
Standards

What standards are supported in Alma?

Ex Libris supports a wide range of industry standards and protocols. We are constantly evaluating and extending our support in this area, based on our customers' needs. Detailed below the protocols and standards we support:

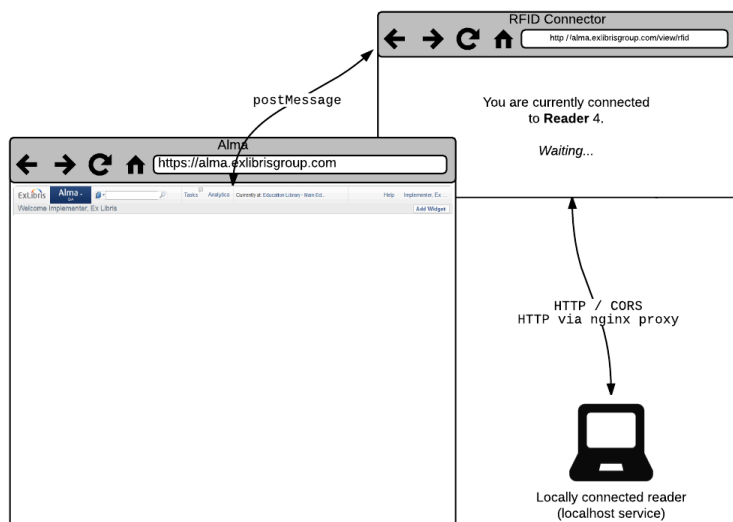
- SIP2
- EDI
- OAI-PMH
- COUNTER 4
- SUSHI
- NISO Circ (NCIP 2)
- RDA – as MARC encoded fields
- MARC 21
- Dublin Core
- MARCXML
- Z39.50
- ISO2709 is supported in its MARC21/UNIMARC versions
- RFID – supported as part of our development roadmap
- KBART – we support the export and import of KBART data
- ONIX – we support the import of ONIX base license data
- AACR2 – is supported in its MARC21 version
- DCRM(B) – it is possible to catalogue all necessary characters for DCRM(B) in Alma

Does Alma support IP v6?

IP v6 (the new, extended standard for IP address) is supported in Alma.

Does Alma support RFID?

Alma supports RFID. Alma communicates with RFID devices that are installed locally on a staff workstation. In order to allow communication between Alma and the locally running RFID software, a proxy should be installed on the workstation. The following diagram illustrates the communication:



A “**Read RFID**” button will be displayed in the following places:

- Patron Services Workbench
- Return Workbench
- Scan In interface (both tabs)
- Repository Search
- Persistent search bar
- Physical item editor
- Quick Cataloging
- Receive

Pressing this button will fill the relevant text box with the barcode of the item which is placed on the RFID device. In case of loan, return and scan-in operation, the item’s security bit will be updated accordingly.

The ability to “**Write RFID**” will be displayed in the following places:

- Physical Item Editor
- Quick Cataloging
- Receive

BIBFRAME, Linked Data

General

Ex Libris is currently involved in Linked Data projects, including Europeana, the European Digital Library project. Our experience has shown that:

- On-the-fly linking of triples in distributed data stores is rather slow and does not allow sophisticated discovery. Search engine technology harvesting the metadata is necessary;
- Most of the current metadata sources do not provide RDF triple. A conversion of metadata is needed; and

- New problems arise as to how to keep RDF triples up-to-date in the index. This is a matter of scale.

Alma's continued development will be informed by Ex Libris' experiences with these projects. The Alma Community Catalogue will work with library data using an open license; Alma's metadata management is designed with FRBR in mind.

Recognizing the importance of up-to-date URIs that are part of BIB records, along with the large number of linking-based services that can be provided through such URIs, Ex Libris will focus on generating lists of URIs for given BIB records. By means of these URIs, numerous services will become available in Primo, third-party discovery interfaces, and citation management systems.

