# FOSSologyの CLI / REST API を叩いてみた

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NECソリューションイノベータ株式会社

About

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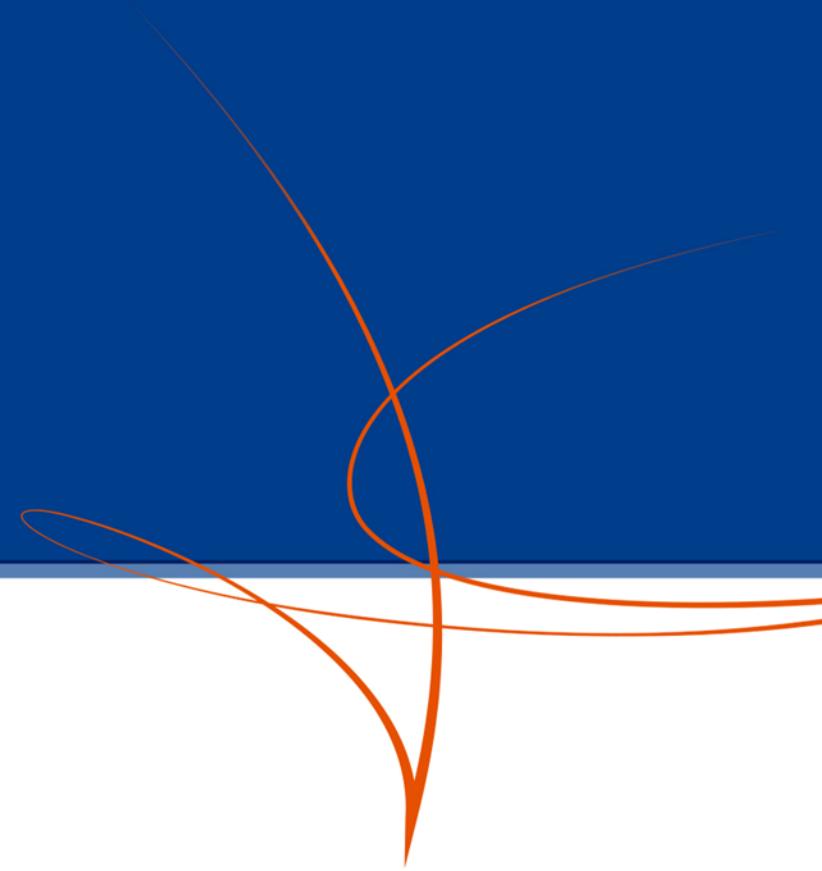
About FOSSology

The Linux Foundation傘下のプロジェクトで開発中のライセンススキャナ
FOSSology自体もOSSで公開されており無料で利用可能

FOSSologyの主な機能

- 検査対象のファイルの，ライセンス，著作権（帰属告知）を検出する
- あくまでライセンススキャナであり，某商用ツールと異なり，どのOSSのソースであるかの判定は行わない．
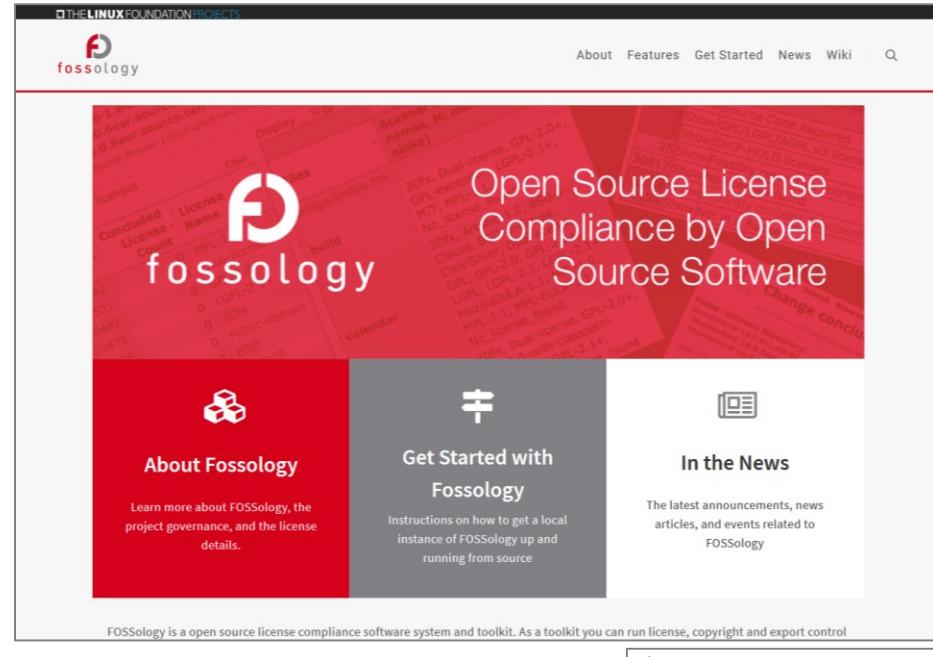
FOSSologyの主な使い方

