FOSSology - New Features for License Compliance in HD

Speaker: Michael C. Jaeger (michael.c.jaeger@siemens.com)

Overview: Contents

1. **Introduction FOSSology**
   What is FOSSology

2. **New Features**
   What FOSSology needs

3. **Summary**
   Where to see it

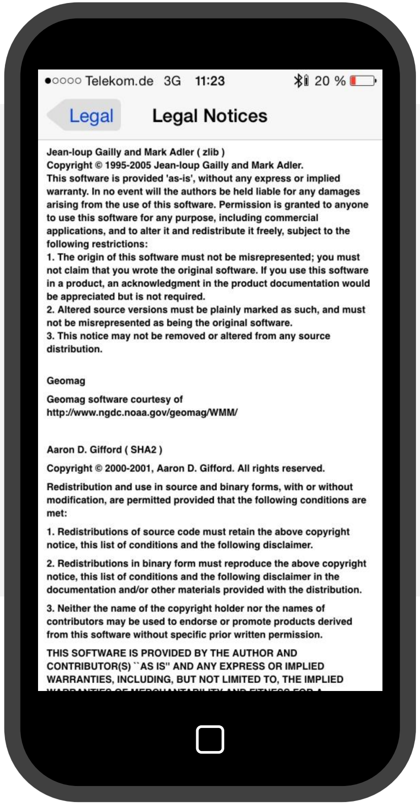
Introduction FOSSology

The Problem Actually

You know these examples

Distributing open source software requires to

- Provide licenses of involved software
- Provide copyright statements of involved authors
- Provide disclaimers
- … and much more



Jean-loup Gailly and Mark Adler (zlib)
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Geomag

Geomag software courtesy of
http://www.ngdc.noaa.gov/geomag/WMM/

Aaron D. Gifford (SHA2)

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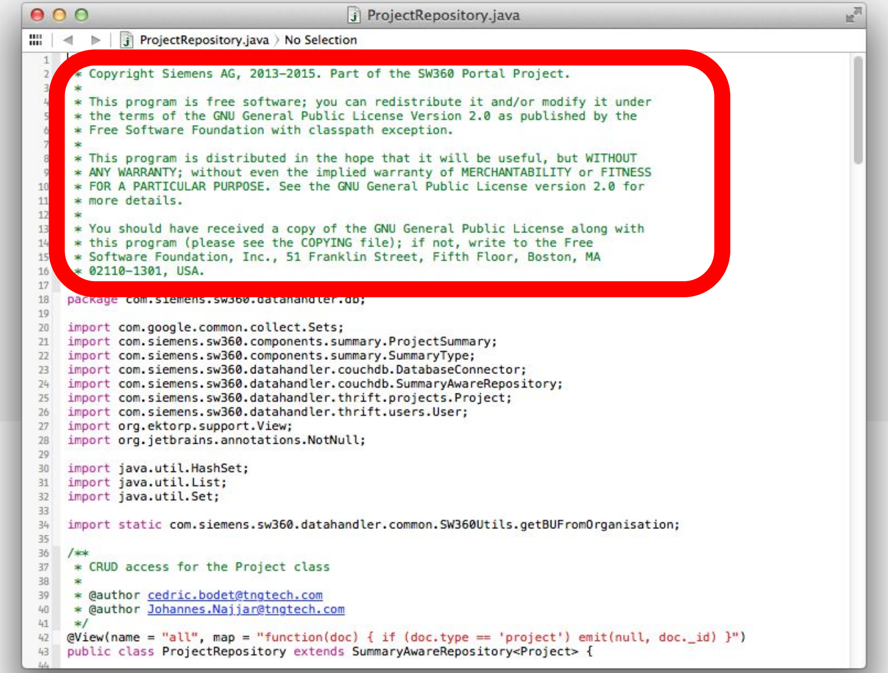
It is about finding licenses

Finding Licenses

- License texts
- References to licenses
- Written texts explaining licensing
- License relevant statements



```
 * Copyright Siemens AG, 2013-2015. Part of the SW360 Portal Project.
 *
 * This program is free software; you can redistribute it and/or modify it under
 * the terms of the GNU General Public License Version 2.0 as published by the
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 *
 * This program is distributed in the hope that it will be useful, but WITHOUT
 * ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
 * FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2.0 for
 * more details.
 *
 * You should have received a copy of the GNU General Public License along with
 * this program (please see the COPYING file); if not, write to the Free
 * Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA
 * 02110-1301, USA.

package com.siemens.sw360.datahandler.db;

import com.google.common.collect.Sets;
import com.siemens.sw360.components.summary.ProjectSummary;
import com.siemens.sw360.components.summary.SummaryType;
import com.siemens.sw360.datahandler.couchdb.DatabaseConnector;
import com.siemens.sw360.datahandler.couchdb.SummaryAwareRepository;
import com.siemens.sw360.datahandler.thrift.projects.Project;
import com.siemens.sw360.datahandler.thrift.users.User;
import org.ektorp.support.View;
import org.jetbrains.annotations.NotNull;

import java.util.HashSet;
import java.util.List;
import java.util.Set;

import static com.siemens.sw360.datahandler.common.SW360Utils.getBUFromOrganisation;

/**
 * CRUD access for the Project class
 *
 * @author cedric.bodet@tngtech.com
 * @author Johannes.Najjar@tngtech.com
 */
@View(name = "all", map = "function(doc) { if (doc.type == 'project') emit(null, doc._id) }")
public class ProjectRepository extends SummaryAwareRepository<Project> {
```

What is FOSSology?

A Web server application for license and copyright compliance of software components.

FOSSology Project
https://www.fossology.org/

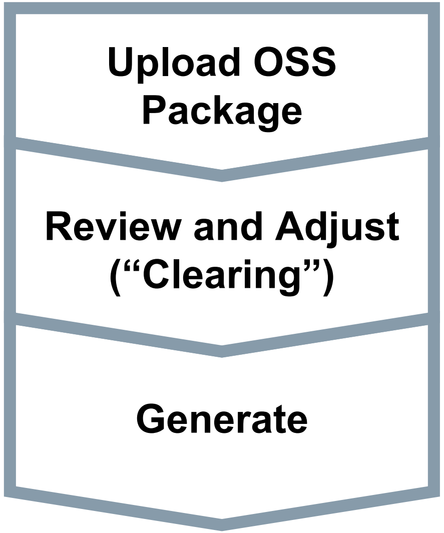
- Published first in 2008, GPL-2.0
- 2015: Linux Foundation collaboration project
- Web server based and command line interfaces
- Scanning agents searching for license and copyright relevant hits (and more …)
- A multi-user / multi-tenant Web UI for review organizing clearing job

FOSSology Development
https://www.github.com/fossology/fossology

- Standard Web application stack:
  - Linux, Apache httpd, PostgreSQL, PHP,
- Web-based UI in PHP, but scanners written in C / C++
- Two ways to interact:
  - Web user interface
  - Command line utilities

How does FOSSology work?

