OASIS OPEN PROJECTS

OSLC Configuration Management Version 1.1. Part 3: Configuration Specification

Project Specification Draft 01
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Previous stage:

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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 Configuration Management Version 1.1. Part 1: Overview.* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/oslc-config-mgt.html
- *OSLC Configuration Management Version 1.1. Part 2: Versioned Resources* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/versioned-resources.html
- *OSLC Configuration Management Version 1.1. Part 3: Configuration Specification (this document)* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/config-resources.html
- *OSLC Configuration Management Version 1.1. Part 4: RDF Vocabulary.* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/config-vocab.html
- *OSLC Configuration Management Version 1.1. Part 5: Machine Readable Vocabulary Terms* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/config-vocab.ttl
- *OSLC Configuration Management Version 1.1. Part 6: Machine Readable Vocabulary Constraints* https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/config-shapes.ttl

RDF Namespaces:

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

Standards Track Work Product

Abstract:

This part of the OSLC Configuration Management Specification defines the representation and behavior of components and configurations of resources in those components (typically referred to as configurations of components, or just configurations).

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.

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OSLC Configuration Management Version 1.1. Part 3: Configuration Specification Edited by Jim Amsden. 24 October 2024. OASIS Project Specification Draft 01. https://docs.oasis-open-projects.org/oslc-op/config/v1.1/psd01/config-resources.html. Latest stage: https://docs.oasis-open-projects.org/oslc-op/config/v1.1/config-resources.html.

Notices

Table of Contents

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

[ABNF]

D. Crocker; P. Overell. *Augmented BNF for Syntax Specifications: ABNF*. IETF. Internet Standard. URL: https://tools.ietf.org/html/rfc5234

[CORS]

WHATWG contributors. *Fetch standard*. WHATWG. Living Standard. URL: https://fetch.spec.whatwg.org/commit-snapshots/d070ea245c6eb66cf4196324f063dc6ab608d9e6/#http-cors-protocol

[OSLCCore3]

Jim Amsden. *OSLC Core Version 3.0. Part 1: Overview*. OASIS. URL: https://docs.oasis-open-projects.org/oslc-op/core/v3.0/oslc-core.html

[OSLCQuery]

Jim Amsden; S. Padgett; S. Speicher; David Honey. *OSLC Query Version 3.0*. OASIS. URL: https://docs.oasis-open-projects.org/oslc-op/query/v3.0/oslc-query.html

[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

[URI]

T. Berners-Lee; P. Overell. *Uniform Resource Identifier (URI): Generic Syntax* IETF. Internet Standard. URL: https://datatracker.ietf.org/doc/html/rfc3986/#section-1.3

2. Service Discovery

A configuration server **SHOULD** implement [OSLCCore3] ServiceProvider and Service resources, where an **oslc:domain** property has the value **http://open-services.net/ns/config#**. [CONFIG-RES-1]

A global configuration service resource, if provided, **SHOULD** include the property **oslc:usage** with the value **http://open-services.net/ns/config#globalConfigurationService**. [CONFIG-RES-2]

A service with this usage property **MUST** provide all global configuration capabilities described as mandatory in this specification. [CONFIG-RES-3]

3. Component and Configuration Constraints

This section describes constraints on the resources for components, configurations, and related artifacts.

Configuration Management servers **MUST** observe these constraints, but **MAY** provide additional classes, properties, and individuals. [CONFIG-RES-4]

In particular, Configuration Management servers **MAY** define additional types of configuration, but all configurations **MUST** also be of one of the types defined here. [CONFIG-RES-5]

3.1 Resource shape for Component

- **Describes:** **http://open-services.net/ns/config#Component**
- **Summary:** The shape of a component.
- **Description:** A set of versioned resources; a configuration selects zero, one, or (very rarely) more than one version of these resources. A component itself **MAY** be a versioned resource [CONFIG-RES-6], indicated by the RDF type **oslc_config:VersionResource** on its versions, but need not be versioned; the semantics of versioned components are not defined by this specification. Typically, components themselves are not nested - that is, typically none of the members of an **oslc_config:Component** container are themselves of type **oslc_config:Component**; any required structure and hierarchy is realized through configurations, or through the structures within the configuration items themselves (e.g., versioned folders or directories).

Component 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-RES-7].
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: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-RES-8].
dcterms:subject	Zero-or-many	false	string	N/A	Unspecified	Tag or keyword for a resource. Each occurrence of a **dcterms:subject** property denotes an additional tag for the resource.
dcterms:title	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content.
oslc_config:configurations	Exactly-one	true	Resource	Reference	**ldp:Container**	The Linked Data Platform Container that contains all the configurations (both streams and baselines) of this component. The **oslc_config:configurations** property on a component is read-only; servers **MAY** also treat the referenced container as read-only [CONFIG-RES-9]. If it is not read-only, the container **MAY** have an **oslc:resourceShape** property referencing a resource shape that describes the container [CONFIG-RES-10]. If a container resource shape is specified, the shape **SHOULD** have a property describing the membership of the container with a **oslc:valueShape** referencing a resource shape that describes the shapes of streams and baselines that may be created [CONFIG-RES-11].
oslc:archived	Zero-or-one	unspecified	boolean	N/A	Unspecified	Indicates whether the subject has been marked as archived, no longer an active resource.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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-RES-12].
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.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A Component MUST have a resource type of oslc_config:Component [CONFIG-RES-13]. A component MAY be a Linked Data Platform Container, containing the concept resources associated with this component [CONFIG-RES-14]. The members of such an oslc_config:Component container MUST NOT be of type oslc_config:Configuration [CONFIG-RES-15]; sub-configurations are given in the oslc_config:contributions property. No meaning is assigned to a member of type oslc_config:Component; neither client nor server is obligated to perform any recursion through nested Components. Servers MAY treat the rdf:type property for a component as read-only. [CONFIG-RES-16]

3.2 Resource shape for Baseline

- **Describes:** http://open-services.net/ns/config#Baseline
- **Summary:** The shape of a baseline. Properties of a baseline defined in this specification MUST be read-only unless stated otherwise [CONFIG-RES-17].

Baseline Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
dcterms:contributor	Zero-or-many	true	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-RES-18].
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	unspecified	XMLLiteral	N/A	Unspecified	Descriptive text about the resource, represented as rich text in XHTML content. The description of a baseline MAY be modifiable [CONFIG-RES-19].
dcterms:identifier	Zero-or-one	true	string	N/A	Unspecified	A unique identifier for this resource.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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-RES-20].
dcterms:subject	Zero-or-many	false	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 baselines MUST be modifiable [CONFIG-RES-21].
dcterms:title	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content. The title of a baseline SHOULD be modifiable [CONFIG-RES-22].
oslc_config:acceptedBy	Zero-or-many	true	Resource	Reference	rdfs:Class	A type of configuration that accepts this configuration as a contribution. A configuration with no value for oslc_config:acceptedBy MUST NOT be used as a contribution to any other configuration [CONFIG-RES-23] - that is, it can only be a root of a configuration hierarchy (or a stand-alone configuration if there is also no value for oslc_config:accepts). Such configurations should be rare.
oslc_config:baselineOfStream	Exactly-one	true	Resource	Reference	oslc_config:Configuration	Indicates the stream of which this is a baseline. Note that the referenced resource might no longer exist (streams are mutable so can be deleted), but this property remains valuable to relate all baselines of the same stream.
oslc_config:branch	Zero-or-one	true	Resource	Either	Unspecified	An indicator of the intended purpose of the baseline.
oslc_config:committed	Zero-or-one	true	dateTime	N/A	Unspecified	Date and time this configuration was committed as a baseline.
oslc_config:committer	Zero-or-many	true	AnyResource	Either	foaf:Agent, foaf:Person	The entity that committed this configuration as a baseline. The link target is usually a foaf:Person or foaf:Agent, but could be any type.
oslc_config:component	Exactly-one	true	Resource	Reference	oslc_config:Component	The component of which this is a configuration, and from which the configuration selects versions of resources in the component. The component is an invariant relating the different configurations of the same 'thing'.
oslc_config:contribution	Zero-or-many	true	AnyResource	Inline	oslc_config:Contribution	A contribution to this baseline. The set of resource versions identified by this baseline is the union of the set determined by the oslc_config:selections resources and each of the sets of resource versions identified by the contributed baselines. The target MUST be of type oslc_config:Contribution [CONFIG-RES-24]. Contribution resources MUST be returned inline with the baseline resource [CONFIG-RES-25]. In the set of Contribution resources for a single parent baseline, there MUST be only one Contribution resource for a given contributed baseline [CONFIG-RES-26].

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_config:previousBaseline	Zero-or-many	true	Resource	Reference	oslc_config:Baseline	A reference to the immediately preceding baseline of the same stream. Multiple instances of this property imply the stream was merged from one or more baselines before this baseline was taken. This property MAY be updated by the server to refer to earlier baselines when intermediate baselines are deleted [CONFIG-RES-27].
oslc_config:selections	Zero-or-many	true	Resource	Reference	oslc_config:Selections	A reference to a resource identifying immutable versions of the resources (configuration items) in the configuration. The set of version resources identified is the union of the sets in all the selections resources. Since selections properties are not ordered, there is no defined meaning to a selection that appears in two or more different selections properties; servers MAY treat such multiple occurrences of selections as an error [CONFIG-RES-28].
oslc_config:streams	Exactly-one	true	Resource	Reference	ldp:Container	The Linked Data Platform Container that contains all the streams derived from this baseline. A new stream derived from this baseline is created by a POST to this container; a previousBaseline property of the new stream MUST be set to refer to this baseline [CONFIG-RES-29]. Note that the streams property itself is immutable, but the container referenced by the property is not. The container MAY have an oslc:resourceShape property referencing a resource shape that describes the container [CONFIG-RES-30]. If a container resource shape is specified, it should have a property describing the membership of the container with a `oslc:valueShape` referencing a resource shape that describes the shapes of streams that may be created [CONFIG-RES-31].
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-RES-32].
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:release	Zero-or-many	false	Resource	Reference	Unspecified	A link to a resource indicating a target release for the artifacts selected by this configuration.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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.
prov:wasDerivedFrom	Zero-or-many	true	Resource	Reference	oslc_config:Configuration	A stream or baseline from which this stream was first copied. This property can be absent for streams created as new empty streams. Multiple instances of this property imply the stream was initially formed from a merge from one or more baselines. The prov:wasDerivedFrom property is undefined for baselines; it MAY be absent, or it MAY have the same value as oslc_config:baselineOfStream [CONFIG-RES-33]. If this property is present on multiple change sets overriding the same base configuration, it implies a partial ordering of those change sets, identifying change sets derived from earlier change sets on the same base. Servers SHOULD treat this property as read-only after initial creation [CONFIG-RES-34].
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A baseline MUST have at least the resource type oslc_config:Baseline [CONFIG-RES-35]. Clients can infer a resource type of oslc_config:Configuration, but there is no requirement for servers to materialize this triple in the RDF representation. Other types MAY be added, including types that are used in oslc_config:accepts and oslc_config:acceptedBy properties [CONFIG-RES-36] to define which matching configurations may be added as contributions to this configuration, or to which this configuration may be added as a contribution. Servers MAY treat the rdf:type property of a baseline as read-only [CONFIG-RES-37].

