

Software Package Document eXchange (SPDX™) Tools

Version 2.1

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Please send your comments and suggestions for this document to:

spdx-tech@fossbazaar.org

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Preface

INTENDED AUDIENCE

This manual is designed to help users become familiar with the tools available for viewing SPDX documents and for converting RDF formatted SPDX documents into spreadsheet format and converting spreadsheets with formatted SPDX content into SPDX documents.

CONTENTS OVERVIEW

Section 1: Introduction—Provides a brief overview of the SPDX standards organization and the SPDX specification.

Section 2: Creating SPDX Content—Describes how to create SPDX documents

Section 3: Open Source Tools for SPDX Creation

Section 4: Using SPDX Tools—Describes how to use the SPDX tools.

Section 5: Notices—Copyright and license information

RELATED DOCUMENTS

The following related documents are available:

- The working version of the SPDX Specification is available here:
 - <http://spdx.org/wiki/spdx/specification>
- The current list of SPDX standard licenses is available here:
 - <http://spdx.org/licenses/>
- RDF vocabulary (an OWL ontology) for expressing SPDX as RDF is available here:
 - <http://spdx.org/wiki/rdf-vocabulary>

The following online resources provide more information about the SPDX Group and how you can participate:

- <http://spdx.org/>

1 INTRODUCTION

The Software Package Data Exchange (SPDX™) specification “is a standard format for communicating the components, licenses and copyrights associated with a software package. An SPDX file is associated with a particular software package and contains information about that package in the SPDX format.”

You can learn more about the SPDX Group and the SPDX specification here:

- <http://spdx.org/>

2 CREATING SPDX CONTENT

The SPDX Specification supports two formats: RDF/XML and Tag/Value. There are a number of ways that SPDX Documents can be created.

- **Tools:** Open source and commercial tools are available to create SPDX Documents in the RDF/XML format.
- **Spreadsheet:** For convenience, the tools can take spreadsheet data as input and can create spreadsheet output from an RDF/XML SPDX Document.
- **Write your own:** You may also choose to write your own tooling to produce an SPDX Document per the specification.
- **Manual:** You can edit an existing SPDX Document to reflect the appropriate information for a different package.

2.1 Populating a Spreadsheet with SPDX Content

Today, many organizations use spreadsheets to share license data about software packages between different teams in the organization. For this reason, the SPDX Group has provided a spreadsheet template with specific sheet and column names reflecting SPDX Document properties.

The spreadsheet template is provided for convenience and the format is not supported by the specification. The spreadsheet template is available for download here:

- <http://spdx.org/tools>

If you wish to translate spreadsheet data into an SPDX RDF document, you can use the SPDX Translator tool. The Translator tool requires the input spreadsheet be in a very specific format. For translation, the spreadsheet must have the following sheets:

- **Origins**
 - States the SPDX specification version used for this document
 - Captures information on how the meta data was generated and when.

1	A	B	C	D	E	F	G
	Spreadsheet Version	SPDX Version	Creator	Created	Data License	Creator Comment	Document Comment
2	1.1.0	SPDX-1.1	Person: Gary O'Neill Organization: Source Auditor Inc. Tool: SourceAuditor-V1.2	2/3/2010 0:00	CC0-1.0	This is an example of an SPDX spreadsheet format	This is a sample spreadsheet
3							
4							
5							
6							
7							

- **Package Info**

- Captures information about the package such as name, download location, license, copyright, and verification data.

1	A	B	C	D	E	F	G	H
	Package Name	Package Version	Package FileName	Package Supplier	Package Originator	Package Download Location	Package Checksum	Package Verification Code
2	SPDX Translator	Version 0.3.2	spdctranslator-1.0.zip	Organization: Linux Foundation	Organization: SPDX	http://www.spdx.org/tools	2fd4e1b67a2c28ced849ee	4e321b67a2c28ced849ee
3								
4								
5								
6								
7								