See more details the Basic Workflow Description: https://www.fossology.org/get-started/basic-workflow



Upload OSS Package

- Upload an open source package to the server
- Select scan agents that analyze the software

Review and Adjust (“Clearing”)

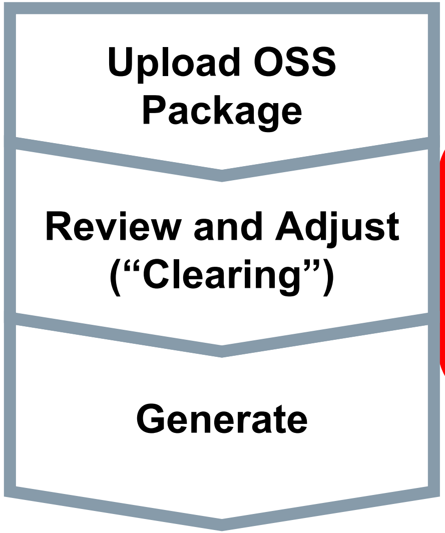
- Review what scanners have found
- Review license occurrences and correct findings if necessary

Generate

- Generate report output
- For example list of licenses or SPDX

What is the point of FOSSology?

See more details the Basic Workflow Description: https://www.fossology.org/get-started/basic-workflow

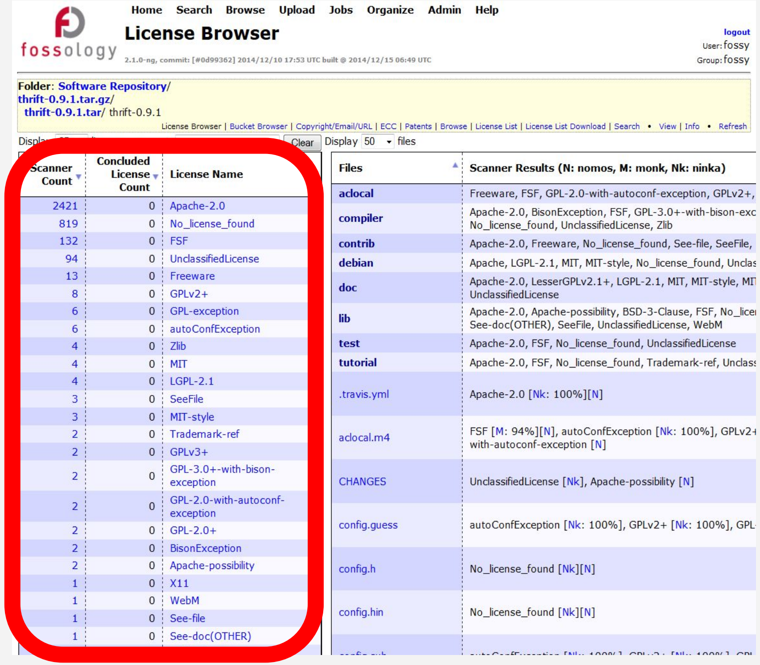


- Upload an open source package to the server
- Select scan agents that analyze the software
- Review what scanners have found
- Review license occurrences and correct findings if necessary
- Generate report output
- For example list of licenses or SPDX

Using FOSSology with this Example

Open Source and Reuse

- It is natural that an OSS project reuses available https://github.com/fossology/fossology
- Likely OSS from other projects is found
- For example, FOSSology will find 25 other licensing relevant text occurrences in Apache thrift



Home
Search
Browse
Upload
Jobs
Organize
Admin
Help
logout
User: fossy
Group: fossy
License Browser | Bucket Browser | Copyright/Email/URL | ECC | Patents | Browse | License List | License List Download | Search • View | Info • Refresh
Clear
Display 50 files

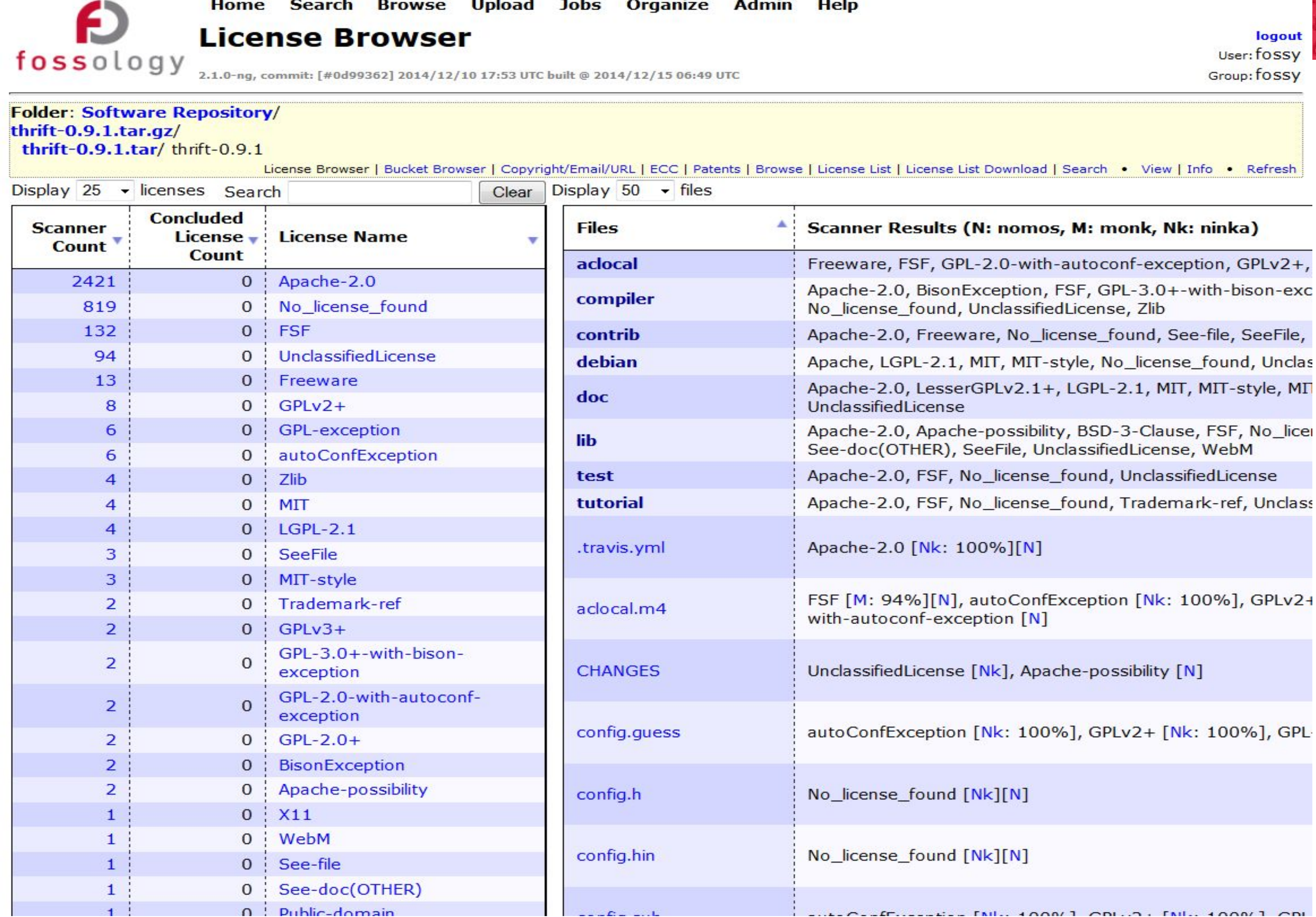
License Browser

2.1.0-ng, commit: [#0d99362] 2014/12/10 17:53 UTC built @ 2014/12/15 06:49 UTC

Folder: Software Repository/
thrift-0.9.1.tar.gz/
thrift-0.9.1.tar/ thrift-0.9.1

Scanner Count	Concluded License Count	License Name
2421	0	Apache-2.0
819	0	No_license_found
132	0	FSF
94	0	UnclassifiedLicense
13	0	Freeware
8	0	GPLv2+
6	0	GPL-exception
6	0	autoConfException
4	0	Zlib
4	0	MIT
4	0	LGPL-2.1
3	0	SeeFile
3	0	MIT-style
2	0	Trademark-ref
2	0	GPLv3+
2	0	GPL-3.0+-with-bison-exception
2	0	GPL-2.0-with-autoconf-exception
2	0	GPL-2.0+
2	0	BisonException
2	0	Apache-possibility
1	0	X11
1	0	WebM
1	0	See-file
1	0	See-doc(OTHER)

