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Ownership and licensing statements in YANG

Abstract

This memo provides for an extension to RFC 8520 that allows MUD file
authors to specify ownership and licensing of MUD files themselves.
This memo updates RFC 8520. However, it can also be used for
purposes outside of MUD, and the grouping is structured as such.

Status of This Memo

This Internet-Draft is submitted in full conformance with the
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1. Introduction

   [RFC8520] Manufacturer Usage Descriptions (MUD) can be used to
   describe devices and their requirements to the network
   infrastructure. The original version of the specification does not
   provide for a means to specify ownership and licensing of the MUD
   file itself. This can hinder those wishing to use, modify, or adapt
   MUD files for the purpose of offering them, when the manufacturer is
   not involved.

      *Issue: Should this be an owner or an originator?

   To avoid any confusion, we define an extension that allows for
   specifying of owners and licensing terms for MUD files.

   Those generating MUD files **SHOULD** use this extension, and thus this
   extension updates RFC 8520.

   There are two ways to specify a license: a URL pointing to the
   license itself or an SPDX tag [SPDX]. If an SPDX tag is supplied
   consumers **MUST** interpret that tag through its meaning as specified
   by [SPDX].

      *Issue: Should we simply say that a URI contains a colon and SPDX
       license identifier doesn't?

   This grouping may be used for other YANG models that reside as
   static objects.

   The key words **"MUST"**, **"MUST NOT"**, **"REQUIRED"**, **"SHALL"**, **"SHALL NOT"**,
   "SHOULD", **"SHOULD NOT"**, **"RECOMMENDED"**, **"NOT RECOMMENDED"**, **"MAY"**, and
   "OPTIONAL" in this document are to be interpreted as described in
   BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all
   capitals, as shown here.

2. The owner-license extension and model

Because the model is primarily motivated by MUD, and based on the
way that YANG trees are formed, the model appears as an augmentation
for MUD.

```
module: ietf-ol

  augment /mud:mud:
    +--rw ol
       +--rw owners*               string
       +--rw (license-type)?
          +--:(spdx-lt)
          |  +--rw spdx-tag?       string
          +--:(url)
             +--rw license-info?   inet:uri
```

*Issue: Should different owners possibly have their own license
types? (Logical and, derived works.)

*Issue: Should a single owner possibly have multiple license
types? (Logical or, multi-licensing.)

3. The YANG schema for ownership and licensing

The following grouping and augmentation are proposed.

```
<CODE BEGINS>file "ietf-ol@2021-05-21.yang"
module ietf-ol {
  yang-version 1.1;
  namespace "urn:ietf:params:xml:ns:yang:ietf-ol";
  prefix ol;

  import ietf-inet-types {
    prefix inet;
  }

  import ietf-mud {
    prefix mud;
  }


  organization
    "IETF OPSAWG (Ops Area) Working Group";
  contact
    "WG
     Web: http://tools.ietf.org/wg/opsawg/
     WG List: opsawg@ietf.org
     Author: Eliot Lear lear@cisco.com
     Author: Carsten Bormann <cabo@tzi.org>";
  description
    "This YANG module to indicate ownership and licensing.

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     authors of the code.  All rights reserved.

     Redistribution and use in source and binary forms, with or
     without modification, is permitted pursuant to, and subject to
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     forth in Section 4.c of the IETF Trust's Legal Provisions
     Relating to IETF Documents
     (https://trustee.ietf.org/license-info).

     This version of this YANG module is part of RFC XXXX
     (https://www.rfc-editor.org/info/rfcXXXX);
     see the RFC itself for full legal notices.

     The key words 'MUST', 'MUST NOT', 'REQUIRED', 'SHALL', 'SHALL
     NOT', 'SHOULD', 'SHOULD NOT', 'RECOMMENDED', 'NOT RECOMMENDED',
     'MAY', and 'OPTIONAL' in this document are to be interpreted as
     described in BCP 14 (RFC 2119) (RFC 8174) when, and only when,
     they appear in all capitals, as shown here.  ";

  revision 2021-05-21 {
    description
      "Initial proposed standard.";
    reference
```

```
            "RFC XXXX: Extension for ownership and licensing";
    }

    grouping ol-extension {
      description
        "OL extension grouping";
      container ol {
        description
          "container relating to ownership and licensing.";
        leaf-list owners {
        type string;
          description
            "A list of owners, may be in the form of a copyright
             Example: Copyright (c) Jane Smith.  All rights Reserved.";
          }
        choice license-type {
          description "Either choose a standard license type or point
                       to one of your own.";
          case spdx-lt {
            leaf spdx-tag {
              type string;
              description "SPDX License Identifier, as indicated at
                           https://spdx.org/licenses/";
            }
          }
          case url {
            leaf license-info {
              type inet:uri;
              description "A URL pointing to licensing information.";
            }
          }
        }
      }
    }

    augment "/mud:mud" {
      description
        "Add extension for Ownership and licensing.";
      uses ol-extension;
    }
}

<CODE ENDS>
```

4. Extension for MUD

MUD files using this extension **MUST** include "ol" in the extensions
array, as specified by [RFC8520].

5. Example

In this example, the Frobmaster company is using the 0BSD SPDX tag
to indicate a relatively open license. The "ol" extension and
container are present. There is a single owner listed.

```
{
  "ietf-mud:mud": {
    "mud-version": 1,
    "extensions": [
      "ol"
    ],
    "ol": {
      "owners": [
        "Copyright (c) FrobMaster 2021. All Rights Reserved"
      ],
      "spdx-tag": "0BSD"
    },
    "mud-url": "https://frobs.example.com/mud/Frob.json",
    "mud-signature": "https://frobs.example.com/mud/Frob.p7s",
    "last-update": "2021-05-24T11:26:04+00:00",
    "cache-validity": 48,
    "is-supported": true,
    "systeminfo": "This device helps produce frobs",
    "mfg-name": "FrobMaster",
    "documentation": "https://frobs.example.com/doc",
    "model-name": "Frobinator"
  }
}
```

*Task: need Makefile for validating this against MUD. (Probably
put this into a separate file, too.)

*Issue: Should we give an example for usage outside yang?

6. Security Considerations

The security considerations of Section 16 of [RFC8520] with respect
to obtaining validation for information claimed in a MUD file do
apply. While the information described in this specification is not
intended to directly influence the behavior of protective
infrastructure, it may be used by an aggregator as input for
deciding the legal basis that enables providing aggregated
information; depending on the juridical environment, false

information in the MUD file may thus expose the aggregator to additional legal risk.

7. IANA Considerations

7.1. MUD Extension

The IANA is requested to add "ol" to the MUD extensions registry of [IANA.mud] as follows:

Extension Name:
   ol

Standard reference:
   This document

8. Normative References

[IANA.mud] IANA, "Manufacturer Usage Description (MUD)", <https://www.iana.org/assignments/mud>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

[RFC8520] Lear, E., Droms, R., and D. Romascanu, "Manufacturer Usage Description Specification", RFC 8520, DOI 10.17487/RFC8520, March 2019, <https://www.rfc-editor.org/info/rfc8520>.

[SPDX] The Linux Foundation, "SPDX Specification 2.1", 2016.

Appendix A. Changes from Earlier Versions

Draft -01:

  *Format IANA considerations

  *Discuss security considerations

Draft -00:

  *Resubmit unchanged

Individual Draft -01:

   *Add some issues

   *correct spacing

Individual Draft -00:

   *Initial revision

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