1	I	J	K	L	M
	Verification Code Excluded Files	Source Info	License Declared	License Concluded	License Info From Files
2	SpdxTranslatorSpdx.rdf,	Version 1.0 of the SPDX Translator	(LicenseRef-3 AND LicenseRef-4 AND	(LicenseRef-3 AND LicenseRef-4 AND	Apache-1.0, Apache-2.0, LicenseRef-1, LicenseRef-3, LicenseRef-4, LicenseRef-2, MPL-1.1
3					
4					
5					

1	N	O	P	Q
	License Comments	Package Copyright Text	Summary	Description
2	The declared license information can be found in the	Copyright 2010, 2011 Source Auditor Inc.	SPDX Translator utility	This utility translates and SPDX RDF XML document to a spreadsheet, translates a spreadsheet
3				
4				
5				
6				

- **Extracted Lic Info**

- Captures information for any detected or declared licenses that are not included in the SPDX standard license set.

The screenshot shows a software interface with two main panes. The top pane, labeled 'A' and 'B', displays the raw license text for 'LicenseRef-1'. The text includes copyright information for Hewlett-Packard Development Company, LP, and various redistribution conditions. The bottom pane shows a table with columns for License Name, Cross Reference URLs, and Comment. The table contains one row for 'CyperNeko License' with the URL 'http://people.apache.org/~andyc/neko/LICENSE, http://justasample.url.com' and the comment 'This is tye CyperNeko License'.

1	A	B
1	Identifier	Extracted Text
1	LicenseRef-1	/* * (c) Copyright 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Hewlett-Packard Development Company, LP * All rights reserved. * * Redistribution and use in source and binary forms, with or without * modification, are permitted provided that the following conditions * are met: * 1. Redistributions of source code must retain the above copyright * notice, this list of conditions and the following disclaimer. * 2. Redistributions in binary form must reproduce the above copyright * notice, this list of conditions and the following disclaimer in the * documentation and/or other materials provided with the distribution. * 3. The name of the author may not be used to endorse or promote products * derived from this software without specific prior written permission. * * THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. * IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. */

	C	D	E
	License Name	Cross Reference URLs	Comment
5	CyperNeko License	http://people.apache.org/~andyc/neko/LICENSE, http://justasample.url.com	This is tye CyperNeko License
6			
7			
8			
9			

- **Per File Info**
 - Captures per-file license and copyright text (if any), verification data, and, optionally, indication that a file has been derived from a specific project.

	A	B	C	D	E	F	G	H	I	J
	File Name	File Type	File Checksum	License Concluded	License Info in File	License Comments	File Copyright Text	Artifact of Project	Artifact of Homepage	Artifact of URL
2	Jenna-2.6.3/jena-2.6.3-sources.jar	ARCHIVE	2fd4e1c67a2d28fcd849ee1bb7 6e7391b93eb12	LicenseRef-1	LicenseRef-1		(c) Copyright 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Hewlett-Packard Development Company, LP	Jena	http://www.openjena.org/	
3	src/org/spdx/parser/DOAPProject.java	SOURCE	2fd4e1c67a2d28fcd849ee1bb7 6e7391b93eb12	Apache-2	Apache-2		Copyright 2010, 2011 Source Auditor Inc.			
4										
5										
6										
7										
8										
9										

- **Reviewers**
 - Optional. Captures information from any review of the SPDX Document, such as reviewer, review date and comment.

	A	B	C
	Reviewer	Review Date	Reviewer Comment
2	Person: Joe Reviewer	2/10/10 0:00	This is just an example. Some of the non-standard licenses look like they are actually BSD 3 clause licenses
3	Person: Suzanne Reviewer	3/13/11 0:00	Another example reviewer.
4			
5			

2.2 Populating a RDF-formatted SPDX Document

A SPDX Document can also be created and shared in RDF/XML format as shown below.