Files	Scanner Results (N: nomos, M: monk, Nk: ninka)
aclocal	Freeware, FSF, GPL-2.0-with-autoconf-exception, GPLv2+,
compiler	Apache-2.0, BisonException, FSF, GPL-3.0+-with-bison-exc No_license_found, UnclassifiedLicense, Zlib
contrib	Apache-2.0, Freeware, No_license_found, See-file, SeeFile,
debian	Apache, LGPL-2.1, MIT, MIT-style, No_license_found, Unclas
doc	Apache-2.0, LesserGPLv2.1+, LGPL-2.1, MIT, MIT-style, MI UnclassifiedLicense
lib	Apache-2.0, Apache-possibility, BSD-3-Clause, FSF, No_lice See-doc(OTHER), SeeFile, UnclassifiedLicense, WebM
test	Apache-2.0, FSF, No_license_found, UnclassifiedLicense
tutorial	Apache-2.0, FSF, No_license_found, Trademark-ref, Unclass
.travis.yml	Apache-2.0 [Nk: 100%][N]
aclocal.m4	FSF [M: 94%][N], autoConfException [Nk: 100%], GPLv2+ with-autoconf-exception [N]
CHANGES	UnclassifiedLicense [Nk], Apache-possibility [N]
config.guess	autoConfException [Nk: 100%], GPLv2+ [Nk: 100%], GPL
config.h	No_license_found [Nk][N]
config.hin	No_license_found [Nk][N]


fossology
Home Search Browse Upload Jobs Organize Admin Help
logout

License Browser

2.1.0-ng, commit: [#0d99362] 2014/12/10 17:53 UTC built @ 2014/12/15 06:49 UTC

User: fossy
Group: fossy

Folder: Software Repository/
thrift-0.9.1.tar.gz/
thrift-0.9.1.tar/ thrift-0.9.1

License Browser | Bucket Browser | Copyright/Email/URL | ECC | Patents | Browse | License List | License List Download | Search • View | Info • Refresh

Display 25 licenses Search Display 50 files

Scanner Count	Concluded License Count	License Name
2421	0	Apache-2.0
819	0	No_license_found
132	0	FSF
94	0	UnclassifiedLicense
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6	0	GPL-exception
6	0	autoConfException
4	0	Zlib
4	0	MIT
4	0	LGPL-2.1
3	0	SeeFile
3	0	MIT-style
2	0	Trademark-ref
2	0	GPLv3+
2	0	GPL-3.0+-with-bison-exception
2	0	GPL-2.0-with-autoconf-exception
2	0	GPL-2.0+
2	0	BisonException
2	0	Apache-possibility
1	0	X11
1	0	WebM
1	0	See-file
1	0	See-doc(OTHER)
1	0	Public-domain

Files	Scanner Results (N: nomos, M: monk, Nk: ninka)
aclocal	Freeware, FSF, GPL-2.0-with-autoconf-exception, GPLv2+,
compiler	Apache-2.0, BisonException, FSF, GPL-3.0+-with-bison-exc No_license_found, UnclassifiedLicense, Zlib
contrib	Apache-2.0, Freeware, No_license_found, See-file, SeeFile,
debian	Apache, LGPL-2.1, MIT, MIT-style, No_license_found, Unclas
doc	Apache-2.0, LesserGPLv2.1+, LGPL-2.1, MIT, MIT-style, MIT UnclassifiedLicense
lib	Apache-2.0, Apache-possibility, BSD-3-Clause, FSF, No_licen See-doc(OTHER), SeeFile, UnclassifiedLicense, WebM
test	Apache-2.0, FSF, No_license_found, UnclassifiedLicense
tutorial	Apache-2.0, FSF, No_license_found, Trademark-ref, Unclass
.travis.yml	Apache-2.0 [Nk: 100%][N]
aclocal.m4	FSF [M: 94%][N], autoConfException [Nk: 100%], GPLv2+ with-autoconf-exception [N]
CHANGES	UnclassifiedLicense [Nk], Apache-possibility [N]
config.guess	autoConfException [Nk: 100%], GPLv2+ [Nk: 100%], GPL
config.h	No_license_found [Nk][N]
config.hin	No_license_found [Nk][N]
config.sub	autoConfException [Nk: 100%], GPLv2+ [Nk: 100%], GPL

New Features

Feature: SPDX Import

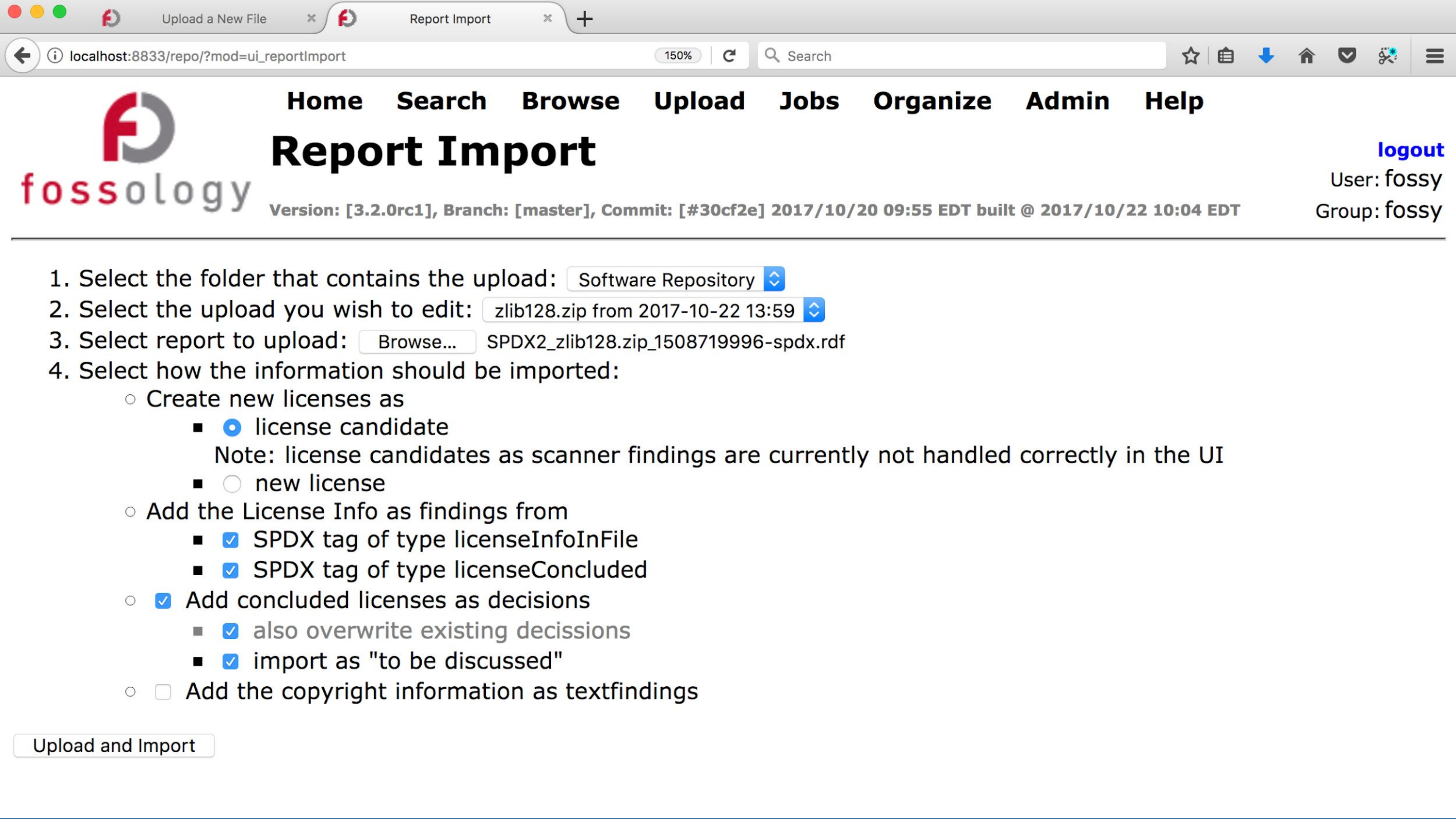
SPDX Import allows for applying SPDX license analysis information to uploaded source code packages

