OSLC Architecture Management Version 3.0. Part 3: Constraints

Project Specification Draft 01
17 September 2020

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Additional components:

Related work:
This specification is related to:


RDF Namespaces:
http://open-services.net/ns/core/am#
http://jazz.net/ns/dm/linktypes#

Abstract:
OSLC Architecture Management Version 3.0. Part 2: Vocabulary defines the OSLC Architecture Management RDF vocabulary terms and resources. This document specifies the standard constraints on those vocabulary terms using OSLC ResourceShapes.

Status:
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1. Introduction

This section is non-normative.

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

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

These constraints apply to the core vocabulary defined in OSLC Architecture Management Version 3.0. Part 2: Vocabulary.

1.1 Terminology

This section is non-normative.

Terminology is based on OSLC Core Overview [OSLCCore3], W3C Linked Data Platform [LDP], W3C's Architecture of the World Wide Web [WEBARCH], Hyper-text Transfer Protocol [HTTP11]. Terminology for this specification is defined in part 1 of the multi-part specification.

1.2 References

1.2.1 Normative references

[HTTP11]

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

[OSLCCore3]

[RFC2119]

1.2.2 Informative references

[OSLCQM]

[OSLCRM]
1.3 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 \texttt{MUST}, \texttt{MUST 	extit{NOT}}, \texttt{REQUIRED}, \texttt{SHOULD}, \texttt{SHOULD 	extit{NOT}}, \texttt{RECOMMENDED}, \texttt{MAY}, and \texttt{OPTIONAL} in this specification are to be interpreted as described in [RFC2119].

In addition to the namespace URIs and namespace prefixes \texttt{oslc, rdf, dcterms} and \texttt{foaf} defined in the \texttt{OSLC Core specification}, OSLC AM defines the namespace URI of \texttt{http://open-services.net/ns/am#} with a namespace prefix of \texttt{oslc_am}.

This specification also uses these namespace prefix definitions:

- \texttt{oslc_rm: http://open-services.net/ns/rm#} [OSLCRM]
- \texttt{oslc_qm: http://open-services.net/ns/qm#} [OSLCQM]
2. Resource Constraints

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

2.1 Resource: Resource

An Architecture Management Resource (AMR) is a generic resource format that can be used to represent any type of specific architecture resource such as a UML Class, Use Case, or Business Process Diagram.

- **Describes:** [http://open-services.net/ns/am#Resource](http://open-services.net/ns/am#Resource)
- **Summary:** Resource
- **Description:** A generic resource format that can be used to represent any type of specific architecture resource like a UML Class, Use Case, or Business Process Diagram.

