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STATE OF NORTH CAROLINA NC Community College System (NCCCS) Distance Learning	**REQUEST FOR BEST AND FINAL OFFER NO.: 50-2425002-BAFO #1**
	Offers will be received until: March 18, 2026
	Issue Date: March 13, 2026
Refer ALL inquiries regarding this BAFO to: Grant F. Braley, Director of Procurement & Auxiliary Services (919) 807-7199 braleyg@nccommunitycolleges.edu	**Commodity Number:** 811120 - Data Services
	Description: NCCCS-Integrated Library System
	Using Agency: NCCCS
See page 2 for mailing instructions.	**Requisition No.:** N/A

NOTICE TO VENDOR

Offers, subject to the conditions made a part hereof, will be received at this office, Caswell Building, 200 West Jones Steet, Raleigh NC, 27603 until 2:00:00 PM on the day of opening and then opened, for furnishing and delivering the goods and services as described herein. Refer to page 2 for proper mailing instructions. Bids submitted via facsimile (fax) machine in response to this Best and Final Offer (BAFO) will not be accepted. Bids are subject to rejection unless submitted on this form.

EXECUTION

In compliance with this Request for Best and Final Offer (BAFO), and subject to all the conditions herein, the undersigned offers and agrees to furnish any or all goods and services which are offered, at the prices agreed upon and within the time specified herein. Pursuant to N.C.G.S. §143B-1354 and under penalty of perjury, the undersigned Vendor certifies that this offer has not been arrived at collusively or otherwise in violation of Federal or North Carolina law and this offer is made without prior understanding, agreement, or connection with any firm, corporation, or person submitting an offer for the same commodity, and is in all respects fair and without collusion of fraud.

Failure to execute/sign offer prior to submittal shall render offer invalid. Late offers are not acceptable.

OFFEROR: Ex Libris (USA) Inc.			
STREET ADDRESS: 789 E. Eisenhower Pkwy		P.O. BOX:	ZIP:
CITY & STATE & ZIP: Ann Arbor, MI 48108		TELEPHONE NUMBER:	TOLL FREE TEL. NO
PRINT NAME & TITLE OF PERSON SIGNING: Tim McGee VP, Sales Operations		FAX NUMBER:	
AUTHORIZED SIGNATURE: Signed by: Tim McGee 79DFF63810614F1...	DATE: March 13, 2026 | 8:29:41 AM PDT	E-MAIL: timothy.mcgee@clarivate.com	

Offer valid for 180 days from date of offer opening unless otherwise stated here: ____days

ACCEPTANCE OF OFFER

If the State accepts any or all parts of this offer, an authorized representative of NCCCS shall affix his/her signature to the Vendor's response to this Request for BAFO. The acceptance shall include the response to this BAFO, any provisions and requirements of the original RFP which have not been superseded by this BAFO and the Department of Information Technology Terms and Conditions. These documents shall then constitute the written agreement between the parties. A copy of this acceptance will be forwarded to the successful vendor(s).

FOR STATE USE ONLY

Offer accepted and contract awarded this _____ *day of* 3/19/2026 _____, *20____, as indicated on attached certification, by* DocuSigned by: Dr. Jeff Cox, President 265D813B0091426... (Authorized representative of NCCCS).

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DELIVERY INSTRUCTIONS:

The Vendor shall email one (1) signed copy of its offer to **braleyg@nccommunitycolleges.edu** on or before the date and time specified on the execution page.

Please include the BAFO number in the email subject line. The file must not be password-protected and must be capable of being copied to other media.

REQUEST FOR BEST AND FINAL OFFER (BAFO)

This request is to acquire a best and final offer from Vendor for an Integrated Library System (ILS). The offer should integrate the previous response to the RFP # 50-2425002 and any changes listed below. Any individual vendor can receive a different number of requests for BAFOs than other offerors.

NOTE: This bid is still in the evaluation period. During this period and prior to award, possession of the BAFO, original bid response and accompanying information is limited to personnel of the Department of Information Technology (DIT) Statewide IT Procurement Office, and to agencies responsible for participating in the evaluation. Bidders who attempt to gain this privileged information, or to influence the evaluation process (i.e. assist in evaluation) will be in violation of purchasing rules and their offer will not be further evaluated or considered.

In accordance RFP # 50-2425002, the order of precedence will be as follows: Best and Final Offers, special terms and conditions specific to this RFP, Specifications of the RFP, the Department of Information Technology Terms and Conditions, and the agreed portion of the awarded Vendor's offer.

BAFO COST:

The State encourages the vendor to supply more competitive prices. Vendor should submit its most competitive prices on Page 3 of this request for BAFO.

VENDOR STANDARD AGREEMENT(S)

The terms and conditions of Vendor's standard license, maintenance or other agreement(s) applicable to Software and other Products acquired under this Agreement may apply to the extent such terms and conditions do not materially change the terms and conditions of this Agreement. In the event of any conflict between the terms and conditions of this Agreement and the Vendor's standard agreement(s), the terms and conditions of this Agreement relating to audit and records, jurisdiction, choice of law, the State's electronic procurement application of law or administrative rules, the remedy for intellectual property infringement and the exclusive remedies and limitation of liability in the Terms and Conditions herein shall apply in all cases and supersede any provisions contained in Vendor's relevant standard agreement or any other agreement. The State shall not be obligated under any standard license and/or maintenance or other Vendor agreement(s) to indemnify or hold harmless the Vendor, its licensors, successors or assigns; nor arbitrate any dispute, nor pay late fees, legal fees or other similar costs.

The Vendor Standard Agreement is referred to as the "Vendor Agreement," appended to this BAFO as Attachment A, and consists the "Ex Libris SaaS Subscription Agreement" which includes Annex A, Ex Libris SaaS Service(s); Annex B, Initial Quotation and Additional Quotations, if any ALMA & Primo; Annex C, Payment Terms Alma and Primo; Annex D, SaaS Service Level Agreement ("the SLA"); Annex E, Alma and Primo Implementation Services with Standard Alma Migration; Annex E-3, Post-Implementation Consulting Hours and Primo VE Overview; Annex F, SaaS Service-Specific Provisions; and Annex G, definitions. The Vendor Agreement is incorporated by reference into this RFP 50-2425002 in the manner shown below.

Vendor terms and conditions incorporated into this Agreement may be modified as shown below to allow tailored adjustments to the Agreement. Modifications may be shown by using strikethroughs for deletions and underlining for insertions, or alternatively, in some cases, a Vendor term may be modified by expressly stating that a specific sentence or clause is deleted, which shall mean that the sentence is not part of the agreement and therefore has no force or effect. Unless shown as modified, the term is incorporated without modifications.

At the outset, the Parties agree that:

1. The term "Agreement" as each appears within the body of the Vendor Agreement, shall mean this RFP 50-2425002.
2. Any reference to "Quotation" in the Ex Libris SaaS Subscription Agreement shall refer to RFP 50-2425002
3. All Headers stating "Ex Libris Confidential Information shall have no force or effect. Any and all references in the Licensor's Agreement to "Confidential Information" shall be interpreted pursuant to the N.C. Public Records Act, N.C.G.S. §132-1 *et seq*. and other Applicable North Carolina or United States Federal Law.
4. The document entitled List of Annexes shall have no force or effect.
5. All Exceptions/Errata submitted by Vendor shall be of no force or effect.
6. The parties agree to the following revisions to the NCDIT Terms and Conditions:

    a. **Section 1. Paragraph 8) Availability of Funds** is hereby revised as set forth below:

    Any and all payments to Vendor are expressly contingent upon and subject to the appropriation, allocation and availability of funds to the Agency for the purposes set forth in the Agreement. If the Agreement or any Purchase Order issued hereunder is funded in whole or in part by federal funds, the Agency's performance and payment shall be subject to and contingent upon the continuing availability of said federal funds for the purposes of the Agreement or Purchase Order. If the term of the Agreement extends into fiscal years subsequent to that in which it is approved, such continuation of the Agreement is expressly contingent upon the appropriation, allocation and availability of funds by the N.C. Legislature for the purposes set forth in this RFP. If funds to effect payment are not available, the Agency will provide advance written notification to Vendor. If the Agreement is terminated under this paragraph, Vendor agrees to take back any affected Deliverables and software not yet delivered under the Agreement, terminate any Services supplied to the Agency under the Agreement, and relieve the Agency of any further obligation thereof. The State shall remit payment for Deliverables and Services provided prior to the date of the aforesaid notice in conformance with the payment terms.

    b. The prescribed cure period in **Section 1. Paragraph 19) Default** is hereby revised from ten (10) days to thirty (30) days.

    c. **Section 1. Paragraph 21) Termination** is hereby revised as set forth below:

    21) TERMINATION: Any notice or termination made under the Agreement shall be transmitted via US Mail, Certified Return Receipt Requested. The period of notice for termination shall begin on the day the return receipt is signed and dated.

    a) The parties may mutually terminate the Agreement by written agreement at any time.

    b) The State may terminate the Agreement, in whole or in part, pursuant to Paragraph 19), or pursuant to the Special Terms and Conditions in the Solicitation Documents, if any, or for any of the following:

    i) Termination for Cause: In the event any goods, software, or service furnished by the Vendor during performance of any Contract term fails to conform to any material requirement of the Contract, and the failure is not cured within thirty (30) days after providing written notice thereof to Vendor, the State may terminate the contract upon written notice to Vendor; holding Vendor liable for such failures, subject only to the limitations provided in Paragraphs 22) and 23) herein. The rights and remedies of the State provided above shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract. Vendor shall not be relieved of liability to the State for damages sustained by the State arising from Vendor's breach of the Agreement; and the State may, in its discretion, withhold any payment due as a setoff until such time as the damages are finally determined or as agreed by the parties. Voluntary or involuntary Bankruptcy or receivership by Vendor shall be cause for termination.

    ii) Termination For Convenience Without Cause: The State may terminate service and indefinite quantity

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contracts, in whole or in part by giving ninety (90) days prior notice in writing to the Vendor. Vendor shall be entitled to sums due as compensation for Deliverables provided and Services performed in conformance with the Contract. In the event the Contract is terminated for the convenience of the State the Agency will pay for all work performed and products delivered in conformance with the Contract up to the date of termination.

iii) Consistent failure to participate in critical problem resolution meetings or failure to make a good faith effort to resolve material problems, may result in termination of the Agreement for cause as set forth Paragraph 21)b)i).

d. **Section 2. Paragraph 18) Security of State Data** is hereby revised as set forth below:

18) SECURITY OF STATE DATA

a) All materials, including software, Data, information and documentation provided by the State to the Vendor for storage on the Vendor's SaaS Services (State Data) during the performance or provision of Services hereunder are the property of the State of North Carolina and must be kept secure and returned to the State. The Vendor will protect State Data in its hands from unauthorized disclosure, loss, damage, destruction by natural event, or other eventuality. Proprietary Vendor materials shall be identified to the State by the Vendor prior to use or provision of Services hereunder and shall remain the property of the Vendor. The Vendor shall not access State User accounts, or State Data, except (i) during data center operations; (ii) in response to service or technical issues; (iii) as required by the express terms of this contract; or (iv) at the State's written request. The Vendor shall protect the confidentiality of all information, Data, instruments, studies, reports, records and other materials provided to it by the State or maintained or created in accordance with this Agreement. No such information, Data, instruments, studies, reports, records and other materials in the possession of Vendor shall be disclosed in any form without the prior written agreement with the State. The Vendor will have written policies governing access to and duplication and dissemination of all such information, Data, instruments, studies, reports, records and other materials.

b) The Vendor shall not store or transfer non-public State data outside of the United States. This includes backup data and Disaster Recovery locations. The Service Provider will permit its personnel and contractors to access State of North Carolina data remotely only as required to provide technical support.

c) Protection of personal privacy and sensitive data. With the understanding that Vendor's SaaS Services are used to process library information and the State's agreement that the Community Colleges using Vendor services will only input the following types of Personal Information: names, postal addresses, email addresses, telephone numbers, institutional ID and loan and fines information, or information of a similar nature, The State acknowledges that the Vendor is not responsible for securing any restricted or highly restricted data, as defined by the Statewide Data Classification and Handling Policy (https://it.nc.gov/document/statewide-data-classification-and-handling-policy) that is collected by the State and stored in any Vendor site or other Vendor housing systems including, but not limited to, computer systems, networks, servers, or databases, maintained by Vendor or its agents or subcontractors in connection with the provision of the Services. The Vendor warrants, at its sole cost and expense, that it shall implement processes and maintain the security of State Data; provide reasonable care and efforts to detect fraudulent activity involving the data; and promptly notify the State of any breaches of security within twenty-four (24) hours of confirmation as required by N.C.G.S. § 143B-1379, to the extent applicable.

d) The Vendor will provide and maintain secure backup of the State Data. The Vendor shall implement and maintain secure passwords for its online system providing the Services, as well as all appropriate administrative, physical, technical and procedural safeguards at all times during the term of this Agreement to secure such State Data from Data Breach, protect the State Data and the Services from loss, corruption, unauthorized disclosure, and the introduction of viruses, disabling devices, malware and other forms of malicious or inadvertent acts that can disrupt the State's access to its Data and the Services. The Vendor confirms that the Vendor's SaaS Service includes the ability of the State to export, delete and modify State Data..

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e) The Vendor shall certify to the State:

i) The sufficiency of its security standards, tools, technologies and procedures in providing Services under this Agreement;

ii) That the system used to provide the Subscription Services under this Contract has and will maintain a valid third party security certification not to exceed one (1) year that Vendor meets ISO 27001 standards or similar international standards. The State reserves the right to independently evaluate, audit, and verify such requirements, with the understanding that access will not be granted to data centers where data of other Vendor customers is processed.

iii) That the Services will comply with the following, to the extent applicable:

(1) Any DIT security policy regarding Cloud Computing, and the DIT Statewide Information Security Policy Manual (to the extent the foregoing Information Security Policy aligns with Contractor's security policies and procedures, as outlined at https://clarivate.com/trust-center/); to include encryption requirements as defined below:

(a) The Vendor shall encrypt all non-public data in transit regardless of the transit mechanism.

(b) For engagements where the Vendor stores sensitive personally identifiable or otherwise confidential information, this data shall be encrypted at rest. Examples are social security number, date of birth, driver's license number, financial data, federal/state tax information, and hashed passwords. The Vendor's encryption shall be consistent with validated cryptography standards as specified in National Institute of Standards and Technology FIPS140-2, Security Requirements. The key location and other key management details will be discussed and negotiated by both parties. When the Service Provider cannot offer encryption at rest, it must maintain, for the duration of the contract, cyber security liability insurance coverage for any loss resulting from a data breach. Additionally, where encryption of data at rest is not possible, the Vendor must describe existing security measures that provide a similar level of protection;

(2) Privacy provisions of the Federal Privacy Act of 1974;

(3) The North Carolina Identity Theft Protection Act, N.C.G.S. Chapter 75, Article 2A (e.g., N.C.G.S. § 75-65 and -66);

(4) The North Carolina Public Records Act, N.C.G.S. Chapter 132;(5) Applicable Federal, State and industry standards and guidelines including, The Family Educational Rights and Privacy Act (FERPA). For the sake of clarity, the State shall remain solely responsible for responding to any public record requests (including with respect to reviewing and amending an educational record) in connection with student records. Vendor shall forward any such request that it receives to the State, and the State shall be responsible for responding to and handling the request in accordance with FERPA. For the sake of clarity, the State agrees that it will not store "education records" in the SaaS Service except to the extent that basic library patron data regarding its students used in a library system is deemed education records under FERPA; and

(6) Any requirements implemented by the State under N.C.G.S. §§ 143B-1376 and -1377.

(7) Any requirements implemented by the State under N.C.G.S. §§ 20-309.2(d).

f) Security Breach. "Security Breach" under the NC Identity Theft Protection Act (N.C.G.S. § 75-60ff) means (1) any circumstance pursuant to which applicable Law requires notification of such breach to be given to affected parties or other activity in response to such circumstance (e.g., N.C.G.S. § 75- 65); or (2) any actual, attempted, suspected, threatened, or reasonably foreseeable circumstance that compromises, or could reasonably be expected to compromise, either Physical Security or Systems Security (as such terms are defined below) in a fashion that either does or could reasonably be expected to permit unauthorized Processing (as defined below), use, disclosure or acquisition of or access to any the State Data or state confidential information. "Physical Security" means physical security at any site or other

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location housing systems maintained by Vendor or its agents or subcontractors in connection with the Services. "Systems Security" means security of computer, electronic or telecommunications systems of any variety (including data bases, hardware, software, storage, switching and interconnection devices and mechanisms), and networks of which such systems are a part or communicate with, used directly or indirectly by Vendor or its agents or subcontractors in connection with the Services. "Processing" means any operation or set of operations performed upon the State Data or State confidential information, whether by automatic means, such as creating, collecting, procuring, obtaining, accessing, recording, organizing, storing, adapting, altering, retrieving, consulting, using, disclosing or destroying.

g) Breach Notification. In the event the Vendor becomes aware of any Security Breach due to Vendor acts or omissions other than in accordance with the terms of the Agreement, the Vendor shall, at its own expense, (1) promptly notify the State's Agreement Administrator (as identified by the Agency in Vendor's support portal) of such Security Breach and perform a root cause analysis thereon; (2) investigate such Security Breach; (3)establish a remediation plan to address the Security Breach and prevent any further incidents; (4) conduct a forensic investigation to determine what systems, data and information have been affected by such event; and (5) cooperate with the State, and any law enforcement or regulatory officials, credit reporting companies, and credit card associations investigating such Security Breach. The State shall make the final decision on notifying the State's persons, entities, employees, service providers and/or the public of such Security Breach. Contractor agrees to provide notifications and any other remedial measures required by law to be sent by Contractor directly after an assessment is conducted and Contractor is aware of the remediation (if applicable).

h) Notification Related Costs. The Vendor shall be liable to the State for any applicable Notification Related Costs incurred by the State arising out of or in connection with any such Security Breach due to Vendor acts or omissions other than in accordance with the terms of the Agreement resulting in a requirement for legally required notifications. "Notification Related Costs" may include the State's internal and external costs associated with addressing and responding to the Security Breach as required by law. If the Vendor becomes aware of any Security Breach which is not due to Vendor acts or omissions other than in accordance with the terms of the Agreement, the Vendor shall promptly notify the State of such Security Breach, and the parties shall reasonably cooperate regarding which activities may be appropriate under the circumstances, including any applicable Charges for the same. For the sake of clarity, Vendor's liability under this section shall be subject to the limitation of liability cap set forth in Section 22 of the NCDIT Terms and Conditions.

i) The Vendor SaaS Services shall allow the State the ability to access audit trails of access/logins to the State Data as well as audit trails of changes to State Data as further described in Vendor's Documentation, at no cost to the State.

j) In the course of normal operations, it may become necessary for the Vendor to copy or move Data to another storage destination on its online system, and delete the Data found in the original location. In any such event, the Vendor shall preserve and maintain the content and integrity of the Data, except by prior written notice to, and prior written approval by, the State.

k) While the Services provided by Vendor to the State will be hosted from data centers in the United States, the Agency understands and agrees that remote access to Data from outside the continental United States including, without limitation, remote access to Data by authorized Services support staff in identified support centers, may be done by Vendor's global affiliates.

l) In the event of temporary loss of access to Services, the Vendor shall promptly restore continuity of Services, restore Data in accordance with this Agreement and as may be set forth in an SLA, restore accessibility of Data and the Services to meet the performance requirements stated herein or in an SLA. As a result, Service Level remedies will become available to the State as provided herein, in the SLA or other agreed and relevant documents. Failure to promptly remedy any such temporary loss of access may

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result in the State exercising its options for assessing damages under this Agreement.

m) In the event of disaster or catastrophic failure that results in significant State Data loss or extended loss of access to Data or Services, the Vendor shall notify the State by the fastest means available and in writing, with additional notification provided to the State Chief Information Officer or designee of the contracting agency. Vendor shall provide such notification within twenty-four (24) hours after Vendor reasonably believes there has been such a disaster or catastrophic failure. In the notification, Vendor shall inform the State of:

(1) The scale and quantity of the State Data loss (to the extent known);

(2) What Vendor has done or will do to recover the State Data from backups and mitigate any deleterious effect of the State Data and Services loss; and

(3) What corrective action Vendor has taken or will take to prevent future State Data and Services loss.

(4) If Vendor fails to respond promptly and remedy the failure, the State may exercise its options for assessing damages or other remedies under this Agreement.

The Vendor shall investigate the disaster or catastrophic failure and shall share the report of the investigation with the State. To the extent required by applicable law, the State and/or its authorized agents shall have the right to lead (if required by law) or participate in the investigation. The Vendor shall cooperate fully with the State, its agents and law enforcement.

n) In the event of termination of this contract, cessation of business by the Vendor or other event preventing the Vendor from continuing to provide the Services, the Vendor shall not withhold the State Data or any other State confidential information or refuse, for any reason, to promptly return to the State the State Data and any other State confidential information (including copies thereof) if requested to do so on such media as reasonably requested by the State, even if the State is then or is alleged to be in breach of the Agreement. Upon such termination, Vendor shall, upon the State's request, make the State Data held in the SaaS Services available to the State for download in an industry-standard format for the thirty (30) days following such termination. After such period, Vendor shall have no obligation to maintain or provide any such State Data and will, unless legally prohibited, delete it..

o) Secure Data Disposal. Following termination of all use of the SaaS Services, the Vendor shall destroy all requested data in all of its forms (e.g., disk, CD/DVD, backup tape, and paper). Data shall be permanently deleted and shall not be recoverable, in accordance with National Institute of Standards and Technology (NIST) approved methods, and certificates of deletion or destruction shall be provided to the State.

3.1.1 The following terms and conditions of the Ex Libris SaaS Subscription Agreement shall have no force or effect and shall be superseded by the NCDIT Terms and Conditions:

e. The opening paragraphs, starting with "This SaaS Subscription Agreement is made as of the ___ day of ___ 2025 and ending with "NOW THEREFORE, the parties agree as follows"
f. Paragraph 3.1 of the Section entitled Implementation and Other Services
g. Paragraph 3.4 of the Implementation and Other Services Section
h. Section 4, Charges and Payments, Current Software, in its entirety.
i. Paragraph 7.2 of the Section Limitation of Liability
j. Paragraph 8.4 of the Section Customer's Undertakings
g. Paragraph 10.2 of the Section entitled Term and Termination
h Paragraph 10.3 of the Section entitled Term and Termination
i. Paragraph 10.5 of the Section entitled Term and Termination
j. Paragraph 12.1 of the Section entitled Statement of Confidentiality; Use of Name in Publicity
k. Paragraph 13.1 of the Section entitled General

l. Paragraph 13.2 of the Section entitled General
m. Paragraph 13.3 of the Section entitled General
n. Paragraph 13.5 of the Section entitled General
o. Paragraph 13.7 of the Section entitled General
p. Paragraph 13.8 of the Section entitled General
q. Paragraph 13.9 of the Section entitled General
r. Paragraph 13.10 of the Section entitled General
s. Paragraph 13.11 of the Section entitled General
t. Paragraph 13.13 of the Section entitled General
u. The Signature section starting with "ACCEPTED, AGREED AND SIGNED ON AND AS OF THE DATE FIRST ABOVE WRITTEN" and continuing through the end of the document.

3.1.2 The parties agree that the following terms and conditions of the Ex Libris SaaS Subscription Agreement shall supersede NCDIT Terms and Conditions.

a. Paragraph 1.1 of Section 1 entitled Subscription to SaaS services, as modified.

In consideration of the payment of the annual subscription Fee for the SaaS Service, as set forth in RFP-50-2425002 ~~the Quotation,~~ and subject to all the terms and conditions of this Agreement ~~hereof,~~ Ex Libris hereby grants to Customer the right to access and use the functionality of the SaaS Service, as outlined in RFP=2425002 ~~the quotation~~ (including, without limitation of use to specific locations and Named Users and other use and access restrictions as set forth in this Agreement ~~the Ex Libris Quotations~~), during the corresponding subscription period, as well as (i) related material such as Documentation (as defined below) to the extent then available, and (ii) if applicable, Licensor Data that may be accessed via the SaaS service.

b. Paragraph 1.2 of Section 1 entitled Subscription to SaaS Services

c. Paragraph 2.1 of the Section entitled Service Level.Support; Other Provisions

d. Paragraph 2.2 of the Section entitled Subscription to SaaS services, as modified:

Provisions applicable to a specific Ex Libris Service may be set forth in Annex F hereto, ~~and/or in the relevant Quotation, and form a part of this Agreement.~~

e. Paragraph 3.3 of the Section entitled Implementation and Other Services
f. Section 5, Documentation
g. Paragraph 7.1 and 7.3 in the Section entitled Limitation of Liability
h. Paragraph 8.1 in the Section entitled Customer's Undertakings
i. Paragraph 9.3 in the Section entitled Customer Data, as modified. The first sentence of the paragraph shall now read as follows:

Customer acknowledges that the use of the Ex Libris Services may involve processing of personal information about Customer's permitted users, such as its staff and patrons, and other third parties **("Personal Information")** and the Customer shall be responsible for having all necessary rights to collect and process or allow collection and processing of such personal information as may be required under applicable North Carolina or United States Federal laws.

j. Paragraph 10.1 of the Section entitled Term and Termination, as modified:

This Agreement shall be effective upon the Agreement Effective Date and shall expire thirty(30) days after the expiration or termination of the last remaining Subscription hereunder. The Subscription for each Ex Libris Service shall be effective upon the Subscription Effective Date set forth on Annex C for such Ex Libris Service. The initial term of a Subscription shall expire at the end of [three (3) ~~five (5)~~] years after the relevant Subscription Effective Date (the **"Initial Term"** of that Subscription). Following the applicable Initial Term, each Subscription ~~shall~~ may automatically renew upon written mutual agreement at the then-applicable Subscription Fee for successive one (1) year terms (each, a

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"Renewal Term", and together with the Initial Term, the **"Term"**), unless ~~(a) Ex Libris or Customer provides the other with written notice not less than ninety (90) days prior to the end of any term of a Subscription of its intent not to renew that Subscription, or (b)~~ the Agreement and/or the applicable Subscription is terminated in accordance with the terms of this Agreement. ~~If Customer shall continue to use the Ex Libris Service past the applicable Subscription renewal date, Customer shall be deemed to have renewed the Subscription for the following term at the rates applicable for said new term.~~

k. Paragraph 10.4 of the Section entitled Term and Termination

l. Paragraph 12.2 of the Section entitled Statements of Confidentiality; Use of Name in Publicity

m. Paragraph 13.4 of the Section entitled General

3.1.3 The parties agree that the following terms and conditions of the **Ex Libris SaaS Subscription shall be superseded by the NCDIT Terms and Conditions.**

a. Paragraph 3.2 of the Section entitled Implementation and Other Services
b. Section 6 entitled Protection from Third Party IP Infringement, in its entirety
c. Paragraph 8.2 in the Section entitled Customer's Undertakings
d. Paragraph 8.3 in the Section entitled Customer's Undertakings
e. Paragraph 8.5 in the Section entitled Customer's Undertakings
f. Paragraph 9.1 in the Section entitled Customer Data
g. Paragraph 9.2 in the Section entitled Customer Data
h. Paragraph 9.4 in the Section entitled Customer Data
i. Paragraph 9.5 in the Section entitled Customer Data
j. Section 11 entitled Force Majeure
k. Paragraph 13.12 of the Section entitled General

3.2.1 The following terms and conditions of the Ex Libris Annex B, Initial Quotation and Additional Quotations shall have no force or effect and shall be superseded by DIT Terms and Conditions.

a. Section 1, Fees

3.2.2 The parties agree that the following terms and conditions of the EX Libris Annex B, Initial Quotation and Additional Quotations shall supersede NCDIT Terms and Conditions.

a. Section 2, Access and Use Restrictions

3.3.1 The Parties agree that the terms and conditions of Annex C, Payment Terms, shall supplement DIT Terms and Conditions where they do not conflict and shall be superseded by DIT Terms and Conditions where conflict occurs.

3.4.1 The parties agree that Annex D, SaaS Service Level Agreement shall supersede the NCDIT Terms and Conditions.

3.5.1 The parties agree that terms and conditions of Annex E, Alma and Primo Implementation Services with Standard Alma Migration shall supersede the NCDIT Terms and Conditions.

3.6.1 The parties agree that terms and conditions of Annex E-3, Post-Implementation Consulting Hours, shall supersede the NCDIT Terms and Conditions.

3.7.1 The parties agree that that the terms and conditions of Annex F, SaaS specific provisions shall supersede NCDIT Terms and Conditions.

3.8.1 The parties agree that the terms and conditions of Annex G, Definitions shall supersede the NCDIT Terms and Conditions

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PRICING TABLE:

The Vendor must list, itemize, and describe any applicable offer costs which may include the following:

Note: For the matrices below, Vendors should imbed any potential Travel and Living costs for meetings into lump sum pricing below otherwise, standalone travel and living costs will be audited by the Agency and must be in accordance with state rates. See Section 5 of Attachment B for further details.

Also, shipping fees cannot be a standalone cost line item per the NCDIT Terms and Conditions. Shipping is to be FOB Destination. See Clause 27 of Attachment B for further details.

One Time Cost Component	One-Time Fee and Year One (1) of Operation	Notes
Base system cost	$Included	Our solution is provided through an all-inclusive SaaS subscription model. The subscription includes application access, hosting, back-ups, enhancements and application support.
Software license fees or costs	$405,271	Our solution is provided through an all-inclusive SaaS subscription model. We have noted here the initial annual subscription cost, which is due upon go-live. Please refer to items a. and b. of the section "**4.0 COST OF VENDOR'S OFFER**" for description of solution offered.
Customization costs	$Included	Not applicable. System configuration services are included as part of our comprehensive implementation package and included in the one-time implementation fee noted below.
Third party software, if any, required for the operation of the system	$Included	Not applicable
Technical and user support documentation	$Included	Inclusive in the subscription is ongoing access to Technical and user support documentation which is openly available via our Knowledge Center and which is updated as part of our quarterly enhancement release cadence.
Data migration cost per college	$Included	We are proposing a fixed price, fixed scope comprehensive implementation package for NCCCS based on the participation on all 58 colleges. Data migration is included as part of our implementation fee and is not separately itemized. The average implementation cost per college based on our proposal is $8,675.

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All onboarding costs inclusive of required third-party and vendor resource costs (Insert additional lines as needed)	$503,179	We are proposing a fixed price, fixed scope comprehensive implementation package for NCCCS based on the participation of all 58 colleges. Our implementation methodology includes: pre-project onboarding and readiness planning, project management, provisioning and configuration of Alma with Primo VE and Rapido for print and e-resource management across acquisitions, fulfillment, resource management, standard third-party integrations (Colleague & Banner), standard authentication (CAS, Shibboleth/SAML, LDAP), comprehensive online training and data migration. We have also included 6 onsite regional training sessions to augment our standard training curriculum in response to your requirements; and certification and post-migration consulting services are also included (10 hours per cohort).
Training, including materials	$Included	Training is included in the one-time implementation fee outlined in item "g" of the "**4.0 COST OF VENDOR's OFFER"** section. Travel and lodging expenses for the onsite training specified is not included and will be based on our actual costs. We can agree to align with NCCCS travel and expense policy and will be in accordance with state rates. Training materials (including recorded courses) are updated on an ongoing basis and provided throughout the duration of your subscription.
Existing software upgrade / integration / training	$Included	The subscription includes hosting, back-ups, enhancements, upgrades/updates, and application support. No on-premise hardware or software is required.
Artificial intelligence – Generative AI integration	$Included	Ex Libris, a part of Clarivate™, has launched a comprehensive AI strategy in 2025 aimed at transforming library services and academic workflows. Their approach centers on integrating AI tools into core platforms like Alma™ and Primo™, enhancing metadata management, research assistance, and digital collection accessibility.
Storage Costs	$Included	The subscription fee presented includes hosting, back-ups, releases, IT maintenance, and traditional application support (including documentation). There is no additional cost for Storage.
Admin technical support (Provide all levels of costs based on 24/7/365 availability)	$Included	Ex Libris is committed to providing customers with timely and accurate customer service. Access to Ex Libris support staff is provided five days a week, 8:30 am to 5:30 pm Central Time. Support for critical issues, such as a down system/component, is provided 24/7/365 via the Ex Libris Hub, including weekends and holidays. Ex Libris customers have access to our Salesforce

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		Customer Portal, which allows customers to open, update, and track support Cases handled by Ex Libris Support at any time. The Portal will send email alerts regarding updates to support cases. See item "I" in section **4.0 COST OF VENDOR"S OFFER**
Faculty/staff/student user support costs (based on 24/7/365 availability)	$Included	The campus library will become the initial point of contact for faculty/staff/student user support.
Vetting cost for LTIs and integrations for applications	$0.00	Integration with Learning Tools Interoperability (LTI) standards is supported natively in optional solutions such as Ex Libris' Leganto reading list / learning affordability product which can be purchased as an added cost on an opt-in basis by individual colleges. Vetting and onboarding third-party applications may incur additional costs depending on complexity, security reviews, and customization needs. Ex Libris encourages institutions to utilize our extensive standards support, open APIs / cloud apps and community development integrations to minimize costs

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One Time Cost Component	One-Time Fee and Year One (1) of Operation	Notes
Consultation hours	$Included	We have included 10 hours of post implementation consulting for each cohort at no added cost (30 hours total). Our standard daily rate for professional services beyond the implementation timeline or scope is $1,850/day.
Costs for customization (Insert additional lines as needed)	$0.00	Not applicable for a multi-tenant, SaaS solution. Moving to the cloud lowers the required threshold for entry to basic management processes and eliminates the need for the types of customizations commonly required for legacy solutions.
Costs incurred if colleges migrate to or away from this solution.	$0.00	Our proposal already includes for all 58 institutions to participate. If there would be the need for adding an institution beyond the 58 NCCCS institutions - There would be a migration cost if joining the NCCCS system as well as a cost for being added to the Network Zone. For the sake of clarity, other than making the customer's data available in a standard format, no other transition services are normally available or required. Ex Libris provides a transition assistance period during which it makes all customer data from its SaaS Service available (as outlined in section 10.4 of the SaaS Agreement included with this response).
Other Costs (Describe any cost that is not included in the proposed solution, including any future known cost)	$Included	Not applicable
	$	
	$	
Total One-Time Cost -Year 1:	**$908,450**	This total amount includes the 1st year subscription fee plus the total Implementation (one-time) cost.

Notwithstanding the above, Vendor agrees to pro-rate the implementation fees and subscription fees for the North Carolina Community Colleges that would implement in year 1, such that the implementation cost per College would be $8,675 and the average subscription cost per College would be $6,987. Vendor shall work with NCCCS and the Colleges to define a cohort-based implementation schedule for remaining colleges and apply a similar pro-rated approach to the implementation and subscription fees due. The parties agree that a timeline for implementation of all colleges shall be established and mutually agreed upon between the parties by the end of the first year of the Agreement.

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Cost Component	RECURRING COSTS			
	Year 2	Year 3	Year 4	Year 5
Base system cost and Maintenance	$0.00	$0.00	$0.00	$0.00
Software license fees or costs	$425,535	$446,811	$469,152	$492,609
Customization costs	$Included	$Included	$Included	$Included
Third party software, if any, required for the operation of the system	$Not applicable	$Not applicable	$Not applicable	$Not applicable
Technical and user support documentation	$ Included	$ Included	$ Included	$ Included
Data migration cost per college	$ Included	$ Included	$ Included	$ Included

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Cost Component	RECURRING COSTS			
	Year 2	Year 3	Year 4	Year 5
All onboarding costs inclusive of required third-party and vendor resource costs (Insert additional lines as needed)	$ Included	$ Included	$ Included	$ Included
Training, including materials and revisions to documentation	$ Included	$ Included	$ Included	$ Included
Existing software upgrade / integration / training	$ Included	$ Included	$ Included	$ Included
Artificial intelligence – Generative AI integration	$ Included	$ Included	$ Included	$ Included
Storage Costs	$ Included	$ Included	$ Included	$ Included
Admin technical support (Provide all levels of costs based on 24/7/365 availability)	$ Included	$ Included	$ Included	$ Included
Faculty/staff/student user support costs (based on 24/7/365 availability)	$ Included	$ Included	$ Included	$ Included
Vetting cost for LTIs and integrations for applications	$ Included	$ Included	$ Included	$ Included
Consultation hours	$ Included	$ Included	$ Included	$ Included
Costs for customization (Insert additional lines as needed)	$ Included	$ Included	$ Included	$ Included
Costs incurred if colleges migrate to or away from this solution.	$0.00	$0.00	$0.00	$0.00

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Cost Component	RECURRING COSTS			
	Year 2	Year 3	Year 4	Year 5
Other Costs (Describe any cost that is not included in the proposed solution, including any future known cost)	$Not applicable	$Not applicable	$Not applicable	$Not applicable
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
Total Recurring Costs:	**$425,535**	**$446,811**	**$469,152**	**$492,609**
Grand Total Price for Entire Contract (One Time Costs Plus 4 Years of Operation):				**$2,742,557**

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ATTACHMENT A

SaaS SUBSCRIPTION AGREEMENT

This SaaS Subscription Agreement ("**Agreement**") is made as of the _ day of _____, 2025 (the "**Agreement Effective Date**"), by and between Ex Libris (USA) Inc., a company organized under the laws of New York having its main office at 789 E. Eisenhower Pkwy, Ann Arbor, MI 48108 ("**Ex Libris**"), and _____, an institution/company organized under the laws of _____ and having its main office at _____ ("**Customer**").

WHEREAS, a list of defined capitalized terms appears in Annex G hereto.

WHEREAS, Ex Libris has the right to grant a subscription to the SaaS Services set forth in Annex A to this Agreement, as such may be amended from time to time by the addition of additional services as set forth below (collectively, the **"SaaS Services"**);

WHEREAS, Customer wishes to subscribe to access and use the SaaS Services from Ex Libris on a Software as a Service basis ("**SaaS**"), and to receive services from Ex Libris, and Ex Libris wishes to provide such a subscription to Customer via SaaS and to provide services to Customer, all subject to the terms of this Agreement;

WHEREAS, to the extent Customer is a user of Current Software pursuant to one or more software license or subscription agreement(s) between Customer, on the one hand, and Ex Libris and/or an Affiliate thereof, on the other hand ("**Current Agreement(s)**"), as set forth in Annex A, Customer wishes to replace the Current Software with a subscription to the SaaS Service(s) hereunder;

WHEREAS, Ex Libris' quotation for the SaaS Service (the "**Initial Quotation**") is appended hereto as Annex B and made a part hereof, all subject to the terms of this Agreement; and

WHEREAS, Ex Libris may subsequently issue quotations under this Agreement for additional Ex Libris Services, or to expand the scope of an Ex Libris Service to which Customer has already subscribed, setting forth prices and any terms applicable thereto (the "Additional Quotations"), which upon signature by both parties, shall be incorporated in and made a part hereof (the Initial Quotation and Additional Quotations, if any, will be collectively referred to as the "Quotations");

NOW, THEREFORE, the parties hereby agree as follows:

1. SUBSCRIPTION TO SaaS SERVICES

1.1. In consideration of the payment of the annual Subscription Fee for the SaaS Service, as set forth in the Quotations, and subject to all the terms and conditions hereof, Ex Libris hereby grants to Customer the right to access and use the functionality of the SaaS Service, as outlined in the Quotations (including, without limitation, any limitation of use to specific locations and Named Users and other use and access restrictions as set forth in the Quotations), during the corresponding subscription period, as well as (i) related materials such as Documentation (as defined below) to the extent then available, and (ii) if applicable, Licensor Data that may be accessed via the SaaS Service.

1.2. As between the parties, all rights, title and interest, including without limitation, patent rights, copyrights, trade secrets, trademarks, service marks and other intellectual property rights, and any goodwill associated therewith, in and to any Ex Libris Service, related Documentation and all reproductions, derivatives, corrections, modifications, enhancements and improvements thereof, including anonymized statistical data derived from the usage of the Ex Libris Service, are and will remain at all times owned by Ex Libris. Other than the rights explicitly granted to Customer hereunder, all rights are reserved to and shall remain solely and exclusively proprietary to Ex Libris.

2. SERVICE LEVEL; SUPPORT; OTHER PROVISIONS

2.1. Ex Libris will make the SaaS Service available to Customer in accordance with the SaaS Service Level Agreement set forth in Annex D (the "**SLA**"). In addition, Ex Libris shall provide Customer with ongoing support services relating to the SaaS Service, as specified in the SLA (the "**Support Services**").

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Ex Libris will provide access to all appropriate documentation for fixes, releases, or upgrades to the SaaS Service. For the sake of clarity, Support Services do not include on-site services.

2.2. Provisions applicable to a specific Ex Libris Service may be set forth in Annex F hereto.

3. IMPLEMENTATION AND OTHER SERVICES

3.1. In consideration of payment of the Implementation Fees as set forth in the Quotation, Ex Libris shall provide Customer the implementation services as specified in Annex E attached hereto (the **"Implementation Services"**). Additional implementation services, if requested by Customer, may be specified in the Quotation together with an additional implementation fee. The parties will mutually agree upon a suitable implementation schedule for the above specified services.

3.2. Customer agrees to perform the tasks assigned to it in the Implementation Services. It is understood that effective communications and cooperation between Ex Libris and Customer are essential ingredients to the success of the Implementation Services. To such end, each Party shall designate a project coordinator who will serve as principal contact for the technical and business communications with respect to the Implementation Services.

3.3. If Customer uses non-Ex Libris programs or services (**"Third Party Programs"**) that interoperate with the Ex Libris Service, Customer acknowledges that such Third Party Programs may access Customer Data on and exchange data with the Ex Libris Service as part of the interoperation and support of such Third Party Programs. Ex Libris shall not be responsible for any disclosure, modification or deletion of Customer Data resulting from any such data access or exchange by Third Party Programs.

3.4. If Customer wishes to order additional training or other professional services, Ex Libris shall provide a quotation in accordance with its standard daily rates plus travel and subsistence expenses.

4. CHARGES AND PAYMENTS; CURRENT SOFTWARE

4.1. The total annual Subscription Fee for the use of the Ex Libris Service, as well as the fee for other services, if any, is as set forth in the Quotations and is payable in the currency set forth therein. Payment is due as set forth in Annex C and, except as otherwise expressly set forth herein, is non-refundable.

4.2. All prices and fees stated in this Agreement and any Quotation exclude all applicable value added tax or any other direct or indirect tax, charge, duty or assessment, all of which shall be added to the fees and paid by Customer (except for taxes based upon Ex Libris' net income). Payment of the fees specified in the Quotation shall be made without deduction or withholding of any amount, tax or government charge. If the Customer is a tax-exempt institution, the Customer will supply Ex Libris with appropriate certification of its tax-exempt status within ten (10) days of the Agreement Effective Date and will promptly notify Ex Libris of any change to such status.

4.3. If and to the extent Customer is a user of Current Software (as indicated on Annex A) to be replaced by one or more SaaS Services, the following provisions shall apply:

4.3.1. Upon the Subscription Effective Date of a SaaS Service, the prorated portion of the annual maintenance fees or subscription fees, as the case may be, paid by Customer for the remaining part of the then-current annual term of the Current Software to be replaced by the SaaS Service, if any, shall be applied to the annual Subscription Fee for that SaaS Service.

4.3.2. During the Additional Use Period, Customer may, subject to full payment of the Subscription Fee for the SaaS Service, continue to use the Current Software subject to the terms of the relevant Current Agreement; provided that any support and maintenance services relating to the Current Software under such Current Agreements shall terminate upon the Go Live Date. Upon expiry of the Additional Use Period, (a) Customer shall stop using the Current Software, (b) the Current Agreements shall terminate with respect to the Current Software and (c) all license, access and other rights granted to Customer with respect to the Current Software will automatically terminate. With respect to any SaaS Service for which the Subscription is continuing from a Current Agreement, this Agreement shall supersede and replace the Current Agreement as of the Agreement Effective Date and shall exclusively govern the continued use of such SaaS Service.

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5. DOCUMENTATION

Ex Libris shall make available in electronic format at no cost to Customer, all standard materials published by Ex Libris for use by subscribers to the Ex Libris Service, including manuals and other relevant materials and documentation, as updated from time to time **("Documentation")**. Customer may print or copy Documentation as needed, provided all copyright notices are included and, with respect to any such materials not made publicly available by Ex Libris, distribution of said copies complies with the confidentiality provisions of this Agreement.

6. PROTECTION FROM THIRD PARTY IP INFRINGEMENT

6.1. Ex Libris will defend Customer to the extent any claim, suit, action or proceeding (each, a **"Claim"**) brought by any third party against Customer alleges that the Ex Libris Service infringes or misappropriates any copyright, trade secret or trademark, and shall pay any amounts awarded by a court pursuant to such Claim or amounts paid to settle the Claim. Ex Libris' obligation pursuant to this paragraph shall not extend to any Claim based on any alleged infringement arising from any use of the Ex Libris Service other than as permitted by this Agreement.

6.2. The obligations set forth in the immediately preceding paragraph shall be subject to the Customer (i) giving Ex Libris prompt notice of such Claim; (ii) giving Ex Libris the sole authority to defend or settle such Claim; and (iii) providing full cooperation in such defense or settlement at Ex Libris' expense and not taking any action that prejudices Ex Libris' defense or settlement of such Claim.

6.3. If the Ex Libris Service becomes the subject of a Claim, or in Ex Libris' opinion is likely to become the subject of a Claim, then Ex Libris may, at its expense and option, either: (a) replace or modify the Ex Libris Service to make it non-infringing, while maintaining equivalent functionality; (b) procure for Customer the right to continue using the Ex Libris Service pursuant to this Agreement; or (c) terminate this Agreement and refund to Customer, on a pro-rata basis, the amount of any Subscription Fee that Ex Libris has received from Customer for the period between the effective date of termination of the Agreement and the expiration of the subscription period for which the Subscription Fee has been paid.

7. LIMITATION OF LIABILITY

7.1. Ex Libris does not assume any liability in respect of (i) violation of copyright, privacy, database rights or trademark protection of any Licensor Data and other third-party data stored with, or accessible through, the Ex Libris Service (including data made available by or on behalf of customers);
(ii) access to, or the content or accuracy of, any such data; and (iii) adverse effects, if any, due to any modification or adaptation made by Customer in the Ex Libris Service without Ex Libris' express and prior written consent.

7.2. In no event shall Ex Libris be liable for indirect, incidental, special, punitive or consequential damages or for cover or for loss of revenues or profits arising from or relating to this Agreement, even if Ex Libris has been advised of the possibility of such damages. In no event shall Ex Libris' aggregate liability arising from or relating to this Agreement exceed an amount equal to the total amount of Subscription Fees actually paid by Customer for the relevant Ex Libris Service during the twelve (12) months prior to the first incident out of which liability arose. The existence of more than one claim or suit will not enlarge or extend this limitation.

7.3. Licensor Data is provided "as is". EX LIBRIS' WARRANTIES AND REPRESENTATIONS ARE LIMITED TO THOSE SET FORTH HEREIN, AND IT DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, IN CONNECTION WITH THE EX LIBRIS SERVICE, ANY OTHER SERVICES AND ANY DATA ACCESSED THROUGH SUCH SERVICES, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. EX LIBRIS MAKES NO REPRESENTATION OR WARRANTY THAT THE USE OF ANY SUCH SERVICE WILL BE UNINTERRUPTED OR ERROR-FREE.

8. CUSTOMER'S UNDERTAKINGS

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8.1. Customer agrees not to (i) make any Ex Libris Service or Licensor Data available in any way for the use or benefit of any unauthorized party and shall use commercially reasonable efforts to prevent unauthorized access to or use of such Ex Libris Service or the Licensor Data, and shall notify Ex Libris as soon as possible after it becomes aware of any unauthorized access or use; (ii) copy, modify, create derivative works from or use an Ex Libris Service, Licensor Data, the Documentation or related materials or other proprietary information received from Ex Libris, in whole or in part, other than as expressly permitted by this Agreement, unless Ex Libris so consents in writing; (iii) reverse engineer, decompile or disassemble any Ex Libris Service or any components thereof except as expressly authorized by law; (iv) violate or abuse the password protections governing access to and use of the Ex Libris Service; (v) remove, deface, obscure, or alter Ex Libris' or any third party's copyright notices, trademarks or other proprietary rights notices affixed to or provided as part of the Ex Libris Service, the Licensor Data and/or the Documentation; (vi) use any robot, spider, scraper, or other automated means to access the Ex Libris Service or the Licensor Data for any purpose without Ex Libris' written consent; (vii) use or display logos differing from Ex Libris' own without Ex Libris' prior approval, which shall not be unreasonably withheld; (viii) store information or materials in an Ex Libris Service that violates a third party's rights or breaches applicable law; and/or (ix) use an Ex Libris Service, the Licensor Data or the Documentation in a way which would violate any applicable laws, rules and regulations.

8.2. Customer agrees to maintain the Ex Libris Service, any non-public Documentation and related materials confidential, and may disclose the Ex Libris Service and related materials to its employees, agents and users to the extent that such disclosure is necessary to Customer's use of the Ex Libris Service, provided that Customer takes reasonable steps to ensure that such information is not disclosed or distributed by such employees or agents in contravention of the provisions of this Agreement.

8.3. Customer agrees to abide by the access and use restrictions set forth in the Quotation and Documentation, and to refrain from any use of an Ex Libris Service that is not expressly permitted by this Agreement or the Documentation. Specifically, but without limitation, Customer undertakes to refrain from performing penetration tests or using an Ex Libris Service in any manner other than in the ordinary course of Customer's regular activities.

8.4. To the extent that any third party brings a claim against Ex Libris alleging that information provided to the Ex Libris Service by or on behalf of Customer violates a third party's rights or breaches applicable law, Customer will defend the claim and pay any resulting judgment or negotiated settlement. The obligation set forth in this Section 8.4 shall be subject to Ex Libris (i) giving Customer prompt notice of such claim; (ii) giving Customer the sole authority to defend or settle such claim; and (iii) providing full cooperation in such defense or settlement at Customer's expense and not taking any action that prejudices Customer's defense or settlement of such claim.

8.5. In order to allow for proper implementation and operation of the Ex Libris Service, Customer shall meet and maintain the technical prerequisites set forth in the Documentation. Customer shall be solely responsible for upgrading to the then-current minimum browser requirements as defined by Ex Libris from time to time. Ex Libris shall provide Customer with no less than six months' prior written notice of any change in the minimum browser requirements.

9. CUSTOMER DATA

9.1. **"Customer Data"** means any business information, Personal Information or other data provided by or on behalf of Customer for storing and/or processing in the Ex Libris Services. The Customer shall own all rights, title and interest in and to all of the Customer Data and shall have sole responsibility for the legality, reliability, integrity, accuracy and quality of the Customer Data. Nothing in this Agreement shall be interpreted to transfer title or ownership of the Customer Data to Ex Libris or any other party.

9.2. Ex Libris agrees during the Term to implement reasonable security measures to protect and backup Customer Data and will, at a minimum, utilize industry standard security and backup procedures.

9.3. Customer acknowledges that use of the Ex Libris Services may involve processing of personal information about Customer's permitted users, such as its staff and patrons, and other third parties

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("**Personal Information**") and the Customer shall be responsible for having all necessary rights to collect and process or allow collection and processing of such Personal Information. As between Customer and Ex Libris, Customer retains ownership of the Personal Information and may, at any time during the term of this Agreement, access, modify and delete Personal Information that is stored in the Ex Libris Services. Ex Libris shall not use the Personal Information for any purpose other than the provision of the Ex Libris Services under this Agreement.

9.4. Customer agrees that it will not upload to or store on the Ex Libris Services, and Ex Libris will not be liable with respect to, any sensitive personal data such as government-issued identification numbers (social security number, national identification number, driver's license number, passport number etc.), bank and credit card account numbers, race, origin, biometric data, health and medical information, student academic records, employment records or financial records, political opinions, religious or philosophical beliefs, trade union membership, genetic data or information concerning sex life or sexual orientation, and Customer will only store basic personal information necessary to operating library systems (i.e., names, postal addresses, email addresses, telephone numbers, institutional ID and loan and fines information, as applicable).

9.5. Ex Libris shall comply with all laws and regulations (including without limitation privacy laws and regulations) applicable to its operation of the Ex Libris Services and Customer shall comply with all laws and regulations (including without limitation privacy laws and regulations) applicable to its use of the Ex Libris Services, including without limitation, the collection, use, transfer, and access by its users, of Personal Information in connection with the Ex Libris Services. Ex Libris may utilize its Affiliates in the performance of its obligations under this Agreement and shall be responsible for compliance by such Affiliates with the terms of this Agreement.

10. TERM AND TERMINATION

10.1. This Agreement shall be effective upon the Agreement Effective Date and shall expire thirty (30) days after the expiration or termination of the last remaining Subscription hereunder. The Subscription for each Ex Libris Service shall be effective upon the Subscription Effective Date set forth on Annex C for such Ex Libris Service. The initial term of a Subscription shall expire at the end of [five (5)] years after the relevant Subscription Effective Date (the **"Initial Term"** of that Subscription). Following the applicable Initial Term, each Subscription shall automatically renew at the then-applicable Subscription Fee for successive one (1) year terms (each, a **"Renewal Term"**, and together with the Initial Term, the **"Term"**), unless (a) Ex Libris or Customer provides the other with written notice not less than ninety (90) days prior to the end of any term of a Subscription of its intent not to renew that Subscription, or (b) the Agreement and/or the applicable Subscription is terminated in accordance with the terms of this Agreement. If Customer shall continue to use the Ex Libris Service past the applicable Subscription renewal date, Customer shall be deemed to have renewed the Subscription for the following term at the rates applicable for said new term.

10.2. Customer may terminate this Agreement and/or the applicable Subscription, effective upon Ex Libris receipt of written notice, if Ex Libris is in material breach of this Agreement and Customer has given written notice of such material breach and Ex Libris has failed to cure such material breach within thirty (30) days of such notice. In the event of such termination, Ex Libris shall refund to Customer, on a pro-rata basis, the amount of any Subscription Fee that Ex Libris has received from Customer for the period between the effective date of termination of the Subscription and the expiration of the subscription period for which the Subscription Fee has been paid.

10.3. Ex Libris may terminate this Agreement and/or the applicable Subscription, effective upon Customer's receipt of written notice, if Customer is in default in payment of any sum due hereunder or is otherwise in material breach of this Agreement and Ex Libris has given written notice of such default or material breach and Customer has failed to cure such default or material breach within thirty (30) days of such notice. Customer's obligation to pay all charges which have accrued prior to termination (including Subscription Fees payable through the end of the applicable Term) shall survive any such termination of this Agreement by Ex Libris, without waiver of any remedies Ex Libris may have at law or in equity.

10.4. Upon expiration or termination of a Subscription, Ex Libris will, upon Customer's request, make the Customer Data available to Customer for download for the thirty (30) days following such

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expiration or termination (the "**Termination Assistance Period**"). After the Termination Assistance Period, Ex Libris shall have no obligation to maintain or provide any Customer Data relating to the expired or terminated Subscription and will, unless legally prohibited or expressly permitted herein, delete it.

10.5. The terms of Sections 1.2, 6, 7, 8, 10, 12.1 and 13, as well as any provisions that are inherently intended to survive the termination of an agreement (e.g., definitions, indemnity, obligation of confidentiality or limit of liability) shall survive the termination of this Agreement.

11. FORCE MAJEURE

A party shall not be responsible for any failures of its obligations under this Agreement (other than obligations of such party to pay amounts owed) to the extent that such failure is due to causes beyond such party's control including, but not limited to, acts of God, war, terrorism, riots, civil unrest, acts of any government or agency thereof, fire, explosions, epidemics, quarantine restrictions, delivery services, telecommunication providers, interruption or failure of the Internet, national strikes and labor difficulties, lockouts, embargoes, or severe weather conditions.

12. STATEMENT OF CONFIDENTIALITY; USE OF NAME IN PUBLICITY

12.1. Except to the extent required by law and insofar as is reasonably necessary in order to review and evaluate the information contained herein, the contents of this Agreement are proprietary and confidential to Ex Libris and may not be copied, disclosed, or used, in whole or in part, without its express written permission.

12.2. Ex Libris may list Customer as a user of the Ex Libris Services, but may not otherwise use Customer's name on its website or in its promotional materials without the prior consent of Customer.

13. GENERAL

13.1. This Agreement is to be governed by and interpreted in accordance with the laws of North Carolina, without giving effect to principles of conflicts of laws. All disputes arising out of this Agreement shall be subject to the sole and exclusive jurisdiction of the competent courts located in Wake County, NC, provided that Ex Libris may seek injunctive relief in any court of competent jurisdiction. The United Nations Convention for the International Sale of Goods shall not apply to this Agreement.

13.2. All notices hereunder shall be deemed effective when delivered to the address set forth above or to a designated fax number, as follows: (i) if hand-delivered, upon delivery, (ii) if sent by recognized national or international courier, on the business day of delivery, (iii) if sent by registered post, within five (5) business days of sending; (iv) if sent by email, on the business day of sending (or if sent on a non-business day on the next business day), provided that the recipient has acknowledged receipt.

13.3. Neither party hereto may assign its rights and obligations under this Agreement except with the prior written consent of the other, provided that Ex Libris may assign its rights and obligations to an affiliate or to a company which succeeds to its business hereunder.

13.4. The development, release, and timing of any new features or functionality of an Ex Libris Service remains at Ex Libris' sole discretion. The Customer acknowledges that it has not relied on the delivery of any future feature or functionality in executing this Agreement.

13.5. The parties acknowledge that they are independent contractors and no other relationship, including partnership, joint venture, employment, franchise, or principal/agent is intended by this Agreement. Neither party shall have the right to bind or obligate the other.

13.6. All headings herein are for ease of reference only and shall not be used to interpret this Agreement.

13.7. The annexes attached hereto are incorporated in, and made a part of, the Agreement by this reference. All capitalized but undefined terms in an annex to this Agreement shall have the meaning set forth herein.

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13.8. This Agreement and its annexes constitute the entire agreement between the parties pertaining to the subject matter hereof, and supersede any and all prior written or oral agreements with respect to such subject matter.

13.9. If any provision of this Agreement shall be held by a court of competent jurisdiction to be contrary to law or unenforceable, the remaining provisions of this Agreement shall remain in full force and effect and this Agreement shall be construed without such provision.

13.10 This Agreement may only be amended by a writing signed by both Parties.

13.11 The waiver of a breach of any term hereof shall in no way be construed as a waiver of any other term or waiver of such breach on other occasions.

13.12 Any purchase order that relates to this Agreement and is entered into between the parties shall be deemed to incorporate the terms of this Agreement. If a purchase order contains terms that purport to modify or supplement the terms of this Agreement then those purchase order terms shall have no force or effect. In the case of an inconsistency or contradiction between this Agreement and any purchase order, this Agreement shall prevail.

13.13 Manual, scanned, electronic or facsimile signatures shall be sufficient for purposes of executing this Agreement. This Agreement may be executed in counterparts.

ACCEPTED, AGREED AND SIGNED ON AND AS OF THE DATE FIRST ABOVE WRITTEN:

[COMPLETE CUSTOMER NAME]	**Ex Libris (USA) Inc.**
By:	By:
Name:	Name:
Title:	Title:
Month: Day: Year:	Month: Day: Year:

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LIST OF ANNEXES

ANNEX A	**Ex Libris Current Software and SaaS Service(s)**
ANNEX B	**Initial Quotation and Additional Quotations, if any**
ANNEX C	**Payment Terms**
ANNEX D	**SaaS Service Level Agreement**
ANNEX E	**Implementation Services**
ANNEX F	**Service-Specific Provisions**
ANNEX G	**Definitions**

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ANNEX A

Ex Libris SaaS Service(s)

SaaS Service(s):

Alma
Alma Premium Sandbox
Primo VE
Primo Premium Sandbox
bX Recommender Service
Rapido

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ANNEX B

Initial Quotation and Additional Quotations, if any ALMA & PRIMO

1. Fees

(a) Annual Fees

(i) The initial annual Alma/Primo Subscription Fee:$405,271

(ii) Ex Libris Alma Sandbox

Premium Alma Sandbox(es): including in the Alma/Primo Subscription Fee

Includes (A) a copy of the Customer configuration, and (B) a copy of the Customer data, except for the Digital Object Files loaded into Alma cloud storage

2 designated institution Premium Sandboxes. Each sandbox includes (A) a copy of the relevant designated institution's configuration, and (B) a copy of such designated institution's data, except for the Digital Object Files loaded into Alma cloud storage. Customer shall notify Ex Libris at the start of Implementation of the identities of the designated institutions

One Network Zone Premium Sandbox. Includes (A) a copy of the Network Zone configuration, and (B) a copy of Network Zone data.

(iii) Primo Sandbox

Premium Sandbox (Requires Premium Alma Sandbox): included in the Alma/Primo Subscription Fee

Includes (A) copy of the Customer configuration, and (B) a copy of the Customer production data

(b) Initial Fees

(i) Standard Implementation Fee: $503,179

(ii) Monthly Provisioning Fee: waived

(iii) Post-Implementation Consulting Hours (described on Annex E-3): included in the Implementation Fee

2. Access and Use Restrictions:

Usage of the SaaS Service is limited to:

(a) The following institutions and their North Carolina based campuses set forth in TABLE A below, and is not for the use of any other campus, college, university, library or entity of any kind. Any use of the SaaS Service by any other entity is strictly prohibited and is considered a material breach of this Agreement. For the sake of clarity, Customer's authorized users associated with such listed campuses may access the SaaS Services from outside of Customer's jurisdiction, but Customer shall ensure that it is entitled to transfer Customer Data and Personal Information from and to any such Customer user location and shall be responsible for compliance with privacy laws applicable to such transfers.

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(b) Alma subscription for up to: (i) 400 Named Users for Ex Libris Alma, and thirty (30) users for Alma Sandbox; (ii) 1,700,00 Bibliographic Titles (including e-books and local authority records); (iii) 350,000 Unique e-Journal Titles.

(c) A subscription to manage the following resource types in Ex Libris Alma: (i) Print; (ii) Electronic.

(d) Primo subscription is for up to (i) 2,050,000 Primo Documents; (ii) 600,000 FTE's; and (iii) 58 institutions.

TABLE A

INSTITUTION NAME
1. ALAMANCE COMMUNITY COLLEGE
2. ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
3. BEAUFORT COUNTY COMMUNITY COLLEGE
4. BLADEN COMMUNITY COLLEGE
5. BLUE RIDGE COMMUNITY COLLEGE
6. BRUNSWICK COMMUNITY COLLEGE
7. CALDWELL COMMUNITY COLLEGE AND TECHNICAL INSTITUTE
8. CAPE FEAR COMMUNITY COLLEGE
9. CARTERET COMMUNITY COLLEGE
10. CATAWBA VALLEY COMMUNITY COLLEGE
11. CENTRAL CAROLINA COMMUNITY COLLEGE
12. CENTRAL PIEDMONT COMMUNITY COLLEGE
13. CLEVELAND COMMUNITY COLLEGE
14. COASTAL CAROLINA COMMUNITY COLLEGE
15. COLLEGE OF THE ALBEMARLE
16. CRAVEN COMMUNITY COLLEGE
17. DAVIDSON-DAVIE COMMUNITY COLLEGE
18. DURHAM TECHNICAL COMMUNITY COLLEGE
19. EDGECOMBE COMMUNITY COLLEGE

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20. FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
21. FORSYTH TECHNICAL COMMUNITY COLLEGE
22. GASTON COLLEGE
23. GUILFORD TECHNICAL COMMUNITY COLLEGE
24. HALIFAX COMMUNITY COLLEGE
25. HAYWOOD COMMUNITY COLLEGE
26. ISOTHERMAL COMMUNITY COLLEGE
27. JAMES SPRUNT COMMUNITY COLLEGE
28. JOHNSTON COMMUNITY COLLEGE
29. LENOIR COMMUNITY COLLEGE
30. MARTIN COMMUNITY COLLEGE
31. MAYLAND COMMUNITY COLLEGE
32. MCDOWELL TECHNICAL COMMUNITY COLLEGE
33. MITCHELL COMMUNITY COLLEGE
34. MONTGOMERY COMMUNITY COLLEGE
35. NASH COMMUNITY COLLEGE
36. PAMLICO COMMUNITY COLLEGE
37. PIEDMONT COMMUNITY COLLEGE
38. PITT COMMUNITY COLLEGE
39. RANDOLPH COMMUNITY COLLEGE
40. RICHMOND COMMUNITY COLLEGE
41. ROANOKE-CHOWAN COMMUNITY COLLEGE
42. ROBESON COMMUNITY COLLEGE
43. ROCKINGHAM COMMUNITY COLLEGE
44. ROWAN-CABARRUS COMMUNITY COLLEGE

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45. SAMPSON COMMUNITY COLLEGE
46. SANDHILLS COMMUNITY COLLEGE
47. SOUTH PIEDMONT COMMUNITY COLLEGE
48. SOUTHEASTERN COMMUNITY COLLEGE
49. SOUTHWESTERN COMMUNITY COLLEGE
50. STANLY COMMUNITY COLLEGE
51. SURRY COMMUNITY COLLEGE
52. TRI-COUNTY COMMUNITY COLLEGE
53. VANCE-GRANVILLE COMMUNITY COLLEGE
54. WAKE TECHNICAL COMMUNITY COLLEGE
55. WAYNE COMMUNITY COLLEGE
56. WESTERN PIEDMONT COMMUNITY COLLEGE
57. WILKES COMMUNITY COLLEGE
58. WILSON COMMUNITY COLLEGE
SYSTEM OFFICE

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ANNEX B-1

Additional Quotations

RAPIDO

1. Fees

   (a) Annual Fees

      (i) The Rapido Subscription Fee: included in the Alma/Primo Subscription Fee

   (b) Initial Fees:

      (i) Implementation Fees: included in the Alma/Primo Implementation Fee

2. Access and Use Restrictions:

Usage of Rapido SaaS Service is limited to:

The institutions set forth in TABLE A of Annex B, is not for the use on behalf of any other entity of any kind. Any use of Rapido by any other entity is strictly prohibited and is considered a material breach of this Agreement. For the sake of clarity, Customer's authorized users associated with such institution may use Rapido from outside of Customer's jurisdiction, but Customer shall ensure that it is entitled to transfer Customer Data and Personal Information from and to any such Customer user location and shall be responsible for compliance with privacy laws applicable to such transfers.

3. Pod Participation

The Customer will be permitted to participate in Pods based on its academic level, geographic location, and resource sharing network. Pods are described in Annex F.

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ANNEX C

Payment Terms

1. Annual Subscription Fee: The initial pro-rated Subscription Fee as further described in Section 4 below is for the one-year period commencing on the Alma/Primo Go Live Date (the **"Subscription Effective Date"**), and each subsequent Subscription Fee is for the one-year period commencing on each anniversary thereof. The Subscription Fee is due on the Subscription Effective Date and on each anniversary thereof. Prices for the Subscription Fee and other services may be increased by Ex Libris from time to time upon notice to Customer, but not more than five percent (5%) per year for the relevant scope/parameters specified in the Quotations. As set forth above, Ex Libris' services are offered on a pre-paid annual subscription basis. Therefore, any early termination of this Agreement for the Customer's convenience as set forth in the Customer's Terms and Conditions shall not obligate Ex Libris to refund any pre-paid fees.

2. Increase in Scope of Subscription: In the event the scope of the Subscription is extended beyond the Access and Use Restrictions initially set forth on the Quotation, the annual Subscription Fee shall be increased proportionally from the time said extension is granted by Ex Libris, without regard to the annual cap on increases set forth in Section 1 above.

3. Implementation Fee: 50% of the pro-rated Implementation Fee as further described in Section 4 below is due on the onboarding kick-off date; 30% of the pro-rated Implementation Fee is due upon providing Customer with access to the cloud environment; and 20% of the pro-rated Implementation Fee is due on the Go Live Date.

4. Notwithstanding C.1 and C.3 above, Vendor agrees to pro-rate the implementation fees and subscription fees for the North Carolina Community Colleges that would implement in year 1, such that the implementation cost per College would be $8,675 and the average subscription cost per College would be $6,987. Vendor shall work with NCCCS and the Colleges to define a cohort-based implementation schedule for remaining colleges and apply a similar pro-rated approach to the implementation and subscription fees due. Vendor requires that all Colleges complete implementation by the end of the 2nd year of the agreement.

5. Other Services**:** Other special services, if any, ordered by the Customer, are payable against Ex Libris' corresponding monthly invoices.

6. Note: RESERVED.

7. Travel and Expenses: RESERVED.

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ANNEX D

SaaS Service Level Agreement (the "SLA")

A. For SaaS Services other than Sandbox

1. **Availability**

For the duration of the Subscription, Ex Libris will use commercially reasonable efforts to ensure that the SaaS Service is available for access and use in accordance with the Agreement at an annual Uptime Percentage (defined below) of at least 99.75%, as measured over any calendar year. Ex Libris shall either publish on a quarterly basis or make available to Customer upon request a report of any Downtime during a calendar quarter (the "**Quarterly Report**").

2. **Definitions**

All capitalized terms used in this SLA without definition shall have the meaning ascribed to them in the Agreement. In addition, the following definitions shall apply to this SLA:

2.1. "**Downtime**" means the total time within a Measured Period during which the SaaS Service is inoperable or inaccessible, excluding SLA Exclusions during such Measured Period.

2.2. "**Measured Period**" means the total number of minutes in the calendar year.

2.3. "**Scheduled Downtime**" shall mean any Downtime (i) of which Customer is notified at least seven (7) days in advance, or (ii) during a standard maintenance window, as published by Ex Libris from time to time. In either of the foregoing two situations, Ex Libris will use commercially reasonable efforts to ensure that the Scheduled Downtime falls between the hours of Saturday 8PM and Sunday 6AM US Central time.

2.4. "**Uptime**" means the total period in minutes during which the SaaS Service is available for access and use during a Measured Period.

2.5. "**Uptime Percentage**" means Uptime expressed as a percentage, calculated in accordance with the following formula:

$$\textbf{Uptime Percentage} = X/(Y-Z) \times 100$$

Where:

X = Uptime
Y = Measured Period
Z = The duration (in minutes) of any SLA Exclusions during the applicable Measured Period

3. **SLA Exclusions**

The following shall not be considered within the definition or calculation of Downtime: (i) Scheduled Downtime; (ii) SaaS Service unavailability attributable to (a) causes beyond Ex Libris' reasonable control, including any Force Majeure event or the performance of any third party communications or internet service provider; (b) the Customer's failure to perform any obligation under the Agreement that affects the performance of the SaaS Service; and/or (c) any actions or omissions of the Customer, its permitted users or any third party acting on their behalf, or to the Customer's or any third party's equipment, software or other technology; (iii) SaaS Service unavailability caused by the suspension and termination of the Customer's right to use the SaaS Service in accordance with the Agreement; and (iv) separate instances of SaaS Service unavailability of less than 5 (five) minutes duration each, provided such instances are not of a persistent nature such that they cause a detrimental impact on the Customer (each an "**SLA Exclusion**").

4. **Low Uptime Percentage; Service Credits**

4.1. If the Uptime Percentage falls below 99.5% for any calendar year, the Customer will be eligible to receive a credit based on a percentage of the annual Subscription Fee paid for the relevant SaaS Service ("Service Credit") as follows:

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Uptime Percentage for calendar year	Service Credit as Percentage of Annual Subscription Fee
Below 99.0% but not less than 98.5%	1%
Below 98.5% but not less than 98.0%	2%
Below 98.0% but not less than 97.5%	3%
Below 97.5% but not less than 97.0%	4%
Below 97.0%	5%

Except as set forth in Section 4.2 below, the Customer's sole and exclusive remedy for failing to meet the annual Uptime Percentage during any year is the receipt of a Service Credit (if eligible) in accordance with this SLA.

4.2. Notwithstanding Section 4.1 above, if the Uptime Percentage shown on any two consecutive Quarterly Reports falls below 97%, then the Customer shall be entitled to terminate the Subscription immediately, without Ex Libris incurring any liability arising from the fact of such termination. The Customer is liable for Subscription Fees only up to the date of termination. The Customer's right to terminate under this Section 4.1 only exists for a period of one month following delivery of the applicable Quarterly Report.

4.3. To receive a Service Credit pursuant to Section 4.1 above, Customer must submit a request to Ex Libris by sending an e-mail message to saas.admin@exlibrisgroup.com within one month of receipt of the final Quarterly Report for the year. If the Customer fails to do so, it will forfeit the right to receive the Service Credit. If the Customer disputes the accuracy of any Quarterly Report, it must submit notice thereof within two weeks of its receipt of the Quarterly Report, which notice must include the dates, times and duration of each incident of Downtime that the Customer claims to have experienced, including instance ids of the instances that were running and affected during the time of each incident. Failure to do so shall render the Quarterly Report definitive.

4.4. If a Service Credit request is approved by Ex Libris, then Ex Libris will apply the Service Credit against future Subscription Fees to be paid by the Customer unless Customer has exercised its right to terminate the Agreement under Section 4.2 above, in which case Customer is entitled to receive payment of any accrued Service Credits. Otherwise, Service Credits shall not entitle the Customer to any refund or other payment from Ex Libris.