Use Case

- Licensing information in SPDX files require also to see the original source code
- If you receive an SPDX file from another (unknown) organisation, review is maybe necessary
- **How can I review SPDX license information from other source?**

Solution

- FOSSology allows for uploading SPDX files
- Select “Report import” from the “Upload menu”
- Select different options for importing
- Actually it is a little bit difficult
  - How to deal with found in file and concluded licenses?
  - How to deal with new licenses -> create candidates
  - How to deal with conclusions -> take over or stage them?


Upload a New File
Report Import
localhost:8833/repo/?mod=ui_reportImport
150%
Search
fossology
Home Search Browse Upload Jobs Organize Admin Help
logout

Report Import

Version: [3.2.0rc1], Branch: [master], Commit: [#30cf2e] 2017/10/20 09:55 EDT built @ 2017/10/22 10:04 EDT

User: fossy
Group: fossy

1. Select the folder that contains the upload: Software Repository
2. Select the upload you wish to edit: zlib128.zip from 2017-10-22 13:59
3. Select report to upload: Browse... SPDX2_zlib128.zip_1508719996-spdx.rdf
4. Select how the information should be imported:
   - Create new licenses as
     - ● license candidate
       Note: license candidates as scanner findings are currently not handled correctly in the UI
     - ○ new license
   - Add the License Info as findings from
     - ☑ SPDX tag of type licenseInfoInFile
     - ☑ SPDX tag of type licenseConcluded
   - ☑ Add concluded licenses as decisions
     - ☑ also overwrite existing decissions
     - ☑ import as "to be discussed"
   - □ Add the copyright information as textfindings

Upload and Import

(Note: Importing SPDX and reuse of licensing analysis information)

Feature: Analysis Documentation

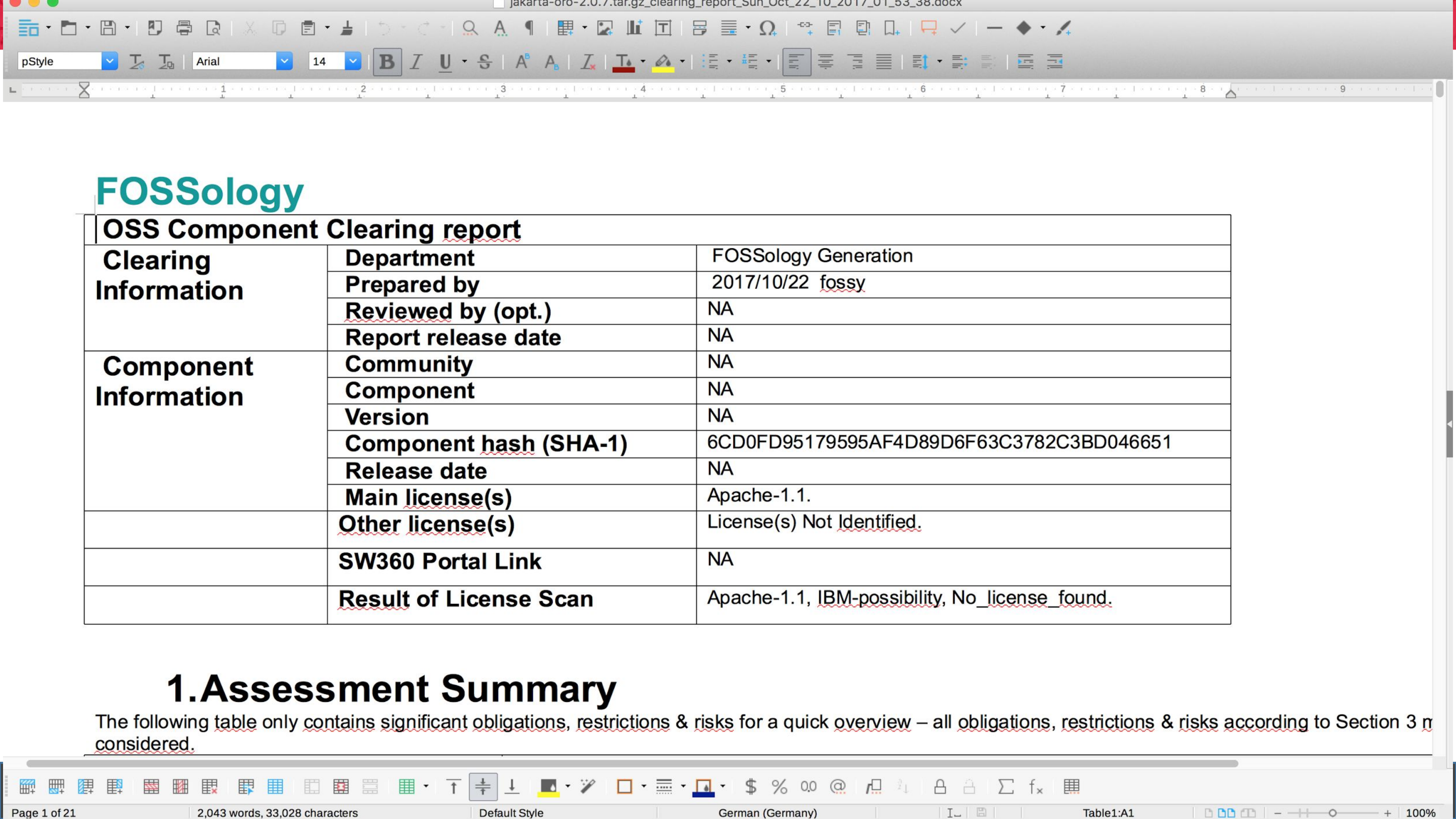
Detailed documentation of the licensing analysis of a component