### Resource Properties

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dcterms:contributor</td>
<td>Zero-or-many</td>
<td></td>
<td>unspecified</td>
<td>AnyResource</td>
<td>Either</td>
<td>Contributor or contributors to the resource. It is likely that the target resource will be a foaf:Person but that is not necessarily the case.</td>
</tr>
<tr>
<td>dcterms:created</td>
<td>Zero-or-one</td>
<td></td>
<td>unspecified</td>
<td>dateTime</td>
<td>N/A</td>
<td>Timestamp of resource creation.</td>
</tr>
<tr>
<td>dcterms:creator</td>
<td>Zero-or-many</td>
<td></td>
<td>unspecified</td>
<td>AnyResource</td>
<td>Either</td>
<td>Creator or creators of the resource. It is likely that the target resource will be a foaf:Person but that is not necessarily the case.</td>
</tr>
<tr>
<td>dcterms:description</td>
<td>Zero-or-one</td>
<td></td>
<td>unspecified</td>
<td>XMLLiteral</td>
<td>N/A</td>
<td>Descriptive text about resource represented as rich text in XHTML content.</td>
</tr>
<tr>
<td>Prefix</td>
<td>Occurs</td>
<td>Read-only</td>
<td>Value-type</td>
<td>Representation</td>
<td>Range</td>
<td>Description</td>
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<td>-------------</td>
</tr>
<tr>
<td>dcterms:identifier</td>
<td>Exactly-one</td>
<td>unspecified</td>
<td>string</td>
<td>N/A</td>
<td>Unspecified</td>
<td>A unique identifier for a resource. Typically read-only and assigned by the service provider when a resource is created. Not typically intended for end-user display.</td>
</tr>
<tr>
<td>dcterms:modified</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>date-time</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Timestamp of latest resource modification.</td>
</tr>
<tr>
<td>dcterms:source</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>The resource URI a client can perform a get on to obtain the original non-OSLC AM formatted resource that was used to create this resource. The source resource is usually a binary or proprietary format that the service provider can consume and convert into an OSLC AM format. The service may use content negotiation with the Accept header to obtain the desired content type.</td>
</tr>
<tr>
<td><strong>Prefix</strong></td>
<td><strong>Occurrences</strong></td>
<td><strong>Read-only</strong></td>
<td><strong>Value Type</strong></td>
<td><strong>Representation</strong></td>
<td><strong>Range</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>--------------------</td>
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<td>-----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>dcterms:title</td>
<td>Exactly-one</td>
<td>unspecified</td>
<td>XMLLiteral</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Title of the resource represented as rich text in XHTML content.</td>
</tr>
<tr>
<td>dcterms:type</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>string</td>
<td>N/A</td>
<td>Unspecified</td>
<td>A short string representation for the type, for example ‘Car’.</td>
</tr>
<tr>
<td>jazz_am:derives</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>The resource that derives from another resource originated from or is significantly influenced by the referenced resource. For example a model element derives from a requirement.</td>
</tr>
<tr>
<td>jazz_am:elaborates</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>This resource elaborates the referenced resource.</td>
</tr>
<tr>
<td>jazz_am:external</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>A generic link from a resource to an external web page.</td>
</tr>
<tr>
<td>jazz_am:refine</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>The target is a refinement of the source. (e.g. a use case scenario might be a refinement of a textual requirement that describes the interaction).</td>
</tr>
<tr>
<td>jazz_am:satisfy</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>The model element satisfies the requirement (e.g. The use case satisfies a functional requirement).</td>
</tr>
<tr>
<td>Prefix Name</td>
<td>Occurs</td>
<td>Read-only</td>
<td>Value-type</td>
<td>Representation</td>
<td>Range</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
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<td>-----------</td>
<td>------------</td>
<td>----------------</td>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>jazz_am:trace</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:Any</td>
<td>The model element has a trace to the requirement (e.g. An attribute or its value are traced to a requirement).</td>
</tr>
<tr>
<td>oslc:instanceShape</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:ResourceShape</td>
<td>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 and thus should not be cached.</td>
</tr>
</tbody>
</table>
### A link to the resource’s OSLC Service Provider.

There may be cases when the subject resource is available from a service provider that implements multiple domain specifications, which could result in multiple values for this property.

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>oslc:serviceProvider</td>
<td>Zero-or-many</td>
<td></td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:ServiceProvider</td>
<td>A link to the resource’s OSLC Service Provider. There may be cases when the subject resource is available from a service provider that implements multiple domain specifications, which could result in multiple values for this property.</td>
</tr>
<tr>
<td>oslc:shortTitle</td>
<td>Zero-or-one</td>
<td></td>
<td>XMLLiteral</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Short name identifying a resource, often used as an abbreviated identifier for presentation to end-users. <strong>SHOULD</strong> include only content that is valid inside an XHTML <code>&lt;span&gt;</code> element.</td>
</tr>
<tr>
<td>rdf:type</td>
<td>Zero-or-many</td>
<td></td>
<td>Resource</td>
<td>Reference</td>
<td>rdfs:Class</td>
<td>The resource type URIs.</td>
</tr>
</tbody>
</table>

### 2.2 Resource: LinkType

A Link Type Resource (LTR) represents type of link that is or can be used when defining links from AM resources. The type has an ID (expressed as a string), whose universally accepted semantics may be defined elsewhere. This resource represents the definition as it is used by this service provider. This resource is meant as a convenience for clients to get a list of known/registered link types with human readable labels and definitions that can be used in client user interfaces when links are being created.

