

YANG Data Model Catalog and Visualization Web Tool

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Required Software

- Pyang tool: Validate YANG model and Covert into various other Format

<https://github.com/mbj4668/pyang>

- Python tool

<https://www.python.org/downloads>

- Python 2.7 (recommmend)
- Python 3.3

- VirutualEvn: creating isolated 'virtual' python environments

<https://github.com/pypa/virtualenv>

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`

YANG Data Model Catalog Tool

- Task Goal: Extract the info from YANG models to populate a YANG model catalog, for the industry (draft-openconfig-netmod-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"

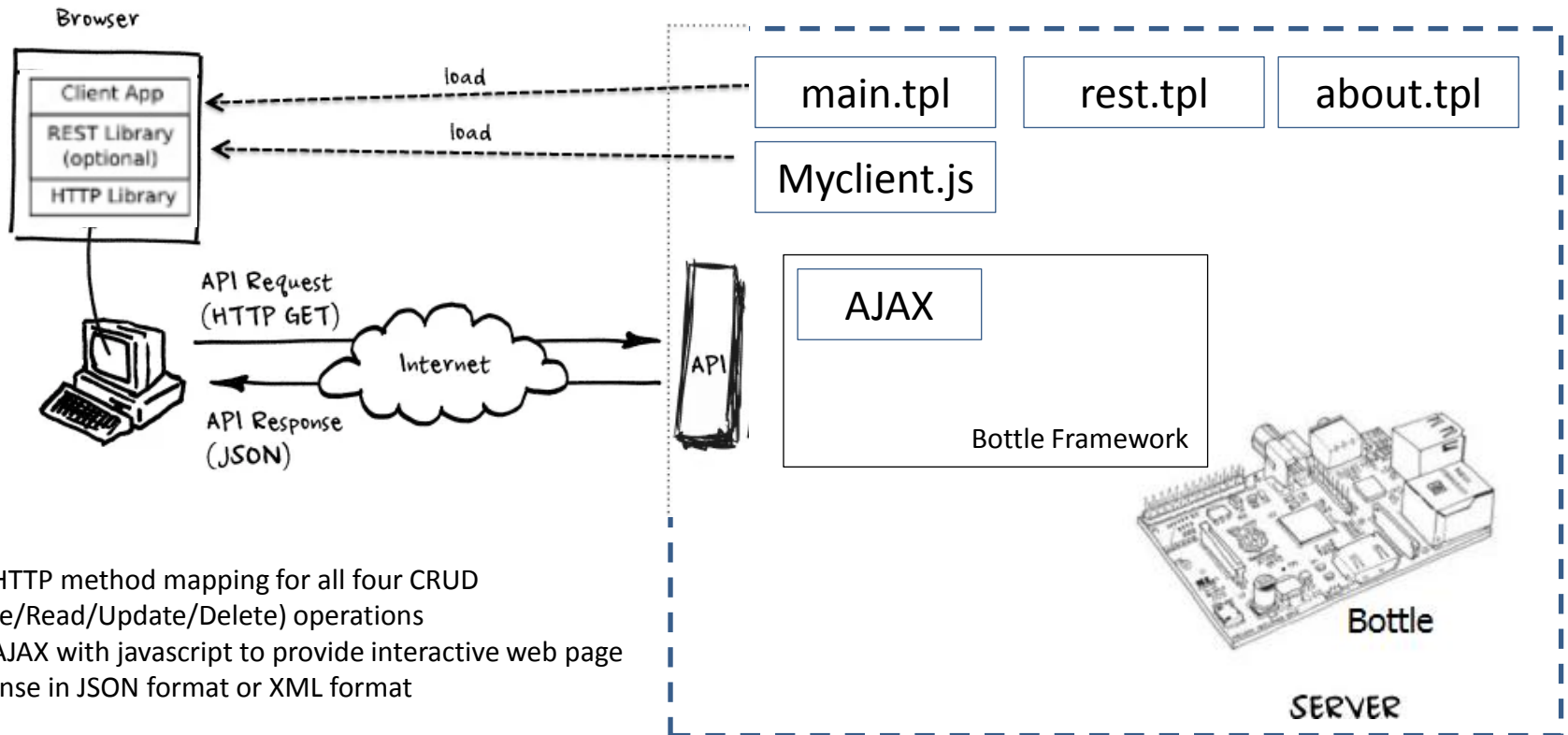
YANG Data Model Catalog Tool

- 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/blob/master/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

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



Required Software

- Cherrypy: pythonic, object-oriented HTTP framework

<https://github.com/cherryypy/cherryypy>

- Bottle: **Python Web Framework**

<https://github.com/bottlepy/bottle>

- Xym: extracting YANG modules from files

<https://github.com/xym-tool/xym>

- Simplejson: JSON Encoder and Decoder for Python

<https://github.com/simplejson/simplejson>

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