Links will be created as embedded URIs or will be based on existing IDs that can be processed to generate full URIs. Alma will make as much use as possible of existing data sources and APIs to generate full URIs. Third-party applications and databases for which URIs will be created include:

- Library of Congress
- Virtual International Authority File (VIAF®), which links name authority files from national libraries and agencies into a single OCLC-hosted name authority service
- Integrated Authority File, or GND (from the German Gemeinsame Normdatei), which is managed by the German National Library with other German libraries for the purpose of removing ambiguity in personal names, subject headings, and the names of corporate bodies
- GeoNames, a geographical database with more than eight million place names

This list is not exhaustive. In an effort to continually provide new linked-data services based on useful URIs, Ex Libris will enrich additional fields with URIs in accordance with research that the company is conducting.

Alma is expected to be not only the metadata platform providing the infrastructure for other tools that supply services based on linked data; Alma will also be the platform over which such services are delivered. Thus, Alma will help enrich the user experience and support streamlined and more powerful back-office processes for librarians, who will leverage services based on linked data inside Alma.

To this end, Alma will include a linked-data services menu on the Repository Search Results screen, indicating that linked-data services are associated with the record. Librarians who use Alma records for any process, be it related to acquisitions, fulfilment, or cataloguing, will be able to access linked-data services for an enhanced experience.

Ex Libris continues to monitor market interest and adoption of linked-data compliant schemas. Ex Libris as a company has joined the W3C Schema Bib Extend Community Group. This community group brings together diverse library organizations and individuals who are creating proposals for extending schemas to improve the representation of bibliographic information on the internet. The group operates under the umbrella of the schema.org initiative. In addition, we are actively discussing with customers possible use-cases to consider in our future plans to support linked data.

BIBFRAME

See also: [Linked Data BIBFRAME and Alma.pptx](#) and https://developers.exlibrisgroup.com/alma/integrations/linked_data/bibframe

Alma supports BIBFRAME linked data model not only in the staff user interface but also in the various methods of publishing, thereby exposing the BIBFRAME format to the end user.

The "General publishing profile" in Alma includes an option to publish to BIBFRAME format:

Content

Set name * Sheryl Sandberg Creator

Filter Records

Publish on:

- Bibliographic level
- Holdings/Portfolio/Representation level
- Item/Portfolio level

Output format: BIBFRAME Bibliographic

Publishing Protocol

FTP

Alma will support the importing of catalog records in BIBFRAME format, allowing BIBFRAME formatted records to be easily and seamlessly made part of the Alma catalog, regardless of the cataloging format in which it is managed. Alma will use the MD Import framework with a source format of BIBFRAME.

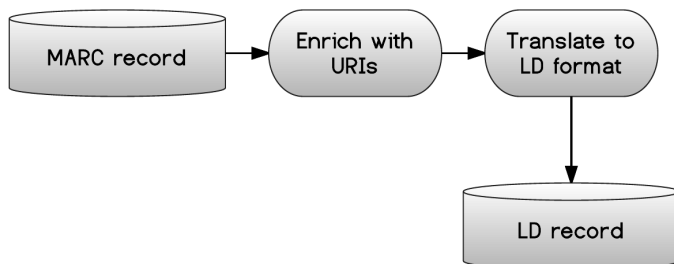
Linked Data

How does Alma support linked data?

The bibliographic metadata found in Alma contains a rich set of information and objects that can be represented in [linked data](#).

The Alma linked open data provides access to the institution's bibliographic information using [Linked Data Principles](#) and made available in several places, including the Alma UI and APIs.

The general workflow for exposing linked open data is described in the following diagram:



For detailed description about the URIs enrichment see our [Developers Network](#).

Linked data can be exposed in several formats. Alma supports the following LD formats:

- [BIBFRAME](#)
- [JSON-LD](#)
- [RDA/RDF](#)

Each format defines the structure of the information and the entities in which it will be exposed. Alma exposes these formats in Alma UI and in URIs. For more details see the above links for each format.

How is linked data exposed?