4.5. Ex Libris' obligations hereunder are based on and subject to the Customer: (i) complying with the terms and conditions of the Agreement, including this SLA; (ii) complying with Ex Libris' instructions, if any, for performing corrective action; and (iii) the Customer maintaining the connectivity (with acceptable bandwidth) of the workstations and end customers to the main internet, including network connectivity to the SaaS Service, and connectivity between the SaaS Service and the Customer's local applications interacting with the SaaS Service, as well as creating and maintaining firewall definitions and opening required ports that permit access to the SaaS Service.

5. Support Incidents

5.1. Customer shall report all issues via Salesforce, through the creation of a Salesforce Case (a **"Support Case"**). Level I and II issues, as described in 5.2 below, should also be reported to 24X7hub@exlibrisgroup.com.

5.2. Ex Libris Response to Support Cases:

Response Level	Description	Initial Response

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I	■ The SaaS Service is not available	1 hour
II	■ An inoperable production module	2 hours
III	■ Other production performance related issues, typically a module feature working incorrectly	1 business day
IV	■ Non-performance related incidents, including: general questions, requests for information, documentation questions, enhancement requests	2 business days

5.3. Updates relating to Support Cases

All incidents of Downtime which are known by Ex Libris are reported by Ex Libris to Customer and available for Customer to view via a designated link on the Customer Portal (**"Downtime Status Page"**). In the event of Downtime, Ex Libris shall update the Downtime Status Page on an hourly basis until resolution of such Downtime event. All incidents of Downtime which are known by Ex Libris and which affect only Customer will be communicated via a support case or by email.

5.4. Escalation

If Downtime is not resolved within two hours, then Ex Libris will escalate the matter to its 24x7 Team Hub Manager; if it is not resolved within four hours, then Ex Libris will escalate the matter to its Director of Support for North America; and if it is not resolved within eight hours, then Ex Libris will escalate the matter to its Global Support Director.

6. 24x7 Monitoring

The Ex Libris hub team provides 24x7 coverage for the SaaS Service by monitoring and alerting on any issues or problems with:

- servers
- operating systems
- network devices (switches/routers)
- backup systems
- server side performance

B. For Sandbox

Ex Libris makes no warranty or representation regarding Uptime. Ex Libris shall respond to Support Cases for Sandbox as follows:

(i) Performance related issues: within two (2) business days.

(ii) Non-performance related matters, including: general questions, requests for information, documentation questions, and enhancement requests: within four (4) business days.

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ANNEX E

Alma and Primo Implementation Services with Standard Alma Migration

Overview

Ex Libris Alma institution(s):	58
Ex Libris Alma sandbox(es):	2 Premium Institution Zone, 1 Premium Network Zone
Ex Libris Primo institution(s):	58
Ex Libris Primo sandbox(es):	2 Premium Institution Zone, 1 Premium Network Zone
Implementation topology:	Network Zone

Alma and Primo implementation services covered by this Agreement include:

1. Project management, training, customer assistance
2. Configuration (Alma and Primo)
3. Data migration (Alma)
4. Alma-Primo integration

Implementation duration is expected to be up to eighteen (18) months. If the Customer would like to extend the Implementation timeline beyond the agreed upon duration, negotiation regarding the extended schedule and related costs will be conducted.

1. Project management, training, customer assistance

1.1. Services provided:
- Kick-off meeting (Web-based)
- Regular project calls
- Reporting and tracking of project progress, tasks and issues
- Guided implementation assistance, including data migration and configuration preparation and refinement
- Alma "train-the-trainer" training (Web-based recorded)
- Live workflow consulting (remotely delivered)
- Alma Administration Certification training (Web-based recorded)
- Primo Administration Certification training (Web-based recorded)

1.2. Ex Libris shall perform all project management, customer assistance and "train-the-trainer" training.

1.3. Customer is responsible to appoint a library project team and a project coordinator who will serve as the primary contact for the Ex Libris project manager. If required, relevant IT resources need to be provided by the Customer in accordance with the project plan.

1.4 Customer project team shall participate in the Alma "train-the-trainer" training and are responsible for performing internal library staff training. At least two persons will be required to participate in the Alma and Primo Administration Certification training and pass the certification exams.

1.6 Ex Libris shall provide ongoing implementation assistance via Ex Libris CRM system (Salesforce) during the implementation project

1.7 Ex Libris uses a Web-based project management tool as the primary communication platform during the implementation project. Customer project team is expected to use this platform following guidelines provided by Ex Libris project team.

1.8 Ex Libris uses the Microsoft Teams® collaborative meeting platform for all online project-related calls and meetings. Customer project team is expected to use this platform following guidelines provided by the Ex Libris project team.

2. Configuration

2.1. Includes configuration and assisting with the setup of the following functional areas and integrations relevant for the Customer within Ex Libris Alma. The specific functions and integrations to implement (among the below) will be determined and agreed as part of the Alma implementation project based on Customer needs and joint analysis with Ex Libris:
- Acquisitions
- Fulfillment

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- User Management
- Resource management
- Standard third party integrations

2.2. Third party integrations:

- The customer's implementation process and responsibility includes the integration of Ex Libris products with 3rd party enterprise systems. This includes preparing the infrastructure for the real time interactions with other systems and the batch upload/download from/to other systems.
- Ex Libris will provide consultation and support to the Customer project team to allow successful configuration of Ex Libris products, as required, for the integration with other systems.

Standard third party Alma integrations include:

- User Management
  - Importing of user (patron) information from a Student Information System
  - Exporting of fees and fines to the institutional financial system (Bursar)
- Acquisitions
  - ProQuest OASIS – Real Time Ordering integration
  - Exporting of invoices for payment to the institutional ERP (Enterprise Resource Planning) / financial system
  - Receiving invoice payment confirmation from an ERP (Enterprise Resource Planning) / financial system
  - EOD (Embedded Order Data) import
  - Export Orders (PO) for sending to the institutional ERP (Enterprise Resource Planning) / financial system
  - Fund Allocation Loader to allocate amounts to the funds in Alma.
  - Setup for Electronic Data Interchange (EDI) messages used to communicate with the vendors (sending of orders, import of invoices).
- Metadata Management
  - ProQuest Ebooks Central- Upload Electronic Holdings
  - Repository Metadata import
  - OCLC Connexion client (if applicable)
  - External catalogs search (via Z39.50)
  - Publishing of bibliographic information to 3rd party systems (OCLC WorldCat, Libraries Australia, SunCat, COPAC, HathiTrust - if applicable)
  - Publishing of library holdings to 3rd party systems (OCLC WorldCat, Libraries Australia, SunCat, COPAC, HathiTrust - if applicable)
  - Alma setup as Z39.50 (data provider)
  - Publish electronic records to Google Scholar
- Fulfillment
  - Standard Resource Sharing / Interlibrary Loan (ILL) services including:
    - OCLC ILLiad (OpenURL/NCIP v.2.0)
    - OCLC WorldCat Navigator (NCIP v.2.0)
    - OCLC VDX (NCIP v.2.0)
    - Relais D2D (OpenURL/NCIP v.2.0)
    - British Library Document Supply Service (using ARTEmail protocol)
    - Innovative INN-Reach (NCIP v.1.0)
    - Kronosdoc GTBib-SOD (OpenURL/NCIP v.2.0)
    - Clio II (OpenURL/NCIP v.2.0)
    - ISO – Communication between Alma and another resource sharing (Alma or non-Alma) system
    - SLNP
  - Remote Storage Facility (transfer list of barcodes and requests pickup location to defined SFTP site or API-based HK/Dematic ASRS solution)
  - Self-Check machines (using SIP2 protocol)
- Staff Authentication - the following options are available:
  - Lightweight Directory Access Protocol (secure LDAP – certificate signed by recognized authority)

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- SAML 2.0 protocol
- Central Authentication Service (CAS)
- Social authentication (OAuth 2.0 protocol)
- Ex Libris Identity Service

2.3. Configuration includes set up of the following areas within Ex Libris Primo (for new Primo customer):

- Institutional view with standard search box, search profiles / scopes, facets and resources types
- Integration with Ex Libris Alma:
  - As a data source, including:
    - Initial test load
    - Final cutover
  - For delivery (availability, request, link resolution)
  - Alma link resolver
- Central Discovery Index (CDI) activation
- Course Reserve setup in Primo (if relevant data migrated to Alma)
- Activation of bX (if applicable)
- EBSCO API integration (if applicable)
- End-user patron authentication via institutional secure LDAP (certificate signed by recognized authority), Shibboleth (using SAML 2.0 protocol), CAS, Social authentication (OAuth 2.0) or Ex Libris Identity Service. End-user authentication must be performed via one of these standard authentication systems.
- Integration with one OAI-compliant digital repository (if applicable)

2.4. Ex Libris shall perform all configuration of Alma based on Customer input in Ex Libris-provided form/workbook.

2.5. Ex Libris shall perform all configuration of Primo based on Customer input in Ex Libris-provided form/workbook except for integration with external data sources and UI configuration.

2.6. For existing Primo customer, customer will re-configure external data sources and adjust UI configuration of the new Primo.

2.7. Ex Libris will provide assistance with product configuration and third party integrations set up during the implementation project until the 'Switch to Support' milestone. If the Customer would like to postpone configuration of any functional area or third party integration and would like Ex Libris to provide assistance following the Switch to Support, Ex Libris will provide a quotation for additional professional services.

2.8. Customer shall provide input on configuration via Alma and Primo configuration form/workbook and provide post-configuration feedback based on end-to-end review of Alma and Primo configuration and functionality in the defined time frame.

2.9. Third party integrations not mentioned above can be configured by Customer following the Go Live Date.

2.10. Customer is responsible for configuring branding in Primo using the standard tools.

2.11. Set up additional institutions or any changes to the existing Primo configuration are not included in this Agreement.

3. Data migration

3.1 Data migration includes two rounds (test and cutover)

3.2 Migration services includes:

The following data entities will be migrated from the Customer's current ILS [SirsiDynix Symphony, Evergreen, Sierra, or OCLC] and from the Customer's current Link Resolver [360Link]:

Please note: The migration of specific elements in scope may vary between source systems and are detailed in the relevant specific source system migration guides.

- Bibliographic records [MARC21]
- Inventory
  - Print - Item records, Holdings records
- Electronic - from 360 Core/Link– Databases and their titles (holdings/portfolios)
  Patrons' name, identifier and borrower information (password and PIN code are not migrated)

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- Fulfillment
  - Loans (current)
  - Hold requests (current on hold shelf)
  - Fines & Fees (current)
  - Aggregated historical circulation statistics (loan count and last loan date at item-level)
- Acquisitions
  - Print - Vendors (vendors are migrated during the test round and are not re-migrated during cutover round), Funds, Purchase orders, Invoices
- Course reserves
  - Course Information
  - Reading lists
  - Citations

3.3 Authority Data - Alma Community Zone includes global authorities (local authority records may be loaded using Alma standard tools post Go Live Date).

3.4 If you subscribe to managing digital resources in Alma, additional digital collections and objects may be set up (beyond the scope described in the above sections) and loaded using Alma standard tools post Go Live Date:

- Digital Metadata records and Digital objects (files) can be ingested into Alma by the Customer
- Remote Digital repository metadata (where the Digital objects (files) remain remote to Alma) can be harvested into Alma via OAI-PMH
  - In both above cases, a URL/path to each Digital object (file) must be provided in a field of each Digital Metadata record
  - In case the Digital objects (files) will be ingested to Alma, they must be directly accessible via an unrestricted URL/path

3.5 Ex Libris will:

- Provide migration guides and forms
- Provide tools/guidelines for data extraction from Ex Libris source systems
- Provide guidelines for reviewing migrated data in Alma
- Provide support during the migration and review period
- Data migration services support single standalone institutions whereby each source database represents a single organization and Alma institution.
- In case any source database does not represent a single organization, there may be a need to split or combine the source database data during migration. In such cases, Ex Libris will:
  - Split data from Ex Libris source ILS databases based on library/location codes indicated by the Customer in the relevant migration inputs. Note: Splitting data based on location/library is not intended for data cleanup, but for organizational separation only.
  - Combine data from multiple source databases. This does not include data de-duplication services, but rather appending data from each source system together into a single target Alma institution.

3.6 Customer will:

- Extract data from Ex Libris systems using Ex Libris-provided and supported tools.
- Extract data from Non-Ex Libris source systems following the data format requirements provided by Ex Libris (if the customer is unable to provide data in required formats in the project test load timeframe, the Alma project schedule will need to be re-scheduled)
- Provide input via migration forms
- Provide data structure description for non-Ex Libris source systems
- Provide input data for print to electronic transformation during migration (if required)
- Provide all input data in migration scope by test migration round delivery date
- Review and test data migrated to Alma and provide feedback in the defined time frame
- Review and test Alma configuration and workflows, and provide feedback in the defined time frame
- In case any source database does not represent a single organization, there may be a need to split or combine the source database data during migration. In such cases, Customer will:

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- Split data from non-Ex Libris source systems and provide to Ex Libris in separate files per organization/target Alma institution for separating organizations.
- Provide library/location codes in the relevant Ex Libris source system migration inputs for separating data. Note: Splitting data based on location/library is not intended for data cleanup, but for organizational separation only.
- Prepare combining organizations' data by aligning codes and policies prior to test round migration, where relevant, for organizations that are combining.

3.7 General

Data modification or clean-up of any type is not included in the scope of the migration. For purposes of the previous sentence, data modification and clean-up includes, but is not limited to the following:

- Eliminating duplicate records
- Correcting misspellings and errors
- Ensuring that there are consistent descriptions, punctuation, and syntax
- Resolving any other inaccuracies and inconsistencies relating to the data content

4. Network Zone:

4.1 Single de-duplicated central bibliographic catalog exists and is used by all member institutions in a single source system whereby all members share the same bibliographic identifier. The bibliographic records will be provided by Customer to Ex Libris to be used to populate the Network Zone. The bibliographic data must follow the data format requirements provided by Ex Libris.

OR

4.1 Single de-duplicated central bibliographic catalog is not used by all member institutions in a single source system. Customer will create a de-duplicated set of records for Ex Libris to populate the Alma Network Zone. The bibliographic data must follow the data format requirements provided by Ex Libris.

- All bibliographic records to be stored in the Network Zone must be provided to Ex Libris prior to test load round of migration with a unique "common identifier" in the 035 |a, 035 |z or 001 MARC fields, for instance OCLC id.
- Each matching bibliographic record from the Alma Institution Zone members with a common identifier will link to the "master" catalog record in the Alma Network Zone, while retaining any marked local fields (in the local field ranges supported by Alma as defined in the data format requirements) for that particular institution in the Alma Institution Zone.

OR

4.1 Single de-duplicated central bibliographic catalog is not used by all member institutions in a single source system. Ex Libris will provide migration services to create a single set of de-duplicated bibliographic records from ALL members' separate ILS databases to populate the Alma Network Zone. The bibliographic data must follow the data format requirements provided by Ex Libris.

- All bibliographic records to be stored in the Network Zone must be provided to Ex Libris prior to test load round of migration with a unique "common identifier" in the 035 |a, 035 |z or 001 MARC fields, for instance OCLC id. This field will be used both for de-duplicating across member institutions and for linking each Alma member institution's shared catalog records to the central Network Zone catalog.
- A "master" bibliographic record will be determined for Alma Network Zone population for each unique "common identifier" on a first come, first served basis - based on a list of ordered Alma institutions provided by the Customer – typically from largest to smallest institution.
- The "master" de-duplicated records determined across the Alma Institution Zones will populate the Alma Network Zone.

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- Each matching bibliographic record from the Alma Institution Zone members with a common identifier will link to the “master” catalog record in the Alma Network Zone, while retaining any marked local fields (in the local field ranges supported by Alma as defined in the data format requirements) for that particular institution in the Alma Institution Zone.
- The de-duplication scope described above is performed across Alma institution zones rather than within Alma Institution Zones, which is not included in the migration services - as noted in the General section above.

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ANNEX E-2

Ex Libris Rapido Implementation Services

Overview

Ex Libris Rapido institution(s): 58
Rapido implementation services covered by this Agreement include:

2. Project management, training, customer assistance
3. Configuration

Implementation duration for all institutions is expected to take up to one year. If the Customer would like to extend the Implementation timeline beyond the agreed upon duration, negotiation regarding the extended schedule and related costs will be conducted. Implementation services for Rapido may be offered on a group basis.

1. Project management, training, customer assistance

1.1. Services provided by Ex Libris:

- Kick-off meeting (Web-based)
- Project management
- Regular project calls
- Reporting and tracking of project progress, tasks and issues
- Guided implementation assistance, including configuration preparation and refinement
- Rapido “train-the-trainer" training (Web-based recorded)

1.2. Customer is responsible for appointing a project team and a project coordinator who will serve as the primary contact for the Ex Libris project manager. If required, relevant IT resources need to be provided by the Customer in accordance with the project plan.

1.3. Customer project team is responsible for attending “train-the-trainer” training. Customer project team is responsible for training local non-project team staff as needed.

1.4. Ex Libris shall provide ongoing implementation assistance via the Ex Libris CRM system (Salesforce) during the implementation project

1.5. Ex Libris uses “Basecamp”, a web-based project management tool, as a major communication platform during the implementation project. The customer project team is expected to use this platform, following guidelines provided by the Ex Libris project team.

2. Configuration

2.1. Includes configuration of and assistance with the setup of the following functional areas within Ex Libris Rapido:

2.1.1 Pods for physical and digital resources;
2.1.2 Lending and borrowing terms;
2.1.3 Rapido sets and workflows;
2.1.4 Primo VE related services for Rapido; and
2.1.5 Publishing library holdings to the shared holding index.

2.2. Ex Libris Project Team will provide assistance with product configuration mentioned above during the implementation project and after the ‘Go Live’ milestone until customer's Switch to Support.

2.3. Additional configurations and third-party integrations can be performed by Customer following the Switch to Support date. If the Customer would like Ex Libris to provide additional services following the Switch to Support, Ex Libris will provide a quotation for required services.

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ANNEX E-3

Post-Implementation Consulting Hours for Alma and Primo VE

Overview

The duration is limited to 30 Consulting Hours in total and is delivered remotely. The bank of consulting hours offered is valid for 12 months from the date of implementation project closure (Switch to Support STS). The Consulting Hours contract term cannot be extended. Consulting hours not used after the Consulting Hours contract term will be lost i.e. the customer will not receive a refund for unused hours.

1. **Scope and deliverables**
    1. Products in scope for Consulting Hours are Alma and Primo VE
    2. If required, Ex Libris will use a Web-based project management tool as the primary communication platform for the duration of this service, especially for remote assistance. The Customer is expected to use this platform following guidelines provided by Ex Libris
    3. Customer will submit topics for consulting sessions and trainings in advance and delivery will take place at a mutually agreeable time
    4. Ex Libris will record and track time spent on preparation, remote assistance, configuration, consulting, meetings, and other services against the allocated 10 consulting service hours
    6. Configuration of third-party systems, Primo VE UI customization, scripting, and data transformation and upload is not included in the services scope
    7. Consulting hours do not replace issues normally handled through Support
2. **Customer responsibilities**
    1. Customer will appoint a primary contact responsible for:
        1. Submitting service requests via the Ex Libris CRM system (Salesforce) and working with Ex Libris to define objectives and requirements
        2. Managing internal coordination and communication among relevant library or campus resources (such as IT)
        3. Coordinate services delivery with Ex Libris

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ANNEX F
SaaS Service-Specific Provisions

Provisions that apply specifically to Alma

1. DaaS – DATA AS A SERVICE

1.1. Both Customer and Ex Libris may make content and data available in connection with the SaaS Service. The intent is to make content and data available which may be useful to others. The rights in connection with this content and data are as set forth below:

(i) Customer may choose to post certain Customer Data into a community zone which is accessible by all of the SaaS Service customers (the "**Community Zone**"). Customer hereby grants to Ex Libris and to any customer of the SaaS Service a royalty-free, perpetual, irrevocable, worldwide, unrestricted license to use, copy, distribute, display, and create derivative works from, any Customer Data which is posted in the Community Zone (such derivative works, including any enhancements, enrichments or modifications, to be owned by Customer and subject to the same unrestricted license);

(ii) Material which Ex Libris posts to the Community Zone will continue to be owned by Ex Libris or its licensor;

(a) if it is owned by Ex Libris, then Ex Libris grants any user a royalty-free, perpetual, irrevocable, worldwide, unrestricted license to use, copy, distribute, display and create derivative works from, such material (such derivative works, including any enhancements, enrichments or modifications, to be owned by Ex Libris and subject to the same unrestricted license);

(b) if it is owned by a licensor, then the uses will be only those permitted by the licensor, which permitted uses shall be made known to the users of the Community Zone.

1.2. Notwithstanding anything else herein, as between the parties, material (excluding Customer Data) which Ex Libris posts to other products or data services, such as KnowledgeBase, or creates, such as indices based on other material, shall be owned by Ex Libris.

1.3. The parties agree that Ex Libris may replace the above-mentioned unrestricted license with a comparable Open License (as defined in Annex G).

Provisions that apply specifically to Primo/bX

1. If the Customer wishes to contribute usage logs to the bX service (the **"bX Service"**), the Customer shall provide access to the Customer's linking service, as specified in the Service FAQ available on Ex Libris' customer information site (currently: http://registration.service.exlibrisgroup.com/customer/faq.do?product=bx). All usage logs so contributed will be anonymized and the data will be encrypted during transfer from Customer's linking server to the bX server. The Customer agrees that all such data contributed to the bX Service will be used by the bX Service on a perpetual, irrevocable basis, whether or not Customer continues to contribute to the bX Service or terminates the Agreement.
2. Customer shall comply with, and shall use reasonable efforts that each end user complies with the Terms of Service for Central Discovery Index and the Central Discovery Index's Service Configuration and Display Guidelines, which can be viewed on the Customer Portal. Customer further agrees that it shall not, nor will it allow any end user or third party to:

2.1. Store or cache such data accessible through the SaaS Service (the **"Data"**) beyond the normal day-to-day use of an individual user;

2.2. Return or display in the Data search results snippets of full text that exceed one hundred and sixty one (161) characters in length;

2.3. Independently produce or display snippets in the Data search results when no such snippets are returned by the SaaS Service;

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2.4. Use the Data for or in connection with any application, product or service other than the SaaS Service;

2.5. Create or repackage a database containing material amounts of Data;

2.6. Merge Data with other data or records (whether or not obtained via the Central Discovery Index), in any manner.

2.7. Text mine, data mine or harvest metadata from the Data.

Provisions that apply specifically to Rapido

1. For purposes of the Rapido service, libraries are grouped together in broad categories known as "Pods", i.e., groups of libraries that agree to share resources with one another. By joining a Pod, Customer represents that it has the capability of providing services, in accordance with the terms of this Annex, to participating libraries ("Participants") in the Pod and agrees to provide such services by supplying materials from its collection ("Inter-Library Materials") using the Rapido service, in exchange for the ability to access the Rapido service to obtain materials from other institutions in that Pod that have entered into similar arrangements with Ex Libris.

2. The document delivery service of Rapido incorporates the RapidILL solution. By subscribing to Rapido, Customer commits to comply with the RapidILL terms below:

   2.1. Agree to reciprocity for document delivery requests; no charges are levied for articles and book chapters supplied by Participants.

   2.2. Agree to provide 24-hour turnaround time (Monday through Friday, holidays excluded) for lending requests in the following manner:
   - Locating and filling a request within 24 hours of receipt; or
   - Updating to unfilled, or bad citation, within 24 hours an item which cannot be located on the first retrieval attempt.

   2.3. Agree to transmit articles electronically through supported delivery protocols to provide high quality document delivery.

   2.4. Serious issues include lack of lending participation, consistently failing to handle requests within the established turnaround time guidelines, or lack of response to attempts at solution. These issues are dealt with by written notice, and failure to correct deficiencies will result in termination of service.

3. Copyright.

   3.1. Customer is solely responsible for complying with the copyright laws applicable to the Inter-Library Materials and Customer's activities and location(s), including, without limitation, those relating to inter-library loans. Among other restrictions, copyright law places limitations on what materials may be copied, how many copies may be made, as well as under what conditions and for what purposes copying may take place.

   3.2. Without limiting the generality of the foregoing, the Customer shall comply with the provisions of Section 108(g)(2) of the United States Copyright Law and the Guidelines for the Proviso of Subsection 108(g)(2) prepared by the National Commission on New Technological Uses of Copyrighted Works (the CONTU Guidelines) in reviewing and fulfilling requests through RapidILL.

   3.3. Without implying any obligation of Ex Libris to monitor the delivery and/or use of Inter-Library Materials, Ex Libris shall have the right to reject requests that fail to comply with applicable copyright provisions or which otherwise are not permitted under any license or contract Ex Libris may be subject to with respect to the work(s) requested.

   3.4. In no event shall Ex Libris or its licensors be liable to Customer or its users for (a) access or inability to access Inter-Library Materials; or (b) the lending and borrowing activities of Rapido customers; or (c) the nature and extent of use which Rapido customers and their users make of the materials made available through the Rapido service.

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ANNEX G

Definitions

Unless otherwise stated, references below to Sections, "Whereas" clauses and Annexes refer to such parts of this Agreement.

"Additional Quotation" means, as set forth in the "Whereas" clauses, a Quotation which may be added to Annex B by written agreement of the parties after the Agreement Effective Date.

"Additional Use Period" means a period of three (3) months following the Go Live Date of the SaaS Service during which Customer is permitted to continue using the Current Software.

"Affiliate" means, with respect to an entity, another entity that controls, is controlled by, or is under common control with, the first entity.

"Agreement" means this SaaS Subscription Agreement, including its Annexes.

"Agreement Effective Date" means the date set forth in the first paragraph of this Agreement, which is the date this Agreement goes into effect.

"Bibliographic Titles" means, the total number of descriptive metadata records managed within Alma, including both physical and e-book titles as well as locally managed authority records. This number excludes e-journal titles and digital metadata record counts.

"Community Zone" means the part of the Alma SaaS Service as further described in Annex F, where Ex Libris and the customers of the SaaS Service, have the option to load metadata, electronic resource and collection definitions (also known as the Knowledge Base) and authority records to be used by all participating customers, to streamline resource management processes, including ordering, cataloging, discovery, and related functions such as context sensitive linking services for end users, authority control and analytics.

"Current Agreement(s)" means those previously entered software license or subscription agreement(s) described in the "Whereas" clauses.

"Current Software" means the software and/or services currently used by Customer and listed on Annex A under the caption "Current Software", pursuant to licenses or subscriptions granted by Ex Libris (or an affiliate) under and in accordance with the Current Agreements.

"Customer" means, as set forth in the first paragraph of this Agreement, the subscribing party that has entered into this Agreement with Ex Libris.

"Customer Data" means, as set forth in Section 9.1, business information, Personal Information or other data provided by or on behalf of Customer for storing and/or processing in an Ex Libris Service.

"**Digital Metadata Records**" means the number of descriptive metadata records (currently MARC, Dublin Core) managed within Alma for digital collections, regardless of where the objects (files) are stored (which may be either in another local digital repository or in the Alma cloud storage).

"**Digital Object Files**" means the digital objects/files stored in the Alma Digital storage. Alma currently makes use of Amazon S3 cloud storage as further described in the relevant Annex F.

"Documentation" means, as set forth in Section 4.3, materials published by Ex Libris for use by subscribers to the Ex Libris Service, including manuals and other materials.

"Ex Libris" means the Ex Libris entity named in the first paragraph of this Agreement.

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"**Ex Libris Identity Service**" means an optional service made available to customers of Alma, Primo/Summon (when bundled with Alma) and/or Leganto SaaS Services for the sole purpose of authenticating users logging into the SaaS Services. The Ex Libris Identity Service is intended only to authenticate Customer's authorized users who cannot be authenticated by Customer's institutional authentication service. Customer shall be subject to the guidelines set forth in the Ex Libris Identity Service Documentation, including with respect to compliance with uniform password policies (such as length and complexity) as set by Ex Libris from time to time.

"Ex Libris Services" means, collectively, SaaS Services and any other solutions and services provided by Ex Libris under this Agreement on a license or subscription basis.

"FTE's" consisting of the following categories of individuals:

(i) then-currently enrolled students;
(ii) then-current faculty (i.e., professors, lecturers and instructors); and
(iii) then-current other personnel (e.g., library staff, university administrators etc.)

"Go Live Date" means the date on which the Customer first uses the SaaS Service for commercial or production purposes, or makes the SaaS Service generally available to Customer's users, or uses the SaaS Service in any way beyond testing.

"Implementation Services" means, with respect to the relevant Ex Libris Service, the implementation services set forth on Annex E to this Agreement, as set forth in Section 3.1.

"Initial Quotation" means, as set forth in the "Whereas" clauses, the Quotation(s) attached to this Agreement as Annex B as of the Agreement Effective Date.

"Initial Term" means, with respect to a Subscription, the period of time beginning on the Subscription Effective Date and ending upon the expiration of the number of years set forth in Section 10.1 (unless earlier terminated).

"Licensor Data" means third-party data or information resources that may be accessed via the Ex Libris Service.

"Named Users" means, Customer's users that have been entitled by the Customer with unique login credentials to the SaaS Service. Named Users may include Customer's employees, library student assistants, temporary staff, consultants, or contractors.

"Open License" means a license which allows a copyright owner to permanently relinquish copyrights to data of a bibliographic nature for the purpose of contributing to a commons of creative, cultural and scientific works that the public can reliably, and without liability for later claims of infringement, build upon, modify, incorporate in other data, reuse and redistribute freely in any form and for any purpose, including, without limitation, commercial purposes. Open Data Commons Public Domain Dedication and License (PDDL) and Creative Commons (CC) license are two of several public copyright licenses that are considered Open Licenses.

"Personal Information" means, as set forth in Section 9.3, personal information of Customer's permitted users, such as its staff and patrons, and other third parties.

"**Primo Documents**" means, any full text or metadata records which are harvested (from Alma or other library sources such as institutional digital repositories) and made discoverable via Primo. The average record size of all Primo Documents must be under 5kb.

"Quotations" means, as set forth in the "Whereas" clauses, collectively the Initial Quotation and any Additional Quotations.

"Renewal Term" means, with respect to a Subscription, each of an indefinite number of successive, automatically renewing one-year terms, as set forth in Section 10.1.

"SaaS" means Software as a Service.

"SaaS Service" means, as set forth in the "Whereas" clauses, the SaaS Service(s) listed on Annex A under the caption "SaaS Service(s)".

"SaaS Service Contract Date" means, with respect to a SaaS Service, the date as of which that SaaS Service became a part of this Agreement. Accordingly, the SaaS Service Contract Date of a SaaS Service that was included on the Initial Quotation set forth on Annex B would be the Agreement Effective Date. However, the SaaS Service Contract Date of a SaaS Service that was included on an Additional Quotation subsequently prepared by Ex Libris, signed by the Customer and added to Annex B would be the date of the Customer's signature on such Additional Quotation (or the date of any other amendment to this Agreement by which the SaaS Service was added).

"SLA" means, as set forth in Section 2.1, the Service Level Agreement set forth on Annex D.

"Subscription" means the right to access and use the functionality of the Ex Libris Services, subject to the terms of this Agreement.

"Subscription Effective Date" means, with respect to a Subscription, the beginning date of that Subscription, as set forth on Annex C.

"Subscription Fee" means, with respect to the relevant Ex Libris Service, the subscription fee set forth on the relevant Quotation, as updated from time to time in accordance with the terms of this Agreement.

"Support Services" means, as set forth in Section 2.1, the maintenance and support services relating to the SaaS Service specified in the SLA.

"Term" means, with respect to a Subscription, the Initial Term and any Renewal Terms, as set forth in Section 10.1.

"Termination Assistance Period" means, as set forth in Section 10.4, the 30-day period immediately following the expiration or termination of a Subscription, during which Ex Libris will, upon Customer's request, make the Customer Data available to Customer for download.

"Third Party Programs" means, as set forth in Section 3.3, non-Ex Libris programs and services that interoperate with the Ex Libris Services.

"**Unique e-Journal Titles**" means, the total number of e-journal titles obtained by counting e-journals once even if they are available from multiple sources. This includes all e-journal titles managed in Alma and is not dependent on the manner they are accessed or acquired (e.g. subscriptions from content providers, open access collections, databases, etc.).

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STATE OF NORTH CAROLINA **NC Community College System (NCCCS)** **Distance Learning**	**REQUEST FOR PROPOSAL NO. 50-2425002**
	Contract Name: NCCCS-Integrated Library System
	Bid Opening Date: August 18, 2025
Refer ALL inquiries regarding this RFP to: Grant F. Braley, Director of Procurement & Auxiliary Services (919) 807-7199 braleyg@nccommunitycolleges.edu	Issue Date: July 3, 2025
	Commodity Code: 811120 - Data Services
	Purchasing Agency: NCCCS
	Requisition No.: N/A

OFFER

The Purchasing Agency solicits offers for Services and/or goods described in this solicitation. All offers and responses received shall be treated as Offers to contract as defined in 9 NCAC 06A.0102(12).

EXECUTION

In compliance with this Request for Proposal (RFP), and subject to all the conditions herein, the undersigned offers and agrees to furnish any or all Services or goods upon which prices are offered, at the price(s) offered herein, within the time specified herein.

Failure to execute/sign offer prior to submittal shall render offer invalid. Late offers are not acceptable.

OFFEROR: Ex Libris (USA) Inc.			
STREET ADDRESS: 789 E Eisenhower Pkwy		P.O. BOX:	ZIP:
CITY, STATE & ZIP: Ann Arbor, MI 48108		TELEPHONE NUMBER:	TOLL FREE TEL. NO
NAME & TITLE OF PERSON SIGNING: Tim McGee, VP Sales Operations		FAX NUMBER:	
AUTHORIZED SIGNATURE: Signed by: Tim McGee 79DFF63810614F1...	DATE: August 6, 2025 | 12:30:44 PM PDT	E-MAIL: timothy.mcgee@clarivate.com	

Offer valid for one hundred eighty (180) days from date of offer opening unless otherwise stated here: ____ days

ACCEPTANCE OF OFFER

If any or all parts of this offer are accepted, an authorized representative of Purchasing North Carolina Community College System shall affix his signature hereto and any subsequent Request for Best and Final Offer, if issued. Acceptance shall create a contract having an order of precedence as follows: Best and Final Offers, if any, Special terms and conditions specific to this RFP, Specifications of the RFP, the NC Department of Information Technology Terms and Conditions, and the agreed portion of the awarded Vendor's Offer. A copy of this acceptance will be forwarded to the awarded Vendor(s).

FOR NCCCS USE ONLY

Offer accepted and contract awarded this date 3/19/2026, as indicated on attached certification,

by DocuSigned by: Dr. Jeff Cox, President 265D813B0091426... (Authorized representative of NCCCS).

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Attachment H: Financial Review Form....74

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1.0 ANTICIPATED PROCUREMENT SCHEDULE

The Agency Procurement Agent will make every effort to adhere to the following schedule:

Action	Responsibility	Date
RFP Issued	Agency	7/3/2025
Written Questions Deadline	Potential Vendors	7/21/2025
Agency's Response to Written Questions/ RFP Addendum Issued	Agency	7/29/2025
Offer Opening Deadline	Vendor(s)	8/18/2025
Offer Evaluation	Agency	8/21/2025
Selection of Finalists	Agency	9/18/2025
Oral Presentations and/or Product Demonstrations by Finalists	Selected Vendors	10/6/2025-10/9/2025
Negotiations with Finalists	Agency designees and selected Vendor(s)	10/10/25-11/3/2025
Best and Final Offers Deadline from Finalists	Selected Vendors	11/3/2025
Contract Award	Agency	11/21/2025
Protest Deadline	Responding Vendors	15 days after award

2.0 PURPOSE OF RFP

2.1 INTRODUCTION

The purpose of this RFP is to solicit offers for a modern, user-friendly, Software as a Service (SaaS) system that fully integrates the patron records and bibliographic database offerings of the North Carolina Community College System (NCCCS or the System) in a centrally accessible platform that allows holdings to be stored, accessed, tracked, and reported in a seamless management system. This system shall provide a scalable solution that will include up to 58 community colleges and their satellite campus/community libraries with support and consistent services from the Vendor. This modern system shall integrate seamlessly with interoperability and real-time connection with discovery services and integrated third-party applications.

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2.2 AGENCY BACKGROUND

In 1998, the N.C. Division of Purchase and Contract mandated that the NCCCS survey the marketplace to determine if a more cost-effective library automation option was available than what was in place at NCCCS at that time. Comprehensive system specifications were developed and reviewed by all 58 of the community college libraries. An RFP was issued for the purchase of permanent software licenses and computer hardware. The resulting contract was awarded to Sirsi, Inc. and has continued since December 1999.

On April 19, 2013, the State Board of Community Colleges (SBCC) approved a request to continue the Integrated Library System (ILS) with an upgrade to a SaaS environment during the State's 2013-14 fiscal year. State IT Procurement approval for the SaaS upgrade was received June 26, 2014, and the migration occurred in Fall 2014. Moving to a SaaS environment reduced hardware costs and allowed an increase to the library title limit from 1 to 1.5 million titles. Upgrades and maintenance are performed during non-business hours resulting in a service level of 99.9% up time. There were 52 of 58 community colleges using the SirsiDynix platform until 2023.

On May 17, 2024, the State Board of Community Colleges requested the System Office to post an RFP for the ILS after 51community colleges migrated to an open-source library platform as the result of the Library Services and Technology Act (LSTA) grant process with the State Library of North Carolina.

SirsiDynix currently provides software licensing and maintenance support for the current Unicorn Symphony library system. Unicorn is a proprietary software product that is only available from SirsiDynix. This ILS is currently shared by a consortium of five North Carolina Community Colleges.

2.3 SUMMARY OF PROBLEM STATEMENT

As technology platforms continue to evolve, it is incumbent for systems of higher learning to update tools, resources, and purchasing agreements to adapt and expand library infrastructure environments. The NCCCS desires a new contract with a SaaS ILS Vendor to achieve a more user-friendly interface, to provide efficient and user-friendly reporting capabilities, to integrate seamlessly with current and desired discovery services to retrieve requested content for academic purposes, to provide a modern system that reduces amount of staff time required for daily operations and maintenance, and ensures a system that has a capacity to manage over 1.3 million holdings and is capable of scalable growth. This system shall provide seamless interlibrary loan (ILL) functionality.

2.4 CONTRACT TERM

A contract awarded pursuant to this RFP shall have an effective date as provided in the Notice of Award. The term shall be three (3) years and will expire upon the anniversary date of the effective date unless otherwise stated in the Notice of Award, or unless terminated earlier. The State retains the option to extend the Agreement for two (2) additional one-year periods at its sole discretion.

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These costs may include but are not limited to:

a. Base system software
b. Software License fees or costs
c. Customization costs
d. 3rd party software, if any, required for the operation of the system
e. Technical and user support documentation
f. Data migration cost per college
g. All onboarding costs inclusive of required third-party and vendor resource costs
h. Training including materials
i. Existing software upgrade/integration/training
j. Artificial intelligence – Generative AI integration
k. Storage costs
l. Admin technical support (provide all levels of cost based on 24/7/365 availability)
m. Faculty/staff/student user support costs (based on 24/7/365 availability)
n. Vetting cost for LTIs and integrations for applications.
o. Consultation hours
p. Costs for customization
q. Costs incurred if college migrate to or away from this solution
r. Other services (Other costs not included in the proposed solution, including any known future cost.)

4.2 PAYMENT SCHEDULE

Invoice to be paid at the start of the fiscal year on July 1, 2026. Invoices must include costs listed by line item.

5.0 EVALUATION

5.1 SOURCE SELECTION

A trade-off/ranking method of source selection will be utilized in this procurement to allow the State to award this RFP to the Vendor providing the Best Value and recognizing that Best Value may result in award other than the lowest price or highest technically qualified offer. By using this method, the overall ranking may be adjusted up or down when considered with or traded-off against other non-price factors.

a) Evaluation Process Explanation. State Agency employees will review all offers. All offers will be initially classified as being responsive or non-responsive. If an offer is found non-responsive, it will not be considered further. All responsive offers will be evaluated based on stated evaluation criteria. Any references in an answer to another location in the RFP materials or Offer shall have specific page numbers and sections stated in the reference.
b) To be eligible for consideration, Vendor's offer must substantially conform to the intent of all specifications. Compliance with the intent of all specifications will be determined by the State. Offers that do not meet the full intent of all specifications listed in this RFP may be considered

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deficient. Further, a serious deficiency in the offer as to any one (1) factor may be grounds for rejection regardless of overall rank.

c) The Evaluation Committee may request clarifications, an interview with or presentation from any or all vendors as allowed by 9 NCAC 06B.0307. However, the State may refuse to accept, in full or partially, the response to a clarification request given by any vendor. Vendors are cautioned that the evaluators are not required to request clarifications; therefore, all offers should be complete and reflect the most favorable terms. Vendors should be prepared to send qualified personnel to Raleigh, North Carolina, to discuss technical and contractual aspects of the offer.

d) Vendors are advised that the State is not obligated to ask for or accept after the closing date for receipt of offer, data that is essential for a complete and thorough evaluation of the offer.

5.2 EVALUATION CRITERIA

Evaluation shall include best value, as the term is defined in NCGS § 143-135.9(a)(1), compliance with information technology project management policies as defined by NCGS §143B-1340, compliance with information technology security standards and policies, substantial conformity with the specifications, and other conditions set forth in the solicitation. The following Evaluation Criteria are listed in Order of Importance.

a. How well the Vendor's offer conforms with the specifications
b. How each Vendor's offer compares with other Vendors' offers
c. Total Cost of Ownership
d. Illustration(s) and/or explanations of adherence to Section 3.3 Enterprise Specifications
e. Adherence to Section 3.2 Security Specifications
f. Vendor Schedule/Timeline for completing work
g. Strength of references relevant or material to technology area(s) or Specifications and Vendor Past Performance (The Vendor may be disqualified from any evaluation or award if the Vendor or any key personnel proposed has previously failed to perform satisfactorily during the performance of any contract with the State, or violated rules or statutes applicable to public bidding in the State.)
h. Risks associated with Vendor's offer which include Vendor errata and exceptions including, but not limited to, data loss during migration, inadequate support and training, integration issues with the ERP system and licensed resources used by the college, as well as inadequate or costly storage

5.3 BEST AND FINAL OFFERS (BAFO)

The State may establish a competitive range based upon evaluations of offers, and request BAFOs from the Vendor(s) within this range, e.g., "Finalist Vendor(s)". If negotiations or subsequent offers are solicited, the Vendor(s) shall provide BAFO(s) in response. Failure to deliver a BAFO when requested shall disqualify the non-responsive Vendor from further consideration. The State will evaluate BAFO(s), oral presentations, and product demonstrations as part of the vendors' respective offers to determine the final rankings.

5.4 POSSESSION AND REVIEW

During the evaluation period and prior to award, possession of the bids and accompanying information is limited to personnel of the issuing agency, and to the committee responsible for participating in the evaluation. Vendors who attempt to gain this privileged information, or to influence

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3.0 RFP REQUIREMENTS AND SPECIFICATIONS

3.2 SECURITY SPECIFICATIONS

3.2.1 SOLUTIONS HOSTED ON STATE INFRASTRUCTURE - RESERVED

3.2.2 SOLUTIONS NOT HOSTED ON STATE INFRASTRUCTURE

The NCCCS Integrated Library System will be required to receive and securely manage data that is classified as Medium Risk/Restricted. Refer to the North Carolina Statewide Data Classification and Handling policy for more information regarding data classification. The policy is located at the following website: https://it.nc.gov/document/statewide-data-classification-and-handling-policy

To comply with the State's Security Standards and Policies, State agencies are required to perform annual security/risk assessments on their information systems using NIST 800-53 controls. This requirement additionally applies to all Vendor-provided, agency-managed Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) solutions which will handle data classified as Medium Risk (Restricted) or High Risk (Highly Restricted) data.

Ex Libris: Our Higher Education Platform (that includes Alma and Primo VE) currently has TX-RAMP Level 1 certification, which demonstrates that it is compliant with the NIST 800-53 Rev 5 controls. The HEP is currently undergoing an assessment for TX-RAMP Level 2 (we have submitted the documentation, and it is currently under review by the Texas DIR). Level 2 certification would apply to Moderate Risk data.

(a) Vendors shall provide a completed Vendor Readiness Assessment Report Non-State Hosted Solutions ("VRAR") at offer submission. This report is located at the following website: https://it.nc.gov/documents/vendor-readiness-assessment-report

Ex Libris: We have included a completed VRAR with our response.

(b) Vendors shall provide a current independent 3rd party assessment report in accordance with the following subparagraphs (i)-(iii) prior to contract award. However, Vendors are encouraged to provide a current independent 3rd party assessment report in accordance with subparagraphs (i)-

(iii) at the time of offer submission.

i. Federal Risk and Authorization Management Program (FedRAMP) certification, SOC 2 Type 2, ISO 27001, or HITRUST are the preferred assessment reports for any Vendor solutions which will handle data classified as Medium Risk (Restricted) or High Risk (Highly Restricted).

Ex Libris: We have provided a copy of our SOC2 and ISO 27001 certificate. Ex Libris is FedRAMP certified for our federal government partners.

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ii. A Vendor that cannot provide a preferred independent 3 rd party assessment report as described above may submit an alternative assessment, such as a SOC 2 Type 1 assessment report. The Vendor shall provide an explanation for submitting the alternative assessment report. If awarded this contract, a Vendor who submits an alternative assessment report shall submit one of the preferred assessment reports no later than 365 days of the Effective Date of the contract. Timely submission of this preferred assessment report shall be a material requirement of the contract.

iii. An IaaS vendor cannot provide a certification or assessment report for a SaaS provider UNLESS permitted by the terms of a written agreement between the two vendors and the scope of the IaaS certification or assessment report clearly includes the SaaS solution.

(c) Additional Security Documentation. Prior to contract award, the State may in its discretion require the Vendor to provide additional security documentation, including but not limited to vulnerability assessment reports and penetration test reports. The awarded Vendor shall provide such additional security documentation upon request by the State during the term of the contract.

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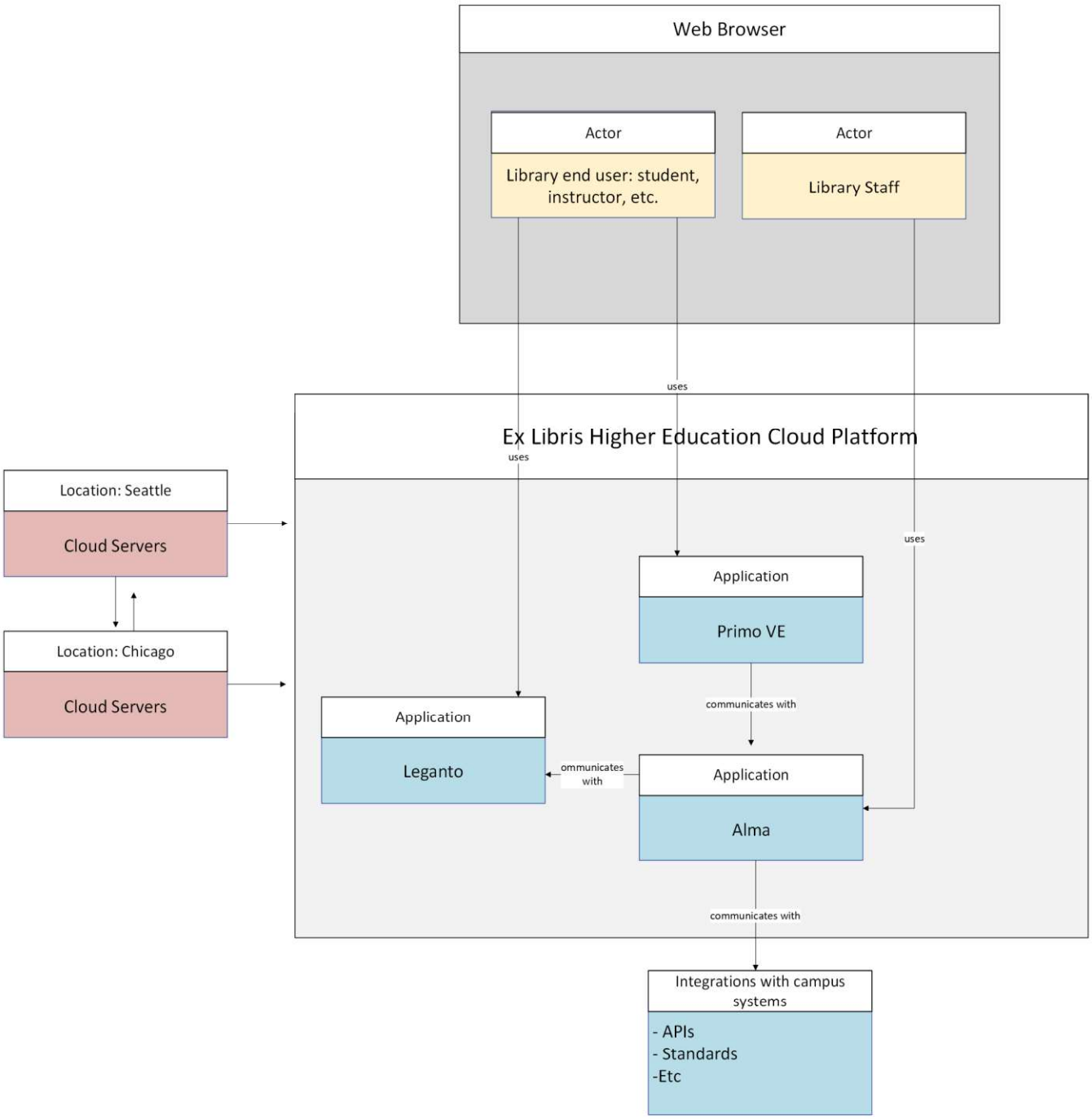
3.3 ENTERPRISE SPECIFICATIONS

3.3.1 ARCHITECTURE DIAGRAMS

The State utilizes architectural diagrams to better understand the design and technologies of a proposed solution.

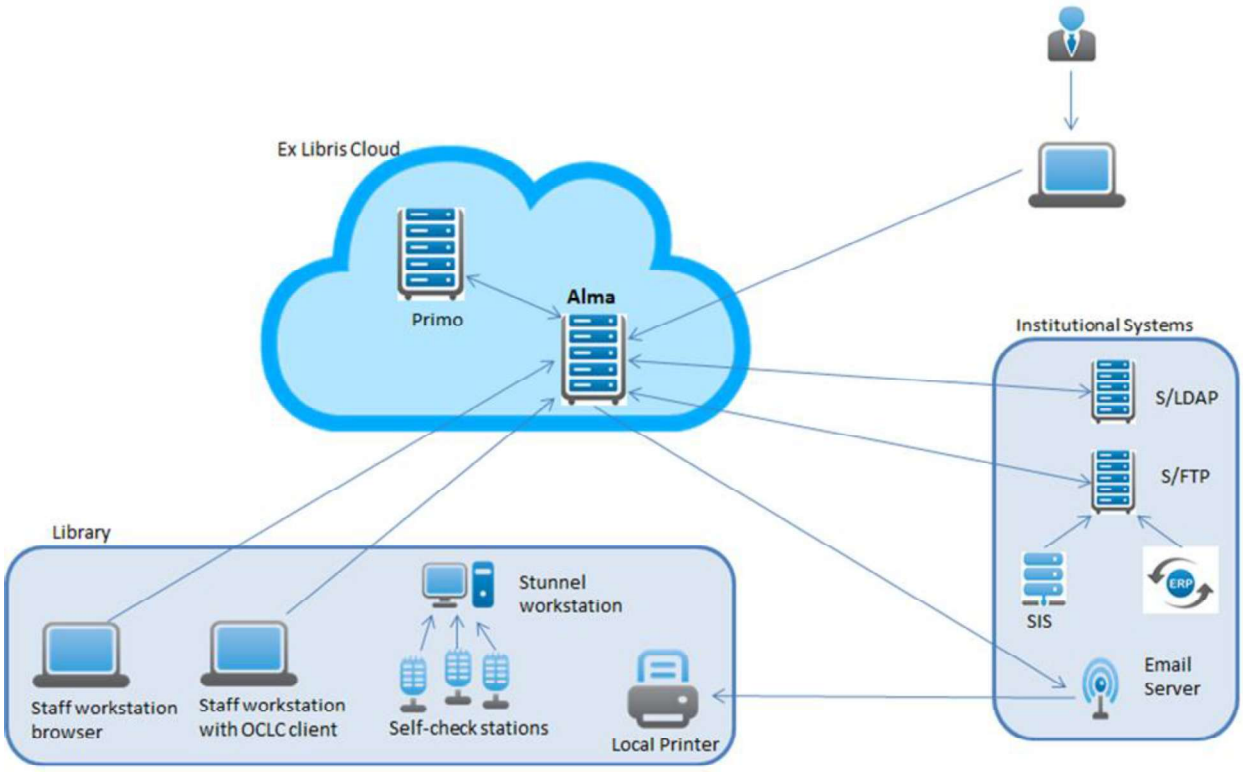
Ex Libris Architecture Diagram:

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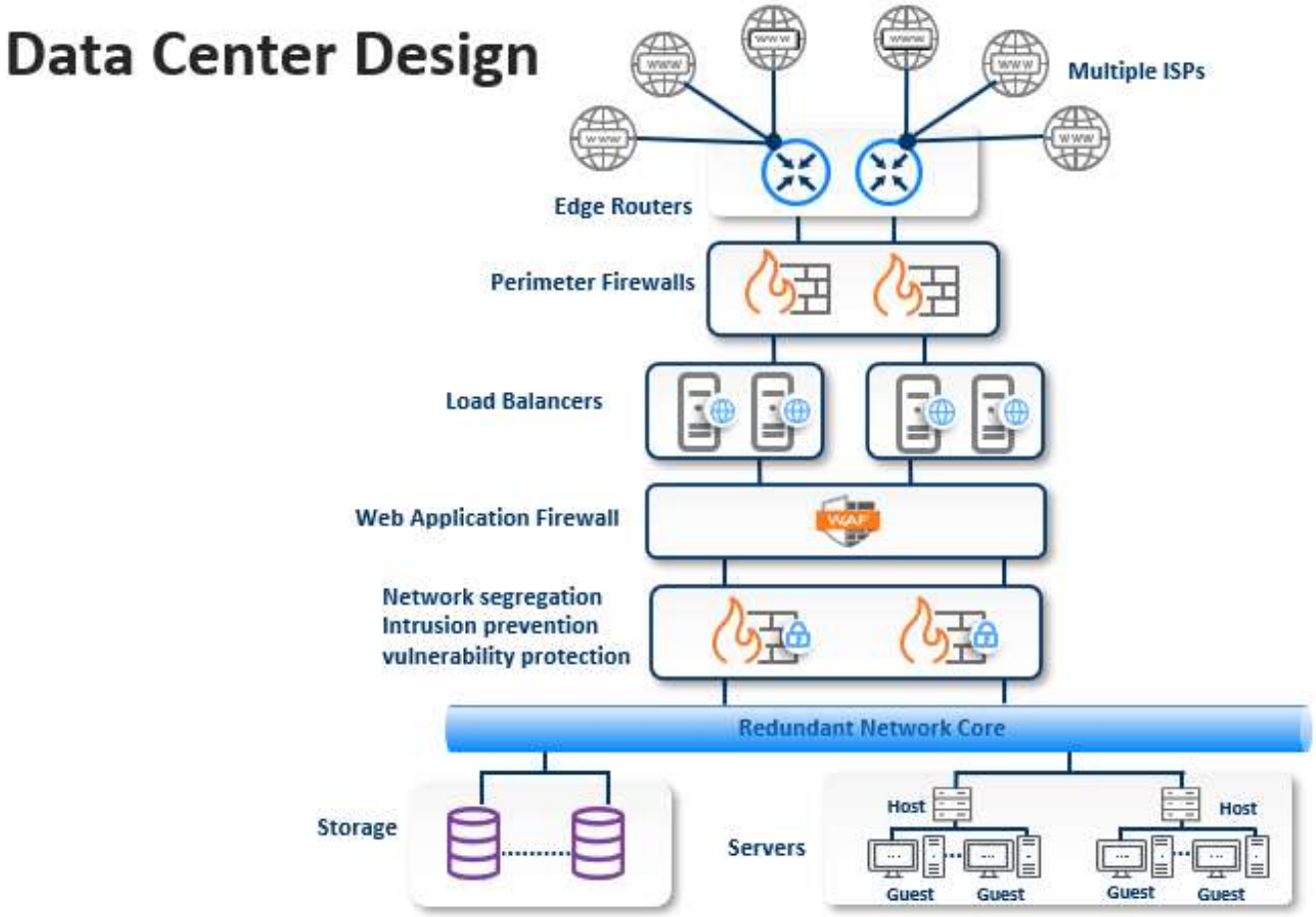
Alma Integrations Architecture:

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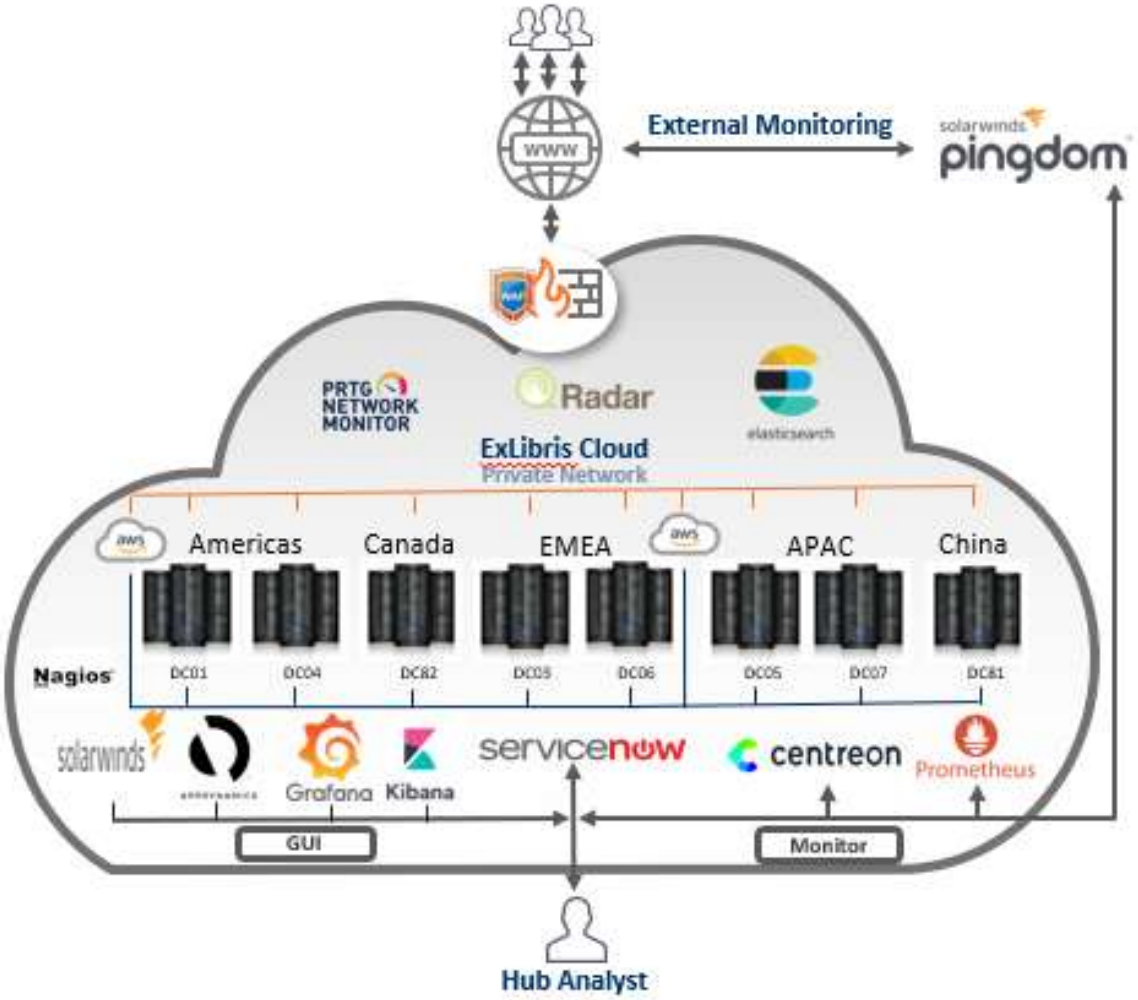
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Additional Diagrams:



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Ex Libris Monitoring:



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3.3.2 SOLUTION ROADMAP RESERVED.

3.3.3 IDENTITY AND ACCESS MANAGEMENT

The proposed solution must externalize identity and access management. The protocols describing the State's Identity and Access Management can be found at the following link: https://it.nc.gov/services/vendor-engagement-resources#Tab-IdentityAccessManagement-1241

Ex Libris: Noted, we have reviewed the website listed above and can integrate with a majority of the methods used.

Describe how your solution supports the above protocols, as well as making them available for application integration/consumption.

Ex Libris: Alma supports a number of authentication schemes, which are defined using Alma's Integration Profiles. An institution may choose to use more than one. Supported authentication schemes include:

- LDAP
- SAML2 based authentication such as Shibboleth
- OAuth based authentication with Facebook or Google
- CAS

In addition refer to the following link for more information - https://developers.exlibrisgroup.com/alma/integrations/user-management

This page has also been included as a PDF attachment.

3.3.4 INTEGRATION APPROACH

Describe proposed solution capabilities to interoperate with other solutions. Identify the standards supported, integrations platforms, adaptors, APIs, and the like.

Ex Libris: Ex Libris: Alma provides exceptional integration with a range of third-party applications and key enterprise systems used on campuses today, including for services such as financial and ordering systems, self-check, interlibrary loan, proxy services, collection agency services and ERP systems, and discovery.

Achieving Alma's seamless handshaking with external systems, integration points are based on both evolving and well-established trend market standards. Alma supports the exchange of data using interfaces like EDI, OAI-PMH, SIP2, NCIP, import and export metadata in MARC-XML format as well as extensive Restful APIs. In addition to standards, Alma's integration approach makes use of plugin -capabilities, allowing institution-specific adaptations to specific systems and needs. The framework for utilizing integration points with third-party systems is the Integration Profile. The Integration Profile is where integration definitions may be set up for many types of Alma-supported integrations, including systems such as:

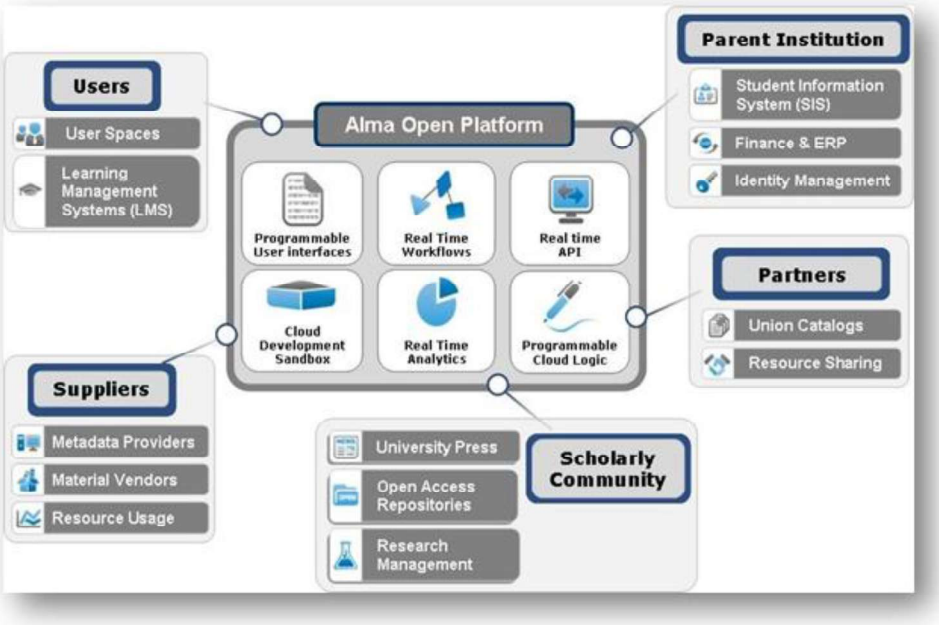
- Self-check

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- Resource sharing systems
- Link resolution and proxies
- Collection agency services
- Discovery interfaces
- Cataloging clients
- Learning management systems
- Financial management systems
- Student Information systems

A unified and centralized platform, the Integration Profiles provide a single interface for defining the different required attributes for a variety of integrated systems.

The diagram below shows the variety of integration interfaces of Alma with multiple third-party systems using its open platform.



The following are the most used integrations that are in production at current customer sites. This list is not exhaustive. Alma's integration profiles allow for other systems to be integrated that may not be listed here.

Bursar integrations:

- Oracle Financial
- SAP

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- Ellucian Banner (SunGard)
- Homegrown
- Oracle PeopleSoft
- Other
- TouchNet Cashiering
- Ellucian Colleague (Datatel)
- Agresso
- Microsoft Dynamics

Course Loader

- Azure
- Homegrown
- Blackboard
- Other
- Canvas
- Ellucian Banner (SunGard)
- Tribal (SITS)
- Moodle
- Oracle PeopleSoft
- Agresso
- Desire2Learn
- Campus Management
- SAP

LDAP

- OpenLDAP
- Other
- Microsoft Active Directory
- Novell eDirectory
- CAS
- Sun/Oracle LDAP
- Homegrown
- Shibboleth

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ERPs

- Agresso
- Blackbaud
- Ellucian Banner
- Ellucian Colleague
- Jenzabar
- Kauali Financial System
- Microsoft Dynamics
- Oracle PeopleSoft
- Oracle Financial
- SAP
- Symmertry
- Workday
- Other

Stack maps

- Map It
- Stack Map
- Other

Payments systems

- TRANSACT
- WPM

Other systems

- Google Console
- Handles
- Linked Data
- BX
- OCLC Connexion
- Springshare API
- SRU

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- Z39.50
- New Order API - GOBI, OASIS
- Webhooks

LTI Integration:

- Canvas
- Moodle
- Blackboard
- Desire2Learn
- Other
- SAKAI

Proxy Server

- EZ Proxy
- LIBProxy
- WAM
- HAN
- OpenAthens

Remote Storage

- Dematic ASRS
- W.B Meyer
- XML

RFID

- 3M - 896
- Other
- Bibliotheca - Liber8Connect
- Nedap
- D-Tech International
- Seret
- Lyngsoe Systems
- InfoMedis

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Self-Check

- Lyngsoe Systems
- **3M™** RFID Staff Workstation (Model 896)
- MK Solutions (https://www.mksolutions.com)
- Nexbib (www.nexbib.com) using the "Other" System Type on the Alma RFID Integration Profile
- D-Tech International (https://d-techinternational.com/technologies/rfid/)
- **Bibliotheca** (staffConnect / Liber8connet / Intellident)

SAML

- Shibboleth
- Other
- ADFS
- WSO2
- Azure
- Ping
- OneLogin
- Homegrown
- Feide
- AuthO

Social Login

- email
- Google
- Facebook
- Twitter

Users (Student Information Systems, Staff)

- Homegrown
- Other
- Oracle PeopleSoft
- Ellucian Colleague (Datatel)
- Ellucian Banner (SunGard)
- Campus Management

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- Tribal (SITS)
- Jenzabar
- SAP
- Workday
- Agresso
- Ellucian PowerCampus (SunGard)

Alma REST APIs provide access to data and workflows stored in Alma. The Developer Network is your key to getting the most out of these APIs. On the following pages, you'll find documentation for each of the interfaces, including a full description of the parameters and the data objects.

- Acquisitions
- Analytics
- Bibliographic Records and Inventory
- Configuration and Administration
- Courses
- Electronic Resources
- Resource Sharing Partners
- Task Lists
- Users and Fulfillment

Alma supports two main resource sharing workflows:

- P2P (Peer-to-Peer)
    - In this workflow, the borrowing library and the lending library communicate directly.

The following protocols are supported for P2P resource sharing:

- ISO 10160/10161
- ISO 18626
- NCIP
- ARTEmail
- BLDSS APIs

P2P Resource Sharing with Alma and the following systems are supported:

System	**Vendor**	**Functionality**	**Status**

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VDX	OCLC	Resource Sharing Process (ISO)	Production
Aleph	Ex Libris	Resource Sharing Process (ISO)	Verified
British Library	British Library	Resource Sharing Process (ARTEmail and BLDSS APIs)	Production
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process (SLNP)	Verified
ILL SBN	SBN	Resource Sharing Process (ISO)	Verified
Libraries Australia Document Deliver (LADD)	OCLC	Resource Sharing Process (ISO)	Production

- Broker-based
    - In this workflow, the borrowing library communicates with an ILL broker. The broker passes the request to potential suppliers and handles the request against the borrowing library.
    - Communication between Alma and resource sharing systems, such as OCLC Navigator, OCLC ILLiad, VDX, and Relais D2D, is done via NCIP 2.0 messages. Note that Alma supports the OCLC CIRC ILL and Relais application profiles for both borrowing and lending, as well as the responder role for the following NCIP messages: RequestItem, CheckOutItem, CheckInItem, AcceptItem, LookupUser.
    - Three integration points are typically part of this workflow:
        - OpenURL or another URL based integration for request submission.
        - Z39.50 integration for exposing the library's holdings availability to the other members of the resource sharing network. At times, systems require full publishing of the institutions' repository rather than rely on ad-hoc Z39.50 queries.
        - Integration for back office processing of the requests, at both borrower and lender sides.

Broker-based resource sharing with Alma and the following systems is supported:

System	Vendor	Functionality	Status	Notes

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ILL/D2D	Relais	• Submit Request (OpenURL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Production	Relais responds to "Submit Request" with request form. Relais is being tested for "Submit Request" via an API call
Navigator	OCLC/Atlas	• Submit Request (Static URL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Production	NRE responds to "Submit Request" with search interface
ILLiad	OCLC/Atlas	Submit Request (OpenURL) • Submit Request - Supplier of Last Resort (Email) • Locate and Availability (WorldCat) • Fulfillment (NCIPv2.0)	Production	ILLiad responds to "Submit Request" with request form, requiring login. Alma can send structured emails to a configured email address, from which ILLiad may be configured to import the emails and create internally managed borrowing requests.

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				It is possible to push borrower requests into ILLiad by a direct API call to ILLiad for further processing in ILLiad. It is possible to push patron records into ILLiad if the requesting patron's account has not been previously loaded to ILLiad.
VDX	OCLC	Fulfillment (NCIPv2.0)	Production	
OCLC WorldShare	OCLC	• Submit Request – Supplier of Last Resort • Locate and Availability (WorldCat) • Fulfillment (NCIP v2.0) Not Supported by Vendor	Production	It is possible to push borrower requests into OCLC WorldShare by an API call for further processing in WorldShare.
ShareIt	AutoGraphics	• Locate and Availability (OPAC	Verified	

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		Syntax of Z39.50) • Fulfillment (NCIPv2.0)		
InnReach via DCB	Innovative	• Patron File (Publishing) • Locate and Availability (Publishing) • Fulfillment (NCIPV1.0)	Production	Requires a script to mediate between Alma and Inn-Reach. See Alma – Inn reach integration.
InnReach via D2IR APIs	Innovative	Supported actions (Borrower and lender): • Request • Ship • Receive • Return • Check-in	Production	See InnReach API Implementation Guide
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process (SLNP)	Production	
GTBib-SOD	Kronosdoc	• Submit Request (OpenURL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Verified	No use of the OPAC syntax

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Clio II	Clio Software	• Submit Request (OpenURL) • Fulfillment (NCIPv2.0)	Verified	
OCLC Tipasa	OCLC	• Submit – Tipasa can be set as a General Electronic Service target, see blog • Submit Request – Supplier of Last Resort • Locate and Availability (WorldCat) • Fulfillment (NCIP v2.0), see blog	Production	It is possible to push borrower requests into Tipasa by an API call for further processing in Tipasa.
RapidILL	Ex Libris	• Publishing • APIs	Production	Alma Publishing Profile is used to update Rapid ILL with holdings information Additionally, requests created in Alma are pushed into RapidILL for further processing in RapidILL if the requested

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				resource is indeed available via RapidILL
ReShare	https://projectreshare.org/	• Submit Request using OpenURL or by pushing borrowing requests from Alma to Reshare • Locate and Availability using ReShare API • Fulfillment (NCIP v2.0)	Production	See ReShare Parameters

Alma supports the following standards:

- **MARC21** - Alma supports MARC21 bibliographic, holding and authority records
- **Dublin Core** - Alma supports Dublin Core/Dublin Core Extended
- **RDA** - Alma supports RDA as MARC encoded fields
- **Z39.50** - Alma supports z39.50 for resource sharing searches and external search resources (for import, copy cataloguing) as well as incoming searches
- **SIP2** - Alma supports communication over the SIP2 protocol, which is used primarily for communication with local self-service machines. The communication is bi-directional.
- **NCIP** - NCIP is used in Alma in the following areas: Broker Resource Sharing, Integration with Remote Storage Facility and NCIP Based P2P Resource Sharing
- **ISO ILL** - Alma supports ISO ILL messages for resource sharing. ISO ILL messages are based on the ISO 10160/10161 standards.
- **OpenURL** - Alma link resolver is based on the OpenURL standard.
- **BIBFRAME** - Ex Libris is implementing its BIBFRAME roadmap, that will enable institutions to gradually implement BIBFRAME with minimal disruption to their workflows. A couple of

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features are already available today. This includes publishing and viewing MARC records in BIBFRAME format.