Use Case

- Exchanging licensing documentation with SPDX is fine, but ...
- Can I have documentation of my analysis?
- Can I provide comprehensive reporting what was analysed?
- **How can tell others what needs to be done?**

Solution

- Now generate a report
- Same as with SPDX output
- Contains rich set of elements
- License listings, copyright listings, ECC listing, Bulk phrase listing, ignored files listing, remarks listing
  - Trying to summarise all information out of FOSSology for a component


jakarta-oro-2.0.7.tar.gz_clearing_report_Sun_Oct_22_10_2017_01_53_38.docx
pStyle
Arial
14

FOSSology

OSS Component Clearing report		
Clearing Information	**Department**	FOSSology Generation
	Prepared by	2017/10/22 fossy
	Reviewed by (opt.)	NA
	Report release date	NA
Component Information	**Community**	NA
	Component	NA
	Version	NA
	Component hash (SHA-1)	6CD0FD95179595AF4D89D6F63C3782C3BD046651
	Release date	NA
	Main license(s)	Apache-1.1.
	Other license(s)	License(s) Not Identified.
	SW360 Portal Link	NA
	Result of License Scan	Apache-1.1, IBM-possibility, No_license_found.

1.Assessment Summary

The following table only contains significant obligations, restrictions & risks for a quick overview – all obligations, restrictions & risks according to Section 3 m
considered.

Feature: Obligations / Policies Management

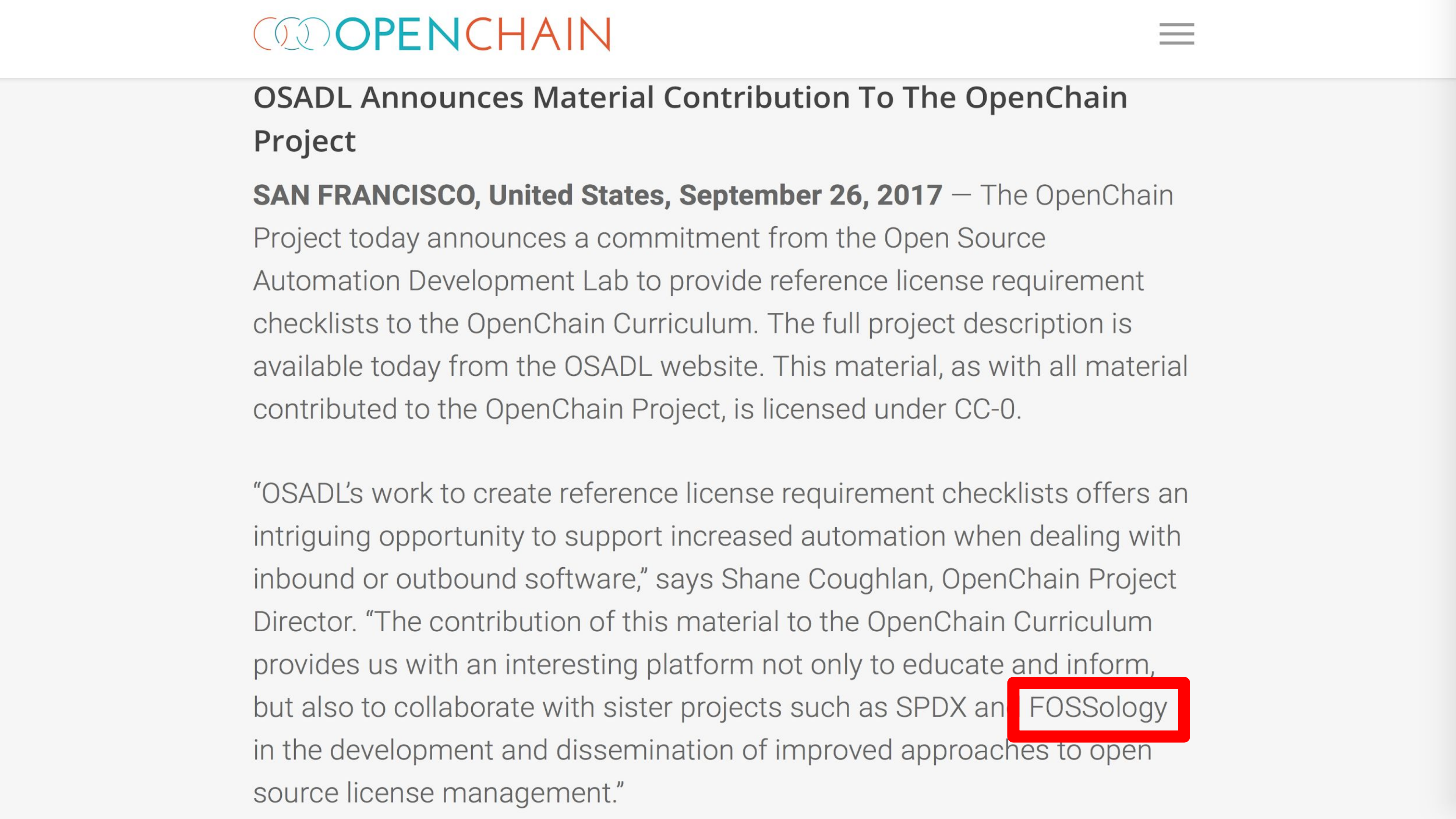
Obligation or Policies = what you need to do when using software under a particular OSS license

Use Case

- List of licenses is good, but ...
- … who understands what to do in your organisation?
- Obligations / Policies explain what to do , but how to get them in?
- **How can I have the involved obligations with the licenses?**

Solution

- Similar to licenses: obligations or policies
- Managed in the admin section
- But it is not so simple:
  - How to deal with candidate licenses?
  - How to deal with redundant obligations?
  - How to update the database?



OSADL Announces Material Contribution To The OpenChain Project

SAN FRANCISCO, United States, September 26, 2017 — The OpenChain Project today announces a commitment from the Open Source Automation Development Lab to provide reference license requirement checklists to the OpenChain Curriculum. The full project description is available today from the OSADL website. This material, as with all material contributed to the OpenChain Project, is licensed under CC-0.

“OSADL’s work to create reference license requirement checklists offers an intriguing opportunity to support increased automation when dealing with inbound or outbound software,” says Shane Coughlan, OpenChain Project Director. “The contribution of this material to the OpenChain Curriculum provides us with an interesting platform not only to educate and inform, but also to collaborate with sister projects such as SPDX and FOSSology in the development and dissemination of improved approaches to open source license management.”

One more thing ...

License Scanning or Source Code Scanning?

Why Or?

License Scanning and Source Code Scanning

fossology

Source code scanning scan for source code and snippets in a database for determining the origin at first hand

Use Case

- Searching for licensing information by license statements does not find the source code origin.
- Was source code copied?
- **How can I find the origin of Source code?**

Solution

FOSSology can search for licensing statements, but it does not have a database for source code.

