OASIS OPEN PROJECTS

OSLC Configuration Management Version 1.0. Part 2: Versioned Resources

Project Specification 01
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This specification is one component of a Work Product that also includes:

- *OSLC Configuration Management Version 1.0. Part 1: Overview.* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/oslc-config-mgt.html
- *OSLC Configuration Management Version 1.0. Part 2: Versioned Resources (this document).* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/versioned-resources.html
- *OSLC Configuration Management Version 1.0. Part 3: Configuration Specification.* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/config-resources.html
- *OSLC Configuration Management Version 1.0. Part 4: RDF Vocabulary.* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/config-vocab.html
- *OSLC Configuration Management Version 1.0. Part 5: Machine Readable Vocabulary Terms.* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/config-vocab.ttl
- *OSLC Configuration Management Version 1.0. Part 6: Machine Readable Vocabulary Constraints.* https://docs.oasis-open-projects.org/oslc-op/config/v1.0/ps01/config-shapes.ttl

RDF Namespaces:

http://open-services.net/ns/config#

Abstract:

This part of the OSLC Configuration Management Specification defines the representation and behavior of versioned resources.

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.

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1. Introduction

This section is non-normative.

1.1 Typographical Conventions and Use of RFC Terms

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.

1.2 References

1.2.1 Normative references

[LDP]

Steve Speicher; John Arwe; Ashok Malhotra. *Linked Data Platform 1.0*. W3C, 26 February 2015. W3C Recommendation. URL: https://www.w3.org/TR/ldp/

[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

[TRS]

Steve Speicher; Frank Budinsky; Vivek Garg; Nick Crossley. *OSLC Tracked Resource Set Version 3.0. Part 1: Specification*. OASIS. URL: https://docs.oasis-open-projects.org/oslc-op/trs/v3.0/tracked-resource-set.html

2. Concept and Version Resources

This section is non-normative.

This part of the OSLC Configuration Management Specification defines the representation and behavior of versioned resources - resources that have multiple versions.

As described in OSLC Configuration Management - Concept resources, version resources, and configuration contexts, the major "Artifacts" or "Entities" in OSLC domains are **concept resources**.

The state (including the properties) of a concept resource can vary over time, or for other reasons. A **versioned resource** is a concept resource that keeps track of different states; a **version resource** is one specific state of a versioned resource.

Versioned resources are typically used in configurations - where they are often called *configuration items*.

3. Version Resources

A version resource defines a particular version of the state of a concept resource. Not every past state is necessarily kept. A server **MAY** elide or discard states. [config-vr-1]

A version resource URI identifies a specific version of a concept resource with no further configuration context required.

A version resource **MUST** have a type of `oslc_config:VersionResource`. [config-vr-2]

A version resource **MUST** be related to its concept resource using the `dcterms:isVersionOf` property. [config-vr-3]

Version resources **SHOULD** be compliant with [LDP]. [config-vr-4]

Version resources **SHOULD** have an `oslc_config:versionId` property. [config-vr-5]

Servers **MAY** provide other properties that distinguish between major changes or revisions, and minor changes or iterations. [config-vr-6]

4. Version Resource Shapes

- **Describes:** `http://open-services.net/ns/config#VersionResource`
- **Summary:** The shape of a versioned resource: all versioned resources **MUST** match this shape [config-vr-7]. Versioned resources **SHOULD** match other shapes appropriate for their types - that is, they **MAY** have additional properties and property constraints beyond those defined here [config-vr-8].