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns="..." xmlns:spdx="...">
  <spdx:SPDXDoc rdf:about="http://example.com/an-ip-analysis">
    <spdx:analysedPackage>
      <spdx:Package rdf:about="http://zlib.net/zlib-1.2.5.tar.gz">
        <spdx:packageFileName>
          openlogic-zlib-1.2.5-all-src-1.zip</spdx:packageFileName>
        <spdx:shortDesc>
          zlib 1.2.5 Source</spdx:shortDesc>
        <spdx:DeclaredLicense
          rdf:resource="http://spdx.org/licenses/bsl-1.0"/>
      </spdx:Package>
    </spdx:analysedPackage>
  </spdx:SPDXDoc>
</rdf:RDF>
```

Open source and commercial tools are available to create an RDF-formatted SPDX document. Detailed information about the tools and how to use them is covered in Section 3 of this document.

2.3 Populating a Tag/Value-formatted SPDX Document

You can create an SPDX tag/value format document, as shown below:

```
...
PackageName: zlib-1.2.5
PackageFileName: openlogic-zlib-1.2.5-all-src.1.zip
PackageDownloadLocation: http://zlib.net/zlib-1.2.5.tar.gz
LicenseDeclared: BSL-1.0
Summary: zlib 1.2.5 Source
...
```

Comments can be added to the file with a hash symbol ‘#’ as the first character in a line.

2.4 Writing your own Tools

If you are using Java, you may want to look at the open source implementation of the SPDX RDF tools. They contain an implementation of the SPDX object model using Jena to parse and render the RDF documents.

3 OPEN SOURCE TOOLS FOR SPDX CREATION

3.1 SPDX Workgroup Tool

The SPDX Group has developed some tools to assist with viewing and managing SPDX documents. The tools are intended to:

- Reduce the effort of creating, consuming and validating SPDX Documents
- Provide a translation from the technical document (e.g. RDF/XML or tag-value format) and a more readable format
- Provide a mechanism for validating SPDX documents
- Enable contributions and review of the tool implementation by the broader technical community through open source licensing

See [Section 4 Using the SPDX Workgroup Tool](#) for downloading and usage information.

The following commands can be used to create, translate, or validate SPDX documents.

3.1.1 SPDX Viewer

The SPDX Viewer is a command line driven Java application that formats a valid SPDX RDF

document into a text file for easier viewing. The SPDX Viewer application validates the SPDX document during formatting and provides Warning messages when parsing issues are encountered. An attempt will be made to create the text file even if validation errors are encountered.

