

# YANG Versioning Overview



Contribution to YANGsters e-meeting

# Introduction



- Purpose: Review the current thinking in the IETF on dealing with YANG module modifications and how this will impact the IEEE
- Current Practice
- Enhancements under discussion
  
- Executive Summary
  - Information provided to raise awareness of the versioning work going on in the IETF

# Updating a YANG Module Current Practice



- Updating a published YANG module follows the rules in Clause 11 of IETF RFC 7950
- There is a bulleted list of what can be added, updated, or changed.
- Non-Backwards Compatible (NBC) changes are not allowed

# YANG Versioning Problem



- YANG Module Versioning Requirements
  - [https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-versioning-reqs/?include\\_text=1](https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-versioning-reqs/?include_text=1)
- From the abstract:
  - This document describes the problems that can arise because of the YANG language module update rules, that require all updates to YANG module preserve strict backwards compatibility. It also defines the requirements on any solution designed to solve the stated problems.
- Important to... (See Clause 5 of draft)
  - Handle non-backwards-compatible changes
  - Allow more control over module imports
  - Coherent version numbering
  - Provide life-cycle documentation

# YANG Module Revision Handling



- YANG Module Revision Handling
  - <https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-module-versioning/>
- From the abstract:
  - This document specifies a new YANG module update procedure that can document when non-backwards-compatible changes have occurred during the evolution of a YANG module. It extends the YANG import statement with an earliest revision filter to better represent inter-module dependencies. It provides help and guidelines for managing the lifecycle of YANG modules and individual schema nodes. It provides a mechanism, via the revision-label YANG extension, to specify a revision identifier for YANG modules. This document updates RFC 7950, RFC 8407 and RFC 8525.
- This draft updates the rules for revision handling. The next draft provides the guidelines for the revision label.

# Semantic Versioning



- YANG Semantic Versioning (semver)
  - [https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-semver/?include\\_text=1](https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-semver/?include_text=1)
- From the abstract:
  - This document specifies a scheme and guidelines for applying a modified set of semantic versioning rules to revisions of YANG modules. Additionally, this document defines a revision-label for this modified semver scheme.
- Guidelines related to version numbering

# YANG Schema Comparison



- YANG Schema Comparison
  - <https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-schema-comparison/>
- From the abstract:
  - This document specifies an algorithm for comparing two revisions of a YANG schema to determine the scope of changes, and a list of changes, between the revisions. The output of the algorithm can be used to help select an appropriate revision-label or YANG semantic version number for a new revision. This document defines a YANG extension that provides YANG annotations to help the tool accurately determine the scope of changes between two revisions.
- Important to consider this algorithm when considering things like “pretty printing”, white space, and any reformatting based on editorial needs.

# Summary



- The current discussion is taking place in IETF NETMOD
- There are related items like YANG Packages (<https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-packages/>)
- IEEE should consider the Versioning and Semantic Versioning work when building guidelines related to revision numbering and understanding what can be revised in a YANG module and how to document the changes.