VersionResource Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`dcterms:contributor`	Zero-or-many	unspecified	AnyResource	Either	`foaf:Agent`, `foaf:Person`	Contributor or contributors to the resource. The link target is usually a `foaf:Person` or `foaf:Agent`, but could be any type.
`dcterms:created`	Zero-or-one	true	dateTime	N/A	Unspecified	Timestamp of resource creation. Each resource **SHOULD** have one instance of the `dcterms:created` property [config-vr-9].
`dcterms:creator`	Zero-or-many	true	AnyResource	Either	`foaf:Agent`, `foaf:Person`	Creator or creators of the resource. The link target is usually a `foaf:Person` or `foaf:Agent`, but could be any type.
`dcterms:description`	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Descriptive text about the resource, represented as rich text in XHTML content.
`dcterms:identifier`	Zero-or-one	true	string	N/A	Unspecified	A unique identifier for this resource.
`dcterms:isVersionOf`	Exactly-one	unspecified	Resource	Reference	Unspecified	The concept resource of which this resource is a version. The subject of this property **MUST** be the version resource URI [config-vr-10].
`dcterms:modified`	Zero-or-one	true	dateTime	N/A	Unspecified	Timestamp of latest resource modification. Each resource **SHOULD** have one instance of the `dcterms:modified` property [config-vr-11].
`dcterms:subject`	Zero-or-many	unspecified	string	N/A	Unspecified	Tag or keyword for a resource. Each occurrence of a `dcterms:subject` property denotes an additional tag for the resource. Tags on versioned resources **SHOULD** be modifiable even if the resource is otherwise immutable (checked in) [config-vr-12].
`dcterms:title`	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content.
`oslc_config:committed`	Zero-or-one	true	dateTime	N/A	Unspecified	Date and time this version resource was checked in. Absent for mutable (checked out) versions.
`oslc_config:committer`	Zero-or-many	true	AnyResource	Either	`foaf:Agent`, `foaf:Person`	The entity that checked in this version.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
`oslc_config:component`	Zero-or-one	unspecified	Resource	Reference	`oslc_config:Component`	The component to which this version belongs. Configuration Management servers **SHOULD** indicate the owning component for each version resource using either this property, or using the membership relationship from the component LDPC [config-vr-13].
`oslc_config:versionId`	Zero-or-many	unspecified	string	N/A	Unspecified	A short human-readable identifier for the version of a resource. All versioned resources **SHOULD** have this property; where the property is present, this identifier **MUST** be unique amongst all currently existing versions of the same concept resource. The subject of this property **SHOULD** be the concept resource URI [config-vr-14].
`oslc:archived`	Zero-or-one	unspecified	boolean	N/A	Unspecified	Indicates whether the subject has been marked as archived, no longer an active resource.
`oslc:instanceShape`	Zero-or-one	true	Resource	Either	`oslc:ResourceShape`	The URI of a Resource Shape that describes the possible properties, occurrence, value types, allowed values and labels. This shape information is useful in displaying the subject resource as well as guiding clients in performing modifications. Instance shapes may be specific to the authenticated user associated with the request that retrieved the resource, the current state of the resource, and other factors, so instance shapes **SHOULD NOT** be cached [config-vr-15].
`oslc:modifiedBy`	Zero-or-many	true	AnyResource	Either	`foaf:Agent`, `foaf:Person`	The entity that most recently modified the subject resource. The link target is usually a `foaf:Person` or `foaf:Agent`, but could be any type.
`oslc:serviceProvider`	Zero-or-many	true	Resource	Reference	`oslc:ServiceProvider`	A link to the resource's OSLC Service Provider. If the subject resource is available from an application that implements multiple domain specifications, there can be multiple values for this property.
`oslc:shortId`	Zero-or-one	unspecified	string	N/A	Unspecified	A short and human-readable identifier for the resource, such as a number.
`oslc:shortTitle`	Zero-or-one	unspecified	XMLLiteral	N/A	Unspecified	A short title for the resource, represented as rich text in XHTML content.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
prov:wasDerivedFrom	Zero-or-many	unspecified	Resource	Reference	Unspecified	A resource from which this version was derived. This is likely to reference a different concept resource; use of prov:wasRevisionOf is recommended to indicate an earlier version of the same concept resource. The subject of each instance of this property MUST be the concept resource URI; the object can be a version resource URI, or a concept resource URI (possibly for a non-versioned resource) [config-vr-16].
prov:wasRevisionOf	Zero-or-many	unspecified	Resource	Reference	Unspecified	A resource from which this version was derived. This is likely to reference an earlier version of the same concept resource; use of prov:wasDerivedFrom is recommended to indicate an earlier version of a different concept resource. The subject of each instance of this property MUST be the concept resource URI; the object is likely to be a version resource URI [config-vr-17].
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. One of the type properties MUST have the version resource URI as the subject, and MUST have a resource type of oslc_config:VersionResource [config-vr-18]. Other types for the concept resource of which this is a version SHOULD use the concept resource URI as the subject [config-vr-19].

5. Supported Operations on Versioned Resources

A versioned resource server **MUST** support the following operations on version resources: [config-vr-20]

- HEAD: Retrieve information about a specific version resource.
- GET: Retrieve the state of a specific version resource.
- OPTIONS: Get information about the available operations on a version resource.

