

# Accessing SPDX Licenses

SPDX-TR-2014-2

## Abstract

The Software Products Data Exchange (SPDX) maintains a list of standard licenses commonly used in open source software. This document describes various methods of accessing the current and previous versions of the list. Several methods of accessing the license list are provided ranging from simply reading the license list on the website to programmatically accessing the license list information online. This report is organized from the easiest method of access targeted at more casual users to the most sophisticated access targeted at software programmers. It does not go into any details on how to submit new licenses or suggest changes to existing licenses. Information on the license list process and additional information on SPDX licenses can be found at <http://spdx.org/spdx-license-list>.

## Keywords

License, Licensing, License List, Legal Working Group

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## Tech Report License

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#### License Summary

##### You are free to:

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- for any purpose, even commercially

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## 1. Reading Licenses on the SPDX Licenses Web Page

If you would like to quickly view the list of SPDX standard licenses, simply going to the SPDX license list page is the fastest approach. The SPDX license list page always contains the most recent published version of the license list.

### URL

The web page is located at <http://www.spdx.org/licenses>

### Table of Contents page

The main index page contains a description of the licenses, pointers on how to request new licenses, the license list version, and a list of licenses.

### License List Version

The version of the license list can be found immediately prior to the list of licenses.

### List of Licenses

The license table contains information on the licenses. The definition of the table columns can be found in the Explanation of License List Fields on the License List Overview webpage.

## 2. Accessing Older Versions of the License List

An archive of the older versions of the license list starting with version 1.18 can be found at [http://spdx.org/licenses/archive/archived\\_ll\\_vX.XX](http://spdx.org/licenses/archive/archived_ll_vX.XX) where vX.XX is the version of the license list.

## 3. Accessing the License List on the SPDX Git Repository

All version of the license list since version 1.19 are maintained in the [SPDX Git Repository](#).

### Location

The summary information can be accessed at <http://git.spdx.org/?p=license-list.git;a=summary>. An archive file for any of the versions can be downloaded by following the "snapshot" link on the left hand side.

### Tags for Versions

A tag is created for each license list once it has been released and published at <http://spdx.org/licenses>. The tag consists of "v" followed by the license list version.

### File Formats

There are two types of files maintained for each release of the license list:

- Spreadsheet - A spreadsheet file named `spdx_licenselist_vX.XX` where X.XX is the license list version. There are two formats stored, an Microsoft Excel (.xls) file and a Open Office Calc (.ods) file. The current spreadsheet column definition can be found in the Explanation of License List Fields on the [License List Overview webpage](#).

Text files: Each license contains a text file with a filename corresponding to the License Identifier with a txt file type. The format of the text files follows the license template as specified in section Appendix II License Template in the [SPDX specification version 1.2](#) or later.

## 4. Programmatically Accessing the Online License List using RDFa

To allow easy, well defined programmatic access to the current licenses list, the SPDX license web pages are encoded using a [W3C](#) standard RDFa. Using RDFa parsers, a program can access SPDX license information in a more reliable fashion than manually parsing the HTML pages themselves. The RDF terms used on the pages are also well defined and documented in the [SPDX RDF terms page](#).

### What is RDFa?

RDFa (Resource Descriptor Framework in Attributes) extends HTML (and XHTML) with attributes allowing RDF data to be easily extracted from the same web pages which can also be rendered using web browsers.

The following resources can provide you further information on RDFa:

- [Wikipedia article](#)
- [W3C RDFa primer](#)
- [Community website for RDFa](#) contains a number of resources for developers and users

### RDFa Available Parsers

There are a number of RDFa parsers available for various languages. [The RDFa community page for developers](#) contains a list of libraries for JavaScript, PHP, Python, Ruby, C, and Java.

In addition to the libraries mentioned above, [Java-RDFa](#) used in conjunction with [Apache Jena](#) provides rich RDF functionality for Java applications. These are the libraries used by the SPDX Tools library.

### Forming the URLs

To retrieve details on an SPDX standard license, access the HTML file at [http://spdx.org/licenses/\[licenseID\]](http://spdx.org/licenses/[licenseID]) where [licenseID] is the SPDX standard license identifier. Note that there is no file type appended.

### Listing the License ID's Available

A list of license ID's can be accessed by querying the RDFa located at <http://spdx.org/licenses/index.html> for resource license ID (<http://spdx.org/rdf/terms#licenseid>).

### RDFa Terms Used

The following RDF terms are used in both the index.html and individual license pages:

- <http://spdx.org/rdf/terms#licenseid> - A human readable short form license. The license Id must be of the form "LicenseRef-[idString] where [idString] is a unique string containing letters, numbers, ".", "-", or "+".