Alma exposes linked data in the following places:

One of the linked data related projects is a set of RESTful APIs that expose linked data in JSON-LD format. Currently, the following LD APIs are supported:

- API to expose bibliographic information in JSON-LD format
- RDA/RDF APIs

A) JSONLD API

Currently, the following APIs are supported in JSONLD format:

- GET bibliographic information
- GET local authorities information

Vocabulary

The [DC terms ontology](#), extended by other ontologies as needed, is being used as a basis for modeling the bibliographic data. See our [BIB context](#), [AUT context](#) for full information.

Note that institutions might define their own context object, and configure Alma to use it. Refer to [Alma's OLH](#) for more details regarding the configuration of "Linked Data" external profile).

URIs

The links are created as embedded URIs, and are always in the public domain. The following links are available:

- [Language](#)
- Authors and subjects – according to the relevant authorities: [Library of Congress](#), [GND](#) (from the German Gemeinsame Normdatei), [MESH](#), [Virtual International Authority File \(VIAF®\)](#)
- [Wikidata](#) links (as of the Sep 2016 release) – To ensure a timely response, links to Wikidata will be provided via a resolver URI with the following structure:
<https://open-na.hosted.exlibrisgroup...ta/{identifier type}/{identifier}>.
The resolver will redirect to the relevant Wikidata page. Note: adding a ".jsonld" suffix will result in getting the data in JSON LD format rather than the HTML page.
- Future plans: Publication place - [GeoNames](#)
- For BIB records that are linked to a local authority record: link to JSON-LD version of that record

This list is not exhaustive. In an effort to continually provide new linked-data services based on useful URIs, Ex Libris will enrich additional fields with URIs in accordance with research that the company is conducting.

Note:

- **the current structure of identifier fields is planned to change in light of the emerging BIBFRAME 2.0 standard**
- **Identifier label might include characters and numbers**

Using the linked data API

This functionality is opt-in. In order to activate it, an external profile should be defined in Alma. See [OLH](#) for more details about defining the "Linked Data" external profile.

- The URL for BIB information in JSON-LD is: <https://open-na.hosted.exlibrisgroup.com/alma/<institution-code>/bibs/<mms id>.jsonld>
- The URL for local authority record information in JSON-LD is: <https://open-na.hosted.exlibrisgroup.com/>

[alma/<institution-code>/authorities/<mms id>.jsonld](#)

Note that the linked data API is working for .jsonld or .json suffix. Other suffix will return error.

Note also that the above URLs will connect to your Alma production catalog. It is currently not possible to work with JSON-LD against the sandbox environments.

B) RDA/RDF

As part of the Alma Link Data effort, Alma supports representation of library resources according to RDA/RDF principles, in RDA/RDF format.

Terms and definitions

RDA/RDF defines a hierarchy of library data resources: Work – Expression – Manifestation – Item. This hierarchy is usually referred to as “WEMI”. Following is an explanation of the WEMI entities:

- **Work** - a distinct intellectual or artistic creation
- **Expression** - the intellectual or artistic realization of a work
- **Manifestation** - the physical embodiment of an expression of a work
- **Item** - a single exemplar of a manifestation, reflect physical form

A real-world example may help clarify: Romeo and Juliet is a work conceived of by William Shakespeare. An illustrated edition of Romeo and Juliet written by Shakespeare is an expression of that work. A manifestation of this expression is the 1989 Penguin edition. The item is the actual book, sitting on the shelf, with a call number and barcode.

Alma APIs

2 APIs are supported:

- Retrieval of a **manifestation** in RDA/RDF format
- Retrieval of a **work** in RDA/RDF format

This functionality is opt-in. In order to activate it, an external profile should be defined in Alma.

C) Metadata Editor

While working with bibliographic records in the MD Editor, the record's link data element information is available in the lower pane of the editor.

The Linked Data List page displays the following information:

- Vocabulary field

This is pulled according to context. The default context is <https://open-na.hosted.exlibrisgroup...a/contexts/bib>.

If there is an active Linked Data integration profile with a path to a context, this context is used.

