

Repository Deposit: SWORDv2

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Overview

This briefing paper introduces the repository deposit protocol known as 'SWORD'. The protocol provides a standardized method to remotely deposit items into a repository.

Background

To make repositories interoperable with each other and with external systems, they must adhere to agreed protocols. In the repository domain there are several standards that are widely implemented and ensure interoperability, the most well known being the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), which is used as a common interface for harvesting metadata from repositories.

Another useful protocol is SWORD.

What is SWORD?

SWORD stands for Simple Web Service Offering Repository Deposit. At its basic level SWORD allows two types of interaction with a repository:

- Query a repository to find out what collections a user can deposit items into
- Perform a deposit into a repository collection

Rather than implementing a wholly new standard, SWORD is a profile of the Atom Publishing Protocol (AtomPub). AtomPub is often used by blogging software to allow the remote posting of items into a blog, and also forms the basis of other well-known standards such as the Google Data API: GData.

SWORD adapts AtomPub with repository-specific extensions that make it fit with the way we use repositories. This brings the benefit of using a widely adopted standard, but with the specifics required by the repository domain.

How does SWORD work?

A typical SWORD deposit will take place in two steps. The first step will often require the user to provide their username and password, which allows the repository software to construct a service document. The service document describes the collections into which a user may deposit items.

Once a user has decided which collection they wish to deposit an item into, they send a package to the deposit URL of that particular collection. The repository will then ingest the item and put it through any workflows that are set up.

Users do not interact with SWORD directly; rather they make use of a client tool, in much the same way as we interact with web sites through a browser. SWORD clients could be:

- Standalone applications
- Integrated into web browsers
- Built into publisher workflows to deposit items automatically into an author's institutional repository
- Incorporated into other software products such as word processors
- Included in web sites such as social networking sites where a deposit could also trigger alerts to colleagues about the new item
- Deposit by machines: laboratory equipment could deposit results from an experiment into a repository without requiring human intervention

One of the benefits of using a standardized protocol such as SWORD for repository deposit is that a user is free to choose which SWORD client to use depending on their working preferences, and an institution is free to choose which repository they implement as all clients and repositories will interoperate. A list of clients and code libraries to write your own clients are available from the SWORD web site.

SWORD versions 1 and 2

SWORD version 1 was originally developed in 2007, with the latest release, version 1.3, published in November 2008.

Further work was initiated in 2010 to develop a second version of SWORD. The biggest difference between version 1 and version 2 is that SWORD now enables updates to take place on deposits by supporting more of the AtomPub methods. These updates might take several forms:

- Collaborating authors depositing different parts of a paper
- An item being updated at a later date with a new or corrected version
- A Research Information Management Systems (or CRIS) synchronizing files with the repository
- A deposit being deleted

SWORD v2 therefore provides support throughout the deposit lifecycle.

What is the difference between SWORD and AtomPub?

SWORD has added a number of extensions to AtomPub to allow it to fit-in with the way repositories work. The extensions are:

- Allowing a depositor (person or machine) to deposit on behalf of another user. By configuring an optional setting, the depositor can say that they are performing the deposit on behalf of another user. Only if the user has the right to deposit on behalf of that user will the deposit be accepted.
- Rather than depositing single files, SWORD allows the deposit of a package, along with a description of the package. A package might be a zipped file of metadata and content files, such as an IMS learning resource package.
- Extra metadata such as collection policies can be described in the service document.

References & Further information

SWORD web site <http://www.swordapp.org/>

Allinson, J., François, S. and Lewis, S., SWORD: Simple Web-service Offering Repository Deposit, Ariadne, Issue 54, January 2008
<http://www.ariadne.ac.uk/issue54/allinson-et-al/>

Lewis, S., Hayes, L., Newton-Wade, V., Corfield, A., Davis, R., Donohue, T., Wilson, S., If SWORD is the answer, what is the question?: Use of the Simple Web-service Offering Repository Deposit protocol, Program: electronic library and information systems, 2009, Vol 43, Issue 4, pp: 407 - 418, 10.1108/00330330910998057, Emerald Group Publishing Limited
<http://hdl.handle.net/2292/5315>

SWORD, JISC project web site
http://www.jisc.ac.uk/whatwedo/programmes/programme_rep_pres/tools/sword.aspx

AtomPub
<http://www.atompub.org/>

Repositories Support Project
<http://www.rsp.ac.uk/>