3.3 Resource shape for Stream

- **Describes:** http://open-services.net/ns/config#Stream
- **Summary:** The shape of a stream.

Stream 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-RES-38].

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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: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-RES-39].
dcterms:subject	Zero-or-many	false	string	N/A	Unspecified	Tag or keyword for a resource. Each occurrence of a dcterms:subject property denotes an additional tag for the resource.
dcterms:title	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content.
oslc_config:acceptedBy	Zero-or-many	true	Resource	Reference	rdfs:Class	A type of configuration that accepts this configuration as a contribution. A configuration with no value for oslc_config:acceptedBy MUST NOT be used as a contribution to any other configuration [CONFIG-RES-40] - that is, it can only be a root of a configuration hierarchy (or a stand-alone configuration if there is also no value for oslc_config:accepts). Such configurations should be rare.
oslc_config:accepts	Zero-or-many	true	Resource	Reference	rdfs:Class	A type of configuration that is acceptable as a contribution to this stream. A configuration with no value for this predicate accepts no contributions - that is, it can only be a leaf in a configuration hierarchy.
oslc_config:baselines	Exactly-one	true	Resource	Reference	ldp:Container	The Linked Data Platform Container that contains all the baselines of this stream. A new baseline of this stream is created by a POST to this container. Note that the baselines property itself is immutable, but the container referenced by the property is not. The container MAY have an oslc:resourceShape property referencing a resource shape that describes the container [CONFIG-RES-41]. If a container resource shape is specified, it SHOULD have a property describing the membership of the container with a oslc:valueShape referencing a resource shape that describes the additional properties that may be specified for baselines [CONFIG-RES-42].
oslc_config:branch	Zero-or-one	false	Resource	Either	Unspecified	An indicator of the intended purpose of the configuration.
oslc_config:component	Exactly-one	true	Resource	Reference	oslc_config:Component	The component of which this is a configuration, and from which the configuration selects versions of resources in the component. The component is an invariant relating the different configurations of the same 'thing'.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_config:contribution	Zero-or-many	false	AnyResource	Inline	oslc_config:Contribution	A contribution to this configuration. The set of resource versions identified by this configuration is the union of the set determined by the oslc_config:selections resources and each of the sets of resource versions identified by the contributed configurations. A user can request an update to a configuration to change the set of contributions; servers MAY deny such requests if any added contributions do not match this configuration [CONFIG-RES-43]. The target MUST be of type oslc_config:Contribution [CONFIG-RES-44]. Contribution resources MUST be returned inline with the configuration resource [CONFIG-RES-45]. In the set of Contribution resources for a single parent configuration, there MUST be only one Contribution resource for a given contributed configuration [CONFIG-RES-46].
oslc_config:previousBaseline	Zero-or-many	true	Resource	Reference	oslc_config:Baseline	A reference to the immediately preceding baseline of this stream. Multiple instances of this property imply the stream was merged from one or more baselines, and no baseline of the merged result has yet been taken. If the property is absent, no baseline of this stream has been taken.
oslc_config:selections	Zero-or-many	unspecified	Resource	Reference	oslc_config:Selections	A reference to a resource identifying versions of the resources (configuration items) in the configuration. The set of version resources identified is the union of the sets in all the selections resources. Since selections properties are not ordered, there is no defined meaning to a selection that appears in two or more different selections properties; servers MAY treat such multiple occurrences of selections as an error [CONFIG-RES-47]. Servers MAY treat this property as read-only [CONFIG-RES-48].
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-RES-49].
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.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc:release	Zero-or-many	false	Resource	Reference	Unspecified	A link to a resource indicating a target release for the artifacts selected by this configuration.
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.
prov:wasDerivedFrom	Zero-or-many	true	Resource	Reference	oslc_config:Configuration	A stream or baseline from which this stream was first copied. This property can be absent for streams created as new empty streams. Multiple instances of this property imply the stream was initially formed from a merge from one or more baselines. The prov:wasDerivedFrom property is undefined for baselines; it MAY be absent, or it MAY have the same value as oslc_config:baselineOfStream [CONFIG-RES-50]. If this property is present on multiple change sets overriding the same base configuration, it implies a partial ordering of those change sets, identifying change sets derived from earlier change sets on the same base. Servers SHOULD treat this property as read-only after initial creation [CONFIG-RES-51].
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A stream MUST have at least the resource type oslc_config:Stream [CONFIG-RES-52]. Clients can infer a resource type of oslc_config:Configuration, but there is no requirement for servers to materialize this triple in the RDF representation. Other types MAY be added, including types that are used in oslc_config:accepts and oslc_config:acceptedBy properties to define which matching configurations may be added as contributions to this configuration, or to which this configuration may be added as a contribution [CONFIG-RES-53]. Servers MAY treat this property as read-only [CONFIG-RES-54].

3.4 Resource shape for ChangeSet

- **Describes:** http://open-services.net/ns/config#ChangeSet
- **Summary:** The shape of a ChangeSet.
- **Description:** A ChangeSet is a mutable configuration (a type of stream) that replaces, or identifies a set of changes from, the configuration identified by the oslc_config:overrides property. That overridden configuration may be either a stream or a baseline, but a change set itself may not be a baseline. Servers MAY refuse to construct a baseline of a change set configuration[CONFIG-RES-55]. This specification does not define the meaning of one change set overriding another change set; servers MAY treat this as an error [CONFIG-RES-56]. If this change set has any contributions, those contributions completely replace the contributions to the overridden configuration when using this change set configuration as a context for resolving versions, or any configuration that contains this change set as a contribution; if this change set has no contributions, any contributions to the overridden configuration are handled normally. Selections in the change set may add to, replace, or remove from, the selections in the overridden configuration, as defined in ChangeSet Selections.

ChangeSet Properties

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

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-RES-57].
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: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-RES-58].
dcterms:subject	Zero-or-many	false	string	N/A	Unspecified	Tag or keyword for a resource. Each occurrence of a dcterms:subject property denotes an additional tag for the resource.
dcterms:title	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content.
oslc_config:acceptedBy	Zero-or-many	true	Resource	Reference	rdfs:Class	A type of configuration that accepts this configuration as a contribution. A configuration with no value for oslc_config:acceptedBy MUST NOT be used as a contribution to any other configuration [CONFIG-RES-59] - that is, it can only be a root of a configuration hierarchy (or a stand-alone configuration if there is also no value for oslc_config:accepts). Such configurations should be rare.
oslc_config:accepts	Zero-or-many	true	Resource	Reference	rdfs:Class	A type of configuration that is acceptable as a contribution to this stream. A configuration with no value for this predicate accepts no contributions - that is, it can only be a leaf in a configuration hierarchy.
oslc_config:branch	Zero-or-one	false	Resource	Either	Unspecified	An indicator of the intended purpose of the configuration.
oslc_config:component	Exactly-one	true	Resource	Reference	oslc_config:Component	The component of which this is a configuration, and from which the configuration selects versions of resources in the component. The component is an invariant relating the different configurations of the same 'thing'.
oslc_config:contribution	Zero-or-many	unspecified	AnyResource	Inline	oslc_config:Contribution	A contribution to this change set configuration. Servers MAY support contributions to change sets [CONFIG-RES-60], and if so, this property behaves just as that for streams.
oslc_config:overrides	Exactly-one	unspecified	Resource	Reference	oslc_config:Configuration	A reference to a configuration modified or overridden by this change set configuration.

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_config:selections	Zero-or-many	unspecified	Resource	Reference	oslc_config:ChangeSetSelections	A reference to a resource identifying versions of the resources (configuration items) in the configuration; these selections override, reduce, or extend the selections in the configuration identified by the oslc_config:overrides property. Servers MAY treat this property as read-only [CONFIG-RES-61].
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-RES-62].
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:release	Zero-or-many	false	Resource	Reference	Unspecified	A link to a resource indicating a target release for the artifacts selected by this configuration.
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.
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A change set configuration MUST have at least the resource type oslc_config:ChangeSet [CONFIG-RES-63]. Clients may infer a resource type of oslc_config:Configuration, but there is no requirement for servers to materialize this triple in the RDF representation. Other types may be added, including types that are used in oslc_config:accepts properties to define which matching configurations to which this configuration may be added as a contribution. Servers MAY treat this property as read-only [CONFIG-RES-64].

3.5 Resource shape for ChangeSetDelivery

- **Describes:** http://open-services.net/ns/config#ChangeSetDelivery

- **Summary:** The shape of a ChangeSetDelivery.
- **Description:** A ChangeSetDelivery is a resource representing the delivery of a single change set to a single target stream.

ChangeSetDelivery Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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-RES-65].
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: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-RES-66].
dcterms:subject	Zero-or-many	false	string	N/A	Unspecified	Tag or keyword for a resource. Each occurrence of a dcterms:subject property denotes an additional tag for the resource.
dcterms:title	Zero-or-one	false	XMLLiteral	N/A	Unspecified	Title of the resource, represented as rich text in XHTML content.
oslc_config:sourceConfiguration	Exactly-one	unspecified	Resource	Reference	oslc_config:ChangeSet	A reference to a resource identifying the change set that was delivered. This cannot be modified after creation.
oslc_config:targetStream	Exactly-one	unspecified	Resource	Reference	oslc_config:Configuration	A reference to a resource identifying the stream to which the change set was delivered. This cannot be modified after creation.
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-RES-67].
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: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
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A change set delivery MUST have at least the resource type oslc_config:ChangeSetDelivery [CONFIG-RES-68]. Clients may infer a resource type of oslc_config:ChangeSetDelivery, but there is no requirement for servers to materialize this triple in the RDF representation. .

3.6 Resource shape for Contribution

- **Describes:** http://open-services.net/ns/config#Contribution
- **Summary:** A contribution to a configuration.