- **MODS** - Records can be published in MODS format.

Furthermore, Alma supports:

- MARC Standards, including **UNIMARC**, **KORMARC** and **CNMARC**
- **MARCXML**
- **COUNTER 4**
- **SUSHI** (for loading COUNTER reports)
- **ONIX-PL** (Licenses)
- **RFID**
- **AACR** (MARC21 Version)
- **KBART** (import and export)
- **DCRM(B)** (as part of Cataloguing)
- **EDI/EDIFACT**
- **EOD** (Embedded Order Data)
- **OAI-PMH**
- **EAD** (Collection Export)
- **CSV** (Metadata Import for Digital content)
- **ARTEmail** (Resource Sharing protocol British Library)
- **SLNP** (Resource Sharing)
- **JSON-LD** (Linked Data)
- **RDA/RDF** (Linked Data)

Describe how the solution provides Single Sign On and integrates with the NCCCS Student Information System.

Ex Libris: For security reasons, no passwords are stored in Alma. Instead, Alma integrates with the NCCCS authentication infrastructure.

Alma supports a number of authentication schemes, which are defined using Alma's Integration Profiles. An institution may choose to use more than one. Supported authentication schemes include:

- LDAP
- SAML2 based authentication such as Shibboleth
- OAuth based authentication with Facebook or Google
- CAS

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Alma can authenticate users using either a federated single-sign-on authentication system (for example based on the SAML 2.0 browser SSO Profile) or using a non-federated authentication. Currently, non-federated authentication options include an LDAP-based authentication.

To go into a bit more detail, A SAML (see below for other SSO options) Integration Profile may be configured in Alma. In this case, Alma does not actively authenticate users. Instead, it turns to the configured SAML system to verify the user's identity.

Alma's implementation of SSO is based on protocols such as the SAML (2.0) protocol. Security Assertion Markup Language (SAML) is an XML-based open standard for exchanging authentication and authorization data between security domains, that is, between an identity provider (a producer of assertions) and a service provider (a consumer of assertions). SAML is a product of the OASIS Security Services Technical Committee.

Alma utilizes the SAML protocol to communicate with any SAML-compliant system, enabling it to establish Single Sign On (SSO) with compliant systems, such as Shibboleth based systems, Microsoft Active Directory, and others that are SAML-compliant.

Alternatively, an LDAP Integration Profile may be configured in Alma. In this case, the authentication of any external user will be done by Alma using a secure protocol to directly communicate with the institutional LDAP server that is configured in the profile.

Alma supports the import of user records.

The integration between Alma and a Student Information System (SIS) is configured in an integration profile of type "Users". If your institution has several SIS systems, a separate profile should be defined for each of them.

There are few usages in which Alma and SIS can be integrated:

The common usage is import and synchronize external users from SIS into Alma.

2 additional usages are available, but are not commonly in use:

- Export user blocks
- Export user

For more information please see our Developers Network site for full information and examples about the different integration options available with Alma - https://developers.exlibrisgroup.com...a/integrations

As stated above, the loading of external users from the Student Information System can be performed in one of two modes

1. Import and
2. Synchronize.

The synchronize modes is an ongoing load, used to update external users and add new ones. The IT department and the library must determine the identifier that Alma and the HR system have in common in order to provide a matching point when synchronizing external users in Alma with the incoming data from the HR system. This may be the primary identifier or any other identifier, unique cross-institution or cross-type. For each external user in the input file, the synchronization job attempts to find a match according to the defined match identifier. All the existing external users are checked, regardless of the SIS to which they initially belonged. (Internal users are not considered for matching purposes.)

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If no match is found, the synchronization job adds the user as a new external user or rejects the user, according to criteria selected in the external system profile. The addition of a new external user is similar to the addition of a new user via the import mode.

If a match is found (that is, the external user already exists in Alma), all the external information of the user is replaced as follows:

- Core information – All the fields are replaced by those in the input file. Only the following fields are not replaced if they were updated manually (or if they are empty in the incoming user record): User group, Job title, PIN number, User language.
- Related segments (identifiers, addresses, phone numbers, email addresses, notes, blocks, and statistics) – The existing external segments are deleted and the segments from the input file are added. Internal segments (that were added manually) are not deleted.

It might happen that a patron comes to the circulation desk, and the circulation staff finds that no such user exists in Alma. This can happen, for example, for a new student, whose information was not yet loaded from the student information system. In such a case, the circulation staff can perform a "fast registration" of the user: the user will be created manually as an external user. The information will be updated by the next synchronization.

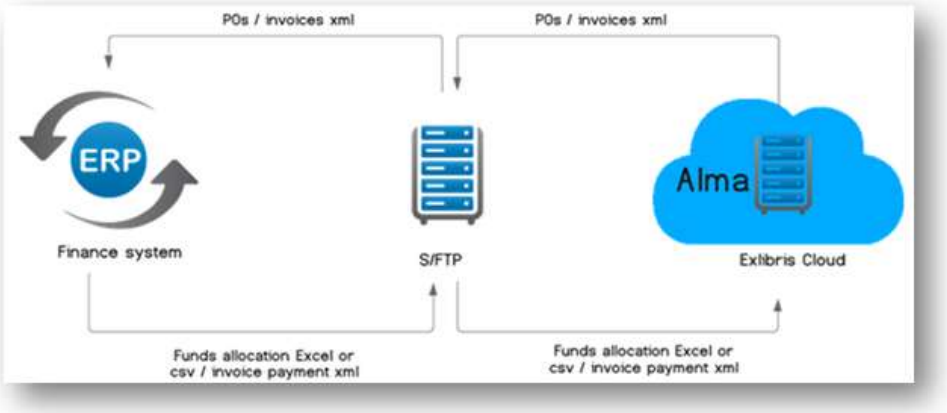
Provide the integration options available with your solution with Ellucian's Colleague ® and Banner ® ERP systems.

Ex Libris: Alma can integrate with NCCCS financial systems, including Banner and Colleague for payment for the following functions:

- Export Payment Requests - report to the ERP System on future purchases from the order state
- Import Payment Confirmations
- Export Orders
- Synchronize fund adjustments – this is the "reconciliation" process with the ERP system – load the fund allocations as they were created in ERP System

In general, the export and import processes between Alma and the financial system are performed using XML files that are placed at a predefined FTP location. These XML files can be fetched by the financial system (in the case of invoice or PO export) or by Alma (in the case of invoice import). Note that the fund allocation loader process is different because the format is an Excel or CSV file. This is illustrated in the following diagram:

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Here is a list of ERPs noted in the Alma integration profile configuration. Note that "Other" is also included in case a specific ERP is not listed:

- Agresso
- Blackbaud
- Ellucian Banner
- Ellucian Colleague
- Jenzabar
- Kauali Financial System
- Microsoft Dynamics
- Oracle PeopleSoft
- Oracle Financial
- SAP
- Symmertry
- Workday
- Other

3.3.5 DISASTER RECOVERY AND BUSINESS CONTINUITY

Describe the proposed solution capabilities related to the following areas:

Disaster Recovery Plan (DRP) – describe how proposed solution supports Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) metrics.

Ex Libris: Ex Libris has a well-developed backup plan consisting of multiple daily snapshots including a full daily backup. The backups are stored at the data center site and in a remote secured location over a private dedicated fast secured line. This guarantees that at any point in time, in case of a disaster, Ex Libris holds copies of the data onsite and in a remote and secured disk backup. On a regular basis, Ex Libris performs a system backup to back up application files,

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database files, and storage files. The privacy controls in practice at the company also apply to all backup files. All backup files are subject to the privacy controls in practice at Ex Libris. Ex Libris has a 10 week retention policy. The restore procedures are tested on an ongoing basis to ensure rapid restoration in case of data loss. Part of the overall Ex Libris recovery plan includes the recovery of the entire institution's data to the last point a backup was taken. Ex Libris takes several data snapshots per day and also maintains a full backup at an offsite remote secured location. This data includes the entire institution's data and configuration.

Ex Libris is responsible for recovery, and maintains a business continuity plan which is implemented following a disruption to service. In the event of a major or catastrophic event, data recovery is performed. After identifying salvageable equipment, early data recovery efforts first focus on restoring the operating system(s) for each system. Next, mission critical system data is restored. After system data is restored, individual customer data is restored. The length of time that the process takes depends on the point of time from which data is required to be restored and whether we can utilize our onsite backups or will we be required to utilize offsite backups. A full restore from onsite backups could be performed within 12 hours depending on the exact scenario and usage of the onsite backups. As stated above Ex Libris maintains a Business Continuity Plan, as well as a Security Incident Response Policy, both can be viewed and downloaded at our Knowledge Center:
https://knowledge.exlibrisgroup.com/Cross_Product/Security/Policies

System Backup – describe backup plan capabilities.

Part of the overall Ex Libris recovery plan includes the recovery of the entire institution's data to the last point a backup was taken. Ex Libris takes several data snapshots per day and also maintains a full backup at an offsite remote secured location. This data includes the entire institution's data and configuration.

Ex Libris is responsible for recovery, and maintains a business continuity plan which is implemented following a disruption to service.

In the event of a major or catastrophic event, data recovery is performed. After identifying salvageable equipment, early data recovery efforts first focus on restoring the operating system(s) for each system. Next, mission critical system data is restored. After system data is restored, individual customer data is restored.

The length of time that the process takes depends on the point of time from which data is required to be restored and whether we can utilize our onsite backups or will we be required to utilize offsite backups. A full restore from onsite backups could be performed within 12 hours depending on the exact scenario and usage of the onsite backups.

Recovery Time Objectives and Recovery Point Objectives

RTO - Recovery Time Objectives

Ex Libris RTO for our Higher Education Platform (Alma, Primo VE, etc) is up to **24 hours**.

RPO - Recovery Point Objectives

Ex Libris has adopted a rigid backup procedure to safeguard the customers' data. On a regular basis, Ex Libris performs system backups using best practice industry standards and centralized backup systems, including backups of the infrastructure network, operating systems, application files, database files, and storage files. This includes several backup snapshots a day of all the data. All backup files are subject to the privacy controls in use. Ex Libris has the ability to go back up to 24 hours to restore customer data. This information stored in a secured offsite remote backup facility that hold full daily backup. The restore procedures are tested on an ongoing monthly basis

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to ensure rapid restoration in case of data loss. In addition, a full copy of the data is maintained at a remote secured site, thus making sure that we always hold a full copy of the data for recovery purposes.

Ex Libris RPO for our Higher Education (Alma, Primo VE, etc) is up to **4 hours.**

For more details please see the BCP linked here: https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Ex_Libris_Cloud_Services_BCP_v2.9

Please also refer to our Business Continuity Plan (BCP): Ex Libris Cloud Services BCP - Ex Libris Knowledge Center (exlibrisgroup.com)

We have included a copy of our BCP as a PDF attached to this response.

Disaster Recovery Testing – describe the frequency and test procedures for end-to-end disaster recovery testing. Business Continuity Plan (BCP) – describe capabilities proposed solution can provide in support of agency's continuity of operations and incident responses.

Ex Libris: Yes, we have a Business Continuity and Disaster Recovery Plan in place.

Disaster Recovery Testing

Ex Libris performs **annual end-to-end disaster recovery (DR) testing** for its cloud services. These tests are designed to simulate real-world disaster scenarios and validate the effectiveness of recovery procedures. The testing process includes:

- **Failover to secondary data centers** to ensure service continuity.
- **Restoration of services from backup** systems.
- **Verification of data integrity** post-recovery.
- **Assessment of Recovery Time Objectives (RTOs)** and **Recovery Point Objectives (RPOs)** to confirm alignment with service level commitments.

This rigorous testing ensures that Ex Libris can restore critical services within defined timeframes and maintain operational resilience in the event of a disaster.

Business Continuity Plan (BCP)

The Ex Libris Business Continuity Plan (BCP) is structured to support uninterrupted service delivery and rapid incident response. Key capabilities include:

- **Identification of mission-critical services** and prioritization of their recovery.
- **Clearly defined roles and responsibilities** for incident response teams.
- **Established escalation and disaster declaration procedures**.
- **Geographically redundant infrastructure**, including secondary data centers to support failover.
- **Regular updates and testing** of the BCP to ensure ongoing effectiveness.
- **Comprehensive communication protocols** to keep stakeholders informed throughout an incident.

These capabilities enable Ex Libris to support the continuity of operations and ensure minimal disruption during emergencies.

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For more details, you can refer to our full plan at https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Ex_Libris_Cloud_Services_BCP_v2.9. as well as attached as a PDF to this response.

Our Incident Response plans are tested at least annually, with the last test conducted in August 2024, which was successful with no significant issues found.

We have included a copy of our BCP as a PDF attached to this response.

Provide the process for communicating with the customer regarding the root cause analysis of downtime events and how the vendor will credit NCCCS's account for lost instructional time.

Ex Libris: Deploying Alma as a SaaS offering, combined with the high uptime we commit to our customers, makes Alma monitoring a fundamental part of our operation. We separate monitoring into two main parts:

- 24x7 monitoring for real-time issues such as identification and resolution; and
- Proactive trend analysis and health check validation.

The 24x7 hub Team provides 24x7 first-line support (in tandem with regular support personnel) for all cloud production environments, using advanced monitoring and dashboard capabilities.

This type of monitoring is responsible for tracking system stability and forecasting provisioning needs to meet the system's uptime SLA:

Run operational reports to track abnormal behavior and growth trends such as :

- Total daily transactions
- Per instance transactions/sec
- Min hour transactions /sec
- Max hour transactions /sec
- Average transactions /sec
- Application health checks:
    - Validity of indexes, triggers, stored procedures
    - System job failures
    - External interfaces failures
- Running the operational BI
    - Provide uptime and performance reports for our customers
- Execute provisioning of new servers based on the analysis of system usage and capacity, taking into consideration lead time and required over-provisioning for meeting the uptime and performance SLA.

In addition, Ex Libris provides users with web access to view system status, including the ability to register for email alerts in case of performance issues or a system down event. The status page is available to all via the below link: http://status.exlibrisgroup.com and provides a live status on the system, with alerts in case of performance issues, planned maintenance or of a system down event.

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Ex Libris' standard SLA commitment is to deliver service availability of at least 99.5%, measured over any calendar year. The cloud environment is monitored 24x7, with staff attending to all issues in real time. Based on our experience with thousands of institutions deployed in our cloud environment, a number of which are large consortia, actual system availability is significantly higher. In practice we have constantly exceeded the annual 99.5% uptime SLA since the first day of going live.

Ex Libris believes in full transparency and post all our Uptime Reports on the web – you can review quarterly reports from the past 3 years including Root-Cause-Analysis reports for downtime events at http://knowledge.exlibrisgroup.com/Alma/Product_Materials/Uptime_Reports

3.3.6 DATA MIGRATION

Describe approaches available for data conversion and/or data migration to load current data into the proposed solution.

Ex Libris: Data migration is a substantial and integrated part of the Alma/Primo implementation project. Ex Libris has developed migration engines for various source systems including Sirsi Symphony and Evergreen. Data Migration to Alma involves extracting, transforming and transferring source system data and loading into the Ex Libris Alma cloud environment

More detailed information about the migration from **Symphony** to Alma can be found in the migration guide and as an attachment:
https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Migration_Guides_and_Tutorials/Symphony_to_Alma_Data_Delivery_and_Migration_Guide

More detailed information about the migration from **Evergreen** to Alma can be found in the migration guide and as an attachment:

https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Migration_Guides_and_Tutorials/Generic_Alma_Data_Delivery_and_Migration_Guide

The following describes the procedures for the actual migration process from the library of NCCCS's current system to Alma.

Data migration in Alma includes two rounds (test and cutover).

Migration services include:

The following data entities will be migrated from the Customer's current ILS and from the Customer's current Link Resolver

Please note: The migration of specific elements in scope may vary between source systems and are detailed in the relevant specific source system migration guides.

- Bibliographic records [MARC21]
- Inventory
  - Print - Item records, Holdings records
  - Electronic - Full Text Targets, Electronic Titles
- Patrons' name, identifier and borrower information (password and PIN code are not migrated)
- Fulfillment
  - Loans (current)
  - Hold requests (current on hold shelf)
  - Fines & Fees (current)

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  - Aggregate historical circulation statistics (loan count and last loan date at item-level)
- Acquisitions
  - Print - Vendors (vendors are migrated during the test round and are not re-migrated during cutover round), Funds, Purchase orders, Invoices
  - Electronic resource management – Licenses, Interfaces, Electronic inventory enrichment from the Customer's current ERM the Customer will be required to follow the data format requirements provided by Ex Libris
- Course reserves
  - Course Information
  - Reading lists
  - Citations

Provide timeline, all costs included and optional in a line-item summary, and security controls for data migration.

Ex Libris: The timeframe for Alma and Primo VE implementation until go-live can range from four months for a small, standard implementation to six months for a large, complex institution. For multiple institutions that are implementing together, we can support a longer project duration that would have all institutions going live at the same time or we can support a cohort or phased approach where groups of institutions would go live in waves. The project duration is defined in the contract. A high-level project plan indicating the major milestones is prepared and agreed upon by both sides. This plan serves as a commitment for the customer and Ex Libris to allocate the relevant resources, complete assigned tasks, and meet agreed upon deadlines for the implementation of the relevant solutions.

Here is an example of a high-level sample timeline:



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Security Controls for Data Migration

Migration File Validation Tool
Ex Libris provides a **Migration File Validation Tool** that helps ensure the integrity and correctness of data files before they are imported into Alma. This tool is used to:

- Validate the structure and format of migration files.
- Identify and correct errors prior to data ingestion.
- Ensure consistency with expected data schemas.

Data Validation and Testing
The migration process includes **testing of migrated data** to verify accuracy and completeness. This step is critical for maintaining data integrity and ensuring that sensitive information is handled securely during the transition.

Security Standards Compliance
Ex Libris aligns its security model with international standards such as **ISO/IEC 27001:2013** and **ISO/IEC 27018:2014**, which cover information security management and protection of personal data in the cloud.

Controlled Access and IP Restrictions
During and after migration, access to systems like Alma can be restricted by **IP address ranges**, ensuring that only authorized personnel can interact with the system during sensitive operations.

Our cost proposal includes our comprehensive data migration and implementation fees.

Describe how data is removed if a Community College chooses to migrate to another solution.

Ex Libris: The customer is in full control of the data stored through the SaaS service and has responsibility to determine the retention scheme for the customer data. The Ex Libris contract specifies that customer data will be available in industry-standard format for download upon termination or completion of the service (free of charge). The customer will have 30 days to download the data before Ex Libris deletes it. Upon request, Ex Libris will provide certification that the data deletion contract has ended, and that customer data is deleted permanently within the Ex Libris environment.

Provide all standard and optional costs for migration.

Ex Libris: Our cost proposal includes our comprehensive data migration and implementation fees.

3.3.7 APPLICATION MANAGEMENT

Describe how the proposed solution monitors and reports the metrics on system performance.

Ex Libris: Deploying Alma as a SaaS offering, combined with the high uptime we commit to our customers, makes Alma monitoring a fundamental part of our operation. We separate monitoring into two main parts:

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- 24x7 monitoring for real-time issues such as identification and resolution; and
- Proactive trend analysis and health check validation.

24x7 monitoring

The 24x7 hub Team provides 24x7 first-line support (in tandem with regular support personnel) for all cloud production environments, using advanced monitoring and dashboard capabilities.

Alma is designed with multiple layers of real-time monitoring of all facets of the solution. These layers include:

- Hardware (servers, storage, networking, FW, LB and all other devices).
- Operating system level monitoring.
- Database monitoring.
- Application-level logs reflecting errors including database issues, software issues, and business level issues.
- Application performance as measured in the servers.
- Internet performance; and
- Security.

All components (physical and logical) are fault-tolerant with redundancy. All critical components work in active-active mode, such that loss of a component is invisible to users. In some cases, failover may result in very short outages (of a few minutes), and the return to full availability is completely automatic.

Monitoring teams are equipped with processes for provisioning decisions based on application performance monitoring and degradation of service scenarios.

Proactive trend analysis and health check validation

This type of monitoring is responsible for tracking system stability and forecasting provisioning needs to meet the system's uptime SLA:

Run operational reports to track abnormal behavior and growth trends such as :

- Total daily transactions
- Per instance transactions/sec
- Min hour transactions /sec
- Max hour transactions /sec
- Average transactions /sec
- Application health checks:
    - Validity of indexes, triggers, stored procedures
    - System job failures
    - External interfaces failures
- Running the operational BI
    - Provide uptime and performance reports for our customers

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- Execute provisioning of new servers based on the analysis of system usage and capacity, taking into consideration lead time and required over-provisioning for meeting the uptime and performance SLA.

In addition, Ex Libris provides users with web access to view system status, including the ability to register for email alerts in case of performance issues or a system down event. The status page is available to all via the below link: http://status.exlibrisgroup.com and provides a live status on the system, with alerts in case of performance issues, planned maintenance or of a system down event.

Ex Libris will use commercially reasonable efforts to ensure that the SaaS Service is available for access and use in accordance with the Agreement at an annual Uptime Percentage (as defined in our SLA) of at least 99.75%, as measured over any calendar year.

To deliver this performance, all aspects of the physical infrastructure are designed to have no single point of failure in any of the cloud layers: electricity, access to internal networking and switches, load balancers, firewall and storage, as well as edge routers and multiple Internet Service providers (ISPs) to the data center, ensuring high availability and accessibility to the Alma service in the cloud.

Ex Libris believes in full transparency and posts all our Uptime Reports on the web – you can review quarterly reports from the past 3 years including Root-Cause-Analysis reports for downtime events
at http://knowledge.exlibrisgroup.com/Alma/Product_Materials/Uptime_Reports

Describe how the proposed solution manages user administration.

Ex Libris: Alma handles permissions for all library functions via role-based management. The system includes an out-of-the-box set of roles relevant to library management (e.g. Acquisitions, Fulfillment, Cataloguing, etc.) while also allowing for the definition of role templates that represent a pre-defined set of roles. The use of templates decreases the need to re-define the roles and privileges for each new user and also enables bulk update in case of a change to the template. While Alma offers quite granular permissions functionality, the interface for configuring permissions is intuitive and easy to use.

This user management functionality includes both public and staff users; their management and structure are the same, but the roles assigned to each may be different. A user role, such as User Manager or Administration, defines the user's functions and privileges. Administrators can assign multiple user roles to a user. Multiple Administrators can be defined. With this model staff users will only be provided with access to areas that are assigned to their roles and privileges. This also means that in certain areas they will be provided with read-only/view-only information.

The Alma Task List provides the staff user with information about tasks that need their attention. The Task List has hypertext links for easy navigation to areas of the system where records require manual intervention. The Task List is sensitive to the user's roles and privileges so that for example, only acquisitions staff will see ordering and invoice-related tasks.

An example of some of the roles included in Alma:

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Profiles List

	Name	Included Roles	Created By	Creation Date	Modified By	Modify Date
1	Acquisitions+Catal...	Trial Participant(Alma University),Vendor Manager(Alma University),Acquisitions Administrator(Alma University),Designs Analytics(Alma University),Fund Manager(Alma University),Invoice Manager(Alma University),Invoice Operator(Alma University),Ledger Manager(Alma University),License Manager(Alma University),Purchasing Manager(Alma University),Purchasing Operator(Alma University),Receiving Operator(Main Library),Trial Manager(Alma University),Trial Operator(Alma University),Catalog Administrator(Alma University),Cataloger(Alma University)	admin1	11/06/2011	Jim Benson	01/08/2014
2	Acquisitions Managerial Template	Vendor Manager(Alma University),Fund Manager(Alma University),Receiving Operator(Alma University),License Manager(Alma University),Purchasing Operator(Alma University),Purchasing Manager(Alma University),Acquisitions Administrator(Alma University),Ledger Manager(Alma University),Invoice Operator(Alma University)	admin1	03/07/2011	admin1	08/14/2011
3	Acquisitions Staff Template	Designs Analytics(Alma University),Fund Manager(Alma University),Invoice Operator(Alma University),License Manager(Alma University),Purchasing Operator(Alma University),Receiving Operator(Alma University),Trial Manager(Alma University),Trial Operator(Alma University),Trial Participant(Alma University),Vendor Manager(Alma University)	admin1	08/14/2011	admin1	08/14/2011
4	Administrator Template	Catalog Administrator(Alma University),Fulfillment Administrator(Alma University),User Administrator(Alma University),Acquisitions Administrator(Alma University),Repository Administrator(Alma University),Patron(Alma University),Resource Sharing Partners Manager(Alma University)	-	03/07/2011	-	03/07/2011
5	Cataloger	Physical Inventory Operator(Alma University),Cataloger(Alma University),Digital Inventory Operator(Alma University),Electronic Inventory	admin1	03/16/2012	Super User	03/16/2012

The use of profiles decreases the need to re-define the roles and privileges for each new user and enables bulk update in case of a change to the profile. While Alma offers quite granular permissions functionality, the interface for configuring permissions is intuitive and easy to use.

Alma supports the concept of automatic role assignment based on library-defined rules, for both groups and individuals. Any number of rules can be created, using the simple, intuitive interface shown below:

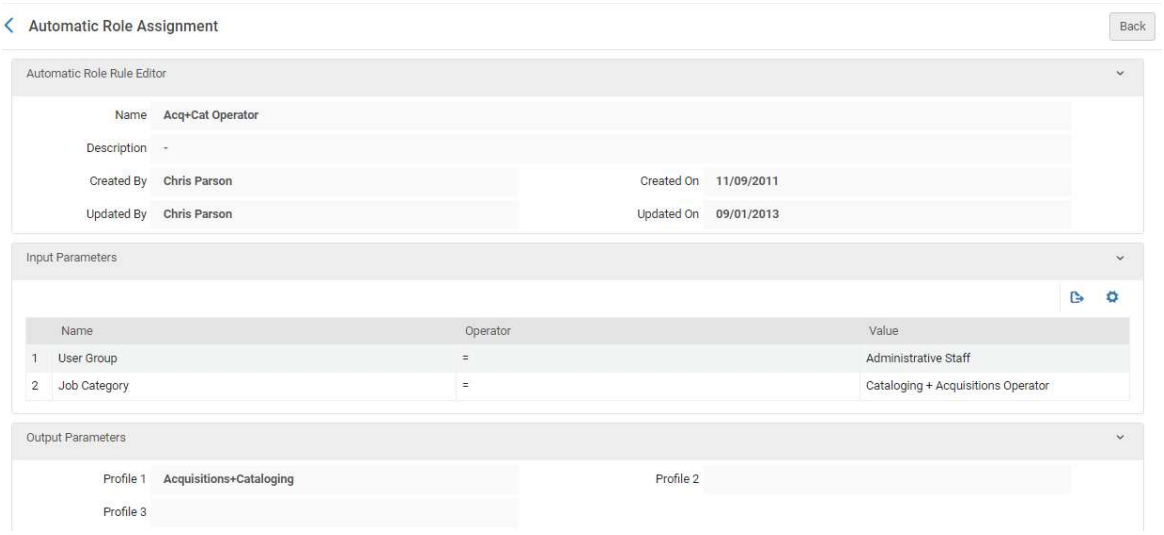
Add New Roles

Cancel | Add Role

		Role	Privileges
1	☑	Acquisitions Administrator	Manages Acquisitions configurations such as Acquisitions processes
2	☑	Fiscal Period Manager	Manages copy ledger, rollover job and edit fiscal period table
3	☐	Fund Manager	Manages all fund related actions
4	☐	Fund-Ledger Viewer	View only for funds and ledgers
5	☐	Invoice Manager	Manages invoice creation, review and approval actions
6	☐	Invoice Operator	Manages invoice creation and review actions
7	☐	Invoice Operator Extended	Allows delete and reassign invoices
8	☐	Ledger Manager	Manages ledgers for set up and allocations
9	☑	License Manager	Manages licenses, license amendments and can search for users
1...	☑	License Viewer	View only and print for licenses
11	☐	Purchase Request Manager	Manage purchase requests operations including edit, add fund and/or vendor, approve, reject, assign or reassign purchase requests. Includes search for users as well as search and view for vendors, funds and ledgers, and licenses
12	☐	Purchase Request Operator	Manage purchase requests operations including edit,add fund and/or vendor,approve,reject

Multiple rule parameters can be assigned to define the group for which a rule will apply. In the following screen, input parameters have been defined relating to the Job Category and the User Group, and output parameters define the relevant profile.

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All users added to the system after the creation of the rule, and matching a rule's input parameters, will automatically receive all the roles defined in that rule's output parameters.

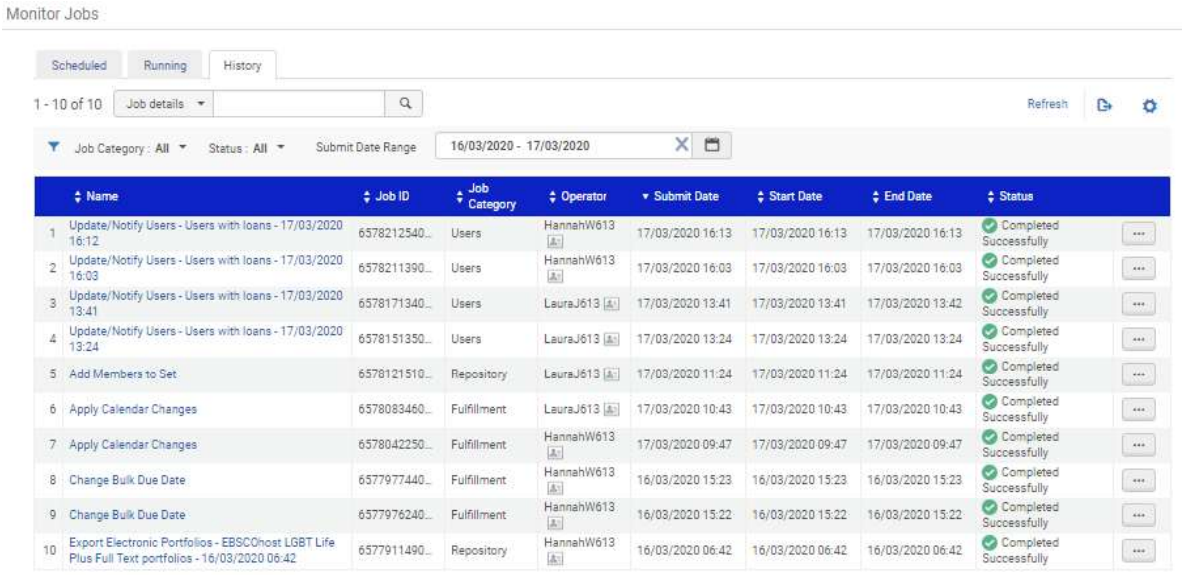
Describe the audit capabilities of proposed solution related to management of the application.

Ex Libris: At the cloud infrastructure level, Ex Libris collects and archives system logs and retains all records of access by Ex Libris cloud personnel. Since the service is a multi-tenant cloud service, these security/system logs include data related to all customers sharing the cloud environment and as such can't be provided. The application includes an audit trail of all access/logins to the customer data (customer institution) - this audit trail includes access records for all the logins of the customer staff and access records of Ex Libris support personnel. The audit trail report could be generated by the customer without the help of Ex Libris. Additionally, on a daily basis, the Security Officer reviews the daily reports of suspicious activity (e.g., failed authentication attempts).

Alma maintains an audit trail of all changes to data. This can be reported on using the Events subject area in Alma Analytics. Reports can be written and edited by staff with the Design Analytics role; System Administrators can provide access to the reports to staff with other roles if and as required. Alma also maintains audit trails for most types of records in the system within the Alma interface, which can be viewed by staff with appropriate roles.

Alma provides a variety of reports and audits to view and act upon processes, including imports, exports, synchronizations/updates and other routines. This is the case for staff-triggered as well as for system jobs which run automatically. These reports provide details about errors during the process.

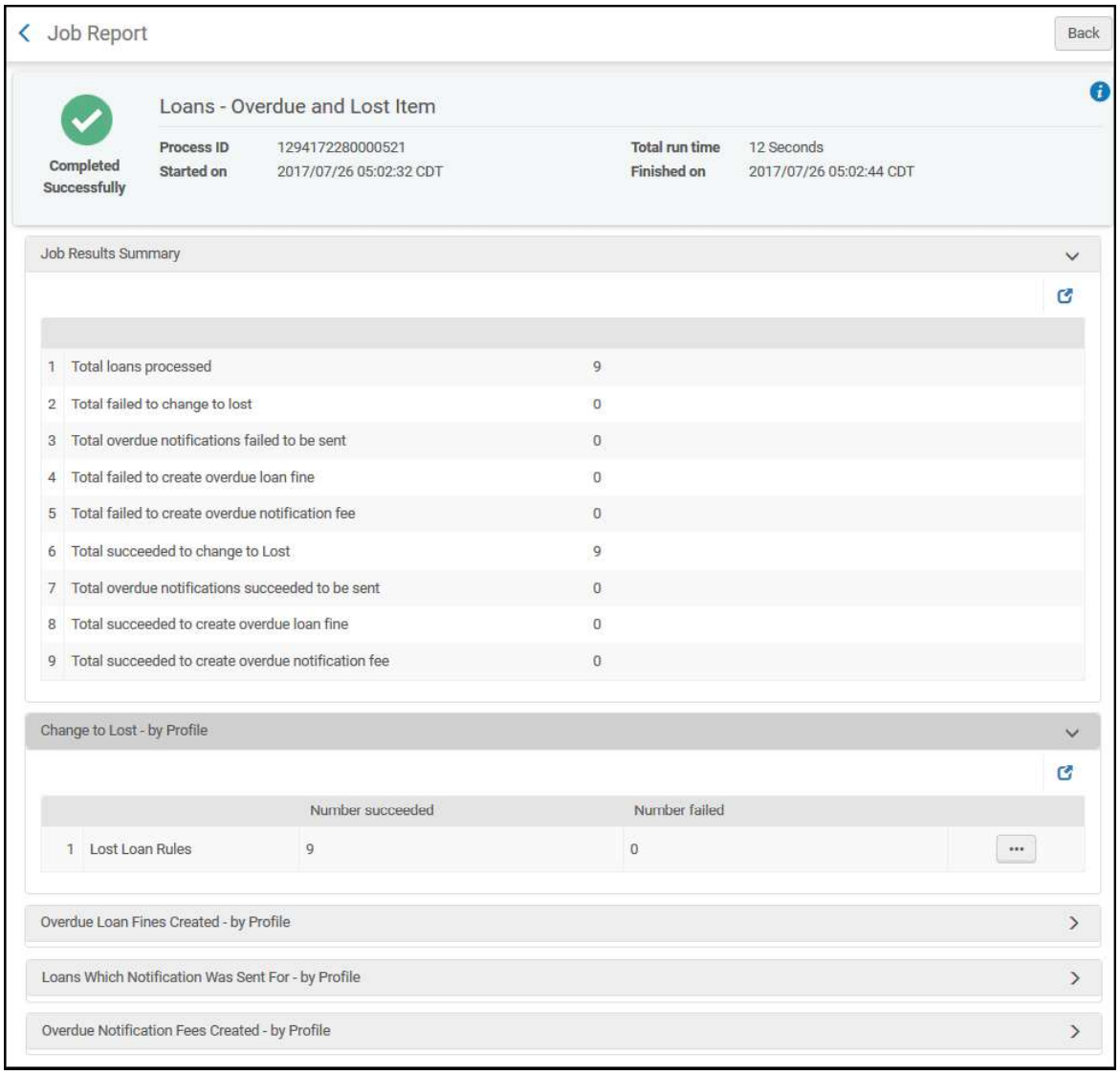
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Authorized staff can easily filter down the job history per status to retrieve processes that either failed or were not completed successful:



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Where errors appear, records that are subject are linked to descriptions that provide more information on the cause of the error. In many areas of the system Alma enables users to avoid malfunctions through making use of pre-defined options (e.g. drop-down) or checking the input instantly for missing or erroneous input.

System logs

It's important to note that access by Ex Libris' personnel to the cloud servers or database for troubleshooting or maintenance doesn't expose the personal data stored in the database as the personal data is encrypted and can only be decrypted via the Alma application itself.

Every access to the cloud server is logged and monitored by dedicated monitoring and logging tools.

Ex Libris is utilizing a leading access control system that performs the following:

Last login report (available in Alma)

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The staff login report shows the last login actions of all users. Below is an example of this report:

Staff Login Report

	User Name	Last Login
11	adams	06/09/2017
12	AdiA613	06/11/2017
13	admin	07/19/2016
14	admin1	06/16/2017
15	admin10	-
16	akline	06/14/2017
17	AmberH613	04/14/2016
18	Andrew	06/08/2017
19	andrew2	08/07/2016
20	andrewfrench	06/13/2017
21	andyt	05/03/2017
22	annaa	06/06/2017
23	aoliver	05/10/2017
24	apemble	05/11/2017

Full login report (available in Alma Analytics)

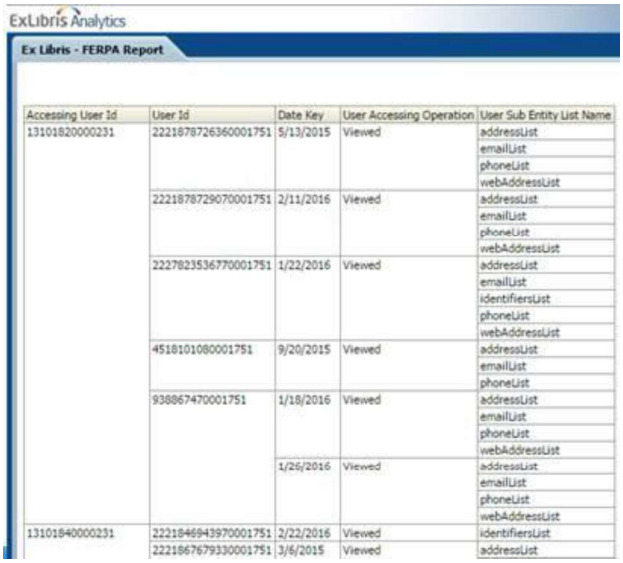
Login to Analytics may only be done via Alma. That is, there is no way to login directly to Alma Analytics. Only after the user is successfully authenticated and logged into Alma is it possible to login to Analytics.

The "Events" Subject Area of Alma Analytics may be used to report on the following events:

Report on user data views

An Analytics report shows which user's address and phone information has been viewed and when. Example below:

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ExLibris Analytics

Ex Libris - FERPA Report

Accessing User Id	User Id	Date Key	User Accessing Operation	User Sub Entity List Name
13101820000231	2221878726360001751	5/13/2015	Viewed	addressList
				emailList
				phoneList
				webAddressList
	2221878729070001751	2/11/2016	Viewed	addressList
				emailList
				phoneList
				webAddressList
	2227823536770001751	1/22/2016	Viewed	addressList
				emailList
				identifiersList
				phoneList
				webAddressList
	4518101080001751	9/20/2015	Viewed	addressList
				emailList
				phoneList
	938867470001751	1/18/2016	Viewed	addressList
				emailList
				phoneList
				webAddressList
		1/26/2016	Viewed	addressList
				emailList
				phoneList
				webAddressList
13101840000231	2221846943970001751	2/22/2016	Viewed	identifiersList
	2221867679330001751	3/6/2015	Viewed	addressList

In Alma Analytics, there is no further tracking of who viewed specific data and when, other than the example listed above.

Logging of activities done via Alma Analytics

This includes logs about every processed report in Alma Analytics – who did when/which report? This is particularly important in case of activity-related reports (e.g. "Cataloger activity").

3.3.8 ACCESSIBILITY

Describe how the proposed solution complies with industry and state accessibility standards and requirements.

Ex Libris: All Ex Libris' products and services comply with the requirements of the DDA including Part III, as well as those of the American Disabilities Act 1990 (ADA). Ex Libris is committed to ensuring that its existing software and planned releases comply with accessibility standards. Alma was developed in line with the WAI guidelines.

The application is compliant by applying a high-contrast level of the display, by adjusting the luminosity level of the display, and by applying alternatives to non-accessible methods, such as JavaScript or AJAX components. The application is also compatible with screen readers for the visually impaired.

The accessibility of the Primo interface for users (inc. HTML and CSS) has been validated by several rounds of usability studies. The Primo user interface was designed to comply with leading international accessibility and industry standards: The W3C Web Content Accessibility Guidelines 2.1, level "Double-A" Section 508 of the Rehabilitation Act (29 U.S.C. 794d). We adhere to the following accessibility guidelines:

- HTML Standards and Accessibility
- XHTML 1.0 Transitional
- WCAG 2.1 Guidelines Priority 2 (with exceptions)

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- Section 508 (with exceptions)
- CSS 3

The interface is navigable without a mouse and has been tested successfully with JAWS.

Provide product documentation that demonstrates how the proposed solution is digitally accessible or if not fully accessible, provide the roadmap with a timeline for remediation.

Ex Libris: The roadmaps for addressing accessibility deficiencies in Alma and Primo are outlined here:

- Alma Accessibility Statement (provided below)
- Primo Accessibility Statement (provided below)

Accessibility and Usability are included in each product roadmap.

Alma Roadmap - User Experience, Accessibility and Infrastructure (attached as PDF)

Primo VE Roadmap (attached as PDF)

Please note that the Primo interface will be undergoing an extensive refresh as part of the Next Discovery Experience User Interface. (attached as PDF)

Alma Accessibility Statement:

All library staff, including those with physical impairments, need to manage all their resources and unique materials.

Ex Libris, including Alma, is working towards providing all of our users with a fully accessible experience for research, insights, and analytics. We make every effort to ensure that our platforms and workflow solutions can be used by everyone. Ex Libris aims to meet Level AA of the W3C Web Content Accessibility Guidelines (WCAG 2.1), Section 508 of the US Rehabilitation Act for features and functions and EN 301 549 the European accessibility standard for ICT (Information and Communication Technology) products and services with as few exceptions as possible.

Document Purpose

This document illustrates the continuous effort to ensure that accessibility standards are built into our design and style guides and are included as part of the requirements across Alma and the Higher Education Platform software development and quality assurance pipelines.

In addition to our methodology, this document also illustrates the current status of Alma's compliance with WCAG 2.1, Section 508 and EN 301 549.

Accessibility Features and Gaps for WCAG 2.1

Alma users should be able to:

- Navigate most of the web application using a keyboard only
- Listen to most Web applications using a screen reader
- Navigate most of the Web applications using speech recognition software
- Zoom in up to 200% using browser tools without losing any text
- Control the density of the display across the system

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There may be some parts of the Web application that are not fully accessible:

- Alma is responsive but not optimized to be used on smartphones.
- A small number of features are challenging to navigate using only the keyboard.

If users have a disability and need to make their computer, tablet, or laptop easier to use, we recommend AbilityNet as a resource. We also recommend browsing free add-ons offered for Google Chrome and Mozilla Firefox.

Technical Information About Alma Site Accessibility

Alma is committed to making its web application accessible, in accordance with:

- Level A and Level AA of the W3C Web Content Accessibility Guidelines (WCAG 2.1).
- Section 508 of the US Rehabilitation Act for features and functions.
- EN 301 549 the European accessibility standard for ICT (Information and Communication Technology) products and services.
- The Americans with Disabilities Act (ADA).
- Public Sector Bodies (Web applications and Mobile Applications) (No.2) Accessibility Regulations 2018.

Compliance Level and Report

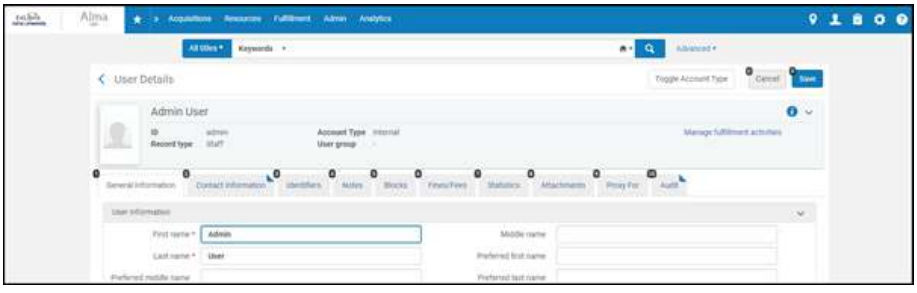
The full Alma Accessibility Conformance Report (WCAG 2.1 by VPAT 2.4) for Alma describes the web application's compliance with the Web Content Accessibility Guidelines v2.1 AA standard, Section 508 of the US Rehabilitation Act for features and functions and EN 301 549, the European accessibility standard for ICT (Information and Communication Technology) products and services.

The Alma team is committed to continually addressing major accessibility issues when found, as part of our annual audit and fix cycle.

Accessibility for the Alma Platform

Keyboard-Only Navigation and Keyboard Shortcuts

Alma provides many ways of using the keyboard for better navigation, such as tabs and arrows. In addition, Alma also supports various pre-defined shortcuts. Alma specifically provides the ability to navigate between multiple tabs in all screens by pressing Alt + number. This site-wide feature makes it easy to jump from one tab to another.



Quick Navigation to Tabs Using the Alt and Number Keys

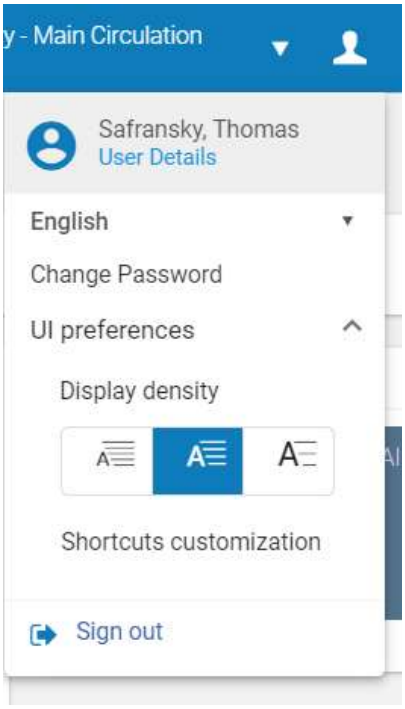
When navigating Alma using only a keyboard, note that:

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- In some forms, where the location field includes collapsed sections that expand automatically, the user cannot bypass this list and skip to the next collapsed section when using the keyboard.
- On some pages, the Esc key does not close the screen; the user must use the Cancel/Close option.
- In date fields, the date picker cannot be accessed using a keyboard. We recommend that the user enters the date as text.

Display Density Options

Alma allows the user to choose the font size and density of elements on the page. This is an easy way for each user to decide whether to see more or less information. You can find this option in the user menu under the heading **UI preferences**.



Display Density Options on the Alma User Menu

Responsiveness

Alma is designed to be responsive. Due to the large amount of information displayed on each page, however, the system is optimized to work with computer screens, laptops, and tablets with landscape orientation.

Further Reading

For more information about how to make the most of Alma, see our help documentation: The Alma User Interface

Accessibility By Design

Accessibility standards are taken into consideration from the earliest phases of feature development. They are built into our design, style guides, and are included as part of the requirements in our software development and quality assurance pipeline.

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As Ex Libris shifts to its new and improved user interface layout, it makes sure, just as it does in its existing infrastructure, to create an infrastructure that incorporates accessibility by design. This includes accessible elements with correct color contrast, keyboard access, proper labeling, and more. The infrastructure is constantly tested as part of the development process.

Ex Libris also provides the development teams with education sessions and development and testing methodologies about how to incorporate accessibility by design.

Accessibility Testing

Ex Libris's range of automated and manual checks include, but are not limited to, the following:

- Color Contrast Analyzer provided by WebAIM
- Deque aXe accessibility testing tool
- High Contrast Chrome extension
- Keyboard-access manual testing and assessment
- Accessibility testing tools such as WAVE, aXe, or Microsoft Accessibility Insights
- Screen readers such as JAWS, NVDA, and VoiceOver

Alma is tested on the latest version of Firefox, Chrome, and Edge and on devices including Windows computers. For more information about browser support, see see Browser and OS Requirements.

Accessibility Assessment and Development

To assess accessibility across Alma and the higher education platform, products are audited annually by a leading third-party compliance company.

In addition to third-party assessments, as part of its development process, Ex Libris runs ongoing accessibility assessments to make sure each development is accessible while verifying with QA that there are no accessibility regressions.

As a result of these assessments, accessibility issues are prioritized and scheduled as part of the accessibility roadmap.

Ex Libris is highly committed to this roadmap. For instance, during 2023-2024, in light of the assessment report mentioned above, Ex Libris invested over 15% of its total annual investment in Alma infrastructure on accessibility related developments.

2026 VPAT

We are committed to working with the community to ensure that we continue to meet our customers' needs. In addition to the third-party assessment report, we are committed to fixing issues found by customers that comply with WCAG 2.2 level A and AA, US Section 508 and the European EN 301 549. We are also open to considering fixing issues that do not comply with that standard if their impact is significant. Once an issue is found and reported, it is prioritized and added to the accessibility roadmap to be fixed as early as possible based on its priority.

What We Are Doing to Improve Accessibility

We are committed to working with the community to ensure that we continue to meet our customers' needs. In addition to the third-party assessment report, we are committed to fixing issues found by customers that do not comply with level A and AA. Once found, these issues are prioritized and added to the accessibility roadmap to be fixed as early as possible based on this priority.

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Accessibility at Clarivate: An ongoing Effort

Our ongoing accessibility efforts as an organization include:

- The Clarivate Accessibility Council: a company-wide team of stakeholders working to increase accessibility resources and capabilities
- Testing with users of all abilities
- Pursuing partnerships with colleges, universities, and other institutions to assist in reviewing and updating our accessibility documentation and testing with users of varying abilities
- Consulting with and performing audits through accessibility experts such as Deque and encouraging third-party audits
- Supporting accessibility training and certification for our employees
- Embedding accessibility in our development process. Our acceptance of new features and functionality requires compliance with WCAG 2.2 AA.

Support and Feedback

If you have difficulty accessing specific Clarivate content or features with adaptive technology, contact us using the links provided below. Our support services are available to accommodate the communication needs of end users with disabilities. We will work with you to identify the best option for remediation, subject to content licensing restrictions and technical capability.

Current customers: submit questions or issues by opening a case using the Support Portal.

Prospective customers: contact AlmaAccessibility@exlibrisgroup.com.

Preparation of This Accessibility Statement

This accessibility statement was first prepared on January 26, 2025, and last reviewed on January 26, 2025.

The web application was initially tested for a May 2023 release. The test was carried out externally by the leading digital accessibility assessment company, Deque. Deque also verified fixes made up to and including the February 2025 release.

As mentioned above, Ex Libris is currently running a new accessibility assessment in coordination with Deque. The results of this review and the fixes that will be done accordingly will be included in the new VPAT planned for the beginning of 2026.

Primo VE Accessibility Statement:

All library patrons, regardless of ability, need access to scholarly information. Clarivate is committed to providing all our users in academia and government with a fully accessible experience for research, teaching, and learning.

We make every effort to ensure that our platforms – including the Primo discovery service for libraries – can be used by everyone. Primo is continually designed and developed to meet Level AA of the W3C Web Content Accessibility Guidelines (WCAG 2.1) and Section 508 of the US Rehabilitation Act for features and functions.

Accessibility Features and Gaps

Primo users can:

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- Navigate most of the website using just a keyboard.
- Go directly to the main content areas on the page using skip links.
- Listen to most of the website using a screen reader.
- Navigate most of the website using speech recognition software.
- Navigate page content using headings.
- Adjust color contrast in browser settings. Primo style guides specify using colors that meet minimum contrast specifications.
- Zoom in up to 200% using browser tools without text spilling off the screen.
- Use most websites with devices of different screen sizes and orientations without losing content or functionality.

There may be some parts of this website that are not fully accessible:

- A small number of features are challenging to navigate using only the keyboard. Not all links or controls provide enough information to screen readers to understand their purpose out of context, and some notifications may not be read out to the user automatically.
- At magnifications higher than 200%, some content may spill off the screen or overlap.
- In some cases, Primo will not be able to correctly identify the language of text while reading a record's elements (such as title, abstract, and so forth).
- Some elements do not have clear programmatic labels, roles or values. In Search Results, a link or button is nested inside the code of another link or button, so assistive technologies may be unable to determine its function.

If you have a disability and need to make your computer, tablet, or another device more straightforward to use, AbilityNet is a recommended resource. We also recommend browsing free add-ons offered for Google Chrome and Mozilla Firefox.

Technical Information About This Site's Accessibility

Primo is committed to making its website accessible under:

- Level A and Level AA of the W3C Web Content Accessibility Guidelines (WCAG 2.1)
- Section 508 of the US Rehabilitation Act for features and functions
- The Americans with Disabilities Act (ADA)
- EU Directive on the accessibility of the websites and mobile applications of public sector bodies 2016
- UK Public Sector Bodies (Websites and Mobile Applications) (No.2) Accessibility Regulations 2018

Compliance Level and Report

This website partially complies with the Web Content Accessibility Guidelines v2.1 at levels A and AA. For more details, see the full Accessibility Compliance Report (VPAT 2.5 and WCAG 2.1).

As part of our continuous effort to comply with the Web Content Accessibility Guidelines 2.1 (Level A and AA), we have resolved or are planning to resolve issues identified because of

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customer feedback and external auditing. The status of these issues is listed in our Primo Accessibility Roadmap.

Clarivate will coordinate with Deque during the year to run a new accessibility assessment. The results of this review will inform the development of the NDE. Fixes will be resolved in the transition to the new UI.

Accessibility in the Next Discovery Experience (NDE)

Ongoing efforts we are making for accessibility in the NDE:

- Deque is providing accessibility annotations on prototypes that we are implementing during development.
- Working with Deque for agile accessibility testing of components.
- The NDE was developed using the Angular Material framework and was designed with accessibility best practices in mind. Angular Material supports WCAG (Web Content Accessibility Guidelines) standards, ARIA (Accessible Rich Internet Applications) attributes, and keyboard navigation.
- In parallel with ongoing compliance work for the existing Primo VE UI and its accessibility roadmap, two rounds of audits based on WCAG 2.2 criteria are planned for the NDE UI in 2025 to ensure accessibility at the A and AA levels:
    - The initial round of external accessibility auditing in April included the NDE functionality released in Primo VE's May release. The NDE UI's accessibility status is outlined in the VPAT for the NDE UI. Institutions participating in the May Managed General Release can review the VPAT and be assured that the identified issues will be addressed and re-evaluated in the next audit.
    - The second round of auditing will take place in Q3 2025 to assess all resolved issues from the first audit and evaluate additional pages developed post-general availability. Following the second assessment, the VPAT for the NDE UI will be updated to reflect the revised accessibility status.

Platform Accessibility

The Primo Platform's user interface is designed to be accessible and operable with multiple input mechanisms, including keyboards, screen readers, and voice control technologies. This is enabled by comprehensive labeling of form elements and icons and features like headings that make the platform easier to navigate with assistive technologies. For example, the titles of all search results are heading level 3 elements, which makes it possible to navigate the results list with a screen reader quickly.

Skipping repetitive page content via skip links is also possible on every page. Skip links allow you to bypass persistent header links and jump directly to a particular section of the page. For example, on the results page, there are skip links at the top of the page that let you jump directly to the main menu, search box, results and facets. The Primo platform is built to be responsive, meaning that regardless of the device you are using or the zoom level set in your browser, interface elements and content will reflow. This means that text will be legible, controls will be usable, and content will not require scrolling in multiple directions.

While most text throughout Primo meets minimum color contrast standards, there are some cases where text and icons do not yet have enough contrast with the background color.

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If color contrast is a concern for you, we recommend utilizing one of the free browser plugins that can increase text/background color contrast, such as the High Contrast extension for Google Chrome.

Accessibility Testing

Primo's accessibility is a continual effort at Ex Librs. Accessibility standards are built into our design and style guides and included as part of our software development and quality assurance pipeline requirements. Primo code is checked for accessibility using a range of automated and manual checks, including but not limited to:

- NVDA
- Deque axe accessibility testing tools
- High Contrast Chrome extension
- Keyboard-access manual testing and assessment
- JAWS screen reader

Primo is tested on the latest versions of Firefox, Safari, Chrome, and Edge, and on devices including Mac and Windows computers, and Android and iOS devices.

What We Are Doing to Improve Accessibility at Clarivate

Making content accessible is an ongoing effort at Clarivate. We are committed to working with the community to ensure we continue to meet our customers' needs. A list of our ongoing efforts includes:

- The Clarivate Accessibility Council: a team of stakeholders working to increase accessibility resources and capabilities
- Building relationships with colleges, universities, publishers and digital accessibility organizations to help make our educational solutions as accessible as possible.
- Foster an accessibility culture within the business by funding courses and certification for employees e.g. Deque University courses, IAAP (International Association of Accessibility Professionals) CPACC and WAS qualifications.
- Consulting with accessibility experts such as Deque to audit and review our products.
- Accessibility is embedded in our development process. Our acceptance of new features and functionality requires compliance with WCAG 2.1 AA

Support and Feedback

If you have difficulty accessing specific ProQuest content or features with adaptive technology after trying the workarounds suggested in this statement, you can contact us using the links provided below. Our support services will respond within three days and are available to accommodate the communication needs of end-users with disabilities. We will work with you to identify the best option for remediation, subject to content licensing restrictions and technical capability.

Current customers: Submit questions or issues by opening a case using the Support Portal.

Prospective customers: contact Primo_Product_Management@exlibrisgroup.com.

Preparation of This Accessibility Statement

Docusign Envelope ID: 5119F65D-C8FC-48F2-A5FF-59B8F24406F6

This accessibility statement was prepared in December 2024.

The application was last audited in August 2024. The review was carried out externally by Deque Systems Inc.

Standards include:

W3C Web Accessibility Initiative - Web Content Accessibility Guidelines (WCAG) 2.1: https://www.w3.org/TR/WCAG21/

Ex Libris: We make every effort to ensure that our platforms – including Alma – can be used by everyone. Alma is continually designed and developed to meet Level A and AA of the W3C Web Content Accessibility Guidelines (WCAG 2.1) and Section 508 of the US Rehabilitation Act for features and functions.

• General Services Administration Federal IT accessibility Rehabilitation Act Section 508 https://www.section508.gov/

Ex Libris: Ex Libris products and services, including Primo and Alma, comply with the requirements of Section 508 of the Rehabilitation Act. The applications are designed to be accessible by applying high-contrast levels, adjusting luminosity, and providing alternatives to non-accessible methods like JavaScript or AJAX components. They are also compatible with screen readers for visually impaired users. The interfaces have been validated through usability studies and adhere to leading international accessibility standards such as the W3C Web Content Accessibility Guidelines 2.0 and 2.1. The current roadmap includes WCAG 2.1 level AA with minimal exceptions

Voluntary Product Accessibility Template (VPAT ®): https://www.itic.org/policy/accessibility/vpat

Ex Libris: We have included VPATs for Alma and Primo VE with our response. They can also be accessed at the following link:

https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Accessibility

ENTERPRISE, SERVICES, AND STANDARDS

Vendors should refer to the Vendor Resources Page for information on the NCDIT regarding architecture, security, strategy, data, digital, identity and access management and other general information on doing business with state IT process.

The Vendor Resources Page found at the following link: https://it.nc.gov/vendor-engagement-resources . This site provides vendors with statewide information and links referenced throughout the RFP document. Agencies may request additional information.

3.4 BUSINESS AND TECHNICAL REQUIREMENTS

3.4.1 The platform/system must meet federal and state ADA Compliance of WCAG 2.1 Level AA for websites, resources, and documentation:

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Ex Libris: Ex Libris ensures that its products and services, including the Library Open platform, comply with the requirements of the American Disabilities Act 1990 (ADA) and the UK Equality Act 2010. The application is developed in line with the Web Accessibility Initiative (WAI) guidelines, applying a high-contrast display, adjusting luminosity levels, and providing alternatives to non-accessible methods like JavaScript or AJAX components. It is also compatible with screen readers for the visually impaired. The accessibility of the platform follows leading international standards such as the W3C Web Content Accessibility Guidelines 2.1 at Level AA with minimal exceptions.

Federal Register: Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities
https://www.w3.org/TR/WCAG21/

Each vendor shall submit the following with its response:

VPAT (The Voluntary Product Accessibility Template (VPAT) is a document which evaluates how accessible a particular product is according to the Section 508 Standards. It is a self-disclosing document produced by the vendor which details each aspect of the Section 508 requirements and how the product supports each criterion.)

Ex Libris: We have included VPATs with our response. VPATs for all of our products can be found here:

https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Accessibility

VRAR See Section 3.2.2 for more information.

Ex Libris: We have included our completed VRAR with our response.

3.5 BUSINESS AND TECHNICAL SPECIFICATIONS

Means, as used herein, a specification that documents the capabilities of a system or system component. It typically includes functional capabilities, performance capabilities, interface recommendations, design recommendations, development standards, maintenance standards, or similar terms. Substantial conformity with technical specifications is required.

a) Please describe your proposed solution's ability to meet the specifications provided in b) and c) below, including capabilities, features, and limitations:

Ex Libris: Our proposed solution, Alma and Primo VE can fully meet NCCCS's requirements. Ex Libris's Library Open Platform combines a true multi-tenant SaaS platform with a powerful tool for the unified management and discovery of all library resources, augmented by integration points and open APIs so libraries can build integrations and applications on the open platform. Ex Libris uniquely offers a complete suite of products supporting the needs of an academic library along with access to the latest developments in generative AI on the Clarivate Academic AI platform. The Clarivate Academic AI Platform ensures privacy, data security, and optimized access to LLMs and provides users with intelligence grounded in trustworthy sources and embedded in academic workflows.

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Our customers enjoy best-available services in big data and machine learning, analytics, security, reliability, and performance. Ex Libris' multi-tenant SaaS environment accelerates our pace of development, provisioned predictably and reliably through our private cloud.

We expect NCCCS to be implemented with multiple institutions connected to a shared catalog called the Network Zone. NCCCS members may share data elements and workflows, using Alma's Network Zone.

A Network Zone may be set up where one of the following is required:.

- Shared Catalogue – A shared catalogue consists of a single metadata catalogue that is shared by all libraries. The single catalogue source can also easily serve as the source for a shared discovery experience.
- Shared Acquisitions – Shared acquisitions consists of centralized purchasing of e-resources that are available to the member libraries.

Centrally managed configurations – Additional functionality can be implemented on top of the Network Zone to facilitate centrally managed configurations for the following:

- Shared fulfillment – The Network Zone can be used to centrally manage fulfillment policies and terms of use. The centrally managed policies and terms of use are then dispatched to all members of the network, where they are used in the local members' fulfillment rules. This achieves a high level of consolidation in the fulfillment area, with agreed upon policies and terms of use being used by all members of the network.
- Resource sharing – The basic configurations of the resource sharing component may be centrally managed at the Network Zone and shared by all members of the network. This includes a shared list of:
    - Resource sharing partners
    - Resource sharing rota templates and assignment rules
    - Workflow profiles
    - Locate profiles

Using a consolidated configuration set achieves the goal of unifying the user experience and library back-office processing across all disparate libraries.

- Vendors – Vendor records can be centrally managed at the Network Zone. Routine and automatic dispatching of the vendor records to all network members achieves the goal of having a single list of vendors that is used throughout all members of the network but is managed centrally by a single office.
- Mapping tables – Mapping tables govern a variety of system behaviors across all functional elements of the system. Maintaining a centrally managed mapping tables set is key to creating unified and consolidated workflows at the network members across the system.

b) Site and System Preparation: See Section 3.1.3 for more information.

Vendors shall provide the Purchasing State Agency complete site requirement specifications for the Deliverables, if any. These specifications shall ensure that the Deliverables to be installed or implemented shall operate properly and efficiently within the site and system environment. Any

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alterations or modification in site preparation, which are directly attributable to incomplete or erroneous specifications provided by the Vendor and which would involve additional expenses to the State shall be made at the expense of the Vendor.

Ex Libris: Alma and Primo VE are delivered as SaaS solutions. No site preparation is required.

c) Specifications: The apparent silence of the specifications as to any detail, or the apparent omission of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only processes, configuration, material and workmanship of the first quality may be used. Upon any notice of noncompliance provided by the State, Vendor shall supply proof of compliance with the specifications. Vendor must provide written notice of its intent to deliver alternate or substitute Services, products, goods or other Deliverables. Alternate or substitute Services, products, goods or Deliverables may be accepted or rejected in the sole discretion of the State; and any such alternates or substitutes must be accompanied by Vendor's certification and evidence satisfactory to the State that the function, characteristics, performance and endurance will be equal or superior to the original Deliverables specified. See Acceptance Criteria below.

Ex Libris: Our proposed solution, Alma and Primo VE meet all of the requirements of this RFP. No substitutes or alternate solutions are required.

i. Describe the Cloud-hosted solution.

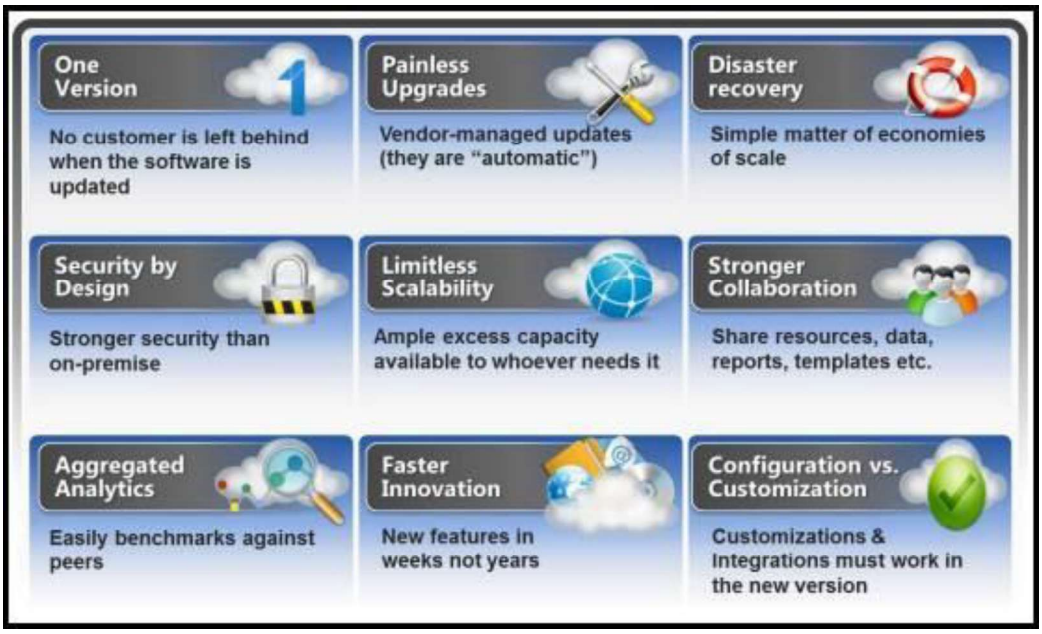
Ex Libris: Alma is delivered only as a **cloud-based SaaS solution** hosted in Ex Libris' private cloud, allowing libraries to eliminate hardware and maintenance investments.

As the entire Alma interface is served via a web browser, Alma also frees system administration staff from the need to install and maintain clients on local PCs. Moving to the cloud also lowers the barrier for entry to basic management processes. In today's systems, many mission-critical workflows require server access. The staffing requirements for basic management processes such as record loading or integrating data from other campus systems must be managed by a system administrator. Since Alma provides user-friendly interfaces for all tasks, the system expertise needed to manage the system is significantly reduced.

The subscription model for the Alma service allows for much more predictable budget planning. By reducing the initial investment in the system, libraries can more quickly realize the value of Alma and eliminate uncertainties associated with hardware and software updates.

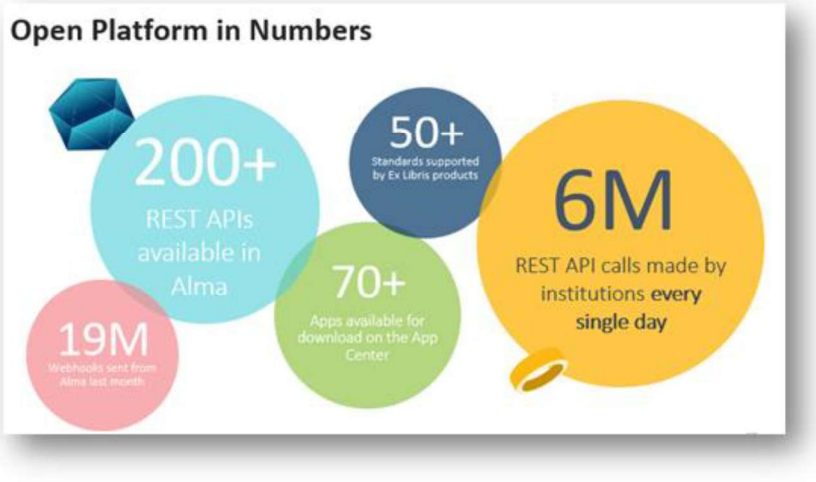
Alma is what is known as a "cloud-born" next generation system, in that the whole product was designed from scratch for a cloud environment, rather than taking a legacy product to a hosted service. As a multi-tenant system Ex Libris only needs to upgrade one copy of the software for all users, meaning that all users are always on the latest release of the system. This means we can offer regular updates to the software, which means that we are able to rapidly develop and deploy new functionality for the benefit of our users, who do not have to wait months and sometimes years for new software releases.

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Ex Libris is committed to an **open platform**, which includes support for integrations via open standards and **REST APIs**. This support enables institutions to integrate Ex Libris solutions with local systems, create innovative services, increase the value of the library, and help meet the institution's goals and objectives.

Ex Libris has provided a community hub where the APIs are detailed and where other users can share developments - known as the Developers Network it can be found here: https://developers.exlibrisgroup.com



The Alma Developers Network is based on an extensible architecture that supports the seamless addition of new integrations via APIs and web services. Alma Developers utilizes web services and Restful APIs for on-line integrations with applications, including but not limited to integrations with financial systems, Student Information Systems, Bursar systems, LMS and more. Ex Libris currently provides more than 200 APIs, which means that NCCCS will benefit from the widest

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range of APIs. We continue to add more APIs - usually on a monthly basis as part of the standard release cycle.

Located at developers.exlibrisgroup.com, the site provides a platform for Ex Libris customers and developers to share code and other content relating to Ex Libris programs and/or services. Access to the Developers Network is open to everyone, and anyone can register. As with every site that provides information and access to APIs, it includes Terms of Use that details the license restriction in regards to our APIs and code contribution. The Terms of Use for this site are located at https://developers.exlibrisgroup.com.

The Developer Network not only refreshed the technology used for developing code extensions, it has provided a brand new, open environment for sharing, experimenting, and managing the lifecycle of developments that extend Ex Libris products. In addition, it offers new ways for users to access, share and collaborate around APIs and developments. The Developer Network consists of dedicated sections for each Ex Libris product, and
includes:

API Docs: Comprehensive API and integration documentation and technical guides

Codes and Apps: an advanced portal for sharing, experimenting, and managing the lifecycle of developments, hosted on GitHub

Tech Blog: Advice, technical guidance, and best practice information offered by developers and Ex Libris development team members

API Console: a testing environment (sandbox) in which users will be able to experiment with Ex Libris APIs before implementing them in their solutions.

Forums: Online forums in which developers can share ideas, questions, and answers about how to get the most value from Ex Libris APIs

API Dashboard: A tool enabling developers to manage their implementations of open interfaces and view usage analytics.

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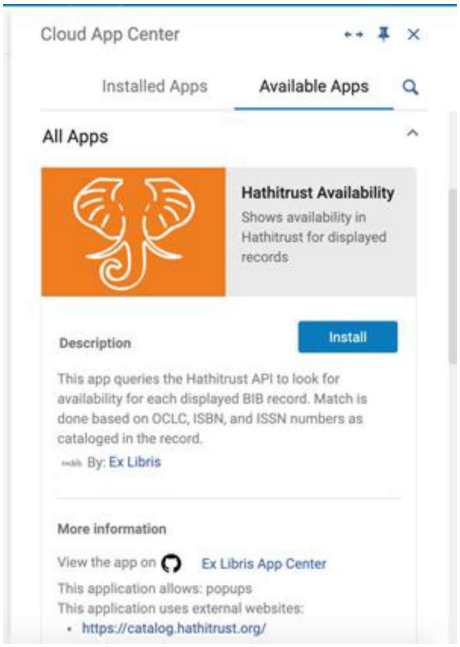
We also support an open framework which enables apps written by Ex Libris community members to run *inside* the Ex Libris library open cloud platform. Known as **Cloud Apps** this functionality can improve library **efficiency** by extending the functionality of Alma services and of other Ex Libris cloud solutions in an **agile** way.

•Cloud Apps are easily searched, installed, and launched within Alma by the end user

•Cloud Apps can respond to the context of the user's session, thereby offering additional functionality depending on the screen.

•Since Cloud Apps run in the Ex Libris platform, they don't require an API key or other local runtime environment.

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Cloud Apps bring many benefits to the organization:

Institutions can offer time-saving apps supported by the community while adhering to their governance policy.

Users can enjoy new functionality and streamlined workflows integrated into their working environment.

Developers can deliver innovative apps to their own institution and the wider community without the need to host or manage the runtime environment.