The following RDF terms are used on the individual license pages:

- <http://www.w3.org/2000/01/rdf-schema#label> or <http://spdx.org/rdf/terms#name> - License name (rdfs:label will be replaced with spdx:name on the next version of the license list)
- <http://spdx.org/rdf/terms#licenseText> - The full text of the license
- <http://spdx.org/rdf/terms#standardLicenseHeader> - Text specifically delineated by the license, or license appendix, as the preferred way to indicate that a source, or other, file is copyable under the license
- <http://spdx.org/rdf/terms#licenseTemplate> - License template which describes sections of the license which can be varied. See License Template section of the specification for format information.
- <http://spdx.org/rdf/terms#isOsiApproved> - Indicates if the OSI has approved the license
- <http://www.w3.org/2002/07/owl#sameAs> or <http://www.w3.org/2000/01/rdf-schema#seeAlso> - Cross reference URL pointing to additional copies of the license (owl:sameAs will be replaced by rdfs:seeAlso on the next version of the license list)

## 5. Programmatically Accessing the Current License List using the SPDX Tools Library

The SPDX Tools are Java utilities and libraries made available by SPDX under the Apache 2.0 license. The SPDX Tools library contains a class `SPDXLicenseInfoFactory` which will parse SPDX license names, access the SPDX online license list using RDFa and providing detailed information on the licenses. If the online license list is not accessible (or if a Java property is set to use only offline licenses), a local cache of license information will be used.

### Downloading the Library

Source code for the SPDX libraries can be accessed in the Linux Git repository ([git.spdx.org](http://git.spdx.org)) in the `spdx-tools.git` project. Implementation versions and a changelog is maintained in the root project directory.

The binary libraries are also included in each of the [SPDX workgroup tools](#).

The binary jar files can also be downloaded from the [Maven Central Repository](#) using the group ID `org.spdx` and the artifact ID `spdx-tools`.

### Library APIs

The primary interfaces to the SPDX standard licenses are the following methods in the `org.spdx.rdfparser.SPDXLicenseInfoFactory` class:

- `String getLicenseListVersion()` - Return the license list version used by the SPDX tools library
- `SPDXStandardLicense getStandardLicenseById(String licenseId)` - Return an SPDX standard license associated with the license ID parameter
- `String[] getStandardLicenseIds()` - Return an array of all SPDX standard license ID's
- `isStandardLicenseId(String licenseId)` - Returns true if the license id is associated with an SPDX standard license ID
- `SPDXLicenseInfo parseSPDXLicenseString(String licenseString)` - Parses a license string compliant with the specification and returns an object representing the licenses. The parser will handle standard license ID's, conjunctive license sets, disjunctive license sets and non-standard license IDs.

The class `SPDXStandardLicense` contains fields for the properties of a Standard license (e.g. text, id, name, sourceUrls, template, standardLicenseHeader, comments).

The package `org.spdx.licenseTemplate` contains classes to manage the license templates used in SPDX standard licenses. See the JavaDocs for this package (located in the doc directory of the source code or in the javadoc jar file in Maven) for a description of the interface to this package. The primary interfaces are in the `org.spdx.licenseTemplate.SpdxLicenseTemplateHelper` class.

The class `org.spdx.compare.LicenseCompareHelper` contains methods to compare license text to determine if they are equivalent according to the license matching [guidelines](#) maintained by the SPDX legal team. The method `boolean LicenseCompareHelper.isTextStandardLicense(SPDXStandardLicense license, String licenseText)` will return true if the `licenseText` is equivalent to the text for the SPDX standard license considering both the license template replaceable/optional text as well as the license matching guidelines.

### Updating the License List in the Offline Cache

By default, the SPDX Tools Library will access the current SPDX license list website using RDFa to acquire the license information. If there is no internet access to <http://spdx.org/licenses> or if the configuration property `OnlyUseLocalLicenses` is set to true, a local offline cache of the licenses is used.

The license cache can be found in the `resources/stdlicenses` directory in the same directory where the library is installed. The files in this directory is an exact copy of the HTML files found on the <http://spdx.org/licenses> website. If you wish to update the licenses, these files can be replaced.

Also within the `resources/stdlicenses` directory is a file `licenses.properties`. This file contains the configuration property `OnlyUseLocalLicenses`. Editing this text file and setting `OnlyUseLocalLicenses=true` will always use the offline cache.

## Examples

### Accessing the Text for a Standard SPDX License

To print out the text for the SPDX standard license Apache 1.1 to the console:

```
public static void main(String[] args) {
    try {
        SPDXStandardLicense apache11 = SPDXLicenseInfoFactory
            .getStandardLicenseById("Apache-1.1");
        System.out.println(apache11.getText());
    } catch (InvalidSPDXAnalysisException e) {
        System.out.println("Error getting Standard License: " +
            e.getMessage());
    }
}
```

### Determining if License Text is Equivalent to an SPDX Standard License Text

To determine if the license text in the string licenseTxt is equivalent to the license text for the BSD 3 clause license:

```
public static void main(String[] args) {
    String licenseText = "...";
    try {
        SPDXStandardLicense bsd3clause = SPDXLicenseInfoFactory
            .getStandardLicenseById("BSD-3-Clause");
        boolean matches = LicenseCompareHelper
            .isTextStandardLicense(bsd3clause, licenseText);
        if (matches) {
            System.out.println("Matches");
        } else {
            System.out.println("Does not match");
        }
    } catch (InvalidSPDXAnalysisException e) {
        System.out.println("Error getting lic: "+e.getMessage());
    } catch (SpdxCompareException e) {
        System.out.println("Error comparing: "+e.getMessage());
    }
}
```