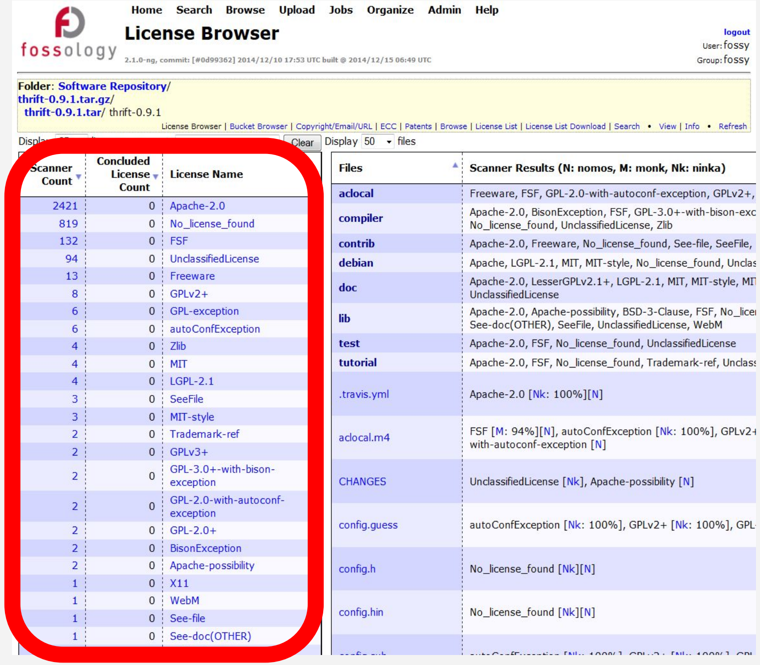
- A source code database would be needed to match source code and determine its origin (and more)
- **But FOSSology has a plug in architecture**
- **FOSSid forked FOSSology to create a custom version ...**

Get the database from there ....

FOSSid Agent for FOSSology

FOSSid Customers can FOSSology to the database

- Like any other agent, the FOSSid agent is called for every file
- It is connecting the FOSSid CLI locally installed
- The UI can display highlights and links to the FOSSid database source files.
- Contact FOSSid the guys for getting access to the github repo!



Home Search Browse Upload Jobs Organize Admin Help
fossology
logout

License Browser

2.1.0-ng, commit: [#0d99362] 2014/12/10 17:53 UTC built @ 2014/12/15 06:49 UTC

User: fossy
Group: fossy

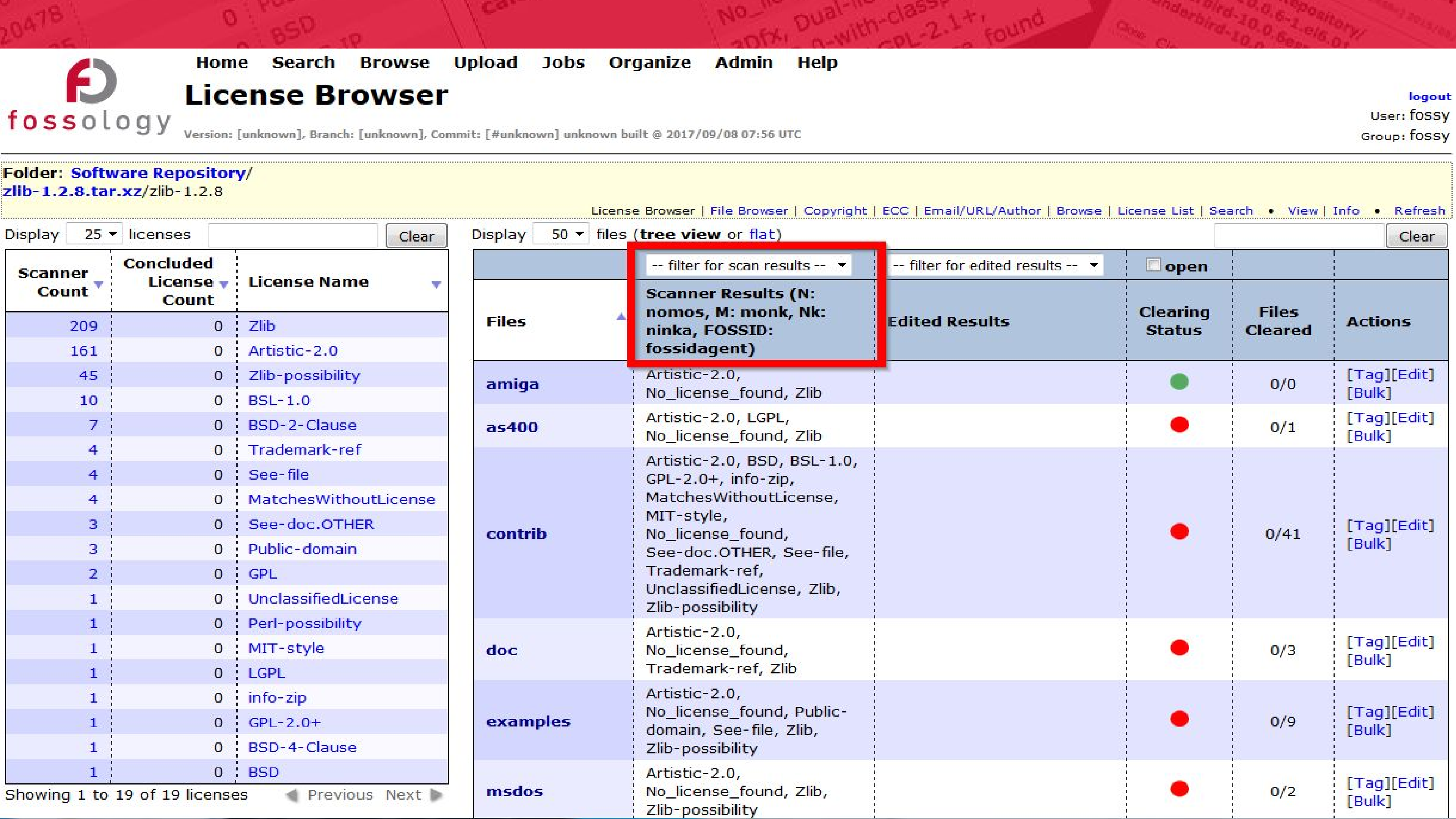
Folder: Software Repository/
thrift-0.9.1.tar.gz/
thrift-0.9.1.tar/ thrift-0.9.1

License Browser | Bucket Browser | Copyright/Email/URL | ECC | Patents | Browse | License List | License List Download | Search • View | Info • Refresh
Clear

Display 50 files

Scanner Count	Concluded License Count	License Name
2421	0	Apache-2.0
819	0	No_license_found
132	0	FSF
94	0	UnclassifiedLicense
13	0	Freeware
8	0	GPLv2+
6	0	GPL-exception
6	0	autoConfException
4	0	Zlib
4	0	MIT
4	0	LGPL-2.1
3	0	SeeFile
3	0	MIT-style
2	0	Trademark-ref
2	0	GPLv3+
2	0	GPL-3.0+-with-bison-exception
2	0	GPL-2.0-with-autoconf-exception
2	0	GPL-2.0+
2	0	BisonException
2	0	Apache-possibility
1	0	X11
1	0	WebM
1	0	See-file
1	0	See-doc(OTHER)

