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Ownership and licensing statements in YANG
draft-ietf-iotops-ol-01

Abstract

This memo provides for an extension to RFC 8520 (Manufacturer Usage Description Specification, MUD) 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 provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on 9 May 2026.

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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 /ietf-mud:mud:
    +--rw ol
       +--rw license* [owner-name]
          +--rw owner-name            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@2024-04-26.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;
    reference
      "RFC 6991: Common Yang Data Types, Section 4";
  }
  import ietf-mud {
    prefix ietf-mud;
    reference
```

```
        "RFC 8520: Manufacturer Usage Description Specification";
    }

    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.

       Copyright (c) 2025 IETF Trust and the persons identified as
       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
       the license terms contained in, the Revised BSD License set
       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.";

    revision 2024-04-26 {
      description
        "Initial revision.";
      reference
        "RFC XXXX: Ownership and Licensing Statements in YANG";
    }

    grouping owner-license-grouping {
      description
        "A grouping expression ownership and license information";
      container ol {
        description
          "container relating to ownership and licensing.";
        list license {
          key "owner-name";
          description
            "list of licenses that may be applied.";
          leaf owner-name {
            type string {
              length "1..128";
```

```
            }
            description
              "name of the owner";
          }
          choice license-type {
            description
              "Either choose a standard license type or point
               to one of your own.";
            case spdx-lt {
              leaf-list spdx-tag {
                type string;
                min-elements 1;
                description
                  "SPDX License Identifier, as indicated at
                   https://spdx.org/licenses/";
              }
            }
            case url {
              leaf-list license-info {
                type inet:uri;
                min-elements 1;
                description
                  "A URL pointing to licensing information.";
              }
            }
          }
        }
      }
    }

    augment "/ietf-mud:mud" {
      description
        "Add extension for Ownership and licensing.";
      uses owner-license-grouping;
    }
  }
  <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"
    ],
    "ietf-ol:ol": {
      "license": [
        {
          "owner-name": "Copyright 2024 Frobinator, Inc",
          "spdx-tags": [
            "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

7.2. XML Name Space Entry

This document requests IANA to register the following URI in the "ns" subregistry within the "IETF XML Registry" in accordance with [RFC3688]:

URI: urn:ietf:params:xml:ns:yang:ietf-ol

Registrant Contact: The IESG.

XML: N/A; the requested URI is an XML namespace.

7.3. YANG Module Names

This document requests IANA to register the following YANG module in the "YANG Module Names" subregistry in accordance with [RFC6020] within the "YANG Parameters" registry.

name: ietf-ol

namespace: urn:ietf:params:xml:ns:yang:ietf-ol

maintained by IANA: N

prefix: ol

reference: RFC XXXX

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/rfc/rfc2119>.

[RFC3688] Mealling, M., "The IETF XML Registry", BCP 81, RFC 3688, DOI 10.17487/RFC3688, January 2004, <https://www.rfc-editor.org/rfc/rfc3688>.

[RFC6020] Bjorklund, M., Ed., "YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)", RFC 6020, DOI 10.17487/RFC6020, October 2010, <https://www.rfc-editor.org/rfc/rfc6020>.

[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/rfc/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/rfc/rfc8520>.

[SPDX] The Linux Foundation, "The Software Package Data Exchange速 (SPDX速) Specification Version 2.3", 2022, <https://spdx.github.io/spdx-spec/v2.3/>.

Appendix A. Changes from Earlier Versions

Draft -02:

* Small updates to the example

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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