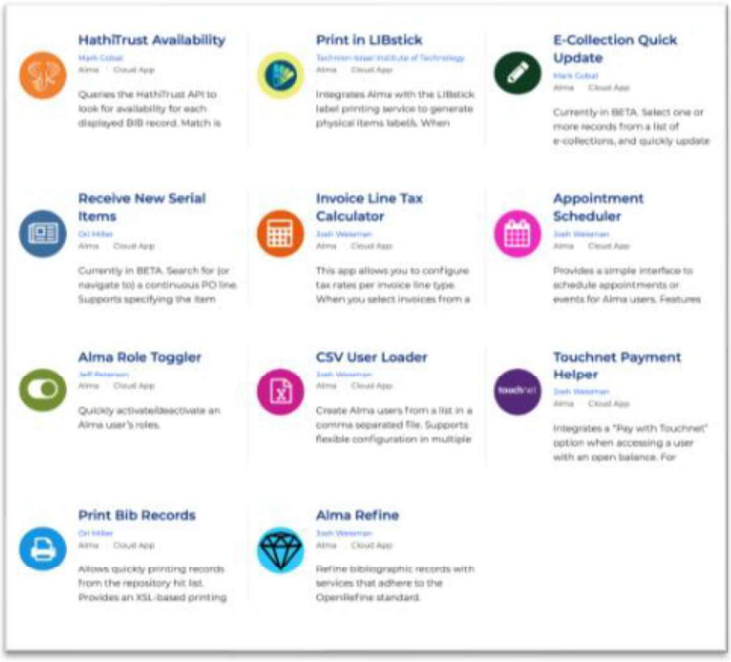
Cloud Apps written by Ex Libris or the community can be used for one of several use cases:

- **Functionality.** Adding new functionality not currently supported

Productivity. Workflow shortcuts or productivity enhancements

Integration. Integrating with external systems or data sources

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ii. Provide an organizational chart as well as a biography for key personnel.

Ex Libris: Information about Ex Libris Leadership can be found here: https://exlibrisgroup.com/about-us/leadership/

Ex Libris hires only skilled staff, many of whom are degreed librarians with extensive library and/or IT experience. While Ex Libris (USA) is not at liberty to disclose all the names and qualifications of our staff, we believe that the following individuals exemplify the high level of training, consulting, and systems analysis expertise Ex Libris can provide. Ex Libris does not assign our staff to a project until we are awarded a contract. Ex Libris does not employ subcontractors; all work will be performed by our staff.

The Ex Libris Professional Services management team makes the decisions regarding project assignments for our staff. Careful consideration is made to ensure the best fit for the customer and to ensure that no staffing changes are needed for the project. In the rare situation where staffing changes are required, the Ex Libris project manager will work directly with the customer project manager to communicate the change and review any risks that may be introduced to the project as a result of the change.

Here are the staff profiles for the Professional Services Leadership who will be responsible for assigning project team personnel that would be part of the implementation project.

Maria Bunevski, Director of Onboarding & Premium Services, joined Ex Libris as an Aleph and Primo Project Manager in 2006. Maria has over 15 years' experience in a variety of roles leading library implementation projects. Maria holds a MLIS from Wayne State University and an A.B. in English/Russian-East European Studies from the University of Michigan. Maria manages the customer onboarding and premium services team.

Dolph Chaney, Director of Project Management, oversees the team of project managers, responsible for all product implementations and additional services projects in North America and LATAM. Dolph joined Ex Libris in 2013 and has been involved in technical and management

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aspects of many implementation projects for multiple Ex Libris products. Before that Dolph worked for Muse Global and Endeavor and started his career working in libraries. Dolph received his MLS from Indiana University and his BA from the University of Houston.

Ashley DeHaye, Senior Team Leader, Project Management, has been with first ProQuest then Ex Libris since 2012. Prior to that she implemented AquaBrowser for 3 years. She received her MLS, MIS from Indiana University in 2001. Ashley will manage the project manager.

Jessica Alverson, Implementation Manager, has been with Ex Libris since 2018, prior to that she worked in academic libraries. Her areas of expertise include configuration, customer training and support. She received her MSLIS from the University of Illinois in 2001. Jessica will manage the implementation consultants.

Leah Bokar, Implementation Manager, has been with Ex Libris since 1998. Her areas of expertise incorporate system analysis and configuration, data conversion, in addition to customer training and support. She has extensive experience in libraries and library automation. Leah received her MS in Library and Information Science in 1997 from Bar-Ilan University, in Ramat Gan, Israel. She has a BA in Liberal Arts from the Publishing Institute in Moscow, Russia. Leah will manage the Alma migration implementation consultant.

iii. Describe the solution's key performance indicators and page load times and include performance metrics and recovery times for the last three years.

Ex Libris: Our solution's key performance indicators (KPIs) include system uptime, page load times, response times, and data recovery metrics. Over the past three years (2023–2025), the Ex Libris Higher-Ed Platform consistently exceeded its SLA target of 99.75% uptime, with most North American instances achieving 99.95% to 100% uptime annually. Page load and transaction times remained fast and stable, averaging 0.3 to 0.9 seconds depending on the action. Response times for support are tiered by severity, ranging from 1 hour to 2 business days. Data recovery procedures are regularly tested, with full restoration from onsite backups typically completed within 12 hours.

The Alma platform is built for scalability and high availability through a cloud-native, multi-tenant architecture. It uses load balancing, dedicated batch processing resources, and real-time monitoring to ensure consistent performance even during peak usage. Governance thresholds are in place to prevent any single institution from impacting others, with import/export limits adjusted for peak and off-peak hours. Batch jobs are prioritized and distributed using a dynamic resource allocation system, ensuring efficient processing without affecting system responsiveness.

When using Alma's batch job services for managing your repository, it is useful to know how long processes can be expected to run. The guidelines provided below are based on Alma's actual production use of these services. Ex Libris expects that, on average, the times given will not be less than listed, and often even better. This depends on the system load at any given time.

Basic Service	Peak (working day) - records per hour	Off-Peak (night) – records per hour
Metadata Import Note: The different profiles of metadata import may influence the time the service takes. For example, an EOD import	30k	120k

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profile will on average take longer than a bibliographic only update.		
Metadata Export	150k	600k
Global Changes – MARC Bibliographic Normalization	50k	200k

Recovery Time & Uptime Summary by Instance

The table below provides a comparative summary of uptime performance and recovery times for all North American (NA) instances of the Ex Libris Higher-Ed Platform—ranging from NA01 through NA07 and NA91—over the past three years (2023 to 2025). These metrics are drawn from our official quarterly uptime reports and reflect the platform's operational reliability and responsiveness to service disruptions. Each instance's performance is evaluated based on its annual uptime percentage and the nature and duration of any recovery events. This synthesis highlights the platform's overall stability, with most instances achieving near-perfect or perfect uptime and resolving incidents well within service level agreement (SLA) thresholds.

Instance	2023	2024	2025
NA01	99.98% uptime; minimal downtime	99.99% uptime; recovery within SLA	100% uptime; no major incidents
NA02	99.97% uptime; brief outages	99.99% uptime; no extended downtime	100% uptime; fast recovery from minor issues
NA03	99.96% uptime; recovery under 1 hour	99.98% uptime; no major disruptions	99.97% uptime; minor slowness resolved quickly
NA04	99.98% uptime; brief outages	100% uptime; no downtime incidents	100% uptime; no recovery events
NA05	99.97% uptime; all incidents resolved within SLA	99.99% uptime; no extended outages	100% uptime; no recovery needed
NA06	99.96% uptime; minor incidents	99.98% uptime; no significant downtime	100% uptime; no recovery events
NA07	99.95% uptime; short outages	100% uptime; no downtime	100% uptime; no recovery needed

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NA91	100% uptime; no downtime	100% uptime; 43 mins unscheduled downtime in Q1	99.98% uptime; 50 mins downtime in Q2 due to WAF issue

- **Recovery times** across all instances were consistently typically under **1 hour**.
- **NA04, NA05, NA06, and NA07** achieved **100% uptime** in 2025, with **no recovery events** reported.
- **Performance metrics** (e.g., API response times, UI load times) remained stable and fast across all instances.
  References

All uptime reports are available here:

https://knowledge.exlibrisgroup.com/Cross-Product/Higher-Ed_Platform_Uptime_Reports/North_America

iv. Describe the proposed solution's monitoring capabilities including but not limited to application usage monitoring, error monitoring, event monitoring, alert monitoring etc.

Ex Libris: Alma offers comprehensive monitoring capabilities to ensure high uptime and performance. The monitoring includes 24x7 real-time monitoring for identification and resolution of issues, proactive trend analysis, and health check validation. The monitoring covers various layers such as hardware, operating system, database, application logs, application performance, internet performance, and security. Alma's monitoring teams are equipped with processes for provisioning decisions based on application performance monitoring and degradation of service scenarios. Additionally, Alma provides uptime and performance reports for customers, executes provisioning of new servers based on system analysis, and offers web access for users to view system status and receive email alerts for performance issues or system downtime events

v. Demonstrate how the solution adheres to industry standards and best practices for software, hardware, and network configuration and implementation.

Ex Libris: Ex Libris' information security policy and controls have been approved by Ex Libris' management and are based on international standards and industry best practices, such as ISO/IEC 27001, the standard for information security management systems (ISMS). Ex Libris' information security policy is maintained and reviewed at least on an annual basis (as required by the ISO certification) by the Ex Libris Security team, led by Ex Libris' Security Officer.

Both Alma and Primo follows security standards best practices and achieved certifications that shows that our products meet the most rigid standards such as ISO 27001, ISO 27017, ISO 27018 as well as ISO 22301. The certifications can be viewed on our web site at:
https://knowledge.exlibrisgroup.com/Cross_Product/Security/Certifications

As both products are Cloud based multi-tenant applications serving multiple customers, Ex Libris must follow industry practices as opposed to customer-specific requirements.

Ex Libris employs a full-time security team led by the Chief Information Security Officer (CISO), that continuously monitors our system security.

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It is Ex Libris policy to update customers regarding its security policy and to provide notification regarding any changes, as described in the "Ex Libris Cloud Security and Privacy Statement." (attached as a PDF as well)

Additionally, Ex Libris engages an independent security company that performs a security penetration test based on the OWASP Top 10 and SANS 25 best practices.

vi. Provide your solution's Service Level Agreement (SLA).

Ex Libris: A copy of our SLA (Sample SaaS Subscription Agreement) is included with our response.

vii. Provide a list of supported integrations and software.

Ex Libris: Alma provides exceptional integration with a range of third-party applications and key enterprise systems used on campuses today, including for services such as financial and ordering systems, self-check, interlibrary loan, proxy services, collection agency services and ERP systems, and discovery.

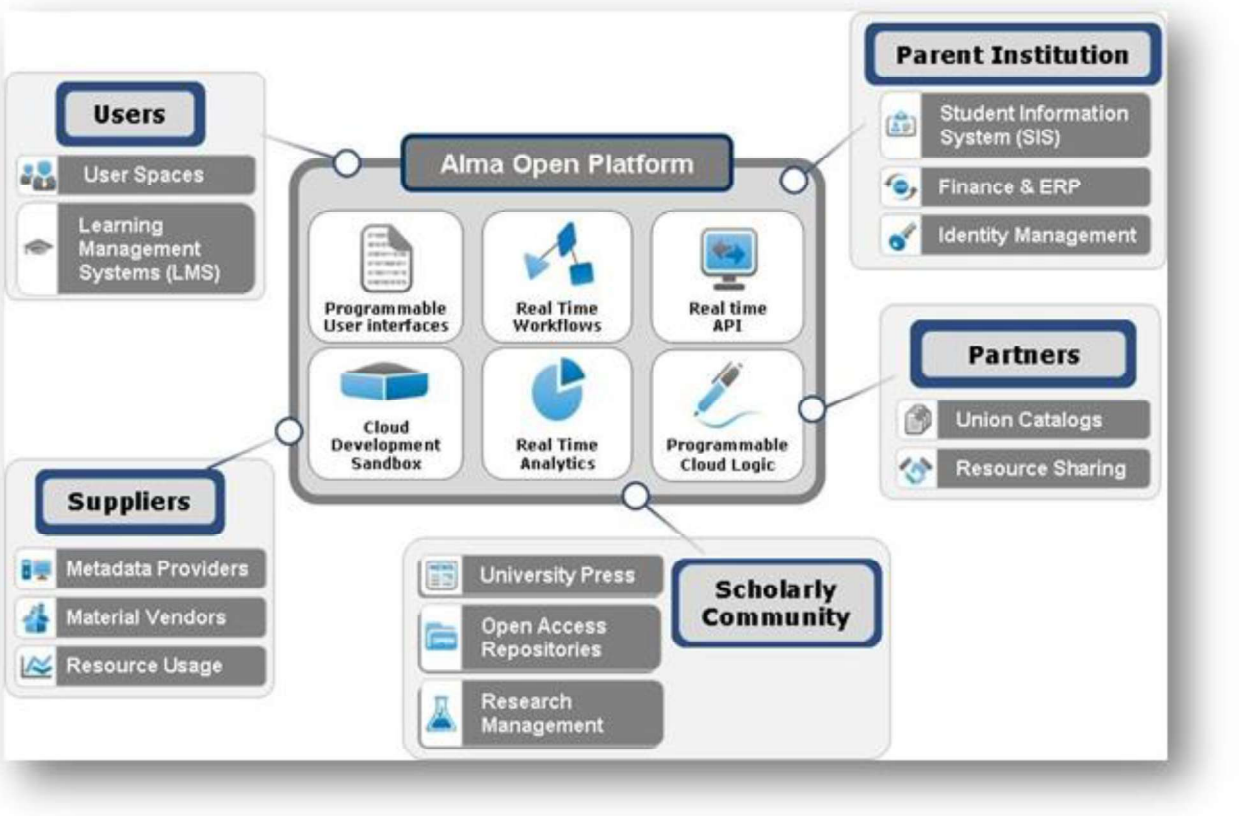
Achieving Alma's seamless handshaking with external systems, integration points are based on both evolving and well-established trend market standards. Alma supports the exchange of data using interfaces like EDI, OAI-PMH, SIP2, NCIP, import and export metadata in MARC-XML format as well as extensive Restful APIs. In addition to standards, Alma's integration approach makes use of plugin -capabilities, allowing institution-specific adaptations to specific systems and needs. The framework for utilizing integration points with third-party systems is the Integration Profile. The Integration Profile is where integration definitions may be set up for many types of Alma-supported integrations, including systems such as:

- Self-check
- Resource sharing systems
- Link resolution and proxies
- Collection agency services
- Discovery interfaces
- Cataloging clients
- Learning management systems
- Financial management systems
- Student Information systems

A unified and centralized platform, Integration Profiles provide a single interface for defining the different required attributes for a variety of integrated systems.

The diagram below shows the variety of integration interfaces of Alma with multiple third-party systems using its open platform.

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The following are the most used integrations that are in production at current customer sites. This list is not exhaustive. Alma's integration profiles allow for other systems to be integrated that may not be listed here.

Bursar integrations:

- Oracle Financial
- SAP
- Ellucian Banner (SunGard)
- Homegrown
- Oracle PeopleSoft
- Other
- TouchNet Cashiering
- Ellucian Colleague (Datatel)
- Agresso
- Microsoft Dynamics

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Course Loader

- Azure
- Homegrown
- Blackboard
- Other
- Canvas
- Ellucian Banner (SunGard)
- Tribal (SITS)
- Moodle
- Oracle PeopleSoft
- Agresso
- Desire2Learn
- Campus Management
- SAP

LDAP

- OpenLDAP
- Other
- Microsoft Active Directory
- Novell eDirectory
- CAS
- Sun/Oracle LDAP
- Homegrown
- Shibboleth

ERPs

- Agresso
- Blackbaud
- Ellucian Banner
- Ellucian Colleague
- Jenzabar
- Kauali Financial System
- Microsoft Dynamics

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- Oracle PeopleSoft
- Oracle Financial
- SAP
- Symmertry
- Workday
- Other

Stack maps

- Map It
- Stack Map
- Other

Payments systems

- TRANSACT
- WPM

Other systems

- Google Console
- Handles
- Linked Data
- BX
- OCLC Connexion
- Springshare API
- SRU
- Z39.50
- New Order API - GOBI, OASIS
- Webhooks

LTI Integration:

- Canvas
- Moodle
- Blackboard
- Desire2Learn
- Other

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- SAKAI

Proxy Server

- EZ Proxy
- LIBProxy
- WAM
- HAN
- OpenAthens

Remote Storage

- Dematic ASRS
- W.B Meyer
- XML

RFID

- 3M - 896
- Other
- Bibliotheca - Liber8Connect
- Nedap
- D-Tech International
- Seret
- Lyngsoe Systems
- InfoMedis

Self-Check

- Lyngsoe Systems
- **3M™** RFID Staff Workstation (Model 896)
- MK Solutions (https://www.mksolutions.com)
- Nexbib (www.nexbib.com) using the "Other" System Type on the Alma RFID Integration Profile
- D-Tech International (https://d-techinternational.com/technologies/rfid/)
- **Bibliotheca** (staffConnect / Liber8connet / Intellident)

SAML

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- Shibboleth
- Other
- ADFS
- WSO2
- Azure
- Ping
- OneLogin
- Homegrown
- Feide
- AuthO

Social Login

- email
- Google
- Facebook
- Twitter

Users (Student Information Systems, Staff)

- Homegrown
- Other
- Oracle PeopleSoft
- Ellucian Colleague (Datatel)
- Ellucian Banner (SunGard)
- Campus Management
- Tribal (SITS)
- Jenzabar
- SAP
- Workday
- Agresso
- Ellucian PowerCampus (SunGard)

Alma REST APIs provide access to data and workflows stored in Alma. The Developer Network is your key to getting the most out of these APIs. On the following pages, you'll find documentation for each of the interfaces, including a full description of the parameters and the data objects.

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- Acquisitions
- Analytics
- Bibliographic Records and Inventory
- Configuration and Administration
- Courses
- Electronic Resources
- Resource Sharing Partners
- Task Lists
- Users and Fulfillment

Alma supports two main resource sharing workflows:

- P2P (Peer-to-Peer)
    - In this workflow, the borrowing library and the lending library communicate directly.

The following protocols are supported for P2P resource sharing:

- ISO 10160/10161
- ISO 18626
- NCIP
- ARTEmail
- BLDSS APIs

P2P Resource Sharing with Alma and the following systems is supported:

System	**Vendor**	**Functionality**	**Status**
VDX	OCLC	Resource Sharing Process (ISO)	Production
Aleph	Ex Libris	Resource Sharing Process (ISO)	Verified
British Library	British Library	Resource Sharing Process (ARTEmail and BLDSS APIs)	Production
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process (SLNP)	Verified

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ILL SBN	SBN	Resource Sharing Process (ISO)	Verified
Libraries Australia Document Deliver (LADD)	OCLC	Resource Sharing Process (ISO)	Production

- Broker-based
    - In this workflow, the borrowing library communicates with an ILL broker. The broker passes the request to potential suppliers, and handles the request against the borrowing library.
    - Communication between Alma and resource sharing systems, such as OCLC Navigator, OCLC ILLiad, VDX, and Relais D2D, is done via NCIP 2.0 messages. Note that Alma supports the OCLC CIRC ILL and Relais application profiles for both borrowing and lending, as well as the responder role for the following NCIP messages: RequestItem, CheckOutItem, CheckInItem, AcceptItem, LookupUser.
    - Three integration points are typically part of this workflow:
        - OpenURL or another URL based integration for request submission.
        - Z39.50 integration for exposing the library's holdings availability to the other members of the resource sharing network. At times, systems require full publishing of the institutions' repository rather than rely on ad-hoc Z39.50 queries.
        - Integration for back office processing of the requests, at both borrower and lender sides.

Broker-based resource sharing with Alma and the following systems is supported:

System	Vendor	Functionality	Status	Notes
ILL/D2D	Relais	• Submit Request (OpenURL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Production	Relais responds to "Submit Request" with request form. Relais is being tested for "Submit Request" via an API call

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Navigator	OCLC/Atlas	• Submit Request (Static URL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Production	NRE responds to "Submit Request" with search interface
ILLiad	OCLC/Atlas	Submit Request (OpenURL) • Submit Request - Supplier of Last Resort (Email) • Locate and Availability (WorldCat) • Fulfillment (NCIPv2.0)	Production	ILLiad responds to "Submit Request" with request form, requiring login. Alma can send structured emails to a configured email address, from which ILLiad may be configured to import the emails and create internally managed borrowing requests. It is possible to push borrower requests into ILLiad by a direct API call to ILLiad for further processing in ILLiad. It is possible to push patron records into ILLiad if the

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				requesting patron's account has not been previously loaded to ILLiad.
VDX	OCLC	Fulfillment (NCIPv2.0)	Production	
OCLC WorldShare	OCLC	• Submit Request – Supplier of Last Resort • Locate and Availability (WorldCat) • Fulfillment (NCIP v2.0) Not Supported by Vendor	Production	It is possible to push borrower requests into OCLC WorldShare by an API call for further processing in WorldShare.
ShareIt	AutoGraphics	• Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Verified	
InnReach via DCB	Innovative	• Patron File (Publishing) • Locate and Availability (Publishin	Production	Requires a script to mediate between Alma and Inn-Reach. See Alma – Inn reach integration.

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		g) • Fulfillment (NCIPV1.0)		
InnReach via D2IR APIs	Innovative	Supported actions (Borrower and lender): • Request • Ship • Receive • Return • Check-in	Production	See InnReach API Implementation Guide
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process (SLNP)	Production	
GTBib-SOD	Kronosdoc	• Submit Request (OpenURL) • Locate and Availability (OPAC Syntax of Z39.50) • Fulfillment (NCIPv2.0)	Verified	No use of the OPAC syntax
Clio II	Clio Software	• Submit Request (OpenURL) • Fulfillment (NCIPv2.0)	Verified	
OCLC Tipasa	OCLC	• Submit – Tipasa can be set as a General Electronic	Production	It is possible to push borrower requests into Tipasa by an API call for further processing in

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		Service target, see blog • Submit Request – Supplier of Last Resort • Locate and Availability (WorldCat) • Fulfillment (NCIP v2.0), see blog		Tipasa.
RapidILL	Ex Libris	• Publishing • APIs	Production	Alma Publishing Profile is used to update Rapid ILL with holdings information Additionally, requests created in Alma are pushed into RapidILL for further processing in RapidILL if the requested resource is indeed available via RapidILL
ReShare	https://projectreshare.org/	• Submit Request using OpenURL or by pushing borrowing requests from Alma	Production	See ReShare Parameters

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		to Reshare • Locate and Availability using ReShare API • Fulfillment (NCIP v2.0)		

Alma supports the following standards:

- **MARC21** - Alma supports MARC21 bibliographic, holding and authority records
- **Dublin Core** - Alma supports Dublin Core/Dublin Core Extended
- **RDA** - Alma supports RDA as MARC encoded fields
- **Z39.50** - Alma supports z39.50 for resource sharing searches and external search resources (for import, copy cataloguing) as well as incoming searches
- **SIP2** - Alma supports communication over the SIP2 protocol, which is used primarily for communication with local self-service machines. The communication is bi-directional.
- **NCIP** - NCIP is used in Alma in the following areas: Broker Resource Sharing, Integration with Remote Storage Facility and NCIP Based P2P Resource Sharing
- **ISO ILL** - Alma supports ISO ILL messages for resource sharing. ISO ILL messages are based on the ISO 10160/10161 standards.
- **OpenURL** - Alma link resolver is based on the OpenURL standard.
- **BIBFRAME** - Ex Libris is implementing its BIBFRAME roadmap, that will enable institutions to gradually implement BIBFRAME with minimal disruption to their workflows. A couple of features are already available today. This includes publishing and viewing MARC records in BIBFRAME format.
- **MODS** - Records can be published in MODS format.

Furthermore, Alma supports:

- MARC Standards, including **UNIMARC**, **KORMARC** and **CNMARC**
- **MARCXML**
- **COUNTER 4**
- **SUSHI** (for loading COUNTER reports)
- **ONIX-PL** (Licenses)

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- **RFID**
- **AACR** (MARC21 Version)
- **KBART** (import and export)
- **DCRM(B)** (as part of Cataloguing)
- **EDI/EDIFACT**
- **EOD** (Embedded Order Data)
- **OAI-PMH**
- **EAD** (Collection Export)
- **CSV** (Metadata Import for Digital content)
- **ARTEmail** (Resource Sharing protocol British Library)
- **SLNP** (Resource Sharing)
- **JSON-LD** (Linked Data)
- **RDA/RDF** (Linked Data)

viii. The State prefers the procured solution to be scalable with the capacity to support a diverse Statewide environment. Describe how the solution scales to support the entire NCCCS (58 Community Colleges and the System Office).

Scalability of Ex Libris Alma for the North Carolina Community College System (NCCCS)

Ex Libris: Alma is purpose-built to support large-scale, diverse, and distributed environments like the North Carolina Community College System (NCCCS), which includes 58 community colleges and the System Office. Its cloud-native, multi-tenant architecture ensures seamless scalability, high performance, and centralized management—making it an ideal solution for a statewide implementation.

Cloud-Based, Multi-Tenant Architecture

Alma is deployed in the cloud, eliminating traditional system limitations on the number of libraries or their capacity. This architecture enables:

- **Parallel Alma instances** within each data center.
- **Multiple libraries per instance**, allowing each NCCCS institution to operate independently while benefiting from shared infrastructure.
- **Multi-tenancy**, where one Alma instance can support many institutions, each with its own configurations, workflows, and data.

Scalability at Multiple Levels

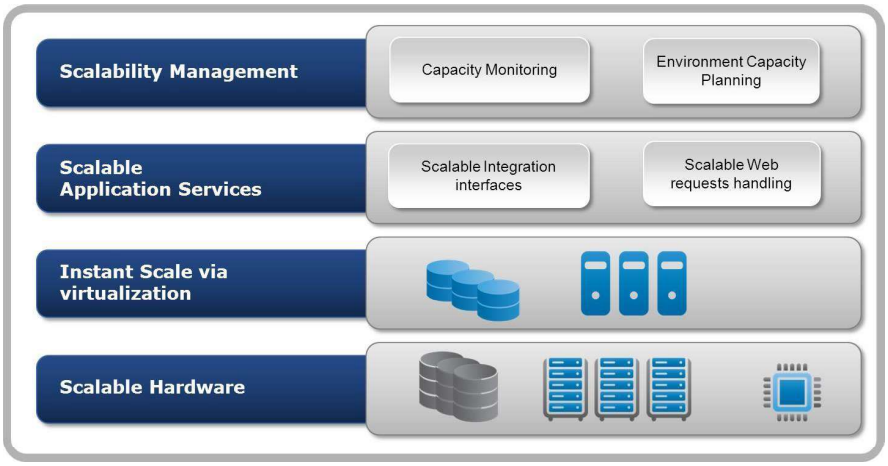
Alma is designed to scale dynamically and efficiently:

- **Horizontal Scaling**: Additional application and database servers can be added to handle increased load.
- **Vertical Scaling**: Existing servers can be enhanced with more CPU cores, memory (RAM), and storage.

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- **Instance-Level Scaling**: New Alma instances can be automatically deployed as needed, based on institutional volume and projected growth.

When a new institution is added, it is deployed in the most appropriate instance, and new instances are proactively prepared based on the implementation pipeline.



Scalability management:

Performance and Load Management

To ensure consistent performance across all institutions, Alma employs:

- **Load balancers** to route users to available application servers.
- **Dedicated resources** for online transactions, batch jobs, and reporting—ensuring that heavy operations do not disrupt user activity.
- **Real-time monitoring tools** that alert cloud engineers to performance issues, enabling dynamic reallocation of resources.

For example, if a server experiences a sudden spike in usage, engineers can adjust load balancer rules to allocate more resources to online transactions.

Capacity Management and Growth Planning

Ex Libris cloud engineers continuously monitor system performance and customer growth trends. This proactive approach ensures that hardware and infrastructure are scaled in real time to meet evolving needs. Capacity planning is informed by:

- Ongoing implementation tracking
- Future pipeline forecasting
- Real-time performance monitoring

Support for Consortia

Alma's **Network Zone (NZ)** model is specifically designed for consortia like NCCCS. It enables:

- **Centralized management** of shared bibliographic records, electronic resources, and services.
- **Autonomous operations** for each institution via their own Institution Zone (IZ).

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- **Shared fulfillment networks**, user groups, and policies that streamline collaboration while preserving local control.
- **Real-time updates** of linked accounts and direct item transits between institutions.

This model ensures that NCCCS institutions can collaborate efficiently while maintaining their individual identities and workflows.

Independent Yet Integrated Management

Each college can independently manage its own acquisitions, cataloging, and fulfillment operations, while still benefiting from shared services like:

- **Link Resolver configurations**
- **Display Logic Rules** for shared electronic services
- **User groups and fulfillment networks** for seamless patron services across institutions

Centralized Control with Local Flexibility

The system office or a central administrative body can:

- Influence the **service order of link resolvers**
- Manage **centrally licensed resources**
- Define **network-wide policies** while allowing local overrides where needed

Flexible Data and Customization

Alma supports unlimited data elements and customization options:

- MARC records and inventory objects are stored using the **Character Large Object (CLOB)** data type, allowing for unlimited entries.
- Entities can include unlimited notes and institution-specific values via mapping tables.

Alma's cloud-native, multi-tenant architecture, combined with its robust support for consortia and dynamic scalability, makes it exceptionally well-suited to support the entire NCCCS. It offers the flexibility, performance, and centralized control needed to manage a diverse statewide system while ensuring each institution retains operational independence.

ix. Describe how the solution may scale up, including practical limits to the design for number of users, data size, implementation complexity, and model complexity.

Ex Libris: There are no system-imposed record limits as such. However, your subscription model is based on record numbers.

The subscription model for Alma is based on the following subscription parameters:

1. Number of Named Users – this means the amount of people requiring login to Alma (this also includes for example students assisting in the library – not just professional staff)
2. Number of bibliographic titles (including e-books and local authority records)
3. Number of unique e-journal titles
4. Number of digital resources metadata - in case the customer elects to manage digital resources metadata in Alma).

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5. Size in GB for digital objects/files – in case the customer elects to store the digital objects in Alma's cloud storage

x. Describe the limits and constraints of the proposed solution.

Ex Libris: Alma manages various types of records in the catalog, based on MARC21 (e.g., bibliographic records) using the MARCxml format. There are no limitations in managing a record and its data elements, except where mandated by the MARC standard (for example, there is only a single LDR field in a record).

Other types of records in Alma have both a fixed set of attributes and repeating, non-limited elements. For example, many records in Alma such as the user record, purchase order line, and others can have any number of notes fields or attachments.

Where a record has a fixed set of attributes (e.g., a user record has fields for their first name, middle name and last name) these fields are added by Ex Libris, based on functional and business requirements. These fields have specific sizes, which are developed as described above, based on functional and business requirements, by Ex Libris.

xi. Describe the features and innovations that deliver performance and scalability.

Ex Libris: The features and innovations that deliver performance and scalability in Alma include:

- Scalability Management: Alma is designed to scale throughout its layers, with cloud engineers overseeing capacity planning and system monitoring to provision more hardware in real-time based on existing and future needs.
- Multi-Tenancy Architecture: One instance of Alma supports multiple institutions, allowing for expansion to meet growing organization or collection needs.
- Horizontal and Vertical Scaling: Alma instances can scale horizontally by adding application and database servers, and vertically by adding cores, RAM, etc., to existing servers.
- Automatic Deployment: Additional Alma instances can be deployed as needed via automatic deployment tools.
- Load Balancing: Access to the Alma application is done via a load balancer that routes customers to available application servers.
- Dedicated Resources: Online transactions, batch jobs, and reports are each performed via dedicated resources to prevent disruption caused by heavy jobs or reports.
- End-Point Monitoring: Deployment of end-point monitoring tools for high visibility to gauge performance and address service degradation.

1. IT Security

To ensure compliance with State policies and standards, the Vendor must provide documented evidence describing the proposed system's security provisions (i.e., physical, technical, etc.) in the form of a Security Plan See Section 3.2.2 for more information.

Ex Libris: Ex Libris is certified with the following ISO/IEC standards:

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- 27001:2022
- 27017:2015
- 27018:2014
- 27032:2023
- 22301:2019
- 27701:2019

Ex Libris is ISO 27001:2022 (information security standard) certified for all data centers, global operations, and application and development processes. The ISO 27001:2013 certification process requires that Ex Libris comply with all Information Security Management System (ISMS) security measures and pass an annual compliance audit conducted by an independent third party audit firm.

Ex Libris is also ISO 27018:2014 certified (Protection of PII) and ISO 27018:2014 which defines the controls and guidelines for implementing measures to protect Personally Identifiable Information (PII) for the public cloud computing environment.

The ISO/IEC 27017:2015 standard provides a code of practice for information security controls, including guidelines that expand upon the ISO/IEC 27002 standard by adding security controls specifically related to cloud computing.

ISO 27032 is an international standard that provides guidance for improving the state of Cybersecurity, regarding information security, network and internet security, and critical information infrastructure protection (CIIP). The ISO 27032 Cybersecurity provides guidelines in privacy and organization data protection from phishing scams, cyber-attacks, hacking, data breaches, spyware, espionage, sabotage and other cyber threats.

The ISO/IEC 22301:2019 standard focuses exclusively on business continuity management (BCM).

ISO 27701:2019 provides a code of practice for maintaining the privacy of data in a privacy information management system (PIMS). This standard establishes privacy requirements, helps organizations manage risks related to personally identifiable information (PII), and outlines a comprehensive set of operational controls that can be mapped to various regulations.

Our ISO certifications can be found on our Knowledge Center under: https://knowledge.exlibrisgroup.com/Cross_Product/Security/Certifications

Alma conforms to FERPA guidelines by providing multi-tier access control based on the security industry's best practices. Such controls consist of (but are not limited to):

- Staff member authentication prior to accessing Alma
- Each staff member has privileges and access to data according to his/her role
- Only authorized staff members have access to patron data, to view and edit
- Alma's browser sessions are encrypted using SSL

Alma maintains an audit trail of access to patron data that has been exported. This information may be used in conjunction with the institutions' written approvals by students and/or their parents to track any export of patron's data outside of Alma

Ex Libris does not store or process credit cards. Only Alma and Leganto products are within PCI scope because they include a redirect to an authorized PCI payment processor. On an annual

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basis, Ex Libris performs an attestation process for Alma and Primo. The PCI-DSS documentation can be supplied upon request.

2. IT Architecture

This section supplements that of Section 3.3.1, above, and vendor should include the following information in its response.

NCCCS requires the hosting solution to comply with North Carolina Statewide Technical Architecture. Located at the following website, (https://it.nc.gov/resources/statewide-it-procurement/vendor-engagement-resources#Tab-Architecture-1192 , the site provides a series of domain documents describing objectives, principles, and best practices for the development, implementation, and integration of business systems. Agencies and Vendors should refer to these documents when implementing enterprise applications and/or infrastructure. Please describe your understanding of and compliance with this requirement within your technical solution. Please also include an explanation of how the solution will:

Ex Libris: We have provided a copy of our system architecture, produced using Microsoft Visio.

Ex Libris is ISO 27018:2014 (Protection of PII) compliant. ISO 27018:2014 defines the controls and guidelines for implementing measures to protect Personally Identifiable Information (PII) for the public cloud computing environment. Additionally, Ex Libris was the first company in the library industry to achieve ISO 27701:2019 certification which provides a code of practice for maintaining the privacy of data in a privacy information management system (PIMS). This standard establishes privacy requirements, helps organizations manage risks related to personally identifiable information (PII), and outlines a comprehensive set of operational controls that can be mapped to various regulations.

Personally identifiable information (PII) is encrypted in-transit and at rest. PII is also encrypted on backups.

Ex Libris Alma makes use of the following encryption mechanisms:

- Data in motion: browser to application server connections are HTTPS, utilizing TLS 1.2, using SHA-256 (part of the SHA-2 family), with 128 or 256 key and AES 128 or 256, depending on what is supported by the Institution. The key strength is negotiated upon session establishment between the server and the browser.
- Data at rest: personal information is kept encrypted in the database using Oracle DBMS_CRYPTO mechanism for data encryption using AES-256 encryption
- Backup of the data is made to disk and the encrypted data is kept encrypted in the backup copy.

Alma conforms to FERPA guidelines by providing multi-tier access control based on the security industry's best practices. Such controls consist of (but are not limited to):

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- Sensitive Patron information is encrypted

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Alma maintains an audit trail of access to patron data that has been exported. This information may be used in conjunction with the institutions' written approvals by students and/or their parents to track any export of patron's data outside of Alma.

Provide on-demand access for Institutional System Administration to upload or download large amounts of data via secure file transfer methods such as Secure File Transfer Protocol (SFTP),

Ex Libris: Alma supports file transfer via SFTP. SFTP (ssh port 22) or FTP (port 21) connections are supported for file-based integration profiles.

Secure Shell (SSH), and Hypertext Transfer Protocol Secure (HTTPS). These methods will be used for batch processes involving the import/export of courses, themes, and reporting data.

Ex Libris: Browser to application server connections are HTTPS, utilizing TLS 1.2, using SHA-1 or SHA-256 (part of the SHA-2 family), with 128 or 256 key and AES 128 or 256, depending on what is supported by the Institution. The TLS version and key strength are negotiated during session establishment between the server and the browser.

Integrate authentication protocols including but not limited to Security Assertion Markup Language (SAML) 2.0, Shibboleth® based protocol, Lightweight Directory Access Protocol (LDAP) based protocol, and Google® authentication.

Ex Libris: Alma supports a number of authentication schemes, which are defined using Alma's Integration Profiles. An institution may choose to use more than one. Supported authentication schemes include:

- LDAP
- SAML2 based authentication such as Shibboleth
- OAuth based authentication with Facebook or Google
- CAS

Alma can authenticate users using either a federated single-sign-on authentication system (for example based on the SAML 2.0 browser SSO Profile) or using a non-federated authentication. Currently, non-federated authentication options include an LDAP-based authentication.

To go into a bit more detail, A SAML (see below for other SSO options) Integration Profile may be configured in Alma. In this case, Alma does not actively authenticate users. Instead, it turns to the configured SAML system to verify the user's identity.

Alma's implementation of SSO is based on protocols such as the SAML (2.0) protocol. Security Assertion Markup Language (SAML) is an XML-based open standard for exchanging authentication and authorization data between security domains, that is, between an identity provider (a producer of assertions) and a service provider (a consumer of assertions). SAML is a product of the OASIS Security Services Technical Committee.

Alma utilizes the SAML protocol to communicate with any SAML-compliant system, enabling it to establish Single Sign On (SSO) with compliant systems, such as Shibboleth based systems, Microsoft Active Directory, and others that are SAML-compliant.

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Alternatively, an LDAP Integration Profile may be configured in Alma. In this case, the authentication of any external user will be done by Alma using a secure protocol to directly communicate with the institutional LDAP server that is configured in the profile.

3. Compliance with Applicable Laws

NCCCS requires the Vendor to comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.

Ex Libris: All Ex Libris products comply with all state and federal laws. The Ex Libris Privacy and Regulation Officer is responsible for privacy and regulation compliance.

Ex Libris has dedicated privacy and regulation officer responsible for identifying and tracking regulations. Ex Libris complies with all applicable legal and regulatory requirements for data protection.

The Vendor must describe how the solution will accommodate the criteria for the following compliances as well as provide a means for further establishing compliance for on-boarded NCCCS community colleges' courses.

Ex Libris: Ex Libris solutions can support your community college courses through reading list management tools in Alma as well as through our resource management tool Leganto (optional). Alma is fully integrated with the Leganto resource list management system from Ex Libris. Leganto was developed on the Alma platform and hence is tightly integrated with the Alma resource management system – including Alma's Link Resolver. More specifically, Leganto and Alma share the resource list repository as well as information about courses and users. Therefore, resource list information is viewable and editable through both Leganto and Alma, and there is no need for processes such as data transfer and data synchronization. Furthermore, availability information is provided in real time.

Leganto is built on the Alma infrastructure. The resource list database, as well as other data elements such as courses and users, are available to both systems, and every data change related to resource lists done through the Alma interface is automatically reflected in through Leganto interface, and vice versa. Furthermore, mechanisms such as the Alma task list (serving as a trigger for workflows related to resource lists) are an integral part of Leganto. There is no need for API to integrate Leganto with Alma.

Library staff can immediately check for resource list citations in the library catalogue and can create purchase requests to begin the acquisitions workflow to add materials to stock. Leganto and Alma are also integrated with the Copyright Licensing Agency (CLA) so library staff can check and update copyright status for list items.

Leganto is also fully integrated with Alma's link resolver to direct end-users to appropriate sources for electronic resources added to lists.

Some integration is also possible with other commercially available reading list systems; Real-time availability for items in Alma can be displayed using Alma's z39.50 server functionality. A link in the 3rd party system can link to the full citation for a resource in Summon. Further integration may be possible depending on APIs offered by the 3rd party system.

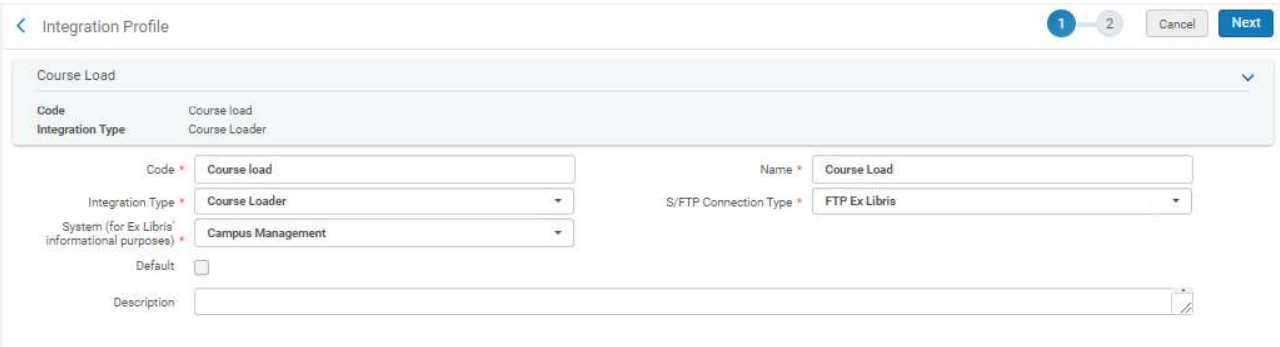
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Courses/modules can be created in Alma manually or imported from a Learning Management System or a student information system. The course upload is based on the Alma Course Loader integration profile that runs on the schedule that the library configures or can be executed manually.

The following Learning Management systems are supported.

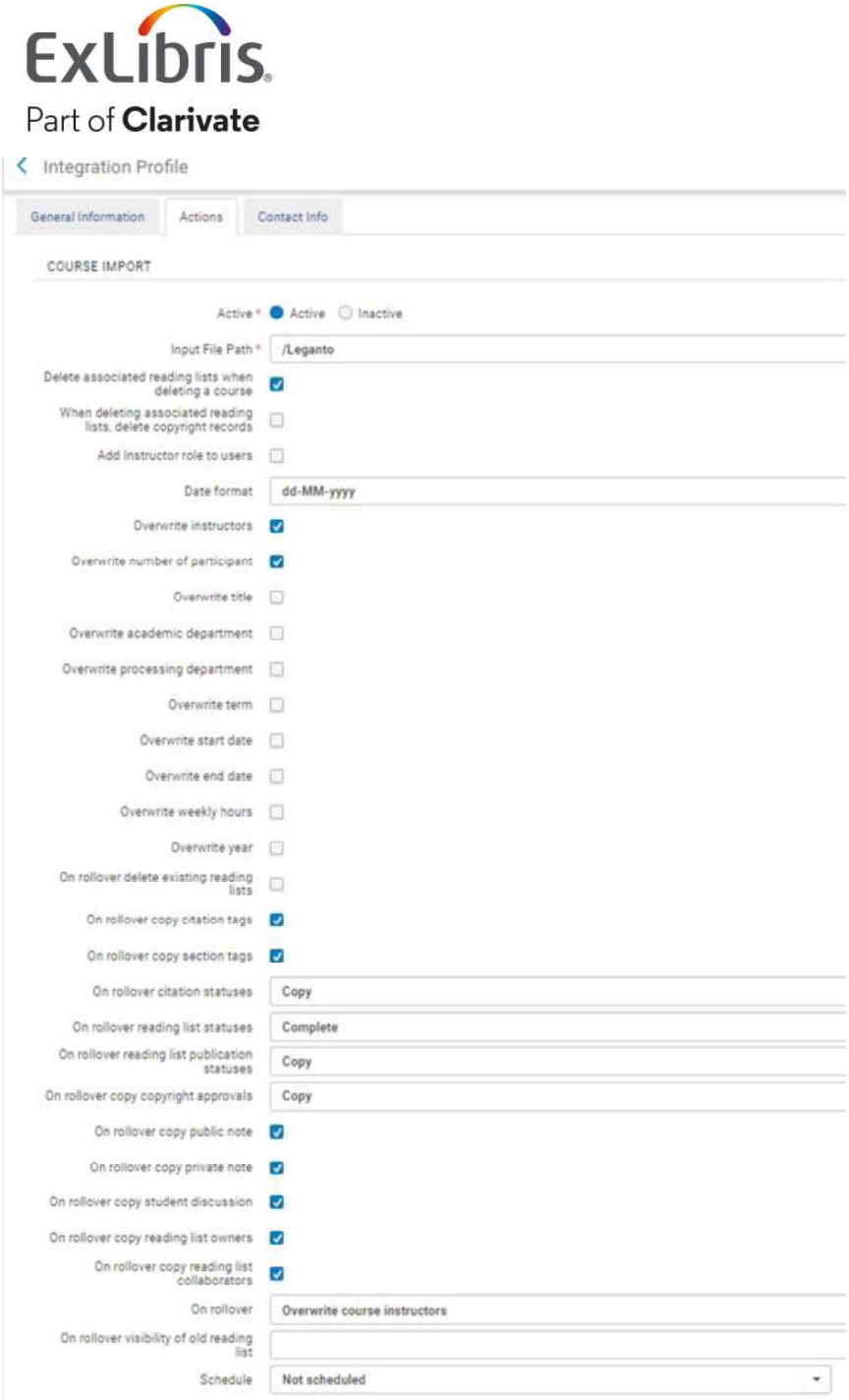
- Moodle
- Desire2Learn
- BlackBoard
- Canvas
- Sakai
- its Learning

The course information must be in a tab-delimited value file, saved as a .txt or .csv file on a dedicated directory on an FTP server accessible by Alma.



Course loader configuration screen

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Course Loader parameters.

a. American Disabilities Act (ADA) Compliance Under the provisions of Section 504 of the Rehabilitation Act of 1973, colleges may not discriminate in the recruitment, educational process, or treatment of students based on a disability. Students are entitled to receive approved modifications of applications and digital resources that enable them to participate in and benefit from all educational programs and activities. Section 508 of the Rehabilitation Act ensures that electronic, and information technology allow individuals with disabilities access to and use of information and data that is comparable to individuals without disabilities. Therefore, the solution must be compliant with both Federal Section 508 and NCGS § 168A-7 requirements. The solution must specifically be compliant with

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Web Content Accessibility Guidelines (WCAG) 2.1 level AA requirements, located at https://www.w3.org/TR/WCAG21/. The Vendor response must contain solution compliance details including a Voluntary Product Accessibility Template (VPAT). In addition, the Vendor response should describe the solution's automated ADA content compliance verification process or tool(s).

Ex Libris: All Ex Libris' products and services comply with the requirements of American Disabilities Act 1990 (ADA). Ex Libris is committed to ensuring that its existing software and planned releases comply with accessibility standards.

The application is compliant by applying a high-contrast level of the display, by adjusting the luminosity level of the display, and by applying alternatives to non-accessible methods, such as JavaScript or AJAX components. The application is also compatible with screen readers for the visually impaired.

The accessibility of the Primo interface for users (inc. HTML and CSS) has been validated by several rounds of usability studies. The Primo user interface was designed to comply with leading international accessibility and industry standards: The W3C Web Content Accessibility Guidelines 2.0, level "Double-A" Section 508 of the Rehabilitation Act (29 U.S.C. 794d). We adhere to the following accessibility guidelines:

- HTML Standards and Accessibility
- XHTML 1.0 Transitional
- WCAG 2.0 Guidelines Priority 2 (with exceptions)
- Section 508 (with exceptions)
- CSS 3

The interface is navigable without a mouse and has been tested successfully with JAWS. The current roadmap includes WCAG 2.1 level AA with minimal exceptions.

VPATs are also included with this response.

b. Health Insurance Portability and Accountability Act (HIPAA) Compliance NCCCS anticipates that some data will require HIPAA compliancy. Therefore, if NCCCS determines that some or all the activities within the scope of this project are subject to the Health Insurance Portability and Accountability (HIPAA), or its implementing regulations, the solution must comply with the HIPAA requirements set forth in https://www.ncbi.nlm.nih.gov/books/NBK500019/ .

Ex Libris: Alma stores no health-related data, so HIPAA regulations also are not applicable.

c. Family Educational Rights and Privacy Act (FERPA) and Personally Identifying Information (PII) Compliance The data stored in this application's database is confidential and must follow FERPA and PII compliance; therefore, the solution must adhere to those PII guidelines within the North Carolina General Statutes as well as those federal regulations regarding FERPA (20 § 1232g; 34 CFR Part 99).

Ex Libris: Alma conforms to FERPA guidelines by providing multi-tier access control based on the security industry's best practices. Such controls consist of (but are not limited to):

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- Staff member authentication prior to accessing Alma
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- Alma's browser sessions are encrypted using SSL
- Sensitive Patron information is encrypted

Alma maintains an audit trail of access to patron data that has been exported. This information may be used in conjunction with the institutions' written approvals by students and/or their parents to track any export of patron's data outside of Alma.

Ex Libris is ISO 27018:2014 (Protection of PII) compliant. ISO 27018:2014 defines the controls and guidelines for implementing measures to protect Personally Identifiable Information (PII) for the public cloud computing environment. Additionally, Ex Libris was the first company in the library industry to achieve ISO 27701:2019 certification which provides a code of practice for maintaining the privacy of data in a privacy information management system (PIMS). This standard establishes privacy requirements, helps organizations manage risks related to personally identifiable information (PII), and outlines a comprehensive set of operational controls that can be mapped to various regulations.

d. Retention NCCCS requires the solution to access and restore course backups as needed by the ILS Administrator within or outside the proposed solution. Therefore, the solution is required to adhere to the NC records and retention schedule as defined in the following link: https://archives.ncdcr.gov/government/state-government-agencies/functional-schedule . NCCCS requires that all user data and artifacts entered by employees, students, and contractors of the State of North Carolina, including backups and archives using the service provided, are owned by the State of North Carolina and must be returned at Vendor's expense to the initiating State agency within thirty (30) days of contract expiration or termination.

Ex Libris: Ex Libris has a well-developed backup plan consisting of multiple daily snapshots including a full daily backup. The backups are stored at the data center site and in a remote secured location over a private dedicated fast secured line. This guarantees that at any point in time, in case of a disaster, Ex Libris holds copies of the data onsite and in a remote and secured disk backup. On a regular basis, Ex Libris performs a system backup to back up application files, database files, and storage files. The privacy controls in practice at the company apply as well to all backup files. All backup files are subject to the privacy controls in practice at Ex Libris. Ex Libris has a 10 week retention policy. The restore procedures are tested on an ongoing basis to ensure rapid restoration in case of data loss.

Part of the overall Ex Libris recovery plan includes the recovery of the entire institution's data to the last point a backup was taken. Ex Libris takes several data snapshots per day and also maintains a full backup at an offsite remote secured location. This data includes the entire institution's data and configuration.

Ex Libris is responsible for recovery, and maintains a business continuity plan which is implemented following a disruption to service.

In the event of a major or catastrophic event, data recovery is performed. After identifying salvageable equipment, early data recovery efforts first focus on restoring the operating system(s)

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for each system. Next, mission critical system data is restored. After system data is restored, individual customer data is restored.

The length of time that the process takes depends on the point of time from which data is required to be restored and whether we can utilize our onsite backups or will we be required to utilize offsite backups. A full restore from onsite backups could be performed within 12 hours depending on the exact scenario and usage of the onsite backups.

Recovery Time Objectives and Recovery Point Objectives

RTO - Recovery Time Objectives

Ex Libris RTO for our Higher Education Platform (Alma, Primo VE, etc) is up to **24 hours**.

RPO - Recovery Point Objectives

Ex Libris has adopted a rigid backup procedure to safeguard the customers' data. On a regular basis, Ex Libris performs system backups using best practice industry standards and centralized backup systems, including backups of the infrastructure network, operating systems, application files, database files, and storage files. This includes several backup snapshots a day of all the data. All backup files are subject to the privacy controls in use. Ex Libris has the ability to go back up to 24 hours to restore customer data. This information stored in a secured offsite remote backup facility that hold full daily backup. The restore procedures are tested on an ongoing monthly basis to ensure rapid restoration in case of data loss. In addition, a full copy of the data is maintained at a remote secured site, thus making sure that we always hold a full copy of the data for recovery purposes.

Ex Libris RPO for our Higher Education (Alma, Primo VE, etc) is up to **4 hours.**

For more details please see the BCP linked here: https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Ex_Libris_Cloud_Services_BCP_v2.9

Please also refer to our Business Continuity Plan (BCP): Ex Libris Cloud Services BCP - Ex Libris Knowledge Center (exlibrisgroup.com)

Our BCP is attached to our response.

The customer is in full control of the customer data stored through the Ex Libris SaaS service and has responsibility to determine the retention scheme for the customer data.

The Ex Libris contract specifies that customer data will be available in industry-standard format for download upon termination or completion of the service (free of charge). Except as otherwise agreed or required by applicable law, the customer will have 30 days to download such data before it is deleted and, thereafter, all such customer data (including backups) will be cycled out of the SaaS service systems and deleted within 120 days.

4. Specifications and Scalability

NCCCS requires a fully functioning integrated library system that includes all standard components and is available 24x7x365. Describe how the proposed solution meets the following specifications, including capabilities, features, and limitations:

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Ex Libris: The proposed solution, Alma, meets the requirements of NCCCS for a fully functioning integrated library system with all standard components available 24x7x365. Alma is a next-generation solution that provides a unified system for library operations, including selection, acquisition, metadata management, digitization, fulfillment, and ILL. It supports print, electronic, and digital resources with unified workflows and task-oriented approach. Alma is cloud-based and multi-tenant, ensuring continuous availability and scalability. It offers features such as automated workflows, business process automation, integrated analytics, and seamless integration with third-party applications and enterprise systems. Alma's architecture allows for scalability without system limitations, with the ability to deploy multiple instances and scale horizontally and vertically. The system also includes advanced security measures and data encryption to ensure the safety of patron information. Additionally, Alma provides a centralized platform for managing funds, vendors, and acquisitions processes efficiently. The integration with Primo VE for resource discovery and delivery enhances the user experience and provides a comprehensive solution for library services.

a. Acquisitions

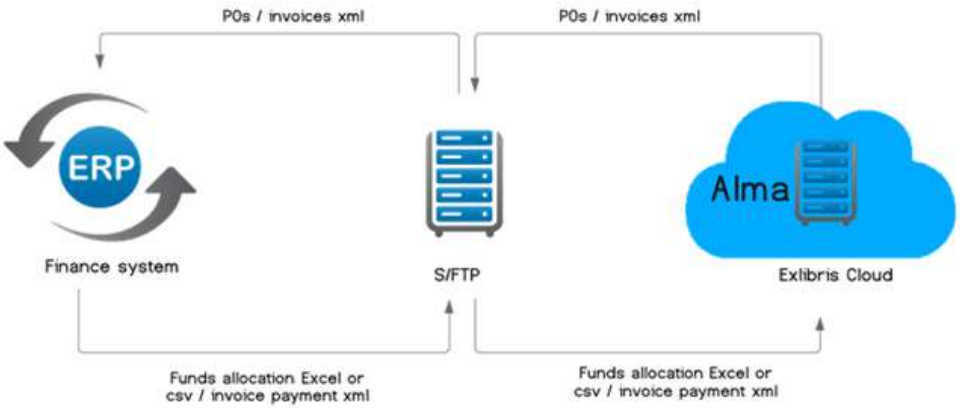
i. NCCCS is seeking an ILS solution that supports a variety of functions related to Acquisitions. Describe the Solution's ability to interface with the current NCCCS ERP and the State procurement system. Describe the acquisitions functionality of the proposed ILS solution. Include in the description how the proposed solution supports the following functions:

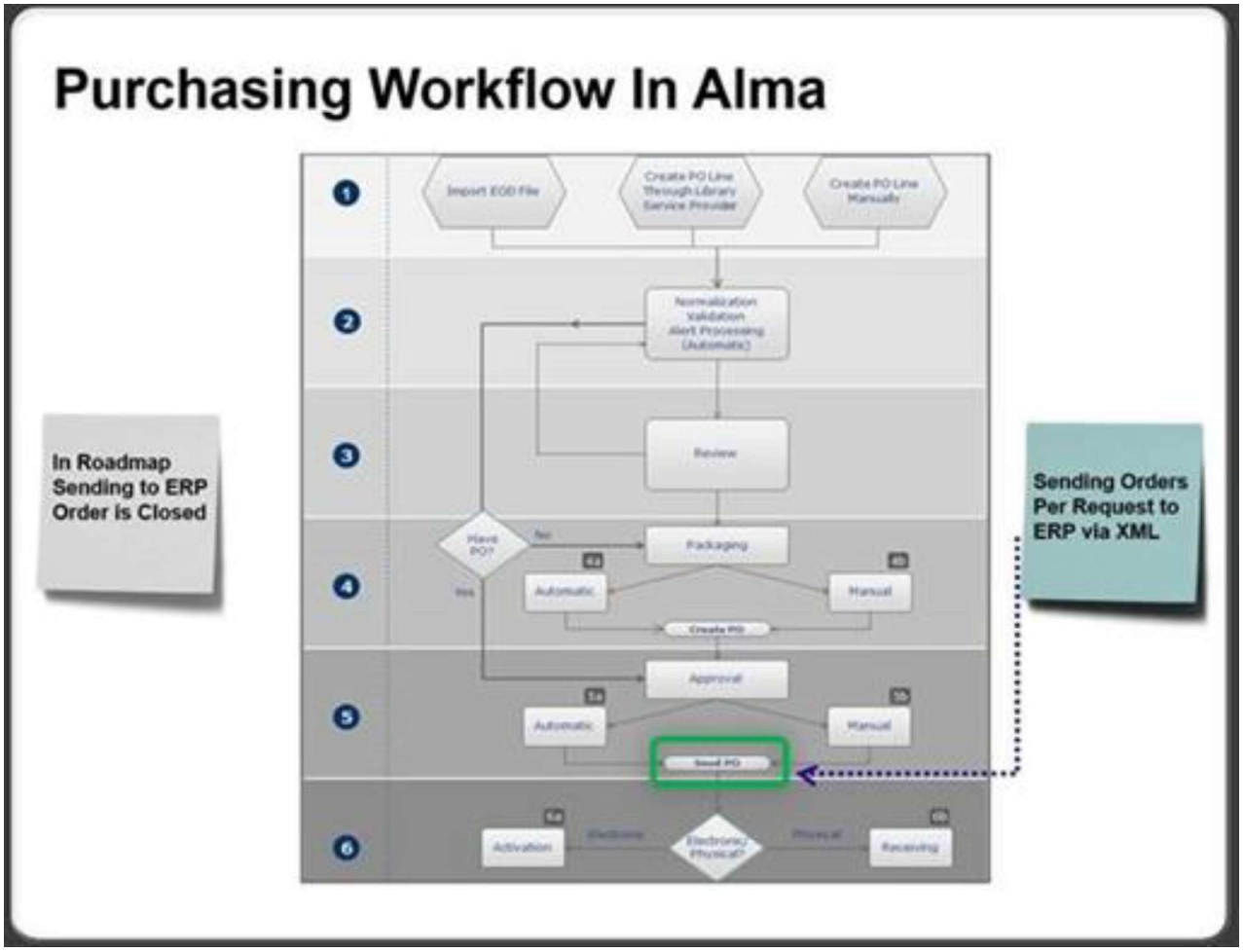
Ex Libris: Alma integrates with financial systems for payment for the following functions:

- Export Payment Requests - report to the ERP System on future purchases from the order state
- Import Payment Confirmations
- Export Orders
- Synchronize fund adjustments – this is the "reconciliation" process with the ERP system – load the fund allocations as they were created in ERP System

In general, the export and import processes between Alma and the financial system are performed using XML files that are placed at a predefined FTP location. These XML files can be fetched by the financial system (in the case of invoice or PO export) or by Alma (in the case of invoice import). Note that the fund allocation loader process is different because the format is an Excel or CSV file. This is illustrated in the following diagram:

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After an invoice has been approved, it reaches the payment stage, in which the invoice awaits payment processing either through Alma or through the institution's Enterprise Resource Planning system.

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Alma's default configuration assumes that the institution will export invoices to its ERP system. In order to support this workflow, it is necessary to configure a Finance Integration profile, as demonstrated in the screenshot below:



Note that if you do not want to export invoices to an ERP, you can configure Alma to skip the export stage and update the invoice status accordingly.

All the above invoices follow the same workflow:

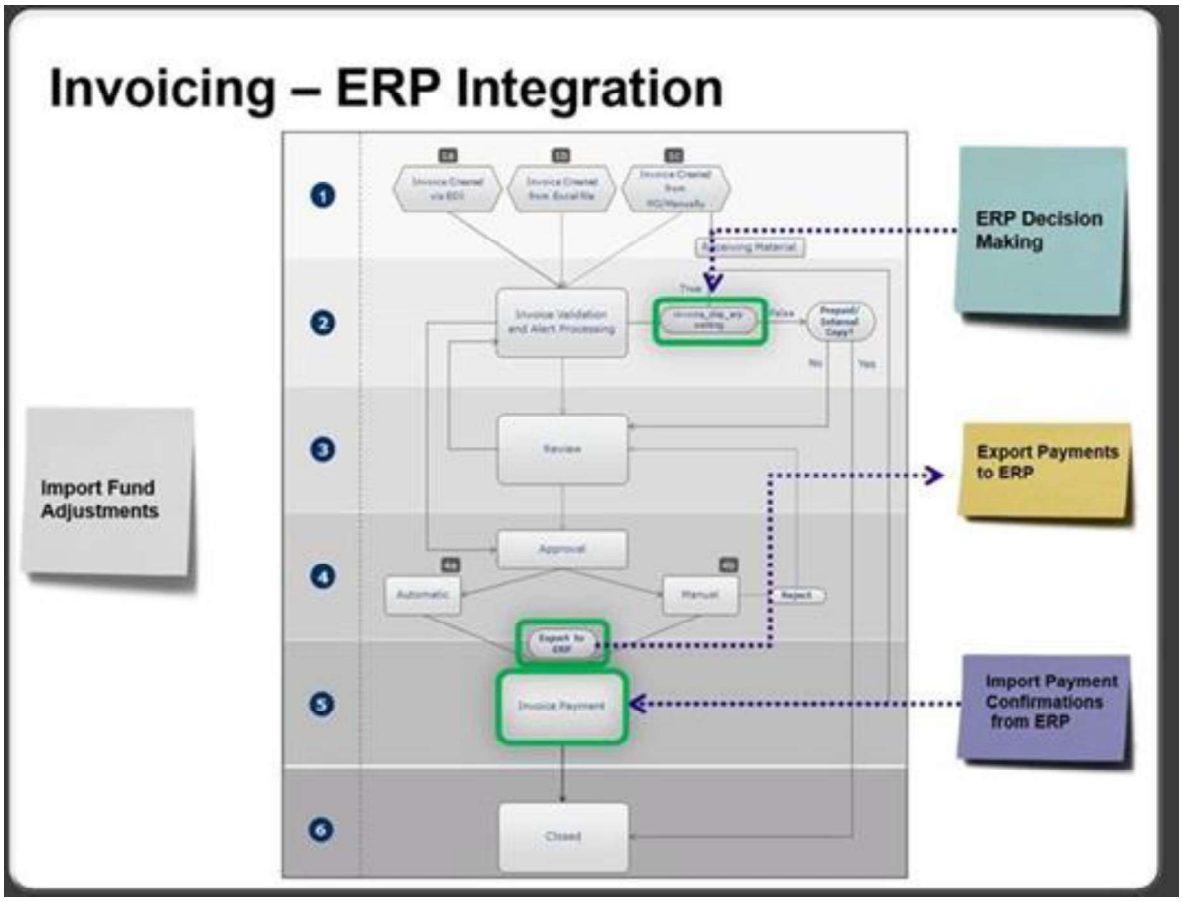
- In Review – initial step in the workflow
- In Approval – if Approval rules exist in the institution
- Ready to be paid – this is the state where all the invoices wait for the Export job to send them to ERP System
- Sent to ERP (Waiting for payment) – after the invoice is sent to the ERP system it is waiting for payment confirmation
- Closed – Invoice is paid and closed

Exceptions

- Invoices may not follow ALL the above stations in the workflow. This is dependent on the invoice itself and the institutional configuration:
    - Some institutions do not use ERP integration
    - A specific invoice may not be sent to an ERP
    - Some institutions may not handle payment in the libraries

Invoices that have been closed or sent to the ERP can be sent back to the Review stage, to allow the invoice to be edited after it was rejected by the ERP. Invoices rejected by the ERP are sent to the review stage automatically.

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Here is a list of ERPs noted in the Alma integration profile configuration. Note that "Other" is also included in case a specific ERP is not listed:

- Agresso
- Blackbaud
- Ellucian Banner
- Ellucian Colleague
- Jenzabar
- Kauali Financial System
- Microsoft Dynamics
- Oracle PeopleSoft
- Oracle Financial
- SAP
- Symmertry
- Workday
- Other

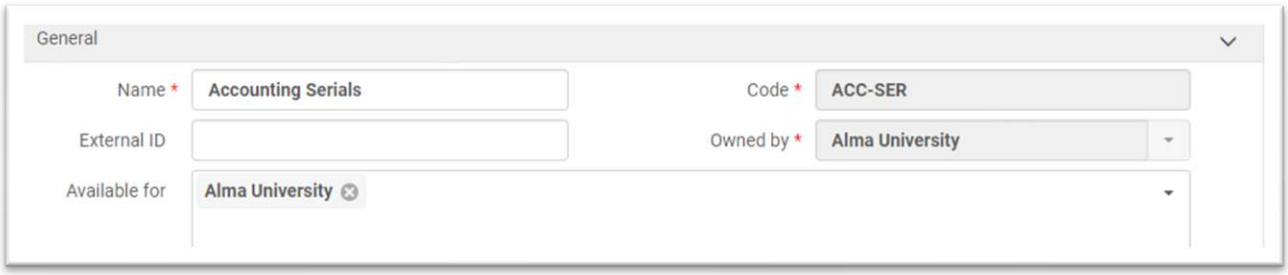
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a) The separation of funds for each library.

Ex Libris: Each NCCCS institution will manage its own funds in its own Alma institution. It is possible to provide staff users with different levels of access to budgets. The Fund-Ledger viewer role provides view-only access to budgets:



Furthermore, budgets can be defined at the individual library level within a single institution so only staff members with privileges for the particular library/branch can view/edit that library's budgets:



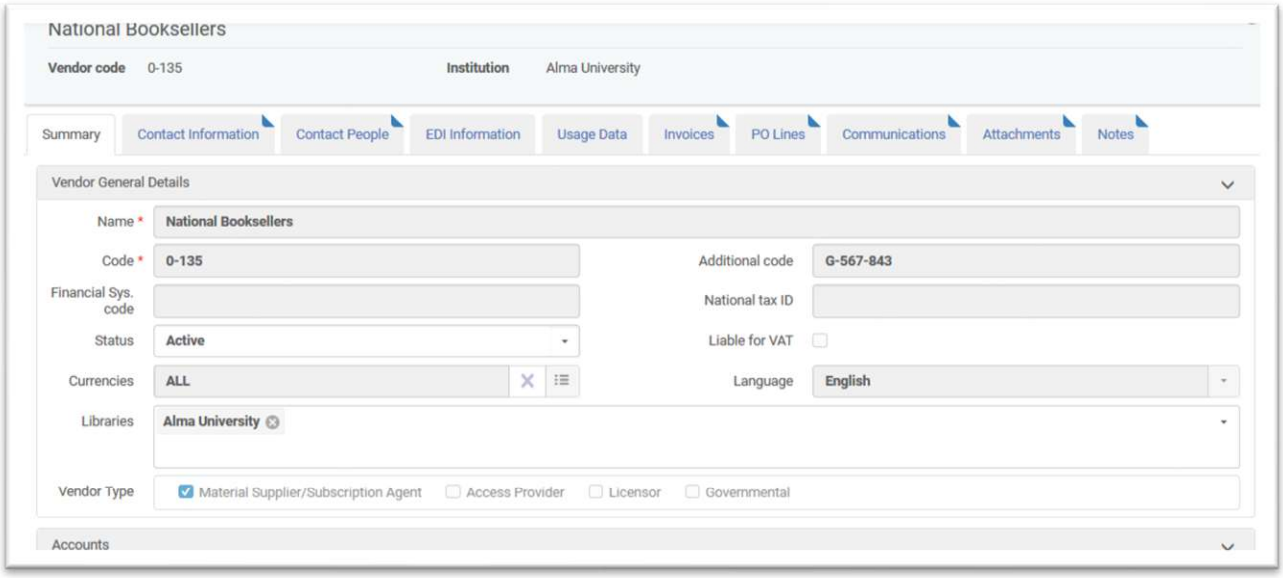
When creating a Purchase Order Line in Alma this will be assigned to a specific library. Once this is done the transaction can only access funds available for the chosen library.

b) Creation of vendor records.

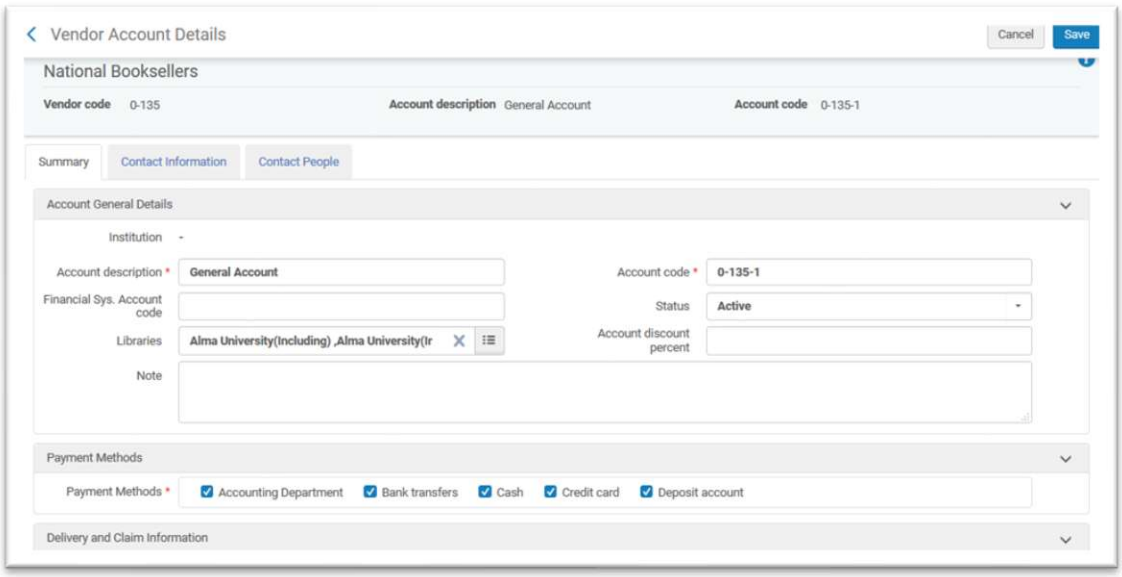
Ex Libris: A vendor record in Alma consists of a master record as well with a linked account record. In addition, library specific accounts may be created and linked to the master account record.

Vendor records store information about the vendor that, by default, are inherited by all the vendor accounts attached to them. Vendor accounts allow libraries to override that information (such as contact information), and to maintain multiple accounts for each vendor (e.g., one account for firm orders, another for approval plans, etc.)

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The next screenshot shows a vendor account record:



The vendor record in Alma is made up of segments that include a summary, contact information (addresses, phone numbers, web addresses), contact people, EDI information, invoices, attachments, communications, and notes. Vendor records are created for materials suppliers, subscription agents, access providers of electronic resources, and licensors.

Definitions in the vendor record – such as payment and delivery information--will automatically populate data in new order records created in Alma.

If, for example, the 'Expected receipt after ordering (days)' is recorded in the vendor record, it will populate by default the same field on the PO Line an order associated with this vendor.