A Linked Data integration profile does not need to be created in order to access linked data from the Alma Repository Search results. However, one is required to expose linked data in the JSON-LD format.

- Linked data URI
- Label

For ISBN, ISSN, and OCLC, the field content is displayed. For creator and subject, the value of the heading is displayed.

Does Alma support COUNTER 5 and SUSHI LITE?

Support for COUNTER 5 and SUSHI lite is on the [Alma Roadmap](#). Ex Libris is closely following developments in the industry regarding these protocols and will incorporate them into Alma in a timely manner, as the industry develops. We are aware that COUNTER has stated that “In January 2019, all publishers and vendors are required to comply with the new Release of the Code of Practice” and Ex Libris product management is therefore closely following all developments.

ILL Standards

Does Alma support ILL standards such as ISO 10160: 2015, and ISO 10161-1:2014?

Alma supports ISO ILL messages for resource sharing. ISO ILL messages are based on the ISO 10160/10161 standards. Supported messages include:

- Request
- Shipped
- Received
- Returned
- Checked In
- Answer Unfill
- Cancel
- Cancel Reply
- Renew
- Renew Answer
- General Messages

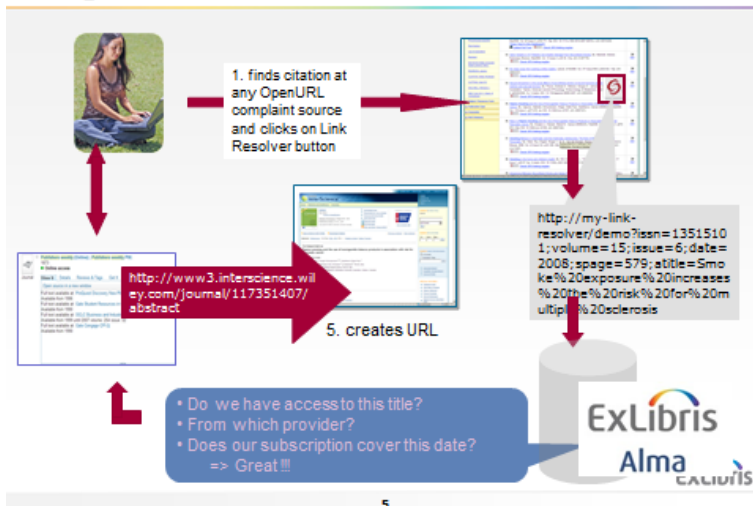
Link Resolution Standards

Does Alma support link resolution standards such as NISO Z39.88-2004?

Alma includes an embedded OpenURL link resolver which provides patrons with context-sensitive electronic, digital and print services. It supports both the OpenURL 0.1 and OpenURL 1.0 standards. The embedded link resolver is a standard functionality in Alma (no additional subscription fee is required) and is based on the Ex Libris' experience delivering the SFX link resolver to over 2300 institutions worldwide.

The following graphic depicts a high level flow of the Alma link resolver:

High Level Flow



To summarize, the Alma link resolver accepts OpenURL requests and analyzes the OpenURL citation content and attempts to enrich it with additional content from different sources; resulting in a comprehensive Context Object that will be the basis for context sensitive service calculation. Based on the metadata available in the Context Object, the Alma link resolver will calculate the relevant services by taking into account the following:

- Electronic resource availability
- Coverage information for electronic journals
- Embargo information for electronic journals
- Linking thresholds

OpenURL requests submitted to Alma from any OpenURL-compliant source will present to the patron the available electronic services made available via the OpenURL. These services relate to the electronic resources that were purchased on behalf of the institution. The Alma link resolver offers the available services via a menu that can be customized by the institution, defining the labels of the services and the order which they appear.

In addition, the institution can define display logic rules among services based on local preferences; for example, if an electronic journal is available from more than one provider, the institution can boost one provider over the other. The institution also can define logic rules among different service types, such as not offering a document delivery service if a full text service exists for the electronic resource. The institution can also configure the link resolver to link directly to the electronic resource, bypassing the electronic service page.