```
SPDX Document for http://www.spdx.org/tools#SPDXANALYSIS
Version: SPDX-0.8      Created: 2010-02-03T00:00:00Z
Created by:
  Tool: SourceAuditor-V1.2
  Company: Source Auditor Inc.
  Person: Gary O'Neall
  2010-02-03T00:00:00Z
Creator comment: This is an example of SPDXViewer output
Reviewed by:
  Person: Joe Reviewer   2010-02-10T00:00:00Z   Comment:This is just an example. Some of the non-standard licenses look
like they are actually BSD 3 clause licenses
  Person: Suzanne Reviewer   2011-03-13T00:00:00Z   Comment:Another example reviewer.
Package Name: SPDX Translator
SPDX Translator utility
Additional Information: Version 1.0 of the SPDX Translator application
File name: spdxtranslator-1.0.zip
SHA1: 2fd4e1c67a2d28fced849ee1bb76e7391b93eb12
Verification: 4e3211c67a2d28fced849ee1bb76e7391b93feba
Description: This utility translates and SPDX RDF XML document to a spreadsheet, translates a spreadsheet to an SPDX RDF XML
document and translates an SPDX RDFa document to an SPDX RDF XML document.
Declared Copyright: Copyright 2010, 2011 Source Auditor Inc.
License declared: (Apache-2 AND MPL-1.1 AND LicenseRef-3 AND LicenseRef-4 AND LicenseRef-2 AND LicenseRef-1)
License concluded: (LicenseRef-4 AND Apache-2 AND LicenseRef-1 AND LicenseRef-3 AND MPL-1.1 AND Apache-1 AND LicenseRef-2)
Licenses from files:
  LicenseRef-3
  LicenseRef-1
  Apache-1
  LicenseRef-2
  Apache-2
  MPL-1.1
  LicenseRef-4
License comments: The declared license information can be found in the NOTICE file at the root of the archive file
File Name: src/org/spdx/parser/DOAPProject.java
File Type: SOURCE
SHA1: 2fd4e1c67a2d28fced849ee1bb76e7391b93eb12
Concluded license: Apache-2
License infos from file: Apache-2
File copyright: Copyright 2010, 2011 Source Auditor Inc.
File Name: Jena-2.6.3/jena-2.6.3-sources.jar
File Type: ARCHIVE
SHA1: 2fd4e1c67a2d28fced849ee1bb76e7391b93eb12
Concluded license: LicenseRef-1
License infos from file: LicenseRef-1
File copyright: (c) Copyright 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Hewlett-Packard Development
Company, LP
  Artifact of Project: Jena
  Artifact of home page: http://www.openjena.org/
Non-Standard Licenses:
  License ID: LicenseRef-3      Text: The CyberNeko Software License, Version 1.0
```

3.1.2 SPDX Translator

The SPDX Translator is a command line driven Java application that provides two types of translation. Specifically, the Translator:

- Converts a spreadsheet containing SPDX information into a valid SPDX/RDF file
- Converts a valid SPDX/RDF file into a spreadsheet

The SPDX Translator requires the input spreadsheet be in a very specific format. The SPDX Translator validates the input and provides Warning messages when parsing issues are encountered.

A spreadsheet template with the specific column names and order is available for download here:

- <http://spdx.org/tools>

When entering license information into the spreadsheet, follow these syntax rules:

- For a standard license, use the short form license ID
- For a non-standard license, use the LicenseRef-N ID as described in the Specification. The same LicenseRef-N must also be present in the “Non Standard Licenses” sheet.
- For a disjunctive license set, enclose the set in parentheses and separate each license reference by “OR” (e.g. (Apache-2 OR LicenseRef-2))
- For a conjunctive license set, enclosed the set in parentheses and separate each license reference by “AND” (e.g. Apache-2 AND LicenseRef-2)
 - Note: A disjunctive or conjunctive license set can include a reference to another license set (e.g. (Apache-2 OR (LicenseRef-1 AND LicenseRef-2)))
- For columns where there are multiple license references allowed (License Info from Files and License Info in File), the license references are separated by comma’s (e.g. Apache-2, LicenseRef-1, Apache-1, LicenseRef-2).

3.2 FOSSOLOGY+SPDX

The FOSSology+SPDX project is built using the FOSSology project. The FOSSology project focuses on the design and development of a software-scanning tool for identifying licenses and copyrights within select software (<http://www.fossology.org>). Our goal of integrating the FOSSology output with the SPDX standard is to provide an end-to-end open source solution for producing SPDX documents from scanned software packages. The project was created and is hosted at the University of Nebraska at Omaha.

Existing modules include creating an SPDX file in TAG format, licenses/copyrights information in NOTICE format, and ATTRIBUTION files. Package level license information from select software will be listed in NOTICE file. From the ATTRIBUTION file, file level license information is listed out grouped by licenses type. FOSSology+SPDX enables the generation of manual, high definition SPDX files, including package and file level information.

FOSSology+SPDX is licensed under Apache License 2.0 (Apache-2.0).

You can get access to the Public Instance here:

<https://fossologyspdx.ist.unomaha.edu/>

Access source code at GitHub:

<https://github.com/spdx-tools/fossology-spdx>

For more information:

<https://sites.google.com/site/fossologyunospx/>

3.3 YOCTO+SPDX

The Yocto+SPDX project is built to integrated SPDX generation into the Yocto build process. The Yocto Project is an open source collaboration project that provides templates, tools and methods to help create custom Linux-based systems for embedded products regardless of the hardware architecture (<http://www.yoctoproject.org>). The goal of integrating the Yocto build process with the SPDX standard is to integrate automated SPDX generation in upstream open source projects. The project and was created and is hosted at the University of Nebraska at Omaha.

Existing features include file level caching to manage package scanning overhead, and the output of TAG format SPDX documents. Yocto+SPDX enables the generation of automated, low definition SPDX files, including package and file level information.

Yocto+SPDX is licensed under BSD 2-clause "Simplified" License (BSD-2-Clause)

Access source code at Git/Poky:

<http://git.yoctoproject.org/cgi/cgit.cgi/poky/commit/?id=a0904066865c9792033d6c87c270966113b6ae66>

For more information:

<https://sites.google.com/site/fossologyunospx/spdx-yocto>

4 USING THE SPDX WORKGROUP TOOL

You can download the SPDX tools here:

- <http://spdx.org/spdx-tools/tools-from-the-spdx-workgroup>

The name of the download file is spdx-tools-[version].zip.

Once you've downloaded the application, unzip the files in your preferred location.

- Unzip `<filename>` into your preferred location
- Make sure you have JRE version 1.8 or later installed. (JRE version 1.6 or later works with SPDX tools versions 2.1.2 or earlier.)

The SPDX workgroup tool is a command line Java application.

To run the tool, enter the following:

