



Implement find-dependency solution with reverse dependency list in ietf-yang- library

IETF 121

2–3 November 2024

Dublin, Ireland

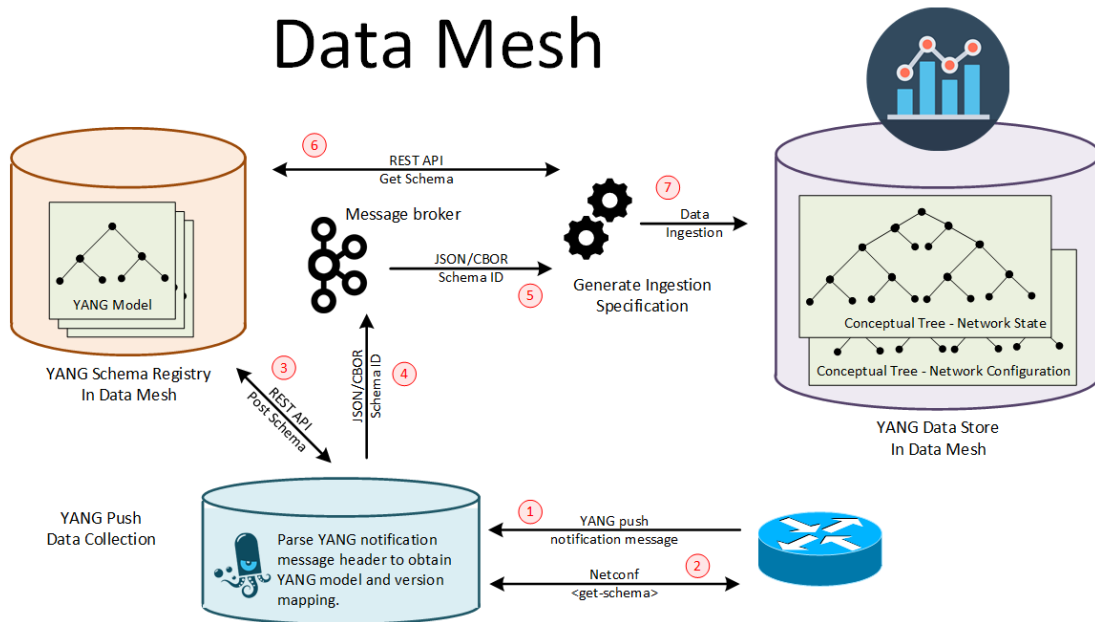
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Motivation

For the YANG application(draft-yang-kafka-integration) we are trying to deliver, provide a light-weight solution to utilize YANG module and its references without missing dependency.

Data Mesh



Hackathon Plan

<What problem were you working on?>

- Draft implementation test:
 - draft-ietf-netconf-yang-notifications-versioning-05
 - draft-ietf-netconf-yang-library-augmentedby-01

<How you planned to solve it?>

- Implement test for draft-ietf-netconf-yang-notifications-versioning
- Incorporate with Huawei Test Release R024C10SPC500T that support the augmentedby feature

