

## XML schema for OpenURL resolver information in WorldCat Registry

Institutions that wish to register their OpenURL resolver(s) should use either the WorldCat Registry at <http://www.worldcat.org/registry/institutions/> or, if they utilize the FirstSearch reference service, their WorldCat Services administrative settings at <http://firstsearch.oclc.org/admin/>.

The contents of a registry entry are defined by the XML schema located at:

<http://worldcatlibraries.org/registry/Resolver/Resolver.xsd>

The schema defines only a few required data elements:

**IPAddressRange** - An IP Address range associated with the Resolver. If the IP address of the requester matches any IP address range in the registry the requester will be redirected to the associated Resolver's Base URL. This element is required. Examples: 132.174.95.5  
132.174.95.5-60 132.174.95-98.\* 132.174.95.\* 132.174.\*.\* 132.174.0.0/27

**Resolver source** - The required source element describes where the Resolver is coming from. For example it could be from the OCLC OpenURL Resolver registry input form, an external provider, or a specific library

**Resolver BaseURL** - The required baseURL element is the Base URL of the Resolver. For example, "http://hogwarts.edu/OpenURLResolver".

**Resolver linkText** - The required linkText element is text which is to be provided with the Resolver Base URL. For example, "Hogwart's potion collection". If the linkIcon element is present then the linkText will be the alt text for the link icon.

### Figure 1

Here is an example of an XML instance that meets the minimum requirements. This example indicates that the Resolver supports both OpenURL\_0.1 and Z39.88-2004 since they are both supported if no OpenURLVersions are specified.

```
<?xml version="1.0" encoding="UTF-8"?>
<resolverRegistryEntry xmlns="http://worldcatlibraries.org/registry/resolver"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://worldcatlibraries.org/registry/resolver
http://worldcatlibraries.org/registry/resolver/Resolver.xsd">
  <IPAddressRange>100.122.13.5</IPAddressRange>
  <Resolver>
    <source>Universal Resolvers</source>
    <baseURL>http://GlobalUniversityLibrary.edu/FindIt</baseURL>
    <linkText>Find Everything Here</linkText>
  </Resolver>
</resolverRegistryEntry>
```

There are two additional non-required elements related to the institution:

**institutionName** - The name of the institution that has configured the Resolver.

**institutionDomainName** - The domain name associated with the Institution. For example, "hogwarts.edu".

**OCLCInstSymbol** - The OCLC Institution Symbol associated with the Institution. See <http://www.oclc.org/contacts/libraries/> to search for symbols. Limited to 6 characters.

Additional non-required data elements are included in the schema that help define the capabilities of the Resolver and also to identify the source of the data including contact information. These include:

**Source** - The required source element describes where the Resolver is coming from. For example it could be from the OCLC OpenURL Resolver registry input form, an external provider, or a specific library.

**contactName** - The optional contactName element describes a contact name. Generally, this will be used if the source is an external provider.

**contactMailto** - The optional contactMailto element describes a contact e-mail address. Generally, this will be used if the source is an external provider. Example: `mailto:elharo@metalab.unc.edu`

**OpenURLVersions** - The optional OpenURL Version element describes which OpenURL versions the Resolver supports. This schema only supports the current choices which are:

OpenURL 0.1  
Z39.88-2004

If no versions are specified, OCLC will assume both are supported. If only one is specified, it will be inferred that the other is not supported.

**Z39.88-2004\_CommunityProfile** - The optional repeating Z39.88-2004\_CommunityProfile element describes which community profiles the Resolver supports for any entity. If this element is omitted OCLC will assume that no community profiles are supported. These identifiers must be in the pattern of `info:ofi/pro:.*`. Here is a list of the community profile registry identifiers currently supported by Z39.88-2004.

info:ofi/pro:sap1-2004  
info:ofi/pro:sap1  
info:ofi/pro:sap2-2004  
info:ofi/pro:sap2

See <http://openurl.info/registry> for information about Z39.88-2004 Community Profiles.

