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Transaction ID Mechanism for RESTCONF
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Abstract

This document defines additional mechanisms intended to extend the RESTCONF Protocol's usability of Transaction ID Mechanism for NETCONF.

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1. Introduction

The Transaction ID Mechanism for NETCONF [I-D.ietf-netconf-transaction-id] defines the functionality in general, specifics for NETCONF, and some specifics for RESTCONF. This document defines additional mechanisms needed to make Transaction ID work over the RESTCONF Protocol [RFC8040]. The txid mechanisms for the HTTP headers ETag and Last-Modified [RFC9110] are defined in the NETCONF txid document.

This document defines how payload attributes for RESTCONF Section 3 would work and also specifics for each HTTP Method Section 4. The payload attributes are encoded as metadata for YANG. [RFC7952]

2. Conventions and Definitions

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.

In addition, this document uses the following terms defined in [I-D.ietf-netconf-transaction-id]:

Txid: Abbreviation of Transaction-id. A transaction-id is a UTF-8 string of characters. The specific format depends on the protocol mechanism used (e.g. ETag or Last-Modified).

3. Payload Transaction ID Attributes

Analogous to the mechanism defined for NETCONF in [I-D.ietf-netconf-transaction-id], the txid can be supplied in the payload as attributes. See section 5.3 in [RFC8040].

Examples payload for XML

```
<acls xmlns="urn:ietf:params:xml:ns:yang:ietf-access-control-list"
      xmlns:txid="urn:ietf:params:xml:ns:yang:ietf-netconf-txid"
      txid:etag="5152">
  <acl txid:etag="4711">
    <name>A1</name>
    <aces>
      <ace>
        <name>R1</name>
        ...
      </ace>
    </aces>
  </acl>
  <acl txid:etag="5152">
    <name>A2</name>
    <aces>
      <ace>
        <name>R7</name>
        ...
      </ace>
    </aces>
  </acl>
</acls>
```

Figure 1: Txid values as attributes in XML over RESTCONF

Examples payload for JSON

```

{
  "ietf-access-control-list:acls": {
    "@": {
      "ietf-netconf-txid:etag": "5152"
    },
    "acl": [
      {
        "@": {
          "ietf-netconf-txid:etag": "4711"
        },
        "name": "A1",
        "aces": [
          {
            "name": "R1",
            ...
          }
        ]
      }
    ],
    {
      "@": {
        "ietf-netconf-txid:etag": "5152"
      },
      "name": "A2",
      "aces": [
        {
          "name": "R7",
          ...
        }
      ]
    }
  ]
}

```

Figure 2: Txid values as attributes in JSON over RESTCONF

4. HTTP Methods

When the txid is supplied in the HTTP ETag header or when the Last-Modified header is used, the rules from sections 4.1 and 4.2 in [I-D.ietf-netconf-transaction-id] applies, respectively.

The priority and interaction together with txid as payload attributes are defined as follows for the following HTTP methods.

4.1. ETag and If-Match headers

4.1.1. GET

For the retrieval GET method when an ETag header is supplied in conjunction with txid values as payload attributes, the ETag header txid value is applied as a default txid value where payload attributes are missing.

4.1.2. POST, PUT, DELETE, PATCH

For the state changing methods, POST, PUT, DELETE, and PATCH, when an If-Match header is supplied, the entire request is rejected if the supplied txid value in the request and any node in the target resource are different.

If the target resource tree have different txid values on different nodes, using the If-Match header will always reject the result. Instead the payload attributes need to be set for granular control over the txid matching.

5. Security Considerations

The security considerations in [I-D.ietf-netconf-transaction-id] applies for this document as well.

6. IANA Considerations

This document has no IANA actions.

7. Normative References

- [I-D.ietf-netconf-transaction-id]
Lindblad, J., "Transaction ID Mechanism for NETCONF", Work in Progress, Internet-Draft, draft-ietf-netconf-transaction-id-11, 7 October 2025, <<https://datatracker.ietf.org/doc/html/draft-ietf-netconf-transaction-id-11>>.
- [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>>.
- [RFC7952] Lhotka, L., "Defining and Using Metadata with YANG", RFC 7952, DOI 10.17487/RFC7952, August 2016, <<https://www.rfc-editor.org/rfc/rfc7952>>.

- [RFC8040] Bierman, A., Bjorklund, M., and K. Watsen, "RESTCONF Protocol", RFC 8040, DOI 10.17487/RFC8040, January 2017, <<https://www.rfc-editor.org/rfc/rfc8040>>.
- [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>>.
- [RFC9110] Fielding, R., Ed., Nottingham, M., Ed., and J. Reschke, Ed., "HTTP Semantics", STD 97, RFC 9110, DOI 10.17487/RFC9110, June 2022, <<https://www.rfc-editor.org/rfc/rfc9110>>.

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