Contribution Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
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-RES-69].
oslc_config:configuration	Exactly-one	unspecified	Resource	Reference	oslc_config:Configuration	The contributed configuration. This property is read-only for contributions to a baseline, and modifiable for contributions to a stream. On a PUT or POST of a Stream resource and its Contributions, this contributed configuration SHOULD be unique amongst the set of configurations contributed to a given parent configuration [CONFIG-RES-70]. a server MAY collapse multiple contributions for the same configuration to a single contribution [CONFIG-RES-71]. During such a reduction of multiple Contribution resources to a single Contribution resource, this specification does not define the contributionOrder value in the merged result.
oslc_config:contributionOrder	Exactly-one	unspecified	string	N/A	Unspecified	An indication of the order of the contribution, relative to other contributions. Contributions are sorted lexicographically on the Unicode code points of this value to resolve component skew. To ensure predictable sorting regardless of implementation and locale, the oslc_config:contributionOrder string SHOULD be restricted to ASCII characters [CONFIG-RES-72]. Servers MUST support at least 64 characters in this string [CONFIG-RES-73]. This property is read-only for contributions to a baseline, and modifiable for contributions to a stream.
oslc_config:overrides	Exactly-one	unspecified	Resource	Reference	oslc_config:Configuration	A reference to a configuration overridden by the configuration of this contribution.
rdf:type	Zero-or-many	true	Resource	Reference	rdfs:Class	A resource type URI. Clients can infer a resource type of oslc_config:Contribution, but there is no requirement for servers to materialize this triple in the RDF representation.

3.7 Resource shape for Selections

- **Describes:** http://open-services.net/ns/config#Selections
- **Summary:** The resources selected by a configuration.

Selections Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_config:selects	Zero-or-many	unspecified	Resource	Reference	Unspecified	If the selection type is not oslc_config:UnboundSelections, the target resource MUST be a version resource [CONFIG-RES-74]. If the selection type is oslc_config:UnboundSelections, the target is a concept URI for a concept resource that should be in the configuration, but for which no version is determined by this selection. Unbound selections can be bound to specific versions by mechanisms not defined by this specification (such as effectivity parameters, variability parameters, etc.), or may be left unbound, in which case the configuration may represent an incomplete or abstract view of a system. Selected resources MUST NOT be of type oslc_config:Configuration [CONFIG-RES-75]; sub-configurations are given in the oslc_config:contributions property. No meaning is assigned to a selected resource of type oslc_config:Component. This property is read-only for selections of a baseline, but MAY be modifiable for selections of a stream [CONFIG-RES-76].
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A Selections resource MUST have at least the resource type oslc_config:Selections [CONFIG-RES-77]. Selections resources MAY also have the type oslc_config:UnboundSelections [CONFIG-RES-78].

3.8 Resource shape for ChangeSet Selections

- **Describes:** http://open-services.net/ns/config#ChangeSetSelections
- **Summary:** The resources selected by a change set.

ChangeSetSelections Properties

Prefixed Name	Occurs	Read-only	Value-type	Representation	Range	Description
oslc_config:selects	Zero-or-many	unspecified	Resource	Reference	Unspecified	A selected version resource. Selected resources MUST NOT be of type oslc_config:Configuration [CONFIG-RES-79]; sub-configurations are given in the oslc_config:contributions property. No meaning is assigned to a selected resource of type oslc_config:Component. This property MAY be modifiable for selections of a change set [CONFIG-RES-80]. If the subject has the type oslc_config:RemoveAll, all selections in the overriden configuration are to be ignored; all selections are in this and other oslc_selects properties of the change set. Any target concept or version resources (depending on the presence or absence of the type oslc_config:UnboundSelections) indicated in this selection resource are selected in this configuration. Otherwise, if the subject has the type oslc_config:Removals, the indicated target concepts or versions are explicitly removed from the set of versions selected by the configuration overridden by this configuration. Otherwise, if the subject has only the type oslc_config:Selections, the indicated target concept or version resources are selected by this configuration; a change set selection overrides (replaces) the concepts or versions selected by a matching concept resource in the overridden configuration's selection, and adds additional selections for concept resources that are not mentioned in the overridden configuration's selection. Since selections properties are not ordered, there is no defined meaning to a selection that appears in two or more different selections properties of any types, or to a change set that include both a oslc_config:RemoveAll and a oslc_config:Removals selection; servers MAY treat occurrences of potentially conflicting selections as an error [CONFIG-RES-81].
rdf:type	One-or-many	unspecified	Resource	Reference	rdfs:Class	A resource type URI. A change set Selections resource MUST have at least the resource type oslc_config:Selections [CONFIG-RES-82]. Change set selections resources MAY also have the types oslc_config:ChangeSetSelections, oslc_config:UnboundSelections, oslc_config:Removals, or oslc_config:RemoveAll [CONFIG-RES-83].

4. Configuration context

Since concept resource URIs for versioned resources do not inherently identify a specific version of that resource, a client **SHOULD** provide a configuration context within which the concept resource is resolved to a specific version [CONFIG-RES-84].

A client requests a specific configuration context in one of two ways:

- When performing a GET on a concept URI, add a **Configuration-Context** header, passing the URI of a configuration resource as the value.

> EXAMPLE 1
>
> GET /resources/conceptResourceA HTTP/1.1
> Configuration-Context: https://example.com/configurations/myConfiguration1

- When performing a GET on a concept URI, add a query string **oslc_config.context** and the encoded configuration URI to the end of the request URI:

> EXAMPLE 2
>
> GET /resources/conceptResourceA?oslc_config.context=%3Chttp%3A//example.com/configurations/myConfiguration1%3E HTTP/1.1

The **Configuration-Context** header is a URI that **MUST** conform to the following ABNF grammar [ABNF]:

```
SP = " "
HTAB = %x09
WSP = SP / HTAB

header = config-context
config-context = "Configuration-Context:" *WSP URI
```

Where the term **URI** is defined in [URI].

[CONFIG-RES-85]

Syntax of the query string for configuration context:

```
?oslc_config.context=uri_ref_esc
```

The *uri_ref_esc* is an angle bracket-delimited URI reference in which > and \ are \-escaped, as defined in [OSLCCore3].

A server **MUST** support both these methods of passing configuration context.[CONFIG-RES-86]

If a request contains both a header and a query string, the server **MUST** use the query string. Servers **MUST** reject requests that contain two or more different configuration contexts passed in query strings. [CONFIG-RES-87]

Where the **Configuration-Context** header is used on a request, a server **SHOULD** include in the response a header **Vary=Configuration-Context** so that different configuration contexts do not use a previously cached response. [CONFIG-RES-88]

Configuration Management servers **SHOULD** use the **Access-Control-Allow-Headers** header [CORS] to allow the use of the **Configuration-Context** header in OSLC requests. [CONFIG-RES-89]

A request **SHOULD** contain only a single occurrence of the **Configuration-Context** header, and **MUST NOT** contain multiple **Configuration-Context** headers referencing different values. A server **SHOULD** treat multiple identical **Configuration-Context** headers as it would a single header, and **MUST** treat multiple **Configuration-Context** headers with different configuration values as an error. [CONFIG-RES-90]

If a configuration context is passed on a request for a non-versioned resource, the server **MUST NOT** treat that as an error, and **MAY** use that context to resolve references to embedded or related resources. [CONFIG-RES-91]

If a configuration context is passed on a request using the version URI for a versioned resource, a server **MUST** ignore the configuration context, even if that configuration context does not select that versioned resource. [CONFIG-RES-92]

> NOTE
>
> The client is responsible for providing the correct configuration context to each request issued by that client at least where the relevant resource might be a versioned resource. If a resource returned from such a request contains links, the client should not assume the server has returned version-specific or configuration-specific links, and the client should continue to provide the correct configuration context to fetch those related resources. Only in cases where the client knows that a resource is not versioned may the configuration context be omitted. As noted later, the compact rendering returned for UI Previews is an exception to this rule.

> NOTE: Implicitly defined configuration contexts

> While navigating between resources, resources or links of certain types may indicate that a different context is to be used when following links from that resource. Any such semantics should be defined by the specifications for such resource and link types; none are defined by this specification.

4.1 Default configuration

If a configuration context is not provided or implied, the server **MAY** provide a default configuration, or the request **MAY** fail. [CONFIG-RES-93]

A server **MAY** include an **oslc_config:configurationSettings** link in the OSLC Service resource, referencing an **oslc_config:ConfigurationsSettings** resource. That resource **MAY** contain at most one **oslc_config:defaultConfiguration** property whose value is the URI of the default configuration to be used by that service. [CONFIG-RES-94]

An **oslc_config:defaultConfiguration** property with an **rdf:nil** value implies there is no default configuration, so requests with no context **MUST** fail. [CONFIG-RES-95]

Servers **MAY** support a PUT on **oslc_config:ConfigurationsSettings** resource as a way to set the default configuration. Servers **MAY** provide other ways for users to set the default configuration. [CONFIG-RES-96]

> NOTE: Default configuration may be implicit
>
> The absence of the **oslc_config:defaultConfiguration** has no implication as to the presence or absence of a default configuration.

5. Supported Operations on Components

A configuration server **MUST** support the following operations on components: [CONFIG-RES-97]

- HEAD and OPTIONS: Retrieve information about the component
- GET: Retrieve the current state of the component
- GET on the component creation factory LDPC to find all components
- GET on the configuration LDPC for a component to find all configurations (baselines and streams) of that component

A configuration server **SHOULD** support, and a global configuration server **MUST** support, the following operations on Linked Data Platform Containers: [CONFIG-RES-98]

- POST to the component LDPC to create a new component. A successful response **MUST** contain a **Location** header providing the URI of the newly created component. [CONFIG-RES-99]
- POST to the configuration LDPC for a component to create a new stream for that component, optionally specifying an initial baseline; if an initial baseline is not specified, a real or notional empty baseline is implied as the starting point for the stream. A successful response **MUST** contain a **Location** header providing the URI of the newly created component. [CONFIG-RES-100]

Servers **SHOULD** support the **Prefer** header for GET on LDPCs specifying PreferMinimalContainer: [CONFIG-RES-101]

> EXAMPLE 3
>
> Prefer: return=representation; include="http://www.w3.org/ns/ldp#PreferMinimalContainer"

allowing a client to retrieve properties about the LDPC, including any **oslc:resourceShape** properties, without needing to retrieve all membership triples.

Servers **MAY** support OSLC selective properties on a GET, allowing a client to specify exactly which properties of those LDPCs are to be returned. [CONFIG-RES-102]

A configuration server **SHOULD** support, and a global configuration server **MUST** support one or more component creation factories declared in one or more OSLC service providers. [CONFIG-RES-103]

A configuration server **SHOULD** support one or more query capabilities for components. [CONFIG-RES-104]

6. Supported Operations on Configurations

A configuration server **MUST** support the following operations on configurations: [CONFIG-RES-105]

- HEAD and OPTIONS: Retrieve information about the configuration
- GET: Retrieve the current state of the configuration

A configuration server **SHOULD** support, and a global configuration server **MUST** support, the following operations on configurations: [CONFIG-RES-106]

- PUT on a configuration resource to update the tags
- PUT on a configuration resource and its inline Contribution resources to update the set of contributed configurations
- DELETE a configuration; servers **MAY** refuse to delete configurations that are part of or referenced by existing baselines [CONFIG-RES-107].