What got done

- <What you achieved?>
- Deliver test program to parse YANG-Push <subscription-update>:
 - ❑ Read the subscribed module
 - ❑ Parse the module-version

```
root@5de747bb1f4c:/libyangpush/example/build# ./example_parse_yangpush_version
huawei-debug
module name: huawei-debug
module version: 2024-06-19
module version label: 1.0.0
```

```
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>
    2024-10-25T07:05:17Z
  </eventTime>
  <subscription-started xmlns="urn:ietf:params:xml:ns:yang:ietf-subscribed-notifications">
    <id>1</id>
    <datastore xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-push" xmlns:ds="urn:ietf:params:xml:ns:yang:ietf-datastores">ds:runni
    </datastore>
    <datastore-xpath-filter xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-push" xmlns:debug="urn:huawei:yang:huawei-debug" xmlns:i
    /debug:debug/debug:board-resouce-states/debug:board-resouce-state|/debug:debug/debug:cpu-infos/debug:cpu-info|/debug:debu
    </datastore-xpath-filter>
    <transport xmlns:unt="urn:ietf:params:xml:ns:yang:ietf-udp-notif-transport":unt:udp-notif</transport>
    <encoding>encode-json</encoding>
    <message-publisher-ids xmlns="urn:ietf:params:xml:ns:yang:ietf-distributed-notif">16974828</message-publisher-ids>
    <message-publisher-ids xmlns="urn:ietf:params:xml:ns:yang:ietf-distributed-notif">16973828</message-publisher-ids>
    <message-publisher-ids xmlns="urn:ietf:params:xml:ns:yang:ietf-distributed-notif">16974839</message-publisher-ids>
    <periodic xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-push">
    <period>6000</period></periodic>
    <module-version xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-push-revision">
      <module-name>
        huawei-debug
      </module-name>
      <revision>
        2024-06-19
      </revision>
      <revision-label>
        1.0.0
      </revision-label>
    </module-version>
    <module-version xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-push-revision">
      <module-name>
        huawei-ifm
      </module-name>
```

What got done

- <What you achieved?>
- Deliver test program to generate get-yanglib rpc according to the subscribed module and parse from the yanglib response the reverse-dependency list

```
[TZHZHLI1@ietf-yp-augm ~]$ python3 netconf.py
/home/TZHZHLI1/.local/lib/python3.6/site-packages/paramiko/transport.py:32: CryptographyDeprecationWarning: Python 3.6 is no longer supported by the Python core team. Therefore, support for it is deprecated in cryptography. The next release of cryptography will remove support for Python 3.6.
  from cryptography.hazmat.backends import default_backend
<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
  <yang-library xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-library">
    <module-set>
      <name>config-module</name>
      <module>
        <name>huawei-debug</name>
        <revision>2024-06-19</revision>
        <namespace>urn:huawei:yang:huawei-debug</namespace>
        <deviation>huawei-debug-deviations-OC-NE-M2K-B</deviation>
      </module>
    </module-set>
  </yang-library>
</data>
```

```
root@f38fb9c0cda9:/libyangpush/example/build# ./example_parse_yanglib huawei-debug
augmentation list size 0
deviation list size 1
augmented-by module:
deviation module:
huawei-debug-deviations-OC-NE-M2K-B
```

What we learned

- For test of draft-ietf-netconf-yang-notifications-versioning:
 - Module-version helps the YANG-Push subscriber learn about module changes from the subscription update
- Incorporate and validate the Huawei test release with libyangpush

The screenshot shows the GitHub interface for the repository 'netopeer2-ietf121'. The repository is owned by 'Zephyre777' and is part of the 'draft-lincla-netconf-yang-library-augmentation' organization. The repository has 1 star and 0 issues. The 'Details' section shows the repository name, the owner's name, and the last published time (4 days ago). The 'Recent tagged image versions' section lists three versions: v1.3, v1.1, and v1.0, all published 4 days ago. The 'Contributors' section lists three contributors: Zephyre777 Zh..., idomingu Igna..., and bclaise. The 'Install from the command line' section shows the command: `$ docker pull ghcr.io/zephyre777/netopeer2-ietf121:v1.3`. The 'Readme.md' section is visible at the bottom.

Docker image link:
<https://github.com/Zephyre777/draft-lincla-netconf-yang-library-augmentation/pkgs/container/netopeer2-ietf121>

IETF Hackathon - <Project name>

Future work

- Improve libyangpush to parse datastore-filter that contains multiple filters
- Deliver application to consume from YANG-Push message stream and real-time parse it

Wrap Up

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Code link:

<https://github.com/Zephyre777/draft-lincla-netconf-yang-library-augmentation/pkgs/container/netopeer2-ietf121>