OASIS OPEN PROJECTS

OSLC Tracked Resource Set Version 3.0. Part 3: Constraints

Project Specification 02
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This stage:

https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/tracked-resource-set-shapes.html (Authoritative)
https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/tracked-resource-set-shapes.pdf

Previous stage:

https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps01/tracked-resource-set-shapes.html (Authoritative)
https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps01/tracked-resource-set-shapes.pdf

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OASIS Open Services for Lifecycle Integration (OSLC) Open Project

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Additional components:

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

- *OSLC TRS Version 3.0. Part 1: Specification*. https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/tracked-resource-set.html
- *OSLC TRS Version 3.0. Part 2: Vocabulary*. https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/tracked-resource-set-vocab.html
- *OSLC TRS Version 3.0. Part 3: Constraints (this document)*. https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/tracked-resource-set-shapes.html
- *OSLC TRS Version 3.0: Part 4: Machine-readable RDF Vocabulary*. https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/trs-vocab.ttl
- *OSLC TRS Version 3.0: Part 5: Machine-readable Resource Shapes*. https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/trs-shapes.ttl

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 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/.

Comments on this work can be provided by opening issues in the project repository or by sending email to the project's public comment list oslc-op@lists.oasis-open-projects.org.

Note that any machine-readable content (Computer Language Definitions) declared Normative for this Work Product is provided in separate plain text files. In the event of a discrepancy between any such plain text file and display content in the Work Product's prose narrative document(s), the content in the separate plain text file prevails.

Citation format:

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Notices

Table of Contents

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 4: Machine-readable RDF Vocabulary*. http://open-services.net. Finalization. URL: https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/ps02/trs-vocab.ttl

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

Prefixed 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 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

Prefixed 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 `ldp:DirectContainer`.
`trs:cutoffEvent`	Exactly-one	true	AnyResource	Either	`trs:Deletion`, `trs:Modification`, `trs:Creation`	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

Prefixed Name	*Occurs*	*Read-only*	*Value-type*	*Representation*	*Range*	*Description*
`trs:change`	Zero-or-many	true	Resource	Inline	`trs:Deletion`, `trs:Modification`, `trs:Creation`	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].
`trs:previous`	Zero-or-one	true	AnyResource	Either	`trs:ChangeLog`	The continuation of the Change Log, containing the next group of chronologically earlier Change Events.

1.2.4 Resource: CreationEventShape

- **Describes:** `http://open-services.net/ns/core/trs#Creation`
- **Summary:** Creation Event
- **Description:** Represents the creation or modification of a resource at a point in time.

Creation Properties

Prefixed Name	*Occurs*	*Read-only*	*Value-type*	*Representation*	*Range*	*Description*
`trs:changed`	Exactly-one	true	Resource	Reference	Unspecified	The resource that has been created, modified, or deleted.
`trs:order`	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 recently available Change Event **MUST** have a larger number than any previously avalable Change Event as accessed by GET on the change log [cc-8].
`trspatch:afterETag`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, gives the final HTTP entity tag of the resource referenced in the `trs:changed property` - the entity-tag value that would have been returned in the HTTP ETag response header if the resource had been retrieved immediately after the change. Clients can use this as the expected `trspatch:beforeETag` value in a chain of patch events for a tracked resource.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`trspatch:beforeETag`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, gives the initial HTTP entity tag of the antecedent resource for a patch event. This is the entity-tag value that would be returned in the HTTP ETag response header if the antecedent resource had been retrieved immediately before the change. If this property is missing, or if the entity-tag value does not match the current state of the antecedent resource, the patch should be ignored and the event treated as a normal modification event.
`trspatch:createdFrom`	Zero-or-one	true	Resource	Reference	Unspecified	This property **MUST NOT** be present unless the `trspatch:rdfPatch` property is also present [cc-9], indicating this change event is annotated with a patch. This property, when present, identifies the antecedent resource to be used to define the "before" state of the patch. If omitted, the antecedent resource is the resource referenced in the `trs:changed` property.
`trspatch:rdfPatch`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, describes a patch to be applied to the antecedent resource's RDF representation. A patch cannot describe a change to the non-RDF contents of a resource. The result of applying the patch describes the representation of the resource referenced in the `trs:changed` property immediately after this change event. This property is used with `trs:Modification` and `trs:Creation Change Events`; it is not meaningful for `trs:Deletion` Change Events. The format of the patch property is defined at TRS Patch.

1.2.5 Resource: ModificationEventShape

- **Describes:** `http://open-services.net/ns/core/trs#Modification`
- **Summary:** Modification Event
- **Description:** Represents the creation or modification of a resource at a point in time.

Modification Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`trs:changed`	Exactly-one	true	Resource	Reference	Unspecified	The resource that has been created, modified, or deleted.
`trs:order`	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-10], but a more recently available Change Event **MUST** have a larger number than any previously avalable Change Event as accessed by GET on the change log [cc-11].

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`trspatch:afterETag`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, gives the final HTTP entity tag of the resource referenced in the `trs:changed property` - the entity-tag value that would have been returned in the HTTP ETag response header if the resource had been retrieved immediately after the change. Clients can use this as the expected `trspatch:beforeETag` value in a chain of patch events for a tracked resource.
`trspatch:beforeETag`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, gives the initial HTTP entity tag of the antecedent resource for a patch event. This is the entity-tag value that would be returned in the HTTP ETag response header if the antecedent resource had been retrieved immediately before the change. If this property is missing, or if the entity-tag value does not match the current state of the antecedent resource, the patch should be ignored and the event treated as a normal modification event.
`trspatch:createdFrom`	Zero-or-one	true	Resource	Reference	Unspecified	This property **MUST NOT** be present unless the `trspatch:rdfPatch` property is also present [cc-12], indicating this change event is annotated with a patch. This property, when present, identifies the antecedent resource to be used to define the "before" state of the patch. If omitted, the antecedent resource is the resource referenced in the `trs:changed` property.
`trspatch:rdfPatch`	Zero-or-one	true	string	N/A	Unspecified	This property, when present, describes a patch to be applied to the antecedent resource's RDF representation. A patch cannot describe a change to the non-RDF contents of a resource. The result of applying the patch describes the representation of the resource referenced in the `trs:changed` property immediately after this change event. This property is used with `trs:Modification` and `trs:Creation Change Events`; it is not meaningful for `trs:Deletion` Change Events. The format of the patch property is defined at TRS Patch.

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

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`trs:changed`	Exactly-one	true	Resource	Reference	Unspecified	The resource that has been created, modified, or deleted.
`trs:order`	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-13], but a more recently available Change Event **MUST** have a larger number than any previously avalable Change Event as accessed by GET on the change log [cc-14].

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-15]