A configuration server **MAY** support PATCH on a configuration to update the tags and/or the set of contributed configurations. [CONFIG-RES-108]

Since baselines are normally linked into a provenance chain using the **oslc_config:previousBaseline** property, servers **MAY** leave a stub resource (one with a minimal set of properties) behind instead of truly deleting a baseline [CONFIG-RES-109]. Servers **SHOULD** add the property **oslc:archived=TRUE** on a reduced form of a partially deleted baseline [CONFIG-RES-110].

A configuration server **SHOULD** support one or more query capabilities for configurations. [CONFIG-RES-111]

7. Supported Operations on Selections

A configuration server MUST support the following operations on selections resources:[CONFIG-RES-112]

- HEAD and OPTIONS: Retrieve information about a selections resource
- GET: Retrieve the current state of a selections resource

> NOTE
>
> Servers may treat selections resources as read-only.

8. Supported Operations on Versioned Resources in a Configuration Context

A configuration server **MUST** support the following operations on configuration items (versioned concept resources) in the context of a global configuration, or in the context of a configuration from this server: [CONFIG-RES-113]

- HEAD: Retrieve information including the version resource URI (if any) about the state of a specified versioned concept resource in the context of a specified configuration.
- GET: Retrieve the state of a specified versioned concept resource in the context of a specified configuration, where this operation returns zero or one version resources matching the required state. An attempt to GET a version resource URI in a configuration context where a different version of that concept resource **MUST** ignore the configuration context and return the specified version resource if it exists. [CONFIG-RES-114].
- PUT: Update the state of a specified versioned concept resource in a specified stream or change set; this operation **MAY** cause the creation of a new version of the resource [CONFIG-RES-115].

A configuration server **MAY** support the following operations on configuration items in the context of a global configuration, or in the context of a configuration from this server: [CONFIG-RES-116]

- POST to a component in the context of a stream or change set, resulting in the creation of the first version of a new concept resource, or a new version of an existing resource. A successful response **MUST** include a **Location** header specifying the URI of the newly created resource. [CONFIG-RES-117]
- DELETE: Delete the current mutable version resource in a specified stream or change set.

9. Supported Operations on Change Set Delivery

A change set delivery represents the delivery of a single change set to a single target stream. If multiple change sets are to be delivered, each would be done as a separate delivery.

Servers **MUST** support a GET of a delivery object URI. The response should include an Etag header. [CONFIG-RES-118]

Servers **SHOULD** support a HEAD on a delivery object URI. The response should include an Etag header [CONFIG-RES-119]

Delivery objects **MAY** be immutable, or a server might permit the title to be changed. If a server allows the title to be changed, it **SHOULD** support a **PUT** with **If-Match** header. Servers **MAY** silently ignore any data that cannot be changed, such as read only properties, or **oslc_config:sourceConfiguration** or **oslc_config:targetStream**. [CONFIG-RES-120]

POST **SHOULD NOT** be supported. A new object can only be created through a creation factory. See the next section: Delivering change sets through a delivery creation factory. [CONFIG-RES-121]

DELETE MAY be supported, but if a server does support it, the semantics of that deletion are undefined. For example, does deleting a delivery remove the change set from the target stream? [CONFIG-RES-122]

9.1 Delivering change sets using a creation factory

There are several key aspects of change set delivery that OSLC Configuration Management should support:

1. Delivery is atomic. Either all the changed/new/removed resources are delivered, or none are.
2. A delivery might be a long-running operation.
3. Delivery of a change set should not result in an earlier change being lost. A conflict arises when a change set applies changes on top of version X of an object, whereas the target stream has changes on top of version X+N of that object.

An OSLC server would declare an OSLC Creation Factory for **rdf:type oslc_config:ChangeSetDelivery** in some OSLC service that was discoverable from an OSLC Service Provider Catalog. The declaration of that creation factory **SHOULD** reference a resource shape that is compatible with **oslc_config:ChangeSetDelivery**. [CONFIG-RES-123]

A client would perform a POST with an RDF body conformant with the resource shape. The server would respond with one of:

1. **201 Created**, with the response including a Location header of the new **oslc_config:ChangeSetDelivery** resource that was created. This might be the case for a server where the operation is quick to execute.
2. **400 Bad request**, if the request was invalid. For example, missing source configuration or target stream in the POSTed content.
3. **409 Conflict**, if the delivery could not be made because of a conflict between the change set and the target stream.
4. **303 See other**, including a Location header of an existing delivery if the change set was already delivered to the target stream.
5. **202 Accepted**, with the response including a Location header of an **oslc_config:Activity** resource indicating the progress or result of that activity. Clients **SHOULD** poll the Activity resource periodically until the state indicates it has finished.

9.2 Delivery Conflicts

If the delivery of a change set would result in the loss or overwriting of a later change to the same object, the delivery **MUST** fail and report a conflict. The corresponding **oslc:Error** should provide sufficient information for a client to understand the nature of the conflict. For each conflict, the corresponding **oslc:Error** should provide a statement using **oslc_config:ChangeSetDeliveryConflict** to an inline resource of implied type **oslc_config:ChangeSetDeliveryConflict** with the following resource shape: [CONFIG-RES-124]

- **Describes:** **http://open-services.net/ns/core#Error**
- **Summary:** The shape of a ChangeSetDeliveryConflict.
- **Description:** A ChangeSetDeliveryConflict is a resource representing a conflict error in the delivery of a single change set to a single target stream.

Error Properties

Prefixed Name	*Occurs*	*Read-only*	*Value-type*	*Representation*	*Range*	*Description*
oslc_config:sourceVersionResource	Exactly-one	unspecified	Resource	Reference	**oslc_config:VersionResource**	The version resource in the source configuration that is in conflict.
oslc_config:targetVersionResource	Exactly-one	unspecified	Resource	Reference	**oslc_config:VersionResource**	The version resource in the target stream that is in conflict.

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 change set delivery conflict MUST have at least the resource type oslc_config:ChangeSetDeliveryConflict [CONFIG-RES-125]. Clients may infer a resource type of oslc_config:ChangeSetDeliveryConflict, but there is no requirement for servers to materialize this triple in the RDF representation. .

OSLC Configuration Management does not specify any means to resolve such conflicts, or to preview a delivery to identify potential conflicts without committing the delivery. Conflicts are expected to be resolved using the tool's UI and/or non-OSLC defined APIs.

9.3 Change Set Delivery History

There are several common uses cases for finding information about change set deliveries:

- When was a specified change set delivered to a specified stream, and by whom?
- Which streams has a specified change set been delivered to?
- What the change sets that have been delivered to a specified stream?

OSLC Query Capability is used to access change set delivery history. Servers SHOULD provide a query capability for rdf:type oslc_config:ChangeSetDelivery in some OSLC service that is discoverable from an OSLC Service Provider Catalog. The declaration of that query capability SHOULD reference a resource shape describes the LDP query results container (as per the OSLC Query specification), which in turn provides a value resource shape for its members that is compatible with oslc_config:ChangeSetDelivery. [CONFIG-RES-126]

Some example queries include:

Clients that want to find the files changes associated with a delivery would do so through the referenced change set. Query capabilities MAY support nested query properties in oslc.select. For example, an unencoded oslc.select value of dcterms:title,dcterms:created,oslc_config:sourceConfiguration, oslc_config:sourceConfiguration {dcterms:title,oslc_config:selections{oslc_config:selects}} might return the delivery title, when it was delivered, the URI of the change set, the title of the change set, and the URIs of the files changed in the change set. [CONFIG-RES-127]

Description	Unencoded oslc.where expression
Find the delivery for a specified change set and target stream	oslc_config:sourceConfiguration={changeSetUri} and oslc_config:targetStream={streamUri}
Find the deliveries for a specified change set to any stream	oslc_config:sourceConfiguration={changeSetUri}
Find the deliveries for all change sets to a specified target stream	oslc_config:targetStream={streamUri}
Find the deliveries for all change sets to a specified target stream since 1st January 2023	oslc_config:targetStream={streamUri} and dcterms:created >= "2023-01-01'T'00:00:00"^^xsd:dateTime

9.4 Change Set Delivery Persistence

The persistence of delivery information is a server implementation choice. In servers where there is a corresponding persisted object, a server might map such objects to delivery objects. In servers where there is no first-class object representing a delivery, the delivery might be constructed from querying internal data.

10. Creation of Baselines and Streams

When a new component is created by POSTing to the Component Container, an empty baseline for that component **SHOULD** be created automatically, and **MUST** be added to the **oslc_config:configurations** container for that component. The empty baseline has no contributions, no selections, and no branch. [CONFIG-RES-128]

10.1 Creation of Streams

A new stream is created by POSTing to the **oslc_config:streams** container for a baseline. By default, the new stream inherits (**MUST** copy) the component, contributions, and selections of the baseline, but does not inherit (**MUST NOT** copy) the branch property. Other properties **MAY** be inherited (copied) from the baseline, or **MAY** be set to server defaults. The POSTed data **MAY** include any of the following properties; if these properties are supported by the server, then the POSTed values for these properties **MUST** completely replace any default or inherited values: [CONFIG-RES-129]

- **dcterms:subject**
- **dcterms:title** *
- **dcterms:description**
- **oslc:shortTitle** *
- **oslc_config:branch**
- **oslc_config:contribution**
- **oslc_config:selections**

The server **MUST** set the **oslc_config:previousBaseline** property of the new stream, and **SHOULD** set the **prov:wasDerivedFrom** property of the new stream, to reference the baseline owning the **oslc_config:streams** container. [CONFIG-RES-130]

A server **MAY** support one or more configuration creation factories declared in one or more OSLC service providers that create a stream for the component specified in the configuration's POSTED RDF body. [CONFIG-RES-131]

10.2 Creation of Baselines

A new baseline of a stream is created by POSTing to the **oslc_config:baselines** container for that stream. If the server determines that a suitable baseline already exists, the server **MAY** return a 303 with a **Location** header referring to that existing baseline; for an existing baseline to be suitable it **MUST** be for the same component, **MUST** have the same **oslc_config:branch** value, if any, **MUST** select the same version resources, each contribution **MUST** be a suitable baseline for the corresponding stream contribution, and there must be no additional or missing contributions. [CONFIG-RES-132]

Where a new baseline is created, that new baseline inherits (**MUST** copy) the following properties of the stream: [CONFIG-RES-133]

- **oslc_config:branch**
- **oslc_config:component**
- **oslc_config:contribution**
- **oslc_config:selections**
- **oslc_config:previousBaseline**

