

YANG Data Model Catalog and Visualization Web Tool Status Update

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Overview

- Implement draft-openconfig-netmod-model-catalog and develop Model Catalog Visualization Tool
 - a. YANG Data Model Catalog Tool
 - b. RESTFul Web Application for Model Catalog

YANG Data Model Catalog Tool

- Task Goal: Extract the info from YANG models to populate a YANG model catalog
- Extracted Model Catalog Example:
 - "prefix": "oc-bgp-types",
 - "namespace": "http://openconfig.net/yang/bgp-types;",
 - "module-version": "2.0.1",
 - "name": "openconfig-bgp-types",
 - "revision": "2016-03-31"

YANG Data Model Catalog Tool

- Progress since last hackathon (Carl Moberg, Qin, ANURAG BHARGAVA)
 - Start from IETF 95 Hackthon with Anurag on Model extraction tool
 - Working with Carl on Model Catalog tool later after IETF95 meeting
<https://github.com/sunseawq/pyang-module-catalog-plugin/module-catalog.py>
 - The difference between two tools: Integrate model catalog extraction feature into pyang plugin.
- Features include:
 - Features we have already done:
 - Support printing YANG model catalog information in JSON format
 - Support printing YANG model catalog information in XML format
 - Support XML format indenting
 - Features we haven't done:
 - Support extracting Summary and model version parameters from YANG module