- Web UI
- CLI
- REST API

引用:
https://www.fossology.org/

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About this Document

本書はFOSSologyのインターフェースのうち,
CLI と REST API を調査した結果をまとめたものである.

評価環境

FOSSology環境	
FOSSologyバージョン	FOSSology Version: [3.5.0], Branch: [master], Commit: [#171d4d] 2019/04/12 08:47 UTC built @ 2019/04/12 09:32 UTC
インストール方法	Docker版

仮想マシン環境(Hyper-V)	
OS	Ubuntu 16.04 LTS
リソース	V-CPU 1core (2thread), MEM 4GB

ホストマシン環境	
OS	Windows 10 Pro
リソース	Core i7-8700 (6core/12thread), MEM 32GB

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FOSSology CLI

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FOSSology

Overview Activity News **Documentation** Forums
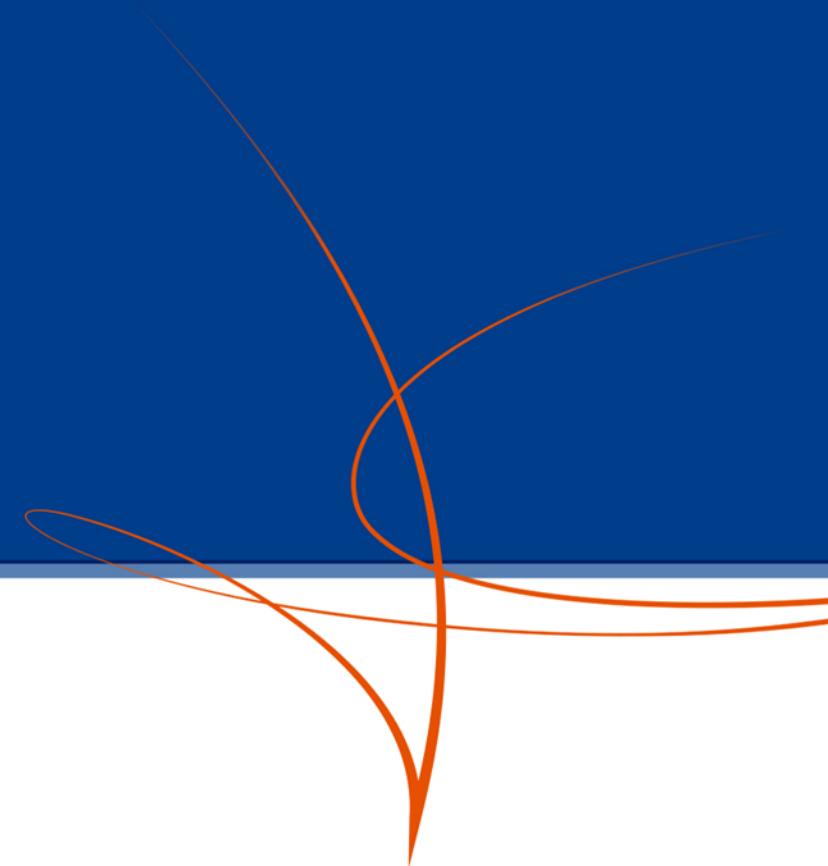
Using FOSSology from the Command Line

These command line utilities are helpful for sysadmins automating certain FOSSology tasks.

