OSLC Tracked Resource Set Version 3.0. Part 3: Constraints

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26 August 2021

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Abstract:

This specification defines standard constraints on the vocabulary for Tracked Resource Sets.

Status:

This document was last revised or approved by the OASIS Open Services for Lifecycle Integration (OSLC) Open Project on the above date. The level of approval is also listed above. Check the "Latest stage" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Open Project are listed at https://open-services.net/about/.

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[OSLC-TRS-v3.0]


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1. Introduction

This section is non-normative.

This specification defines standard constraints on the vocabulary for Tracked Resource Sets.

RDF vocabularies define the terms and resources for a domain of interest, in this case, OSLC Tracked Resource Sets. These vocabularies are often specified in an open manner, without providing information such as property domain and range assertions, cardinalities, etc. This helps keep the vocabulary applicable for a wide range of uses and furthering integration with other vocabularies.

However, it is often desirable to closed down a vocabulary with specific constraints to facilitate using the vocabulary for a specific purpose. This document specifies the constraints for using the OSLC Tracked Resource Set vocabulary in OSLC. Different sets of constraints may be applied to a vocabulary in order to tailor its use, without overly constraining the vocabulary for other usages.

These constraints apply to the core vocabulary defined in OSLC Tracked Resource Set Version 3.0, Part 2: Vocabulary.

Note that this document is informative; the normative document for the vocabulary is the machine-readable source in [VOCAB].

1.1 Typographical Conventions and Use of RFC Terms

This section is non-normative.

As well as sections marked as non-normative, all authoring guidelines, diagrams, examples, and notes in this specification are non-normative. Everything else in this specification is normative.

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

1.1.1 References

1.1.1.1 Normative references

[RFC2119]
1.1.1.2 Informative references

[VOCAB]

1.2 Resource Constraints

This section specifies the constraints for Tracked Resource Set resources. The resource properties are not limited to the ones defined in this specification, TRS Servers may provide additional properties. It is recommended that any additional properties exist in their own unique namespace and not use the namespaces defined in these specifications.

1.2.1 Resource: TrackedResourceSetShape

- **Describes**: http://open-services.net/ns/core/trs#TrackedResourceSet
- **Summary**: The shape of a TrackedResourceSet
- **Description**: A Tracked Resource Set provides a representation of the current state of a set of Tracked Resources.

### TrackedResourceSet Properties

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rdf:type</td>
<td>One-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>rdfs:Class</td>
<td>A resource type URI. A tracked resource set <strong>MUST</strong> have at least the resource type trs:TrackedResourceSet [CC-1].</td>
</tr>
<tr>
<td>trs:base</td>
<td>Exactly-one</td>
<td>true</td>
<td>Resource</td>
<td>Reference</td>
<td>trs:Base</td>
<td>An enumeration of the resources in the Tracked Resource Set. This <strong>SHOULD</strong> be a reference to a separate resource, not returned inline with the Tracked Resource Set itself [CC-2].</td>
</tr>
<tr>
<td>trs:changeLog</td>
<td>Exactly-one</td>
<td>true</td>
<td>AnyResource</td>
<td>Inline</td>
<td>trs:ChangeLog</td>
<td>A Change Log providing an ordered series of incremental adjustments to the Tracked Resource Set.</td>
</tr>
</tbody>
</table>
Resource Set. The Tracked Resource Set representation **MUST** contain the triples for the referenced Change Log (i.e., via a blank node, or an inline named resource), including the Change Events for the first page of changes [CC-3].

### 1.2.2 Resource: BaseShape

- **Description**: 
  
  - **Describes**: [http://open-services.net/ns/core/trs#Base](http://open-services.net/ns/core/trs#Base)
  - **Summary**: The shape of a Base
  - **Description**: A Base is an ldp:DirectContainer that enumerates the members of a Tracked Resource Set at the time the Base was computed.

