



# CrossRef Basics

- Description of the various transactions
  - Some XML basics
  - Ways to perform these transactions
- 
- System interface demonstration
  - Tools and reports
  - Help system demonstration

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# Anatomy of the basic transaction

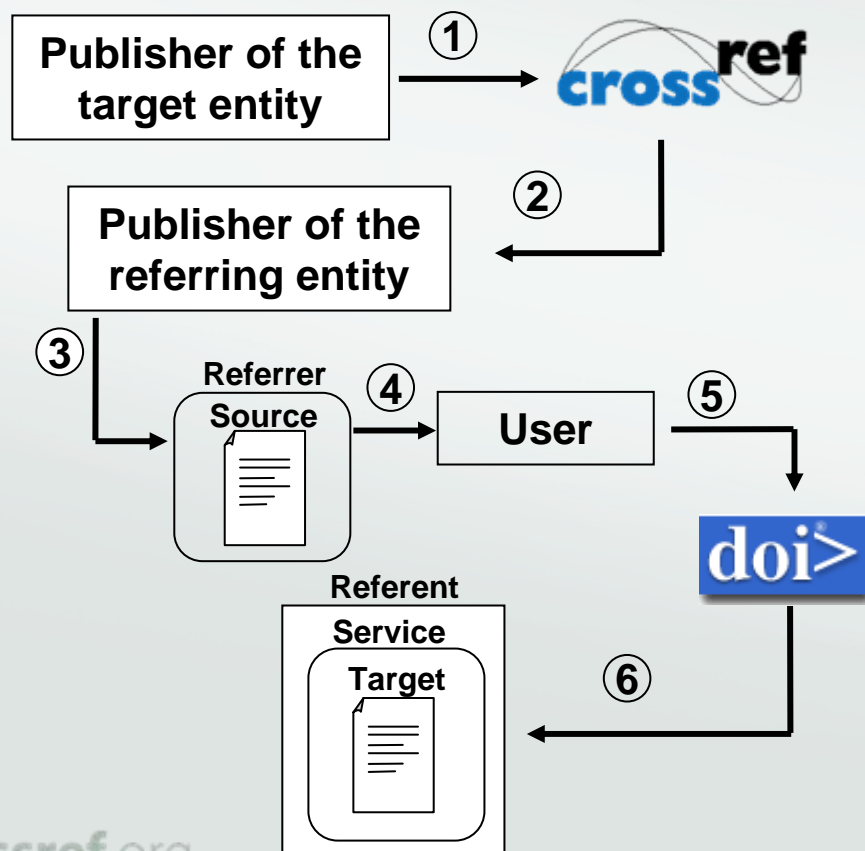


HTTP://dx.doi.org/10.1016/S0040-4039(01)80789-9

'The' DOI  
Resolver

Publisher's  
Prefix

DOI suffix



1. Deposit article meta-data to CrossRef with the DOI & URL
2. Query CrossRef to get a DOI using an article's meta-data
3. Present the referring article to the user with reference links active as DOIs
4. The user clicks on a link
5. Their browser sends the link to the DOI Resolver
6. The Resolver finds the URL and re-directs the user to the target document



# CrossRef Transactions

- 1) Deposit metadata for an article and assign a DOI
  - 2) Deposit a list of references in an article (forward linking!)
  - 3) Query to obtain the DOI of an article using metadata
  - 4) Query to obtain metadata using a DOI
  - 5) Query to obtain a list of articles that 'cite' article (forward linking!)
- \* 1,2 and 3 can be done separately or in one transaction
  - \* 5 can only be done by the owner of article X

# Where to do a transaction



- 95+% of the activity is by automated systems that ‘talk’ to CrossRef sending XML data using simple Web operations.
  - <http://doi.crossref.org> => production system (deposit & query)
  - <http://test.crossref.org> => a ‘sandbox’ for experiments
  - [www.crossref.org/openurl](http://www.crossref.org/openurl) => OpenURL host (queries only)
  - <http://oai.crossref.org/OAIHandler> => metadata harvesting
  - doi.crossref.org:8081 => low-overhead non-Web query interface
  
- Interfaces for people are available to perform low volume transactions or to do testing.
  - <http://doi.crossref.org>
  - <http://www.crossref.org>



