NETMOD Versioning Solution Update

NETMOD WG
Nov 2021

Presenting on behalf of the weekly versioning call attendees:
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IETF 112
Agenda

This presentation:
   Solution Overview – Balazs Lengyel

Following presentations on individual drafts:
   YANG Packages – Bo Wu

See backup slides for solution overview & summary of Module Versioning and YANG Semver drafts.
General update on weekly Versioning calls

• Authors + interested parties continue to meet on a weekly call to progress this work
  • Meetings are open to all
  • Regular participation from people across 5+ different companies (mostly equip. vendors, participation from more operators/users would be beneficial)
  • Key issues are brought back to WG mailing list
  • Weekly meeting is currently on Tues @2pm UK time / 9am Eastern.
    Thanks to the authors and contributors for their regular attendance
General update on weekly Versioning calls

Focus of weekly meetings since IETF111:

1) Driving Module Versioning and YANG Semver drafts to completion
   • last of the author top-down reviews are done
   • updates have been rolled into the latest drafts
   • authors believe drafts are ready for WG last call

2) Closing issues against the Packages draft
   • owners assigned to issues to produce updated text
   • many still to work through
Module Versioning Updates Since IETF111

draft-ietf-netmod-yang-module-versioning-05

Following changes were made since rev -03:

1. Clarifications on removal revisions from revision history, section 3.3. Issue #103

2. Multiple editorial changes based on review by various contributors, e.g:
   a) Updates RFC6020
   b) Added couple of SHOULD statements in 7.1 (Guidelines)
YANG Semver Updates Since IETF111

draft-ietf-netmod-yang-semver-05

• Authors conducted top-down review
• Added text to define impact to submodules
• Changed prefix to “ysver” to retain some uniqueness while keeping it short
• Multiple editorial changes
  • Clarified the definition of “YANG Semver”
  • Chase updates to YANG module versioning
• More changes discovered after initial review; version -05 addresses all open issues
YANG Semver Updates Since IETF111
New Text on Submodules

“YANG Semver MAY be used to version submodules. Submodule version are separate of any version on the including module, but if a submodule has changed, then the version of the including module MUST also be updated.

The rules for determining the version change of a submodule are the same as those defined in Section 3.1 and Section 3.2 as applied to YANG modules, except they only apply to the part of the module schema defined within the submodule's file.”

• Essentially, submodules may be versioned based on changes to the schema within the submodule.

• A version bump of a submodule necessitates a version bump of the including module
Next Steps

• Issues tracked in github, discussed on WG mail list
  https://github.com/netmod-wg/yang-ver-dt

• Phase work on the documents:
  • WG LC comments & updates to Module Versioning and YANG Semver
  • Focus on Packages draft:
    • many open issues
    • various people contributing text updates
  • Version Selection and Schema Comparison to follow
BACKUP SLIDES
Recap - YANG Versioning Solution Overview

Complete solution consists of five drafts:

1. Updated YANG Module Revision Handling:
   Notify nbc changes between module revisions, allows branched revision history, revision-labels

2. Module semantic version number scheme:
   YANG semver for module revision-labels and package versioning

3. Versioned YANG packages:
   Versioning at the schema level rather than individual modules

4. Protocol operations for package version selection:
   Devices can support multiple schema versions, clients can select for session

5. YANG schema comparison tooling:
   Tooling to algorithmically compare module or schema revisions

Latest working drafts can all be found here: https://github.com/netmod-wg/yang-ver-dt
Module Revision Handling + YANG Semver Drafts
Summary of main requirements & recommendations

draft-ietf-netmod-yang-module-versioning - Updated YANG Module Revision Handling
draft-ietf-netmod-yang-semver - YANG Semantic Versioning

A) Mark a revision as non-backwards-compatible
Module Revision Handling + YANG Semver Drafts
Summary of main requirements & recommendations

B) Import by revision-or-derived

Specify a *minimum* revision for import, but any descendant is also conformant.

Use the latest descendant available.

```yaml
import example-module {
    rev:revision-or-derived 3.0.0
}
```
Module Revision Handling + YANG Semver Drafts
Summary of main requirements & recommendations

C) YANG Semver revision-label

X.Y.Z = Major.Minor.Editorial

Major -> change for NBC changes
Minor -> additional leafs, etc
Editorial -> fix a description

Example YANG module with branched revision history.

<table>
<thead>
<tr>
<th>Module revision date</th>
<th>Revision label</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-01-01</td>
<td>&lt;= 1.0.0</td>
</tr>
<tr>
<td>2019-02-01</td>
<td>&lt;= 2.0.0</td>
</tr>
<tr>
<td>2019-03-01</td>
<td>&lt;= 3.0.0</td>
</tr>
<tr>
<td>2019-04-01</td>
<td>&lt;= 2.1.0</td>
</tr>
<tr>
<td>2019-05-01</td>
<td>&lt;= 2.2.0</td>
</tr>
<tr>
<td>2019-06-01</td>
<td>&lt;= 3.1.0</td>
</tr>
</tbody>
</table>

Optional compatibility extension:
rev:revision-label 3.0.2_non_compatible
D) Filename recommendation

my-module#3.2.0.yang