Other properties **MAY** be inherited (copied) from the stream, or **MAY** be set to server defaults. The POSTed data **MAY** include any of the following properties; if these properties are supported by the server, then the POSTed values for these properties **MUST** completely replace any default or inherited values: [CONFIG-RES-134]

- **dcterms:subject**
- **dcterms:title** *
- **dcterms:description**
- **oslc:shortTitle** *

When creating a new baseline from a stream, after copying all previous values of the **previousBaseline** to the new baseline, the server **MUST** replace all those **previousBaseline** properties on the stream by a single reference to the newly created baseline. The chain of **previousBaseline** links thus shows the history of baselines of a stream. [CONFIG-RES-135]

The server **MUST** set the **oslc_config:baselineOfStream** property of the new baseline to reference the stream owning the **oslc_config:baselines** container. [CONFIG-RES-136]

Since all contributions to a baseline must themselves be baselines, creation of a baseline requires that a server **MUST** first create or obtain baselines for the current state of all stream contributions, recursively downward through the contribution graph. See Long Operations. [CONFIG-RES-137]

10.3 Concerns common to streams and baselines

* A server **MAY** adjust the name properties of a configuration to maintain any name uniqueness constraints; a server **SHOULD NOT** fail creation of a baseline or stream just because the requested name is not unique. [CONFIG-RES-138]

The server **MAY** ignore any additional properties, or **MAY** return an error if those properties are considered incompatible with the creation request. [CONFIG-RES-139]

Any properties required on new streams or baselines not defined by this standard **MUST** be described in resource shapes referenced by **oslc:resourceShape** properties on the container. [CONFIG-RES-140]

Servers **SHOULD** support the **Prefer** header for GET on those LDPCs specifying PreferMinimalContainer: [CONFIG-RES-141]

> EXAMPLE 4
>
> Prefer: return=representation; include="http://www.w3.org/ns/ldp#PreferMinimalContainer"

allowing a client to retrieve properties about the LDPC, including any **oslc:resourceShape** properties, without needing to retrieve all membership triples. Servers **MAY** support OSLC selective properties on a GET [CONFIG-RES-142], allowing a client to specify exactly which properties of those LDPCs are to be returned.

11. Contributions and Overrides

Global configurations, and possible other types of configuration, support aggregation of multiple configurations, using the **oslc_config:Contribution** resource. Changes to contributions are made using PUT. For change sets, and possibly other use cases, a configuration or contribution can override another configuration contributed to the overall hierarchy. An override relationship may be specified at the configuration level (for change sets that apply to a specific base configuration) or at the contribution level (allowing a hierarchy where some contributions may override others without modifying the properties of potentially shared configurations).

- When adding a contribution, if the configuration being added has an **oslc_config:overrides** relationship, that relationship **MUST** be copied to the contribution. [CONFIG-RES-143]
- If the configuration being added has no OSLC overrides - it is a reusable configuration - a client **MAY** include an **oslc_config:overrides** relationship in a PUT to the contribution resource. [CONFIG-RES-144]
- Servers **MAY** require an overriding configuration to be for the same component as the overridden contribution. [CONFIG-RES-145]
- Servers **MAY** report an error if the configuration identified in the**oslc_config:overrides** property does not exist in the hierarchy for the context configuration. [CONFIG-RES-146]

12. Version Resolution

When a request is made for a versioned resource in the context of a configuration:

1. if there is no version of that resource in any of the selections in the contributions to the context configuration, nor in any of the selections in their recursive contributions, the request **MUST** fail with a 404 Resource not found (note that this includes unbound selections from a selection with type **oslc_config:UnboundSelections**) [CONFIG-RES-147]
2. if there is exactly one version of that resource in the union of the selections in the recursive contributions, the request **MUST** return that one version [CONFIG-RES-148]
3. if there is more than one version of that resource in the union of the selections in the recursive contributions, the behavior is implementation-defined, but **SHOULD** be well-defined in that the successive requests in the same configurations with the same selections **SHOULD** resolve to the same version. A server **MAY** perform an ordered search using the **oslc_config:contributionOrder** property, and **MAY** have a way to indicate multiple possible version resolutions [CONFIG-RES-149].

> NOTE
>
> The **oslc_config:contributionOrder** property is defined as a string rather than an integer to make it easier for servers to insert new contributions into an existing set without having to adjust the order value of existing contributions.

During this version resolution, overrides for entire configurations **MUST** be taken into account. If a contribution is marked as an override and the overriding configuration is earlier in the ordered set of all recursive contributions than the overridden configuration, the overridden configuration and all its contributions **MUST** be ignored in their entirety. Servers**MAY** report an error if an overriding configuration is later in the ordered set of all recursive contributions than the overridden configuration. [CONFIG-RES-150]

Overrides from change set configurations **MUST** also be taken into account. If a change set removes a selection for a versioned resource in the overridden configuration, and no other selection is provided for that resource in some other configuration, then the request **MUST** fail with a 404 Resource not found. If a change set replaces a selection for a versioned resource in the overridden configuration, and no other selection is provided for that resource in some other configuration, the request **MUST** return the version in the change set selection. [CONFIG-RES-151]

Implementations **SHOULD** provide documentation on their version resolution behavior.[CONFIG-RES-152]

13. Change Sets

Some systems use change sets to group related changes, or changes to multiple resources that must be kept together. Change sets **MAY** be represented using a configuration of type **oslc_config:ChangeSet** - a special type of stream. Each **oslc_config:ChangeSet** resource is related to exactly one base configuration (either a stream or a baseline), using the **oslc_config:overrides** property. A **oslc_config:ChangeSet** has either a complete set of replacements for the versions selected by that base configuration, or a set of changes - a delta. The configuration defined by a change set thus identifies both the 'before' state (the base configuration that is overridden by this change set), and the 'after' state defined by the change set configuration itself.

Systems that allow multiple change sets to be applied to a single base configuration **SHOULD** represent each such internal change set as an **oslc_config:ChangeSet** resource using the same value of **oslc_config:overrides**; the property **prov:wasDerivedFrom** should be used to provide a complete or partial ordering of such change sets. Servers **MAY** also synthesize a combined **oslc_config:ChangeSet** resource representing the overall effect of multiple internal change sets.

When a change set is based on a stream (the **oslc_config:overrides** property on an instance of an **oslc_config:ChangeSet** refers to a configuration of type **oslc_config:Stream**), then the 'before' state is mutable, and may not represent the state at the time the change set was created. Servers can avoid this lack of precision by ensuring either that all changes made to a stream are captured in a change set based off that stream, or that the stream's **oslc_config:selections** properties accurately represent the sets of changes delivered to that stream before any of the change sets based on that stream (those change sets probably representing changes still pending for the stream).

Since the shape for a change set allows only a single value for **oslc_config:overrides**, systems that allow a single change set to be applied to multiple base configurations need to represent that internal change set by multiple **oslc_config:ChangeSet** resources. These copies **MAY** be associated with each other using properties such as **http://purl.org/datanode/ns#isCopyOf**, **dcterms:relation**, or similar.

14. Delegated UIs

All configuration servers **MUST** provide a delegated user interface dialog for selection of configurations. A global configuration server **MUST** provide, and a local configuration server **MAY** provide, a delegated user interface dialog for creation of configurations. [CONFIG-RES-153]

In order to provide a good user experience when selecting configurations to be used as contributions to a parent configuration, the UI Consumer **SHOULD** provide the URI of the parent configuration as a parameter to the Delegated UI Dialog, using the parameter **oslc_config.parentConfiguration**. UI Providers **SHOULD** use the types and **oslc_config:accepts** property values of that resource to filter the list of potential contributions shown in the selection dialog. [CONFIG-RES-154]

Syntax:

?oslc_config.parentConfiguration=*uri_ref_esc*

Example:

> EXAMPLE 5
>
> ?oslc_config.parentConfiguration=%3Chttps://example.com/configurations/globalConfig12%3E

Tools providing versioned resources using configuration management systems **SHOULD** provide delegated user interface dialogs for selection of versioned resources in the context of a configuration, and **MAY** provide delegated user interface dialogs for creation of versioned resources in the context of a configuration. [CONFIG-RES-155]

15. Compact Rendering

Configuration servers **SHOULD** implement [OSLCCore3] UI Previews and compact rendering. [CONFIG-RES-156]

Where implemented, clients **MUST** pass any required configuration context on the initial request for a compact resource, and the configuration server **MUST** return a compact resource honoring that configuration context. [CONFIG-RES-157]

Moreover, the icon reference, the large preview reference, the small preview reference, and any image or intra-page references directly embedded in the large and small HTML preview documents in that compact resource **MUST** correspond to the given configuration context, so the client need not pass a configuration context to render the icon or the HTML preview. [CONFIG-RES-158]

A reference corresponds to a given configuration if it is the URI of a non-versioned resource, the version URI for a versioned resource selected by the given configuration, or a concept resource URI with a configuration query string that resolves to the versioned resource selected by the given configuration.

16. Tracked Resource Sets

A configuration server **SHOULD** provide one or more Tracked Resource Sets for configurations, contributions, and components. A configuration server **MAY** publish selections and versioned resources in a Tracked Resource Set (TRS); URIs for versioned resources in the base and change log of the TRS **MUST** be version resource URIs. [CONFIG-RES-159]

17. Query Support

Configuration servers **MAY** support [OSLCQuery] for configurations and components. If OSLC Query is provided, queries for the following properties using **oslc.where** and **oslc.select** **SHOULD** be supported: [CONFIG-RES-160]

- **dcterms:title**
- **dcterms:created**
- **dcterms:subject**
- **rdf:type**
- **oslc_config:component**
- **oslc_config:contribution{oslc_config:configuration}**
- **oslc_config:baselineOfStream**

Query for other properties **MAY** be supported. [CONFIG-RES-161]

For example, this is a query for baselines of a given stream **https://example.com/configs/stream123**, with tag 'stellar', created after July 1st 2014:

> EXAMPLE 6
>
> https://example.com/configs?oslc.where=oslc_config:baselineOfStream=<https://example.com/configs/stream123> and
> dc_terms:modified>="2014-07-01T00:00:00" and dcterms_subject="stellar"

Since some of those character must be encoded, the request would be issued as:

> EXAMPLE 7
>
> https://example.com/configs?oslc.where=oslc_config%3AbaselineOfStream%3D%3Chttps%3A%2F%2Fexample.com%2Fconfigs%2Fstream123%3E%20and
> %20dc_terms%3Amodified%3E%3D%222014-07-01T00%3A00%3A00%22%20and%20dcterms_subject%3D%22stellar%22

Servers that support query capabilities on versioned resources **MUST** support the use of a configuration context to limit the query results to the versions selected by that configuration context, or to unversioned resources. The configuration context **MUST** support reference of a global configuration, or a configuration from this server. [CONFIG-RES-162]

18. Matching Contributions

Certain types of streams accept only certain other types of configurations as contributions. A global stream **MUST** accept any suitable configuration (baseline or stream) from an arbitrary configuration server [CONFIG-RES-163], while a stream from some non-global server might accept only configurations from the same server. For a non-global server, some configurations may be acceptable as contributions to global streams, while other non-global configurations are valid only as a contribution to a broader scoped stream from that same server.