# What does the XML look like?

```
<?xml version="1.0" encoding="UTF-8"?>
...
<timestamp>200706181120</timestamp>
```

```
<journal>
<journal_metadata>
  <full_title>Test Publication</full_title>
  <abbrev_title>T27P</abbrev_title>
  <issn media_type='print'>99999999</issn>
</journal_metadata>
<journal_issue>
  <publication_date media_type='print'>
    <month>5</month>
    <day>5</day>
    <year>2001</year>
  </publication_date>
  <journal_volume>
    <volume>33</volume>
  </journal_volume>
  <issue>1</issue>
</journal_issue>
```

1

```
<journal_article publication_type='full_text'>
```

```
<titles> <title>Article Apr 16, 2007 11:51</title></titles>
<contributors>
  <person_name sequence='first' contributor_role='author'>
    <given_name>Chuck</given_name>
    <surname>Koscher</surname>
  </person_name>
<publication_date media_type='print'>
  <month>5</month> <day>9</day> <year>1995</year>
</publication_date>
<pages>
  <first_page>100</first_page><last_page>200</last_page>
```

2

```
<doi_data>
  <doi>10.50505/test_200704082300</doi>
  <resource>http://www.crossref.org/</resource>
</doi_data>
```

3

```
<component_list>
  <component parent_relation="isPartOf">
    <description>Some component DOI</description>
    <doi_data>
      <doi>10.50505/test_200611161118</doi>
      <resource>http://www.crossref.org/</resource>
    </doi_data>
  </component>
</component_list>
```

4

# What does a transaction look like



- Machines are good at this!

**Get**

```
http://doi.crossref.org/servlet/query?usr=<USR>&pwd=<PWD>&qdata=
|%20Natl%20Acad.%20Sci.%20USA|Zhou|94|24|13215|1997|||
|J.%20Mol.%20Biol.|Hagerman|260|||1996|||
```

**Post**

```
POST /servlet/query?usr=creftest&pwd=c53test&format=unixref HTTP/1.1
Host: doi.crossref.org
Connection: Keep-Alive, TE
TE: trailers, deflate, gzip, compress
User-Agent: RPT-HTTPClient/0.3-3
Accept-Encoding: deflate, gzip, x-gzip, compress, x-compress
Content-type: application/x-www-form-urlencoded
Content-length: 560
==== Body 560 bytes
Body => usr=<USR>
Body => &pwd=<PWD>
Body => &qdata=%3C%3Fxml+version+%3D+%221.0%22+encoding%3D%22UTF-
8%22%3F%3E%3Cquery_batch+version%3D%222.0%22
ns+%3D+%22http%3A%2F%2Fwww.crossref.org%2Fqschema%2F2.0%22+xmlns%3Aksi%3D%22http%3A%2F
%2Fwww.w3.org%2F2001%2FXMLSchema-instance%
E%3Chead%3E%3Cemail_address%3Eckoscher%40crossref.org%3C%2Femail_address%3E%3Cdoi_batch_id%
3Ew001%3C%2Fdoi_batch_id%3E%3C%2Fhead
3Cbody%3E%3Cquery+key%3D%22555-555%22+expanded-
results%3D%22true%22%3E%3Cdoi%3E10.1103%2FPhysRevD.7.2467%3C%2Fdoi%3E+%3C%2Fquery
3C%2Fbody%3E%3C%2Fquery_batch%3E%0A
====
```

**XML**

A red arrow points from the word "XML" to the XML content in the POST body, specifically to the opening tag of the query\_batch element.

# What else does a transaction look like



[http://www.crossref.org/openurl?url\\_ver=Z39.882004  
&req\\_dat=username:password  
&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:journal  
&rft.atitle=Isolation of a common receptor for coxsackieB  
&rft.jtitle=Science  
&rft.aulast=Bergelson  
&rft.auinit=J  
&rft.date=1997  
&rft.volume=275  
&rft.spage=1320  
&rft.epage=1323](http://www.crossref.org/openurl?url_ver=Z39.882004&req_dat=username:password&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.atitle=Isolation of a common receptor for coxsackieB&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.date=1997&rft.volume=275&rft.spage=1320&rft.epage=1323)



<http://www.crossref.org/help>