

YANG Packages

[draft-ietf-netmod-yang-packages-02](#)

NETMOD WG

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YANG Package Current Status –

- Changes since -01
 - Remove package checksums definition based on WG discussion
- Issues status
 - Open issues, 20 total open issues now
 - <https://github.com/netmod-wg/yang-ver-dt/issues?q=is%3Aopen+is%3Aissue+label%3Apackages>
 - Issues under discussion
 - Should add revision label scheme to YANG packages #65
 - YANG packages support for schema mount #57
 - Packages and Library are separately defined and somewhat different #67 #69

Should add revision label scheme to YANG packages #65

- <https://github.com/netmod-wg/yang-ver-dt/issues/65>
- YANG revision label scheme is missing in YANG package definition, should allow any YANG revision label scheme.

Next step: will refine the text

Schema Mount and Packages

<https://github.com/netmod-wg/yang-ver-dt/issues/57>

Packages can contain modules with mount points. Should there be some additional information in the package definition about mount points? E.g. Package "IETF": mounts L2VPN and L3VPN

Next step: will update to include the mount point information, and define constraints for mounted schema:

Rule R1: Package X constraints for the instance of the mount point (e.g. either L2VPN or L3VPN)

Rule R2: Schema-mounts listed in Package X is an override of mounts in included packages

Rule R3: List of allowable packages must include all allowable packages from included packages

Too many module lists (library, hello, packages, etc)

<https://github.com/netmod-wg/yang-ver-dt/issues/69>

<https://github.com/netmod-wg/yang-ver-dt/issues/67>

There are already four mechanisms standardized by IETF:

1. The hello message (mandatory in YANG 1.0, RFC 6020)
2. ietf-netconf-monitoring (required for downloading YANG schemas, RFC 6022)
3. ietf-yang-library (mandatory in YANG 1.1, RFC 7950)
4. ietf-yang-library (as modified by NMDA, RFC 8342)

YANG package would add a fifth mechanism to list the set of modules a server implements.
Is there some possible way to remove this duplication?

Proposal: will be further discussed in weekly calls, and bring back to WG

Next Step

- Resolve the open issues

Backup

YANG Package Model Structure

Common package definition for both the YANG instance data file and the device

grouping yang-pkg-instance

```
+-- name                pkg-name
+-- version              pkg-version
+-- timestamp?          yang:date-and-time
+-- organization?      string
+-- contact?           string
+-- description?       string
+-- reference?         string
+-- complete?          boolean
+-- local?             boolean
+-- previous-version?  pkg-version
+-- nbc-changes?       boolean
+-- tag*               tags:tag
+-- mandatory-feature* scoped-feature
+-- included-package* [name version]
|  +-- name                pkg-name
|  +-- version              pkg-version
|  +-- replaces-version*   pkg-version
|  +-- nbc-modified?       boolean
|  +-- location*           inet:uri
+-- module* [name]
|  +-- name                yang:yang-identifier
|  +-- revision?          rev:revision-date-or-label
|  +-- replaces-revision*  rev:revision-date-or-label
|  +-- namespace?         inet:uri
|  +-- location*          inet:uri
|  +-- submodule* [name]
|  |  +-- name?           yang:yang-identifier
|  |  +-- revision        yang:revision-identifier
|  |  +-- location*       inet:uri
+-- import-only-module* [name revision]
|  +-- name?              yang:yang-identifier
|  +-- revision?          rev:revision-date-or-label
|  +-- replaces-revision*  rev:revision-date-or-label
|  +-- namespace?         inet:uri
|  +-- location*          inet:uri
|  +-- submodule* [name]
|  |  +-- name?           yang:yang-identifier
|  |  +-- revision        yang:revision-identifier
|  |  +-- location*       inet:uri
```

Package list on Server: all versions of all packages supported

module: ietf-yang-packages

```
+--ro packages
  +--ro package* [name version]
    // Uses the yang-package-instance grouping defined in
    // ietf-yang-package-types.yang, with location and checksum:
    +--ro name                pkg-name
    +--ro version              pkg-version
    ... remainder of yang-package-instance grouping ...
    +--ro location*           inet:uri
```

YANG Library augmentation:

Clients generally uses the packages to associate with the datastore schema instead of the module set

module: ietf-yl-packages

```
augment /yanglib:yang-library/yanglib:schema:
  +--ro package* [name version]
    +--ro name                -> /pkgs:packages/package/name
    +--ro version              leafref
```


YANG structure with schema mount

```
grouping yang-pkg-instance
  +-- name                pkg-name
  +-- version             pkg-version
  +-- timestamp?         yang:date-and-time
  +-- ...
  +-- mandatory-feature*  scoped-feature
  +-- included-package* [name version]
  | +-- name              pkg-name
  | +-- version           pkg-version
  | +-- ...
  +-- module* [name]
  | +-- ...
  +-- import-only-module* [name revision]
  | +-- name?             yang:yang-identifier
  | +-- revision?        rev:revision-date-or-label
  | +-- ...
  +-- schema-mounts      <---- This is new.
    +-- mount-point* [module label]
      +-- module?        yang:yang-identifier
      +-- label?         yang:yang-identifier
      +-- config?        boolean
      +-- shared-schema? boolean
      +-- package* [name version]
        +-- name         pkg-name
        +-- version      pkg-version
```