The acceptability of a configuration as a child contribution to a parent stream is governed by the **oslc_config:acceptedBy** property on the child configuration and the **oslc_config:accepts** property on the parent stream. A configuration is a match, and thus acceptable as a contribution, if and only if:

1. The parent has an **oslc_config:accepts** property whose value matches one of the types of the child configuration, AND
2. The child has an **oslc_config:acceptedBy** property whose value matches one of the types of the parent configuration.

A configuration type matches another type if they are the same type, or if the parent type is **oslc_config:Configuration** and the child type is either **oslc_config:Baseline** or **oslc_config:Stream**. No other form of inference is required, but servers **MAY** use inference through properties such as **owl:sameAs** and **rdfs:subClassOf** to extend the definition of matching configuration types[CONFIG-RES-164].

A configuration is marked as a global configuration by adding an **oslc_config:accepts** property with the value **oslc_config:Configuration**. Any configuration that is suitable to be a contribution to a global configuration (including global configurations themselves) **MUST** have an **oslc_config:acceptedBy** property with the value **oslc_config:Configuration** [CONFIG-RES-165]. A stream is marked as not accepting any kind of contribution (that is, it may only appear as a leaf in the configuration tree) by not having any **oslc_config:accepts** property. A configuration is marked as ineligible as any form of contribution (that is, it may only appear as a root in the configuration tree) by not having any **oslc_config:acceptedBy** property.

A stream with an **oslc_config:accepts** property with the value **oslc_config:Baseline** accepts only baselines in changes to its set of contributions. A server **MAY** use this to indicate a stream being used to stage the progressive construction of a baseline [CONFIG-RES-166], where any initial stream contributions are gradually replaced by baselines as they become available.

Since baselines are immutable, their contributions (if any) are immutable, derived from the streams from which those baselines were created, so the **oslc_config:accepts** property is not meaningful and may be omitted.

Configuration servers **MAY** define their own types of configuration, and use those types in **oslc_config:acceptedBy** and **oslc_config:accepts** properties to define the allowed contributions. [CONFIG-RES-167]

Servers **MAY** treat the **oslc_config:accepts** and **oslc_config:acceptedBy** as server-generated read-only properties, not modifiable by a client. [CONFIG-RES-168]

Servers **MAY** perform validation of **oslc_config:accepts**code> and **oslc_config:acceptedBy**. If a server performs such validation, it **MAY** limit validation to new contributions being added or defined for the first time. [CONFIG-RES-169]

19. Long Operations

Some operations (for example, creating a baseline from a large hierarchy of streams) can take a long time to complete.

Servers MAY use the standard HTTP response 202 Request Accepted to indicate that a request has been accepted, but may not yet be complete. [CONFIG-RES-170]

The content and location header of this 202 response MUST be that of an oslc_config:Activity resource, indicating the progress or result of that activity. Clients SHOULD poll the Activity resource periodically until the state indicates it has finished. [CONFIG-RES-171]

Each Activity resource MUST be persisted by a server (including over a restart) for a minimum of 24 hours after completion of the long operation as a whole, or until explicitly deleted by a client. [CONFIG-RES-172]

Clients SHOULD delete each Activity created by a long-running operation soon after the client has seen the completion of the activity, or when the client is no longer interested in the result. Servers MAY deny clients access to delete Activity resources including but not limited to activities still in progress, or activities not created by that client, or MAY require clients to have a specific role or permission to delete activities. [CONFIG-RES-173]

- **Describes:** http://open-services.net/ns/config#Activity
- **Summary:** The shape of an activity.
- **Description:** An activity is a read-only resource representing a long-running operation, such as recursive baseline or stream creation.

Activity Properties

Prefixed Name	*Occurs*	*Read-only*	*Value-type*	*Representation*	*Range*	*Description*
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-RES-174].
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:modified	Zero-or-one	true	dateTime	N/A	Unspecified	Timestamp of the last change of status. If this property is missing, the time of creation can be taken to be the same as the last change of status.
dcterms:references	Zero-or-one	true	AnyResource	Either	Unspecified	A reference to a resource providing more details about the progress or result of the activity. For successful or partially successful operations, the dcterms:references property MUST be present, providing a link to the primary resource created or affected by the operation [CONFIG-RES-175]. For completely unsuccessful activities, this property may be missing. For activities still in progress, this MAY be a reference to a resource providing further information; which MAY be provided inline [CONFIG-RES-176].
dcterms:title	Exactly-one	true	XMLLiteral	N/A	Unspecified	A name for the activity, or current phase of the activity.
oslc_auto:progress	Zero-or-one	true	integer	N/A	Unspecified	The percentage (0-100) of completion, if known.
oslc_auto:state	Exactly-one	true	Resource	Reference	Unspecified	The state of the activity, as defined by OSLC Automation states.
oslc_auto:verdict	Exactly-one	true	Resource	Reference	Unspecified	The result of the activity, as defined by OSLC Automation verdicts.
oslc_config:progressMessage	Zero-or-one	true	XMLLiteral	N/A	Unspecified	Descriptive text about the progress of the activity, represented as rich text in XHTML content.
oslc:error	Zero-or-many	true	AnyResource	Either	oslc:Error	A warning or error issued by the activity. Instances of this property MAY appear at any time during the execution of the activity, or MAY be returned only after the activity is complete [CONFIG-RES-177].
rdf:type	One-or-many	true	Resource	Reference	rdfs:Class	A resource type URI. An Activity MUST have a resource type of oslc_config:Activity, and MAY have other types [CONFIG-RES-178].

20. Conformance

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

Clause Number	Requirement
CONFIG-RES-1	A configuration server **SHOULD** implement [OSLCCore3] ServiceProvider and Service resources, where an **oslc:domain** property has the value **http://open-services.net/ns/config#**.
CONFIG-RES-2	A global configuration service resource, if provided, **SHOULD** include the property **oslc:usage** with the value **http://open-services.net/ns/config#globalConfigurationService**.
CONFIG-RES-3	A service with this usage property **MUST** provide all global configuration capabilities described as mandatory in this specification.
CONFIG-RES-4	Configuration Management servers **MUST** observe these constraints, but **MAY** provide additional classes, properties, and individuals.
CONFIG-RES-5	In particular, Configuration Management servers **MAY** define additional types of configuration, but all configurations **MUST** also be of one of the types defined here.
CONFIG-RES-6	A component itself **MAY** be a versioned resource
CONFIG-RES-7	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-8	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-9	The **oslc_config:configurations** property on a component is read-only; servers **MAY** also treat the referenced container as read-only
CONFIG-RES-10	the container **MAY** have an **oslc:resourceShape** property referencing a resource shape that describes the container
CONFIG-RES-11	If a container resource shape is specified, the shape **SHOULD** have a property describing the membership of the container with a **oslc:valueShape** referencing a resource shape that describes the shapes of streams and baselines that may be created
CONFIG-RES-12	instance shapes **SHOULD NOT** be cached
CONFIG-RES-13	A Component **MUST** have a resource type of **oslc_config:Component**
CONFIG-RES-14	A component **MAY** be a Linked Data Platform Container, containing the concept resources associated with this component
CONFIG-RES-15	The members of such an **oslc_config:Component** container **MUST NOT** be of type **oslc_config:Configuration**
CONFIG-RES-16	Servers **MAY** treat the **rdf:type** property for a component as read-only.
CONFIG-RES-17	Properties of a baseline defined in this specification **MUST** be read-only unless stated otherwise
CONFIG-RES-18	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-19	The description of a baseline **MAY** be modifiable
CONFIG-RES-20	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-21	Tags on baselines **MUST** be modifiable
CONFIG-RES-22	The title of a baseline **SHOULD** be modifiable
CONFIG-RES-23	A configuration with no value for **oslc_config:acceptedBy MUST NOT** be used as a contribution to any other configuration
CONFIG-RES-24	The target **MUST** be of type **oslc_config:Contribution**
CONFIG-RES-25	Contribution resources **MUST** be returned inline with the baseline resource
CONFIG-RES-26	In the set of Contribution resources for a single parent baseline, there **MUST** be only one Contribution resource for a given contributed baseline
CONFIG-RES-27	This property **MAY** be updated by the server to refer to earlier baselines when intermediate baselines are deleted
CONFIG-RES-28	servers **MAY** treat such multiple occurrences of selections as an error

Clause Number	Requirement
CONFIG-RES-29	a **previousBaseline** property of the new stream **MUST** be set to refer to this baseline
CONFIG-RES-30	The container **MAY** have an **oslc:resourceShape** property referencing a resource shape that describes the container
CONFIG-RES-31	If a container resource shape is specified, it should have a property describing the membership of the container with a **`oslc:valueShape`** referencing a resource shape that describes the shapes of streams that may be created
CONFIG-RES-32	instance shapes **SHOULD NOT** be cached
CONFIG-RES-33	The **prov:wasDerivedFrom** property is undefined for baselines; it **MAY** be absent, or it **MAY** have the same value as **oslc_config:baselineOfStream**
CONFIG-RES-34	Servers **SHOULD** treat this property as read-only after initial creation
CONFIG-RES-35	A baseline **MUST** have at least the resource type **oslc_config:Baseline**
CONFIG-RES-36	Other types **MAY** be added, including types that are used in **oslc_config:accepts** and **oslc_config:acceptedBy** properties
CONFIG-RES-37	Servers **MAY** treat the **rdf:type** property of a baseline as read-only
CONFIG-RES-38	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-39	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-40	A configuration with no value for **oslc_config:acceptedBy MUST NOT** be used as a contribution to any other configuration
CONFIG-RES-41	The container **MAY** have an **oslc:resourceShape** property referencing a resource shape that describes the container
CONFIG-RES-42	If a container resource shape is specified, it **SHOULD** have a property describing the membership of the container with a **oslc:valueShape** referencing a resource shape that describes the additional properties that may be specified for baselines
CONFIG-RES-43	servers **MAY** deny such requests if any added contributions do not match this configuration
CONFIG-RES-44	The target **MUST** be of type **oslc_config:Contribution**
CONFIG-RES-45	Contribution resources **MUST** be returned inline with the configuration resource
CONFIG-RES-46	there **MUST** be only one Contribution resource for a given contributed configuration
CONFIG-RES-47	servers **MAY** treat such multiple occurrences of selections as an error
CONFIG-RES-48	Servers **MAY** treat this property as read-only
CONFIG-RES-49	instance shapes **SHOULD NOT** be cached
CONFIG-RES-50	The **prov:wasDerivedFrom** property is undefined for baselines; it **MAY** be absent, or it **MAY** have the same value as **oslc_config:baselineOfStream**
CONFIG-RES-51	Servers **SHOULD** treat this property as read-only after initial creation
CONFIG-RES-52	A stream **MUST** have at least the resource type **oslc_config:Stream**
CONFIG-RES-53	Other types **MAY** be added, including types that are used in **oslc_config:accepts** and **oslc_config:acceptedBy** properties to define which matching configurations may be added as contributions to this configuration, or to which this configuration may be added as a contribution
CONFIG-RES-54	Servers **MAY** treat this property as read-only
CONFIG-RES-55	Servers **MAY** refuse to construct a baseline of a change set configuration
CONFIG-RES-56	servers **MAY** treat this as an error
CONFIG-RES-57	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-58	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-59	A configuration with no value for **oslc_config:acceptedBy MUST NOT** be used as a contribution to any other configuration