Files	Scanner Results (N: nomos, M: monk, Nk: ninka)
aclocal	Freeware, FSF, GPL-2.0-with-autoconf-exception, GPLv2+,
compiler	Apache-2.0, BisonException, FSF, GPL-3.0+-with-bison-exc No_license_found, UnclassifiedLicense, Zlib
contrib	Apache-2.0, Freeware, No_license_found, See-file, SeeFile,
debian	Apache, LGPL-2.1, MIT, MIT-style, No_license_found, Unclas
doc	Apache-2.0, LesserGPLv2.1+, LGPL-2.1, MIT, MIT-style, MI UnclassifiedLicense
lib	Apache-2.0, Apache-possibility, BSD-3-Clause, FSF, No_licer See-doc(OTHER), SeeFile, UnclassifiedLicense, WebM
test	Apache-2.0, FSF, No_license_found, UnclassifiedLicense
tutorial	Apache-2.0, FSF, No_license_found, Trademark-ref, Unclass
.travis.yml	Apache-2.0 [Nk: 100%][N]
aclocal.m4	FSF [M: 94%][N], autoConfException [Nk: 100%], GPLv2+ with-autoconf-exception [N]
CHANGES	UnclassifiedLicense [Nk], Apache-possibility [N]
config.guess	autoConfException [Nk: 100%], GPLv2+ [Nk: 100%], GPL
config.h	No_license_found [Nk][N]
config.hin	No_license_found [Nk][N]


fossology
Home Search Browse Upload Jobs Organize Admin Help
logout

License Browser

Version: [unknown], Branch: [unknown], Commit: [#unknown] unknown built @ 2017/09/08 07:56 UTC

User: fossy
Group: fossy

Folder: **Software Repository**/
zlib-1.2.8.tar.xz/zlib-1.2.8

License Browser | File Browser | Copyright | ECC | Email/URL/Author | Browse | License List | Search • View | Info • Refresh

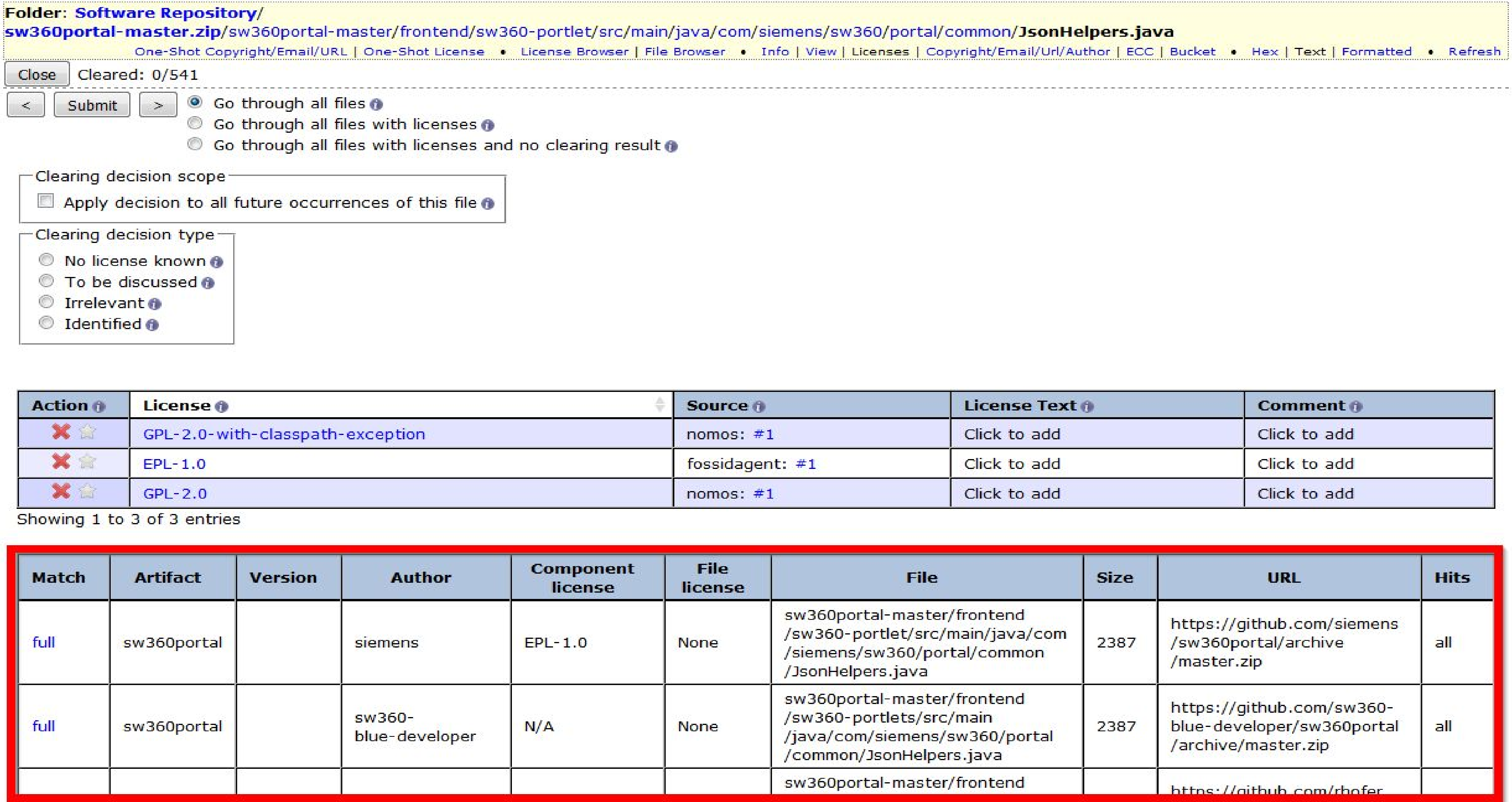
Display 25 licenses Clear

Scanner Count	Concluded License Count	License Name
209	0	Zlib
161	0	Artistic-2.0
45	0	Zlib-possibility
10	0	BSL-1.0
7	0	BSD-2-Clause
4	0	Trademark-ref
4	0	See-file
4	0	MatchesWithoutLicense
3	0	See-doc.OTHER
3	0	Public-domain
2	0	GPL
1	0	UnclassifiedLicense
1	0	Perl-possibility
1	0	MIT-style
1	0	LGPL
1	0	info-zip
1	0	GPL-2.0+
1	0	BSD-4-Clause
1	0	BSD

Showing 1 to 19 of 19 licenses ◀ Previous Next ▶

Display 50 files (**tree view** or flat) Clear

	-- filter for scan results --	-- filter for edited results --	□ open		
Files	Scanner Results (N: nomos, M: monk, Nk: ninka, FOSSID: fossidagent)	Edited Results	Clearing Status	Files Cleared	Actions
amiga	Artistic-2.0, No_license_found, Zlib		🟢	0/0	[Tag][Edit][Bulk]
as400	Artistic-2.0, LGPL, No_license_found, Zlib		🔴	0/1	[Tag][Edit][Bulk]
contrib	Artistic-2.0, BSD, BSL-1.0, GPL-2.0+, info-zip, MatchesWithoutLicense, MIT-style, No_license_found, See-doc.OTHER, See-file, Trademark-ref, UnclassifiedLicense, Zlib, Zlib-possibility		🔴	0/41	[Tag][Edit][Bulk]
doc	Artistic-2.0, No_license_found, Trademark-ref, Zlib		🔴	0/3	[Tag][Edit][Bulk]
examples	Artistic-2.0, No_license_found, Public-domain, See-file, Zlib, Zlib-possibility		🔴	0/9	[Tag][Edit][Bulk]
msdos	Artistic-2.0, No_license_found, Zlib, Zlib-possibility		🔴	0/2	[Tag][Edit][Bulk]