**vendor** - The optional Resolver vendor. This could be either vendor or product name. Examples include:

BIBSYS  
ILLIAD  
linkSource  
1Cate  
Serials Solutions  
Sirsi  
TDNet

**OpenURL\_0.1\_Identifiers** - The optional OpenURL\_0.1\_Identifiers element describes which OpenURL 0.1 identifiers the Resolver supports. If this element is omitted and the OpenURL\_0.1 OpenURL version is supported then OCLC will assume that all 0.1 Identifiers are supported. If the element exists each empty sub-element indicates that identifier is supported. The absence of the sub-element indicates it is not supported. OpenURL version 0.1 is defined at <http://www.openurl.info/registry/docs/pdf/openurl-01.pdf>.

**Z39.88-2004\_namespace** - The optional repeating Z39.88-2004\_namespace element describes which OpenURL 1.0 namespaces the Resolver supports for any entity. If no Z39.88-2004\_namespace elements are specified and the Z39.88-2004 OpenURL version is supported and either the info:ofi/pro:sap1-2004 or the info:ofi/pro:sap1-2004 community profiles is supported, OCLC will assume that all San Antonio Profile (sap1-2004) namespaces are supported. If any Z39.88-2004\_namespace elements are specified then those that are not specified will be assumed not to be supported. These namespaces must be in the pattern of info:ofi/.\*. Here is a list of the identifier namespaces currently supported by the sap1-2004 profile:

info:ofi/nam:ftp:  
info:ofi/nam:http:  
info:ofi/nam:https:  
info:ofi/nam:ldap:  
info:ofi/nam:mailto:  
info:ofi/nam:urn:ISBN:  
info:ofi/nam:urn:ISSN:  
info:ofi/nam:urn:NBN:  
info:ofi/nam:info:bibcode:  
info:ofi/nam:info:doi:  
info:ofi/nam:info:hdl:  
info:ofi/nam:info:lccn:  
info:ofi/nam:info:oai:  
info:ofi/nam:info:oclcnum:  
info:ofi/nam:info:pmid:  
info:ofi/nam:info:sid:  
info:ofi/nam:info:sici:

**OpenURL\_0.1\_genres** - The optional OpenURL\_0.1\_genres element describes which OpenURL 0.1 genres the Resolver supports. If this element is omitted and the OpenURL\_0.1 OpenURL version is supported then OCLC will assume that all 0.1 genres are supported. If the element is present, the presence of each empty sub-element indicates that identifier is supported. The absence of the sub-element indicates it is not supported. OpenURL version 0.1 is defined at <http://www.openurl.info/registry/docs/pdf/openurl-01.pdf>.

**Z39.88-2004\_metadataFormat** - The optional repeating Z39.88-2004\_metadataFormat element describes which OpenURL 1.0 metadata formats the Resolver supports for any entity. The Z39.88-2004\_metadataFormat matches the pattern of info:ofi/fmt:.\*. If no Z39.88-2004\_metadataFormat elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap1-2004 community profile is supported, OCLC will assume that the following sap1-2004 metadata formats are supported:

info:ofi/fmt:kev:mtx:journal  
info:ofi/fmt:kev:mtx:book  
info:ofi/fmt:kev:mtx:patent  
info:ofi/fmt:kev:mtx:sch\_svc  
info:ofi/fmt:kev:mtx:dissertation

If no Z39.88-2004\_metadataFormat elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap2-2004 community profile is supported, OCLC will assume that the following sap2-2004 metadata formats are supported:

info:ofi/fmt:xml:xsd:journal  
info:ofi/fmt:xml:xsd:book  
info:ofi/fmt:xml:xsd:patent  
info:ofi/fmt:xml:xsd:sch\_svc  
info:ofi/fmt:xml:xsd:dissertation  
info:ofi/fmt:xml:xsd:MARC21  
info:ofi/fmt:xml:xsd:oai\_dc

If any Z39.88-2004\_metadataFormat elements are specified then those that are not specified will be assumed not to be supported.

