Versioning YANG schema
draft-rwilton-netmod-yang-packages-01
NETMOD WG

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YANG Package - Overview

Defines a versioned YANG schema as the set of YANG module versions/revisions
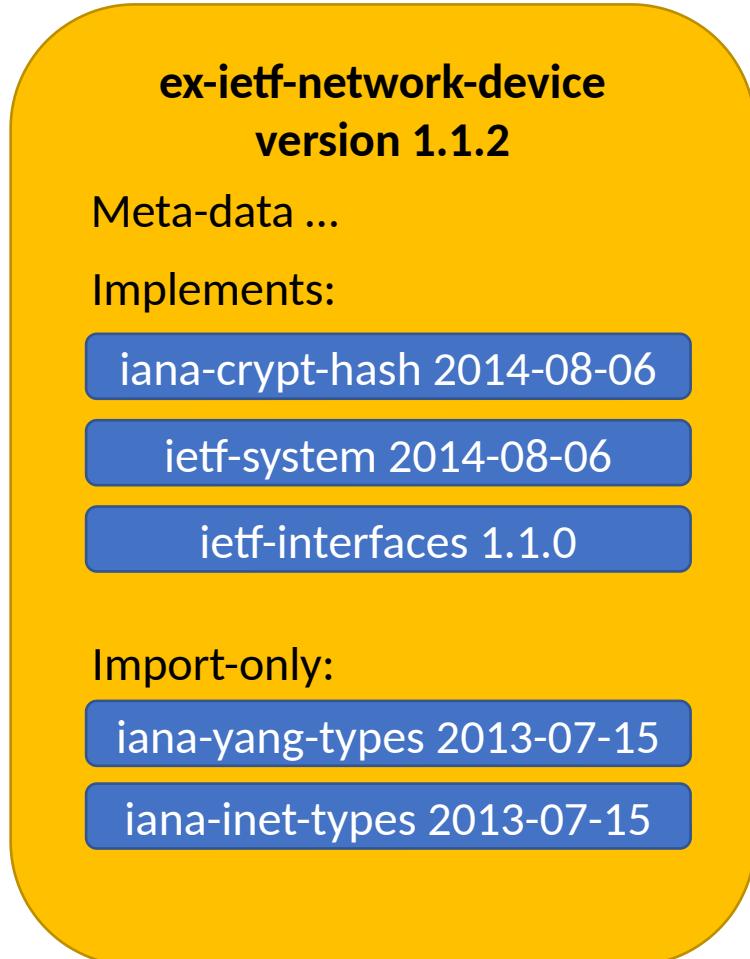
- Uses the same module YANG semver scheme (*)

- Hierarchical - packages can import other packages

- Available offline in a YANG instance data file

- Available on the device (e.g. in YANG library)

- The draft is slightly out of date (doesn't accommodate the changes for draft-verdt-netmod-yang-module-versioning-00)

YANG Package – Why?

Aim to solve several problems:

- Need to version sets of modules instead of just individual modules

- Encourage more consistency in implementations

- Some schema contain 100+ modules, managing these as a flat list is unwieldy

- To avoid downloading/check the full module list from a device. Making the schema available offline, and then check that the device is using (or just compatible with) the expected schema
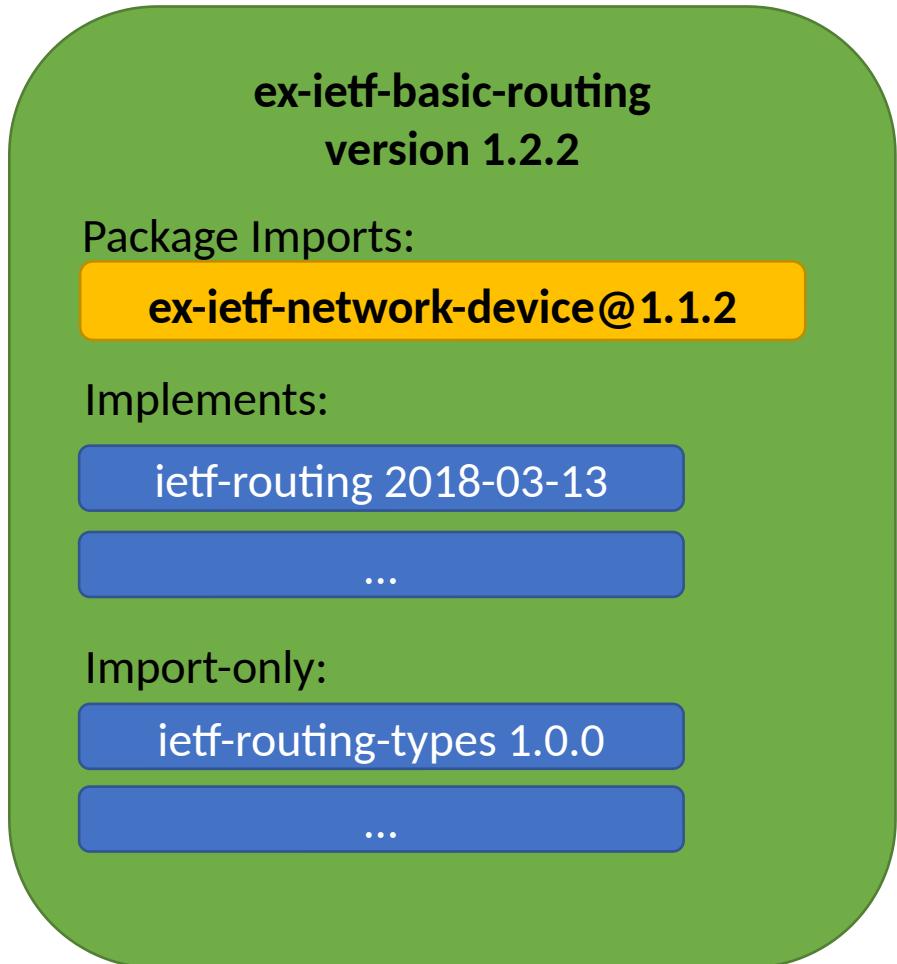
Example Package - **ex-ietf-network-device**

**ex-ietf-network-device
version 1.1.2**

Meta-data …

Implements:

iana-crypt-hash 2014-08-06

ietf-system 2014-08-06

ietf-interfaces 1.1.0

Import-only:

iana-yang-types 2013-07-15

iana-inet-types 2013-07-15

Definition includes:

- Metadata:
  - URLs to find package/module definitions
  - Mandatory features

- Imported packages

- Implemented module version/revisions

- Import-only module versions/revisions

- **Import conflict resolution**

Example Package 2 - **example-ietf-basic-routing**

**ex-ietf-basic-routing
version 1.2.2**

Package Imports:

ex-ietf-network-device@1.1.2

Implements:

ietf-routing 2018-03-13

...

Import-only:

ietf-routing-types 1.0.0

...

- Ex-ietf-basic-routing imports ex-ex-ietf-network-device and defines more module versions

- **Any version conflict/change must be explicitly resolved**

- Package version indicates nature of changes in the modules or package import

YANG Package – key issue?

- Current packages draft uses YANG Semver as the versioning scheme
- But the latest module level versioning is not tied to YANG Semver, that is only one possible version identifier
- Probably better for YANG packages to support any partially ordered set of version identifiers?
  - E.g. YANG Semver could be used, or some other schemes
- Use YANG identifier (or enum) to specify the scheme being used