User Commands

cp2foss	Copy files to a FOSSology server, and run scans.
fossjobs	Queue up a FOSSology analysis job on an upload that is already in the repository.
fo_copyright_list	Gets copyrights from an upload (or upload subtree)
fo_nomos_license_list	Gets licenses from an upload (or upload subtree)
fo_antelink.php	Prototype that tags open source files by using the commercial Antepedia server for identification
fo_tagfoss.php	Prototype to do VERY basic foss discovery using the Antepedia public database server
fo_tagfile.php	Prototype to tag files based on an input list of file paths

Stand alone agents

Most agents can be run stand alone, outside the FOSSology infrastructure. To see their command line options, use {command} --help. For example,

```
./nomos --help
```

ununpack	Unpack an iso, tar, or any other archive file into its component files.
nomos	Perform a license scan on files listed on the command line.
monk	License scanner. Matches licenses in license_ref table
copyright	Perform a copyright scan on files listed on the command line.
pkgagent	Scan package headers in RPM's and debian packages listed on the command line.
mimetype	Return file types for files listed on the command line.

If you want to run a command line agent in parallel to pick up the speed, try something like this:

```
export myagent=/usr/local/etc/fossology/mods-enabled/nomos/agent/nomos
or
export myagent=/etc/fossology/mods-enabled/nomos/agent/nomos

then run it in parallel:
find /home/users/me/myfiles/ -type f -print0 | parallel -0 -j8 -m 'stdbuf -o0 $myagent'
```

引用:
http://archive15.fossology.org/projects/fossology/wiki/Using_FOSSology_from_the_Command_Line

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FOSSology CLI

以下のコマンドでDocker内でコマンドを叩くようにする

```
$ sudo docker exec -it [container ID] bash
```

基本的な使い方

```
# cp2foss --username fossy --password fossy -q all -A /usr/local/検査対象.zip    ★検査対象を送信し検査する コマンド応答でupload Noが表示される
# fo_copyright_list --user fossy --password fossy -u 3                          ★copyrightレポ出力 これだけ --user なので注意。（おそらくバグ？）
# fo_nomos_license_list --username fossy --password fossy -u 3                  ★licenseレポ出力 "3" はupload No
```

管理上，FOSSology上のツリー分けや，プロジェクト名/概要記載が必要な場合は各オプションで指定する

```
# cp2foss --username fossy --password fossy -q all -f fossology_tree -n project_name -d project_description -A /usr/local/検査対象.zip
```

検査エージェントを指定する場合は以下の種類が使える(WebUIで表示されるチェックボックスに対応)

```
# cp2foss --username fossy --password fossy -q agent_copyright -A /usr/local/検査対象.zip                        ★copyrightのみ
# cp2foss --username fossy --password fossy -q agent_nomos,agent_monk -A /usr/local/検査対象.zip                 ★nomosとmonk
# cp2foss --username fossy --password fossy –Q                                                                  ★使えるエージェントは以下
The available agents are:
 agent_copyright
 agent_ecc
 agent_keyword
 agent_mimetype
 agent_monk
 agent_nomos
 agent_pkgagent
 agent_unpack
 agent_adj2nest
 wget_agent
```

(公式のマニュアルはこちら) http://archive15.fossology.org/projects/fossology/wiki/Using_FOSSology_from_the_Command_Line

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Problem of CLI

CLIの問題点

- 出力可能なレポート形式がショボい
  - License ListとCopyright Listしか出力できない
  - ベタテキストのみ

- SPDX出力に対応していない
  - SPDXならSPDX Tools で スプレッドシート等各種フォーマット変換できるがテキストは不可
  - 他ツールとのデータ交換ができない