Services that are offered via the link resolver service page include the following types:

- Full text
- Document delivery
- Resource sharing
- Request
- General Electronic Services

Finally, Alma collects data on the usage of electronic resources via the Alma link resolver. These include OpenURL requests, services offered to the patrons and services which the patron chooses to use. Usage of electronic resources tracked via the link resolver can also be used for reporting using Alma Analytics.

Support for Exchange Protocols

Does Alma support data exchange with protocols such as EDIFACT, EDI, SIP2, and NCIP?

See also: [Integrations - SIP2](#)

Edit section

Alma supports electronic data interchange (EDI) using the UN/EDIFACT standard for electronic communications of order and invoice information. This information includes vendor EDI attributes, S/FTP connection information, individual library EDI information, and EAN information per vendor account. These details allow for maximum flexibility when there are multiple libraries within an institution, or when a library has multiple accounts with a vendor (e.g. for multiple formats, material types, approval plans, etc.).

The NISO Z39.83 Circulation Interchange Protocol (NCIP) plays a major role in two aspects of resource sharing:

- Integrating third party resource sharing systems with Alma in deployments where Alma is intended to make use of existing third party systems for managing the resource sharing communication, taking on itself the management of the internal library processes on which the resource sharing process relies.
- Managing a full and independent resource sharing process. Alma's NCIP capabilities may be implemented also for directly obtaining resource sharing related information, such as holdings availability and patron eligibility for requesting a resource sharing service, as well as orchestrating the process of identifying the most suitable library resource, making it available to the requester and managing the fulfillment lifecycle of the supplied resource.

The Alma-supported version of NCIP is 2.0. NCIP 1.0 is also supported as part of our INN-Reach integration.

SIP2.0 is supported for managing self-check actions such as:

- Self check-out
- Self check-in
- Self payment of fines/fees

All of the SIP2.0 messages that are required for supporting these actions are currently supported in Alma, including:

- 11,12 – Check –Out
- 09,10 – Check- In
- 37,38 – Fee Paid
- 93,94 – Login
- 23,24 – Patron Status Request
- 63,64 – Patron Information

How does Alma support NCIP?

The NISO Z39.83 Circulation Interchange Protocol (NCIP) plays a major role in two aspects of resource sharing:

1. Integrating third party resource sharing systems with Alma in deployments where Alma is intended to make use of existing third party systems for managing the resource sharing communication, taking on itself the management of the

internal library processes on which the resource sharing process relies, such as:

- Identifying the most suitable library resource for fulfilling a request
- Making the requested resource available for the requester
- Checking out/in a resource that is loaned as part of a resource sharing process

In this model, NCIP is the key building stone by which the Alma integration with the resource sharing system is achieved.

2. Managing a full and independent resource sharing process. Alma's NCIP capabilities may be implemented also for directly obtaining resource sharing related information, such as holdings availability and patron eligibility for requesting a resource sharing service, as well as orchestrating the process of identifying the most suitable library resource, making it available to the requester and managing the fulfillment lifecycle of the supplied resource.

NCIP support is an attribute of Alma's resource sharing Integration Profiles. As each integration profile may be specifically tailored to the specific integration it is intended to facilitate, the NCIP message support may be specifically profiled per the use of the specific integration it is part of.

The Alma-supported version of NCIP is 2.0.

Does Alma adhere to standards for business continuity and information security?

Ex Libris is the first company in the library industry to achieve ISO 22301:2012 certification. ISO 22301:2012 is the first international standard published by the International Organization for Standardization (ISO) that focuses exclusively on business continuity management (BCM). ISO 22301 is a comprehensive standard that represents the highest level of commitment to business continuity and disaster preparedness.

This Ex Libris certification joins two others awarded to the company—ISO 27001:2013, certification for information security management systems; and ISO/IEC 27018:2014, certification for the protection of personally identifiable information in the cloud computing environment.

Total views:

5889