A versioned resource server **MAY** support the following operations on version resources: [config-vr-21]

- PUT: Update the state of a specific version resource; this operation **MAY** succeed by creating a new version, or **MAY** succeed without creating a new version for servers that offer version resources with mutable state. A PUT operation on a version resource **MAY** fail, since version resources may be immutable, or have many immutable properties. [config-vr-22]
- DELETE: Delete the specified version resource. Deletion of immutable versions, or versions used in configurations, **MAY** fail or **MAY** require specific privileges. [config-vr-23]

6. Delegated UIs

A versioned resource server **MAY** provide delegated user interface dialogs for creation of new concept resources or new version resources. [config-vr-24]

A versioned resource server **SHOULD** provide delegated user interface dialogs for selection of concept resources. A versioned resource server **MAY** provide delegated user interface dialogs for selection of version resources, but such selection is typically performed in a configuration context to find the appropriate version. [config-vr-25]

7. Compact Rendering

A versioned resource server **SHOULD** implement compact rendering, both for concept resources and version resources. See Compact Rendering for the handling of configuration context in such rendering. [config-vr-26]

8. Tracked Resource Sets

A versioned resource server **MAY** publish version resources in a Tracked Resource Set; the URIs in the base and change log **MUST** be the version resource URIs, not the concept resource URIs. All Tracked Resource Sets for version resources **MUST** be compliant with [TRS]. [config-vr-27]

9. Conformance

Implementations of this specification need to satisfy the following conformance clauses.

Clause Number	Requirement
config-vr-1	A version resource defines a particular version of the state of a concept resource. Not every past state is necessarily kept. A server **MAY** elide or discard states.
config-vr-2	A version resource **MUST** have a type of `oslc_config:VersionResource`.
config-vr-3	A version resource **MUST** be related to its concept resource using the `dcterms:isVersionOf` property.
config-vr-4	Version resources **SHOULD** be compliant with [LDP].
config-vr-5	Version resources **SHOULD** have an `oslc_config:versionId` property.
config-vr-6	Servers **MAY** provide other properties that distinguish between major changes or revisions, and minor changes or iterations.
config-vr-7	The shape of a versioned resource: all versioned resources **MUST** match this shape
config-vr-8	Versioned resources **SHOULD** match other shapes appropriate for their types - that is, they **MAY** have additional properties and property constraints beyond those defined here
config-vr-9	Each resource **SHOULD** have one instance of the `dcterms:created` property
config-vr-10	The subject of this property **MUST** be the version resource URI
config-vr-11	Each resource **SHOULD** have one instance of the `dcterms:modified` property
config-vr-12	Tags on versioned resources **SHOULD** be modifiable even if the resource is otherwise immutable (checked in)
config-vr-13	Configuration Management servers **SHOULD** indicate the owning component for each version resource using either this property, or using the membership relationship from the component LDPC
config-vr-14	All versioned resources **SHOULD** have this property; where the property is present, this identifier **MUST** be unique amongst all currently existing versions of the same concept resource. The subject of this property **SHOULD** be the concept resource URI
config-vr-15	instance shapes **SHOULD NOT** be cached
config-vr-16	The subject of each instance of this property **MUST** be the concept resource URI; the object can be a version resource URI, or a concept resource URI (possibly for a non-versioned resource)
config-vr-17	The subject of each instance of this property **MUST** be the concept resource URI; the object is likely to be a version resource URI
config-vr-18	One of the type properties **MUST** have the version resource URI as the subject, and **MUST** have a resource type of `oslc_config:VersionResource`
config-vr-19	Other types for the concept resource of which this is a version **SHOULD** use the concept resource URI as the subject
config-vr-20	A versioned resource server **MUST** support the following operations on version resources:
config-vr-21	A versioned resource server **MAY** support the following operations on version resources:
config-vr-22	PUT: Update the state of a specific version resource; this operation **MAY** succeed by creating a new version, or **MAY** succeed without creating a new version for servers that offer version resources with mutable state. A PUT operation on a version resource **MAY** fail, since version resources may be immutable, or have many immutable properties.
config-vr-23	DELETE: Delete the specified version resource. Deletion of immutable versions, or versions used in configurations, **MAY** fail or **MAY** require specific privileges.
config-vr-24	A versioned resource server **MAY** provide delegated user interface dialogs for creation of new concept resources or new version resources.
config-vr-25	A versioned resource server **SHOULD** provide delegated user interface dialogs for selection of concept resources. A versioned resource server **MAY** provide delegated user interface dialogs for selection of version resources, but such selection is typically performed in a configuration context to find the appropriate version.

Clause Number	Requirement
config-vr-26	A versioned resource server **SHOULD** implement compact rendering, both for concept resources and version resources. See Compact Rendering for the handling of configuration context in such rendering.
config-vr-27	A versioned resource server **MAY** publish version resources in a Tracked Resource Set; the URIs in the base and change log **MUST** be the version resource URIs, not the concept resource URIs. All Tracked Resource Sets for version resources **MUST** be compliant with [TRS].