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FOSSology REST API

FOSSology

Overview **Activity** **News** **Documentation** **Forums**
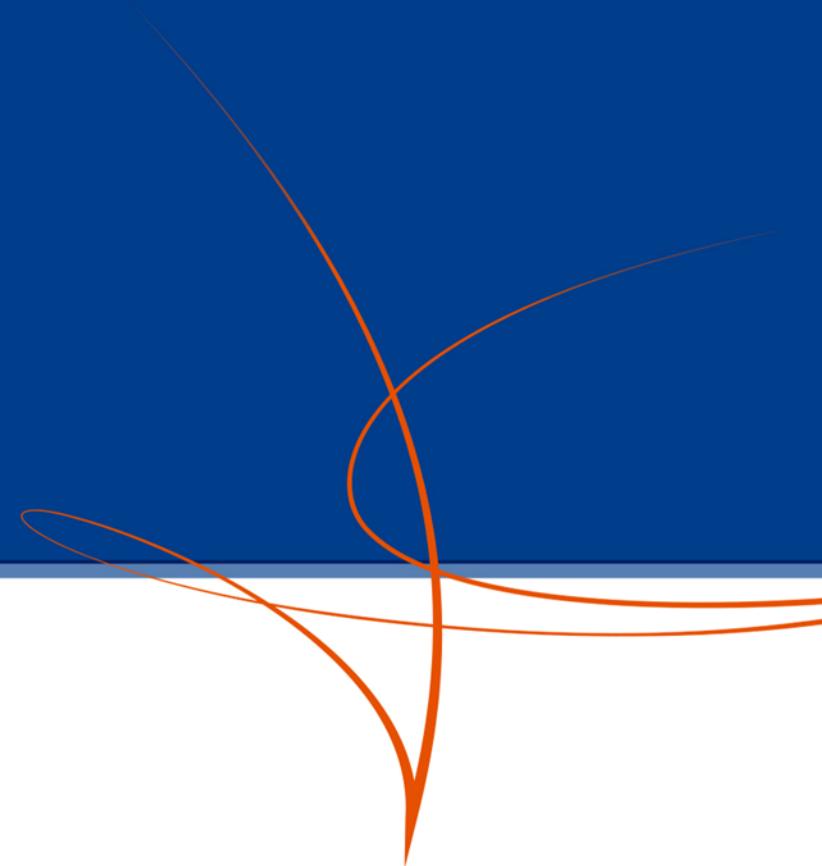
FOSSology RESTful interface

Goal:
Provide a simple HTTP interface for those needing to do their own data access.
This is not an sql replacement, or even a simple grammar, but rather a simple
method to do common queries while hiding the complexities of sql data retrieval.

This is a proposal. The only api that has been implemented to date is the following, which returns a comma separated list of licenses in a single file:

```
wget -qO - --post-file unwind.h http://repo.fossology.org/?mod=agent_nomos_once

Substitute unwind.h for your file.
```

Need to specify in query:

```
1) Does the query apply to a specific file, or every file in a repository file tree?
   Only one of these may be specified.  Default is file.
   &range=file
   &range=tree

2) How to identify a file (range=file) or top of tree (range=tree).
   Zero or more of these may be specified.  Default is whole repository.
   &filepk={uploadtree_pk}   An uploadtree_pk is a fossology internal unique
                             key to a file in an upload file hierarchy.
                             e.g. &filepk=123
   &filename={filename}      e.g. &filename=foo.c
   &filepath={filepath}      e.g. &filepath=foo.tar.gz/A/B/myfile
                                  &filepath=foo.c
   &uploadpk={upload_pk}     An upload_pk is a fossology internal unique key
                             to an uploaded file (which might be a simple file
                             like foo.c or a container like RHEL.x.iso or foo.tar.
                             e.g. &uploadpk=234

3) Query parameters.
   Query parameters may be any table.column, or pseudo parameter (see 4).
     e.g. &pkg_rpm.pkg_name="Pound-2.4-0.1.d.fc8.src.rpm"
          &pkg_rpm.version=1.2.3
```

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REST API

REST API

- ~~Document (~~http://archive15.fossology.org/projects/fossology/wiki/REST_API~~)~~

  - Proposalと書かれている．ましてや The only api that has been implemented to date is the following,とまで書かれている．
    …と言うことに当初気づいていなかった…~~どうやら未リリースのようです．~~

    まさに 3.5.0 のリリースメモ に↓と書かれている…！
    Mainly 3.5.0 adds more documentation, infrastructure improvements and support for brand new FOSSology REST API.