```
java -jar spdx-tools-jar-with-dependencies.jar <function> <parameters>
```

The following table summarizes the SPDX tool functions:

Function	Parameters	Description
TagToSpreadsheet	inputFile outputFile	Convert a tag format input file to a spreadsheet output file
TagToRDF	inputFile outputFile	Convert a tag format input file to an RDF format output file
RdfToTag	inputFile outputFile	Convert an RDF format input file to a tag format output file
RdfToHtml	inputFile outputFile	Convert an RDF format input file to an HTML web page output file
RdfToSpreadsheet	inputFile outputFile	Convert an RDF format input file to a spreadsheet format output file
SpreadsheetToRDF	inputFile outputFile	Convert a spreadsheet input file to an RDF format output file
SpreadsheetToTag	inputFile outputFile	Convert a spreadsheet input file to a tag format output file
SPDXViewer	inputFile	Display an SPDX document input file (in either tag/value or RDF format)
CompareMultipleSpdxDocs	output.xls doc1 doc2 ... docN	Compare multiple SPDX documents (in either tag/value or RDF formats) and output to a spreadsheet
CompareSpdxDocs	doc1 doc2 [output]	Compare two SPDX documents (in either

		tag/value or RDF format)
GenerateVerificationCode	sourceDirectory [skippedFileRegex]	Generate a Verification Code from a directory of files.

4.1 SPDX Viewer

The SPDX Viewer function formats a valid SPDX RDF document into a text file for easier viewing. The SPDX Viewer validates the SPDX document during formatting and provides error messages when parsing issues are encountered.

Execute the `spdx-tools-jar-with-dependencies.jar` with the `SPDXViewer` function and a single text parameter of a file path for the SPDX RDF document. For example, on Windows:

- `cd` to the directory with the SPDX Tools application and run the tool with the following command
- `java -jar spdx-tools-jar-with-dependencies.jar SPDXViewer examples\SPDXRdfExample.rdf`

4.2 SPDX Translate Functions

The SPDX Translate functions provides four types of translation. Specifically:

- `SpreadsheetToRDF` converts a spreadsheet containing SPDX information into a valid SPDX/RDF file
- `RdfToSpreadsheet` converts a valid SPDX/RDF file into a spreadsheet
- `TagToRDF` converts a valid SPDX Tag format file into a valid SPDX/RDF file
- `RdfToTag` converts a valid SPDX/RDF file into a valid SPDX Tag format file
- `RdfToHtml` converts a valid SPDX/RDF file into an HTML file
- `TagToSpreadsheet` converts a valid SPDX Tag format file into a spreadsheet
- `SpreadsheetToTag` converts a spreadsheet containing SPDX information into a valid SPDX Tag format file

To translate a file, Execute the `spdx-tools-jar-with-dependencies.jar` with the translate function name followed by the input file path followed by the output file path. For example, to convert a Spreadsheet to an RDF file on Windows:

- Copy the example spreadsheet file into the same directory with the Translator application
- `cd` to the directory with the SPDX tools application and run the tool with the following command
- `java -jar spdx-tools-jar-with-dependencies.jar SpreadsheetToRDF <spreadsheetfile.xls> <rdfxmlfile.rdf>`

4.3 Comparing Multiple SPDX document

The `CompareMultipleSpdxDocs` function will compare two or more SPDX documents and output the results to a spreadsheet file.

Execute the `spdx-tools-jar-with-dependencies.jar` with the `CompareMultipleSpdxDocs` function followed by the filename of the output spreadsheet file followed by two or more SPDX document file names. The SPDX documents may be in either the Tag/Value or RDF formats. For example, on Windows:

- `cd` to the directory with the SPDX Tools application and run the tool with the following command
- `java -jar spdx-tools-jar-with-dependencies.jar compareOutput.xls CompareMultipleSpdxDocs examples\SPDXRdfExample.rdf, examples\SPDXRdfExample.spdx`

4.4 Comparing Two SPDX documents

The `CompareSpdxDocs` function will compare two SPDX documents and output the results to the terminal or to an optional output text file.