**Z39.88-2004\_transport** - The optional repeating Z39.88-2004 transport element describes which OpenURL 1.0 transports the Resolver supports. These identifiers must be in the pattern of info:ofi/tsp:\*. If no Z39.88-2004 transport elements are specified and the Z39.88-2004 OpenURL version is supported and either the info:ofi/pro:sap1-2004 or the info:ofi/pro:sap2-2004 community profiles is supported, OCLC will assume that all San Antonio Profile (sap1-2004 and sap2-2004) transports are supported. If any Z39.88-2004\_transport elements are specified then those that are not specified will be assumed not to be supported. Here is a list of the transports currently supported by the sap1-2004 and the sap2-2004 profiles:

info:ofi/tsp:http:openurl-by-ref  
info:ofi/tsp:http:openurl-by-val  
info:ofi/tsp:http:openurl-inline

Also currently available in the registry are https transports:

info:ofi/tsp:https:openurl-by-ref  
info:ofi/tsp:https:openurl-by-val  
info:ofi/tsp:https:openurl-inline

**Z39.88-2004\_encoding** - The optional repeating Z39.88-2004 encoding element describes which OpenURL 1.0 character encodings the Resolver supports. These identifiers must be in the pattern of info:ofi/enc:\*. If no Z39.88-2004\_encoding elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap1-2004 community profile is supported, OCLC will assume that the following sap1-2004 character encodings are supported:

info:ofi/enc:ISO-8859-1  
info:ofi/enc:UTF-8

If no Z39.88-2004\_encoding elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap2-2004 community profile is supported, OCLC will assume that the following sap1-2004 character encoding is supported:

info:ofi/enc:UTF-8

If any Z39.88-2004\_encoding elements are specified then those that are not specified will be assumed not to be supported.

**Z39.88-2004\_contextObject** - The optional repeating Z39.88-2004\_contextObject element describes which OpenURL 1.0 context object formats the Resolver supports. . These identifiers

must be in the pattern of info:ofi/fmt:.\*. If no Z39.88-2004\_contextobject elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap1-2004 community profile is supported, OCLC will assume that the info:ofi/fmt:kev:mtx:ctx contextObject metadata format is supported.

If no Z39.88-2004\_contextobject elements are specified and the Z39.88-2004 OpenURL version is supported and the info:ofi/pro:sap2-2004 community profile is supported, OCLC will assume that the info:ofi/fmt:xml:xsd:ctx contextObject metadata format is supported.

If any Z39.88-2004\_contextObject elements are specified, then those that are not specified will be assumed not to be supported.

### Additional Examples

**Figure 2**

This example indicates that the Resolver supports both OpenURL\_0.1 and Z39.88-2004 since they are both assumed to be supported if no OpenURLVersions are specified. This example also indicates that the Resolver supports the info:ofi/pro:sap1-2004 community profile and all of the namespaces, metadata formats, transports, character encodings, and Context Object formats that go along with that community profile (even though they are not listed – see defaults above).

```
<?xml version="1.0" encoding="UTF-8"?>
<resolverRegistryEntry xmlns="http://worldcatlibraries.org/registry/resolver"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://worldcatlibraries.org/registry/resolver
http://worldcatlibraries.org/registry/Resolver/resolver.xsd">
  <institutionName>Old State University</institutionName>
  <IPAddressRange>132.175.0.0/27</IPAddressRange>
  <resolver>
    <source>International Referrers</source>
    <baseURL>http://OldStateUniviersity/Resolver/</baseURL>
    <linkText>Your Library Services</linkText>
    <Z39.88-2004_CommunityProfile>info:ofi/pro:sap1-2004</Z39.88-
2004_CommunityProfile>
  </resolver>
</resolverRegistryEntry>
```

Figure 2.3

This example indicates that the Resolver supports only the OpenURL\_0.1 version. This Resolver only supports Journal and Article referents so it does not support all of the 0.1 identifiers and genres. In this case the identifiers and genres that are supported are spelled out individually.

```
<?xml version="1.0" encoding="UTF-8"?>
<resolverRegistryEntry xmlns="http://worldcatlibraries.org/registry/resolver"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://worldcatlibraries.org/registry/resolver
http://worldcatlibraries.org/registry/resolver/Resolver.xsd">
  <institutionName>EDUCATIONAL TESTING SERV</institutionName>
  <IPAddressRange>166.81.*.*</IPAddressRange>
  <OCLCInstSymbol>EXT</OCLCInstSymbol>
  <resolver>
    <source>FirstSearch</source>
    <baseURL>http://www.serialSources.com/sources /</baseURL>
    <linkIcon>http://www.serialSources.com/images/source.gif</linkIcon>
    <linkText>Serial Sources</linkText>
    <OpenURLVersions>
      <OpenURL_0.1/>
    </OpenURLVersions>
    <vendor>serialSources</vendor>
    <OpenURL_0.1_Identifiers>
      <doi/>
      <pmid/>
      <bibcode/>
      <oai/>
    </OpenURL_0.1_Identifiers>
    <OpenURL_0.1_genres>
      <journal/>
      <article/>
    </OpenURL_0.1_genres>
  </resolver>
</resolverRegistryEntry>
```