#### Base Properties

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ldp:hasMemberRelation</code></td>
<td>Exactly-one</td>
<td>true</td>
<td>Resource</td>
<td>Reference</td>
<td>Unspecified</td>
<td>The membership predicate for this Base container.</td>
</tr>
<tr>
<td><code>ldp:member</code></td>
<td>Zero-or-many</td>
<td>true</td>
<td>Resource</td>
<td>Reference</td>
<td>Unspecified</td>
<td>A Tracked Resource that is a member of the Tracked Resource Set. <strong>ldp:member</strong> is the preferred predicate, but the actual predicate is indicated by <strong>ldp:hasMemberRelation</strong>.</td>
</tr>
<tr>
<td><code>rdf:type</code></td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td><code>rdfs:Class</code></td>
<td>A resource type URI. Clients can infer a resource type of <strong>trs:Base</strong>, or its superclass.</td>
</tr>
<tr>
<td>Prefixed Name</td>
<td>Occurs</td>
<td>Read-only</td>
<td>Value-type</td>
<td>Representation</td>
<td>Range</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------</td>
<td>-----------</td>
<td>--------------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ldp:DirectContainer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trs:cutoffEvent</td>
<td>Exactly-one</td>
<td>true</td>
<td>AnyResource</td>
<td>Either</td>
<td>trs:Deletion, trs:Modification, trs:Creation</td>
<td>The URI of an entry in the Change Log at and after which all changes have already been included in the Base.</td>
</tr>
</tbody>
</table>

1.2.3 Resource: ChangeLogShape

- **Describes:** [http://open-services.net/ns/core/trs#ChangeLog](http://open-services.net/ns/core/trs#ChangeLog)
- **Summary:** The shape of a ChangeLog
- **Description:** A Change Log describes what resources have been created, modified or deleted, and when.

**ChangeLog Properties**

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>trs:change</td>
<td>Zero-or-many</td>
<td>true</td>
<td>Resource</td>
<td>Inline</td>
<td>trs:Deletion, trs:Modification, trs:Creation</td>
<td>An inline resource describing a change to a Tracked Resource. Change Events <strong>MUST</strong> have URIs (i.e., they cannot be blank nodes) to allow clients to recognize entries they have seen before. [CC-4] The URI is used to identify an event; it need not be dereferenceable, and <strong>MAY</strong> be a URN. [CC-5] The URI of a Change Event <strong>MUST</strong> be guaranteed unique, even if order numbers get reused in the wake of a Server rollback [CC-6].</td>
</tr>
<tr>
<td>trs:previous</td>
<td>Zero-or-one</td>
<td>true</td>
<td>AnyResource</td>
<td>Either</td>
<td>trs:ChangeLog</td>
<td>The continuation of the Change Log, containing the next group of chronologically earlier Change Events.</td>
</tr>
</tbody>
</table>

tracked-resource-set-shapes
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1.2.4 Resource: CreationEventShape

1.2.5 Resource: ModificationEventShape

1.2.6 Resource: DeletionEventShape

- **Describes:** [http://open-services.net/ns/core/trs#Deletion](http://open-services.net/ns/core/trs#Deletion)
- **Summary:** Deletion Event
- **Description:** Represents the deletion of resource at a point in time.

**Deletion Properties**

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>trs:changed</td>
<td>Exactly-one</td>
<td>true</td>
<td>Resource Reference</td>
<td>Unspecified</td>
<td>The resource that has been created, modified, or deleted.</td>
<td></td>
</tr>
<tr>
<td>trs:order</td>
<td>Exactly-one</td>
<td>true</td>
<td>integer N/A</td>
<td>Unspecified</td>
<td>A non-negative integer number indicating the sequence in time of the Change Event. <strong>There MAY be gaps in the sequence [CC-7]</strong>, but a more recent Change Event <strong>MUST</strong> have a larger number than any preceding Change Event [CC-8].</td>
<td></td>
</tr>
</tbody>
</table>

1.3 Conformance

OSLC TRS Servers **MUST** use the vocabulary terms defined here where required, and with the meanings defined here. Servers **MAY** augment this vocabulary with additional terms. [CC-9]