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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](#).

Internet-Draft

RESTCONF Update to Support the NMDA

July 2017

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Table of Contents

1.	Introduction	2
2.	Requirements Language	3
3.	Summary of Updates to RFC 8040	3
4.	Conformance	3
5.	The {+restconf}/ds/<datastore> Resource	4
6.	Protocol Operations	4
7.	Security Considerations	4
8.	IANA Considerations	4
9.	Normative References	4
	Authors' Addresses	5

[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 [\[I-D.nmdsd-netconf-rfc7895bis\]](#).

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

Bjorklund, et al.

Expires January 4, 2018

[Page 4]

Internet-Draft

RESTCONF Update to Support the NMDA

July 2017

[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>>.

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Bjorklund, et al.

Expires January 4, 2018

[Page 5]

Internet-Draft

RESTCONF Update to Support the NMDA

July 2017

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