Development Guide

IM.MDL Interoperability

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## Document Control

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## Overview

Moodle is chosen as a target for provision from Oracle Identity Manager.

It can be expected that if Moodle rolled out at ??? offers the same performance as the official Moodle Site crawled for documentation the connector to develop becomes a nightmare. 80% of the request to discover the official documentation ended up in connection time outs.

### Specification

The following specifications are taken in account to depict the interoperability of the provided SCIM Service by Pivotal Cloud Foundry (PCF) User Account and Authorization (UAA).

1. HTTP
2. SCIM 2.0
3. SCIM 1.1
4. SCIM 1 (deprecated)
5. Cloud Foundry API

#### HTTP

Internet Engineering Task Force (IETF)

1. [Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content](https://tools.ietf.org/html/rfc7231)

#### SCIM 2.0

SCIM 2.0 is released as RFC7642, RFC7643 and RFC7644 under IETF in September 2015.

1. [RFC7643 - SCIM: Core Schema](https://tools.ietf.org/html/rfc7643)  
   The Core Schema provides a platform-neutral schema and extension model for representing users and groups.
2. [RFC7644 - SCIM: Protocol](https://tools.ietf.org/html/rfc7644)  
   The SCIM Protocol is an application-level, REST protocol for provisioning and managing identity data on the web.
3. [RFC7642 - SCIM: Definitions, Overview, Concepts, and Requirements](https://tools.ietf.org/html/rfc7642)  
   This document lists the user scenarios and use cases of System for Cross-domain Identity Management (SCIM).

#### SCIM 1.1

Second official release of the SCIM specification, released in July 2012. Compatible with 1.0 and contains cleanups and clarifications on issues found during interop testing.

1. [Core Schema](http://www.simplecloud.info/specs/draft-scim-core-schema-01.html)  
   The Core Schema provides a platform-neutral schema and extension model for representing users and groups in JSON and XML formats.
2. [REST API](http://www.simplecloud.info/specs/draft-scim-api-01.html)  
   The SCIM Protocol is an application-level, REST protocol for provisioning and managing identity data on the web.

#### SCIM 1 (deprecated)

First official release of the SCIM specification, released in December 2011.

1. [Core Schema](http://www.simplecloud.info/specs/draft-scim-core-schema-00.html)  
   The Core Schema provides a platform-neutral schema and extension model for representing users and groups in JSON and XML formats.
2. [REST API](http://www.simplecloud.info/specs/draft-scim-api-00.html)  
   The SCIM Protocol is an application-level, REST protocol for provisioning and managing identity data on the web.

#### Moodle REST API

1. [UAA API Version 74.24..0](https://docs.cloudfoundry.org/api/uaa/version/74.24.0/index.html#overview)
2. [REST API](https://apidocs.cloudfoundry.org/13.17.0/) Version 13.17.0 Cloud Controller API Version 2.153.0

## Compliance

|  |  |
| --- | --- |
|  | Important: |
| Any user can have multiple roles in multiple organizations and spaces |

| D:\tt\icon-restrict-16.png | Restrict: |
| --- | --- |
| Will it be a compliance issue in terms of SoD if a user is a manager of an organization and a developer in a space attached to the organization?  This constellation implies that the user have to be also the role user assigned on that organization |

## Interoperability

### WebServices

It’s hard to get an official documentation of the WebService interfaces without to have a handy instance of Moodle up and running.

| D:\tt\icon-restrict-16.png | Restrict: (https://docs.moodle.org/311/en/Web\_services\_FAQ) |
| --- | --- |
| Since different Moodle sites can extend or restrict the API, and the API will evolve over time, the best way to see the exact API for a particular Moodle site is to look at the automatically generated documentation. |

| D:\tt\icon-note-16.png | Note: |
| --- | --- |
| But why the hell can't you document your own things. Looks like laziness. |

Moodle offers two types of conversation models:

* SOAP
* REST

#### SOAP

##### WebService Description Language (WSDL)

|  |  |
| --- | --- |
|  | Important: |
| WSDL’s usually used to generate the client stubs. |

| D:\tt\icon-restrict-16.png | Restrict: (https://docs.moodle.org/311/en/Web\_services\_FAQ) |
| --- | --- |
| Unfortunately the generated WSDL isn't currently compatible with JAVA or .NET. See [MDL-28988](https://tracker.moodle.org/browse/MDL-28988) and [MDL-28989](https://tracker.moodle.org/browse/MDL-28989) for plans to create a JAVA-compatible SOAP WSDL. |

| D:\tt\icon-note-16.png | Note: |
| --- | --- |
| Such things happens if you use a typeless programming language like PHP. |

| D:\tt\icon-warning-16.png | Workaround |
| --- | --- |
| We need to go an extra mile to create a JAX-WS compliant WSDL if we vote for SOAP |

#### REST

Authentication

It looks like there is some doubts about it:

A typical call to authenticate is:

##### REST Requests

A REST call is resource based and extended by parameters transferred to such resource

Moodle offers something like:

https://<moodleauthority>/webservice/rest/server.php?wstoken=XXXXXXXXXXXX&wsfunction=

In the standardized manner it has to be

https://<moodleauthority>/webservice/rest/server/users

##### ContentType transmission

A REST Server has to interact with the HTTP Headers send by the client to take care about the format of the payload.

To put in such things in the request parameters violates the standards

##### POST Requests

Can somebody tell me what kind of syntax Moodle implements?

https://<moodleauthority>/webservice/rest/server.php?wstoken=XXXXXXXXXXXX&wsfunction=core\_course\_create\_courses&moodlewsrestformat=json&courses[0][fullname]=MyCourse&courses[0][shortname]=ShortName&courses[0][categoryid]=14&courses[0][format]=&courses[0][visible]=&courses[0][groupmode]

Somebody needs to tell the Moodle Developers that a REST Post Request has a Request Body with the XML/JSON Payload.

It an ridiculous idea to put all in as request parameters the example shows native PHP not REST.

Why this is important.

Payloads can become huge so they are streamed from the consumer to the provider.