  
 © 2010 Original Author <[authorname@example.com](mailto:authorname@example.com)>

## 2 SPDX License Identifier

An SPDX License Identifier must be associated with each file, except for those listed under [Exceptions: Files That Do Not Require Copyright or License Information](#) above. The comments associated with a file contributed to an ONF project must identify the open source license in a format that complies with the [Software Package Data Exchange® \(SPDX®\)](#) specification. The SPDX License Identifier consists of the following elements, in the following order:

1. The tag **SPDX-License-Identifier:**
2. The standardized short identifier for the applicable license from the [SPDX License List](#) available at <https://spdx.org/licenses/>.
3. If more than one license applies to the file, or if a [License Exception](#) applies, use the appropriate License Expression operator from the table below:

<b>AND</b>	
<b>OR</b>	
<b>WITH</b>	
<b>+</b>	

See the examples below for proper use of License Expression operators:

**SPDX-License: MIT AND Apache 2.0**

The file is subject to *both* the Apache License v. 2.0 and the MIT License

**SPDX-License: MIT OR Apache 2.0**

The licensee may choose to use the file under *either* the Apache-2.0 *or* MIT license

**SPDX-License: GPL-2.0+**

The file is under the GPL v.2.0 or any later version, at the licensee's option

**SPDX-License: GPL-2.0 WITH classpath-exception-2.0**

The file is under the GPL v.2.0 with the Classpath exception 2.0

More examples are available at:

<https://spdx.org/ids-how>

4. If a license exception applies, use the SPDX standardized short form identifier for such exception from the [SPDX License Exception List](#).
5. If a license applies to the file that is not included in the [SPDX License List](#), or if an exception applies that is not included in the [SPDX License Exception List](#), follow the instructions for [Licenses Not Included in the SPDX License List](#) below.

### 3 Licenses Not Included in the SPDX License List

If a license applies to the file that is not included in the [SPDX License List](#), or if an exception applies that is not included in the [SPDX License Exception List](#):

1. Give the license a name or unique alphanumeric identifier that is unique within the repository.
2. Following the **SPDX-License:** tag, identify the license using the prefix **LicenseRef-** followed by the unique name. See the examples below:

**SPDX-License: LicenseRef-1**

The unique name for the license is "1"

**SPDX-License: LicenseRef-CustomLicense1**

The unique name for the license is "CustomLicense1"

**SPDX-License: LicenseRef-FreeBeer**

The unique identifier for the license is "FreeBeer"

3. In the LICENSES folder of the top-level directory (See [License Folder and Files](#)), create a new text file that includes the full text of the license (See [License and Notice Files](#)). Give the license text file a name that starts with **LicenseRef-** followed by the unique name for

the license. Using the same examples provided above, the name of the license text file would be [LicenseRef-1](#), [LicenseRef-CustomLicense1](#), or [LicenseRef-FreeBeer](#).

## 4 Examples of Source File Header Comments

The following are examples of source file comments that include only a [Copyright Notice](#) and [SPDX License Identifier](#):

### Example Header for a File Created By an ONF Employee

```
/*  
 * Copyright 2019-Present Open Networking Foundation, Inc.  
 *  
 * SPDX-License-Identifier: Apache-2.0  
 */
```

### Example Header for File Created By a Contributor

```
/*  
 * Copyright (c) 2015, 2017 ABC Corporation  
 *  
 * SPDX-License-Identifier: Apache-2.0  
 */
```

### Example Header for File Originally Created By Someone Else That You Modified

```
/*  
 * Copyright 2019 Your Name Here  
 * Copyright 2015 Original Author Name  
 *  
 * SPDX-License-Identifier: Apache-2.0 AND MIT  
 */
```

The following is an example of source file comments that, in addition to a [Copyright Notice](#) and [SPDX License Identifier](#), includes other information (title of the component, a note about the file's modification history, the name of the license that applies to this file, and a warranty disclaimer)

```
/*  
 * XYZ Subcomponent  
 *  
 * Copyright 2017 John Anybody  
 * Copyright 2015-2016 XYZ Foundation and Contributors  
 *  
 * SPDX-License-Identifier: MIT  
 *  
 * This file includes code based on the XYZ Subcomponent available  
 * at <www.github.com/XYZ>. It has been modified by John Anybody  
 * <youremail@yourdomain.com> to fix several bugs.  
 */
```

```
* Licensed under the MIT License
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY
* OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT
* LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
* FITNESS FOR A PARTICULAR PURPOSE AND
* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
* COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES
* OR OTHER LIABILITY, WHETHER IN AN ACTION OF
* CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
* IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
* DEALINGS IN THE SOFTWARE.
*
*/
```

## 4 Exceptions: Files That Do Not Require Copyright or License Information

The following files do not require a [Copyright Notice](#) or [SPDX License Identifier](#):

- Files that do not contain any original work and thus are not eligible for copyright protection
- The files in the LICENSES folder of the top-level directory
- The files belonging to the project's version control system (example: [.git/](#)).
- The files ignored by the project's version control system (example: Files listed in [.gitignore](#)).
- [The files in the [.reuse/](#) directory in the root of the Project. This directory MUST contain only files relevant for the operation of the REUSE Tool.]

