

OSLC Tracked Resource Set Version 3.0. Part 3: Constraints

Project Specification Draft 01 26 August 2021

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Open Project:

[OASIS Open Services for Lifecycle Integration \(OSLC\) Open Project](#)

Project Chairs:

Jim Amsden (jamsden@us.ibm.com), [IBM](#)
Andrii Berezovskyi (andriib@kth.se), [KTH](#)

Editor:

Nick Crossley (nick_crossley@us.ibm.com), [IBM](#)

Additional components:

This specification is one component of a Work Product that also includes:

- *OSLC Tracked Resource Set Version 3.0. Part 1: Specification.* [tracked-resource-set.html](#)

- OSLC Tracked Resource Set Version 3.0. Part 2: Vocabulary. [tracked-resource-set-vocab.html](http://open-services.net/ns/core/trs#)
- OSLC Tracked Resource Set Version 3.0. Part 3: Constraints. (this document) [tracked-resource-set-shapes.html](http://open-services.net/ns/core/trspatch#)
- OSLC Tracked Resource Set Version 3.0: Part 4: Machine-readable RDF Vocabulary. [trs-vocab.ttl](https://open-services.net/about/)
- OSLC Tracked Resource Set Version 3.0: Part 5: Machine-readable Resource Shapes. [trs-shapes.ttl](https://open-services.net/about/)

RDF Namespaces:

<http://open-services.net/ns/core/trs#>

<http://open-services.net/ns/core/trspatch#>

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](https://open-services.net/about/) 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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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]

S. Bradner. [Key words for use in RFCs to Indicate Requirement Levels](#). IETF, March 1997. Best Current Practice. URL: <https://www.rfc-editor.org/rfc/rfc2119>

[RFC8174]

B. Leiba. [Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words](#). IETF, May 2017. Best Current Practice. URL: <https://www.rfc-editor.org/rfc/rfc8174>

1.1.1.2 Informative references

[VOCAB]

Nick Crossley; Frank Budinsky. [OSLC TRS Version 3.0: Part 3: Machine-readable vocabulary](#). <http://open-services.net>. Finalization. URL: <http://open-services.net/ns/trs>

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

Prefix Name	Occurs	Read-only	Value-type	Representation	Range	Description
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A tracked resource set MUST have at least the resource type trs:TrackedResourceSet [CC-1].
trs:base	Exactly-one	true	Resource	Reference	trs:Base	An enumeration of the resources in the Tracked Resource Set. This SHOULD be a reference to a separate resource, not returned inline with the Tracked Resource Set itself [CC-2].
trs:changeLog	Exactly-one	true	AnyResource	Inline	trs:ChangeLog	A Change Log providing an ordered series of incremental adjustments to the Tracked

Prefixes Name	Occurs	Read-only	Value-type	Representation	Range	Description
						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

- **Describes:** <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

Prefixes Name	Occurs	Read-only	Value-type	Representation	Range	Description
ldp:hasMemberRelation	Exactly-one	true	Resource	Reference	Unspecified	The membership predicate for this Base container.
ldp:member	Zero-or-many	true	Resource	Reference	Unspecified	A Tracked Resource that is a member of the Tracked Resource Set. ldp:member is the preferred predicate, but the actual predicate is indicated by ldp:hasMemberRelation .
rdf:type	Zero-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. Clients can infer a resource type of trs:Base , or its superclass

Prefix Name	Occurs	Read-only	Value-type	Representation	Range	Description
						<code>ldp:DirectContainer</code> .
<code>trs:cutoffEvent</code>	Exactly-one	true	AnyResource	Either	<code>trs:Deletion</code> , <code>trs:Modification</code> , <code>trs:Creation</code>	The URI of an entry in the Change Log at and after which all changes have already been included in the Base.

1.2.3 Resource: ChangeLogShape

- **Describes:** <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

Prefix Name	Occurs	Read-only	Value-type	Representation	Range	Description
<code>trs:change</code>	Zero-or-many	true	Resource	Inline	<code>trs:Deletion</code> , <code>trs:Modification</code> , <code>trs:Creation</code>	An inline resource describing a change to a Tracked Resource. Change Events MUST 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 MAY be a URN. [CC-5] The URI of a Change Event MUST be guaranteed unique, even if order numbers get reused in the wake of a Server rollback [CC-6].
<code>trs:previous</code>	Zero-or-one	true	AnyResource	Either	<code>trs:ChangeLog</code>	The continuation of the Change Log, containing the next group of chronologically earlier Change Events.

1.2.4 Resource: CreationEventShape

1.2.5 Resource: ModificationEventShape

1.2.6 Resource: DeletionEventShape

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

Deletion Properties

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

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]