Open Cloud Computing Interface - HTTP Header Rendering

Status of This Document

This document provides information to the Cloud and Grid community. Distribution is unlimited.

Abstract

This document is part of the Open Cloud Computing Interface (OCCI) specification document series. The OCCI document series describes what each OCCI compatible interface needs to provide. The overall OCCI specification itself is setup modular to be extensbible and includes the following parts:

- The OCCI Core & Models
- The OCCI Infrastructure Models
- OCCI XHTML5 rendering
- OCCI HTTP Header rendering

Each of these parts is described in a separate document so the overall specification comes in the form of a document series. Where as this document describes the OCCI HTTP header rendering. It can be seen as the machine interface for OCCI.

All these parts and the information within are mandatory for implementors (unless otherwise specified).

1. OCCI HTTP Header rendering

1.1. Introduction

In this section we detail the requirements need to support the HTTP header rendering of the OCCI Model. This is a lightweight yet all-encompassing means to describe infrastructure. It provides the capability to send a native (e.g. OVF, VMX) representation along as the HTTP body for clients that can digest such a native rendering.

1.2. Specification

The HTTP binding for OCCI provides a machine interface, delivering resources in their native formats:

- The HTTP binding is defined by *RFC2616* (HTTP).
- Web Linking [*LINK*] and Web Categories [*CATEGORY*] specifications are used for the meta-model.

- Server-side cookies ("Attributes") are used for name-value pairs.
- Collections are transferred as the `text/uri-list` content type.*RFC2483*

1.3. Examples

This is an example of creating a compute resource, specifying only an id and an alternate representation. The resource's attributes are assigned default values, which are determined by the provider, and are visible in the example response.

1.3.1. POST Request

```
POST /compute/123 HTTP/1.1
Host: example.com
Content-Length: 0
Attribute: id="urn:uuid:d0e9f0d0-f62d-4f28-bc90-23b0bd871770"
Category: compute;
  scheme="http://purl.org/occi/kind/";
  label="Compute Resource"
Link: <http://example.com/products/1234>;
  rel="alternate";
  title="Alternate representation"
```

1.3.2. GET Response

```
Attribute: id="urn:uuid:d0e9f0d0-f62d-4f28-bc90-23b0bd871770"
Attribute: title="Compute Resource #123"
Attribute: summary="A virtual compute resource"
Attribute: updated="2009-12-31T12:59:59Z"
Attribute: compute.cores=2
Attribute: compute.speed=3000
Attribute: compute.memory=2048
ETag: "dad86c61eea237932f"
Category: compute;
  scheme="http://purl.org/occi/kind/";
  label="Compute Resource"
Link: <http://example.com/products/1234>;
  rel="alternate";
  title="Alternate representation"

<?xml version="1.0" encoding="UTF-8"?>
<ovf:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ovf="http://schemas.dmtf.org/ovf/1/envelope"
<!-- snip -->
```

Bibliography

Normative References

[RFC2483] *RFC 2483 - URI Resolution Services Necessary for URN Resolution*. `http://tools.ietf.org/html/rfc2483#section-5 [http://tools.ietf.org/html/rfc2109]`. Internet Engineering Task Force (IETF) 1999-01.

[RFC2616] *RFC 2616 - Hypertext Transfer Protocol -- HTTP/1.1*. `http://tools.ietf.org/html/rfc2616`. Internet Engineering Task Force (IETF) 1999-06.

[RFC2965] *RFC 2965 - HTTP State Management Mechanism*. `http://tools.ietf.org/html/rfc2965 [http://tools.ietf.org/html/rfc2822]`. Internet Engineering Task Force (IETF) 2000-10.

Informative References

[CATEGORY] *Web Categories*. `http://tools.ietf.org/html/draft-johnston-http-category-header`. Internet Engineering Task Force (IETF) Sam Johnston. 2009-07-1.

[LINK] *Web Linking*. `http://tools.ietf.org/html/draft-nottingham-http-link-header`. Internet Engineering Task Force (IETF) Mark Nottingham. 2009-07-12.

[HTML5-article] *Designing a great HTTP API - why heavyweight XML is not the answer*. `http://www.elastichosts.com/blog/2009/01/01/designing-a-great-http-api/` `[http://www.smashingmagazine.com/2009/07/29/misunderstanding-markup-xhtml-2-comic-strip/]`. . 2009-01-01.

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