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Additional such fields are:

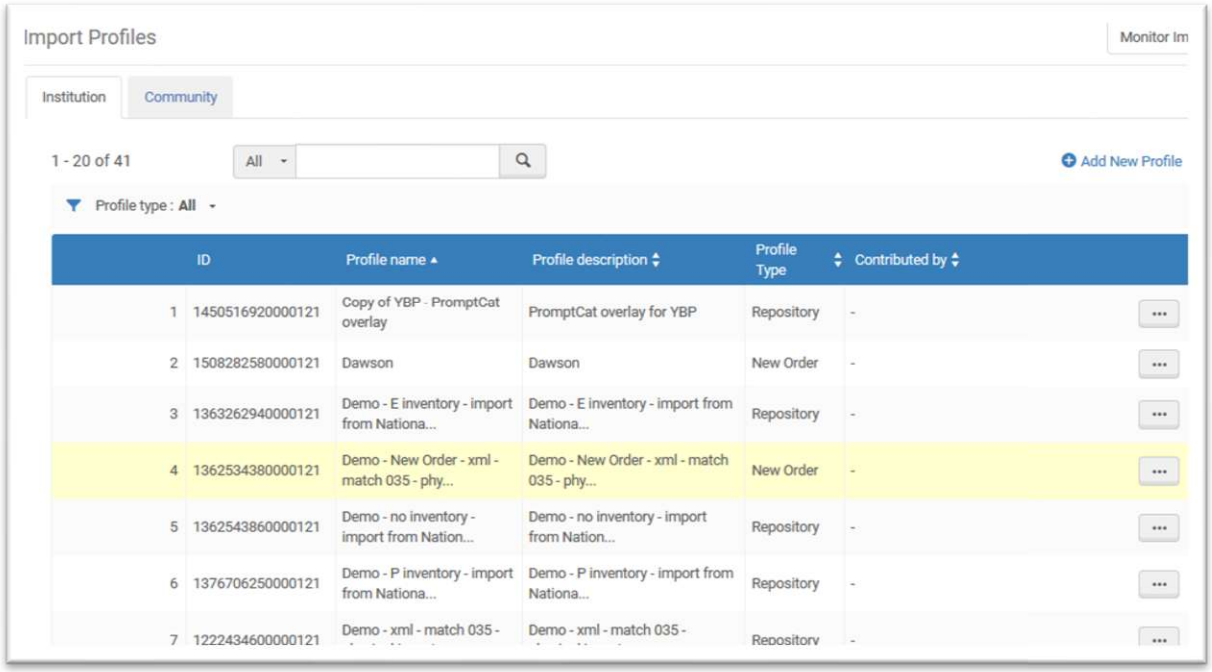
- Renewal evaluation interval (days)
- Claiming grace period (days)
- Expected activation after ordering (days)
- Subscription grace period (days)

The screen shot below illustrates the vendor account details which include the delivery and claiming default setup:



c) Importing of catalog records within the acquisitions order record.

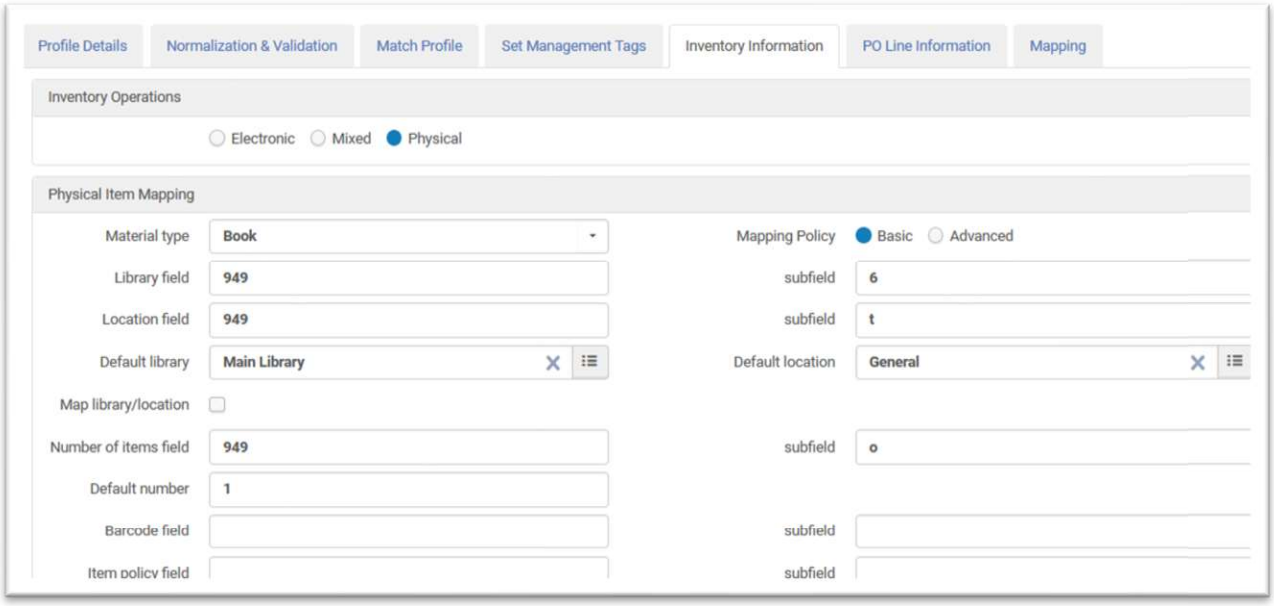
Ex Libris: Alma supports the ability to import embedded order records. The rules by which it imports records are defined in "import profiles." Many import profiles may be setup –for records from different sources, containing different data types, etc.:



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If the library is importing using EOD, it can use one or more profiles that have been created for a particular vendor with specific configurations for the kinds of purchases that are being processed. A vendor can have multiple import profiles with specific configurations for a particular purchase type. For example, different import profiles might exist for purchases being funded through different funds, or for purchases for different libraries in the institution.

The following screen capture is an example of defining inventory information as part of an embedded order profile:



MARC records with embedded order data can be used to create purchase orders in Alma, as well as create records for the items added to the library's inventory using data supplied by the individual institution or the library's materials vendor.

This includes support of vendor approval programs for both print and electronic resources, such as e-books. In this workflow, Alma imports an EOD record (embedded order data) and puts the description into the metadata management systems (MMS) and turns the embedded order information into a PO line.

The library will need to configure the import profile in Alma based on its agreement with the material vendor regarding the specific fields that will be used to supply the order and item information in the MARC record.

Loading EOD files into Alma has the potential to automate the entire acquisitions and cataloging workflow, making it possible to order a resource using the vendor's interface, and unpack and shelve the materials with minimal effort.

d) Fund rollover year to year.

Ex Libris: Alma's fiscal period close operations provide a variety of options that allow each library to create a new financial structure and roll over current orders in accordance with the library's financial and reporting requirements.

As part of the fiscal period close, the Purchasing/Ledger manager runs a system job that copies the ledger of the current fiscal period with all the summary details and allocated funds to the new

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fiscal period, if required. No changes to the ledger or allocations can be made during the process. If the next fiscal period does not exist, Alma creates a new one. Fiscal periods are defined by each Alma institution; Alma can accommodate any yearly definition of a fiscal period. An institution may have one or multiple ledgers, depending on local financial requirements.

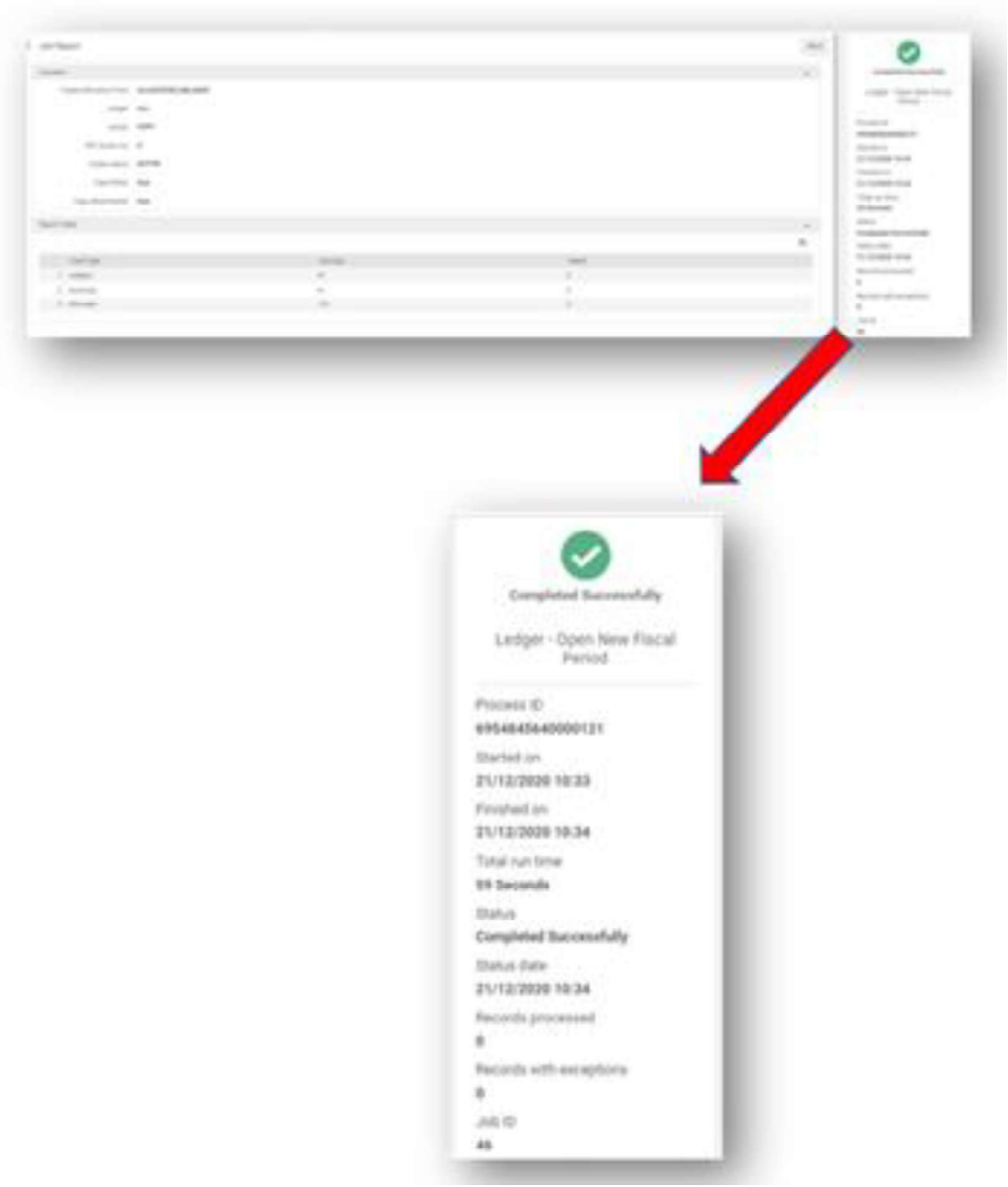
At the end of the current fiscal period, the Purchasing/Ledger Manager rolls over the current open orders to the new fiscal period and can specify if the encumbrances should be increased or decreased automatically by a specified percentage. The new year's encumbrances can be based on the previous fiscal period's encumbrances, or optionally on the previous fiscal period's expenditures, which allows the library to base the encumbered amounts on the actual payments in the prior year. Once the orders have been rolled over to the new period, the previous fiscal year is closed, and the new fiscal year becomes active. If resource sharing requests (ILL) are associated with a fund in your workflows, a third step for rolling over resource sharing requests becomes obligatory.

Step One: Ledger Rollover

This is the first step in the fiscal period closure process. As part of the fiscal period closure, the Ledger Manager runs a job that copies the ledger of the current fiscal period with all the summary details and allocated funds to the new fiscal period, if required. No changes to the ledger or allocations are made during this process. If the next fiscal period does not exist, Alma creates a new one.

Ledgers and funds can be created as either "active" or "draft". Draft ledgers are useful when creating the new fund structure in advance; ledgers are made active when the institution is ready to begin using the fund structure.

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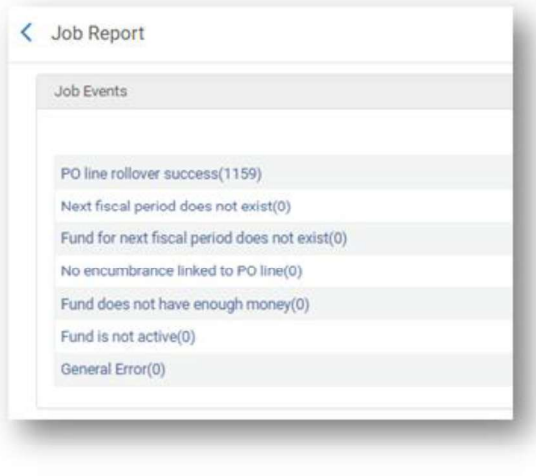


Step Two: Rolling Over PO Lines

A job must be run to copy the encumbered PO lines to the new fiscal period. During the rollover process, you can select whether you want to increase or decrease the amount of the encumbered PO line. Please note that before performing a PO line rollover, you must first perform a ledger rollover.

PO line rollover is performed on all active, continuous PO lines and on active, one-time PO lines that still have an encumbrance.

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Step Three: Resource Sharing Rollover

A job must run to copy the encumbered resource sharing requests to the new fiscal period. Only resource sharing requests associated with a fund may be encumbered.

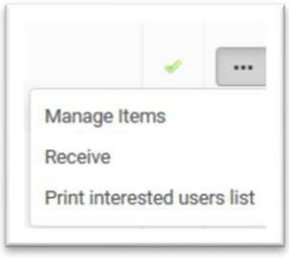
Resource sharing request rollover is performed on all active resource sharing requests that still have an encumbrance.

e) Tracking of requestors and by department.

Ex Libris: As part of the order record, it is possible to define a list of interested users that can be used for routing issues after they have arrived and been checked-in.

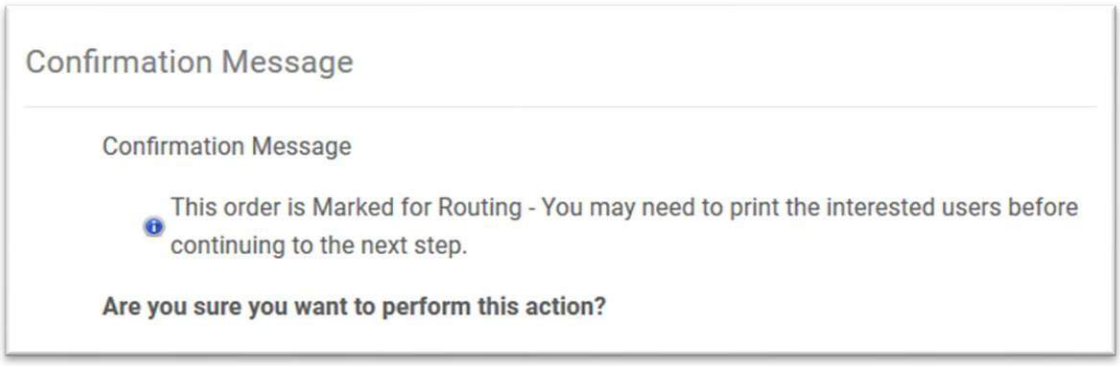
The staff user receiving items will be able to see if a serial title has a routing list from the main receiving screen):

From the Actions (...) button the staff user can print the list of interested users:

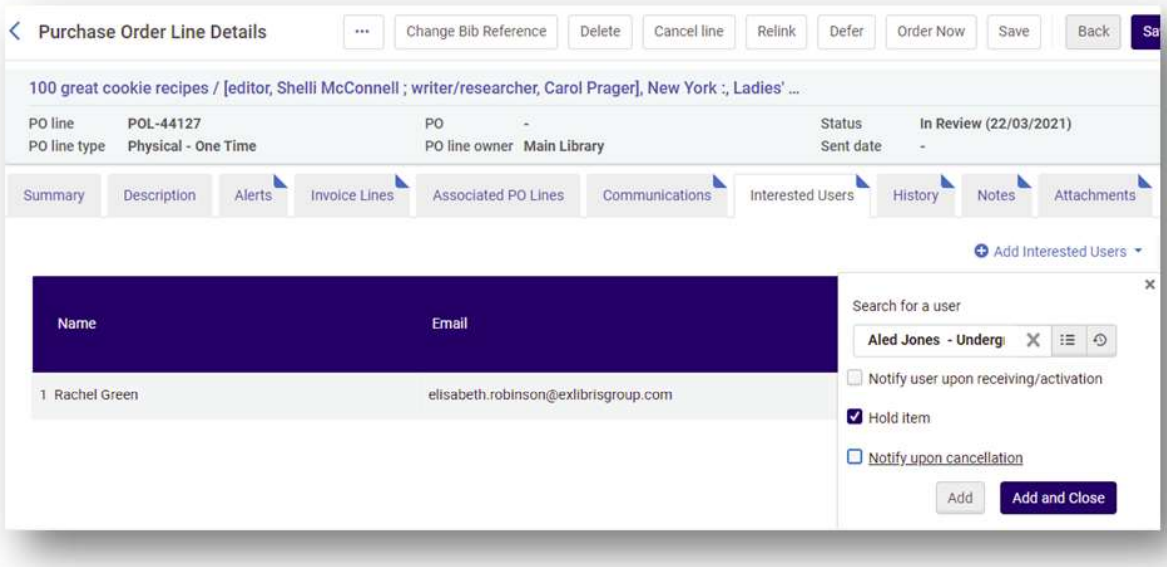


When receiving an issue that has a routing list, the following pop up message will display:

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Interested users are always notified about changes in the PO line. You can also select whether an interested user is notified when the item is received or activated, renewed, or canceled, and whether a hold is placed on the item for the user. The notification is sent as an **Interested in Letter**. The requester of the purchase request is automatically defined as an interested user.



Depending on the material type and use case, interested user(s) may have the following configurations:

Notify user upon receiving/activation – When selected, Alma sends an email to the user when the item arrives at the library's receiving department. An email is sent only if this is selected and an email address is configured for the user. This option is selected by default.

Hold item – This option appears only when working with physical items. When selected, Alma creates a hold request on the item for the user when the item leaves the Acquisition Department.

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If other requests exist for the item, request priority is handled according to role, as configured by the institution.

Notify upon renewal – This option appears only for continuous orders. When selected, Alma sends the Notify Upon Renewal letter to the user when the order is sent to manual renewal. An email is sent only if this is selected and an email address is configured for the user. This option is clear by default.

Notify upon cancelation - When selected, Alma sends an email to the user when the order is cancelled. An email is sent only if this is selected and an email address is configured for the user. This option is clear by default.

f) Standing orders.

Ex Libris: Alma supports purchasing workflows of all types, including standing orders for monographs and serials.

Alma's Task list provides staff with the ability to be notified when PO Lines need attention. These tasks include the following:

- Order Lines - deferred - assigned to you
- Order Lines - packaging
- Order Lines - review - assigned to you
- Order Lines - review - unassigned
- Order Lines - waiting for renewal
- Order Lines with claims
- Orders - approval
- Orders - review

Print continuations (print subscriptions and standing orders) and electronic subscriptions are both managed by Alma through ongoing open orders. The library establishes a purchase for the subscription, including a start and end date (the latter is optional). As new issues of print resources are received, inventory is created automatically. Electronic subscriptions may be activated and are subject to evaluation and renewal workflows.

Alma maintains a lifecycle of purchasing that allows orders to be processed automatically with no staff intervention. The library can set up rules that will flag an order for review or for automatic processing based on flags, e.g.:

- By vendor (so that some vendor orders can pass through automatically)
- By acquisition method (e.g., so that approval orders will pass fewer checks)
- By type of material or source of PO information
- By additional exceptions (duplicate active order, item already exists in inventory, price exceeds limits, fund nearing limit, etc.)

A suggested workflow for standing orders is to create a generic bibliographic record for the series. For example, "All catalogs published by the National Gallery of Australia". This bibliographic record is suppressed from discovery, and the PO line is assigned a price of what

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you expect the items to amount to eventually. This amount will appear as an encumbrance on the fund.

As each title is received, new bibliographic, holding and item records are created, linked to the standing order PO line, and the cost of the item is moved to expenditure on the fund.

All items received are therefore tracked via the PO line or the bibliographic record, as well as links in the fund and vendor files.

At the end of the financial year, any open standing orders can be rolled over to the next financial year if desired, or a new one created.

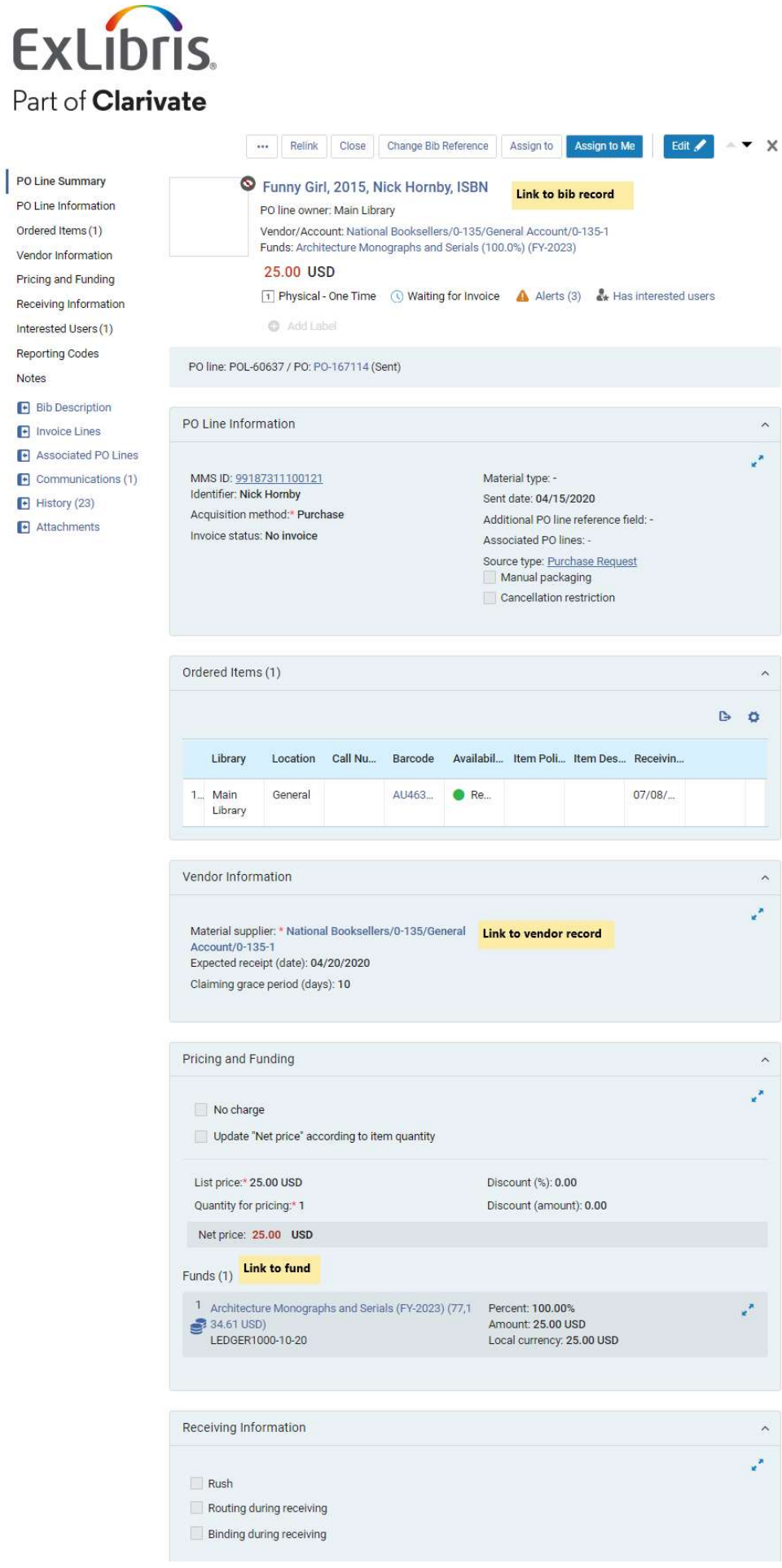
g) Purchase orders.

Ex Libris: Alma provides the ability to navigate (by hypertext links) among linked purchase orders, funds, vendors, bibliographic records, licenses for electronic resources, and information about electronic packages (from the Central KnowledgeBase).

Additionally, the purchase order is linked directly to the metadata records in the system; there is no need for duplicate records in Alma. Order lines are linked directly to bibliographic records, or to package records in the case of groups of e-resources. Item records, which describe the resources in the library's inventory, are linked to the metadata record, which is in turn linked to the purchase order line.

Please find a screenshot of a Purchase Order Line record below with indications which hyperlinks are available to directly access related records and information:

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h) Invoicing, including the creation of vendor supplied and electronic invoices.

Ex Libris: Alma supports the creation of an invoice automatically from a PO. Once the PO is selected Alma will automatically create invoice lines based on the PO details; the invoice line fields are automatically populated and are displayed in the Summary tab, where they can be edited as needed.

Invoices can be created in several ways:

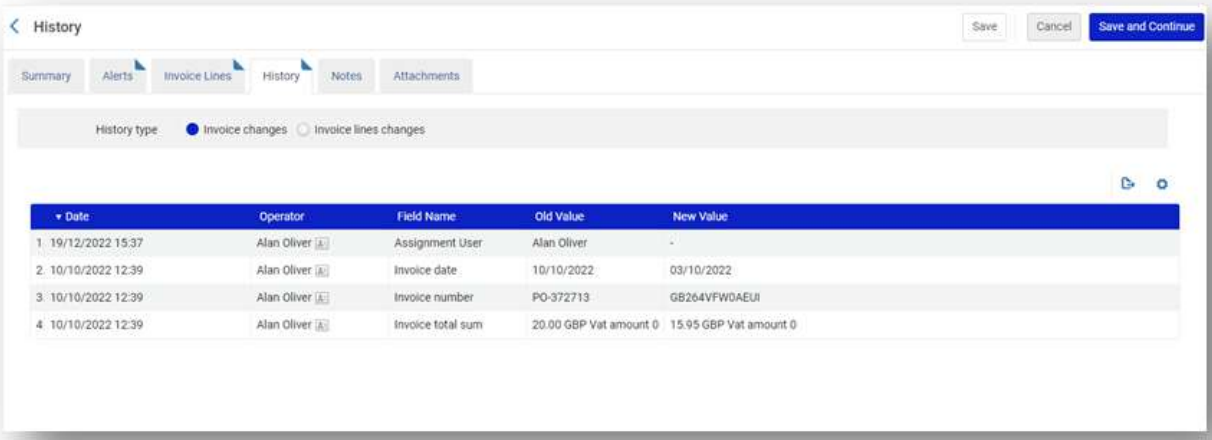
- Electronic data interchange (EDI) with a vendor.
- Creating an invoice from the PO.
- Creating an invoice manually; or
- Loading invoices from an Excel file.

Receiving and invoicing can be done together or separately, depending on the library's workflows. Alma uses library-defined rules to automatically process an invoice to determine whether there are elements that require special attention. If there are issues that require attention, the invoice is surfaced via the task list for review by a staff user.

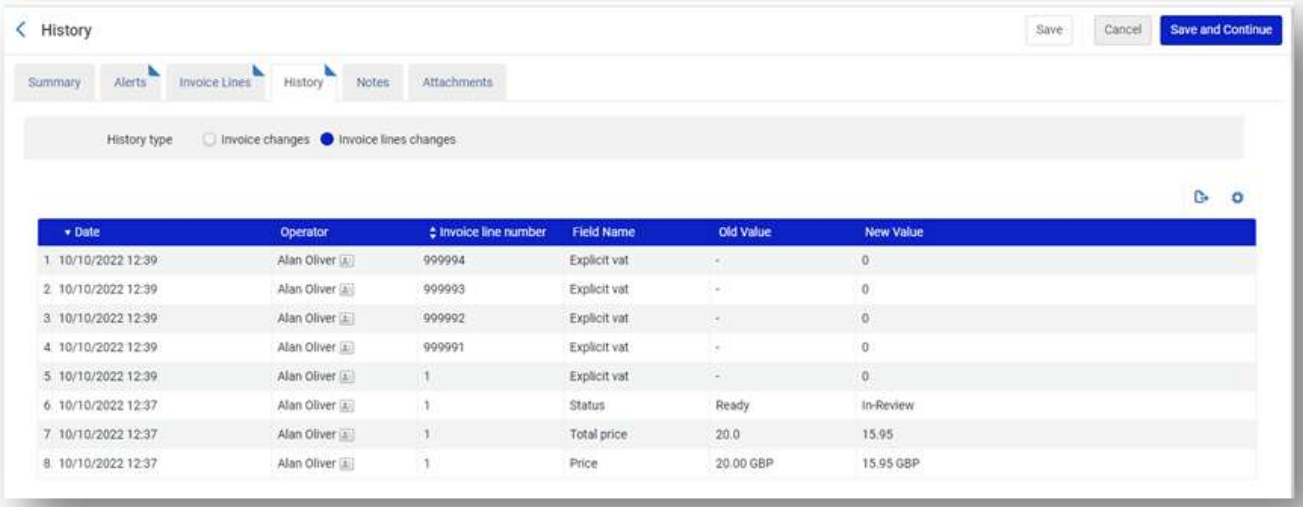
For workflows such as ordering and invoicing, Alma relies on standard protocols to facilitate automated interoperability with other systems—significantly streamlining workflows and reducing the time to make new resources available to the campus community. Alma supports electronic data interchange (EDI) 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.). Alma also streamlines electronic ordering through improved management of embedded order data records. Once a vendor EOD profile has been created, the process is fully automated. Rule validation and the auto-generation of purchase orders takes place without the need for staff intervention. Alma provides tools including analytics to track purchase order status and budget information.

Invoice records include a history tab which allows you to track changes of the invoice and the invoice lines:

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Invoice line changes:



In addition, Alma Analytics includes comprehensive reporting capabilities for invoices:

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ii. Explain how the proposed solution supports EDI, and how it is compatible with the State's current E-Procurement system. See http://eprocurement.nc.gov/ .

Ex Libris: For workflows such as ordering and invoicing, Alma relies on standard protocols to facilitate interoperability with other systems – both internal to the library's environment and externally to vendors. Alma supports electronic data interchange (EDI) using the UN/EDIFACT standard for electronic communications of order and invoice information. Library staff configure EDI information as part of the vendor record.

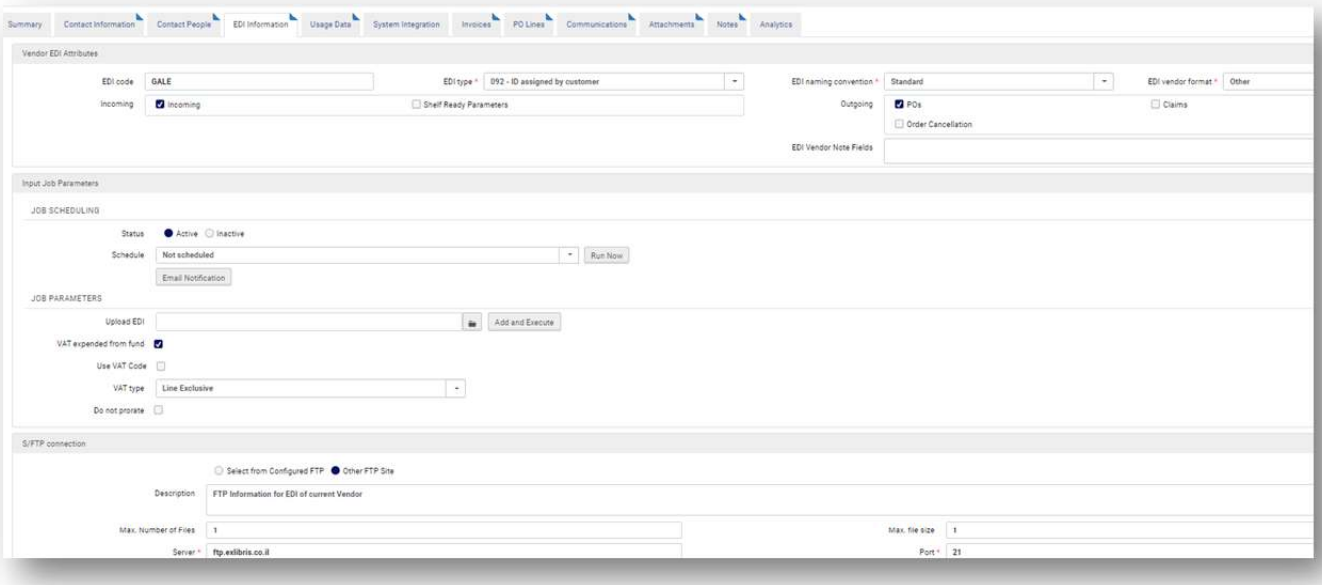
This information includes vendor EDI attributes, S/FTP connection information, individual library EDI information, and EAN information per vendor account. These details allow for maximum flexibility when there are multiple libraries within an institution, or when a library has multiple accounts with a vendor (e.g. for multiple formats, material types, approval plans, etc.).

Storing the vendor EDI account information in Alma allows the process to be automated. As EDI orders are sent and EDI invoices are received, the EDI files are linked to the vendor's record and available from the attachments tab. Alma also supports claiming via EDI.

Invoices that have been created from EDI files flow into the invoice workflows automatically, and integrate with the library's ERP system.

The EDI tab on the vendor record:

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The following acquisition activities are supported for EDI-enabled vendors:

- Sent from Alma to the vendor:
    - Purchase orders (POs)
    - Claims – Claims sent to the vendor regarding missing items. EDI claims can be used for both one-time and continuous orders.
    - Order cancellations – For vendors that support this feature, cancellations are sent using EDI instead of by email.
- Sent from the vendor to Alma:
    - Invoices
    - Order Responses:
        - Shelf-Ready – these responses contain barcodes and other item information for delivered items. After receiving the Order Response, Alma updates the relevant PO lines.
        - Claim responses - these responses are loaded by the standard EDI Load Files job. Information about the response appears in the Notes tab of the relevant PO lines:

The vendor record in Alma is made up of segments that include a summary, contact information (addresses, phone numbers, web addresses), contact people, EDI information, invoices, attachments, communications, and notes. Vendor records are created for materials suppliers, subscription agents, access providers of electronic resources, and licensors.

Definitions in the vendor record – such as payment and delivery information--will automatically populate data in new order records created in Alma.

If, for example, the 'Expected receipt after ordering (days)' is recorded in the vendor record, it will populate by default the same field on the PO Line an order associated with this vendor.

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Additional such fields are:

- Renewal evaluation interval (days)
- Claiming grace period (days)
- Expected activation after ordering (days)
- Subscription grace period (days)

A vendor can have multiple accounts. Account records may be linked when an operator creates an order. Selecting an account is setting defaults associated with that account e.g., a 5% discount for firm orders. This setting is account specific, so could vary from library to library across the institution.

Alma is a unified platform and handles resources of all types, regardless of format, including books, journals and other serial and non-serial formats (physical, electronic and digital). Workflows and processes have been designed to allow seamless and automatic management with as much consistency across the format types as possible. Alma only differentiates where necessary and leaves the user to decide where manual intervention is desired.

b. Administration

i. NCCCS desires a solution that allows different levels of administrative access, including central administrative control of the ILS, and a shared system of login access. Describe the administration functionality of the proposed ILS solution and include in the description how the proposed solution supports the following items:

Ex Libris: Alma (and Primo VE, which is configured accordingly) support a number of main organization levels:

- *Alma Institution*
- *Alma Library*

The Alma Institution is the main building block of the organizational structure. It enables consolidated management of key workflows. The institution manages the following data as a single list, accessible to all institution staff with the relevant roles (authorization):

- User management
- Vendors
- Licenses
- Metadata management
- Configuration
- Integrations
- Resource sharing partners

The Library System Administrators will have access to their entire institution to make changes and remedy issues without interference from Ex Libris. Additionally, if the libraries are implemented with a Network Zone, authorized administrators for the Network Zone can centrally manage configurations to be distributed across the system.

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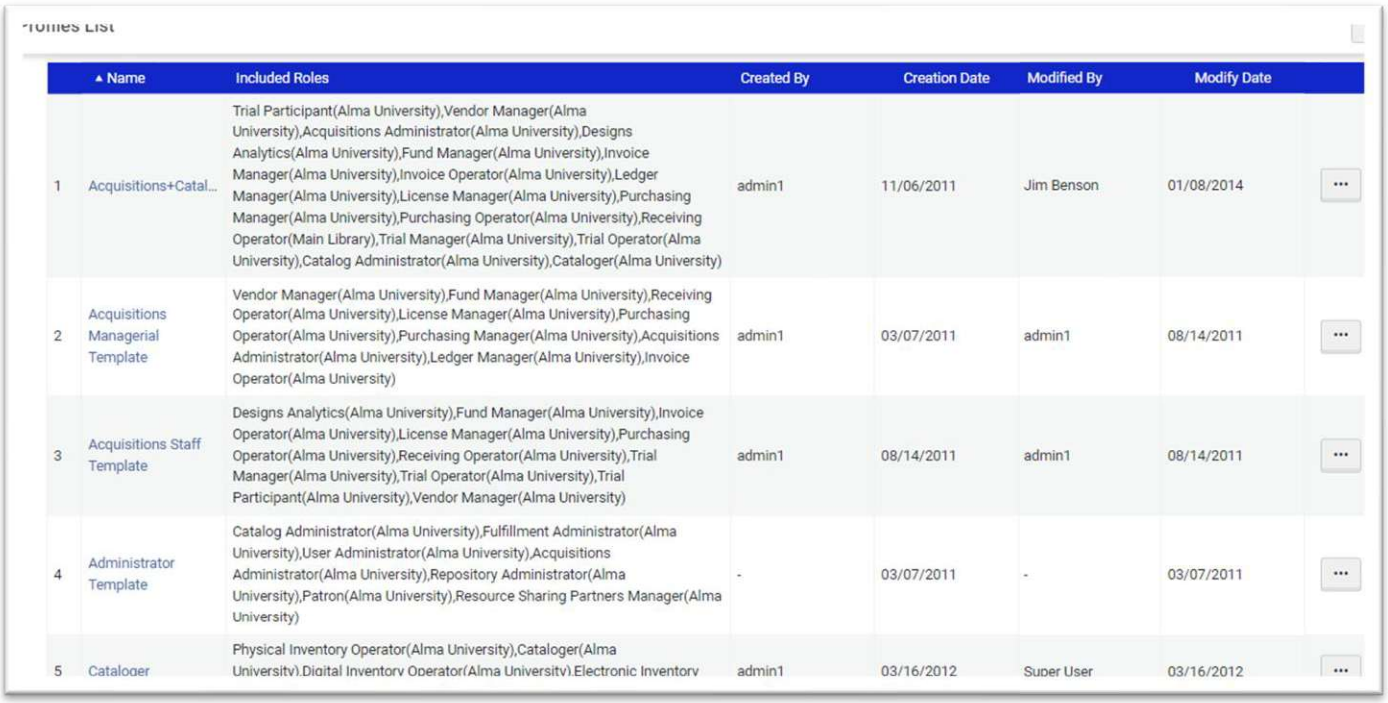
a) Login and permissions management.

Ex Libris: Alma handles permissions for all library functions, including circulation, via role-based management. The system includes an out-of-the-box set of roles relevant to library management (e.g. Acquisitions, Fulfillment, Cataloguing, etc.) while also allowing for the definition of role templates that represent a pre-defined set of roles. The use of templates decreases the need to re-define the roles and privileges for each new user and also enables bulk update in case of a change to the template. While Alma offers quite granular permissions functionality, the interface for configuring permissions is intuitive and easy to use.

This user management functionality includes both public and staff users; their management and structure are the same, but the roles assigned to each may be different. A user role, such as User Manager or Administration, defines the user's functions and privileges. Administrators can assign multiple user roles to a user. Multiple Administrators can be defined. With this model staff users will only be provided with access to areas that are assigned to their roles and privileges. This also means that in certain areas they will be provided with read-only/view-only information.

The Alma Task List provides the staff user with information about tasks that need their attention. The Task List has hypertext links for easy navigation to areas of the system where records require manual intervention. The Task List is sensitive to the user's roles and privileges so that for example, only acquisitions staff will see ordering and invoice-related tasks.

An example of some of the roles included in Alma:

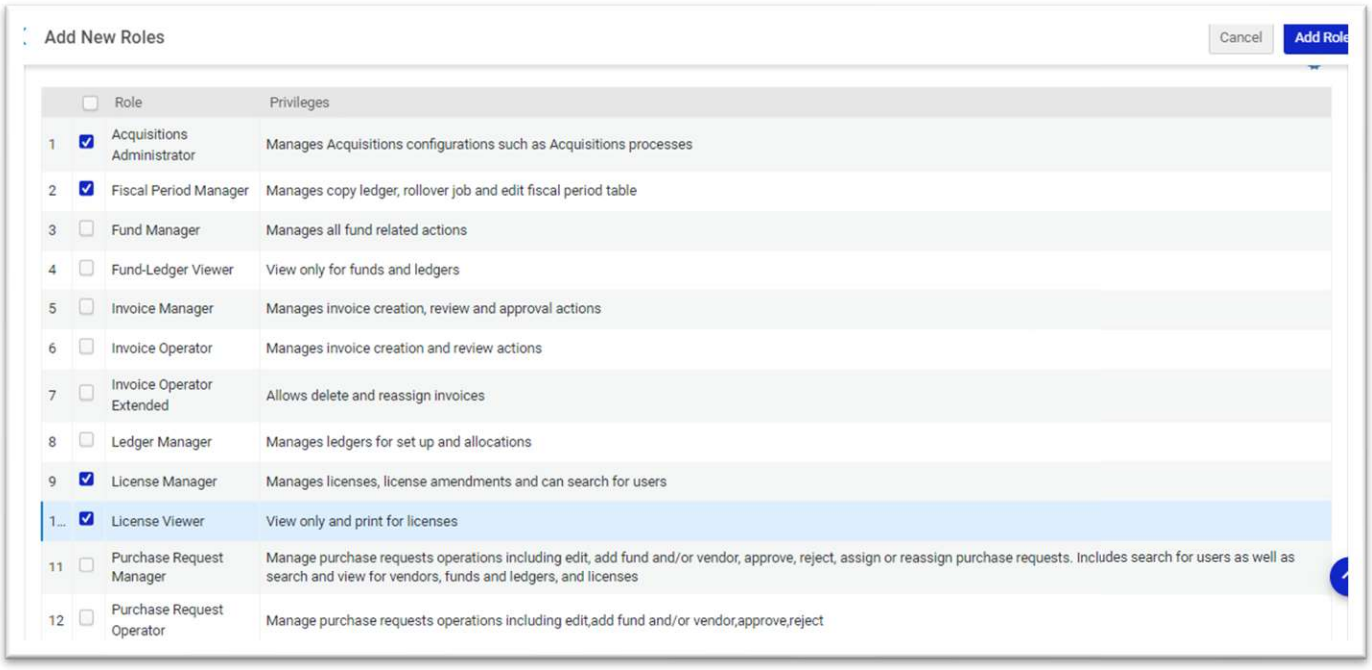


	Name	Included Roles	Created By	Creation Date	Modified By	Modify Date
1	Acquisitions+Catal...	Trial Participant(Alma University),Vendor Manager(Alma University),Acquisitions Administrator(Alma University),Designs Analytics(Alma University),Fund Manager(Alma University),Invoice Manager(Alma University),Invoice Operator(Alma University),Ledger Manager(Alma University),License Manager(Alma University),Purchasing Manager(Alma University),Purchasing Operator(Alma University),Receiving Operator(Main Library),Trial Manager(Alma University),Trial Operator(Alma University),Catalog Administrator(Alma University),Cataloger(Alma University)	admin1	11/06/2011	Jim Benson	01/08/2014
2	Acquisitions Managerial Template	Vendor Manager(Alma University),Fund Manager(Alma University),Receiving Operator(Alma University),License Manager(Alma University),Purchasing Operator(Alma University),Purchasing Manager(Alma University),Acquisitions Administrator(Alma University),Ledger Manager(Alma University),Invoice Operator(Alma University)	admin1	03/07/2011	admin1	08/14/2011
3	Acquisitions Staff Template	Designs Analytics(Alma University),Fund Manager(Alma University),Invoice Operator(Alma University),License Manager(Alma University),Purchasing Operator(Alma University),Receiving Operator(Alma University),Trial Manager(Alma University),Trial Operator(Alma University),Trial Participant(Alma University),Vendor Manager(Alma University)	admin1	08/14/2011	admin1	08/14/2011
4	Administrator Template	Catalog Administrator(Alma University),Fulfillment Administrator(Alma University),User Administrator(Alma University),Acquisitions Administrator(Alma University),Repository Administrator(Alma University),Patron(Alma University),Resource Sharing Partners Manager(Alma University)	-	03/07/2011	-	03/07/2011
5	Cataloger	Physical Inventory Operator(Alma University),Cataloger(Alma University),Digital Inventory Operator(Alma University),Electronic Inventory	admin1	03/16/2012	Super User	03/16/2012

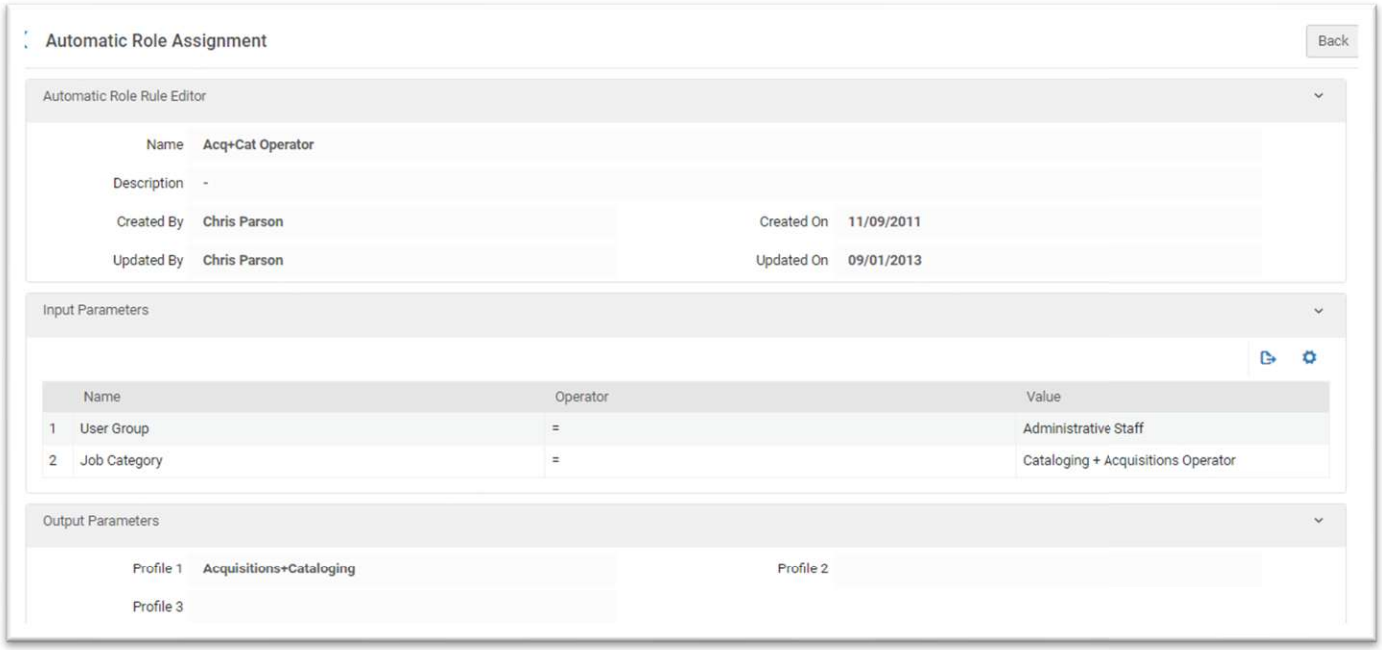
The use of profiles decreases the need to re-define the roles and privileges for each new user, and also enables bulk update in case of a change to the profile. While Alma offers quite granular permissions functionality, the interface for configuring permissions is intuitive and easy to use.

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Alma supports the concept of automatic role assignment based on library-defined rules, for both groups and individuals. Any number of rules can be created, using the simple, intuitive interface shown below:



Multiple rule parameters can be assigned to define the group for which a rule will apply. In the following screen, input parameters have been defined relating to the Job Category and the User Group, and output parameters define the relevant profile.



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All users added to the system after the creation of the rule, and matching a rule's input parameters, will automatically receive all the roles defined in that rule's output parameters.

b) Performance metrics. Include metrics according to functions identified in this RFP.

Ex Libris: We have metrics that we track during several phases of the project. For the implementation project, the key metrics tracked are meeting the project plan milestone deadlines. These milestones are set by the Ex Libris Professional Services Team and NCCCS after the contract is signed as part of the onboarding process.

Regarding data migration, compliance with the data migration specifications and thorough data review and testing are tracked. Throughout the project, the Ex Libris project manager will monitor and report on project status and identify/manage issues. Monthly project status will be shared with key project stakeholders identified by the library. At the end of the project, a project survey will be sent to the library project team to assess their overall implementation project experience.

c) Schedule for system updates. Indicate if NCCCS will have the option to specify the dates and times on an updated schedule.

Ex Libris: Alma & Primo VE have a quarterly release cycle when new product features/functionalities are rolled out. These releases will be in February, May, August and November. Bug fixes will continue to be released on a monthly basis.

Two weeks prior to the quarterly release date – i.e., the second last Sunday of the previous month – we deploy the new release in all the sandbox environments, allowing library staff to test and become familiar with the features.

In addition, Alma may require ongoing maintenance performed by our SaaS team, such as hardware replacement, security patches, and practice of failover scenarios. The maintenance window for release deployment and other routine maintenance work falls between Saturday 8:00 PM and Sunday 6:00 AM. Bug fixes are performed on a monthly release cycle. If a bug fix needs to be applied outside of the regular monthly release cycle, if any downtime is required, the fix will be applied during the scheduled maintenance window. Customers will be advised of any downtime via an alert in your Alma dashboard and also via email.

Updates are done for all customers at the same time, due to the nature of the SaaS environment.

d) Test database. Include in the description the size and currency of the proposed test database.

Ex Libris: As part of Alma's standard offering, included as part of the Alma subscription, Ex Libris provides an Alma Standard sandbox. This sandbox contains a significant amount of data (about 70,000 records) provided by Ex Libris that you can use for staff training and testing Alma business scenarios, new enhancements, and integration with other systems, without affecting your production environment.

The standard Alma sandbox which will be provided as part of the Onboarding phase contains a significant amount of data provided by Ex Libris that can be used by the library project team at this stage to make themselves familiar with the Alma user interface and functionalities. The data corresponds with the Alma essential training provided as e-learning sessions, in combination with exercises to practice. A subset of the library's own data can be imported into the sandbox via

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import profiles and loaders. This can be done by the project team or Ex Libris and refers to bibliographic data with embedded items as well as authority records. These loaders do not represent the data migration routines which will be used for the test migration and cut-over load during the actual implementation project. Data migration requires interaction with the library project team beforehand to gather data specifics and migration decisions which will take place before the test load during implementation. Therefore, we would like to discuss with the library if a load of data for the early sandbox access will be useful at this stage.

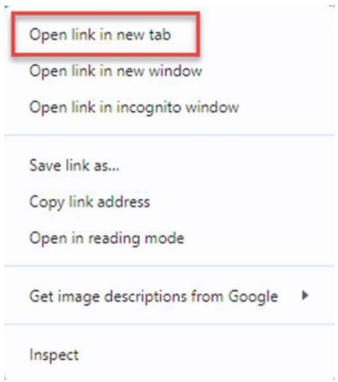
Please find more information about sandboxes at: https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/Alma_Online_Help_(English)/Getting_Started/040Alma_Sandbox_Environments

e) Describe how the solution also allows a user to view multiple screens simultaneously.

Ex Libris: Alma supports the use of multiple tabs to be open simultaneously. Multiple tabs functionality ONLY works if multiple browser tabs are opened for the same:

- Alma environment
- Logged-in user account

Note that if you login to a new tab, the previous session will be cancelled. Instead, open the same session in a new tab by selecting for example **Open link in new tab** for Chrome:



c. Authority

i. The proposed ILS solution should allow NCCCS librarians to manage authority records and headings. Describe the authority functionality of the proposed ILS solution and include in the description how the proposed solution performs the following functions:

Ex Libris: Authority files such as LC Names and Subjects, MeSH (Medical Subject Headings), the GND (German) and BARE (Norwegian) Authority files are loaded into Alma's Community Zone (CZ). A full list of currently supported authorities can be found from the following link as well as *provided as an attachment to this proposal*:

https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/Alma_Online_Help_(English)/Resource_Management/040Metadata_Management/060Working_with_Authority_Records

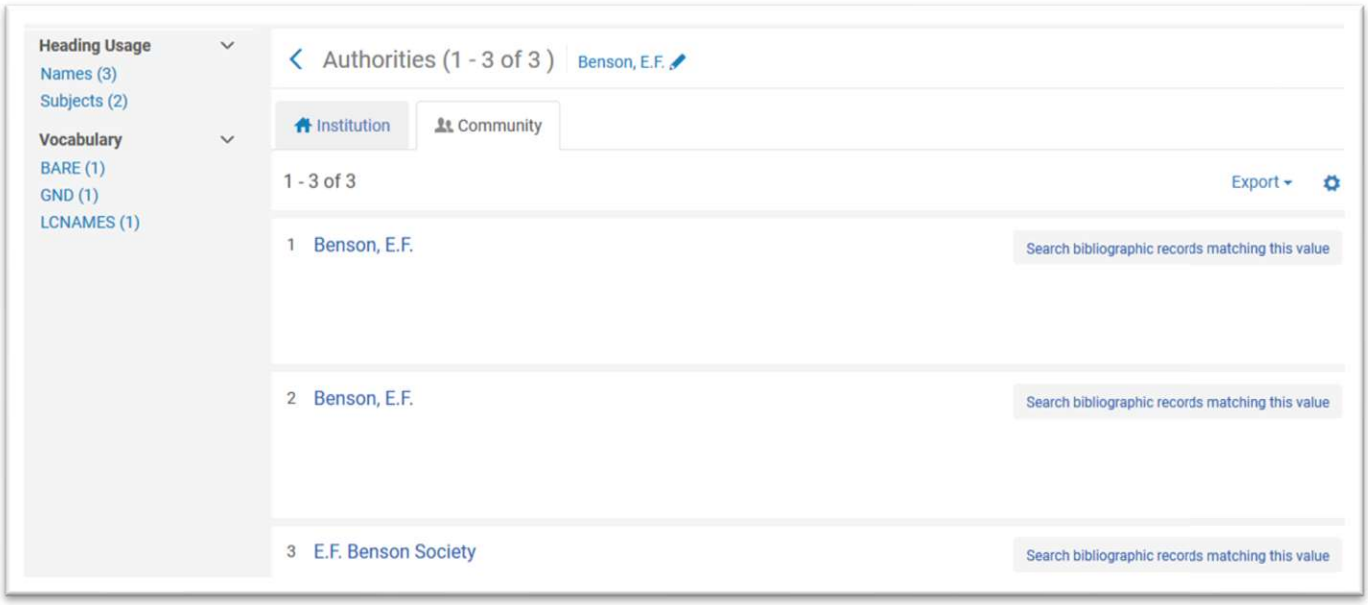
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Ex Libris keeps these authority files up to date based on changes distributed by the authorizing agency. Any institution may use these records to authorize headings in their local bibliographic records. Institutions that use unaltered authority files will be able to use this and no longer manage local authorities. This significantly lowers the barrier to authority control, by allowing institutions who do not make significant changes to external authority files to avoid managing any local authorities.

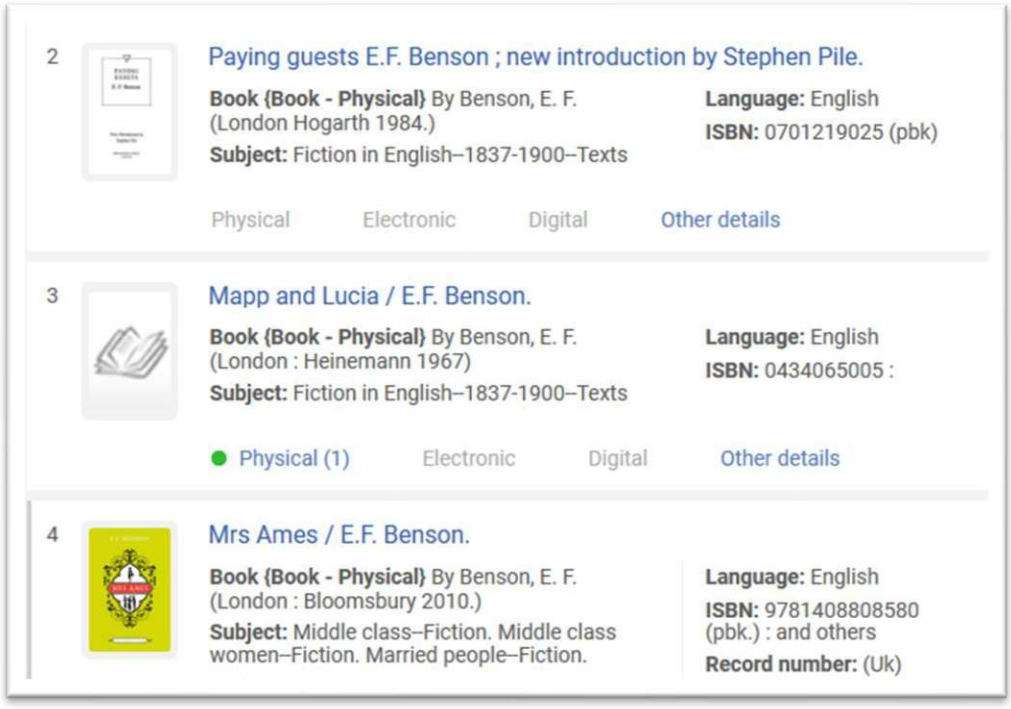
When Ex Libris loads a file of authority records, the system will analyze the file for changes to individual headings. When it identifies changed headings, it will automatically make those changes to the bibliographic headings that are linked to those authorities. Staff may view a report of records affected by these headings change processes.

In certain predefined cases, the system will identify headings that require further analysis. For example, when a heading splits into two or more headings, the affected bibliographic headings will appear on the Authority Control Task List. Staff may then decide which of the new headings apply to each resource. In this way, most of the process is automated, with only a small set of exceptions requiring staff intervention.

Staff users may search the Community Zone for authority records. Clicking on the relevant hyper-text link in the heading display will switch the search from the authority record in the Community Zone to the linked bibliographic records in the local institution.



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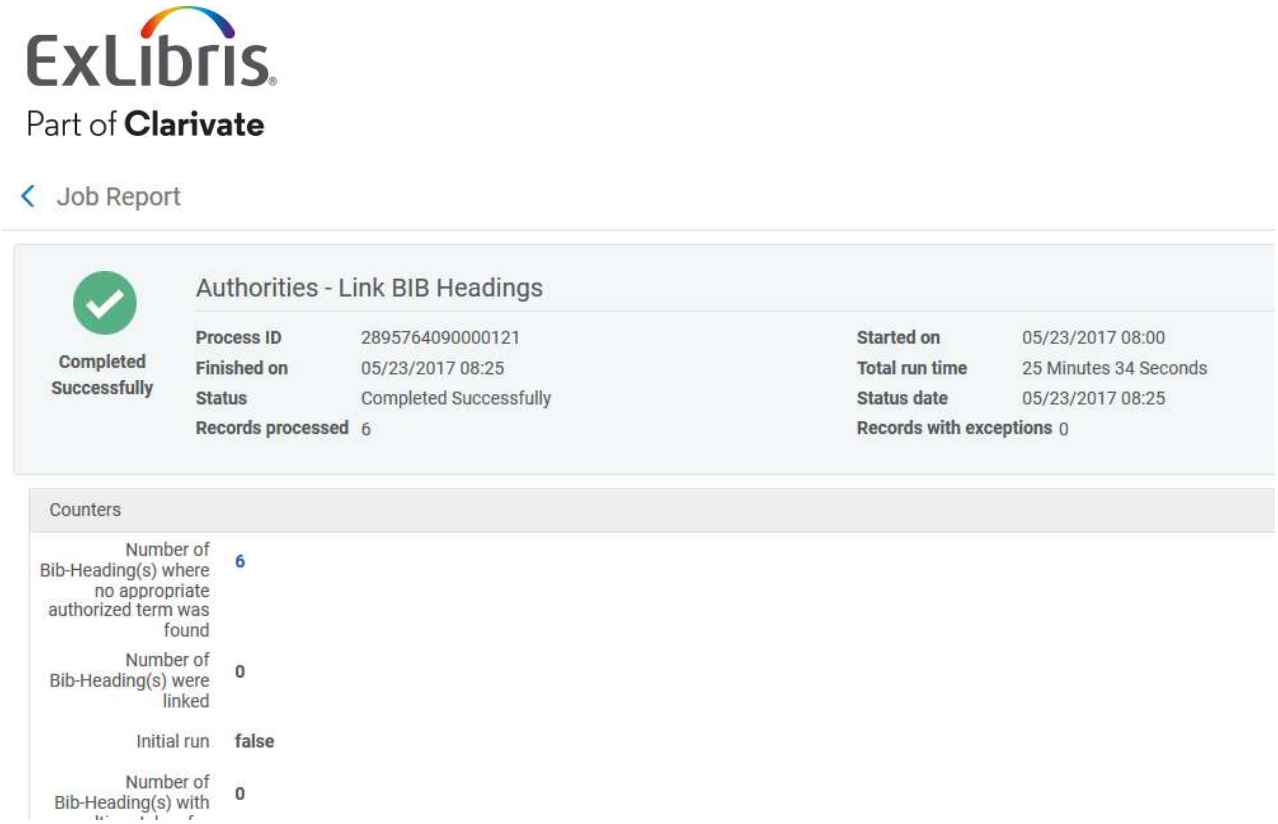
Authority Job processes:

Alma runs the following jobs automatically every day to authorize the bibliographic records in your catalog:

- **Authorities - Link BIB Headings** – This job searches all authority (and local authority, if enabled by Ex Libris Support) record fields, including subdivision fields, for complete terms listed in bibliographic records (giving priority to local authorities, if enabled). If exact matches are found, the bibliographic records are linked to the corresponding authority records. If exact matches are not found, the subdivision fields are disregarded, a search of all authority records is performed once again, and the bibliographic records are linked to the matching authority records that are located during the second search.
- **Authorities - Preferred Term Correction** – This job performs preferred term correction on all bibliographic records that are linked to authority records using the **Authorities - Link BIB Headings** job. For example, if a bibliographic record contains the non-preferred term "Narcotics, Control of," and the associated authority record contains the preferred term "Drug control," the Authorities – Preferred Term Correction job replaces "Narcotics, Control of" with the preferred term "Drug control." Note that bibliographic records are also updated with any subsequent updates to authority records.

Staff may view a report of records affected by these headings change processes, as shown in the screenshot below:

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Local Authorities:

In addition to global authority files, Alma allows libraries to create and load local authorities. This includes authority records for subject headings, titles and names. These local authorities can be used as overrides for authorization against the global authority file—when validating, Alma will check first for local authorized headings before checking for global headings.

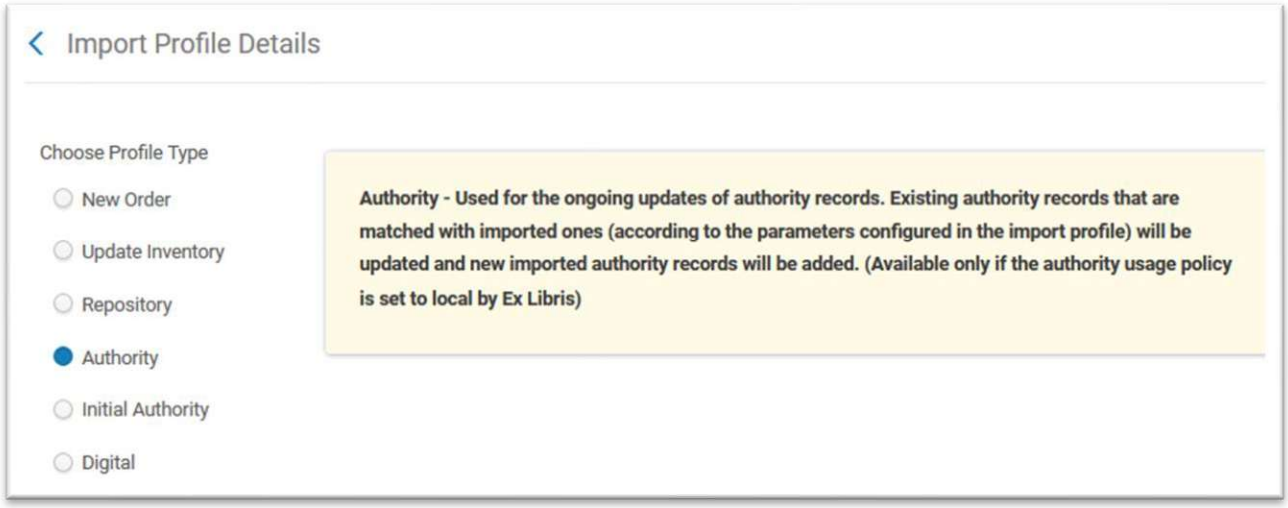
The library can create local authority records by:

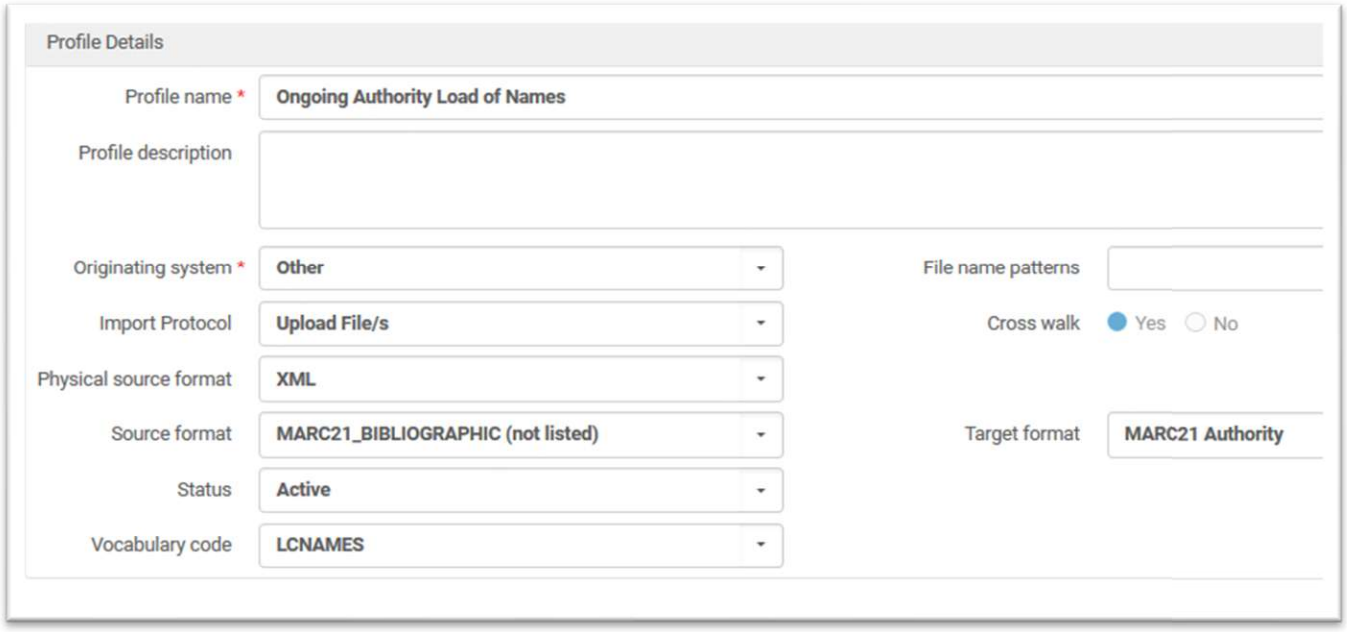
- Using the MD Editor
- Using an import profile

The MD Editor can be used when a staff member wants to create a single local authority record. If Alma has been configured for local authority records, such records can be imported using an authority import profile:

In general, the Authority option is selected for ongoing authority record updates; and the Initial Authority option is for a library's initial load of local authority records (when only loading and no normalization or matching is required).

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A cataloger can create a single local authority record in the MD Editor:

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The user can now create a bibliographic record that uses the local authority record/terms that they created.



Browsing:

F3 enables you to link to suggested authority records quickly from an authority-controlled field (100-199, 600, 610-611, 630, 700, 710, 730, 800, 810-819, 830, 440, 490, 648, 650, 651, 654, 655, 748, 751, and 754) in a bibliographic record and to view a read-only version of a suggested authority record and view the bibliographic records that are linked to this authority record.

When you press F3, from an authority-controlled field in the MD Editor, the system presents a sorted, full list of browsable authority headings.

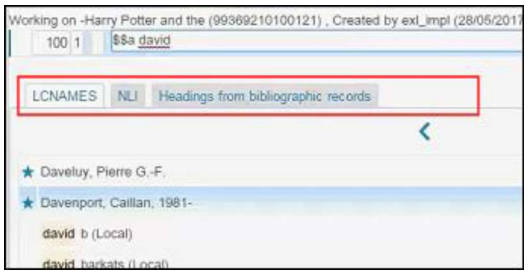
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F3 Sorted List of Authority Headings

The system looks for a match to the contents of the control field, highlights the match in yellow and sorts the results in alphabetical order. The list starts with the two authority headings that precede the matched headings.

If your system uses multiple authority vocabularies and is configured for multiple authority priorities, the sorted, matched authority headings lists for each vocabulary are presented on separate tabs that appear in the priority order that you had Ex Libris configure. Select a different tab to view the different authority headings.



F3 Tabs for Multiple Authority Vocabularies/Priorities

If you find a match in one tab/vocabulary and switch to a different tab where there is no match, the system places an indicator showing where the match would occur in the list if a match existed.

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Your Entry Would Be Here

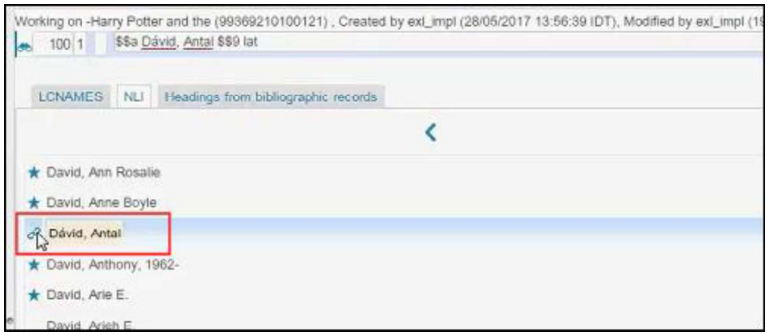
Use the Previous and Next arrows to page forward and backward through the authority headings list.



Previous and Next Arrows

If you type additional text in the control field, click the magnifying glass icon or press **Enter** to refresh your authority headings list.

For authority headings that are linked to the bibliographic control field, there is a special icon in the authority headings list to indicate that the link exists. This capability exists for all vocabularies.



Link Icon Indication

The View and Select buttons in the authority headings list work as previously described on this page.

a) Automatically verifies authority headings in any record.

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Ex Libris: The MD Editor allows you to quickly link to a suggested authority record from an authority-controlled field in a bibliographic record. It also enables you to view a read-only version of a suggested authority record and view the bibliographic records that are linked to this authority record.

In addition to the Name and Subject Headings authority support for the above bibliographic fields that are mapped to authority headings, Alma provides mapping for the bibliographic 490$a and 440$a (obsolete) and an F3 lookup for these fields in the Alma MD Editor. The 490$a (and 440$a) lookup is pulled from the authority record 130$a and 430$a:

- 130 – Main Entry – Uniform Title
- 630 – Subject Added Entry – Uniform Title
- 730 – Added Entry – Uniform Title
- 830 – Series Added Entry – Uniform Title

With the F3 lookup (refer to the procedure below for more information), you are provided the option to select your preferred series statement from a predefined list that is displayed in the MD Editor. The system does not do automatic linking/preferred term correction as part of the authorities daily processing for the 490$a/440$a, since the 490$a/440$a series statement represents the information (the way that a series is named) on the book itself. (Refer to http://id.loc.gov/authorities/names.html for more information.) However, you can do an F3 lookup in the MD Editor for the 490$a/440$a series statement and, optionally, **Select** the preferred authorities to update the bibliographic 490$a/440$a. Refer to the example below.



F3 Lookup for 490$a

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b) Creates, edits, merges, restores and deletes authority headings.

