NETCONF Working Group   M. Bjorklund
Internet-Draft   Tail-f Systems
Updates: 8040 (if approved)   J. Schoenwaelder
Intended status: Standards Track   Jacobs University
Expires: January 4, 2018   P. Shafer
                                                               K. Watsen
                                                        Juniper Networks
                                                               R. Wilton
                                                           Cisco Systems
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RESTCONF Update to Support the NMDA
draft-dsdt-netconf-restconf-nmda-00

Abstract

   This document updates RESTCONF [RFC8040] in order to support the
   Network Management Datastore Architecture (NMDA) defined in
   [I-D.ietf-netmod-revised-datastores].

Editorial Note (To be removed by RFC Editor)

   This draft contains many placeholder values that need to be replaced
   with finalized values at the time of publication. This note
   summarizes all of the substitutions that are needed. No other RFC
   Editor instructions are specified elsewhere in this document.

   Artwork in this document contains shorthand references to drafts in
   progress. Please apply the following replacements:

   o "XXXX" --> the assigned RFC value for this draft

   Artwork in this document contains placeholder values for the date of
   publication of this draft. Please apply the following replacement:

   o "2017-07-03" --> the publication date of this draft

   The following two Appendix sections are to be removed prior to
   publication:

   o Appendix A. Change Log

Status of This Memo

   This Internet-Draft is submitted in full conformance with the
   provisions of BCP 78 and BCP 79.

Table of Contents

1. Introduction

This document updates RESTCONF [RFC8040] in order to support the
Network Management Datastore Architecture (NMDA) defined in
[I-D.ietf-netmod-revised-datastores].

The solution presented in this document is backwards compatible with
[RFC8040]. This is achieved by it only adding new top-level

resources, and thereby leaving the semantics of all existing
resources alone.

2. Requirements Language

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.

3. Summary of Updates to RFC 8040

This document updates [RFC8040] in the following ways:

o Adds new top-level resource "/ds".

o Add new query parameter 'with-origin'.

o Section 3.5.4, Paragraph 3 doesn't apply for <operational>.

4. Conformance

A RESTCONF server identifies that it supports NMDA both by supporting
the <operational> datastore, as well as by supporting at least
revision YANG_LIBRARY_REVISION of the "ietf-yang-library" module, as
specified in [I-D.nmdsdt-netconf-rfc7895bis].

RESTCONF clients MAY test if a server supports NMDA using the HEAD
method on the <operational> datastore resource, described later in
this document.

RESTCONF clients MAY also test if a server supports the NMDA using
either the HEAD or GET methods on 'ietf-yang-library:yang-library'
resource, under either {+restconf}/data or <operational>, though only
the latter resource SHOULD be used so that the client doesn't need to
have any ongoing need to use the {+restconf}/data resource.

RESTCONF clients MAY also test if a server supports the NMDA by
checking the revision number for the "ietf-yang-library" module
listed under 'ietf-yang-library:modules-state', under either
{+restconf}/data or <operational>. This approach might be preferred
by some existing clients, but new clients should avoid using the
deprecated 'modules-state' resource.

5. **The {+restconf}/ds/<datastore> Resource**

   Knowing which datastores a server supports, from querying the ietf-
   yang-library module, a RESTCONF client interacts with specific
   datastores using the resource path template:

      {+restconf}/ds/<datastore>

   Where <datastore> is encoded as an 'identity'. For instance:

      {+restconf}/ds/ietf-datastores:running
      {+restconf}/ds/ietf-datastores:intended
      {+restconf}/ds/ietf-datastores:operational
      {+restconf}/ds/example-ds-ephemeral:ds-ephemeral

6. **Protocol Operations**

   All existing protocol operations defined in [RFC8040] for the
   {+restconf}/data resource are available for all of the new datastore
   resources with the following exceptions:

   o Dynamic datastores are excluded, as each dynamic datastore
      definition needs to be reviewed for what protocol operations it
      supports.

   o Some datastores are read-only by nature (e.g., <intended>), and
      hence any attempt to modify these datastores will fail.

   o RFC 8040, Section 3.5.4, Paragraph 3 does not apply when
      interacting with <operational>.

   o New boolean query parameter 'with-origin' (default: false) is
      defined to request the 'origin' attributes when querying
      <operational>.

7. **Security Considerations**

   TBD

8. **IANA Considerations**

   TBD

9. **Normative References**

   [I-D.ietf-netmod-revised-datastores]
              Bjorklund, M., Schoenwaelder, J., Shafer, P., Watsen, K.,
              and R. Wilton, "Network Management Datastore
              Architecture", draft-ietf-netmod-revised-datastores-02
              (work in progress), May 2017.

   [I-D.nmdsdt-netconf-rfc7895bis]
              Bierman, A., Bjorklund, M., and K. Watsen, "YANG Module
              Library", draft-nmdsdt-netconf-rfc7895bis-00 (work in
              progress), May 2017.

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

   [RFC8040] Bierman, A., Bjorklund, M., and K. Watsen, "RESTCONF
              Protocol", RFC 8040, DOI 10.17487/RFC8040, January 2017,
              <http://www.rfc-editor.org/info/rfc8040>.

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

Authors' Addresses

   Martin Bjorklund
   Tail-f Systems

   EMail: mbj@tail-f.com

   Juergen Schoenwaelder
   Jacobs University

   EMail: j.schoenwaelder@jacobs-university.de

   Phil Shafer
   Juniper Networks

   EMail: phil@juniper.net

   Kent Watsen
   Juniper Networks

   EMail: kwatsen@juniper.net

      Rob Wilton
      Cisco Systems

      EMail: rwilton@cisco.com