Clause Number	Requirement
CONFIG-RES-60	Servers **MAY** support contributions to change sets
CONFIG-RES-61	Servers **MAY** treat this property as read-only
CONFIG-RES-62	instance shapes **SHOULD NOT** be cached
CONFIG-RES-63	A change set configuration **MUST** have at least the resource type **oslc_config:ChangeSet**
CONFIG-RES-64	Servers **MAY** treat this property as read-only
CONFIG-RES-65	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-66	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-67	instance shapes **SHOULD NOT** be cached
CONFIG-RES-68	A change set delivery **MUST** have at least the resource type **oslc_config:ChangeSetDelivery**
CONFIG-RES-69	Each resource **SHOULD** have one instance of the **dcterms:modified** property
CONFIG-RES-70	On a PUT or POST of a Stream resource and its Contributions, this contributed configuration **SHOULD** be unique amongst the set of configurations contributed to a given parent configuration
CONFIG-RES-71	a server **MAY** collapse multiple contributions for the same configuration to a single contribution
CONFIG-RES-72	the **oslc_config:contributionOrder** string **SHOULD** be restricted to ASCII characters
CONFIG-RES-73	Servers **MUST** support at least 64 characters in this string
CONFIG-RES-74	If the selection type is not **oslc_config:UnboundSelections**, the target resource **MUST** be a version resource
CONFIG-RES-75	Selected resources **MUST NOT** be of type **oslc_config:Configuration**
CONFIG-RES-76	This property is read-only for selections of a baseline, but **MAY** be modifiable for selections of a stream
CONFIG-RES-77	A Selections resource **MUST** have at least the resource type **oslc_config:Selections**
CONFIG-RES-78	Selections resources **MAY** also have the type **oslc_config:UnboundSelections**
CONFIG-RES-79	Selected resources **MUST NOT** be of type **oslc_config:Configuration**
CONFIG-RES-80	This property **MAY** be modifiable for selections of a change set
CONFIG-RES-81	servers **MAY** treat occurrences of potentially conflicting selections as an error
CONFIG-RES-82	A change set Selections resource **MUST** have at least the resource type **oslc_config:Selections**
CONFIG-RES-83	Change set selections resources **MAY** also have the types **oslc_config:ChangeSetSelections**, **oslc_config:UnboundSelections**, **oslc_config:Removals**, or **oslc_config:RemoveAll**
CONFIG-RES-84	a client **SHOULD** provide a configuration context within which the concept resource is resolved to a specific version
CONFIG-RES-85	The **Configuration-Context** header is a URI that **MUST** conform to the following ABNF grammar [ABNF]: SP = " " HTAB = %x09 WSP = SP / HTAB header = config-context config-context = "Configuration-Context:" *WSP URI Where the term **URI** is defined in [URI].
CONFIG-RES-86	A server **MUST** support both these methods of passing configuration context.

Clause Number	Requirement
CONFIG-RES-87	If a request contains both a header and a query string, the server MUST use the query string. Servers MUST reject requests that contain two or more different configuration contexts passed in query strings.
CONFIG-RES-88	Where the Configuration-Context header is used on a request, a server SHOULD include in the response a header Vary=Configuration-Context so that different configuration contexts do not use a previously cached response.
CONFIG-RES-89	Configuration Management servers SHOULD use the Access-Control-Allow-Headers header [CORS] to allow the use of the Configuration-Context header in OSLC requests.
CONFIG-RES-90	A request SHOULD contain only a single occurrence of the Configuration-Context header, and MUST NOT contain multiple Configuration-Context headers referencing different values. A server SHOULD treat multiple identical Configuration-Context headers as it would a single header, and MUST treat multiple Configuration-Context headers with different configuration values as an error.
CONFIG-RES-91	If a configuration context is passed on a request for a non-versioned resource, the server MUST NOT treat that as an error, and MAY use that context to resolve references to embedded or related resources.
CONFIG-RES-92	If a configuration context is passed on a request using the version URI for a versioned resource, a server MUST ignore the configuration context, even if that configuration context does not select that versioned resource.
CONFIG-RES-93	If a configuration context is not provided or implied, the server MAY provide a default configuration, or the request MAY fail.
CONFIG-RES-94	A server MAY include an oslc_config:configurationSettings link in the OSLC Service resource, referencing an oslc_config:ConfigurationsSettings resource. That resource MAY contain at most one oslc_config:defaultConfiguration property whose value is the URI of the default configuration to be used by that service.
CONFIG-RES-95	An oslc_config:defaultConfiguration property with an rdf:nil value implies there is no default configuration, so requests with no context MUST fail.
CONFIG-RES-96	Servers MAY support a PUT on oslc_config:ConfigurationsSettings resource as a way to set the default configuration. Servers MAY provide other ways for users to set the default configuration.
CONFIG-RES-97	A configuration server MUST support the following operations on components:
CONFIG-RES-98	A configuration server SHOULD support, and a global configuration server MUST support, the following operations on Linked Data Platform Containers:
CONFIG-RES-99	POST to the component LDPC to create a new component. A successful response MUST contain a Location header providing the URI of the newly created component.
CONFIG-RES-100	POST to the configuration LDPC for a component to create a new stream for that component, optionally specifying an initial baseline; if an initial baseline is not specified, a real or notional empty baseline is implied as the starting point for the stream. A successful response MUST contain a Location header providing the URI of the newly created component.
CONFIG-RES-101	Servers SHOULD support the Prefer header for GET on LDPCs specifying PreferMinimalContainer:
CONFIG-RES-102	Servers MAY support OSLC selective properties on a GET, allowing a client to specify exactly which properties of those LDPCs are to be returned.
CONFIG-RES-103	A configuration server SHOULD support, and a global configuration server MUST support one or more component creation factories declared in one or more OSLC service providers.
CONFIG-RES-104	A configuration server SHOULD support one or more query capabilities for components.
CONFIG-RES-105	A configuration server MUST support the following operations on configurations:
CONFIG-RES-106	A configuration server SHOULD support, and a global configuration server MUST support, the following operations on configurations:
CONFIG-RES-107	servers MAY refuse to delete configurations that are part of or referenced by existing baselines
CONFIG-RES-108	A configuration server MAY support PATCH on a configuration to update the tags and/or the set of contributed configurations.
CONFIG-RES-109	servers MAY leave a stub resource (one with a minimal set of properties) behind instead of truly deleting a baseline
CONFIG-RES-110	Servers SHOULD add the property oslc:archived=TRUE on a reduced form of a partially deleted baseline
CONFIG-RES-111	A configuration server SHOULD support one or more query capabilities for configurations.
CONFIG-RES-112	A configuration server MUST support the following operations on selections resources:
CONFIG-RES-113	A configuration server MUST support the following operations on configuration items (versioned concept resources) in the context of a global configuration, or in the context of a configuration from this server:
CONFIG-RES-114	An attempt to GET a version resource URI in a configuration context where a different version of that concept resource MUST ignore the configuration context and return the specified version resource if it exists.
CONFIG-RES-115	this operation MAY cause the creation of a new version of the resource
CONFIG-RES-116	A configuration server MAY support the following operations on configuration items in the context of a global configuration, or in the context of a configuration from this server:

Clause Number	Requirement
CONFIG-RES-117	POST to a component in the context of a stream or change set, resulting in the creation of the first version of a new concept resource, or a new version of an existing resource. A successful response **MUST** include a **Location** header specifying the URI of the newly created resource.
CONFIG-RES-118	Servers **MUST** support a GET of a delivery object URI. The response should include an Etag header.
CONFIG-RES-119	Servers **SHOULD** support a HEAD on a delivery object URI. The response should include an Etag header
CONFIG-RES-120	Delivery objects **MAY** be immutable, or a server might permit the title to be changed. If a server allows the title to be changed, it **SHOULD** support a **PUT** with **If-Match** header. Servers **MAY** silently ignore any data that cannot be changed, such as read only properties, or **oslc_config:sourceConfiguration** or **oslc_config:targetStream**.
CONFIG-RES-121	POST **SHOULD NOT** be supported. A new object can only be created through a creation factory. See the next section: Delivering change sets through a delivery creation factory.
CONFIG-RES-122	**DELETE MAY** be supported, but if a server does support it, the semantics of that deletion are undefined. For example, does deleting a delivery remove the change set from the target stream?
CONFIG-RES-123	An OSLC server would declare an OSLC Creation Factory for **rdf:type oslc_config:ChangeSetDelivery** in some OSLC service that was discoverable from an OSLC Service Provider Catalog. The declaration of that creation factory **SHOULD** reference a resource shape that is compatible with **oslc_config:ChangeSetDelivery**.
CONFIG-RES-124	If the delivery of a change set would result in the loss or overwriting of a later change to the same object, the delivery **MUST** fail and report a conflict. The corresponding **oslc:Error** should provide sufficient information for a client to understand the nature of the conflict. For each conflict, the corresponding **oslc:Error** should provide a statement using **oslc_config:ChangeSetDeliveryConflict** to an inline resource of implied type **oslc_config:ChangeSetDeliveryConflict** with the following resource shape:
CONFIG-RES-125	A change set delivery conflict **MUST** have at least the resource type **oslc_config:ChangeSetDeliveryConflict**
CONFIG-RES-126	OSLC Query Capability is used to access change set delivery history. Servers **SHOULD** provide a query capability for **rdf:type oslc_config:ChangeSetDelivery** in some OSLC service that is discoverable from an OSLC Service Provider Catalog. The declaration of that query capability **SHOULD** reference a resource shape describes the LDP query results container (as per the OSLC Query specification), which in turn provides a value resource shape for its members that is compatible with **oslc_config:ChangeSetDelivery**.
CONFIG-RES-127	Clients that want to find the files changes associated with a delivery would do so through the referenced change set. Query capabilities **MAY** support nested query properties in **oslc.select**. For example, an unencoded oslc.select value of **dcterms:title,dcterms:created,oslc_config:sourceConfiguration, oslc_config:sourceConfiguration {dcterms:title,oslc_config:selections{oslc_config:selects}}** might return the delivery title, when it was delivered, the URI of the change set, the title of the change set, and the URIs of the files changed in the change set.
CONFIG-RES-128	When a new component is created by POSTing to the Component Container, an empty baseline for that component **SHOULD** be created automatically, and **MUST** be added to the **oslc_config:configurations** container for that component. The empty baseline has no contributions, no selections, and no branch.
CONFIG-RES-129	A new stream is created by POSTing to the **oslc_config:streams** container for a baseline. By default, the new stream inherits (**MUST** copy) the component, contributions, and selections of the baseline, but does not inherit (**MUST NOT** copy) the branch property. Other properties **MAY** be inherited (copied) from the baseline, or **MAY** be set to server defaults. The POSTed data **MAY** include any of the following properties; if these properties are supported by the server, then the POSTed values for these properties **MUST** completely replace any default or inherited values:
CONFIG-RES-130	The server **MUST** set the **oslc_config:previousBaseline** property of the new stream, and **SHOULD** set the **prov:wasDerivedFrom** property of the new stream, to reference the baseline owning the **oslc_config:streams** container.
CONFIG-RES-131	A server **MAY** support one or more configuration creation factories declared in one or more OSLC service providers that create a stream for the component specified in the configuration's POSTED RDF body.
CONFIG-RES-132	A new baseline of a stream is created by POSTing to the **oslc_config:baselines** container for that stream. If the server determines that a suitable baseline already exists, the server **MAY** return a 303 with a **Location** header referring to that existing baseline; for an existing baseline to be suitable it **MUST** be for the same component, **MUST** have the same **oslc_config:branch** value, if any, **MUST** select the same version resources, each contribution **MUST** be a suitable baseline for the corresponding stream contribution, and there must be no additional or missing contributions.
CONFIG-RES-133	Where a new baseline is created, that new baseline inherits (**MUST** copy) the following properties of the stream:
CONFIG-RES-134	Other properties **MAY** be inherited (copied) from the stream, or **MAY** be set to server defaults. The POSTed data **MAY** include any of the following properties; if these properties are supported by the server, then the POSTed values for these properties **MUST** completely replace any default or inherited values:
CONFIG-RES-135	When creating a new baseline from a stream, after copying all previous values of the **previousBaseline** to the new baseline, the server **MUST** replace all those **previousBaseline** properties on the stream by a single reference to the newly created baseline. The chain of **previousBaseline** links thus shows the history of baselines of a stream.
CONFIG-RES-136	The server **MUST** set the **oslc_config:baselineOfStream** property of the new baseline to reference the stream owning the **oslc_config:baselines** container.
CONFIG-RES-137	Since all contributions to a baseline must themselves be baselines, creation of a baseline requires that a server **MUST** first create or obtain baselines for the current state of all stream contributions, recursively downward through the contribution graph. See Long Operations.
CONFIG-RES-138	* A server **MAY** adjust the name properties of a configuration to maintain any name uniqueness constraints; a server **SHOULD NOT** fail creation of a baseline or stream just because the requested name is not unique.

Clause Number	Requirement
CONFIG-RES-139	The server MAY ignore any additional properties, or MAY return an error if those properties are considered incompatible with the creation request.
CONFIG-RES-140	Any properties required on new streams or baselines not defined by this standard MUST be described in resource shapes referenced by oslc:resourceShape properties on the container.
CONFIG-RES-141	Servers SHOULD support the Prefer header for GET on those LDPCs specifying PreferMinimalContainer:
CONFIG-RES-142	Servers MAY support OSLC selective properties on a GET
CONFIG-RES-143	When adding a contribution, if the configuration being added has an oslc_config:overrides relationship, that relationship MUST be copied to the contribution.
CONFIG-RES-144	If the configuration being added has no OSLC overrides - it is a reusable configuration - a client MAY include an oslc_config:overrides relationship in a PUT to the contribution resource.
CONFIG-RES-145	Servers MAY require an overriding configuration to be for the same component as the overridden contribution.
CONFIG-RES-146	Servers MAY report an error if the configuration identified in the oslc_config:overrides property does not exist in the hierarchy for the context configuration.
CONFIG-RES-147	if there is no version of that resource in any of the selections in the contributions to the context configuration, nor in any of the selections in their recursive contributions, the request MUST fail with a 404 Resource not found (note that this includes unbound selections from a selection with type oslc_config:UnboundSelections)
CONFIG-RES-148	if there is exactly one version of that resource in the union of the selections in the recursive contributions, the request MUST return that one version
CONFIG-RES-149	the behavior is implementation-defined, but SHOULD be well-defined in that the successive requests in the same configurations with the same selections SHOULD resolve to the same version. A server MAY perform an ordered search using the oslc_config:contributionOrder property, and MAY have a way to indicate multiple possible version resolutions
CONFIG-RES-150	During this version resolution, overrides for entire configurations MUST be taken into account. If a contribution is marked as an override and the overriding configuration is earlier in the ordered set of all recursive contributions than the overridden configuration, the overridden configuration and all its contributions MUST be ignored in their entirety. Servers MAY report an error if an overriding configuration is later in the ordered set of all recursive contributions than the overridden configuration.
CONFIG-RES-151	Overrides from change set configurations MUST also be taken into account. If a change set removes a selection for a versioned resource in the overridden configuration, and no other selection is provided for that resource in some other configuration, then the request MUST fail with a 404 Resource not found. If a change set replaces a selection for a versioned resource in the overridden configuration, and no other selection is provided for that resource in some other configuration, the request MUST return the version in the change set selection.
CONFIG-RES-152	Implementations SHOULD provide documentation on their version resolution behavior.
CONFIG-RES-153	All configuration servers MUST provide a delegated user interface dialog for selection of configurations. A global configuration server MUST provide, and a local configuration server MAY provide, a delegated user interface dialog for creation of configurations.
CONFIG-RES-154	In order to provide a good user experience when selecting configurations to be used as contributions to a parent configuration, the UI Consumer SHOULD provide the URI of the parent configuration as a parameter to the Delegated UI Dialog, using the parameter oslc_config.parentConfiguration. UI Providers SHOULD use the types and oslc_config:accepts property values of that resource to filter the list of potential contributions shown in the selection dialog.
CONFIG-RES-155	Tools providing versioned resources using configuration management systems SHOULD provide delegated user interface dialogs for selection of versioned resources in the context of a configuration, and MAY provide delegated user interface dialogs for creation of versioned resources in the context of a configuration.
CONFIG-RES-156	Configuration servers SHOULD implement [OSLCCore3] UI Previews and compact rendering.
CONFIG-RES-157	Where implemented, clients MUST pass any required configuration context on the initial request for a compact resource, and the configuration server MUST return a compact resource honoring that configuration context.
CONFIG-RES-158	Moreover, the icon reference, the large preview reference, the small preview reference, and any image or intra-page references directly embedded in the large and small HTML preview documents in that compact resource MUST correspond to the given configuration context, so the client need not pass a configuration context to render the icon or the HTML preview.
CONFIG-RES-159	A configuration server SHOULD provide one or more Tracked Resource Sets for configurations, contributions, and components. A configuration server MAY publish selections and versioned resources in a Tracked Resource Set (TRS); URIs for versioned resources in the base and change log of the TRS MUST be version resource URIs.
CONFIG-RES-160	Configuration servers MAY support [OSLCQuery] for configurations and components. If OSLC Query is provided, queries for the following properties using oslc.where and oslc.select SHOULD be supported:
CONFIG-RES-161	Query for other properties MAY be supported.
CONFIG-RES-162	Servers that support query capabilities on versioned resources MUST support the use of a configuration context to limit the query results to the versions selected by that configuration context, or to unversioned resources. The configuration context MUST support reference of a global configuration, or a configuration from this server.
CONFIG-RES-163	A global stream MUST accept any suitable configuration (baseline or stream) from an arbitrary configuration server

Clause Number	Requirement
CONFIG-RES-164	servers **MAY** use inference through properties such as **owl:sameAs** and **rdfs:subClassOf** to extend the definition of matching configuration types
CONFIG-RES-165	Any configuration that is suitable to be a contribution to a global configuration (including global configurations themselves) **MUST** have an **oslc_config:acceptedBy** property with the value **oslc_config:Configuration**
CONFIG-RES-166	A server **MAY** use this to indicate a stream being used to stage the progressive construction of a baseline
CONFIG-RES-167	Configuration servers **MAY** define their own types of configuration, and use those types in **oslc_config:acceptedBy** and **oslc_config:accepts** properties to define the allowed contributions.
CONFIG-RES-168	Servers **MAY** treat the **oslc_config:accepts** and **oslc_config:acceptedBy** as server-generated read-only properties, not modifiable by a client.
CONFIG-RES-169	Servers **MAY** perform validation of **oslc_config:accepts**code> and **oslc_config:acceptedBy**. If a server performs such validation, it **MAY** limit validation to new contributions being added or defined for the first time.
CONFIG-RES-170	Servers **MAY** use the standard HTTP response 202 Request Accepted to indicate that a request has been accepted, but may not yet be complete.
CONFIG-RES-171	The content and location header of this 202 response **MUST** be that of an **oslc_config:Activity** resource, indicating the progress or result of that activity. Clients **SHOULD** poll the Activity resource periodically until the state indicates it has finished.
CONFIG-RES-172	Each Activity resource **MUST** be persisted by a server (including over a restart) for a minimum of 24 hours after completion of the long operation as a whole, or until explicitly deleted by a client.
CONFIG-RES-173	Clients **SHOULD** delete each Activity created by a long-running operation soon after the client has seen the completion of the activity, or when the client is no longer interested in the result. Servers **MAY** deny clients access to delete Activity resources including but not limited to activities still in progress, or activities not created by that client, or **MAY** require clients to have a specific role or permission to delete activities.
CONFIG-RES-174	Each resource **SHOULD** have one instance of the **dcterms:created** property
CONFIG-RES-175	the **dcterms:references** property **MUST** be present, providing a link to the primary resource created or affected by the operation
CONFIG-RES-176	For activities still in progress, this **MAY** be a reference to a resource providing further information; which **MAY** be provided inline
CONFIG-RES-177	Instances of this property **MAY** appear at any time during the execution of the activity, or **MAY** be returned only after the activity is complete
CONFIG-RES-178	An Activity **MUST** have a resource type of **oslc_config:Activity**, and **MAY** have other types