

# NETMOD YANG Versioning Solution Update

NETMOD WG

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Presenting on behalf of the weekly versioning call attendees:  
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IETF 115

# Agenda

## **This presentation:**

**Solution Overview – Jason Sterne**

## **Following presentations on individual drafts:**

**Module Versioning – Jason Sterne**

**YANG SemVer – Joe Clarke**

**See backup slides for solution overview & summary of Module Versioning and YANG Semver drafts.**

# 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. YANG schema comparison tooling:  
Tooling to algorithmically compare module or schema revisions
4. Versioned YANG packages:  
Versioning at the schema level rather than individual modules
5. Protocol operations for package version selection:  
Devices can support multiple schema versions, clients can select for session

Latest working drafts can all be found here: <https://github.com/netmod-wg/yang-ver-dt>

# Recap - YANG Versioning Solution Overview

Links for published drafts:

<https://datatracker.ietf.org/doc/html/draft-ietf-netmod-yang-module-versioning>

<https://datatracker.ietf.org/doc/html/draft-ietf-netmod-yang-semver>

<https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-schema-comparison>

<https://datatracker.ietf.org/doc/html/draft-ietf-netmod-yang-packages>

<https://datatracker.ietf.org/doc/draft-ietf-netmod-yang-ver-selection>

# 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
- Issues tracked in github (<https://github.com/netmod-wg/yang-ver-dt>)

# General update on weekly Versioning calls

Focus of weekly meetings since IETF114:

## 1) Defining per-node NBC/BC/Editorial extensions

- Added to Schema Comparison draft
- TBD: put as a separate draft ?

## 2) Processing and replying to feedback from WG Last Call on Module Versioning and YANG Semver drafts

- mostly done discussion of the LC feedback
- responses posted back to the mailing list for all feedback
- some updates to the drafts made, some updates remaining

We didn't look at Schema Comparison, Packages or Version Selection drafts.

# Next Steps

- 1) Finish remaining updates to Module Versioning and YANG Semver
  - WG LC comments
  - GitHub issues
- 2) Submit Module Versioning and YANG Semver for another WG LC with intention to bring them to RFC:
  - Don't wait any longer for remaining 3 drafts (Comparison, Packages, Selection)
  - Work has been taking a long time to converge
  - O-RAN is asking to have these 2 drafts completed
- 3) Phase work on remaining documents: Schema comparison, Packages, Version selection

# BACKUP SLIDES



# 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 example-module {  
  
    namespace "urn:example:module";  
    prefix "prefix-name";  
  
    import ietf-yang-revisions { prefix "rev"; }  
    import ietf-yang-semver { prefix "ysver"; }  
  
    rev:revision-label-scheme "ysver:yang-semver";  
  
    revision 2019-06-01 {  
        rev:revision-label 3.1.0;  
        description "Add new functionality.";  
    }  
  
    revision 2019-03-01 {  
        rev:revision-label 3.0.0;  
        rev:non-backwards-compatible-revision;  
        description  
            "Add new functionality. Remove some deprecated nodes.";  
    }  
  
    revision 2019-02-01 {  
        rev:revision-label 2.0.0;  
        rev:non-backwards-compatible-revision;  
        description "Apply bugfix to pattern statement";  
    }  
}
```

# 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.

```
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.

Module revision date	Revision label
2019-01-01	<- 1.0.0
2019-02-01	<- 2.0.0
2019-03-01	<- 3.0.0
2019-04-01	<- 2.1.0
2019-05-01	<- 2.2.0
2019-06-01	<- 3.1.0

```
module example-module {  
  
    namespace "urn:example:module";  
    prefix "prefix-name";  
  
    import ietf-yang-revisions { prefix "rev"; }  
    import ietf-yang-semver { prefix "ysver"; }  
  
    rev:revision-label-scheme "ysver:yang-semver";  
  
    revision 2019-06-01 {  
        rev:revision-label 3.1.0;  
        description "Add new functionality.";  
    }  
  
    revision 2019-03-01 {  
        rev:revision-label 3.0.0;  
        rev:non-backwards-compatible-revision;  
        description  
            "Add new functionality. Remove some deprecated nodes.";  
    }  
}
```

Optional compatibility extension/suffix:

rev:revision-label 3.0.2\_non\_compatible

# Module Revision Handling + YANG Semver Drafts

Summary of main requirements & recommendations

## D) Filename recommendation

```
my-module#3.2.0.yang
```