## 5 Contributing a File Originally Authored By Someone Else

When contributing a file originally authored by someone else, prior to contributing it to ONF:

1. If the original file includes header comments, do not delete any of the existing header content.
2. If you did not make meaningful modifications to the file, check to see if the file header includes an appropriate [SPDX License Identifier](#) indicating the license that applies to the file. If it does not, add the appropriate [SPDX License Identifier](#).
3. If you made meaningful modifications to the file, add to the header comments:
  - a. A copyright line with your name as the author and the year or years in which you modified the file; and
  - b. An SPDX License Identifier that identifies both (a) the open source license that applies to the original file and (b) Apache License version 2.0, the open source license that will apply to your modifications and additions to the file. If the original file that you modified is also licensed under Apache 2.0, the SPDX License Identifier only needs to include Apache 2.0.

For example, if a file header originally contained the text below that appears in black, and you made meaningful modifications to the file, you would add the comments that appear below in red underlined text:

```
/*
 * XYZ Subcomponent
 *
 * Copyright YYYY Your Name
 * Copyright 2015 Jane Smith
 *
 * SPDX-License-Identifier: Apache-2.0 AND MIT
 *
 * Licensed under the MIT License
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY
 * OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT
 * LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND
 * NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
 * COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES
 * OR OTHER LIABILITY, WHETHER IN AN ACTION OF
 * CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
 * IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
 * DEALINGS IN THE SOFTWARE.
 */
```

You may also add other information to the comment headers if desired, including [Required Third Party Notices](#). For example, you could add notices that you modified the file. See the example below:

```
/*
 * XYZ Subcomponent (MODIFIED)
 *
 * Copyright YYYY Your Name
 * Copyright 2015 Jane Smith
 *
 * SPDX-License-Identifier: Apache-2.0 AND MIT
 *
 * This file includes code based on the XYZ Subcomponent available
 * at <www.github.com/XYZ>. It has been modified by Your Name
 * <youremail@yourdomain.com> to fix several bugs. The original XYZ
 * Subcomponent is licensed under the MIT License. The modifications
 * made by [Your Name] are licensed under the Apache License version 2.0.
 *
 * Licensed under the MIT License
 */
```

```
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY
* OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT
* LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
* FITNESS FOR A PARTICULAR PURPOSE AND
* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
* COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES
* OR OTHER LIABILITY, WHETHER IN AN ACTION OF
* CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
* IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
* DEALINGS IN THE SOFTWARE.
*
*/
```

Although you may add additional text to the header comments of a file authored by someone else, please do not delete any header comments included in a file authored by someone else.

## 6 Files Without Text-Based Comments

Some files, such as image files, PDFs, and excel spreadsheets do not easily accommodate text-based header comments. To associate copyright and license information with such a file, add new text file in the same directory with an identical name appended by “.license”, and the [Copyright Notice](#) and [SPDX License Identifier](#) to this new text file. For example, to associate copyright and license information with the file `cat.jpg`, create a new text file called `cat.jpg.license` in the same folder, and add the [Copyright Notice](#) and [SPDX License Identifier](#) to this new text file.

## 7 License and Notice Files

### 1 License Folder and Files

The top-level directory of each repository shall contain a folder named `LICENSES`. This `LICENSES` folder will include a text file for each license and license exception that applies to any files in the repository. If the license is included in the [SPDX License List](#), the SPDX Short Form Identifier will be used as the name of the text file, with or without that `.txt` extension. If the license is not included in the [SPDX License List](#), the name of the text file will be start with `LicenseRef-` followed by the unique name given to the license (See [Licenses Not Included in the SPDX License List](#) above). For example, the list of license text files in the `LICENSES` folder might appear as follows:

```
Apache-2.0
BSD-2-Clause
Classpath-exception-2.0
GPL-2.0
LicenseRef-1
LicenseRef-2
LicenseRef-FreeBeer
MIT
```

## 2 Notice Files

Every distribution of an Open Networking Foundation program should include a **NOTICE** text file in the top directory.

