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SFX and DOI: How to make the best of it?

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The basics: DOI, CrossRef, etc.

- **DOI System** (http://www.doi.org/) – "The DOI system provides a framework for persistent identification, managing intellectual content, managing metadata, linking customers with content suppliers, facilitating electronic commerce, and enabling automated management of media."

  The DOI assignment process is organized by a group of registration agencies (including CrossRef).

  The International DOI Foundation governs the DOI System and operates the **DOI resolver** under http://dx.doi.org/.

- **CrossRef** (http://www.crossref.org/) – This DOI registration agency is responsible for scholarly publications and has more than 2,800 participating publishers. Publishers register metadata records for each DOI and thereby build a multidisciplinary reference database with 36+ million records, see http://www.crossref.org/01company/crossref_indicators.html.

  Institutions can sign the "**Library Agreement**" to gain access to selected CrossRef services, e.g. to retrieve DOIs or metadata. This is free of charge for most libraries, see http://www.crossref.org/03libraries/index.html.

- **Digital Object Identifier (DOI)** – Persistent identifiers assigned to digital content items via the DOI system. Each DOI name has two components:

  10.1006 / **jmbi.1998.2354**
  prefix   suffix

  The prefix identifies the publisher or imprint which assigned the DOI (like "Elsevier Academic Press" in the example above). A list of CrossRef site keys is available under http://www.crossref.org/06members/50go-live.html.

  The suffix is exclusively defined by the publisher and does not need to apply an inner syntax (even though they often do).

  DOIs are permanently assigned, and persist if the content is transferred to another publisher. Thus, the site key may point to one publisher, while the full text can be resolved via another publisher's platform.

Improve the metadata record
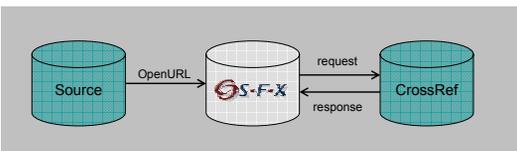
Benefits

A metadata lookup in CrossRef's database can improve the quantity and quality of metadata available to SFX. This is especially important if the SFX source provides only a minimum set of information via OpenURL.

In addition, the lookup could also be used to check if a given DOI is resolvable via CrossRef to avoid broken links, e.g. if the DOI has not been registered yet, or the SFX source uses incorrect identifiers.

Consequences

The display of the SFX menu will be delayed if the CrossRef server does not respond promptly.

The library agreement specifies that a DOI link needs to be presented if the CrossRef database has been queried for metadata.

Recommendations

1. Adjust request timeout to avoid outage of SFX (/config/crossref.config).

2. Revise your DOI source parser to request CrossRef only if additional metadata is required, e.g.
   ```
   if (($issn || $eissn || $isbn) && ($volume || $date) && ($spage || $pages)) {
       debug "Metadata fetch not invoked, doi_fetch set to '0'";
       $ctx_object->set('doi_fetch',0);
       return 0;
   ```

3. Ensure that DOI.getDOI is displayed if metadata has been fetched from CrossRef, e.g.
   ```
   $obj->need('doi') && $obj->need('doi_fetch','==',1)
   ```

Offer a link to the article
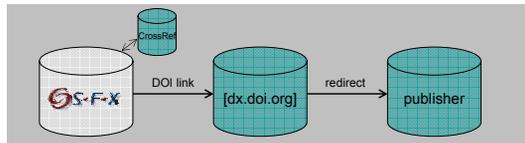
Benefits and Setup

Not all publisher platforms offer a reliable inbound linking syntax to address a specific article. While some publishers categorically require DOIs for all article links, DOI links may also be preferred to improve the handling of special cases (e.g. double volume or issue numbers).

DOI linking depends on two settings:

- The "CrossRef" checkbox in the target service configuration specifies if the CrossRef database should be checked in advance to retrieve a DOI.
- The target parser defines which metadata and services are used for linking.

Consequences

DOI linking via http://dx.doi.org/ may lead users to a copy of the content which has not been licensed by their library ("appropriate copy problem"). In addition, a multiple resolution page may pop-up if CrossRef retrieves more than one full text location.

The generation of the target URL will be delayed if the CrossRef server does not respond promptly.

Recommendations

1. Test your linking setup, in particular for transferred content. Request a platform specific DOI linking syntax from the publisher and apply this syntax instead of using http://dx.doi.org/.

2. Adjust request timeout to avoid outage of SFX (/config/crossref.config).

Redirect DOI links ("DOInapping")
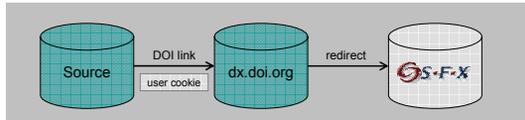
Benefits and Setup

A growing number of publishers enables DOI links in the references section of their full texts. These links will direct the user to the publisher version of the corresponding publication without regard to license status or alternative copies available. The DOI cookie pusher mechanism can be used to redirect these requests to the institution's SFX server.

The setup requires:

- Registration of the SFX base URL at CrossRef.
- Setup of a redirection page to set the cookie in the browser of your users.

Consequences

Redirecting DOI links may confuse users because of the unexpected appearance of the SFX menu.

The DOI cookie expires after three days and therefore needs to be reset regularly.

The library agreement specifies that a DOI link needs to be presented if the request was redirected.

Recommendations

1. Select an often visited page to set the user cookie and provide some documentation for users which would like to opt-out.

2. Ensure that your server can retrieve metadata from CrossRef, and an alternative is offered when the fetch fails (e.g. direct linking).

Further Reading

SFX Advanced User's Guide, Chapter 13: DOI/CrossRef Setup
How Libraries Use CrossRef: http://www.crossref.org/03libraries/16lib_how_to.html
MPG/SFX: Usage of DOIs: https://dev.livingreviews.org/projects/vlib/wiki/SFXDOI