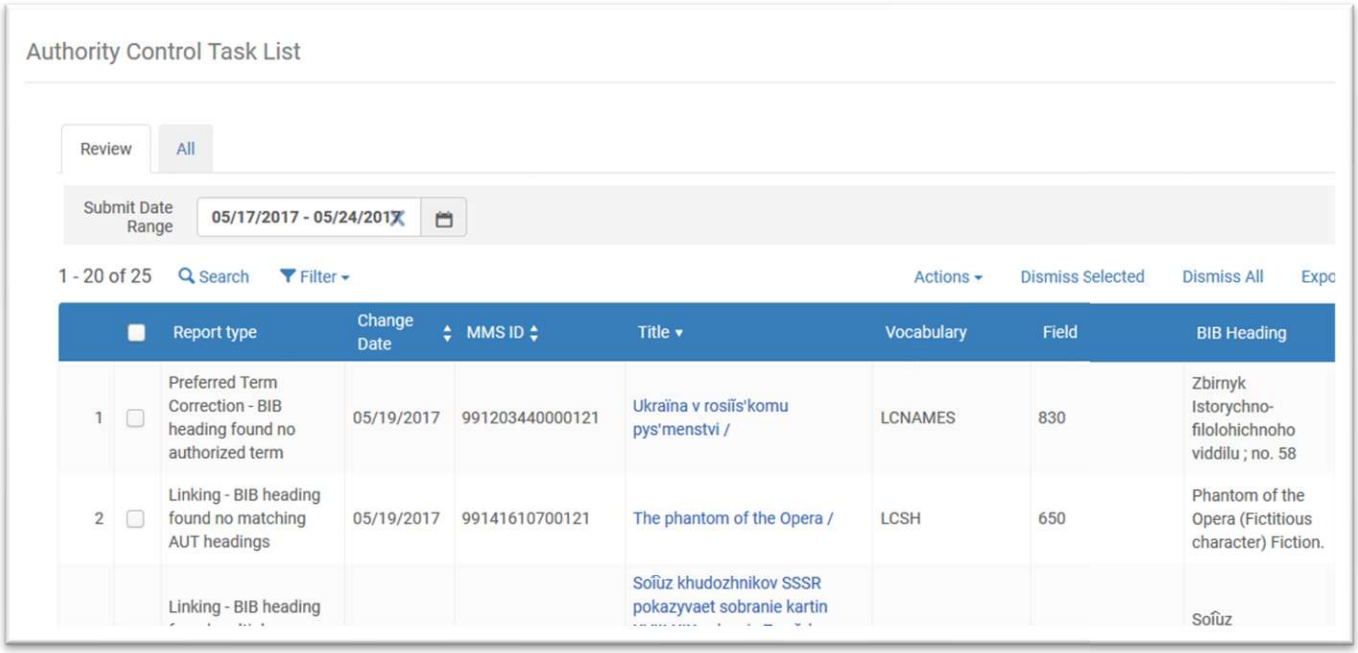
Ex Libris: Shared authority files in the Community Zone are maintained by Ex Libris. Ex Libris will make global changes to authority headings as required, including merging headings.

If the library maintains local authority records, the library can make global changes, including merging headings.

Each authority file has its own unique vocabulary – authority records are updated/delete/created based on the information provided by the authoritative source according to the schedule defined by the authoritative source.

Matching the authority record is based on the authoritative source ID, which prevents duplication of authority records within the vocabulary.

Alma provides an authority control task list which reports all changes to authority records and identifies headings which do not correspond to an authorized form:



c) Reports blind authority headings.

Ex Libris: The Authority Control Task list provides several ways for identifying authority headings that are not linked or records for which no authority record was identified:

AUT record deleted - Unlinked BIB heading : This option references authority records that have been deleted and manual handling may be needed.

Linking – BIB heading found no matching AUT headings: This option references attempts to find a link between a heading in the bibliographic record and an authority headings record. When no matching authority headings record is found, you may want to review the information in the bibliographic record.

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Preferred Term Correction – BIB heading found no authorized term: This option references updates to the bibliographic record with the value of the preferred term of the linked authority record. When the linked authority record does not have a preferred term matching the nonpreferred term (such as when the nonpreferred term is registered in the 410 field and the preferred term is in the 100 field), the bibliographic record is not updated.

ii. Explain how the solution supports the following actions:

a) Merges authority records and adjusts their linked headings automatically.

Ex Libris: Alma runs the Authorities - Link BIB Headings job automatically every day to search for complete terms listed in bibliographic records and link them to corresponding authority records. If exact matches are not found, a second search is performed to link the bibliographic records to the matching authority records. Additionally, Alma performs preferred term correction on bibliographic records linked to authority records using the Authorities - Preferred Term Correction job. This job replaces non-preferred terms with preferred terms found in the associated authority records. The system also updates bibliographic records with any subsequent updates to authority records. Staff can view a report of records affected by these headings change processes

b) Performs ongoing updates to authority headings according to the Library of Congress.

Ex Libris: Authority files such as LC Names and Subjects, MeSH (Medical Subject Headings), the GND (German) and BARE (Norwegian) Authority files are loaded into Alma's Community Zone (CZ). A full list of currently supported authorities can be found from the following link, as well as provided as an attachment:

https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/Alma_Online_Help_(English)/Resource_Management/040Metadata_Management/060Working_with_Authority_Records

Ex Libris keeps these authority files up to date based on changes distributed by the authorizing agency. Any institution may use these records to authorize headings in their local bibliographic records. Institutions that use unaltered authority files will be able to use this and no longer manage local authorities. This significantly lowers the barrier to authority control, by allowing institutions who do not make significant changes to external authority files to avoid managing any local authorities.

When Ex Libris loads a file of authority records, the system will analyze the file for changes to individual headings. When it identifies changed headings, it will automatically make those changes to the bibliographic headings that are linked to those authorities. Staff may view a report of records affected by these headings change processes.

c) Globally updates authority headings or records by any MARC field.

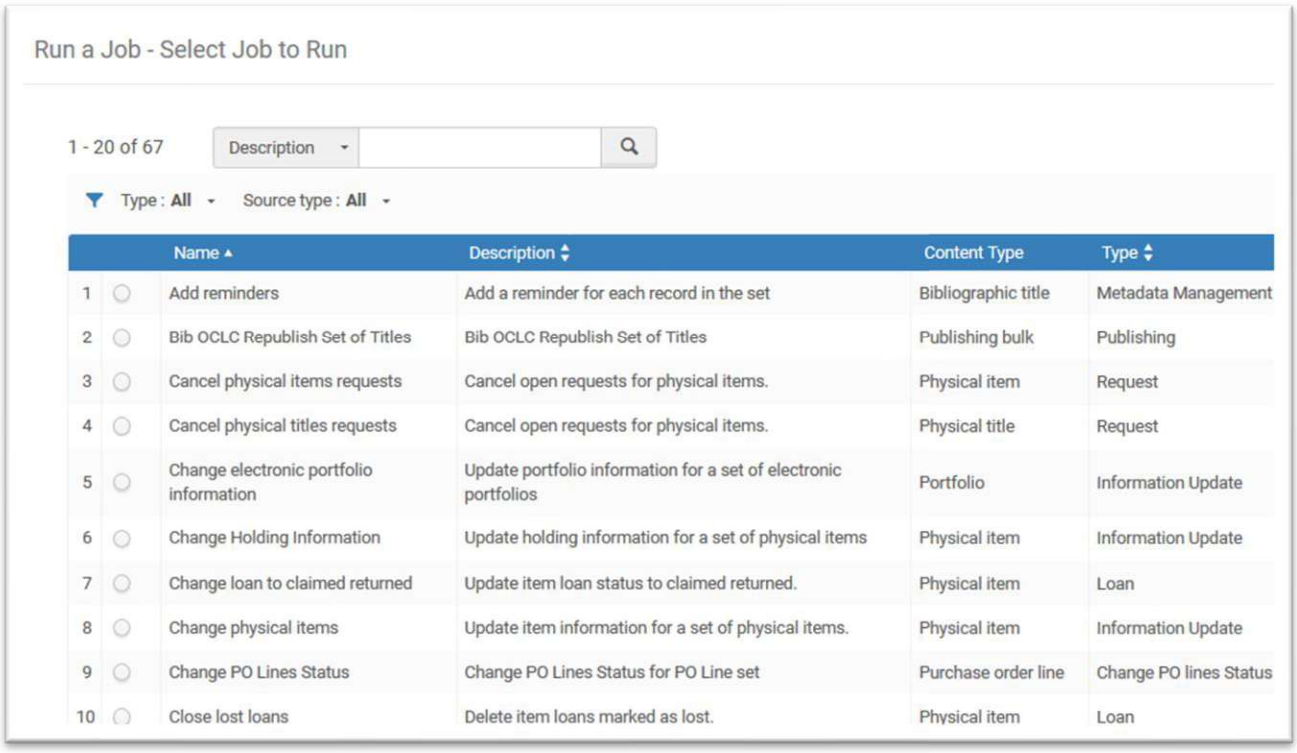
Ex Libris: Alma supports the ability to perform batch changes against bibliographic, inventory records (electronic, physical and digital), holding records and authority records. NCCCS will find a big repository of predefined jobs, that can be extended with custom jobs and adjusted to your local needs. Please also note that import and export profiles come with rich processing (such as validation, normalization, localization, etc.) options. Today holding batch operations allows you to export bibliographic information with holding information, change holding information (including call number update, normalization and suppression), delete holdings with no items and republish

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a set of titles to OCLC. Alma also provides comprehensive capabilities for holdings, which will incorporate set management, further batch processes and advanced search capabilities. Newly implemented user experience features include the ability to run a job on selected records and to create an itemized set right from the search results, the ability to add or remove labels for sets, as well as a Quick Access module on the Manage Sets page, which allows users to quickly find available information on a selected set.

Batch jobs are flexible and extensible. Staff with rights to perform global changes will first identify the action to perform, then identify the set of records to change (either manually or as all results of a search). These actions may also be bound to an import profile, to automatically run for every record imported by that profile. This allows staff to identify common problems records and perform automatic cleanup on those records.

The following shows the first step of running such a bulk change process—selecting the action to perform on all records.



	Name	Description	Content Type	Type
1	Add reminders	Add a reminder for each record in the set	Bibliographic title	Metadata Management
2	Bib OCLC Republish Set of Titles	Bib OCLC Republish Set of Titles	Publishing bulk	Publishing
3	Cancel physical items requests	Cancel open requests for physical items.	Physical item	Request
4	Cancel physical titles requests	Cancel open requests for physical items.	Physical title	Request
5	Change electronic portfolio information	Update portfolio information for a set of electronic portfolios	Portfolio	Information Update
6	Change Holding Information	Update holding information for a set of physical items	Physical item	Information Update
7	Change loan to claimed returned	Update item loan status to claimed returned.	Physical item	Loan
8	Change physical items	Update item information for a set of physical items.	Physical item	Information Update
9	Change PO Lines Status	Change PO Lines Status for PO Line set	Purchase order line	Change PO lines Status
10	Close lost loans	Delete item loans marked as lost.	Physical item	Loan

Global changes and deletions are carried out with relevant user privileges. Such changes are supported via a 'wizard', which walks the operator through the steps needed to carry out the task. Initially the items that require changing or deleting are gathered into a managed set. Then, either out of the box or library defined processes are applied to the set of data.

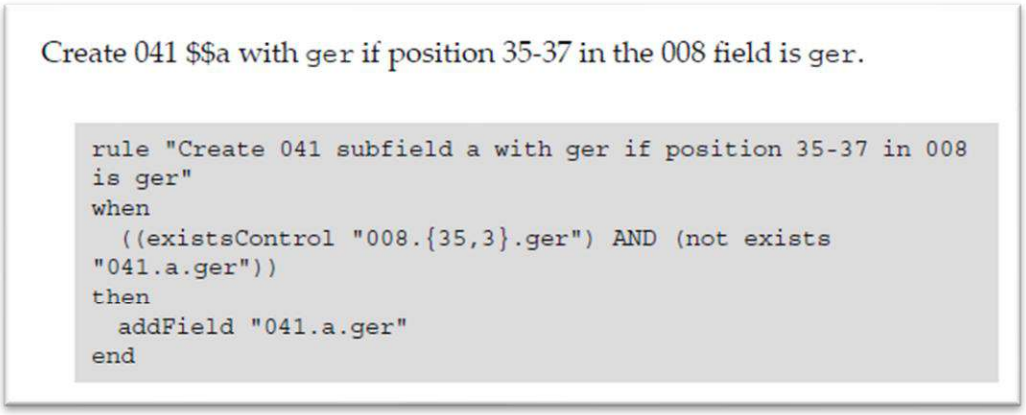
Alma comes with a pre-defined set of standard processes (normalization rules) for changing managed sets (including such standard functions as deletions and exports), but a library can also create its own rules. Normalization rules are essential for automating the modification and updating of bibliographic metadata at various stages, including record saving, importing, and editing. This automation significantly enhances operational efficiency by reducing the need for manual interventions, thereby saving time and minimizing the risk of errors.

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Users can design and tailor rules to meet specific requirements, ensuring that metadata is consistently formatted and accurate. Normalization rules can be seamlessly integrated into various processes, such as import profiles and external searches, thereby optimizing the overall workflow.

There are two primary types of normalization rules used in Alma: **Drool** and **XSL**. Drool normalization rules are written using a specific syntax that allows for detailed and conditional modifications to metadata records. These rules can be applied to individual records or sets of records, making them highly versatile for various cataloging needs. On the other hand, XSL (Extensible Stylesheet Language) normalization rules utilize XSLT (XSL Transformations) to transform XML data. This method is particularly useful for complex transformations and can be integrated into workflows that require extensive data manipulation.

An example of a library defined normalization rule:


Create 041 $$a with ger if position 35-37 in the 008 field is ger.

```
rule "Create 041 subfield a with ger if position 35-37 in 008
is ger"
when
  ((existsControl "008.{35,3}.ger") AND (not exists
"041.a.ger"))
then
  addField "041.a.ger"
end
```

The benefits of employing normalization rules are substantial. By automating metadata updates, libraries can achieve greater efficiency and consistency in their cataloging practices. The flexibility provided by customizable rules enables the system to adapt to diverse cataloging practices, making it a versatile tool for libraries with varying needs. Overall, normalization rules are pivotal in enhancing the functionality and reliability of the Alma, ensuring that libraries can manage their bibliographic data with increased precision and ease.

See the following page for more details: Working with Normalization Rules - Ex Libris Knowledge Center

d. Cataloging

i. NCCCS is seeking an ILS solution that conforms to established Federal standards for cataloging. Describe how the proposed solution conforms to the following Federal standards:

a) Unicode compliance. Indicate if the proposed solution fully supports Unicode in special characteristics and diacritics.

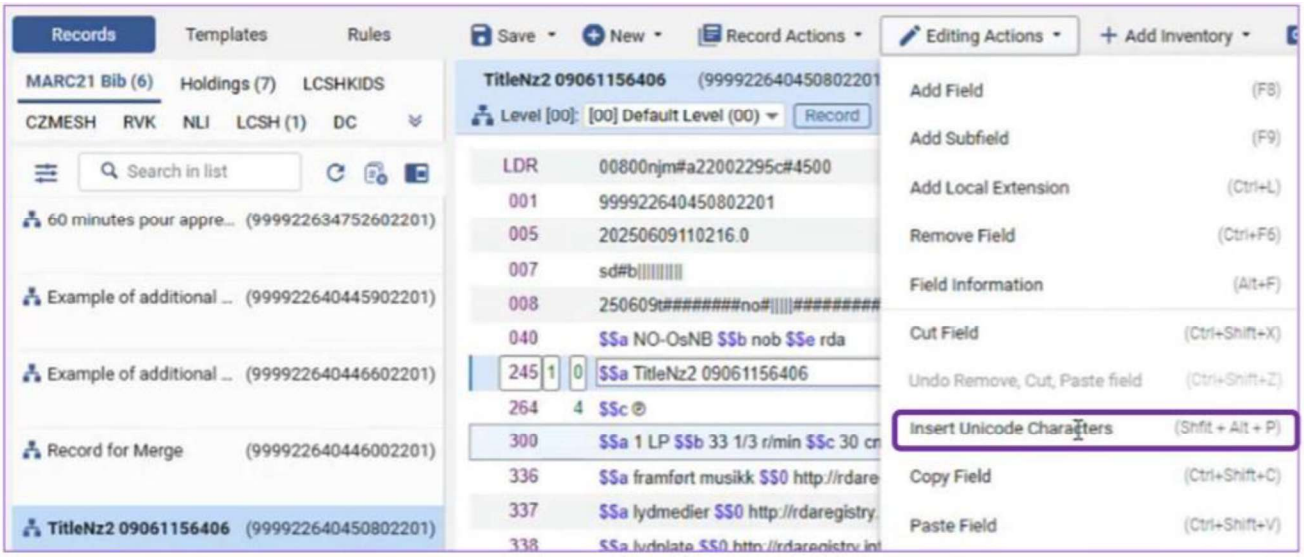
Ex Libris: All data in Alma is stored in a Unicode character set—specifically UTF-8. This includes both application data (e.g., internal database fields, labels, etc.) and data in records (e.g., MARC

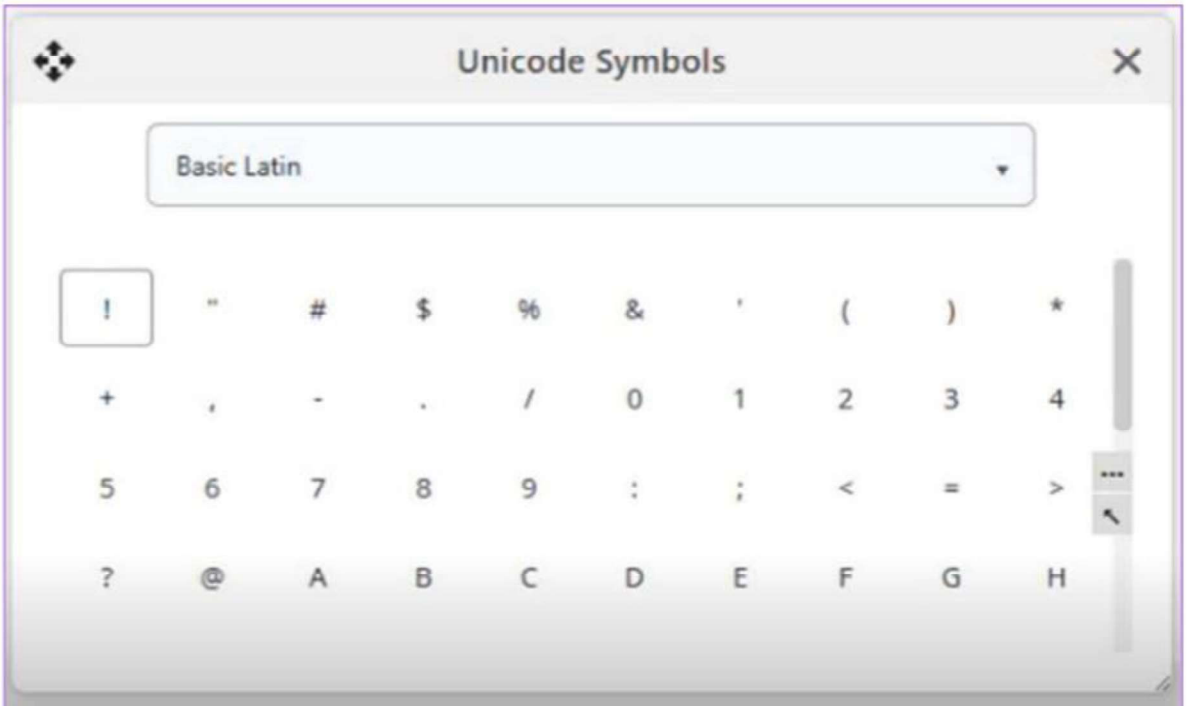
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bibliographic or authority data). Record data is stored internally in XML format, which mandates Unicode. The full UTF-8 character set is supported. Such characters can be entered via operating system devices, for example an On-Screen Keyboard.

UTF-8 Unicode allows Alma to support multiple languages and scripts, including scripts that display right-to-left.

A virtual keyboard has been added to the MD Editor, enabling users to easily insert special characters and diacritics. This feature allows users to input special characters directly in the MD Editor without the need for external tools.





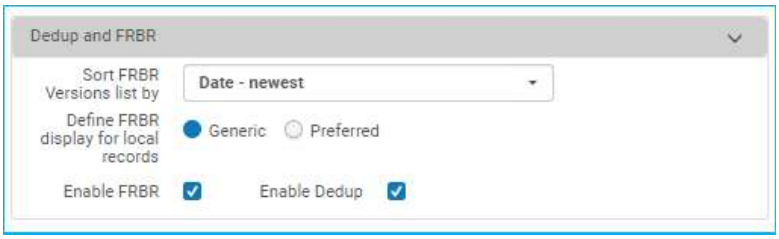
Docusign Envelope ID: 5119F65D-C8FC-48F2-A5FF-59B8F24406F6

b) FRBR. Refer to: http://www.ifla.org/files/assets/cataloguing/frbr/frbr_2008.pdf

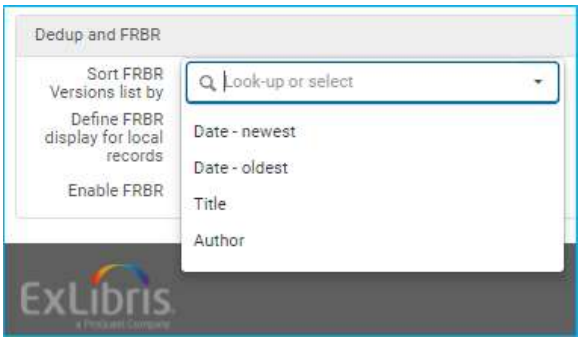
Ex Libris: Alma's metadata management is designed with FRBR in mind.

Primo search results are de-duplicated. For local records, the system de-duplicates records during indexing and creates FRBR-groupings for search results based on author and title fields. When a record is de-duplicated, the merged record is displayed. With FRBR, the records are grouped in the results list, but users can see the details of the individual records. Both the de-duplication and the FRBRization methodology can be modified by the library, and both are steps in the publishing process.

Each View can have its own FRBR/Dedup configuration. This includes to enable or disable both processes.



You can define the FRBR Versions list sorting:



Furthermore, you can choose between two FRBR options for local records to define which information is displayed in the brief results:

- **Preferred** – Primo VE dynamically selects one of the records from the group for display in the brief results list. This is the preferred record. The preferred record is the highest ranked record from the results set. From the preferred record, the system displays a link to the additional records in the group.
- **Generic** – The generic record serves as a placeholder for the group and does not include the data and functionality that is relevant to a specific record (such as the availability status). It only indicates that multiple versions of the title have been found. End users can click either the title or the View versions link to display the versions for the FRBR group.

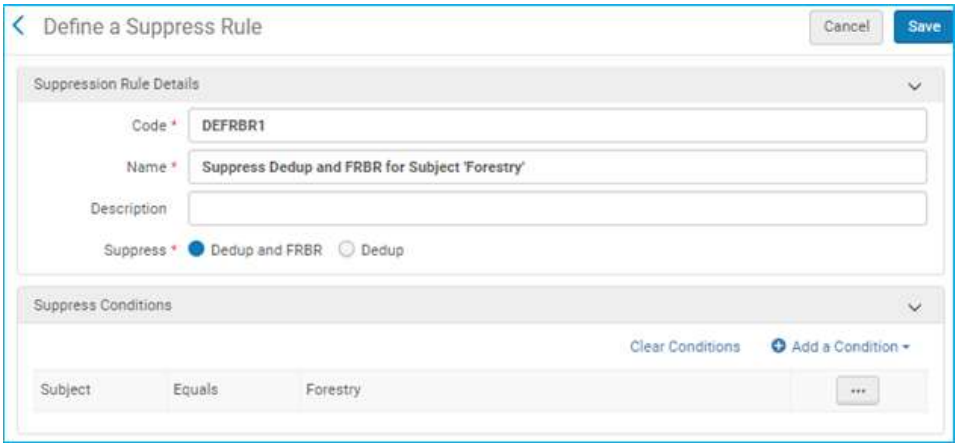
The Supress Dedup/FRBR Rules page in Alma Discovery configuration allows you to create rules that prevent groups of records from being Deduped/FRBRized so that they are not made

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redundant or grouped during discovery. For each rule you can decide whether to suppress the records from both the Dedup and FRBR processes or just from the Dedup process and to specify a set of conditions (maximum of two).

Rules are defined through the following parameters:

- **Fields** – Select a field from one of the following categories: Inventory, Local Fields, or Metadata.
- **Operator** – Select one of the following operators: **Equals**, **Not Equals**, **Contains**, **Doesn't Contain**, **Exists**, or **Doesn't Exist**.
- **Value** – Specify a value for the selected field.



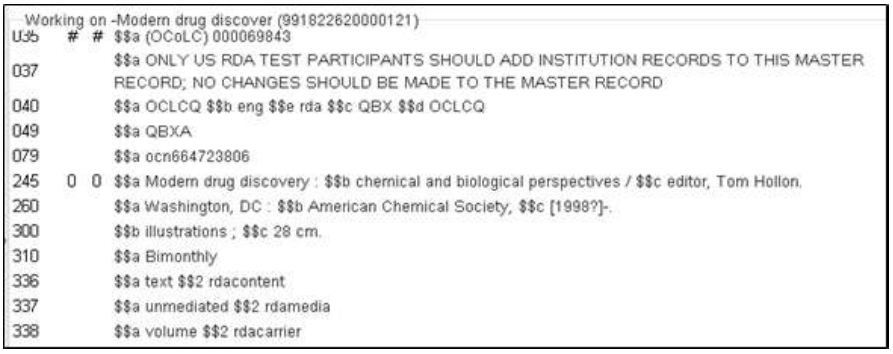
Alma's Discovery configuration also provides a Dedup and FRBR Analysis tool. The utility page allows you to perform the following tests to analyze how the system determines whether records belong to Dedup/FRBR groups, which are used to reduce redundant records in the brief results:

- Find matching records
  - This test allows you to find a record's matching FRBR or Dedup records.
- Compare records
  - This test allows you to compare two records to determine whether they belong to the same FRBR or Dedup group.

c) RDA. Refer to: http://www.loc.gov/aba/rda/

Ex Libris: Alma supports RDA and ACCR2. The MARC 21 schema in Alma supports the updated fields for bibliographic and authority records that support the RDA descriptive standard. These fields are fully editable and searchable and may take advantage of the assisted text entry for a controlled vocabulary.

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Alma supports the following RDA API's:

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

Enriched URIs in $$0 can be published in MARC. In addition, Alma supports the publishing of RDA/RDF and BIBFRAME as output formats.

Primo creates FRBR groupings for search results based on author and title fields. When a record is deduplicated, the merged record is displayed, or the library can prefer a specific record. With FRBR, the records are grouped in the results list, but users can see the details of the individual records.

ii. NCCCS desires the proposed ILS to have broad cataloging functionality. Explain the cataloging functionality of the proposed ILS solution and include in the explanation how the proposed solution supports the following functions:

Ex Libris: Alma offers great flexibility in the ways institutions manage their cataloging, by providing the ability to manage local holdings and collections as well as shared resources (e.g., resources from the broader Alma community). Alma's centralized metadata management environment (Metadata Management Service, or MMS) supports both traditional and new methods for cataloging, which allows libraries to move into a shared metadata environment in a way that best meets local needs and policies. The Metadata Management System includes the Institution Zone and the Community Zone. This hybrid model allows institutions to manage their unique local collections while supporting a global Community Catalog.

The Institution Zone represents the single library, and it is the basic level of data and workflow management in Alma. An institution [library] can link its inventory records to the metadata records in the Community Zone, which eliminates the need to download these records to the local catalog. In addition, a library can copy catalog (or download) records from the shared catalog into the local Institution Zone catalog. The Community Zone also contains authority catalogs that are synchronized against the relevant authorizing agency, ensuring individual institutions have access to the benefits of authority control without having to invest their local resources in synchronizing the authority files themselves.

For consortia such as NCCCS the Network Zone provides a means to allow your members to share catalog records. Institutions can link their holdings to a centrally managed record. This allows for less duplication of effort as well as greater visibility into other member's holdings.

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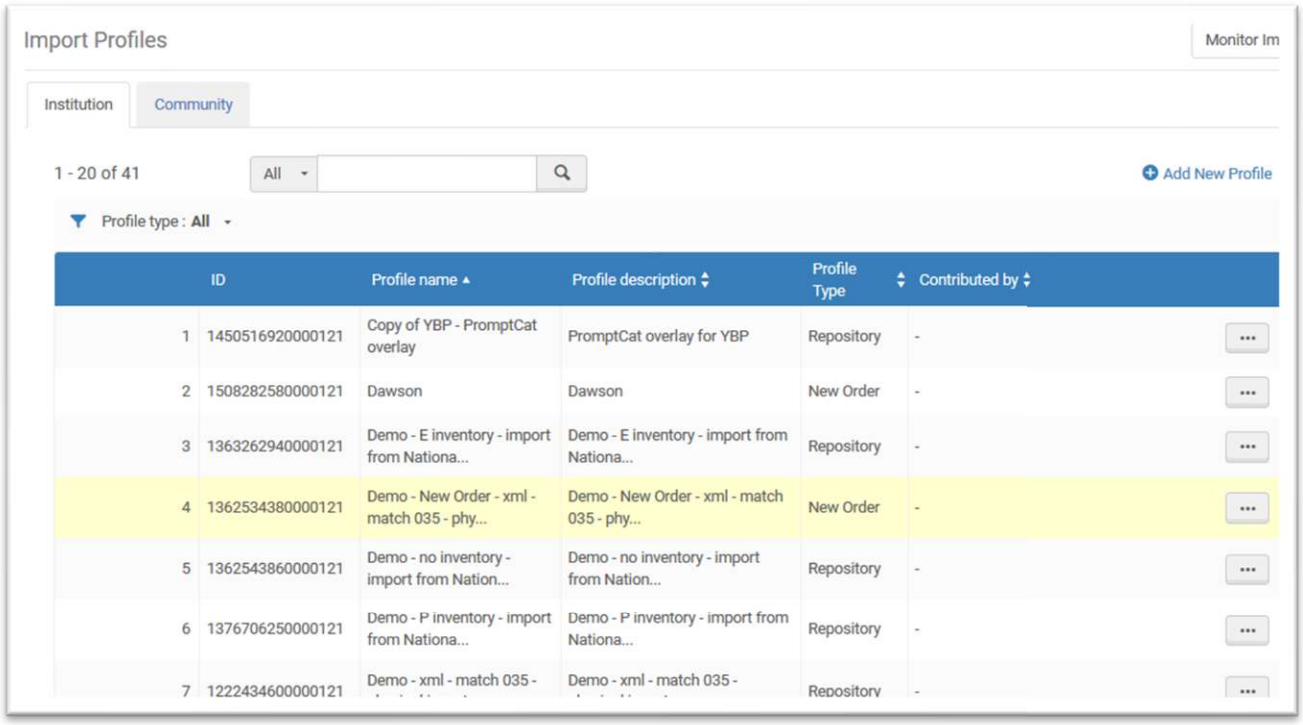
Furthermore, Alma is designed using an open data philosophy with records in the Community Catalog fully open to, owned by and stewarded by the Alma community. Ex Libris claims no rights of ownership nor restricts the use or reuse of these records.

a) MARC subscriptions.

Ex Libris: Alma supports the import of MARC records from a wide variety of sources such as subscriptions. This is done via batch loading described in b) below.

b) Batch load imports and downloads MARC records from any source, generating bibliographic records, along with item and order records.

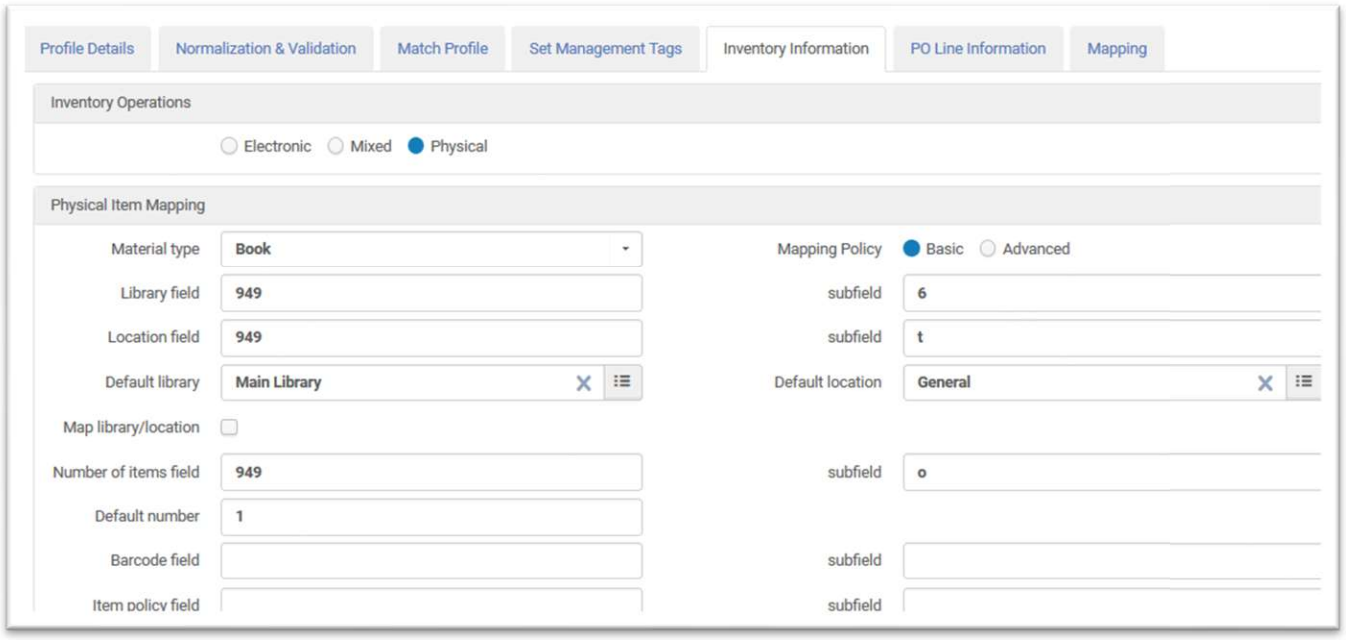
Ex Libris: Alma supports the ability to import embedded order records. The rules by which it imports records are defined in "import profiles." Many import profiles may be setup –for records from different sources, containing different data types, etc.:



If the library is importing using EOD, it can use one or more profiles that have been created for a particular vendor with specific configurations for the kinds of purchases that are being processed. A vendor can have multiple import profiles with specific configurations for a particular purchase type. For example, different import profiles might exist for purchases being funded through different funds, or for purchases for different libraries in the institution.

The following screen capture is an example of defining inventory information as part of an embedded order profile:

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MARC records with embedded order data can be used to create purchase orders in Alma, as well as create records for the items added to the library's inventory using data supplied by the individual institution or the library's materials vendor.

This includes support of vendor approval programs for both print and electronic resources, such as e-books. In this workflow, Alma imports an EOD record (embedded order data) and puts the description into the metadata management systems (MMS), and turns the embedded order information into a PO line.

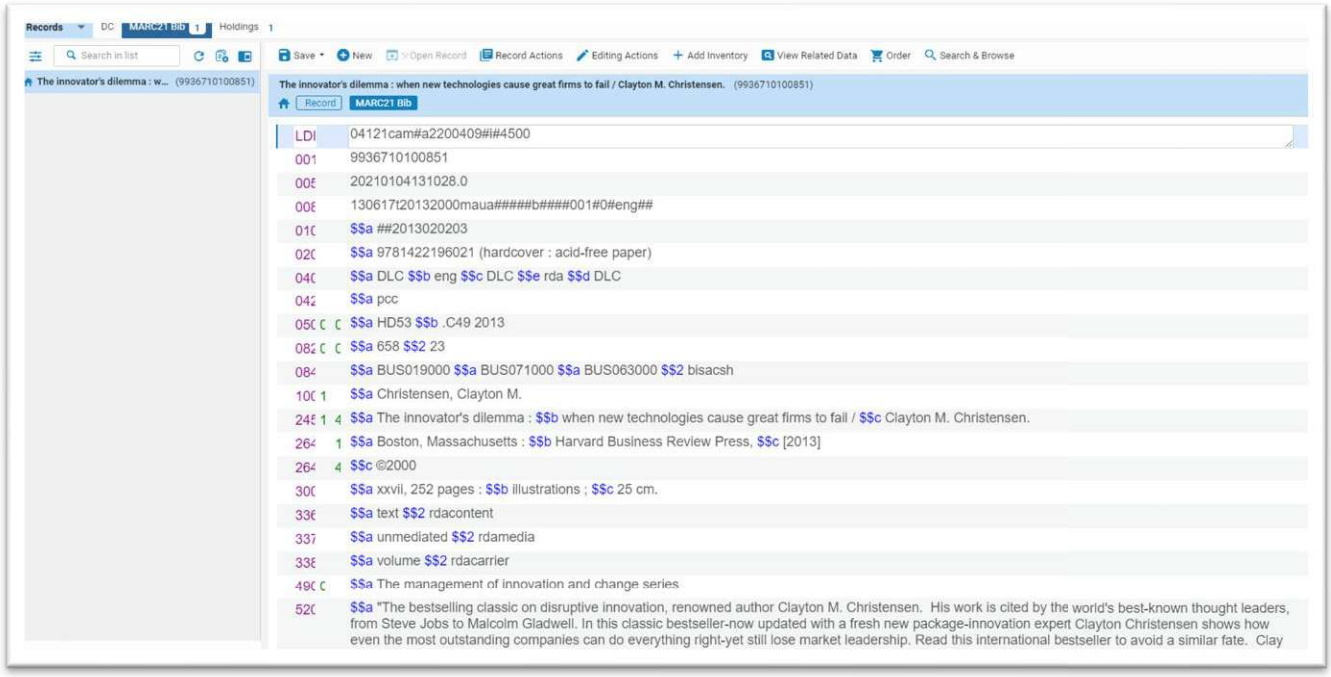
The library will need to configure the import profile in Alma based on its agreement with the material vendor regarding the specific fields that will be used to supply the order and item information in the MARC record.

Loading EOD files into Alma has the potential to automate the entire acquisitions and cataloging workflow, making it possible to order a resource using the vendor's interface, and unpack and shelve the materials with minimal effort.

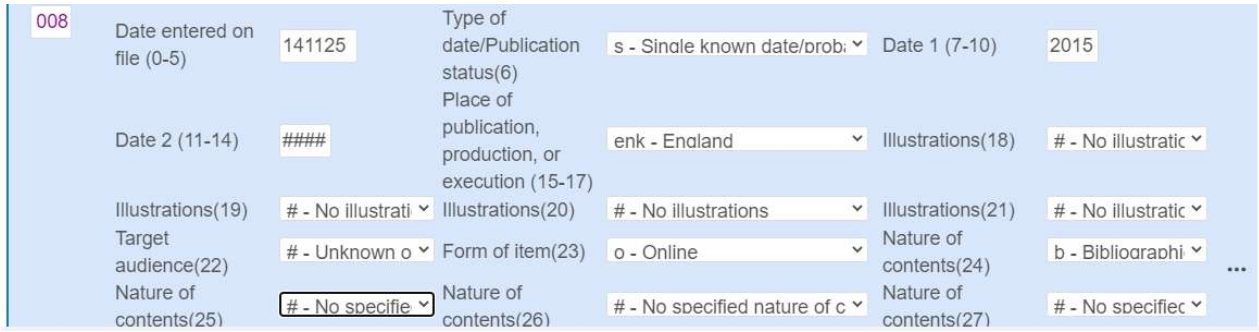
c) Editing and validating bibliographic records.

Ex Libris: The Metadata Editor supports editing any MARC tag, subfield, and indicator.

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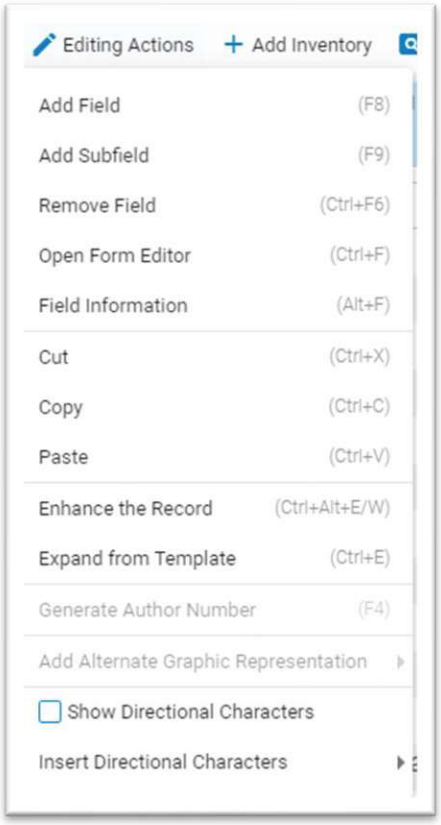


Fixed fields can either be edited inline, or in a form that presents all values for the relevant position in the field:

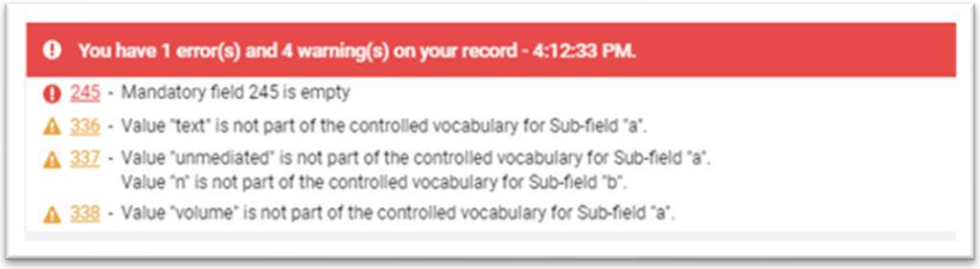


Alma supports the ability to perform all navigation and editing functions within the metadata editor using hotkeys, to speed data entry for staff. Some examples can be seen in the following screen captures:

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Records are automatically validated when being edited in the metadata editor. Additionally, records may be validated on demand. Validation can be warnings that will notify staff of invalid data or will prevent a record from being updated because a mandatory field (e.g. 245) is missing from the record.



Ex Libris maintains and updates the validation routines for the formats supported by Alma. These routines can be customized by the library.

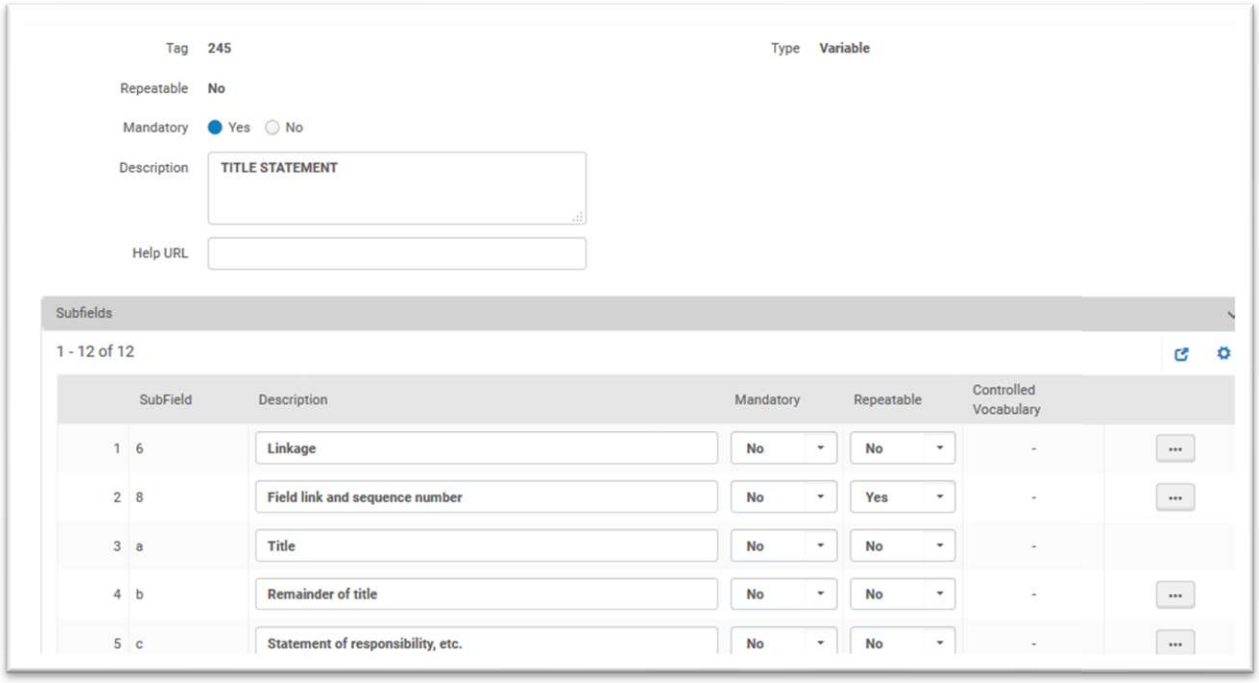
Records imported, or created in the MD Editor will be validated.

There are two out-of-the-box validation routines:

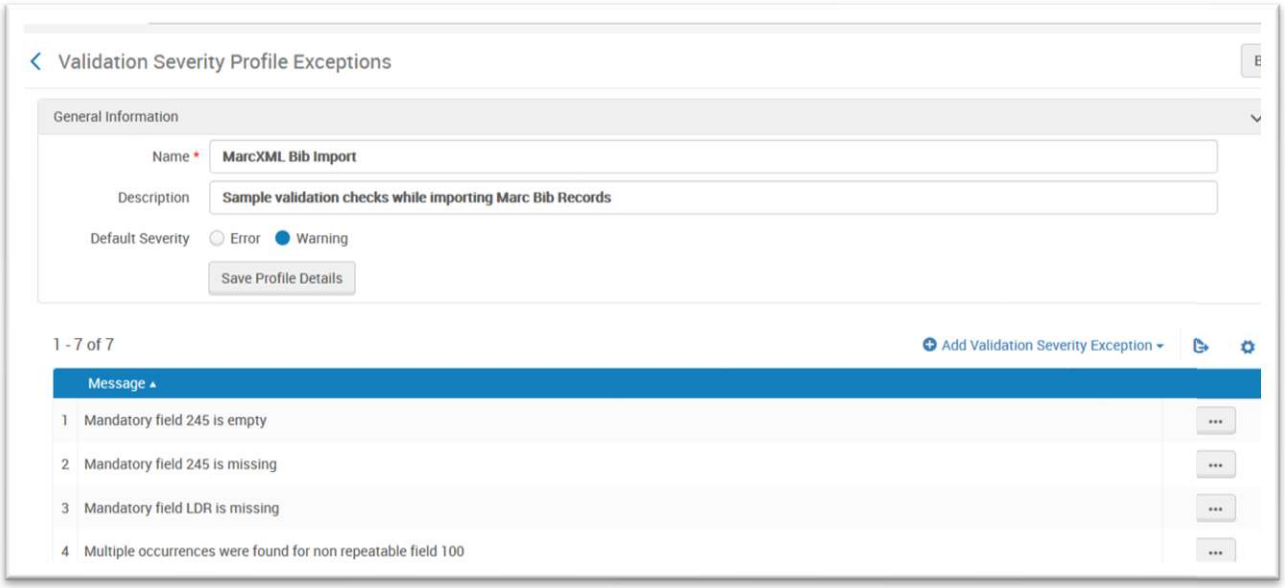
- MARC21 Bib match validation – defines the way in which validation is handled when a bibliographic record match is performed during the import process or in the MD Editor
- MARC21 Bib validation on save – defines the way in which validation is handled when importing MARC records using an import profile, copy cataloging via an external resource (such as WorldCat or LoC), and saving a bibliographic record in the MD Editor.

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Aspects for validation are options like “Mandatory”, “Repeatable”, “Controlled Vocabulary” which can be set up for fields, subfields and indicators. See the following example for field 245:

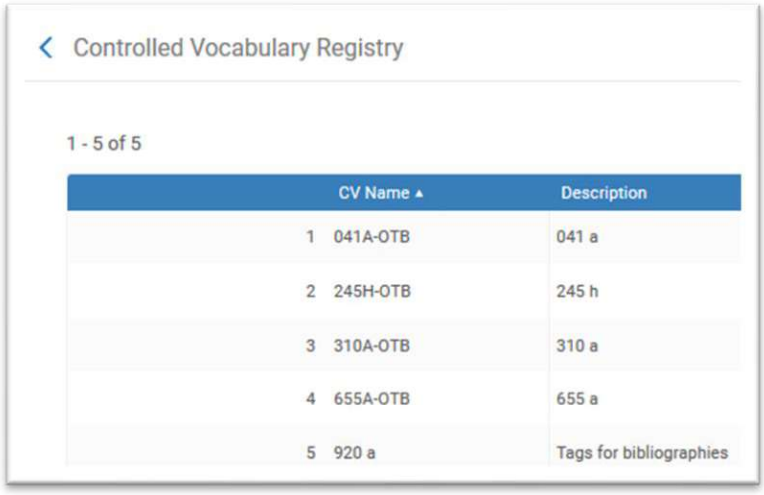


Validation messages are defined out of the box by Ex Libris, based on MARC validation standards. These can, however, be modified by the library. The following is an example of configuring the severity of validation checks:



Alma supports a Controlled Vocabulary Registry (e.g. for fields such as the 310, or 041). There are a number of ‘out-of-the-box’ routines, but a library may also define its own routines as can be seen in the following screen capture:

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Alma will warn the staff user if a barcode number already exists in the system.

Broken links can be identified by using a report generated via Alma Analytics, which lists URLs held in the 800 field. It can then be checked for broken links by using third party products.

Spelling mistakes are managed by the browser's own native functionality.

d) Merging duplicate bibliographic records and combining their holdings/item records automatically.

Ex Libris: Ex Libris supports automated merging of duplicate bibliographic records using configurable merge rules. These rules define how data from a *secondary* record is integrated into a *primary* record. The merge process can either remove data from the primary record or copy data from the secondary record into it. The secondary record itself is not altered during the merge, though it is typically deleted afterward.

Catalogers can create and apply merge rules in the Metadata (MD) Editor, specifically for MARC 21 records. Merging is supported during copy cataloging, imports, and directly within the MD Editor.

When merging two bibliographic records and consolidating their inventory under a single record, users can choose to delete, suppress, or retain the bibliographic record that no longer has associated inventory after the merge.

e) Batch export of MARC records with or without holding information via scheduled task.

Ex Libris: Alma supports the ability to export bibliographic, inventory, and authority records in their native formats, including MARC 21 XML or binary and Dublin Core XML. The export of bibliographic records makes use of Publication Profiles. These profiles are defined to determine which records to export, on what schedule to export them, and additional services to run at export (which may include enhancing or cleaning up the outgoing records). This publication approach is the same infrastructure used for synchronizing holdings with WorldCat.

Additionally, Alma supports the ability to perform ad-hoc exports on demand. This can be used for external record processing, updating for a shared repository, loading into an institutional data

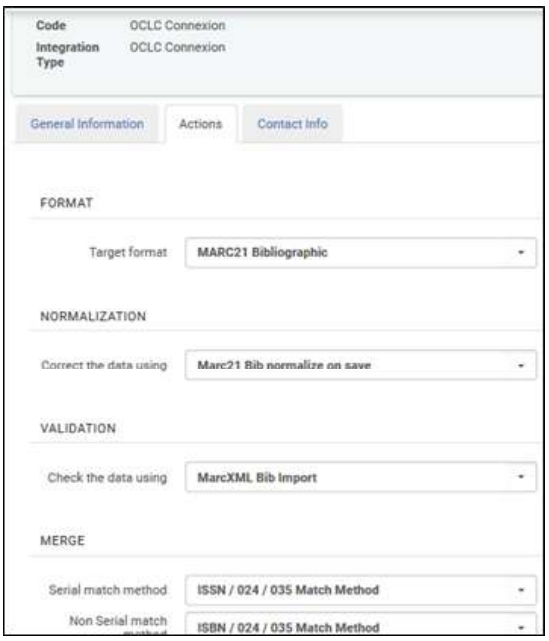
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warehouse, or any other purpose. The most versatile and ubiquitous type of data extract is the Tools button that is found on most list screens generated in Alma. This Tools button permits the user to save whatever list is present to an Excel spread sheet for further work outside of Alma.

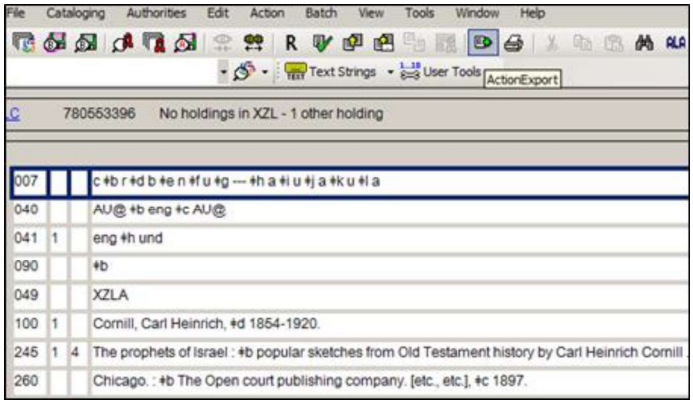
f) Interactive OCLC Connexion client loading of bibliographic records, item records, or order records into ILS to be immediately visible in the catalog.

Ex Libris: Alma can interoperate with OCLC Connexion so that records cataloged in Connexion are automatically imported to Alma.

Alma's Integration Profile framework may be utilized for integrating with cataloging clients such as the OCLC Connexion client. Setting up the Integration Profile with the requested normalization, validation and merge routines will enable direct upload of externally cataloged records into Alma's repository:



Staff can define the relevant parameters in the Connexion client (for example) that will link and automatically download records from OCLC Connexion to Alma:



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OCLC records can also be imported into Alma via a Z39.50 connection from within the metadata editor.

g) Overlaying existing records in the Consortium via Connexion.

Ex Libris: The integration with Connexion supports several ways to overlay/merge a record:

Serial match method	The serial match method. For a detailed description and examples of some of these methods, see Match Methods – Explanations and Examples.
Non-serial match method	The non-serial match method. For a detailed description and examples of some of these methods, see Match Methods – Explanations and Examples .
Merge method	How to merge the external record into the one already existing in Alma. Select from one of the following merge methods predefined by Ex Libris: • **Replace 245 and 035 OCLC if exist** – Replaces all MARC fields in the Alma record with fields from the external records, except for fields 001, 245, and 035 (whose "a" subfields contain OCoLC or where the first indicator is 9 and the second indicator is #). Any 001, 245, or 035 fields in the Alma record are left in place, and any 245 or 035 fields in the external record are added to them. • **Overlay all fields but local** – Replaces 035 fields in the Alma record with those from the external record unless the first indicator is 9 and the second indicator is #. In addition, replaces all other MARC fields in the Alma record with fields from the external records, except for fields 001 and 9XX. When using the **Overlay all fields but local** merge rule as part of the redirection, the 035 field is not part of the rule. This is because the redirection occurs before the merge. • **Keep only old value** – Keeps all MARC field values in the Alma records. • **Conditional subject headings** –

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	Replaces all MARC fields in the Alma record with fields from the external records, except for fields 001, 035, 9XX, 65X, and 7XX. Any 001, 035, 9XX, 65X, or 7XX fields in the Alma record are left in place, and any 6xX or 7XX fields in the external record are added to them. Alternatively, if you defined merge rules in the MD Editor, you can select these rules from the **Merge method** drop-down list. The descriptions that were entered for the rules are displayed as the method names.
Do not override/merge a record with lower brief version	Whether to override a more complete record (higher brief level) with a less complete record (lower brief level). In order to prevent a situation in which a good quality record is overlaid with a lower quality imported record, this parameter provides additional control when an imported record overlays or merges with an existing record. This option assumes that you do not want to overlay/merge a full or more descriptive record with a brief or less fully descriptive record. As a result, when this option is selected, the system checks/compares the brief level number (01-10) of the existing and imported records; and a record with a lower brief level number will not merge or overlay a record with a higher brief level number.
Do not override/merge record with an older version	Whether to override an older record with a newer one.

h) Indexing of imported records, including keyword indexing, and how completely and quickly the proposed solution performs this function.

Ex Libris: The processing times of batch files can range between very fast loading and processing of a few seconds to hours depending on the size of the file. Alma makes use of an advanced jobs processing mechanism to ensure high performance and load balancing between jobs. Prioritizing processing of data in Alma is controlled on several levels:

Different job types are controlled with different aallocationsof resources (therefore they are independent of system resources).

The job types are:

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- UI short background jobs (usually indexing or saving of a record in the background)
- Customer batch jobs (Import, publishing etc.)
- Ex Libris batch jobs (such as quarterly indexing).

These types of jobs use separate resources from customer jobs so the customer won't be affected by massive jobs run by Ex Libris.

Within the above categories there is an internal priority algorithm that acts as a semi- FIFO (first in first out). The system resources are divided between all jobs depending on the in-queue time, job length (how much data the job needs to run on) and the job origin (was it scheduled or run manually).

Alma also automatically controls the jobs resources allocation. During off hours – more resources are allocated for job running. As a reference, our system is used by very large institutions such as University of Minnesota, Manchester university, Leuven Consortia in Belgium, Orbis Cascade Alliance – consortia of 40 institutions – all are extensively using our batch load and processing of files on a daily basis while reporting good performance.

As a multi-tenant cloud-based solution, Alma has a sophisticated batch job management architecture, which takes into account various factors such as the types of jobs running, the time of the day and the general load of the system, all in order to provide you with the services you require. There are no limits on the number of records that can be included in an import or export job, but the system may break large numbers of records into smaller files during loading.

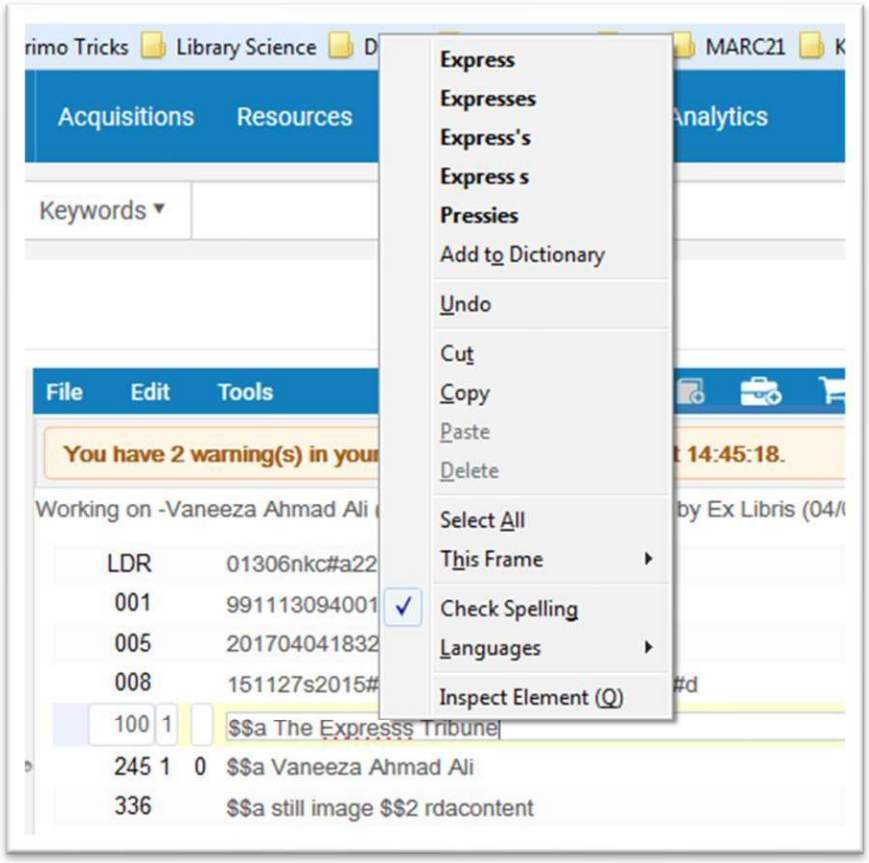
As with every multi-tenant solution, Alma has Governance Thresholds that ensure that no single institution negatively impacts other Alma institutions, prevent performance degradation and help reduce the risks of malicious attacks. These thresholds represent the performance an institution can expect to see in Alma at different times. Such Governance Thresholds exist in a few areas of the system, for example importing and exporting data to/from Alma:

	Peak (working day) - records per hour	**Off-Peak (night) – records per hour**
Export	0.3M	1.2M
Manipulate	0.15M	0.6M
Import (**match by system ID**)	0.15M	0.6M

i) Spell checking.

Ex Libris: Alma is a web-based application, so spell check functionality is provided through the user's web browser. Users can enable or disable this feature directly in their browser settings, depending on their preference:

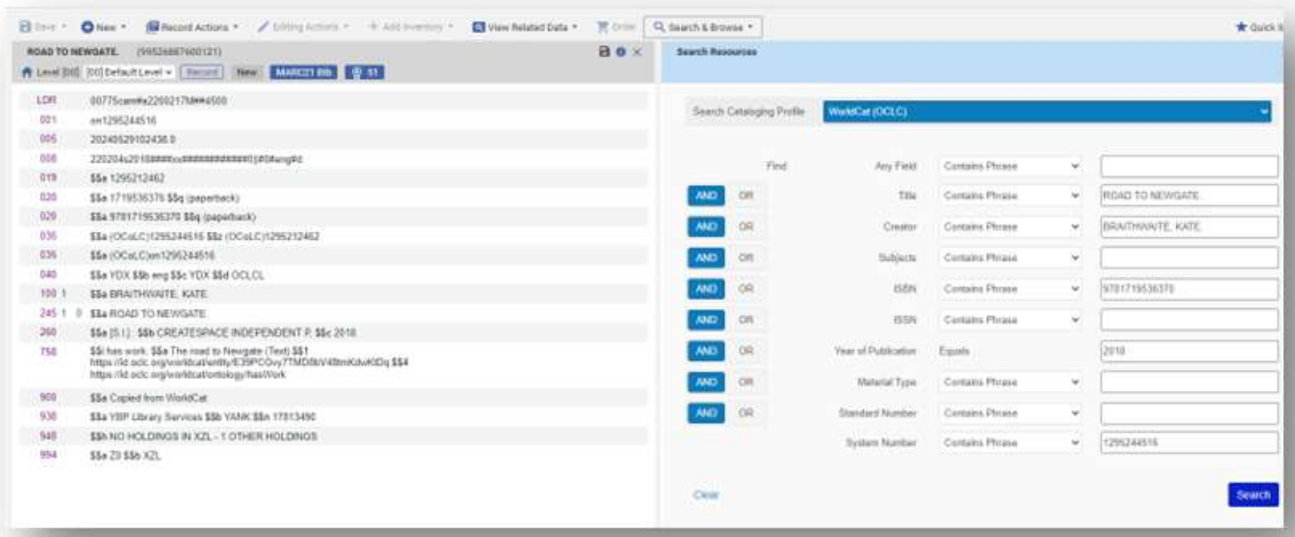
Docusign Envelope ID: 5119F65D-C8FC-48F2-A5FF-59B8F24406F6



j) Real-time downloading with Z39.50 targets.

Ex Libris: Alma supports searching and downloading records from an external bibliographic database via z39.50 in the Metadata Editor based on content of the bibliographic record, or by populating fields in the External Search window:

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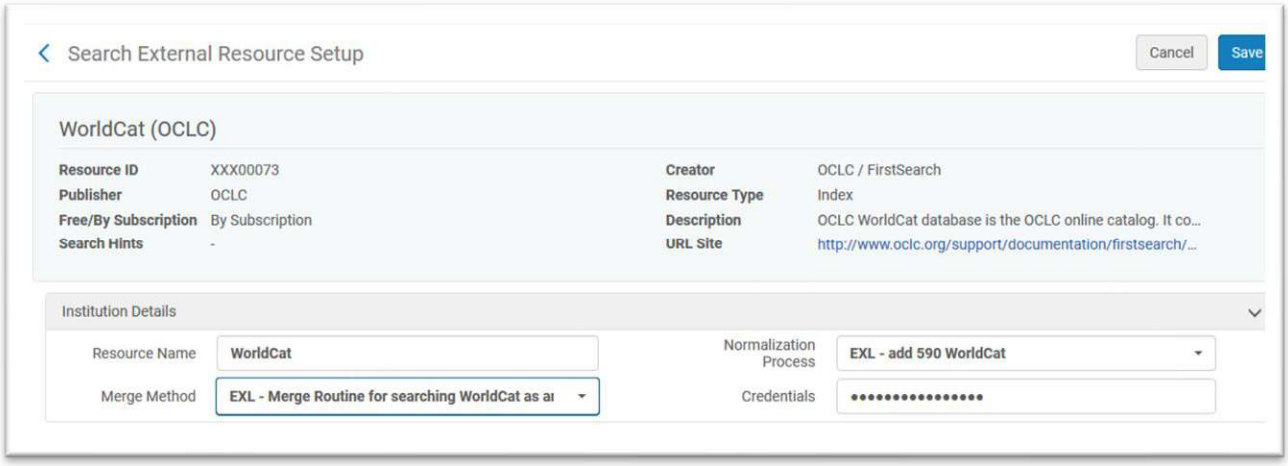
External resource profiles can be defined that string a number of resources together. In order to return results as quickly as possible, Alma will first present the results found for the first resource. If the staff user is not satisfied with the results, he/she can click on the next tab. Alma will then search for results in the second resource and so on.

The knowledge base of external bibliographic databases that can be configured includes more than 80 external bibliographic databases such as:

- Library of Congress (United States Library of Congress (LOC))
- WorldCat (OCLC)
- German National Library
- British Library
- National Library of Australia

An example of configuring the profile of an external database:

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Ex Libris maintains the knowledge base of external bibliographic databases adding new resources on an on-going basis.

k) Globally editing bibliographic records.

Ex Libris: Alma comes with a pre-defined set of standard processes (normalization rules) for changing managed sets (including such standard functions as deletions and exports), but a library can also create its own rules. Normalization rules are essential for automating the modification and updating of bibliographic metadata at various stages, including record saving, importing, and editing. This automation significantly enhances operational efficiency by reducing the need for manual interventions, thereby saving time and minimizing the risk of errors.

Users can design and tailor rules to meet specific requirements, ensuring that metadata is consistently formatted and accurate. Normalization rules can be seamlessly integrated into various processes, such as import profiles and external searches, thereby optimizing the overall workflow.

There are two primary types of normalization rules used in Alma: **Drool** and **XSL**. Drool normalization rules are written using a specific syntax that allows for detailed and conditional modifications to metadata records. These rules can be applied to individual records or sets of records, making them highly versatile for various cataloging needs. On the other hand, XSL (Extensible Stylesheet Language) normalization rules utilize XSLT (XSL Transformations) to transform XML data. This method is particularly useful for complex transformations and can be integrated into workflows that require extensive data manipulation.

An example of a library defined normalization rule:

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Create 041 $$a with ger if position 35-37 in the 008 field is ger.

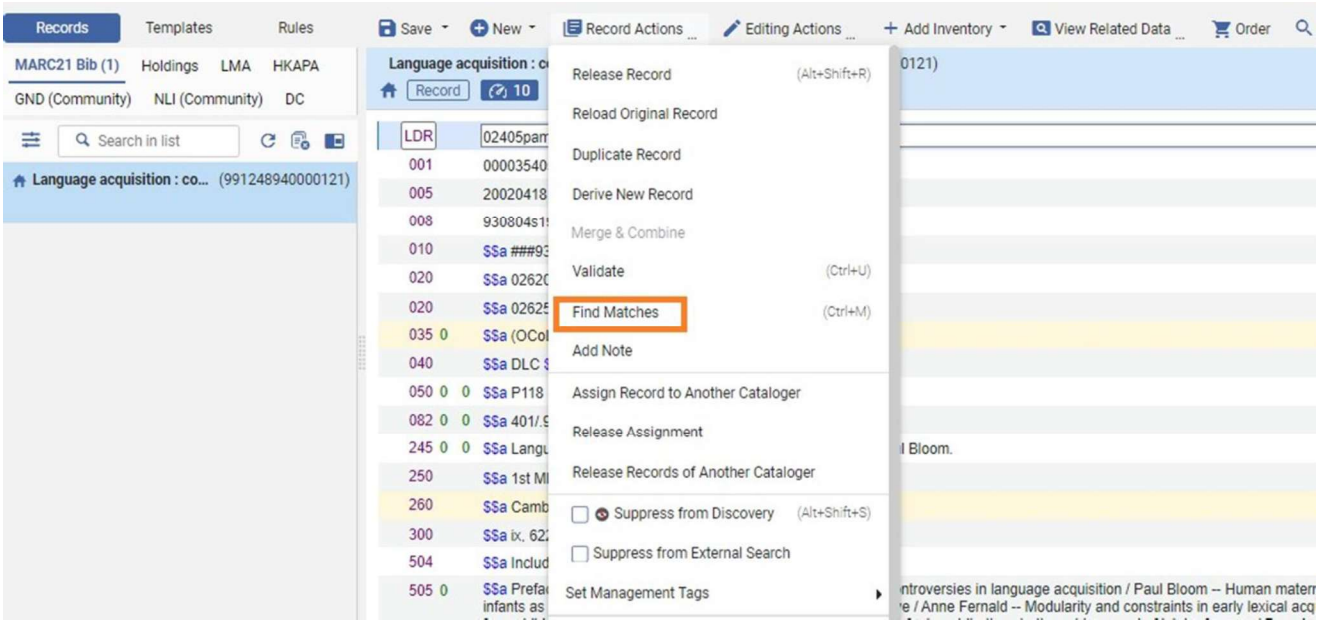
```
rule "Create 041 subfield a with ger if position 35-37 in 008
is ger"
when
  ((existsControl "008.{35,3}.ger") AND (not exists
"041.a.ger"))
then
  addField "041.a.ger"
end
```

The benefits of employing normalization rules are substantial. By automating metadata updates, libraries can achieve greater efficiency and consistency in their cataloging practices. The flexibility provided by customizable rules enables the system to adapt to diverse cataloging practices, making it a versatile tool for libraries with varying needs. Overall, normalization rules are pivotal in enhancing the functionality and reliability of the Alma, ensuring that libraries can manage their bibliographic data with increased precision and ease.

See the following page for more details: Working with Normalization Rules - Ex Libris Knowledge Center (also included as an attachment with our response)

l) Customizable duplicate detection.

Ex Libris: Alma allows NCCCS staff to check for matching records from within the metadata editor for the record being worked on. This includes the ability to check for existing records in the local catalog, and to search external sources for matching records. In addition to discouraging unintentional duplicate records, this also allows staff to easily find more complete versions of brief records they are viewing.



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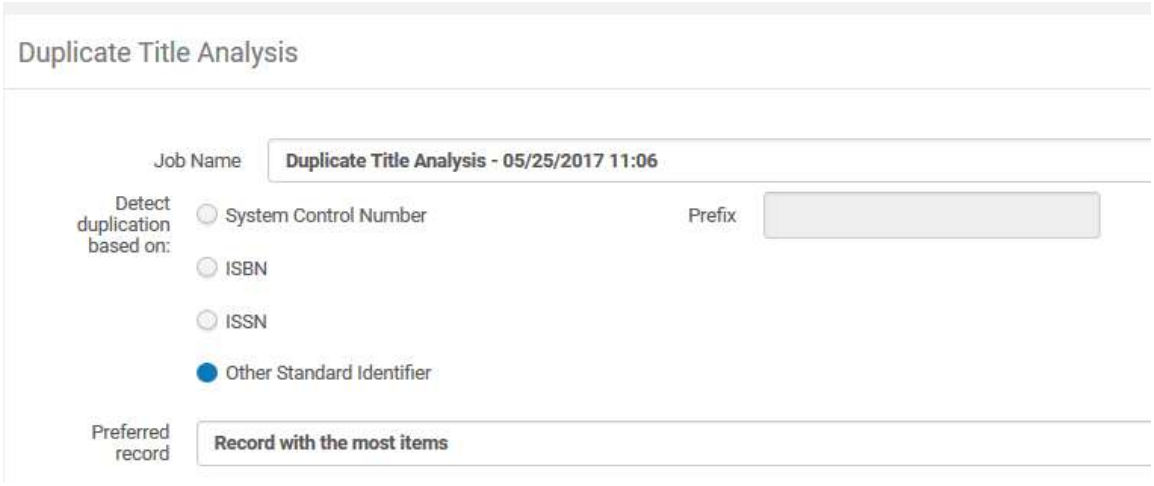
If the cataloger does not call up this option, Alma will still warn if there is a duplicate record in the database when the record is saved:



In addition, Alma supports a Duplicate Title Analysis report.

Duplicates are determined by looking for a match on one of the following parameters:

- System Control Number (035 field) with or without a prefix such as (OCLC)
- ISBN
- ISSN
- Other Standard Identifier (024 field)



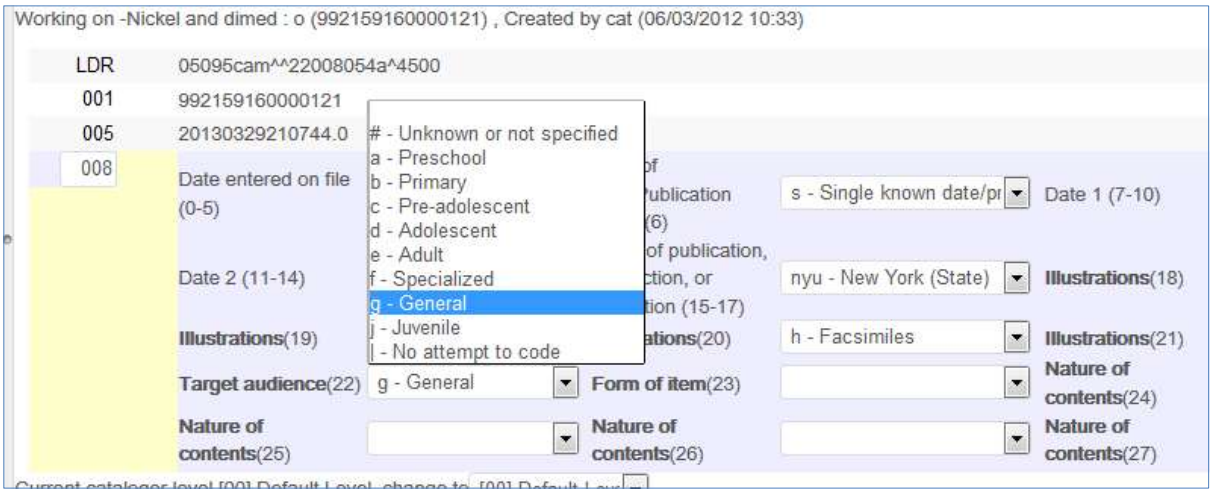
For import profiles staff users can define if the matching routine proceeds automatically according to the parameters defined for the profile or if staff users need to decide on a record-to-record basis.