- Source (https://github.com/fossology/fossology/tree/master/src/www/ui/api)

  - 一方，ソースを探してみると実装は進みつつある模様？

    – https://github.com/fossology/fossology/blob/master/src/www/ui/api/Controllers/AuthController.php
      https://github.com/fossology/fossology/blob/master/src/www/ui/api/documentation/openapi.yaml
      このあたりとか．

- Try-Error

  - HTTPリクエスト投げたら responce(error) が返ってくる！

  - FiddlerでHTTP通信キャプチャしたらWeb UIからの操作も似たようなHTTPリクエストを送っている．

    – token取得→検査対象ファイルupload→report出力 を試そう．

というわけで試してみた...

結論からいうと，動きます．

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get リクエストだけを使う場合はread でよい
get リクエスト以外を使う場合write
検査対象をupload する際はpost するのでwrite

以降のページのスクリーンショットは Chrome Extension の Restlet Client 2.19.2 を使用しています.
© 2019 Restlet, Inc. https://restlet.com/modules/client/

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REST API: token取得 (2of2)

Response

Cache Detected - Elapsed Time: 199ms

201 Created

HEADERS ⑦   pretty ▾

Date: Mon, 10 Jun 2019 06:30:28 GMT **+2s**
Server: Apache/2.4.25 (Debian)
Content-Length: 258 bytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/json;charset=utf-8

▸ COMPLETE REQUEST HEADERS

BODY ⑦   pretty ▾

```
▾ {
    Authorization    "Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpc3MiOiJmb3Nzb2xvZ3kubG9jYWwi
  }
```

lines nums   length: 258 bytes

アクセストークンが返される

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REST API: folder取得

folders

METHOD	SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]
GET	http://fossology.local:8082/repo/api/v1/folders

length: 47 bytes

▶ QUERY PARAMETERS

HEADERS ⑦ ↓ᴬ₂   Form ▾   ◀ ▶ BODY ⑦ ↓ᴬ₂

☑ Authorization : Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIUz ✕ ⚲

➕ Add header   ⚲ Add authorization   🗑

Payloads are disallowed for GET request.
Click here to open an entity-body editor
or change a method definition in settings.

アクセストークンで認証する

Response

Cache Detected - Elapsed Time: 124ms

200 OK

HEADERS ⑦   pretty ▾   ◀ ▶ BODY ⑦   pretty ▾

Date: Mon, 10 Jun 2019 06:37:34 GMT +2s
Server: Apache/2.4.25 (Debian)
Content-Length: 66 bytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/json;charset=utf-8

```
▾ [
    ▾ {
        id : 1,
        name : "Software Repository",
        description : "Top Folder"
    }
]
```
lines nums

FOSSology上のフォルダID(1)が返される

▶ COMPLETE REQUEST HEADERS

length: 66 bytes

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REST API: folder作成 (1of2)

folders_create

Save

METHOD | SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]
POST | http://fossology.local:8082/repo/api/v1/folders

Send

length: 47 bytes

▶ QUERY PARAMETERS

HEADERS | Form ◀ | ▶ BODY | Text

☑ Authorization : Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIU
☑ parentFolder : 1
☑ folderName : fossology_test_folder
☑ folderDescription : folder create test via REST API
☑ Content-Type : application/json

＋ Add header | Add authorization

親(ルート)フォルダのID(1)を指定してpost

Text | JSON | XML | HTML | ☑ Enable body evaluation | length: 0 byte

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REST API: folder作成 (2of2)

