

Module Tags

draft-rtgyangdt-netmod-module-tags

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Module Tags

Use Cases

- Organization
- Classification
- Other future module metadata

Example Yang Tree (before and after)

```
module isis:  
  +--rw routing  
    +--rw control-plane-protocols  
      +--rw control-plane-protocol  
        +--rw name  
          +--rw isis (augments here)
```

becomes:

```
module isis:  
  +--rw isis
```

Example XML Per-Module (before and after)

XML:

```
<rt:routing>  
  <rt:control-plane-protocols>  
    <rt:control-plane-protocol>  
      <i:isis>  
        ...
```

becomes:

```
<i:isis>  
  ...
```

Example XML Global Tag List

and:

```
<t:module-tags>
  <t:module>
    <t:module-key>isis</t:module-key>
    <t:tags>routing</t:tags>
    <t:tags>control-plane-protocol</t:tags>
  </t:module>
</t:module-tags>
```

Creating Tags

- 3 creation points
 - Module (author)
 - Implementer (vendor)
 - User (customer)

Key Points Here

Fixed structure (routing or device meta-model)

- Modules depend on IETF standard parent module.
- Parent module must be revised to add new structure.
- Authors only decide classification and organization.

Tags

- Modules remain more loosely coupled.
- Non-IETF can add to organization and classification.
- Users can add and **remove** tags.
- Allows for other additional types of metadata.

Tag Standardization (and local use)

IANA Registry for tag prefixes

- **ietf:** - ietf standardized
- **vendor:** - for implementer use
- **local:** - for local user use
- Alloc Policy: Specification Required
 - Allows allocation by other SDOs (e.g., **ieee:**)

IANA Registry for **ietf:** tags

- Alloc Policy: IETF Review (IETF reviewed documents)

Root-level Additions

```
module: ietf-module-tags
  rpcs:
    +---x [rm'ing: add-tags]
    +---x [rm'ing: remove-tags]
    +---x reset-tags
      +---w in
        | +---w name          yang:yang-identifier
        | +---w revision?    union
      +--ro output
        +--ro tags*         string
```

Yang Library List Augment

```
module: ietf-library-tags
  augment /yanglib:modules-state/yanglib:module:
    +--ro tags*   string
```

R/W List of Module Tag Lists

```
module: ietf-module-tags
  +--rw module-tags
    +--rw module*          [module-key]
      +--rw module-key
        +--rw tags*      string
```

- Allows adding tags to any modules

R/W Per-module Tags List

```
module: example-module
```

```
  +--rw module-tags  
  |   +--rw tags*   string  
  +--rw examples-stuff
```

- Grouping used by modules
- Allow for single xpath references into module data
`/[tags="igp"]/hello-timer/interval`

Open Issue [final slide]

- Tag access points
 - r/o version in yang library?
 - r/w in writable list of modules.
 - r/w or r/o version in module?
- User can remove tags.
 - Authors strongly support yes.