

WADL

Generate API docs from WADL files



What is WADL?

- *Web Application Description Language.*
- An XML vocabulary to describe RESTful APIs.
- Machine- and human-readable.
- Referenced in DocBook XML files to generate API docs.

See [Web Application Description Language](http://www.w3.org/Submission/wadl/) (<http://www.w3.org/Submission/wadl/>).

WADL-generated output

- Chapter 3. Compute Extensions – Compute API v2 and Extensions Reference
- Service Admin Actions – API Reference Page

Generated from os-admin-actions.wadl

WADL application element

```
<application xmlns="http://wadl.dev.java.net/2009/02"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsdxt="http://docs.rackspacecloud.com/xsd-ext/v1.0"
  xmlns:wadl="http://wadl.dev.java.net/2009/02"
  xmlns:csapi="http://docs.openstack.org/compute/api/v1.1"
  xmlns:compext="http://docs.openstack.org/compute/api/v1.1">
```

- Root of a WADL description.
- For OpenStack, the **xmlns** attribute is always <http://wadl.dev.java.net/2009/02>.

WADL resources element

```
<resources base="https://servers.api.openstack.com">
```

- A container for the resources that the application provides.
- The **base** attribute must define the base URI for children resources.

WADL resource element

```
<resource id="tenantID" path="{tenant_id}">
```

- ▣ Describes a resource that the application provides.
- ▣ The **id** attribute identifies the resource element.
- ▣ The **path** attribute (optional) provides a relative URI template for the ID of the resource.

WADL param element

```
<param name="X-Auth-Token" style="header" type="xsd:string" required="true"/>
<param name="name" style="query" required="true" type="xsd:string">
<param name="tenant_id" style="template" type="xsd:string"/>
<param name="name" style="plain" type="xsd:string"/>
```

- In resources definition, defines a parameter that child resources inherit.
- In method definition, defines a parameter that a parent resource contains.
- The **style** attribute defines the parameter style.
- The **type** attribute defines the data type.
- The **required** attribute is true or false.

WADL doc element

```
<param name="X-Auth-Token" style="header" type="xsd:string" required="true">
  <doc xml:lang="EN" title="Authentication Token Header">
    <p xmlns="http://www.w3.org/1999/xhtml">A
      valid authentication token.</p></doc>
```

- Documents its parent WADL element.
- Use wadl:doc to include DocBook markup:

```
<method name="POST" id="pause">
  <wadl:doc xmlns="http://docbook.org/ns/docbook" xml:lang="EN" title="Pause Server">
    <para role="shortdesc">Pauses a server.</para>
  </wadl:doc>
```

WADL method reference/definition

```
<!-- Method reference -->
<method href="#pause"/>
<!-- Method definition →
<method name="POST" id="pause">
  <wadl:doc xmlns="http://docbook.org/ns/docbook" xml:lang="EN" title="Pause Server">
    <para role="shortdesc">Pauses a server and changes its status to PAUSED.</para>
  </wadl:doc>
  <request/>
  <response status="202"/>
</method>
```

- **method** reference. The **href** attribute must cross-reference a **method** definition element.
- **method** definition. A child of a **resource** or **application** element. The **name** attribute defines the HTTP method: GET, PUT, POST, or DELETE (and others). The **id** value matches the **href** value on the corresponding method reference.

WADL request/response elements

- **request**. Describes a request to an HTTP method on a resource.
- **response**. Describes the output from performing an HTTP method on a resource. The **status** attribute can list the HTTP status codes associated with a particular response.
- For requests and responses, provide code samples through the **representation** element.

How to include WADL files

Point to	To generate API reference
Entire WADL file	All resources and child methods
Entire WADL file starting at specified resource level	All resources and their child methods from the specified resource level starting point
A specified resource	The resource and its child methods
One or more methods for a specified resource	The specified methods

Include an entire WADL

```
<?xml version="1.0" encoding="UTF-8"?>
<chapter xmlns="http://docbook.org/ns/docbook"
        xml:id="wadl_example_chapter" xmlns:wadl="http://wadl.dev.java.net/2009/02">
  <title>WADL Examples</title>
  <!-- Pointer to WADL file -->
  <wadl:resources href="../wadls/test_example.wadl"/>
</chapter>
```

- The simplest way to generate an API reference chapter or section.
- Requires little effort. Limits control over the organization of information.
- Comprehensive roll-up table auto-generated – no role="api-reference" required.

Create comprehensive roll-up table

- Include role="api-reference" on chapter or section element.
- Example:
<http://docs.openstack.org/api/openstack-compute/2/content/ext-compute.html>

Start from specified level in the WADL

```
<resource id="Servers" path="servers">
  <resource path="{server_id}">
    <?rax start-sections?>
    <resource path="action">
      <method href="#pause"/>
      <method href="#unpause"/>
      <method href="#suspend"/>
      <method href="#resume"/>
    </resource>
  </resource>
</resource>
```

- Sections start at the resource level where you place the directive.
- All siblings and children of the resource appear in the output.

Include specified WADL resources or methods

```
<!-- All methods for a resource -->
<wadl:resources xmlns:wadl="http://wadl.dev.java.net/2009/02">
  <wadl:resource href="../wadls/test_example.wadl#examples"/>
</wadl:resources>
<!-- Specified method in a WADL -->
<wadl:resources xmlns:wadl="http://wadl.dev.java.net/2009/02">
  <wadl:resource href="../../xsd/test.wadl#examples">
    <wadl:method href="createExample"/>
  </wadl:resource>
</wadl:resources>
```

- You can include all methods or specified methods for one or more specified resources.
- Use this technique to group the resources/methods in arbitrary combinations.

WADL Resources

- [Web Application Description Language](#)
- [API Writers Guide](#)
- [Generating an API Reference from a WADL file](#)
- [OpenStack API Reference github](#)
- [REST in Practice: Hypermedia and Systems Architecture](#)