Response

201 Created

HEADERS ⑦   pretty ▾

Date:	Mon, 10 Jun 2019 06:43:53 GMT +2s
Server:	Apache/2.4.25 (Debian)
Content-Length:	38 bytes
Keep-Alive:	timeout=5, max=100
Connection:	Keep-Alive
Content-Type:	application/json;charset=utf-8

▸ COMPLETE REQUEST HEADERS

BODY ⑦   pretty ▾

```
{
    code :  201,
    message :  2,
    type :  "INFO"
}
```
lines nums

length: 38 bytes

作成したフォルダのID(2)が返される

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REST API: folder作成後 再度folder取得

Response

Cache Detected - Elapsed Time: 110ms

200 OK

HEADERS ⓘ   pretty ▾

Date: Mon, 10 Jun 2019 06:52:24 GMT **+2s**
Server: Apache/2.4.25 (Debian)
Content-Length: 154 bytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/json;charset=utf-8

▸ COMPLETE REQUEST HEADERS

BODY ⓘ   pretty ▾

```
[
  {
    id : 1,
    name : "Software Repository",
    description : "Top Folder"
  },
  {
    id : 2,
    name : "fossology_test_folder",
    description : "folder create test via REST API"
  }
]
```
lines nums   length: 154 bytes

作成したフォルダID(2)の情報が返される

---

fossology

Home   Search   Browse   Upload   Jobs   Organize   Admin   Help

Browse

Version: [3.5.0], Branch: [master], Commit: [#171d4d] 2019/04/12 08:47 UTC built @ 2019/04/12 09:32 UTC

logout
User: fossy
Group: fossy

Folder Navigation	X

Collapse All | Expand All

⊟ Software Repository
　└ fossology_test_folder

Uploads in Software Repository

Show [50 ▾] entries

Search:		▾			▾		
Upload Name and Description ▴		**Status** ▾	**Comment**	**Main licenses**	**Assigned to** ▾	**Upload Date** ▾	**Priority** ▾
No data available in table							

Web UI 上にもきちんと作成されている

ME_OSS generation   SPDX2 generation

Previous   Next

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REST API: file upload (1of3)

フォルダ，解析オプションを指定してファイルを
multipart/form-data形式でpostする

各パラメータはWeb UI経由で検査する際のこの部分に対応
ただし，deciderRules[] (Web UIの「7.」)はどうもうまく動作しなかった

Response

Cache Detected - Elapsed Time: 1.26s

201 Created

HEADERS ⑦   pretty ▾

Date:	Mon, 10 Jun 2019 07:11:58 GMT **+1s**
Server:	Apache/2.4.25 (Debian)
Content-Length:	38 bytes
Keep-Alive:	timeout=5, max=100
Connection:	Keep-Alive
Content-Type:	application/json;charset=utf-8

▸ COMPLETE REQUEST HEADERS

BODY ⑦   pretty ▾

```
{
    code : 201,
    message : 2,
    type : "INFO"
}
```
lines nums

length: 38 bytes

解析のjob ID(2)が返される

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REST API: file upload get

upload_get

Save ● ▼

METHOD

GET ▼

SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]

http://fossology.local:8082/repo/api/v1/uploads

◀ Send ▼

length: 47 bytes

▶ QUERY PARAMETERS

HEADERS ⑦ ↓ᴬ₂   Form ▼   ◀ ▶   **BODY** ⑦ ↓ᴬ₂

☑ Authorization : Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIU ✕ 🔑

➕ Add header   🔑 Add authorization   🗑

Payloads are disallowed for GET request.
Click here to open an entity-body editor
or change a method definition in settings.