The complete list of match profiles can be found here: https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/040Resource_Management/060Record_Import/020Managing_Import_Profiles#Match_Methods_.E2.80.93_Explanations_and_Examples

m) Utilizing formatting coding templates to reduce errors in fixed-field coding.

Ex Libris: Fixed fields can either be edited in line, or in a form that presents all values for the relevant position in the field:

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n) Automatic management of links between Authority and Bibliographic records.

The MD Editor allows you to quickly link to a suggested authority record from an authority-controlled field in a bibliographic record. It also enables you to view a read-only version of a suggested authority record and view the bibliographic records that are linked to this authority record.

In addition to the Name and Subject Headings authority support for the above bibliographic fields that are mapped to authority headings, Alma provides mapping for the bibliographic 490$a and 440$a (obsolete) and an F3 lookup for these fields in the Alma MD Editor. The 490$a (and 440$a) lookup is pulled from the authority record 130$a and 430$a:

- 130 – Main Entry – Uniform Title
- 630 – Subject Added Entry – Uniform Title
- 730 – Added Entry – Uniform Title
- 830 – Series Added Entry – Uniform Title

With the F3 lookup (refer to the procedure below for more information), you are provided the option to select your preferred series statement from a predefined list that is displayed in the MD Editor. The system does not do automatic linking/preferred term correction as part of the authorities daily processing for the 490$a/440$a, since the 490$a/440$a series statement represents the information (the way that a series is named) on the book itself. (Refer to http://id.loc.gov/authorities/names.html for more information.) However, you can do an F3 lookup in the MD Editor for the 490$a/440$a series statement and, optionally, **Select** the preferred authorities to update the bibliographic 490$a/440$a. Refer to the example below.

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F3 Lookup for 490$a

Flexibility in searching bibliographic records by any MARC field.

Ex Libris: See the following pages for details regarding the available indexes:

MARC 21 Search Indexes

- MARC 21 Bibliographic All Titles Search (provided as a PDF attachment)
- MARC 21 Authority Search Index Mapping
- MARC 21 Keyword Search Indexes
- MARC 21 Holdings Tags and Mapped Search Indexes

UNIMARC Search Indexes

- UNIMARC Bibliographic All Titles Search
- UNIMARC Authority Search Index Mapping
- UNIMARC Keyword Search Indexes

CNMARC Search Indexes

- CNMARC Bibliographic All Titles Search
- CNMARC Authority Search Index Mapping

GND Search Indexes

Dublin Core Search Indexes

Classification Search Indexes

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p) Creating non-MARC metadata that is searchable and indexable (brief order records, generic MARC-like records.

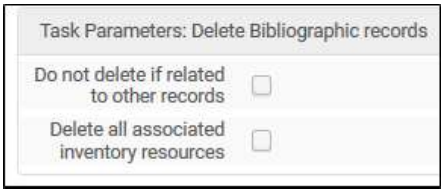
Ex Libris: Alma supports MARC21, Dublin Core, UNIMARC, KORMARC and CNMARC.

q) Deleting items with bills attached.

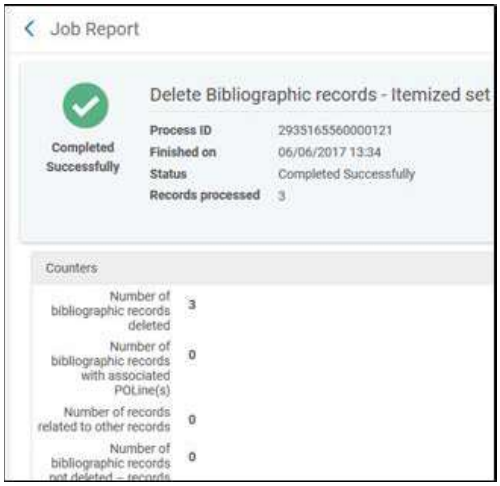
Ex Libris: Alma supports the bulk deletion of bib records. The delete bibliographic records job allows you to define whether or not to delete:

- Records that are related to other records
- All associated inventory resources

Records with associated orders will not be deleted



The results of the delete job can be viewed in the report:



The detailed counters report can be downloaded. The MMSIDs of the records deleted/not deleted will be listed in each of the relevant tabs of the downloaded excel file. Records with PO Lines are not deleted.



r) Managing book cover images, including subscription to service.

Ex Libris: Primo records can be enriched with additional data to enhance the discovery and delivery functions. Some examples of this include:

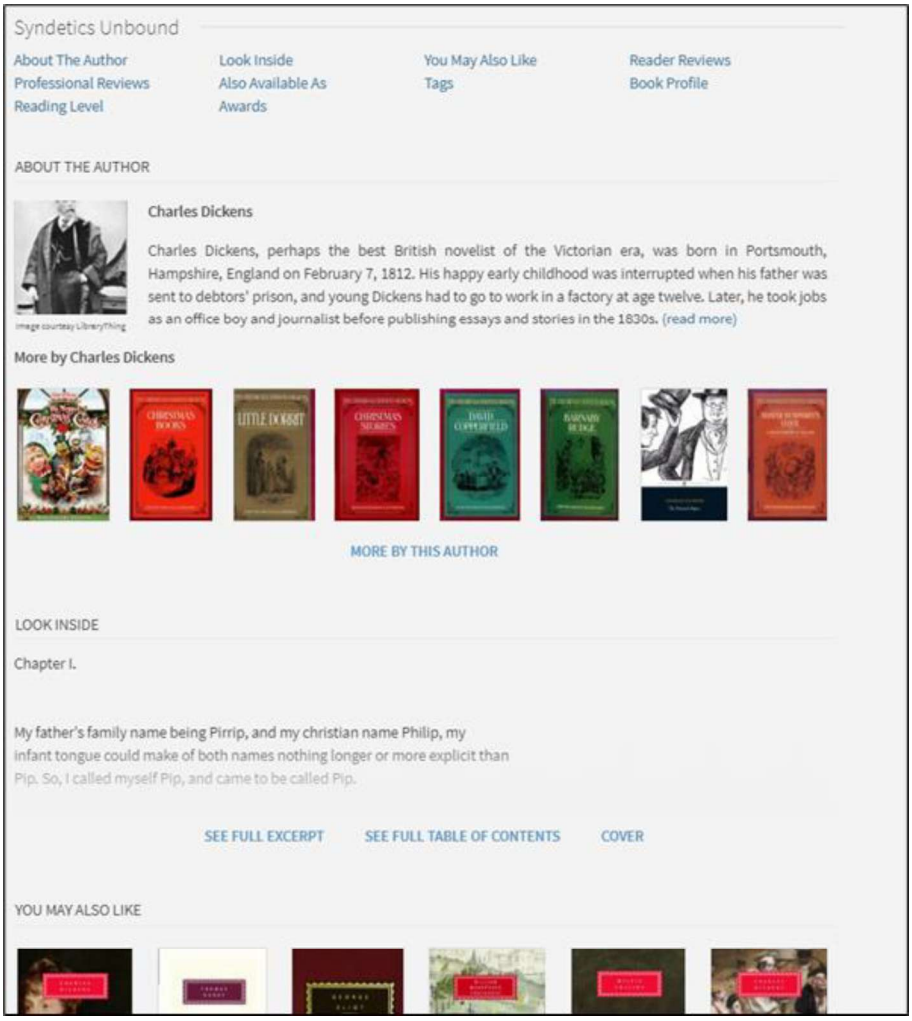
- Google Books

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- Library of Congress: classification numbers translated to description
- Customer-defined enrichments: "plug-in" enrichments

Ex Libris is helping libraries improve the research experience and expand exploration by integrating Syndetics Unbound with Primo VE.

The integration with Syndetics Unbound, a groundbreaking online enrichment service, enables libraries to create a better discovery experience for today's researcher while maximizing the value of their collections. Libraries can display Syndetics Unbound data on their Primo detail pages to showcase items and increase user engagement. Researchers see familiar elements such as title recommendations, author information, look-inside-the-book pages, series information, professional reviews, reader reviews, tags, book profiles, and awards.



iii. NCCCS is seeking an ILS solution that records and manages library inventory. Describe the proposed solution and how it supports the following functionality:

a) Inventory date in Item record capture.

Ex Libris: Inventory date is part of the item record and is automatically set by the system during inventorying.

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ExLibris
Part of Clarivate

General | ENUM/CHRON | Notes | History

General Information

Barcode	100097-000010 Generate		RFID
Copy ID		Material type	Book
Item policy	4 Week Loan	Provenance	
Is magnetic		PO Line	POL-44366
Issue date			
Receiving date	01/19/2014	Expected receiving date	
Enumeration A		Enumeration B	
Chronology I		Chronology J	
Description	Generate		
Pages		Pieces	
Replacement cost		Receiving operator	
Physical condition			
Process type			

Inventory Information

Inventory number		Inventory date	
Inventory price			Clear Inventory Information

Location Information

Permanent location *	Main Library: General (GEN)		
Item call number type		Item call number	
Source (Subfield 2)			
Storage location ID		Choose prefix	Generate

Temporary Location Information

Item is in temporary location	No Yes		
Temporary location			
Temporary call number type		Temporary call number	
Temporary source (Subfield 2)			
Temporary item policy		Due back date	

Retention Information

Committed to Retain	No Yes		
Retention Reason		Retention Note	

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b) Inventory with portable inventory control devices; with optional application available for mobile devices.

Ex Libris: An RFID-enabled hand-held device or a barcode scanner can be used at the shelf to gather a list of identifiers of RFID-tagged material.

The Shelf Report provides staff users with an efficient process for managing the library's inventory. Using the Shelf Report functionality, you can manage Physical Inventory to see if items are in place, misshelved, or missing.

You can take an Excel file or a .txt file containing barcodes/identifiers obtained by scanning using the handheld RFID device and compare that information with the information stored in the Alma database to identify items that are misshelved or are missing from inventory. The following criteria can be specified to identify the records in Alma that a staff user wants to compare with the Excel or .txt file:

- Library
- Location
- Alma inventory range (by call number) or Alma inventory set (by set name)

c) Integrated shelf-list.

Ex Libris: Alma includes integrated shelf report functionality. This allows you to run an inventory on your collections.

d) Exceptions report.

Ex Libris: The Shelf Report tool runs the Shelf Report job that provides a report with the following information to help you identify where you have issues with your physical inventory:

- Number of items in place - Items in the input file with the status **In place**.
- Number of known items that are not in place - Items that were not in the input file with status **Not in place**.
- Number of items on the shelf but are marked not in place in the database - Items that were in the input file but with the status **Not in place**.
- Number of missing items that are marked in place in the database - Items that were not in the input file but with status **In place**.
- Number of items on the shelf but are out of the range specified or not in the set specified - Items with a barcode in the input file that match an item in inventory but the item is not in the range or set.
- Number of barcodes with no matched item in the database - Items with a barcode in the input file that do not match any items in inventory.

From the report results, you can access a robust set of options for managing your inventory. You can preview the items flagged in the report (from the Repository Search results page), create an itemized set of the items flagged in the report, or download a list of barcodes (for items with no match).

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e) RFID.

Ex Libris: An RFID-enabled hand-held device or a barcode scanner can be used at the shelf to gather a list of identifiers of RFID-tagged material.

iv. NCCCS desires the proposed solution to manage Course Reserves. Describe how the proposed solution approaches the following specifications:

a) Staff managed interface.

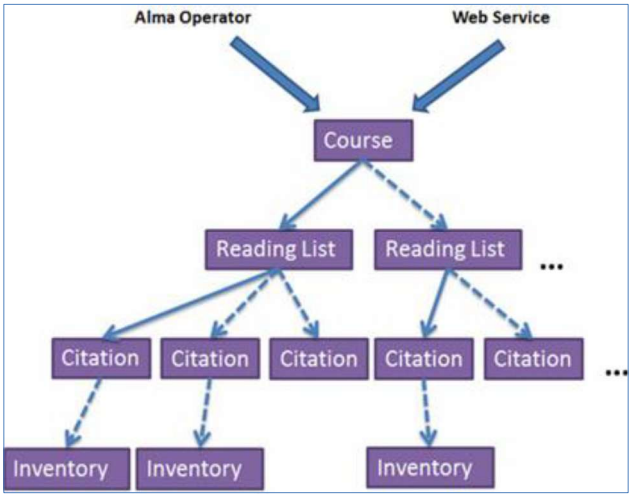
Ex Libris: Alma's course reserve functionality is fully integrated and uses the same user and bibliographic databases as the rest of the system. Additionally, Alma provides searching of both bibliographic records and course reserve information in a single interface for library staff, and through a common discovery interface, such as Primo, for end users. Alma's course reserve's functionality supports physical, electronic and digital materials.

Course Reserves Workflow

Course Reserve Collections can be managed across more than one library within the institution.

The Courses and Reading Lists Workflow in Alma works as follows:

- Reading Lists – contain citations compiled by the course instructor and submitted to the library. The list may include resources which are in the institutional repository, or which are not in the repository.
- Courses – contain details concerning the course for which the Reading List has been submitted (e.g., name of instructor, start and end dates of the course, etc.) Courses may contain more than one Reading List which may be processed by separate libraries.
- Course Departments – Each course must be associated with a Course Department. A Course Department is itself associated with an organizational unit (institution or library/libraries), which determines the resources available for the course. Course Departments may (and usually do) contain more than one Course.

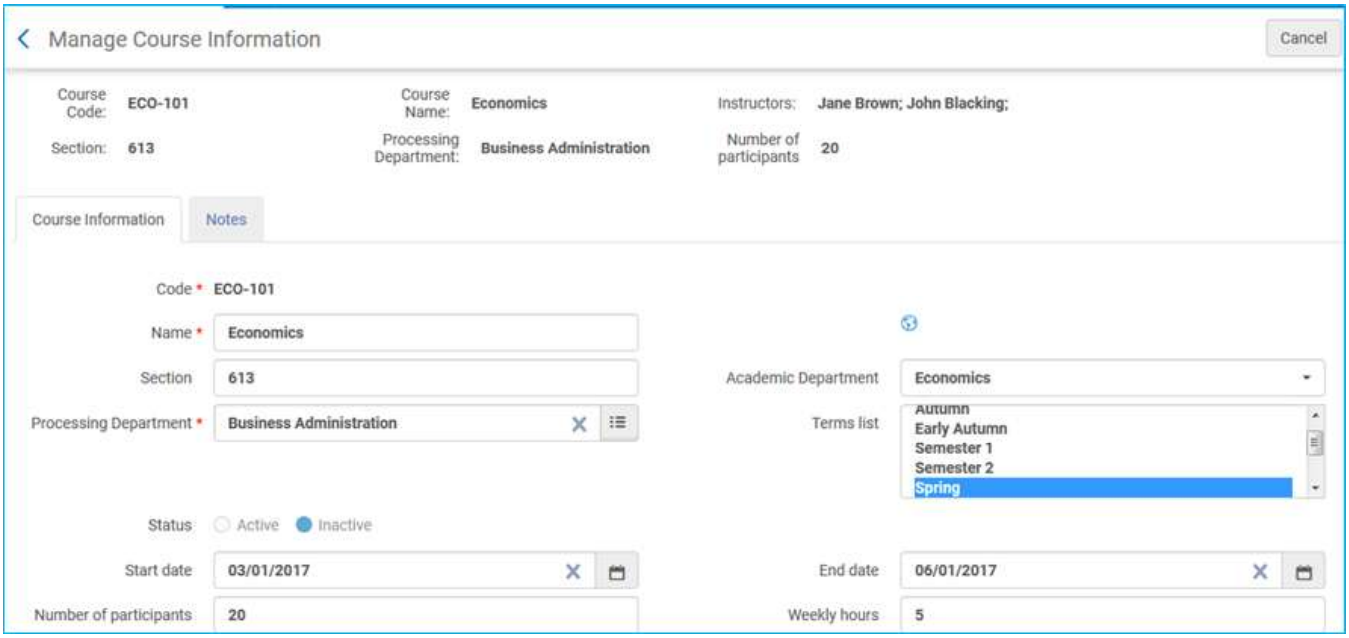


The workflow for creating and managing a course reserves reading list is as follows:

- The workflow commences when information is received about a department's courses.

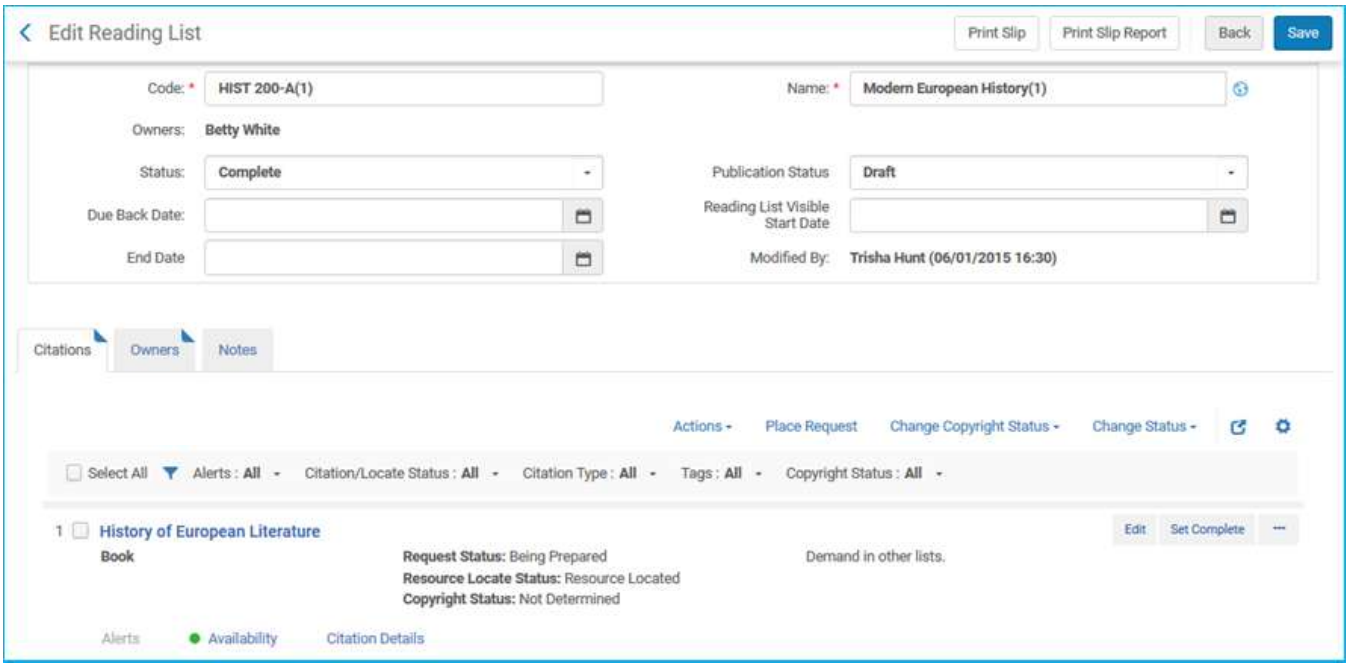
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- Define the course: course information includes instructor, start and end dates, number of participants, and weekly hours. The staff operator may add, delete, or edit courses in a department. Creating a course is a prerequisite to enable access to reading lists.



- Define the reading list: the staff operator may add, delete, or edit reading lists that an instructor requires for a course. The reading list specifies resources (physical, digital, and others) that can be selected from the repository within the library.
- Titles may be added to a course's reading list using a title that is already cataloged in the institutional repository or based on a freely catalogued resource that is not part of the institutional repository. The latter is the means by which non-library material can also be made part of the reading list.
- For titles that have been made part of the reading list, the system will display the available inventory, be it physical, digital or electronic, and supply management tools to the operator, for example for requesting the transfer of physical items to a reserved area, or for requesting the digitization of physical copies.

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- Dedicated workflows facilitate the temporary change of item information for physical copies that have been moved to a reserved area. For example, changing their temporary location or the terms of use by which they are circulated, and setting the date on which the item is expected to be moved back to its permanent location. This date may be automatically calculated based on the length of course for which the item is moved.
- Automatic processes trigger the moving of these items back to their permanent shelving locations.

Reading Lists

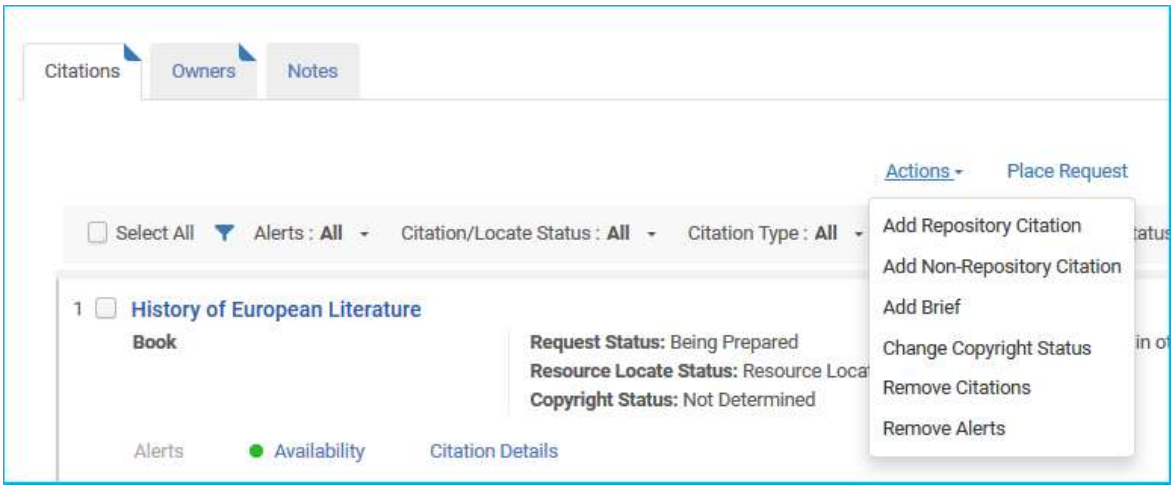
Internal move requests that are placed by staff for fulfilling course's requirements take priority over patrons' requests. If both a library staff course-related request and a patron request exist, the library request will take precedence, and the patron request will be fulfilled only if - after the change of temporary location - it is still valid according to library policies.

Likewise, any future requests that will be placed on the reserved material will be allowed and be processed only as per policies set forth by the library for the reserved material.

Non-Repository Citations

Alma Course Reserve functionality includes the option to 'Add Non-Repository Citation' and 'Add Brief' functionality to facilitate handling of external titles/copies (e.g. the instructor's personal copy):

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- Cataloging a 'non-repository' citation results in a metadata record that is linked to the course but is not part of the institutional repository. They may represent items that are not part of the library's resources and therefore are listed only in Course Reserves.
- Cataloging 'Brief' records result in a metadata description that is linked to the course and is part of the institutional repository, so that it may have linked holdings and items. Cataloging this resource, however, may be done in a manner that either suppresses the record from the discovery interface, or publishes it in a manner that makes it discoverable only in the context of a courses related search. This type of cataloging may be preferable if the resource is expected to be re-used for subsequent courses but is not a real part of the library inventory.

Using the Course Reserves area, the Design Analytics user may create reports/dashboards for the Course Reserves area and is able to answer the following types of business questions:

- Which courses reserved a specific title?
- Which courses share the same titles?
- What are the reading lists per department?

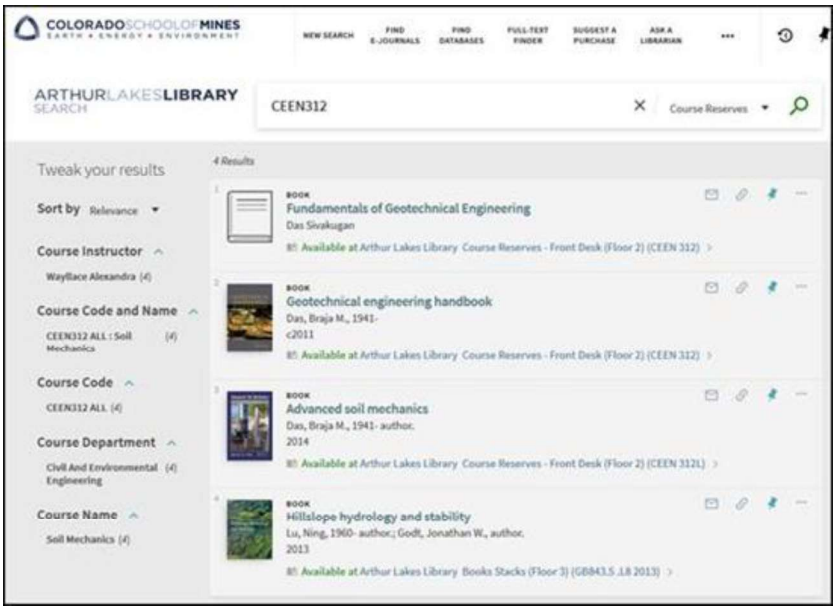
b) Accompanying display in the Discovery Services/OPAC.

Ex Libris: A dedicated course reserves search scope can be activated for patrons in Primo.



Facets allow you to filter results by Course Instructor or Course Name:

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e. Circulation

i. NCCCS is seeking an ILS solution with robust circulation functionality. Describe the circulation functionality of the proposed ILS solution. Describe how the proposed solution supports the following functionality:

Ex Libris: Alma, offers robust circulation functionality that includes standard circulation functions such as checkout, checkin, renewals, loan history, fines payment, fines history, reservation, borrower records, and interlibrary loans. It supports the use of barcodes and RFID tags for scanning material and patron identifiers. Users can be searched by various criteria including email, name, identifiers, and job category. The system allows for viewing requests, managing current loans, handling returns, paying fees, and editing patron information. Alma also supports communication over the SIP2 protocol for local self-service machines. Additionally, Alma's Smart Fulfillment framework manages the delivery of resources to end users, encompassing print circulation requesting, electronic link resolution, and digital access and rights management. The system simplifies patron services by presenting all options to patrons regardless of format and filtering options based on patron rights and library-defined rules

a) Uploads student information from the college's ERP software system. The student information to be imported will be the student's name and address.

Ex Libris: Alma supports the import of user records from an ERP system. Names and addresses can be imported.

The integration between Alma and a Student Information System (SIS) is configured in an integration profile of type "Users". If your institution has several SIS systems, a separate profile should be defined for each of them.

There are few usages in which Alma and SIS can be integrated:

The common usage is import and synchronize external users from SIS into Alma.

2 additional usages are available, but are not commonly in use:

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- Export user blocks
- Export user

For more information please see our Developers Network site for full information and examples about the different integration options available with Alma - https://developers.exlibrisgroup.com...a/integrations

As stated above, the loading of external users from the Student Information System can be performed in one of two modes

1. Import and
2. Synchronize.

The synchronize mode is an ongoing load, used to update external users and add new ones. The IT department and the library must determine the identifier that Alma and the ERP system have in common in order to provide a matching point when synchronizing external users in Alma with the incoming data from the ERP system. This may be the primary identifier or any other identifier, unique cross-institution or cross-type. For each external user in the input file, the synchronization job attempts to find a match according to the defined match identifier. All the existing external users are checked, regardless of the SIS to which they initially belonged. (Internal users are not considered for matching purposes.)

If no match is found, the synchronization job adds the user as a new external user or rejects the user, according to criteria selected in the external system profile. The addition of a new external user is similar to the addition of a new user via the import mode.

If a match is found (that is, the external user already exists in Alma), all the external information of the user is replaced as follows:

- Core information – All the fields are replaced by those in the input file. Only the following fields are not replaced if they were updated manually (or if they are empty in the incoming user record): User group, Job title, PIN number, User language.
- Related segments (identifiers, addresses, phone numbers, email addresses, notes, blocks, and statistics) – The existing external segments are deleted and the segments from the input file are added. Internal segments (that were added manually) are not deleted.

It might happen that a patron comes to the circulation desk, and the circulation staff finds that no such user exists in Alma. This can happen, for example, for a new student, whose information was not yet loaded from the student information system. In such a case, the circulation staff can perform a "fast registration" of the user: the user will be created manually as an external user. The information will be updated by the next synchronization.

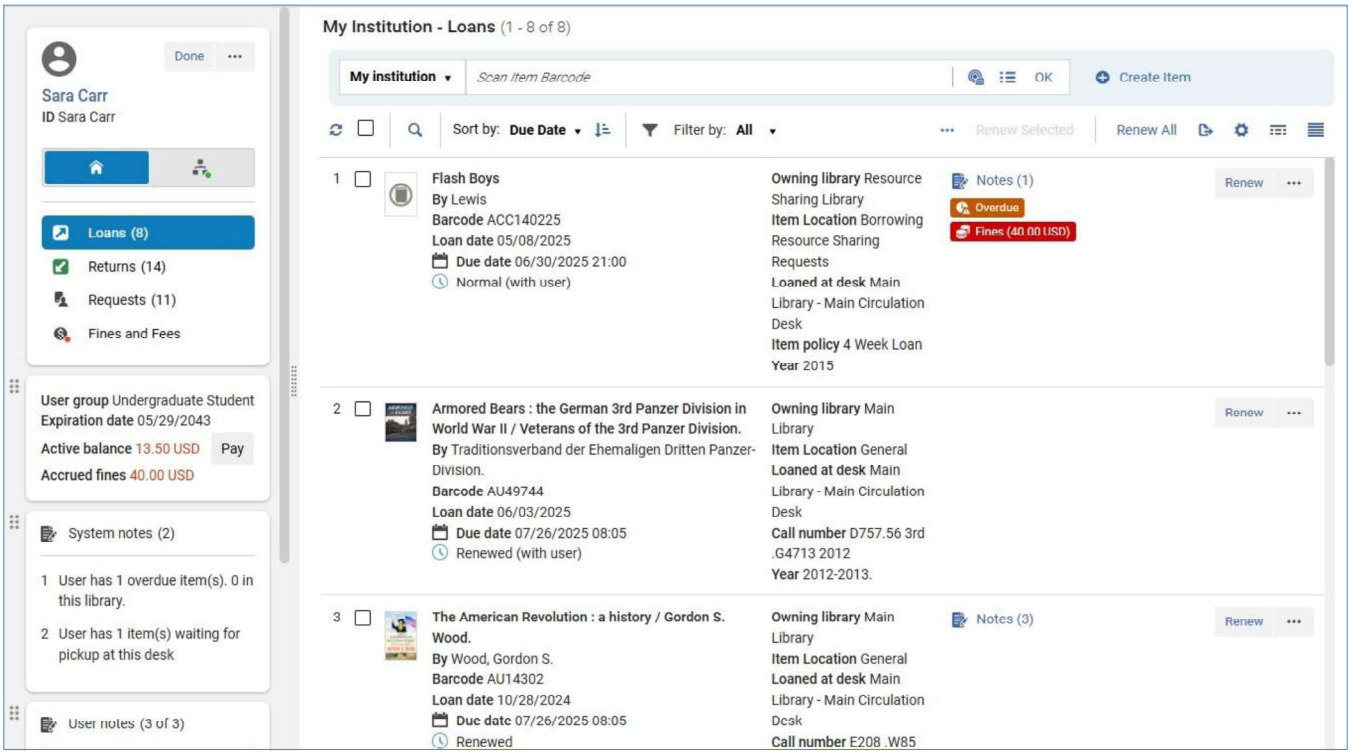
b) Integrates functions so that transactions (placing a hold, paying a bill, updating a patron record, etc.) can be performed from one window.

Ex Libris: The Patron services page includes the following activities:

- **Viewing requests** – The Circulation Desk Operator/Manager can view a list of items requested by the patron
- **Loans** – Current loans with the options to renew loans, add/scan in further items,
- **Returns** – Returned loans of either the current session or all returns

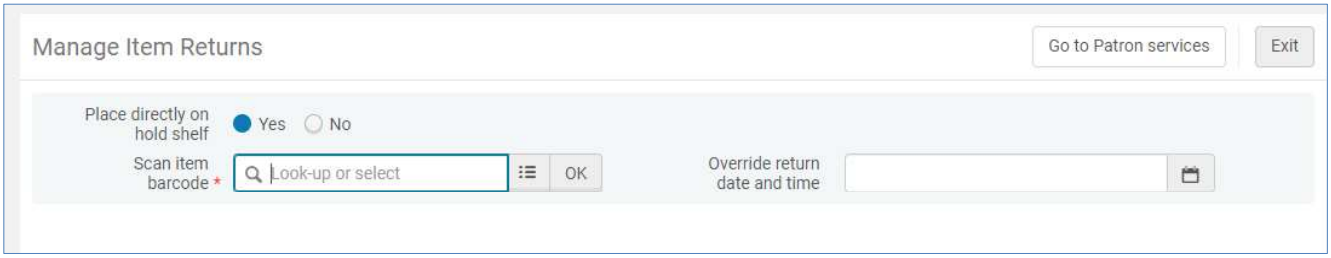
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- **Fees and fines** – The active balance is shown with the option to pay fines/fees (full, partial, item/case related)
- **Editing patron information** – The Circulation Desk Operator/Manager can make changes to patron general information.



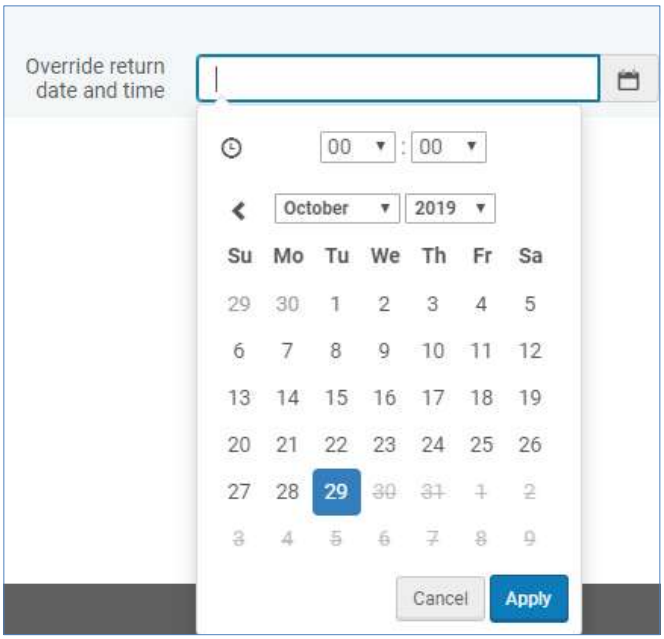
c) Edits of the book drop check-in dates.

Ex Libris: On the Manage Item Returns screen, the operator can change the due date of returning items, by clicking on the calendar icon on the 'Override return date time' box:

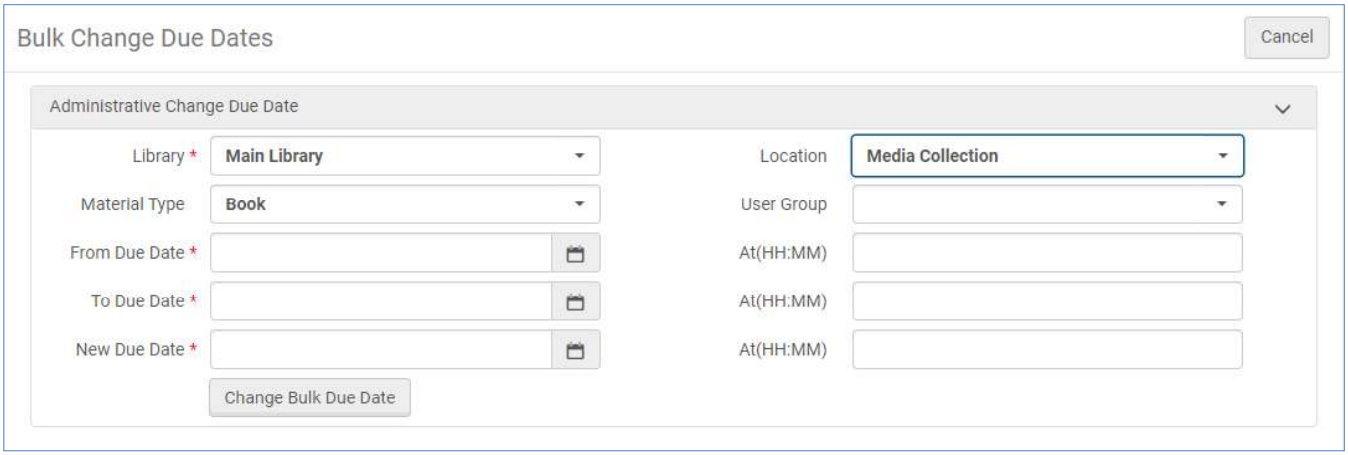


The staff user can then enter the relevant date in the dialog box:

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In addition, there is functionality related to bulk changes of a loan date:



Changes can be made on the level of the library and the location. Staff are prompted to enter a 'from' and 'to' due date range, as well as the new due date for all items matching the data input.

d) Supports process for printing receipts of checked-out items.

Ex Libris: Alma includes the following receipt notices suitable for receipt printers:

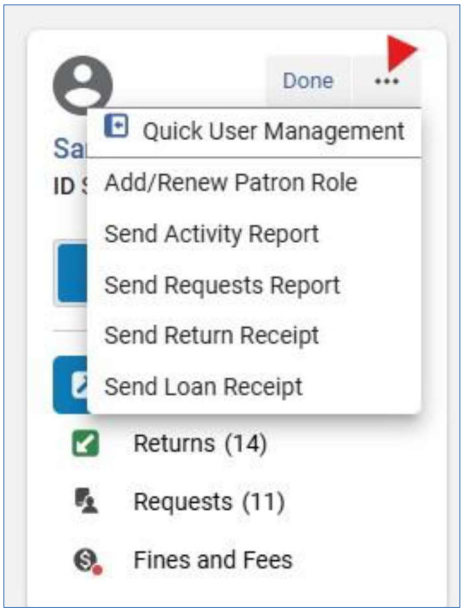
Loan Receipt Letter
Sent to patrons after items are loaned from the circulation desk.

Return Receipt Letter
Sent to patrons after items are returned to the circulation desk.

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Fine Fee Payment Receipt Letter
Sent to patrons; indicates that payment has been received.

Alma's Patron services also allows staff to send reports and receipts ad-hoc (e.g. when Alma's default is to print receipts):



For security reasons Alma sends print-outs via email. If you require a label and print slip application that supports a variety of desktop and network printers, please refer to the following page of our Development Network that introduces the SpineOMatic Label printing software: https://developers.exlibrisgroup.com/blog/SpineOMatic-Label-Printing-Software-for-Alma

e) Allows editing of receipt headers.

Ex Libris: Yes, receipt headers can be customized.

f) Supports reversal of lost Item status once the item is returned and reverses the replacement cost and substitutes it with overdue fines.

Ex Libris: Alma can automatically remove lost item fees from a borrower's account when a lost item is returned. Alma also offers the option to remove a percentage of the lost item fee instead of the whole fee, if desired.

Alma will present staff with an on-screen alert when lost or claimed returned items are issued or returned.

g) Supports claims returned functionality with timestamp.

Ex Libris: When claiming an item as returned:

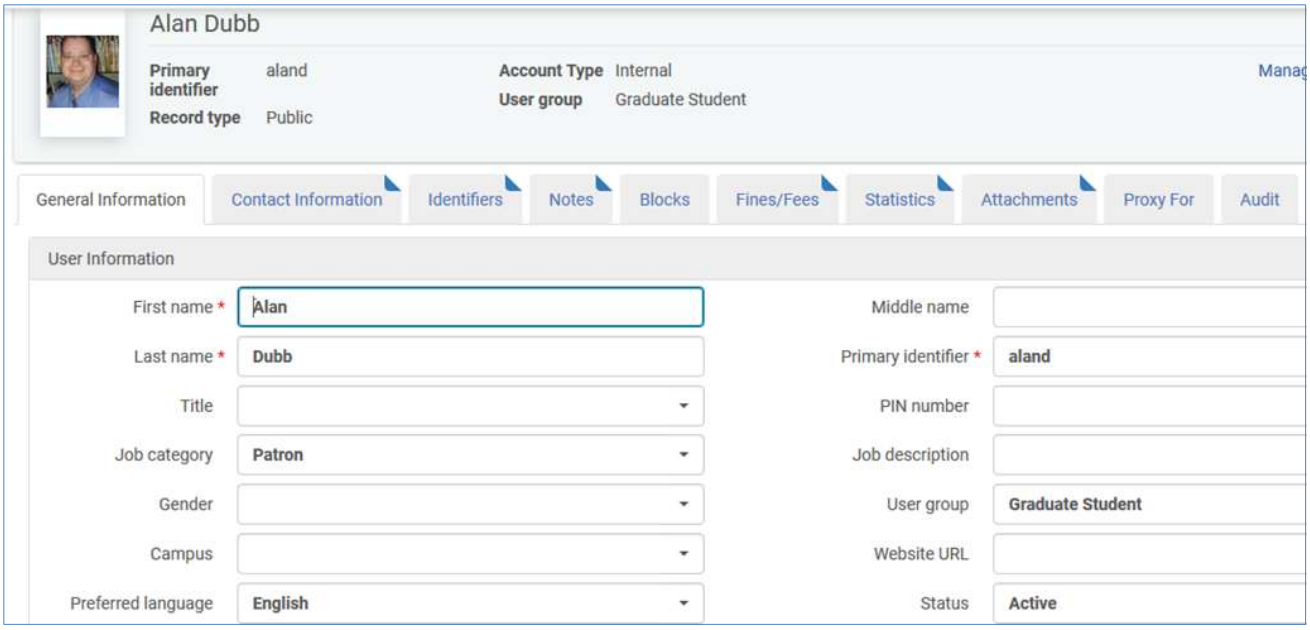
- The loan's status is changed to Claim Returned.

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- The item's Process Type value is Claimed Returned, and the item remains requestable and is considered to still be on loan.
- By default, overdue fines accumulated prior to the item being claimed as returned are applied to the patron's active balance, but no new overdue fines accrue from that point onward. (This functionality, however, can be configured as well as deciding if the library wants to exclude lost and claimed returned loans from the overdue limit (number of loans that are allowed to be overdue).
- The date, time and staff member that claimed the item as returned are recorded in the Loan Audit Trail tab.

h) Uploads and displays patron photos in the patron's record and performs real-time updates when patron record is modified.

Ex Libris: A patron record is structured with tabs containing segments of information such as addresses, phone numbers, email addresses, notes, blocks, match IDs, etc.) In addition, a patron photograph may be included. The screenshots below illustrate this concept:



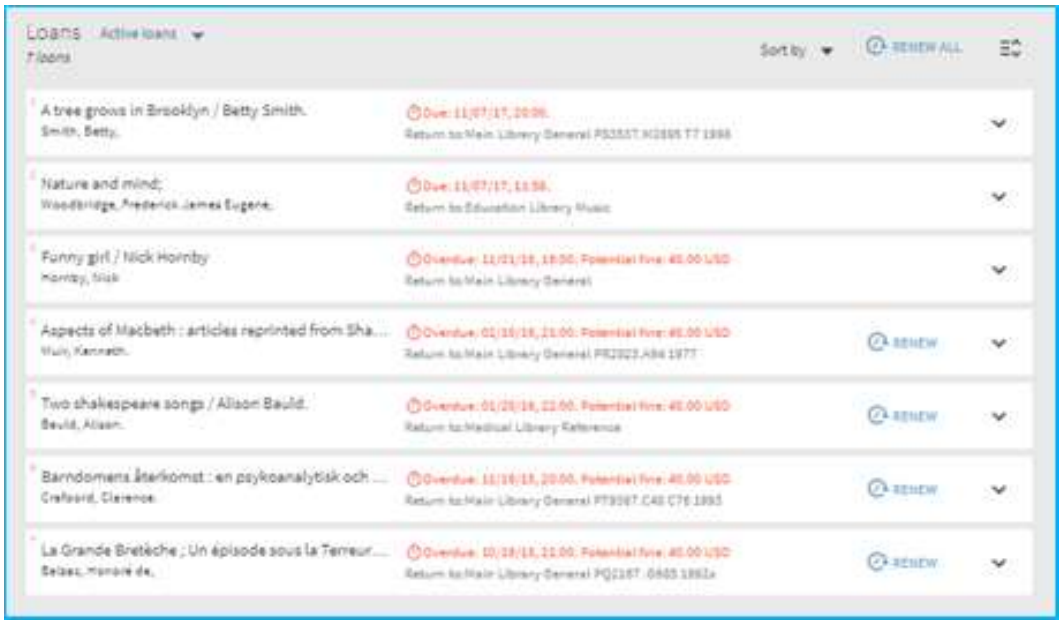
i) Renews item records.

Ex Libris: Alma supports manual and automatic loan renewals. Manual renewals are possible through self-check, staff users in Alma or in the Discovery layer by patrons.

Automatic loan renewal rules define the conditions under which items will be renewed by the Notifications - Send Courtesy Notices and Handle Loan Renewals job. Input parameters can be by user group and/or item owner (library). Any number of such rules may be defined.

Renewals can be done for a particular item or in batch. The renew option is only displayed for items where renewal is possible:

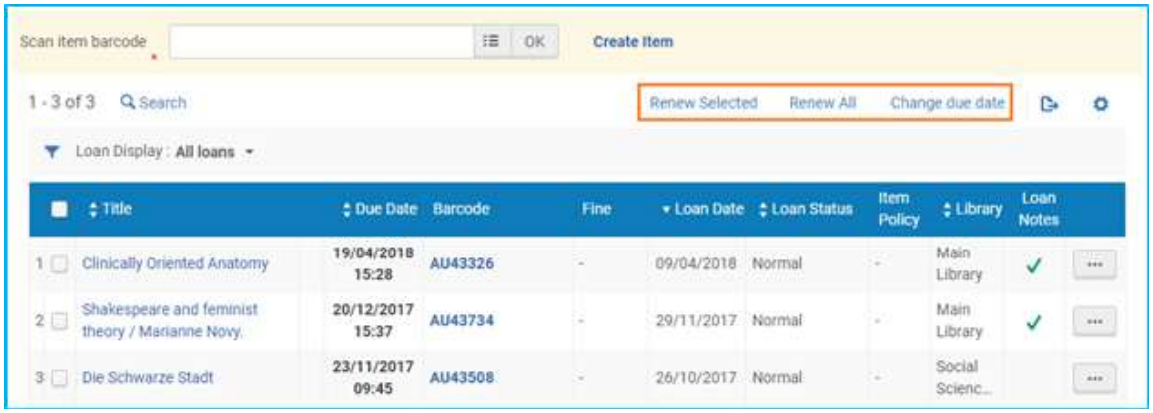
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If the user chooses to renew in bulk, Alma will return a message displayed in Primo, that indicates which items were renewed and a specific notification at the top if renewal could not be applied to the full list of items (plus indication for each item):



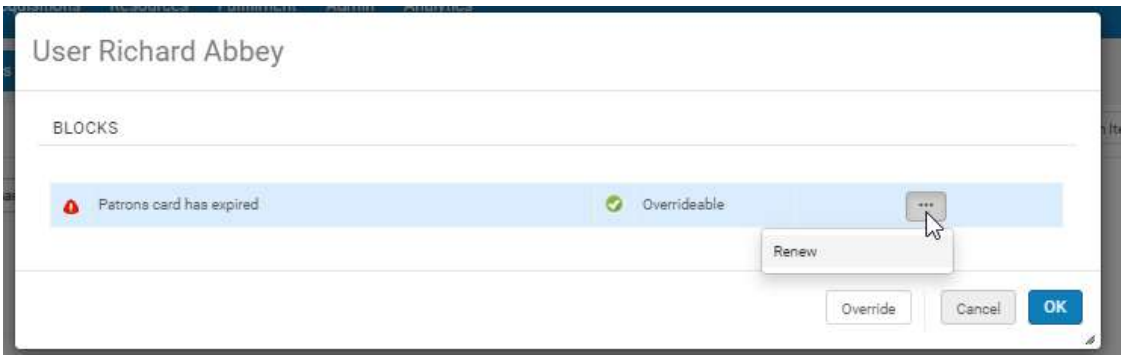
The same operations are possible in Alma on behalf of the patron.



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j) Renews patron library cards.

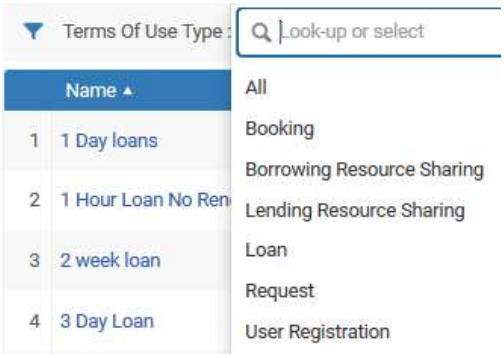
Ex Libris: When a patron card expires, a pop up window alerts the staff member. Staff with proper permissions can select override or renew the patron account.



k) Allows borrowing and lending rules, such as lending period, grace period, library closures, among others, to be customizable by location.

Ex Libris: Alma combines lending rules related to issue and return dates with the library calendar.

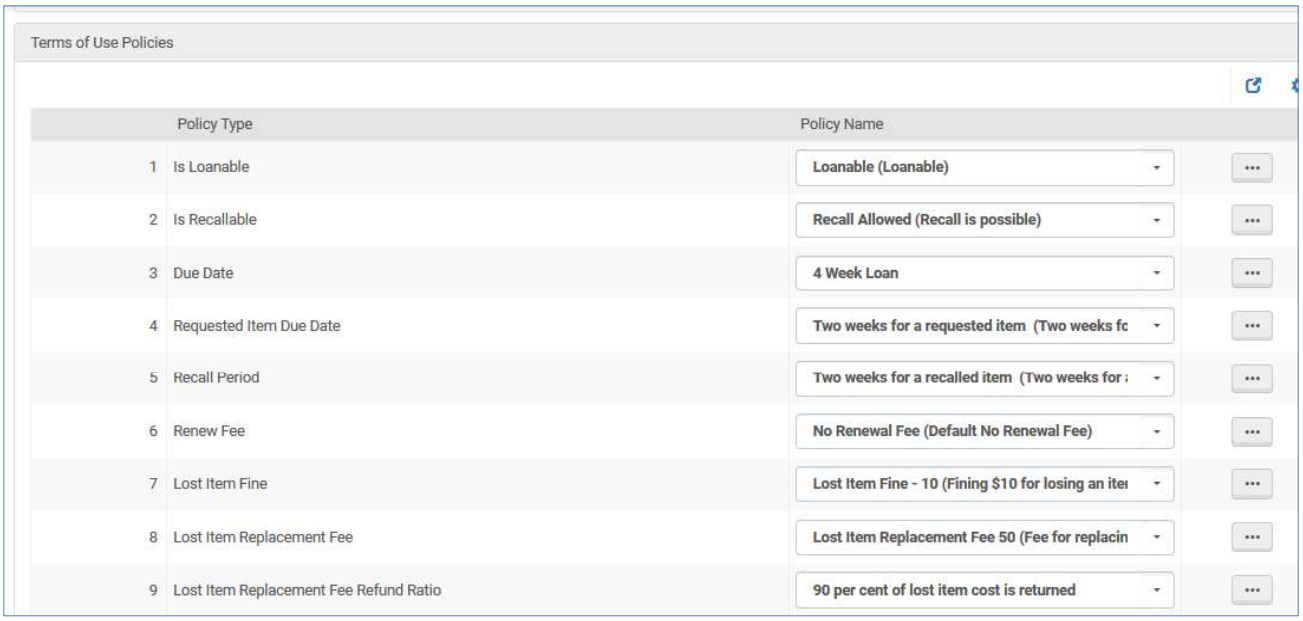
Alma supports the concept of Terms of Use (TOU), which refers to an aggregation of policies relating to a specific fulfillment service type (e.g., loan, request, etc.), reusable for combinations of patrons and items.



Terms of use can be applied differently for different combinations of user groups, job categories, material types, process types and locations.

An example of a TOU record may be seen in the following screen capture:

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Taken together, the policies define the 'terms-of-use' under which the specific fulfillment service will be provided (or not) to the patron by the institution or the library.

Alma's Terms of Use (TOU) policy includes a parameter for defining the behavior of due dates related to library hours and closures. This rule will automatically be applied to all relevant loans and transactions. Options include automatically extending a due date to account for a closed period. In the case of an unplanned closure, the due dates will automatically be adjusted related to the unexpected closure.



l) Allows borrowing and lending rules to be created by the owning library, home location, item type, patron status, and other variables.

Ex Libris: Lending and requesting rules in Alma can be as flexible as the library requires. Alma allows for inter-site lending between different Libraries which are part of the same Institution. Depending on configuration options, users based at one site may request material held at another site. Rules for requesting are configured by the library using Policies and Request Terms of Use (TOU). The following can be determined in the TOU: whether material of a particular type is requestable, what pickup locations are allowed, hold shelf period, whether material is digitizable, whether material is requestable for Resource Sharing (document supply), Request priority (low, medium or high), On shelf request policy, Personal delivery allowed. The TOU can be applied via Fulfillment Unit Rules per User Group, Item Policy, Material Type or Location.

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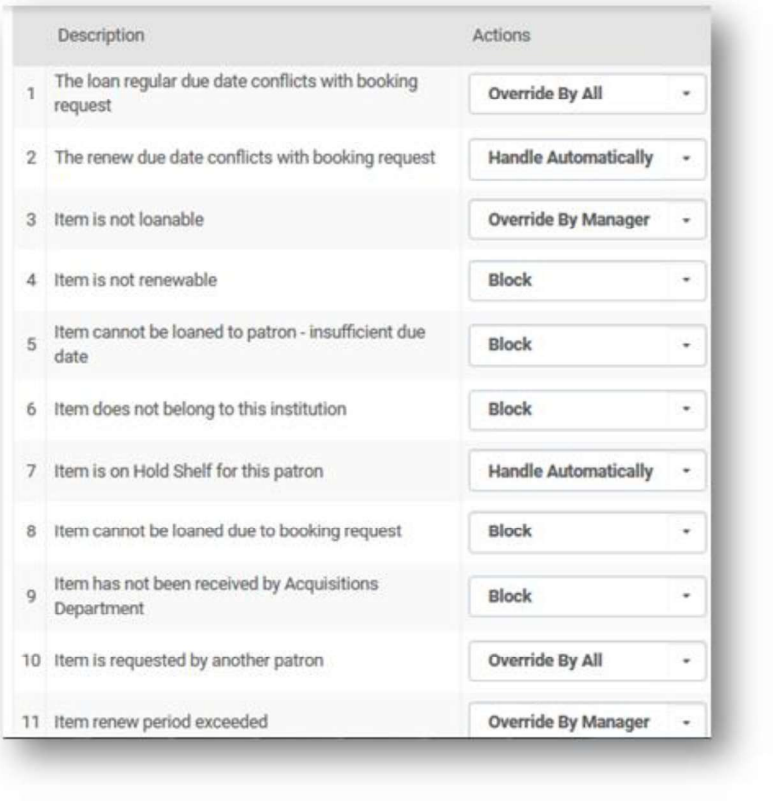
If an item is returned to a library which is not the owning library, then the staff user returning the item will get a pop-up window regarding the transit of the item to the owning library.

The workflow steps can be summarized as follows:

- The staff user gets a message that it needs to be placed in transit to another location
- A transit letter is printed
- In the repository search the item appears as "in transit"
- When the item is scanned in at the owning library it will appear as "in place".

m) Allows borrowing and lending rules to be over-ridden based on the level of user permission.

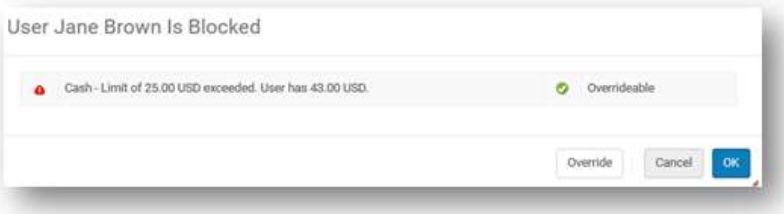
Ex Libris: Override policies are configured by the library and only available to staff with the relevant roles and permissions. An example of the override configuration table can be seen in the following screen capture:



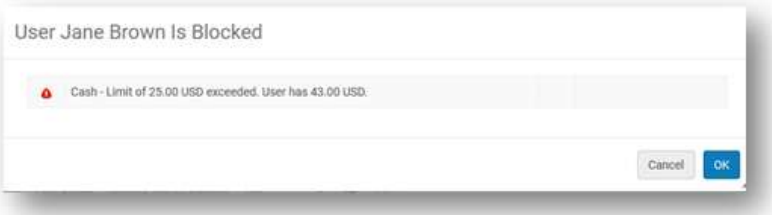
	Description	Actions
1	The loan regular due date conflicts with booking request	Override By All
2	The renew due date conflicts with booking request	Handle Automatically
3	Item is not loanable	Override By Manager
4	Item is not renewable	Block
5	Item cannot be loaned to patron - insufficient due date	Block
6	Item does not belong to this institution	Block
7	Item is on Hold Shelf for this patron	Handle Automatically
8	Item cannot be loaned due to booking request	Block
9	Item has not been received by Acquisitions Department	Block
10	Item is requested by another patron	Override By All
11	Item renew period exceeded	Override By Manager

The following screen capture illustrates a library defined block that can be overridden by the staff operator:

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The following example shows the same block that cannot be overridden by the staff operator who does not have override privileges.



n) Tracks items loaned from individual libraries.

Ex Libris: Yes, Alma tracks a variety of data points for circulation including details of what library owns the item as well as other details such as item location at the time of loan and the circulation desk that performed the transaction. See the example below:

Loans (In House + Not In House)	Institution Name	Location Name	Location Code
4	Alma University	Abstracts	ABST
2		Almacenamiento remoto BC	ARBC
4		Asian Collection	ASIAN
1		Audio-Visual	AV
1		Ballet Music Collection	BAL
295		Borrowing Resource Sharing Requests	OUT_RS_REQ
18		Children's Collection	CHILD
1		Depósito 2	DEP2
3		Film & TV Archive Reading Room	FILMTV
4,993		General	GEN
9			
12			
24			
10			
67			
5			
57			
1			
9		ILL Material	ILL
3		Lending Resource Sharing Requests	IN_RS_REQ

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Provides reliable offline circulation and patron registration options.

Ex Libris: Alma circulation functions will work even in low-bandwidth situations, as only a minimal amount of data transfer is required. In cases of complete third-party network interruption, Alma has a complete offline circulation facility that allows normal library operations to continue, and for data to be re-synchronized quickly as soon as connectivity is restored. The offline circulation tool can be installed locally and allows the data to be synched back to Alma when the network connection is back following a network failure. In addition, as Alma is hosted in the cloud, in case of local network outage there is also the option of using mobile networks to access the system, enabling normal operations. The offline client allows for basic circulation to continue (issue/renew/return).

Your self-service equipment may also offer its own offline circulation functionality, which will produce a transaction file which can be uploaded to Alma when the network is back online.

ii. Within the Circulation functionality, NCCCS requires the proposed solution to handle financial tasks. Describe how the proposed solution approaches financial tasks. Include in the description how the proposed solution supports the following functionality:

Ex Libris: Alma supports the automatic generation of fines and fees based on defined policies, allows for manual addition or waiver of charges, and provides options for configuring payment modes and handling fines and fees at circulation desks

a. SIP 2 compatibility

Ex Libris: With standards-based integrations being one of its main design goals, Alma integrates with other fulfillment systems using a number of widely used standard protocols such as SIP2.0 and the NISO Z39.83 Circulation Interchange Protocol (NCIP).

SIP2.0

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

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A Self- Check Integration Profile is used to define which of the above listed actions is to be supported by the institution's different self-check machines. The Self-Check Integration Profile is also linked to an Alma Circulation Desk, inheriting attributes from the attached desk such as which physical locations are served by the self-check machine.

For more details, see: https://developers.exlibrisgroup.com/alma/integrations/selfcheck/sip2 (attached as a PDF)

b. Debt collection

Ex Libris: Integration with a third party debt collection agency can be managed in the same way as integration with a bursar system. An integration profile is set up and fines/fees information for patrons is exported to an FTP server in the appropriate format. The debt collection agency can retrieve the files from the FTP server.

Alma can update the institutional bursar concerning user fines and fees. A profile may be set to export user fees that exceed a defined threshold to an external bursar system. Any number of export profiles of this type may be defined. Profiles may be set to export fees only if they are older than a defined number of days, and/or are owed by defined user types. In addition, the profile may be set to export only specific types of fees. Once exported to the external bursar system, the fee will be considered closed by the system. In addition, Alma supports a suit of web services that enables managing fees in an integrated manner from external systems. These include:

- getUserCash-Retrieve User Cash
- payFine-Pay User Fine/Fee
- waiveFine – Waive User Fine/Fee
- disputeFine – Dispute User Fine/Fee
- restoreFine – Restore User Fine/Fee

The payment/waive action may be full or partial. The export to the bursar may also be set up not to close the fee in Alma. The fee will be close after receiving a 'fully paid' indication from the bursar's system, via an import of payment actions. Patrons can be charged fees for various types of activities, such as signing up for a course, extra education services, and so forth. Thus, many institutions handle patron-related charges in a dedicated bursar system. This can be the institution's ERP system or a system that is in charge of patron-related finance. Institutions export fine and fee information from Alma to the bursar system. Exported fines and fees are considered closed in Alma, since they are handled outside of the library's scope. In general, the export of fines and fees is handled using XML files that are placed by Alma at a predefined FTP location. These XML files can then be fetched by the bursar system.

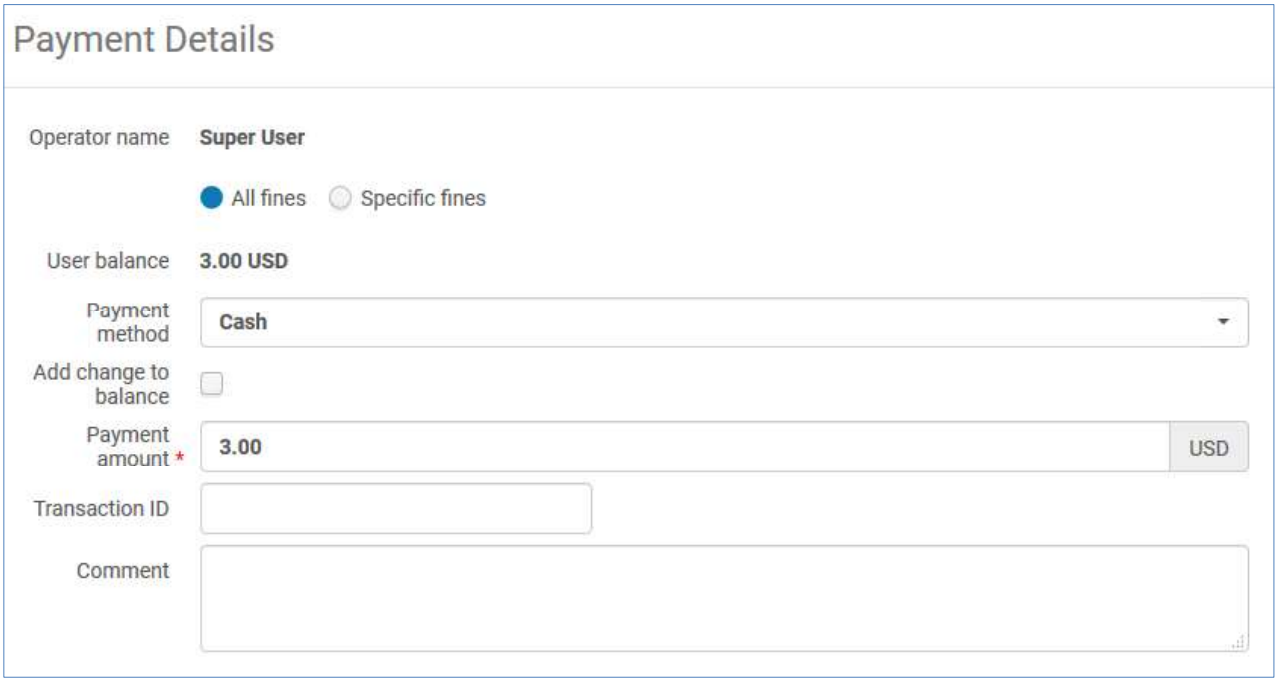
c. Multiple payment types (cash, check, credit card, for example.) at circulation desk

Ex Libris: Alma does not handle the actual payment method. Instead, circulation desk operators can view and receive payments for patron fines and fees. Within the patron services page staff users can opt for the **Pay** link. The Payment Details dialog box appears. Within the dialog box staff users can enter payments for either all fines or specific fines. Furthermore, it is possible to:

- Chose a payment method (cash, credit card, online… - depending on institutional payment methods and integrations)

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- Add the change to the user's account (the change is retained as credit for future fines and fees)
- Fully or partially pay the amount
- Enter a transaction ID
- Add a comment



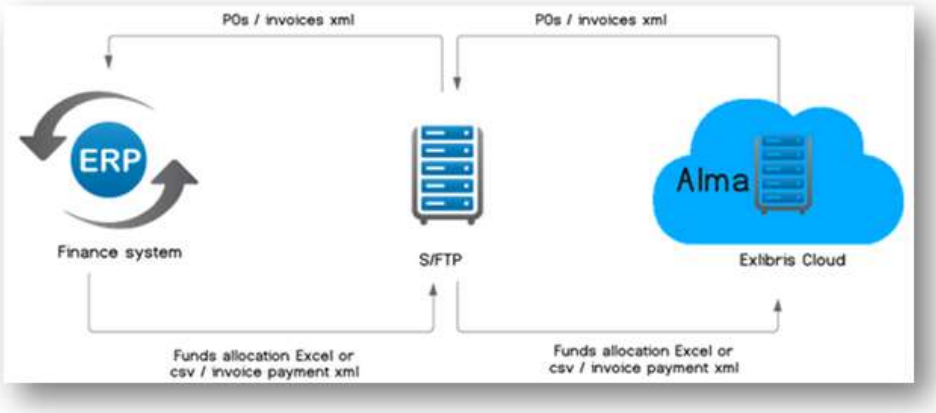
d. Two-way communication with the business office of individual community colleges.

Ex Libris: Alma may integrate with the institution's financial system for payment for the following functions:

- Export Payment Requests - report to the ERP System on future purchases from the order state
- Import Payment Confirmations
- Export Orders
- Synchronize fund adjustments – this is the "reconciliation" process with the ERP system – load the fund allocations as they were created in ERP System

In general, the export and import processes between Alma and the financial system are performed using XML files that are placed at a predefined FTP location. These XML files can be fetched by the financial system (in the case of invoice or PO export) or by Alma (in the case of invoice import). Note that the fund allocation loader process is different because the format is an Excel or CSV file. This is illustrated in the following diagram:

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In the future one might expect more use of APIs and real time integration, as this would likely create efficiencies and save on manual work.

e. Staff waiver or cancellation of fines based on permissions.

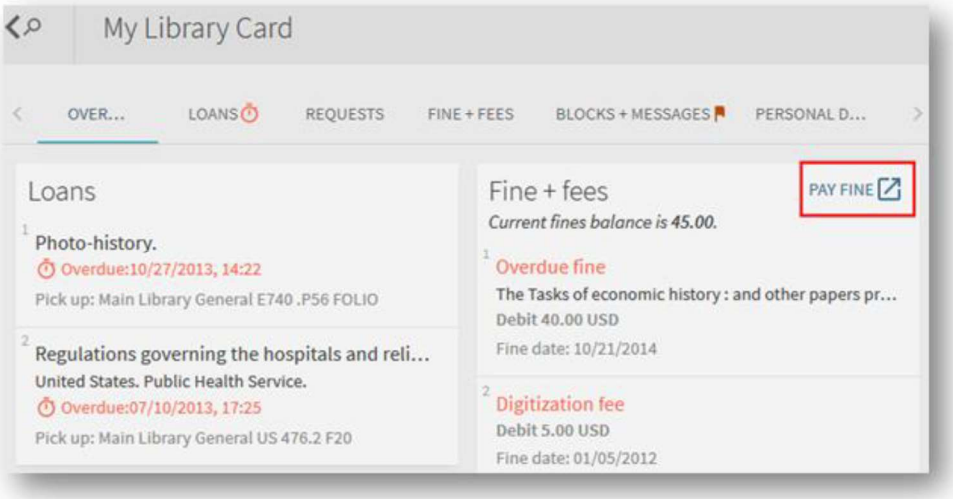
Ex Libris: Alma includes roles and permissions to allow the libraries to set controls on a range of tasks. This includes permissions linked to the ability to deal with waiving and cancellation of fees.

f. Individual libraries determination of overdue fine rates.

Ex Libris: Fines and fees can be set at either the institution level or at the library level within that institution.

g. Payment of fines by patrons online and at the circulation desk.

Ex Libris: Online payment of fines can be provided via the patron's library account pages in Primo VE in addition to the circulation desk (described earlier in this section).



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You can integrate payment systems with Primo VE to allow users to pay their fines using the Pay Fine link in the Fines and Fees areas in My Library Card. When users select the Pay Fine link, the system passes the user information in an encoded JWT (JSON Web Token) to your Web Service (as indicated by the online_payment_url). This JWT, which contains the user_id and other relevant parameters, can be used to invoke the Alma Rest APIs.

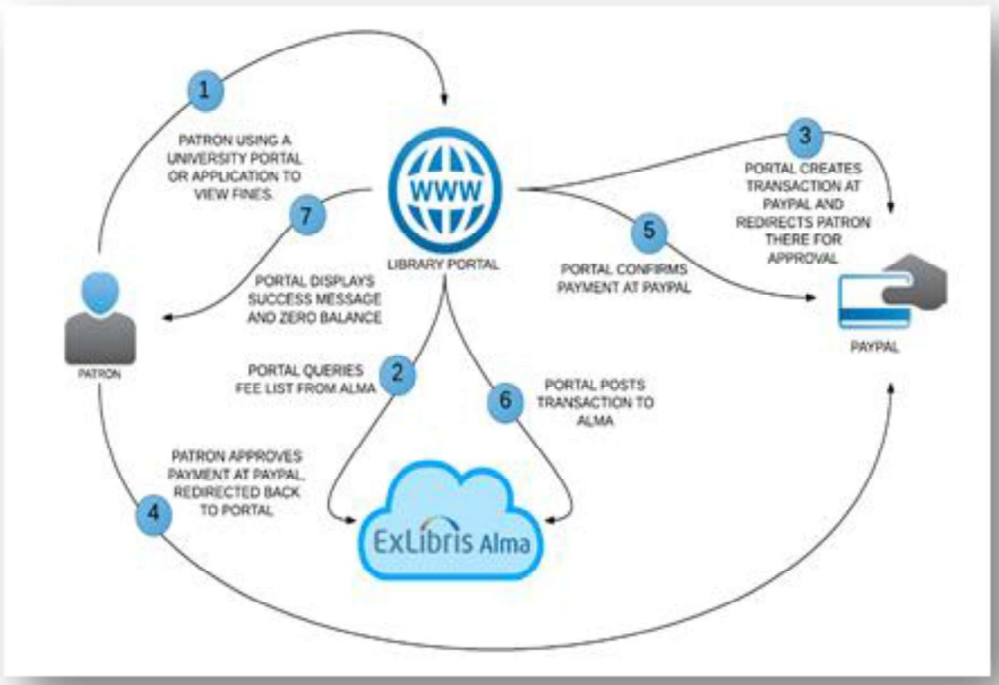
The institution can use Alma's open RESTful APIs to communicate with other online payment providers.

In addition, the Alma APIs allows institutions the freedom to integrate with any payment system from an institution's portal application or even from Primo.

The general flow for integrating with any payment system is the same, and can be summarized as follows, using PayPal as an example:

1. A patron requests to view his fees on a student portal
2. The portal queries Alma and displays a list of fees and the balance. The patron requests to pay his fees via PayPal
3. The portal creates a transaction in PayPal for the relevant amount, then redirects the patron's browser to PayPal for approval
4. The patron logs into PayPal and approves the payment and payment method. PayPal redirects the browser back to the portal application
5. The portal executes the payment in PayPal using the specified transaction code
6. Once confirmation is received from PayPal, the portal posts the payment to Alma to be reflected in the patron's account
7. The portal displays a confirmation message and a zero balance

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h. Notices regarding holds and overdue or lost items.

Ex Libris: Alma automatically sends patrons courtesy notices and due date reminders via email, in addition to lost loan notices, notifications of items waiting on the hold shelf, recall notices, etc.

An example of a courtesy letter;

Courtesy Notice

Sara Carr
123 Main St.
1800234567
College Town

Dear Mr./Ms. Carr

The item Autumn hearts. is due back at 08/11/2014 12:09 after which there will be a fine of 1.0 USD per hour.