Folder: Software Repository/ sw360portal-master.zip/sw360portal-master/frontend/sw360-portlet/src/main/java/com/siemens/sw360/portal/common/**JsonHelpers.java**

One-Shot Copyright/Email/URL | One-Shot License • License Browser | File Browser • Info | View | Licenses | Copyright/Email/Url/Author | ECC | Bucket • Hex | Text | Formatted • Refresh
Close
<
Submit
>

Cleared: 0/541

- ● Go through all files
- ○ Go through all files with licenses
- ○ Go through all files with licenses and no clearing result

Clearing decision scope

- □ Apply decision to all future occurrences of this file

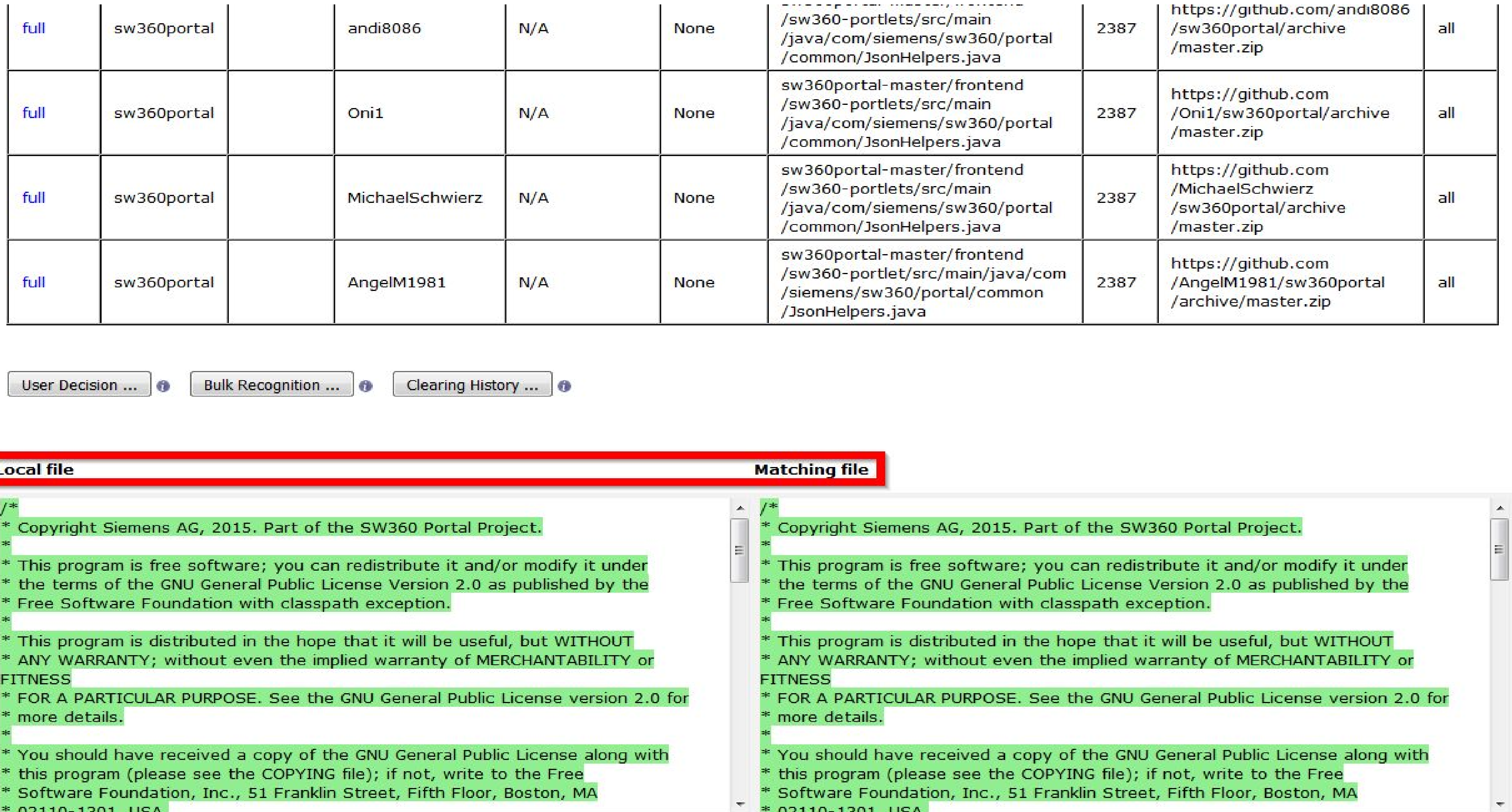
Clearing decision type

- ○ No license known
- ○ To be discussed
- ○ Irrelevant
- ○ Identified

Action	License	Source	License Text	Comment
✖ ☆	GPL-2.0-with-classpath-exception	nomos: #1	Click to add	Click to add
✖ ☆	EPL-1.0	fossidagent: #1	Click to add	Click to add
✖ ☆	GPL-2.0	nomos: #1	Click to add	Click to add

Showing 1 to 3 of 3 entries

Match	Artifact	Version	Author	Component license	File license	File	Size	URL	Hits
full	sw360portal		siemens	EPL-1.0	None	sw360portal-master/frontend/sw360-portlet/src/main/java/com/siemens/sw360/portal/common/JsonHelpers.java	2387	https://github.com/siemens/sw360portal/archive/master.zip	all
full	sw360portal		sw360-blue-developer	N/A	None	sw360portal-master/frontend/sw360-portlets/src/main/java/com/siemens/sw360/portal/common/JsonHelpers.java	2387	https://github.com/sw360-blue-developer/sw360portal/archive/master.zip	all
						sw360portal-master/frontend		https://github.com/rhofer	



full	sw360portal		andi8086	N/A	None	/sw360-portlets/src/main /java/com/siemens/sw360/portal /common/JsonHelpers.java	2387	https://github.com/andi8086 /sw360portal/archive /master.zip	all
full	sw360portal		Oni1	N/A	None	sw360portal-master/frontend /sw360-portlets/src/main /java/com/siemens/sw360/portal /common/JsonHelpers.java	2387	https://github.com /Oni1/sw360portal/archive /master.zip	all
full	sw360portal		MichaelSchwierz	N/A	None	sw360portal-master/frontend /sw360-portlets/src/main /java/com/siemens/sw360/portal /common/JsonHelpers.java	2387	https://github.com /MichaelSchwierz /sw360portal/archive /master.zip	all
full	sw360portal		AngelM1981	N/A	None	sw360portal-master/frontend /sw360-portlet/src/main/java/com /siemens/sw360/portal/common /JsonHelpers.java	2387	https://github.com /AngelM1981/sw360portal /archive/master.zip	all

Local file **Matching file**

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Summary

Summary

1. **FOSSology for precise license analysis**
   FOSSology is a mature framework and Web application for license analysis

2. **SPDX Import**
   Finally: review of SPDX documents and … reuse of licensing info at new versions

3. **New Document Report**
   Beyond exchange of license information: Complete documentation of analysis

4. **Obligations / Policies handling**
   Organise obligations with the found licenses.

5. **FOSSid: Scan for source code with the FOSSid database**
   To get container running in the continuous build

Internet
https://www.fossology.org

Github
https://github.com/fossology/fossology

Further Links
https://www.spdx.org
https://www.openchainproject.org
https://github.com/sw360/sw360portal