Response

Cache Detected - Elapsed Time: 114ms

200 OK

HEADERS ⑦   pretty ▼   ◀ ▶   **BODY** ⑦   pretty ▼

Date: Mon, 10 Jun 2019 07:17:16 GMT **+2s**
Server: Apache/2.4.25 (Debian)
Content-Length: 210 bytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/json;charset=utf-8

▶ COMPLETE REQUEST HEADERS

▼ [
  ▼ {
      folderid : 2,
      foldername : "fossology_test_folder",
      id : 2,
      description : "fossology upload test via REST API",
      uploadname : "Volumio2-master.zip",
      uploaddate : "2019-06-10 07:11:59.200017+00",
      filesize : 7432176

> job ID(2)のuploadsがあることが確認できる

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REST API: file upload get

Web UI 上にもきちんと作成されている

REST API: report生成(1of2)

report_get

Save ●

METHOD	SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]	
GET	http://fossology.local:8082/repo/api/v1/report	Send

length: 46 bytes

▼ QUERY PARAMETERS

➕ Add query parameter

HEADERS ⑦ ↓ᴬ₂   Form ▼ ◀ ▶ BODY ⑦ ↓ᴬ₂

☑ Authorization : Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIU ✕ 🔗

☑ uploadId : 2 ✕

☑ reportFormat : spdx2 ✕

➕ Add header   🔗 Add authorization

Payloads are disallowed for GET request.
Click here to open an entity-body editor
or change a method definition in settings.

解析のjob ID(2)とレポート出力形式(spdx2)を指定する
　'dep5',
　'spdx2',
　'spdx2tv',
　'readmeoss',
　'unifiedreport'
の5種類が指定可能

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Response

201 Created

HEADERS ⑦

pretty ▾

Date: Mon, 10 Jun 2019 07:26:44 GMT +3s
Server: Apache/2.4.25 (Debian)
Content-Length: 80 bytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: application/json;charset=utf-8

▸ COMPLETE REQUEST HEADERS

BODY ⑦

pretty ▾

```
{
    code :  201,
    message :  "fossology.local/repo/api/v1/report/3",
    type :  "INFO"
}
```

lines nums

length: 80 bytes

report ID(3)が返される

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REST API: report取得

reportXX

Save ●

METHOD
GET

SCHEME :// HOST [":" PORT] [PATH ["?" QUERY]]
http://fossology.local:8082/repo/api/v1/report/3

Send

length: 48 bytes

▼ QUERY PARAMETERS

➕ Add query parameter

report ID(3)を指定する

HEADERS ⊘ ↓ᴬ   Form ▾   ◀ ▶   BODY ⊘ ↓ᴬ   preview ▾

☑ Authorization : Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJIU ✕ ⚿

➕ Add header   ⚿ Add authorization   🗑

Payloads are disallowed for GET request.

Click here to open an entity-body editor

or change a method definition in settings.

Response   Cache Detected - Elapsed Time: 164ms

200 OK

HEADERS ⊘   pretty ▾   ◀ ▶   BODY ⊘   preview ▾

Date: Mon, 10 Jun 2019 07:30:41 GMT +2s
Server: Apache/2.4.25 (Debian)
Content-Description: File Transfer
Content-Disposition: attachment; filename="SPDX2_Volumio2-master.zip_1560
                   151604-spdx.rdf"
Cache-Control: must-revalidate
Pragma: private
Content-Length: 361 kilobytes
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive

THE TYPE OF THE RESPONSE BODY
IS UNKNOWN

reportが返される

The server did not provide the mandatory **"Content-type"** header.

Click here to download it,
or open either the hex or raw view.

Reports

名前	更新日時	種類	サイズ
SPDX2TV_Volumio2-master.zip_1560151800.spdx	2019/06/10 16:34	SPDX ファイル	107 KB
SPDX2_Volumio2-master.zip_1560151604-spdx.rdf	2019/06/10 16:30	RDF ファイル	362 KB

```
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:spdx="http://spdx.org/rdf/terms#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#">
<spdx:SpdxDocument rdf:about="http://c2ee8a2dec83/repo/SPDX2_Volumio2-master.zip_1560151604-spdx.rdf#SPDXRef-DOCUMENT">
  <spdx:specVersion>SPDX-2.1</spdx:specVersion>
  <spdx:dataLicense rdf:resource="http://spdx.org/licenses/CC0-1.0" />
```

```
SPDXVersion: SPDX-2.1
DataLicense: CC0-1.0

##------------------------
## Document Information
##------------------------

DocumentNamespace: http://c2ee8a2dec83/repo/SPDX2TV_Volumio2-master.zip_1560151800.spdx
DocumentName: /srv/fossology/repository/report
SPDXID: SPDXRef-DOCUMENT

##------------------------
## Creation Information
##------------------------

Creator: Tool: spdx2
Creator: Person: fossy (y)
CreatorComment: <text>
This document was created using license information and a generator from Fossology.
</text>
Created: 2019-06-10T07:30:00Z
LicenseListVersion: 2.6
```