The resource defines the properties rdfs:label and rdfs:comments for the link type URI. The link type URI is made type: [http://open-services.net/ns/am#LinkType](http://open-services.net/ns/am#LinkType) via an rdf:type property. The remaining properties may be properties of the link type URI, or on a separate resource managed by the service provider. In the case where the service provider owns the domain of the link type URI these can be the same, and all properties can be on the same link type URI.

Links from AMR resources are managed in accordance with the [OSLC Core Guidance on Links and Relationships](https://www.w3.org/2004/02/Ops/Amplat.php). They appear
as simple properties in the resource. Links MAY include inlined values for the target and MAY include anchor properties on the link itself. AM Servers SHOULD support LinkType Resources for clients to get a list of known and acceptable link properties.

- **Describes:** [http://open-services.net/ns/am#LinkType](http://open-services.net/ns/am#LinkType)
- **Summary:** LinkType
- **Description:** Represents type of link that is or can be used when defining links from AM resources.

### LinkType Properties

<table>
<thead>
<tr>
<th>Prefixed Name</th>
<th>Occurs</th>
<th>Read-only</th>
<th>Value-type</th>
<th>Representation</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dcterms:contributor</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>AnyResource</td>
<td>Either</td>
<td>oslc:Any</td>
<td>Contributor or contributors to the resource. It is likely that the target resource will be a foaf:Person but that is not necessarily the case.</td>
</tr>
<tr>
<td>dcterms:created</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>dateTime</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Timestamp of resource creation.</td>
</tr>
<tr>
<td>dcterms:creator</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>AnyResource</td>
<td>Either</td>
<td>oslc:Any</td>
<td>Creator or creators of the resource. It is likely that the target resource will be a foaf:Person but that is not necessarily the case.</td>
</tr>
<tr>
<td>dcterms:identifier</td>
<td>Exactly-one</td>
<td>unspecified</td>
<td>string</td>
<td>N/A</td>
<td>Unspecified</td>
<td>A unique identifier for a resource. Typically read-only and assigned by the service provider when a resource is created. Not typically intended for end-user display.</td>
</tr>
<tr>
<td>dcterms:modified</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>dateTime</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Timestamp of latest resource modification.</td>
</tr>
<tr>
<td>Prefixed Name</td>
<td>Occurs</td>
<td>Read-only</td>
<td>Value-type</td>
<td>Representation</td>
<td>Range</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-----------</td>
<td>------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>oslc:instanceShape</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc:ResourceShape</td>
<td>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 and thus should not be cached.</td>
</tr>
<tr>
<td>Prefixed Name</td>
<td>Occurs</td>
<td>Read-only</td>
<td>Value-type</td>
<td>Representation</td>
<td>Range</td>
<td>Description</td>
</tr>
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<td>-------------------</td>
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<td>------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>oslc: serviceProvider</td>
<td>Zero-or-many</td>
<td>unspecified</td>
<td>Resource</td>
<td>Reference</td>
<td>oslc: ServiceProvider</td>
<td>A link to the resource’s OSLC Service Provider. There may be cases when the subject resource is available from a service provider that implements multiple domain specifications, which could result in multiple values for this property.</td>
</tr>
<tr>
<td>rdfs:comment</td>
<td>Zero-or-one</td>
<td>unspecified</td>
<td>string</td>
<td>N/A</td>
<td>Unspecified</td>
<td>Descriptive text about link type. Provides a description of this link type that could be used in hover help or other areas of the UI where the user wants to understand more about what a link of this type means.</td>
</tr>
<tr>
<td>rdfs:label</td>
<td>Exactly-one</td>
<td>unspecified</td>
<td>string</td>
<td>N/A</td>
<td>Unspecified</td>
<td>The human readable name for this link type. This value is expected to be used in drop down lists and in tables where a link of this type is involved.</td>
</tr>
</tbody>
</table>
3. Conformance

Architecture Management servers **MUST** follow the constraints defined here where required, and with the meanings defined here. Architecture Management servers **MAY** provide additional constraints for specific purposes.