**Figure 2.4**

This example indicates that the Resolver supports both the OpenURL\_0.1 and the Z39.88-2004 OpenURL versions. However, the Resolver doesn't support all of namespaces, metadata formats, transports, and encodings that are specified in the sap1-2004 community profile. So, in this case all of those elements are specified in the XML instance.

```
<?xml version="1.0" encoding="UTF-8"?>
<resolverRegistryEntry xmlns="http://worldcatlibraries.org/registry/resolver"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://worldcatlibraries.org/registry/resolver
http://worldcatlibraries.org/registry/resolver/Resolver.xsd">
  <institutionName>OCLC PICA</institutionName>
  <IPAddressRange>194.81.78.132-255</IPAddressRange>
  <IPAddressRange>195.184.233.43-44</IPAddressRange>
  <IPAddressRange>195.184.233.65-68</IPAddressRange>
  <IPAddressRange>212.85.10.224-226</IPAddressRange>
  <IPAddressRange>192.87.44.*</IPAddressRange>
  <IPAddressRange>194.168.215.61</IPAddressRange>
  <OCLCInstSymbol>EQA</OCLCInstSymbol>
</resolver>
  <source>FirstSearch</source>
  <baseURL>http://demo.InfoGroup.com:9003/demo</baseURL>
  <linkIcon>http://www.InfoGroup.com/images/logo_sfx_small_link.gif</linkIcon>
  <linkText>Click here to check availability from other services</linkText>
  <OpenURLVersions>
    <OpenURL_0.1/>
    <Z39.88-2004/>
  </OpenURLVersions>
  <vendor>other</vendor>
  <OpenURL_0.1_Identifiers>
    <doi/>
    <pmid/>
    <bibcode/>
    <oai/>
  </OpenURL_0.1_Identifiers>
  <Z39.88-2004_namespace>info:ofi/nam:urn:ISBN:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:urn:ISSN:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:urn:NBN:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:bibcode:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:doi:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:hdl:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:lccn:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:oai:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:oclcnum:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:pmid:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:sid:</Z39.88-2004_namespace>
  <Z39.88-2004_namespace>info:ofi/nam:info:sici:</Z39.88-2004_namespace>
```

```
<OpenURL_0.1_genres>
  <book/>
  <journal/>
  <article/>
  <conference/>
  <proceeding/>
  <bookitem/>
  <preprint/>
</OpenURL_0.1_genres>
<Z39.88-2004_metadataFormat>info:ofi/fmt:kev:mtx:book</Z39.88-
2004_metadataFormat>
  <Z39.88-2004_metadataFormat>info:ofi/fmt:kev:mtx:dissertation</Z39.88-
2004_metadataFormat>
  <Z39.88-2004_metadataFormat>info:ofi/fmt:kev:mtx:journal</Z39.88-
2004_metadataFormat>
  <Z39.88-2004_transport>info:ofi/tsp:http:openurl-inline</Z39.88-2004_transport>
  <Z39.88-2004_encoding>info:ofi/enc:UTF-8</Z39.88-2004_encoding>
  <Z39.88-2004_contextObject>info:ofi/fmt:kev:mtx:ctx</Z39.88-2004_contextObject>
</resolver>
</resolverRegistryEntry>
```

Although the defaults are based on the existing community profiles in the OpenURL registry, the schema is designed to be extensible to accommodate new community profiles, metadata formats, namespaces, transports, character encodings, and ContextObject formats as they become available. The schema cannot support new versions of OpenURL. If a new OpenURL standard is written the schema will need to change.