y.

io2-master.zip_1560151604-spdx.rdf#LicenseRef-GPL">

o view the different versions.

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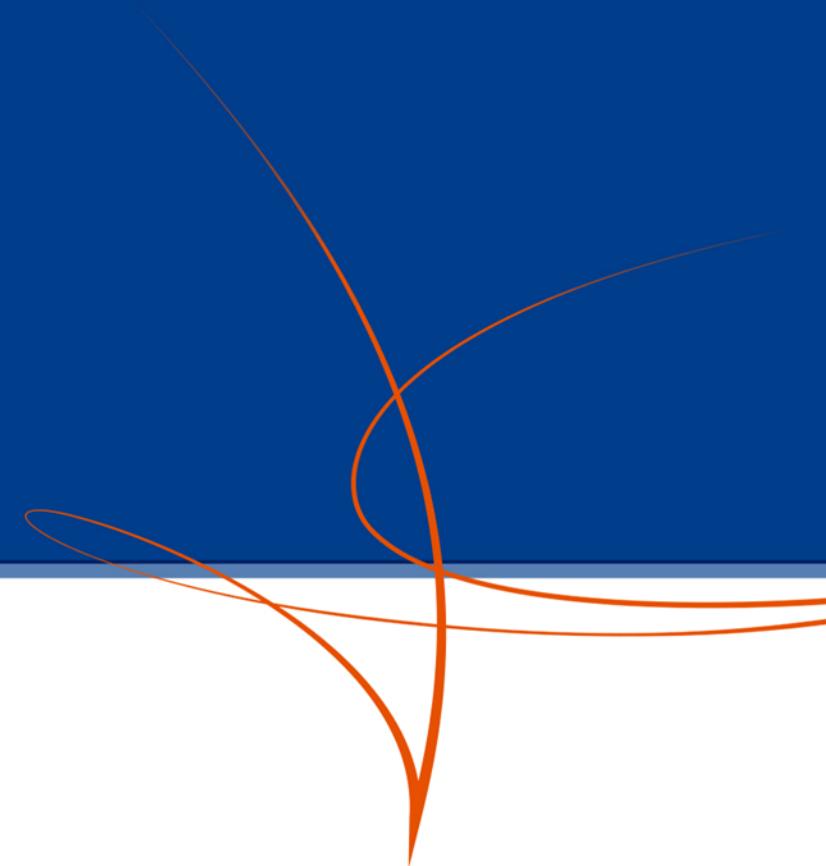
Summary

Summary

REST API の実装状況

- Requestを投げればResponseが返ってくる
- 試した限りではどのRequestも**ほぼ**正常処理された

課題

- Document上は~~Proposalであり未リリースとみられる~~ 　3.5.0 でリリースされました！
  - 一部リクエストについては，パラメータが処理されないケースも見受けられる．
- ~~Documentも整備が未だという状況であり，実装にはソース解読が必要~~
  - 特に以下のソースが有用（これ見れば大体分かる）
    - https://github.com/fossology/fossology/blob/master/src/www/ui/api/documentation/openapi.yaml
    - https://github.com/fossology/fossology/blob/master/src/www/ui/api/index.php
  - 上記で分からなければ（Requestがerrorで返ってくる場合等）以下の各実装を確認する
    - https://github.com/fossology/fossology/tree/master/src/www/ui/api/Controllers

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