Execute the `spdx-tools-jar-with-dependencies.jar` with the `CompareSpdxDocs` function followed by the two SPDX document file names. The SPDX documents may be in either the Tag/Value or RDF formats. Optionally, an output text filename may be supplied. For example, on Windows:

- `cd` to the directory with the SPDX Tools application and run the tool with the following command
- `java -jar spdx-tools-jar-with-dependencies.jar CompareSpdxDocs examples\SPDXRdfExample.rdf, examples\SPDXRdfExample.spdx`

4.5 Generating Verification Codes

The `GenerateVerificationCode` function will compute and display a verification code for a directory of source files.

Execute the `spdx-tools-jar-with-dependencies.jar` with the `GenerateVerificationCode` function followed by the directory name containing the files to be included in the verification code followed by an optional [regular expression](#) for skipped files. Any file name matching the regular expression will be excluded from the verification code and added to the skipped file list. For example, on Windows:

- Copy the example RDF file into the same directory with the SPDX Viewer application
- `cd` to the directory with the SPDX Tools application and run the tool with the following command
- `java -jar spdx-tools-jar-with-dependencies.jar GenerateVerificationCode examples ".*\..spdx"`

5 USING THE SPDX TOOLS LIBRARIES

The SPDX tools are available as a Java library for programmatic access. The source code can be accessed from the GIT repository located at <http://git.spdx.org>. The source and binaries can also be downloaded from the Maven central repository search.maven.org under the group ID `org.spdx`.

6 CONTRIBUTING TO SPDX WORKGROUP TOOL

A GIT repository for SPDX tools can be found at:

- <https://github.com/spdx/tools>

Contributions and suggestions are welcome. Report any defects or suggest any improvements on the issues list at <https://github.com/spdx/tools/issues>

You can also contribute to development of the SPDX specification by joining the SPDX group. Click on the Participation link on the SPDX home page at <http://spdx.org> to get started.

7 NOTICES

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You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This package includes software from Jena under the following License:

```

/*
 * (c) Copyright 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Hewlett-Packard
Development Company, LP
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in the
 * documentation and/or other materials provided with the distribution.
 * 3. The name of the author may not be used to endorse or promote products
 * derived from this software without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
 * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
 * IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
 * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
 * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */

```

This package includes the GRDDL parser developed by Hewlett Packard under the following license:

◆ Copyright 2007 Hewlett-Packard Development Company, LP

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The Jena GRDDL Reader is built on top of other sub-systems which we gratefully acknowledge:

The Saxon XSLT and XQuery Processor from Saxonica Limited

This is distributed under Mozilla Public License Version 1.0 . The version used is Saxon B 8.8; source and binary versions are available from the Saxon download area on SourceForge CyberNeko HTML Parser

The version used is 0.9.5. It is redistributed, in binary form, under The CyberNeko Software License, Version 1.0.

BrowserLauncher2

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[1] <<http://stars.ilrt.bris.ac.uk/blog/>>

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The RDFa License Generator exports SortTable version 2 7th April 2007

Stuart Langridge, <http://www.kryogenix.org/code/browser/sorttable/>
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