1. The top of each **NOTICE** file should include the following text, suitably modified to reflect the product name and year(s) of distribution of the current and past versions of the product:

```
[PROJECT NAME]
Copyright YYYY Open Networking Foundation and Contributors

SPDX-License-Identifier: Apache-2.0

This program includes software developed at the Open Networking
Foundation. This program is licensed to you under the Apache License,
Version 2.0.

This program may include subcomponents with separate copyright notices and
license terms. Your use of each of these subcomponents is subject to the terms
and conditions of the subcomponent's license.
```

2. The remainder of the **NOTICE** file is to be used for [Required Third Party Notices](#), if any. Required notices for a specific file should be preceded by its file path. For example, the contents of a **NOTICE** file might appear as follows:

```
[PROJECT NAME]
Copyright YYYY Open Networking Foundation and Contributors

SPDX-License-Identifier: Apache-2.0

This program includes software developed at the Open Networking
Foundation. This program is licensed to you under the Apache License,
Version 2.0.

This program may include subcomponents with separate copyright notices and
license terms. Your use of each of these subcomponents is subject to the terms
and conditions of the subcomponent's license.

-----
ProjectName/src/supersubcomponent.java

Supersubcomponent
```



This program includes code based on the Supersubcomponent available at [www.github.com/Example/Supersubcomponent](http://www.github.com/Example/Supersubcomponent). It has been modified by Open Networking Foundation and its contributors to conform to the OpenFlow standard.

-----  
ProjectName/Images/CuteCatPicture.jpg

No animals were harmed in the creation of this image. This image is provided “AS IS” with no warranties of any kind.

3. For binary distributions, the **NOTICE** file must also contain the [Copyright Notice](#) and [SPDX License Identifier](#) for each file. See [Binary Distributions](#) below for more information and an example.

### 3 Required Third Party Notices

When a release contains third party works, the licenses covering those works may ask that users are informed in certain specific fashions. These third party notices vary from license to license. This policy requires that each a [Copyright Notice](#) and [SPDX License Identifier](#) be included with each source file, and that each distribution (including in binary form) include a copy of applicable licenses, as described in [License Folder and Files](#). For many licenses this is a sufficient notice. For some licenses, some additional notice is required. For example, Section 4(b) of the Apache License version 2.0 requires that, if you modify a file originally authored by someone else, you must cause modified files to include a prominent notice stating that you changed the file. Additionally, Section 4(d) of the Apache License version 2.0 requires that, if the work contains a NOTICE text file, and you redistribute such file with or without modifications, the redistributions must include a readable copy of the attribution notices contained within such NOTICE file, excluding the notices that do not pertain to any part of the version you redistribute.

Required Third Party Notices for a file may be included either in the **NOTICES** text file as described in [Notice Files](#) above, or in the comments contained in the header of the file as described in [Contents of Source File Comments](#) above.

### 4 Binary Distributions

Even if there are no source files within the release, the **LICENSE** folder and files and **NOTICE** file are still required within every distribution of an Open Networking Foundation program, whether the distribution is in the form of a .jar, .msi, .tar.gz, .zip, .exe installer, or any other file format used for distributions.

For distributions in source code form, the [Copyright Notice](#) and [SPDX License Identifier](#) needs to appear only in the comments included in or with each source file. However, for any distribution that is not in source code form, the user cannot view source file comments; therefore, when

distributing a program in binary form, the [Copyright Notice](#) and [SPDX License Identifier](#) must be included in the **NOTICE** text file, along with any [Required Third Party Notices](#).

For example, the contents of a **NOTICE** file included with a binary distribution might appear as follows:

[PRODUCT NAME]

Copyright 2006-present Open Networking Foundation and Contributors

SPDX-License-Identifier: Apache-2.0

This program includes software developed at the Open Networking Foundation. This program is licensed to you under the Apache License, Version 2.0.

This program may include subcomponents with separate copyright notices and license terms. Your use of each of these subcomponents is subject to the terms and conditions of the subcomponent's license.

-----  
ProjectName/src/supersubcomponent.java

Supersubcomponent

Copyright 2018-present Open Networking Foundation and Contributors  
Copyright 2015-2017 Original Author Name

SPDX-License-Identifier: Apache-2.0 AND MIT

This program includes code based on the Supersubcomponent, available at [www.github.com/Example/Supersubcomponent](http://www.github.com/Example/Supersubcomponent). It has been modified by Open Networking Foundation and its contributors to conform to the OpenFlow standard. The original version is licensed under the MIT License. The modifications made by Open Networking Foundation and Contributors are licensed under the Apache License version 2.0.

-----  
ProjectName/Images/CuteCatPicture.jpg

Copyright 2014 Krazy Kat Lady

SPDX-License-Identifier: Apache-2.0

No animals were harmed in the creation of this image. This image is provided "AS IS" with no warranties of any kind.

