

# NETMOD Versioning Solution Update

NETMOD WG

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Presenting on behalf of the weekly versioning call attendees:  
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IETF 111

# Agenda

## **This presentation:**

**Solution Overview – Jason Sterne**

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

**YANG Module Versioning – Jason Sterne**

**YANG Semantic Versioning – Joe Clarke**

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

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## 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  
}
```

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### 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"; }  
  
    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:nbc-changes;  
        description  
            "Add new functionality. Remove some deprecated nodes.";  
    }  
}
```

Optional compatibility extension:

```
rev:revision-label 3.0.2 non_compatible
```

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## D) Filename recommendation

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

# 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
- Focus has been on driving Module Versioning and YANG Semver drafts to completion
- Most issues are now closed with updated text rolled into the latest drafts



# Standardize as part of YANG 1.1

This work was adopted by NETMOD but a recurring question has been raised:

- A. Should we adopt these drafts (i.e., go to RFC) as updates/extensions of YANG 1.1?
- B. Or, should this work be part of [YANG Next](#) (YANG 2.0?) along with dozens of potential other improvements?
- C. Or, have the versioning drafts constitute the **only changes** for a YANG 1.2?

The versioning call group proposes to standardize these as update/extensions to YANG 1.1:

1. This solves an urgent need that the industry has today with YANG 1.1
2. NBC changes already occur and we need a standard way to communicate them
3. Import by revision is not practical using the current RFC7950 mechanism

# Next Steps

- Issues tracked in github, discussed on WG mail list  
<https://github.com/netmod-wg/yang-ver-dt>
- Phase work on the documents:
  - Wrap up Module Versioning and YANG Semver (WG LC)
  - Move onto Packages draft shortly after IETF 111
  - Version Selection and Schema Comparison to follow