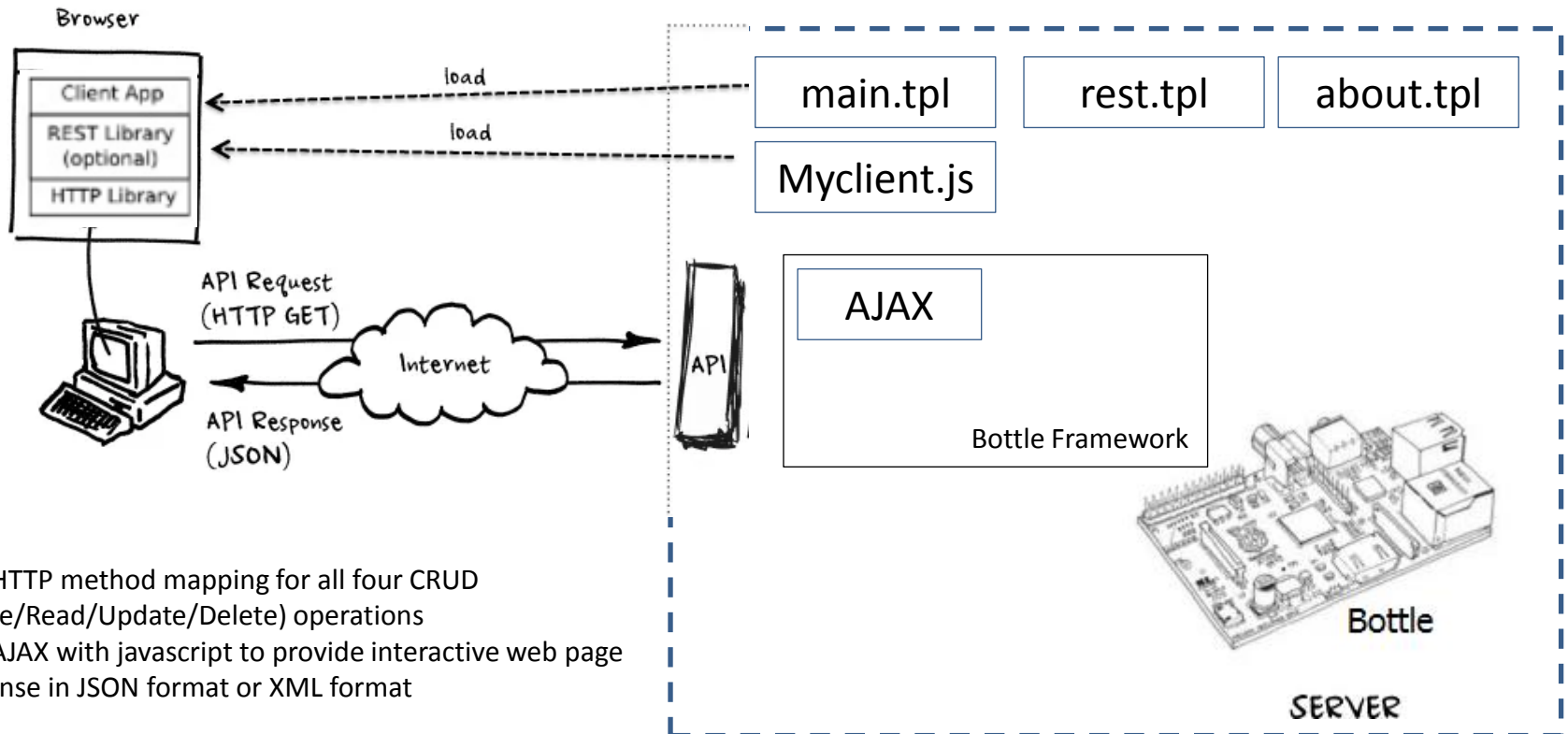
PYANG Plugin

- YANG Plugin is used to convert YANG module into various format, activated with `-f`
- Most plugins have specific command-line switches and argument, e.g.,
`pyang -f tree ietf-interfaces.yang`

RESTFul Web Application for Catalog population

- Task Goal: Extract the Catalog info from YANG models and Use RESTFul Web interface to output the Catalog information per module
- Tool Features include:
 - Support extracting YANG model catalog information based on a individual draft uploaded
 - Support extracting YANG model catalog information based on a YANG module file uploaded
 - Support extracting YANG model catalog based on a set of YANG module files uploaded or a zip file which include a set of YANG module files
 - Support extracting YANG model catalog information based on URL link to RFC number
 - Support extracting YANG model catalog information based on URL link to draft name.

RESTFUL Web application Architecture Setup



REST API

HTTP Method	Entrypoint	Action
POST	/validator	Extract model catalog information from zip file or a list of YANG file
POST	/draft-validator	Extract model catalog information from yang model draft
Get	/api/rfc	Extract model catalog information based on rfc number
Get	/api/draft	Extract model catalog information based on draft name

Demo Installation

- Please ensure that development libraries for bottle and cherrypy are installed.
- Step 1: Clone Model Catalog RESFUL Web application project to your application folder

git clone <https://github.com/catalog-tool/catalog.git>

- Step 2: Install required software including xym, bottle, cherrypy, json.
- Step 3: Install model catalog plugin
- Step 4: Run the cherrypy server
- Step 5: Open <http://localhost:8080> in the browser

Demo UI

You should be able to see the Main Page at
<http://localhost:8080>

← → ↻ localhost:8080

Home REST API About

Fetch YANG models Catalog in either JSON format or XML format

The form below allows you to fetch YANG modules Catalog information in appropriate format by RFC number, by IETF draft name, or by uploading IETF drafts or YANG files.

Upload multiple YANG files or a zip archive

Upload Internet Draft

Fetch YANG Module Catalog Information based on IETF RFC number

Fetch YANG Module Catalog information based on IETF Draft name

Demo Test Case Example

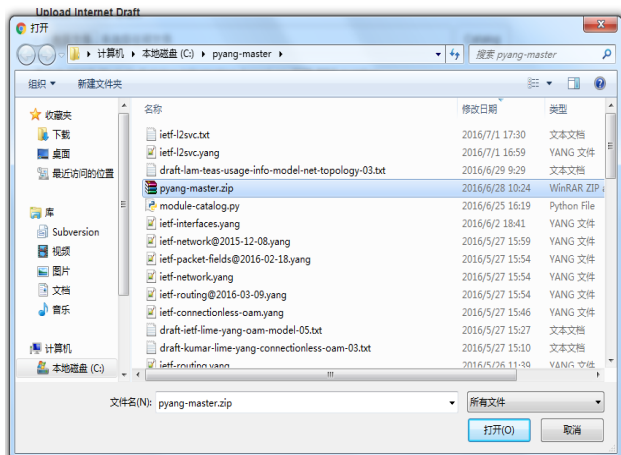
- Extracting YANG model catalog information from a zip file

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Upload multiple YANG files or a zip archive

未选择任何文件



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Upload multiple YANG files or a zip archive

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Upload Internet Draft

未选择任何文件

Fetch YANG Module Catalog Information based on IETF RFC number

Fetch YANG Module Catalog information based on IETF Draft name

Extracted 2 YANG modules

- ietf-network.yang
- ietf-interfaces.yang

ietf-network.yang

Validation

No warnings or errors

Output

```
json  xml
{
  "prefix": "nd",
  "namespace": "urn:ietf:params:xml:ns:yang:ietf-network",
  "name": "ietf-network",
  "revision": "2015-06-08"
}
```

ietf-interfaces.yang

Validation

No warnings or errors

Output

```
json  xml
{
  "prefix": "if",
  "namespace": "urn:ietf:params:xml:ns:yang:ietf-interfaces"
}
```

Next Step

- Bundling Service Support
- Make it available at github after Hackathon