Scheduling and configuration of courtesy, overdue and activity notices:

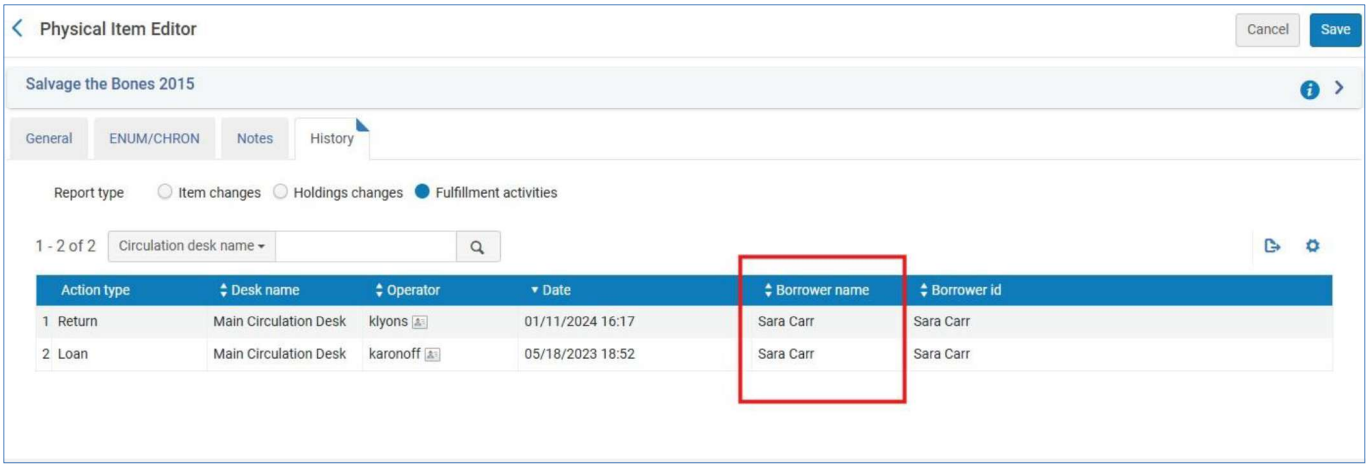
- Courtesy notifications
  - The renew job sends courtesy notices to all non-renewable loans (which may be configured to be all loans) x number of days before the loans are due, where x is configurable at the institution level.
  - Another notification is sent on the day the item is due

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- Overdue notices are configurable via the lost/notification profiles
    - A notification profile may be set up to send warning if loans are overdue more than x number of days, where x is configurable per library/location, user group, item type and material type.
    - A lost item profile may be set up to mark a loan as lost and send a lost item bill if loans are overdue more than x number of days, where x is configurable per library/location, user group, item type and material type.
- Activity report – A general report, including all on loan and all overdue loans may be sent regularly, on a weekly or monthly basis. The report includes separate lists of on loan items and of overdue items. It also includes the patron's fine/fee balance

i. Historical patron tracking on an item.

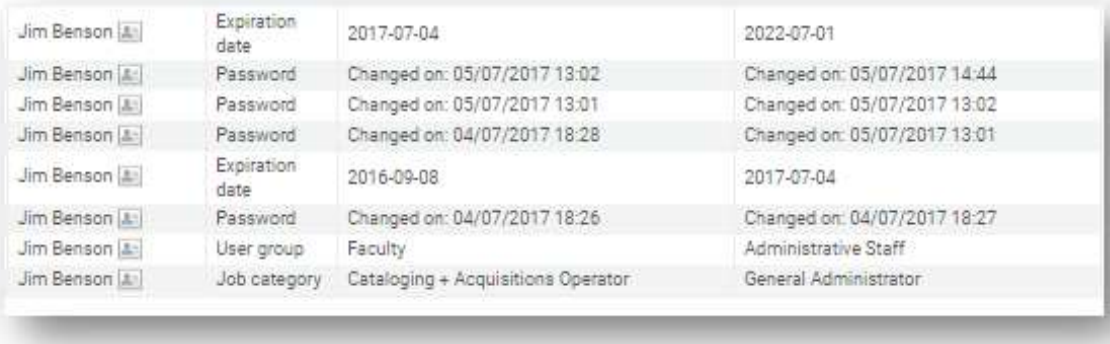
Ex Libris: As a part of the item history, staff can view which patrons recently borrowed the item. The library can choose to anonymize this information according to your local policies. An example can be seen below:



j. Historical tracking of changes to patron records.

Ex Libris: The user record - for patrons or staff users - contains a history tab where Alma logs activities such as role changes, notes, blocks, password changes, changes of contact information, expiration date changes, user group changes, etc.

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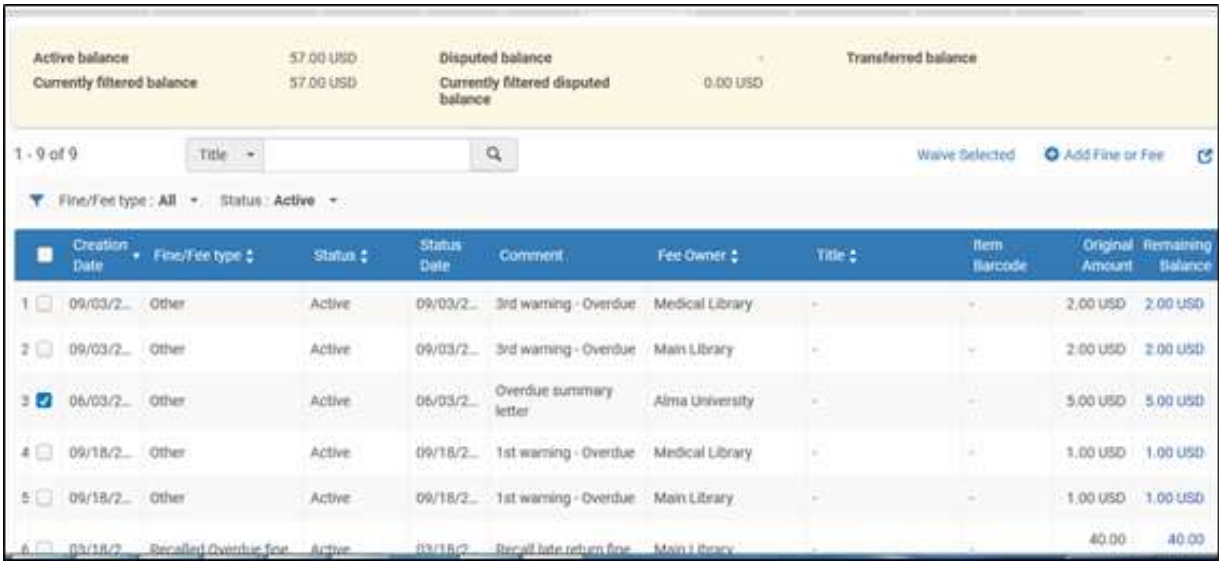


Jim Benson	Expiration date	2017-07-04	2022-07-01
Jim Benson	Password	Changed on: 05/07/2017 13:02	Changed on: 05/07/2017 14:44
Jim Benson	Password	Changed on: 05/07/2017 13:01	Changed on: 05/07/2017 13:02
Jim Benson	Password	Changed on: 04/07/2017 18:28	Changed on: 05/07/2017 13:01
Jim Benson	Expiration date	2016-09-08	2017-07-04
Jim Benson	Password	Changed on: 04/07/2017 18:26	Changed on: 04/07/2017 18:27
Jim Benson	User group	Faculty	Administrative Staff
Jim Benson	Job category	Cataloging + Acquisitions Operator	General Administrator

Other activities can be retrieved either in relevant areas. For historic transactions it may be necessary to filter by statuses such as 'closed'. In Alma Analytics in various subject areas, you can include the staff user as a field to retrieve relevant staff activities.

k. A historical record of bills and fines paid by patron and by item.

Ex Libris: All details of the patron's transactions relating to fines and fees are stored in the patron record:

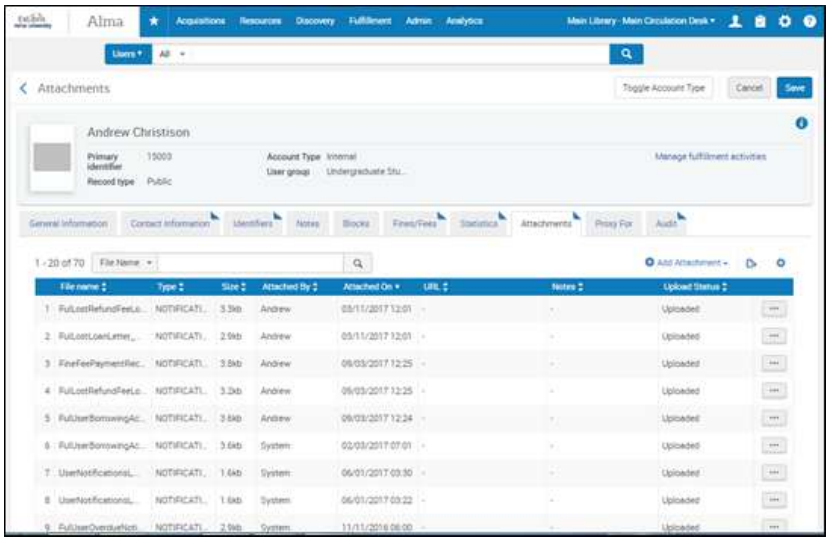


Detailed information such as creation date, fine/fee type, status, fee owner (institution or library), title and amount is also stored in the patron record, and is retained after the fine has been paid. Historical fines can be viewed by filtering for "inactive" or "closed" fines.

l. A historical record of notifications sent to individual patrons.

Ex Libris: All notifications sent by Alma to a patron can be viewed in the Attachments tab of their User record, from where they can also be viewed, downloaded, printed or resent.

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m. Printing a list of checked-out items for patrons on receipt paper.

Ex Libris: Alma includes the following receipt notices suitable for receipt printers:

Loan Receipt Letter
Sent to patrons after items are loaned from the circulation desk.

Return Receipt Letter
Sent to patrons after items are returned to the circulation desk.

Fine Fee Payment Receipt Letter
Sent to patrons; indicates that payment has been received.

Alma's Patron services also allows staff to send reports and receipts ad-hoc (e.g. when Alma's default is to print receipts):



For security reasons Alma sends print-outs via email. If you require a label and print slip application that supports a variety of desktop and network printers, please refer to the following page of our Development Network that introduces the SpineOMatic Label printing software: https://developers.exlibrisgroup.com/blog/SpineOMatic-Label-Printing-Software-for-Alma

n. Editing of receipt headers and receipts.

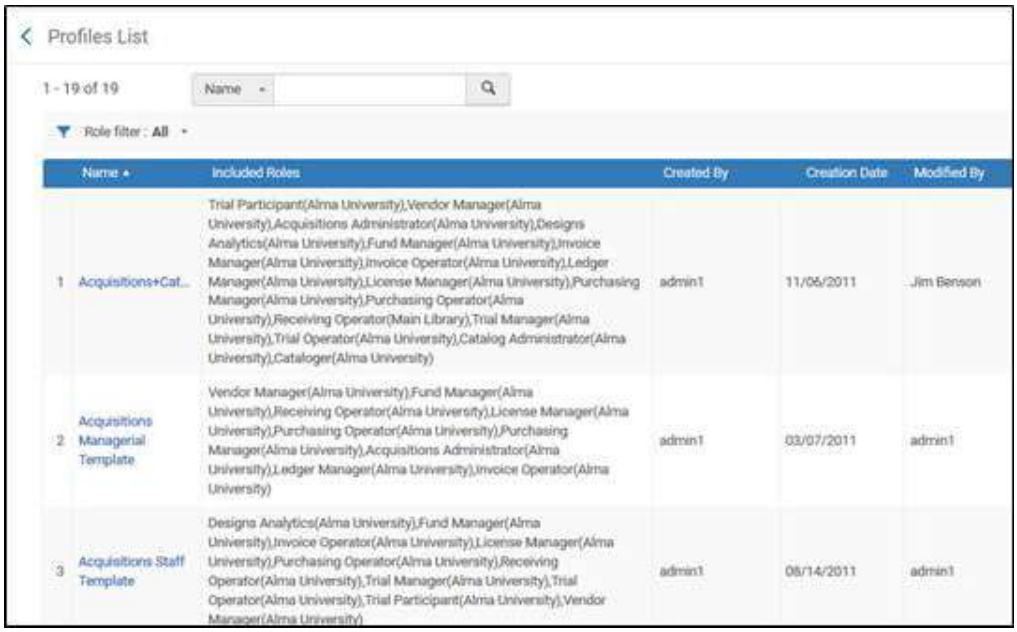
Ex Libris: Yes, receipt headers can be customized.

o. Customization of permissions by individual or group.

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Ex Libris: Alma offers highly granular, role-based permission management across all library functions, including circulation and user management. Roles define specific privileges tied to system elements such as menus, screens, forms, and server-side actions. Assigning a role grants access only to the functions and data permitted by its associated privileges.

Roles can be grouped into **profiles** or **templates**, which simplify user setup and allow bulk updates. These profiles can be automatically assigned based on user attributes like group, job category, or title. For example, a new user may automatically receive a "Fulfillment Manager" or "Physical Item Receiving" profile based on their job category.



Alma provides a comprehensive set of out-of-the-box roles (e.g., Acquisitions, Fulfillment, Cataloging) and allows institutions to customize role combinations. Users may be assigned multiple roles and scopes, such as limiting a Circulation Desk Operator to the "Main Library" but not the "Law Library."

Permission configuration is intuitive, and Alma supports flexible overrides for circulation blocks with the following granularity:

- **ALL** – Overridable by any circulation desk operator
- **NONE** – Not overridable
- **CIRCDESC** – Overridable only by a circulation desk manager
- **OPERATOR** – Overridable by a manager or operator (excluding limited operators)

Operators can also be restricted from accessing patron information by disabling search capabilities. When enabled, the standard search field is replaced with a text entry field, removing autocomplete and recent searches. This restriction applies to:

- Circulation Desk roles: Manager, Operator, Operator - Limited
- Fulfillment Services roles: Manager, Operator
- Requests Operator

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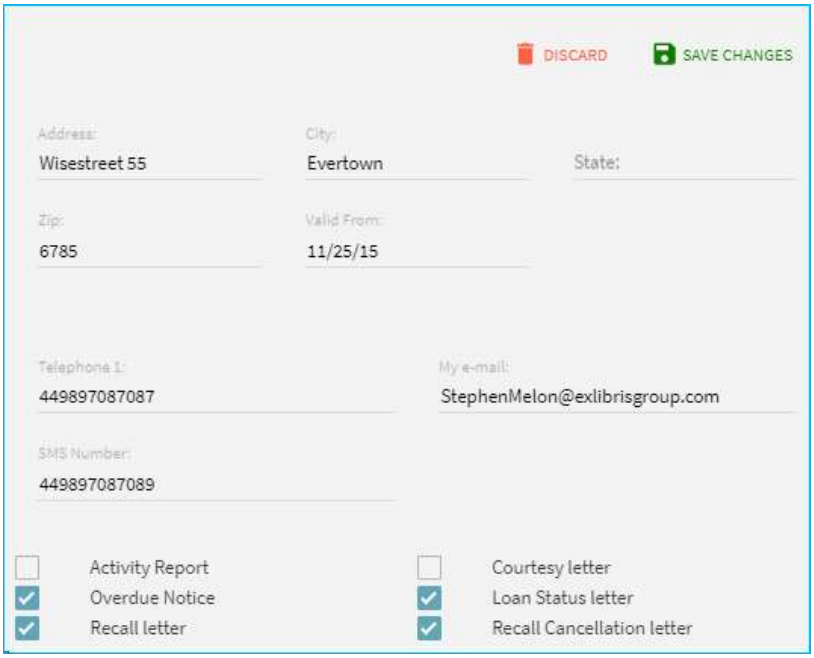
Alma's flexible and secure authorization system ensures that sensitive actions are controlled through precise role and privilege assignments, reflecting institutional workflows and responsibilities.

p. The sending of notifications by mail, telephone, email, or text.

Ex Libris: Alma supports sending notifications by email or SMS/text. Notices can be printed in order to mail them to the patron. We are not aware of any customers currently providing notifications by telephone. APIs could be used to create such an integration.

q. Allowing the patron to select notification preference.

Ex Libris: Patrons can opt-in or out from standard regular notifications. It is up to the library to provide patrons with this choice.



These settings can also be applied in Alma either for a single patron or globally based on user sets.

r. Customizations of notifications by individual library.

Ex Libris: Notices can be customized at the Institution or Library level, within the institution.

Notices in Alma are based on XML files generated by the system, and run through XSL files that customize and set the styling on the Alma-generated XML data. The XSL files are fully customizable by the library, so that styling of the printouts is fully controlled by the library.

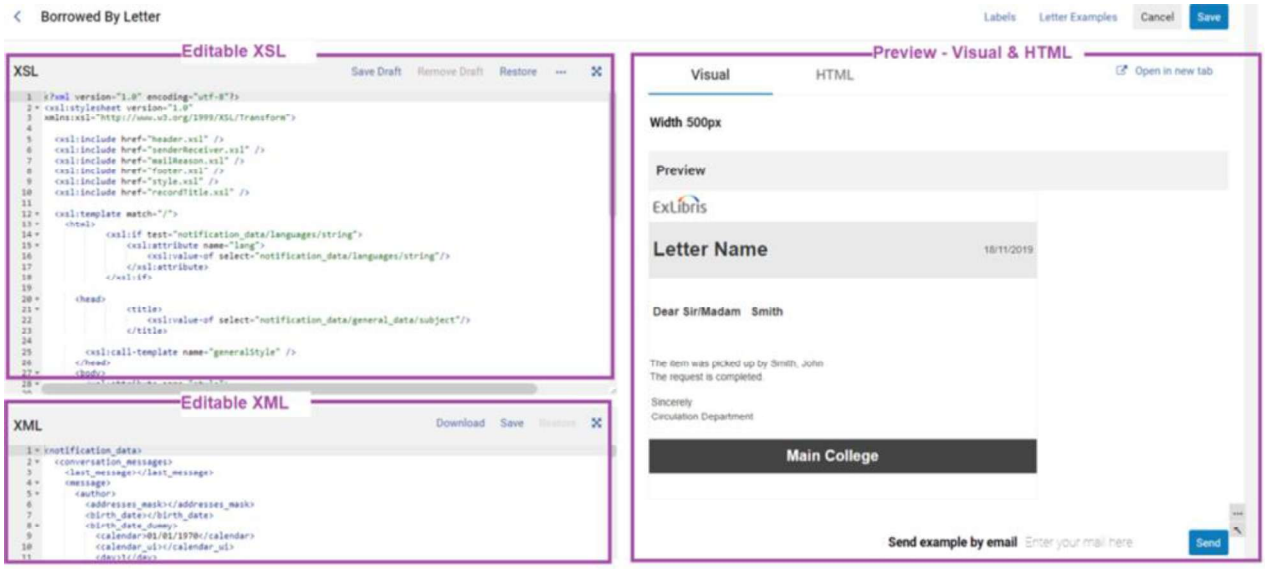
Notices and forms can be customized at the institution level and inherited by all libraries, or customized at the library level. The delivery schedule of notices can also be configured.

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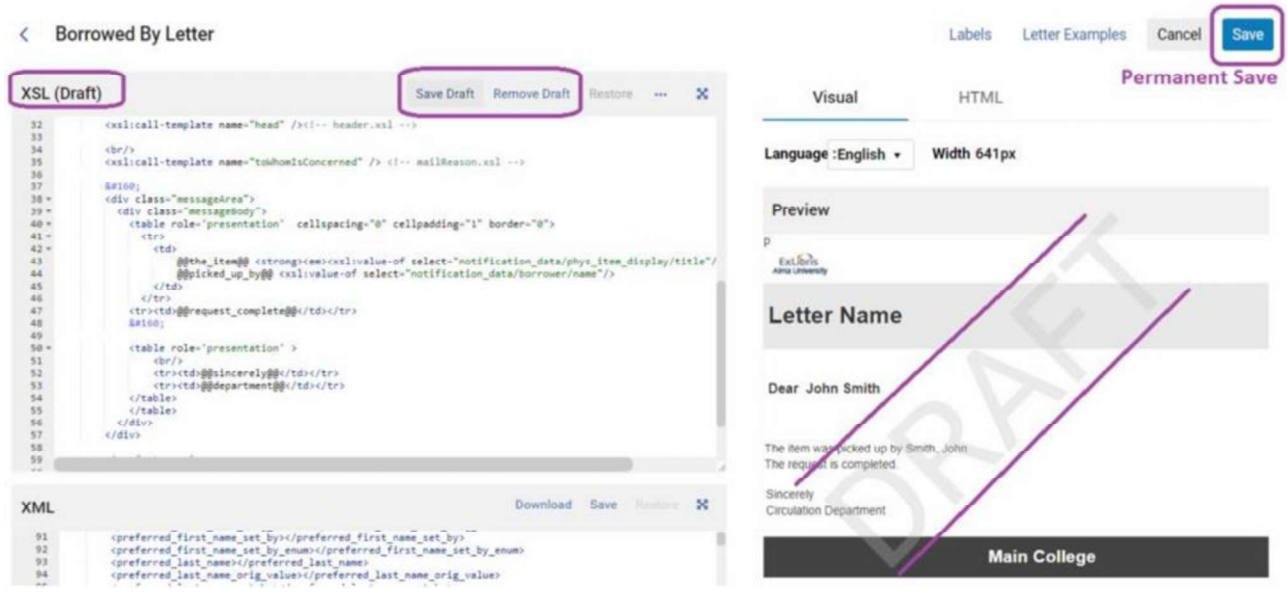
The Configuration Files page lists all of the XML style sheets that are used to format each type of letter and determine what XML data fields display in the letter emails and SMS messages. Alma allows you to configure these style sheets to customize letters for your institution. The customizations may include changes to the style, the addition or subtraction of information sent to users, and so forth.

In addition, our newly implemented Letters Configuration interface provides an improved and more intuitive user experience, including:

- XSL/XML and preview of the output, now all in one window:

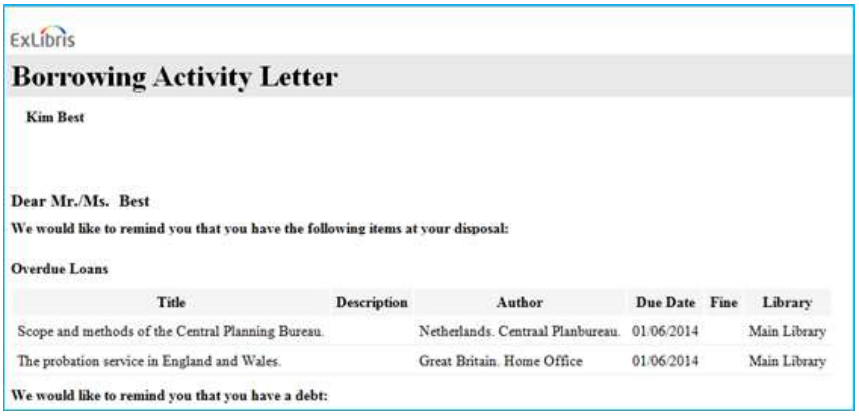


- Error detection and reporting while editing.
- Enhanced preview pane with easy navigation between visual and html view.
- Quicker access to configuration of labels and letter examples.
- New save draft feature:



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The following is an example of an automated borrowing activity letter sent to a patron, followed by an example of notification of a requested item waiting to be picked up from the hold shelf:



ExLibris

Borrowing Activity Letter

Kim Best

Dear Mr./Ms. Best

We would like to remind you that you have the following items at your disposal:

Overdue Loans

Title	Description	Author	Due Date	Fine	Library
Scope and methods of the Central Planning Bureau.		Netherlands. Centraal Planbureau.	01/06/2014		Main Library
The probation service in England and Wales.		Great Britain. Home Office	01/06/2014		Main Library

We would like to remind you that you have a debt:



ExLibris

On Hold Shelf Letter

Sara Carr
123 Main St.
Centerville

Dear Mr./Ms. Carr

The following item, which you requested on 01/22/2014, can be picked up at Main Library - Main Circulation Desk Circulation Desk.

The item will be held for you until 01/29/2014.

Devil take the hindmost : a history of financial speculation /
By: Chancellor, Edward,

s. Individual library determination of the frequency of notifications.

Ex Libris: Individual libraries can determine the frequency of notifications. Alma automatically sends patrons courtesy notices and due date reminders via email, in addition to lost loan notices, notifications of items waiting on the hold shelf, recall notices, etc.

Scheduling and configuration of courtesy, overdue and activity notices:

- Courtesy notifications
    - The renew job sends courtesy notices to all non-renewable loans (which may be configured to be all loans) x number of days before the loans are due, where x is configurable at the institution level.
    - Another notification is sent on the day the item is due
- Overdue notices are configurable via the lost/notification profiles
    - A notification profile may be set up to send warning if loans are overdue more than x number of days, where x is configurable per library/location, user group, item type and material type.

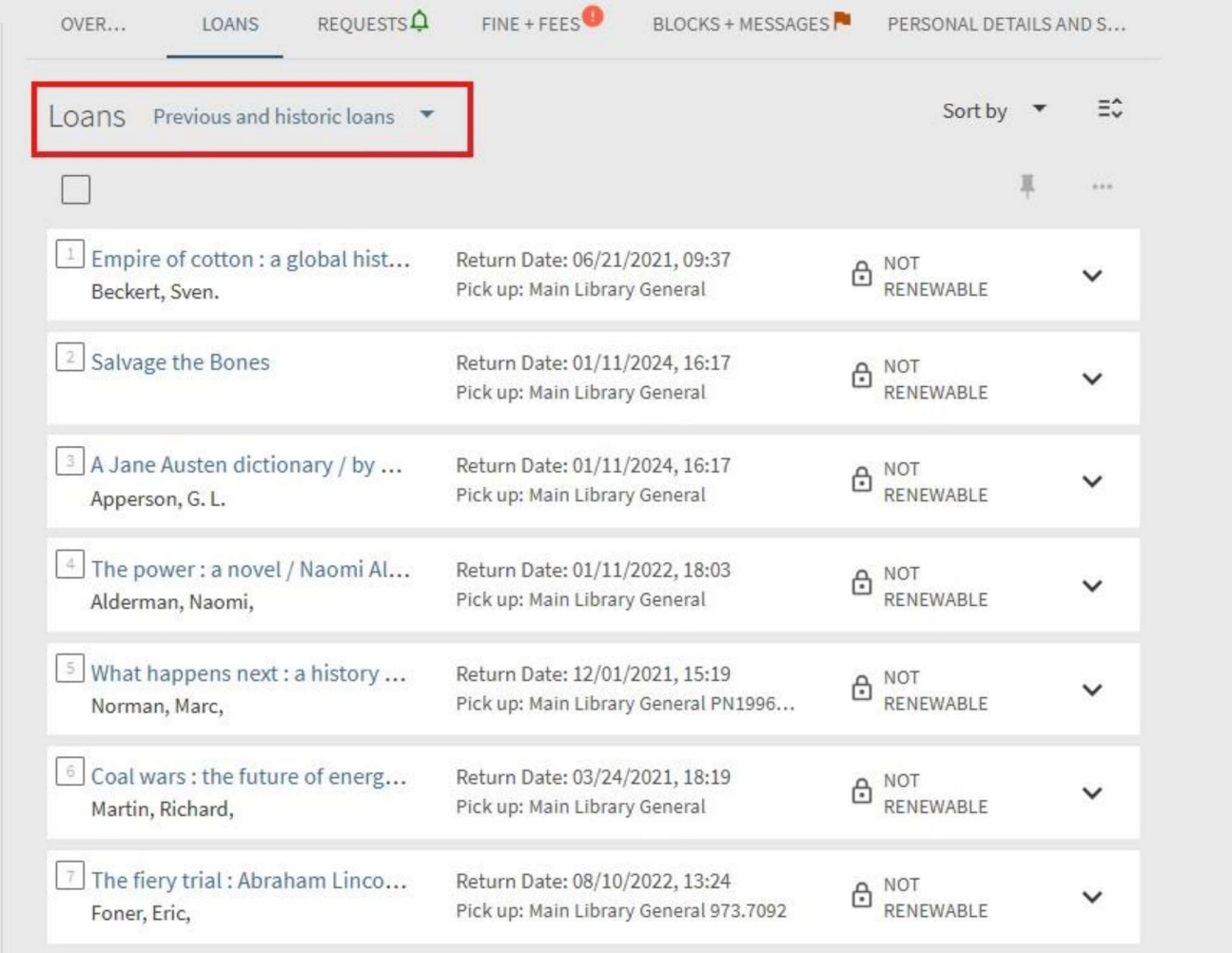
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- A lost item profile may be set up to mark a loan as lost and send a lost item bill if loans are overdue more than x number of days, where x is configurable per library/location, user group, item type and material type.

- Activity report – A general report, including all on loan and all overdue loans may be sent regularly, on a weekly or monthly basis. The report includes separate lists of on loan items and of overdue items. It also includes the patron's fine/fee balance

t. Patrons electing to track borrowed materials, which does not erase history when an item is checked in.

Ex Libris: Patron borrowing history can be viewed from within the patron's record in Primo VE.



Patron history may be stored indefinitely or anonymized and scraped the moment it is not serving an active workflow in the system. Some history scraping may also be subject to library set rules, such as how long to retain information about loans from special collection. The policy, however, is made by the library and is not subject to specific patron preferences.

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Primo VE does allow end-users to save search results to a Favorites list and to save searches to rerun later. Users can also add labels to their favorites in order to organize them. Search results can be saved, emailed or printed, and users can export citations from the list to third parties. Users can also configure email or RSS alerts for saved searches so can be informed when new results for the search are added to Primo VE.

Note that customers have suggested the feature to allow users to opt-in to save their borrowing history. The plan is to have a check mark in a user form to "keep my loan history" - if applied, these patrons will not have their loans anonymized. This feature has the status of "accepted" in the Alma Idea Exchange but we do not yet have a date for this development.

u. Patrons borrowing materials from all locations while maintaining a home location within a library.

Ex Libris: Lending and requesting rules in Alma can be as flexible as the library requires. Alma allows for inter-site lending between different Libraries which are part of the same Institution. Depending on configuration options, users based at one site may request material held at another site. Rules for requesting are configured by the library using Policies and Request Terms of Use (TOU). The following can be determined in the TOU: whether material of a particular type is requestable, what pickup locations are allowed, hold shelf period,
whether material is digitizable, whether material is requestable for Resource Sharing (document supply), Request priority (low, medium or high), On shelf request policy, Personal delivery allowed. The TOU can be applied via Fulfillment Unit Rules per User Group, Item Policy, Material Type or Location.

If an item is returned to a library which is not the owning library then the staff user returning the item will get a pop up window regarding the transit of the item to the owning library.

The workflow steps can be summarized as follows:

- The staff user gets a message that it needs to be placed in transit to another location
- A transit letter is printed
- In the repository search the item appears as “in transit”
- When the item is scanned in at the owning library it will appear as “in place".

v. Self-checkout equipment.

Ex Libris: With standards-based integrations being one of its main design goals, Alma integrates with **shelf-checkout** systems using a number of widely used standard protocols such as SIP2.0 and the NISO Z39.83 Circulation Interchange Protocol (NCIP).

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

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09,10 – Check- In

37,38 – Fee Paid

93,94 – Login

23,24 – Patron Status Request

63,64 – Patron Information

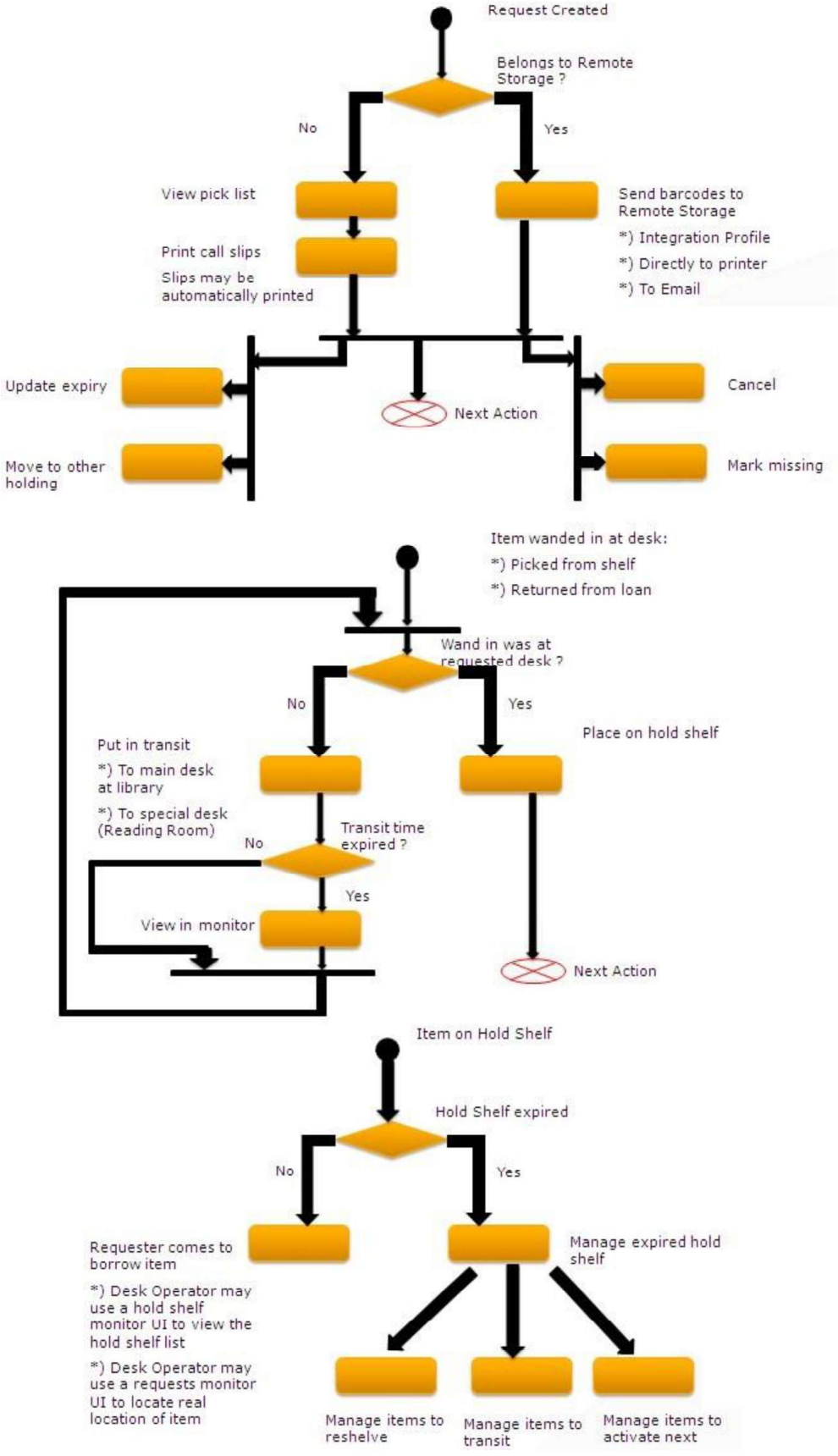
A Self- Check Integration Profile is used to define which of the above listed actions is to be supported by the institution's different self-check machines. The Self-Check Integration Profile is also linked to an Alma Circulation Desk, inheriting attributes from the attached desk such as which physical locations are served by the self-check machine.

iii. Within the Circulation functionality, NCCCS desires the proposed solution to handle tasks related to holds. Describe how the proposed solution supports the following functions:

Ex Libris: Alma supports the management of holds through the circulation desk operations. When an item requested by a patron is picked from the shelf, it is sent to the hold shelf at the circulation desk. The circulation desk operator can manage the item by scanning its barcode, which triggers actions such as placing the item on the local hold shelf or moving the item to a different location for pickup. Notifications are sent to the requesting patron indicating the last date the item will remain on the hold shelf. The circulation desk operator can view a list of items on the hold shelf, remove items from the active hold shelf, re-shelve items, or notify the requesting patron when a request is cancelled.

The full process is described in the following diagram:

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Docusign Envelope ID: 5119F65D-C8FC-48F2-A5FF-59B8F24406F6

a) Placing a hold on a specific copy at the bibliographic or item level.

Ex Libris: By default, patron-placed requests are always placed at title level (although it is possible for the library to offer item-level requests to patrons if desired).

The patron specifies the title he wishes to receive (via Primo). Alma, utilizing internal item location processes, identifies the most suitable item for fulfilling the request, and triggers the request workflow process on the specific item. The considerations for selecting a specific item are based on item availability and ease of fetching. For example, Alma will prefer an item that is already shelved at the requested pickup location, and select a remote facility shelved item only if no other available item exists that can be used to fulfill the request.

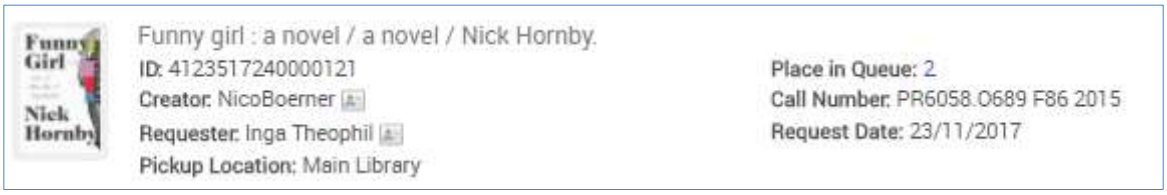
b) Producing customizable hold slips.

Ex Libris: Hold receipts can be printed or emailed as required. Notices and print forms can be fully configured and customized locally, including hold receipts, pick slips/paging slips, hold availability notices, overdue notices, and borrowing activity notices.

c) Editing the holds queue.

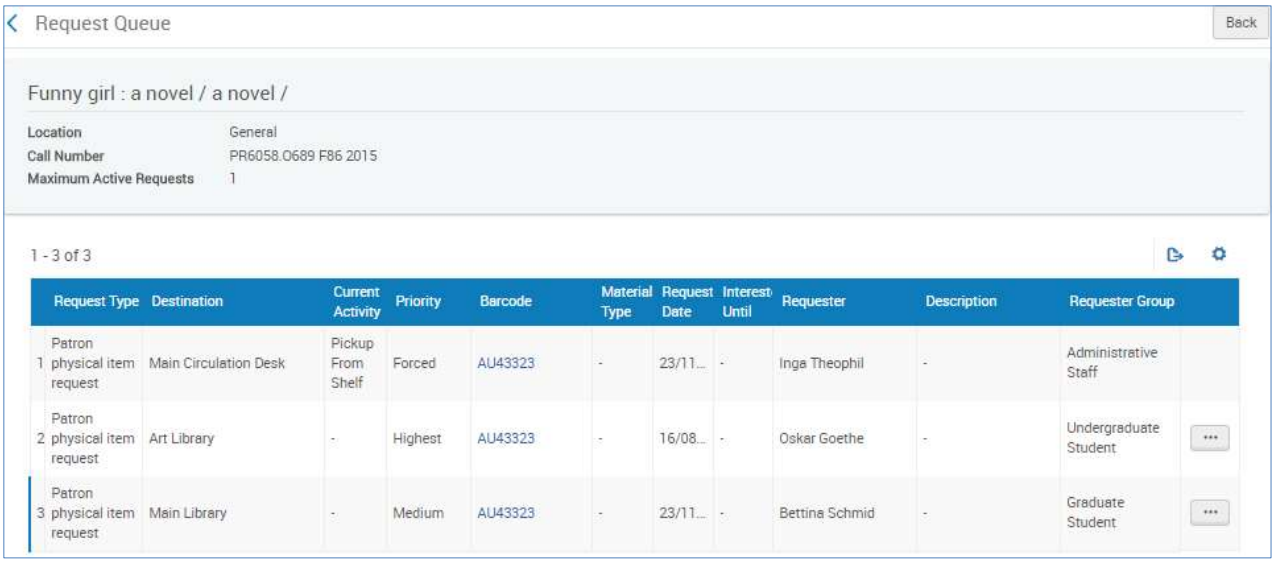
Ex Libris: Requests and work orders that have been created and are pending can be viewed and handled on the Resource Request Monitoring page. This page provides updated information on the various types of resource requests, and their progression within Alma.

Once an item that is either on loan or under processing (e.g. under repair) is requested more than one time, Alma lists the items under the Resource Request Monitoring page.



Clicking Place in Queue number, the user accesses the “Request Queue” where the order can be changed if necessary:

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d) Modifying the expiration date of the hold.

Ex Libris: While the item is at the hold shelf, the patron can request to update the expiration date or cancel the request. If the patron fails to pick up the item by the expiration date, notification is sent to the requesting patron and the item's request expires. An authorized staff member can choose to extend the expiry date.

e) Suspending or transferring the hold.

Ex Libris: Hold requests in Alma can be cancelled by library patrons or staff. Alma does not support suspending (or pausing) a hold request. Requests cannot be transferred to another patron. The request can be cancelled by one patron and put on hold by another patron.

f) Setting of rules by the owning library, such as creating priorities, determining due dates, or providing pick up locations.

Ex Libris: The setting of rules by the owning library, such as creating priorities, determining due dates, or providing pick up locations, is done through the Terms of Use (TOU) in Alma. The TOU allows the library to configure rules for requesting material, including request priority (low, medium, or high), hold shelf period, allowed pickup locations, and due dates. These rules can be applied via Fulfillment Unit Rules per User Group, Item Policy, Material Type, or Location. The TOU also determines whether material is requestable, digitizable, or requestable for Resource Sharing. Additionally, the TOU includes parameters for defining the behavior of due dates related to library hours and closures.

g) Setting of rules by item type, home location, patron status, among other variables.

Ex Libris: Rules for requesting are configured by the library using Policies and Request Terms of Use (TOU). The following can be determined in the TOU: whether material of a particular type is requestable, what pickup locations are allowed, hold shelf period, whether material is digitizable, whether material is requestable for Resource Sharing (document supply), Request priority (low,

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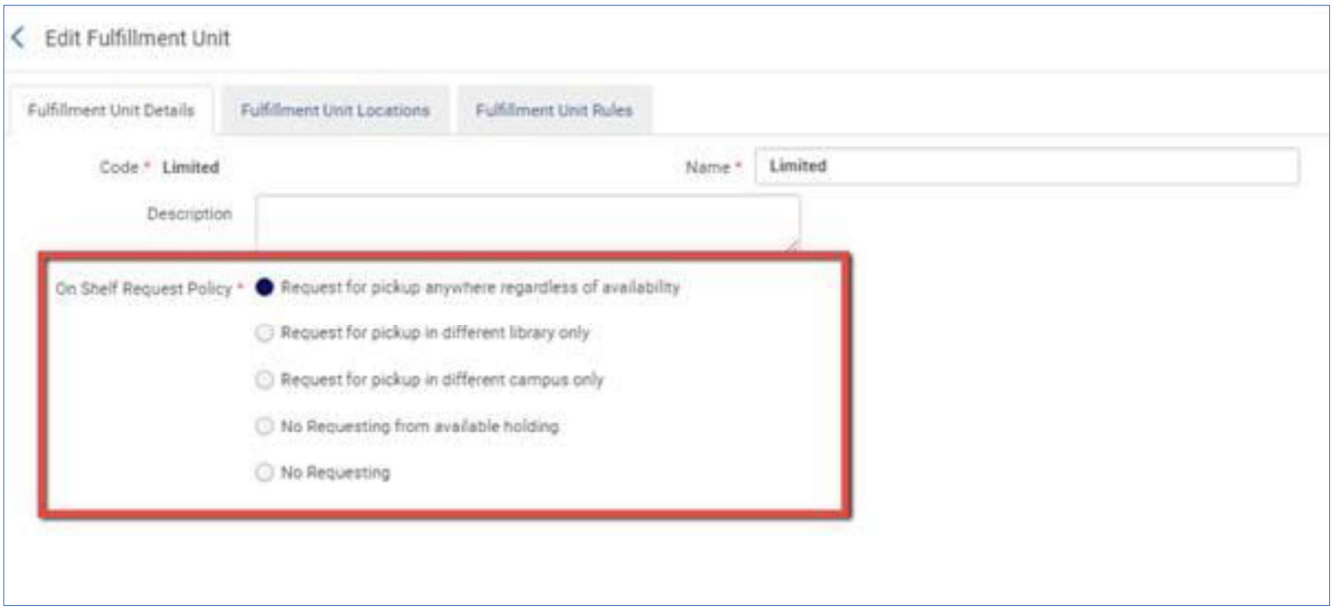
medium or high), On shelf request policy, Personal delivery allowed. The TOU can be applied via Fulfillment Unit Rules per User Group, Item Policy, Material Type or Location.

h) Placing a hold on an on-shelf item.

Ex Libris: Alma allows you to determine if on-shelf items can be requested or not. In the Fulfillment Unit's 'Fulfillment Unit Details' tab, determine the policy that will be applied to 'On Shelf' items.

The on shelf request policy options are:

- Request for pickup anywhere regardless of availability
- Request or pickup in different library only
- Request for pickup in different campus only
- No requesting for available holding
- No requesting



Edit Fulfillment Unit

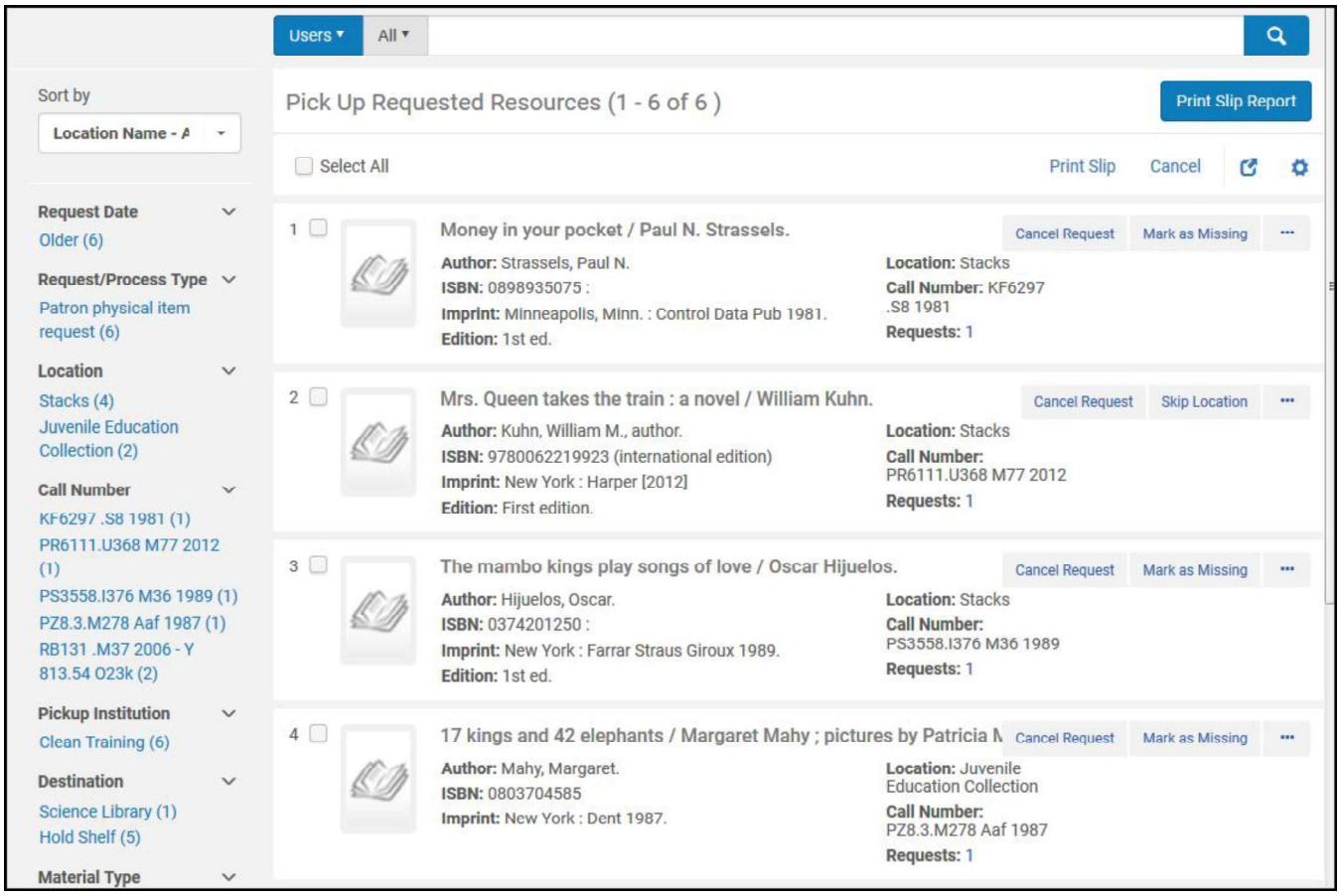
i) Placing cascading holds on a series to receive them in sequential order.

Ex Libris: Alma does not support cascading holds.

j) Determining how an owning library is notified when scheduled holds are available.

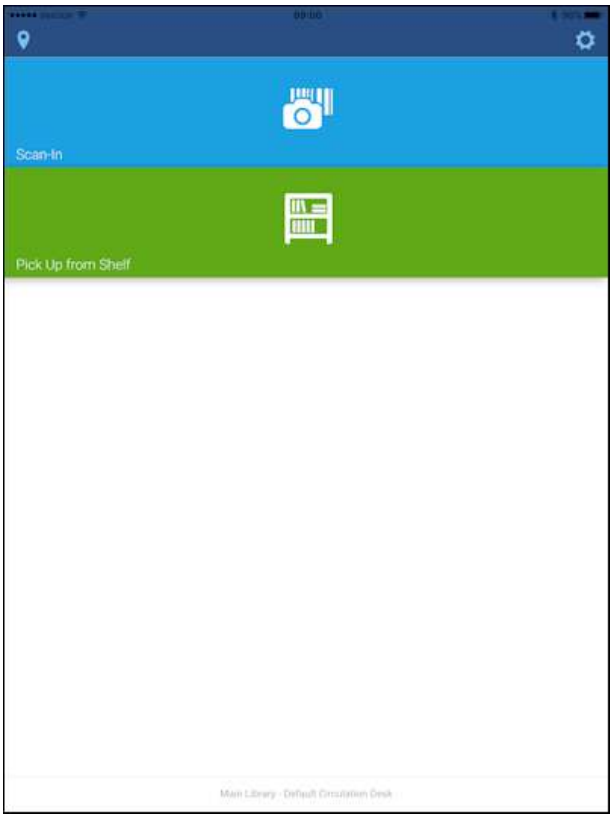
Ex Libris: Staff can view and print the Pick from Shelf list in Alma. This list notifies staff when holds are available. Alma's Task List populates in real time letting staff know that new holds have come in. Notice the ability to use facets to narrow the list.

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Staff can also access this list using a tablet or mobile device (using the Alma Mobile app) to update the list while at the shelves:

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k) Having a minimum of four hold levels to include an institution's main library and branches, district level, state, and national levels.

Ex Libris: Alma includes a variety of levels:

- Network Zone
- Institution Zone
- Campus
- Library

Alma can connect to national catalogs using Z39.50 and NCIP. Your patrons will be able to place requests at all of these levels.

iv. Within the Circulation functionality, NCCCS expects the proposed solution to handle tasks related to interlibrary loans. Describe how the proposed solution manages interlibrary loans. Include in the description how the proposed solution supports the following functionality for patron records:

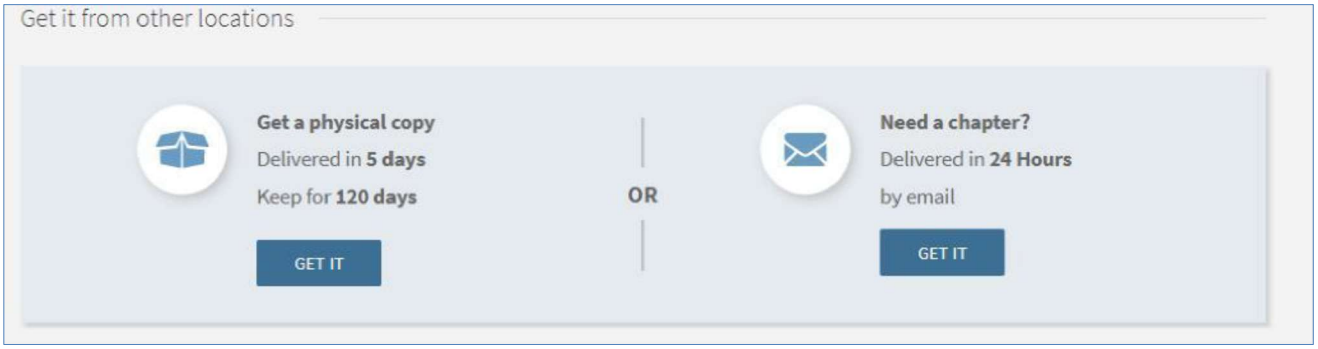
Ex Libris: Rapido supports resource sharing between NCCCS and non-NCCCS libraries such as UNC.

The resource sharing workflow is completely integrated within the solution. In this workflow, the patron places a request for an item in Primo.

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The solution uses Pods to enable the sequencing of requests within NCCCS and non-NCCCS partner libraries. Pods are groups of libraries that share with each other. Each library belongs to at least one Pod, and most belong to several Pods, as Libraries may participate in multiple Pods. Each Pod has a priority, so that certain Pods are searched before others (for example, NCCCS Pod may be searched before another Pod with non-NCCCS libraries). In addition, peer to peer configuration enables NCCCS libraries to connect with partner libraries via standards (ISO 10161 and ISO 18626) including OCLC member libraries.

If the item is found in your Pods, the system will display terms to help the end user make an informed decision, such as whether the resource will arrive on time, or if they prefer a digital copy or an article (see image below). This gives the user choice and visibility while also increasing staff efficiency due to the unmediated requesting workflows.



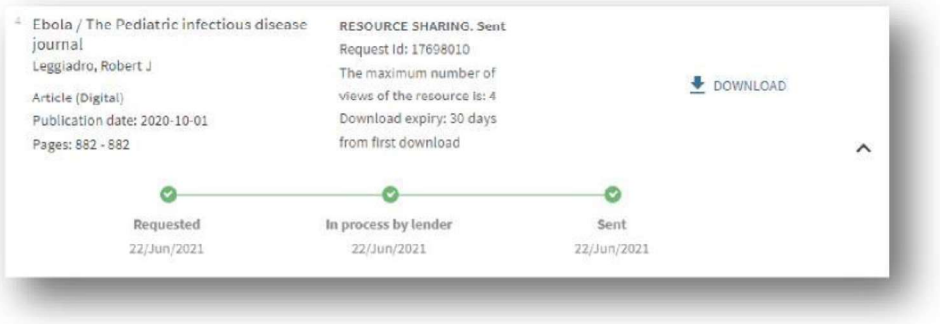
Rapido enables the automation of the process as much as possible. However, mediation rules exist to enable staff to mediate in certain conditions specified by the library. If the request doesn't meet conditions in mediation rules, the request will automatically be sent to the lender , and the system will automatically be updated with the status of the request throughout the process (Sent to lender, shipped physically, etc.).

Note that the Pods priority is determined by the institution, so for example, the NCCCS network can be set as first priority, and only if the resource is not found there, would the system then look for it in other Pods. If the request is unfilled from your Pods or other peer to peer connections, as defined in the system, or if it requires attention, it will show up in the Rapido Borrowing task list for staff mediation. From there staff have many options, such as creating a new rota to fill the request, out of a functionality that enables the institution to view the holdings of other libraries for this specific resource. Another option would be to create a purchase request directly out of the request. The solution is open to any system supporting standards such as ISO and NCIP, so partners outside your Pods may be added.

When the library receives the physical item from the lender, a temporary item record is created in Alma for circulating the resource. A notice is emailed to the patron that the item is available for pickup. When the patron is done with the resource, it is marked as returned in the system and can be shipped back. Once the lender receives the item back, the request is completed. If the request is for a non-returnable item, the patron will automatically be emailed a link to download their request after it has been filled by the lender. No staff mediation is needed.

Patrons can monitor all their requests through the My Account feature in Primo. They have full visibility of where the request is at all moments. This is done through their My Library Card page, so all services are accessed in one place:

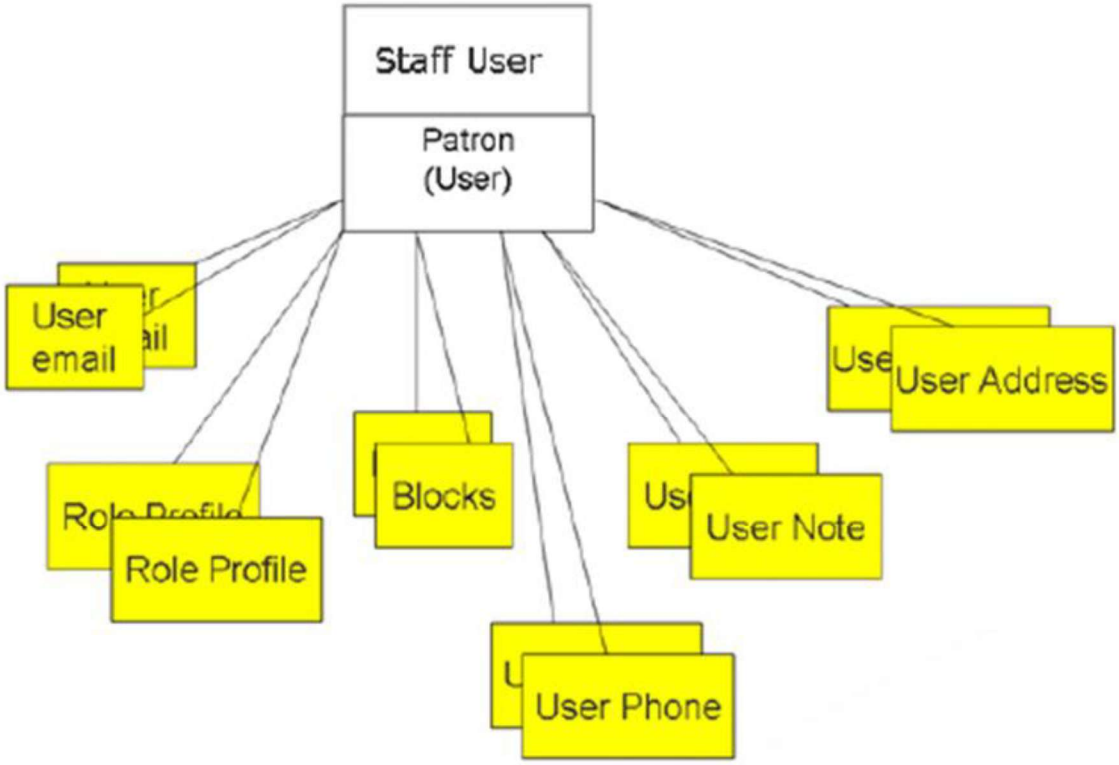
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a) Allows records to contain fields for at least three (3) phone numbers, at least two email addresses, and at least one (1) text field.

Ex Libris: The following diagram shows the core user record and its relationship to some selected user-related functions such as contact information, roles and user (patron) blocks.

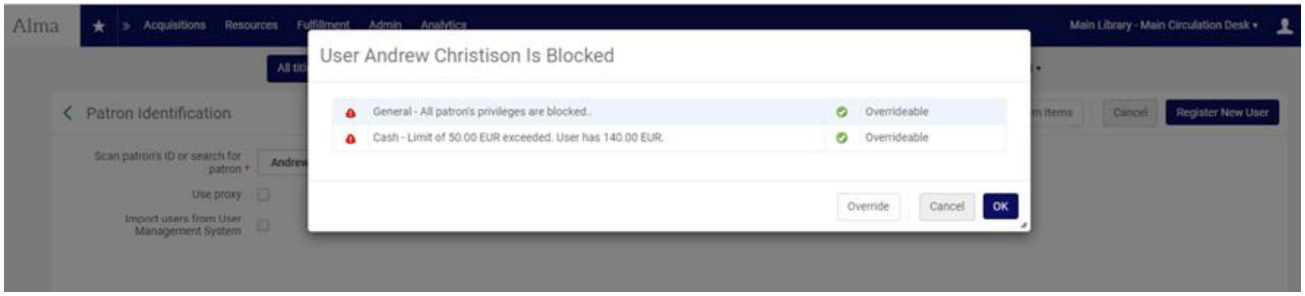
Phone numbers, email addresses and many other fields are repeatable, meaning there can be more than one. One of these is set as the primary.



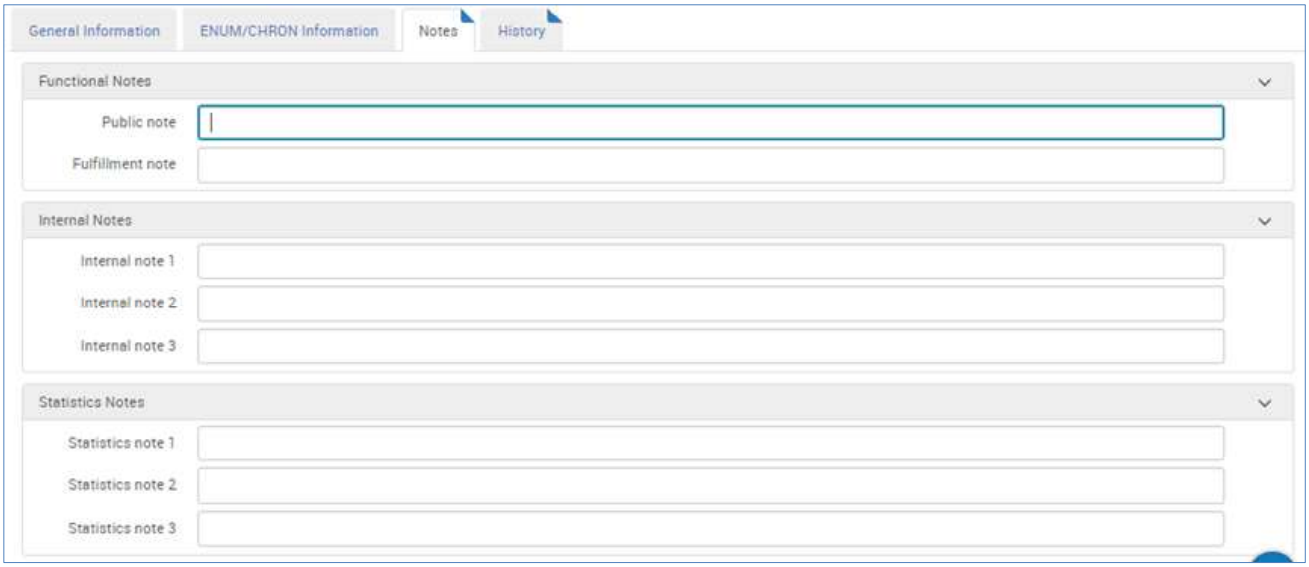
The user record also includes different types of notes (text) fields. Staff can add notes to a user account either in Manage Patron Services (circulation functions) or in the full User record. Notes are visible in the User record, Notes tab, and in Manage Patron Services.

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Pop up windows can be set to appear when accessing a patron's record with important status information:



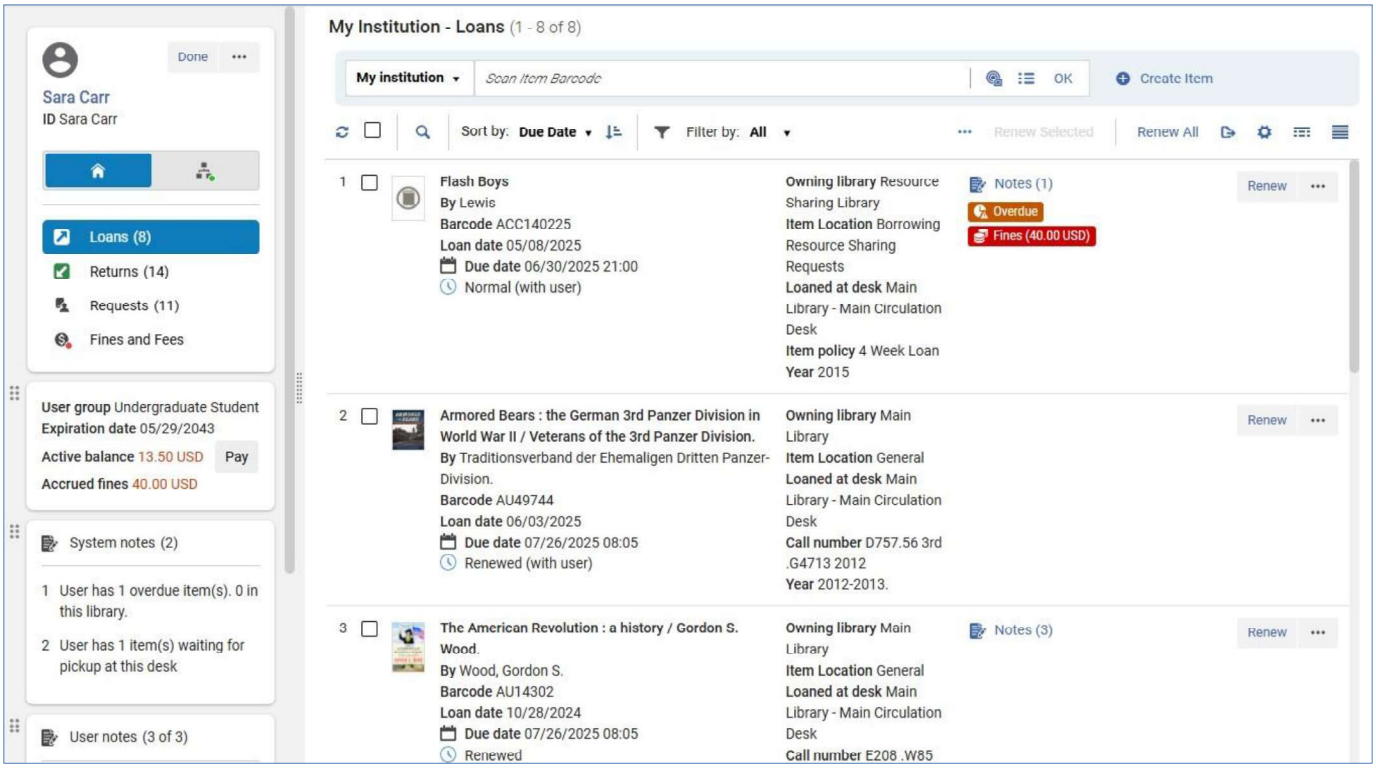
Additionally, Alma supports searchable item-specific notes. Staff can add public notes, fulfillment notes (which pop up when the item is checked out or checked in), internal notes, or statistics notes to item records:



b) Displays student ID number and account expiration date.

Ex Libris: When viewing a patrons account in the "Manage Patron Services" Page (pictured below), both the patron ID and the account expiration date are visible.

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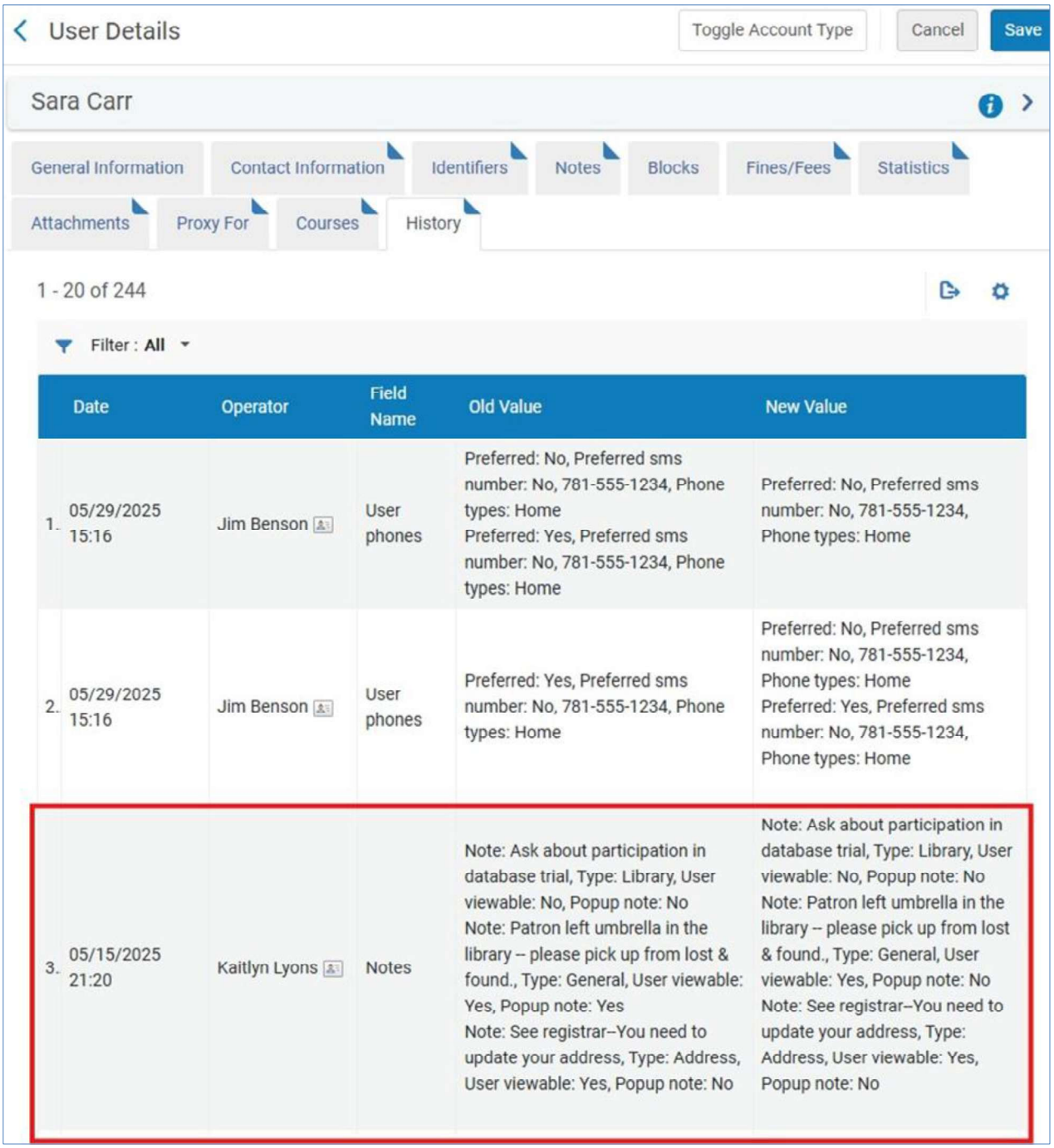
c) Allows Staff to post notes.

Ex Libris: Yes, please see answer a) above.

d) Maintains historical records of staff notes.

Ex Libris: Yes, notes are a part of the patron's history.

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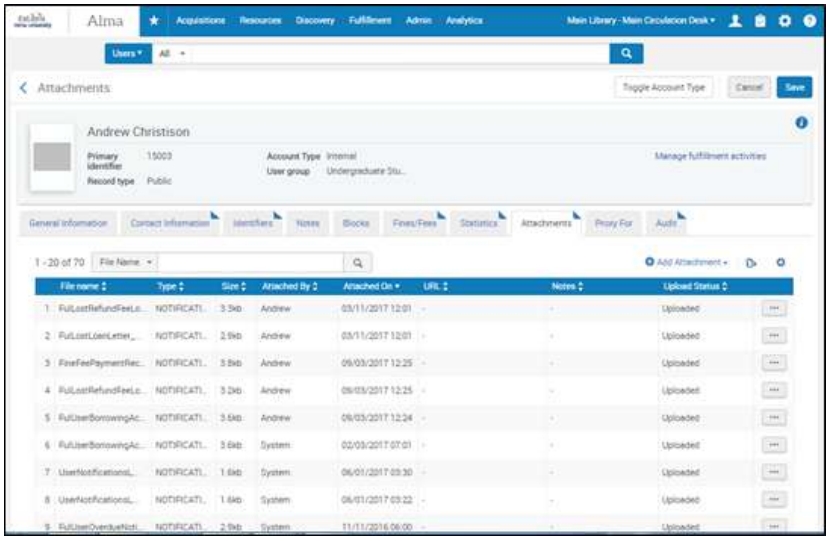
e) Allows patrons to edit a PIN online.

Ex Libris: Alma integrates with your campus Single Sign On. Most users would log in using the same password they use for other campus systems. Alma does support password management for users that are not managed by your campus system using Alma's Identity Management Service. This supports password changes.

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f) Creates historical record of notifications sent to patrons

Ex Libris: All notifications sent by Alma to a patron can be viewed in the Attachments tab of their User record, from where they can also be viewed, downloaded, printed or resent.



g) Allows staff to merge duplicate records.

Ex Libris: Alma includes an automatic routine that will de-duplicate patron records upon loading and report the issue. This allows the migration to move forward while the library determines whether to correct the issue before or after moving to Alma. The deduplication is based on a unique id that identifies the records as duplicate.

Merging patron records after migration has to be done manually and can be done on individual records. You can set up a job to merge duplicate user records into another user record. The merge moves all fulfillment activities (loans, requests, fines/fees and interested users) to the new user and includes an option to decide which segments to merge (contacts, Identifiers, notes, blocks, demerits, statistics, attachments and proxy for).

h) Stores patron signatures.

Ex Libris: The attachments tab allows for any attachment up to 25 MB to be uploaded. This could include a file that contains that patron's signature.

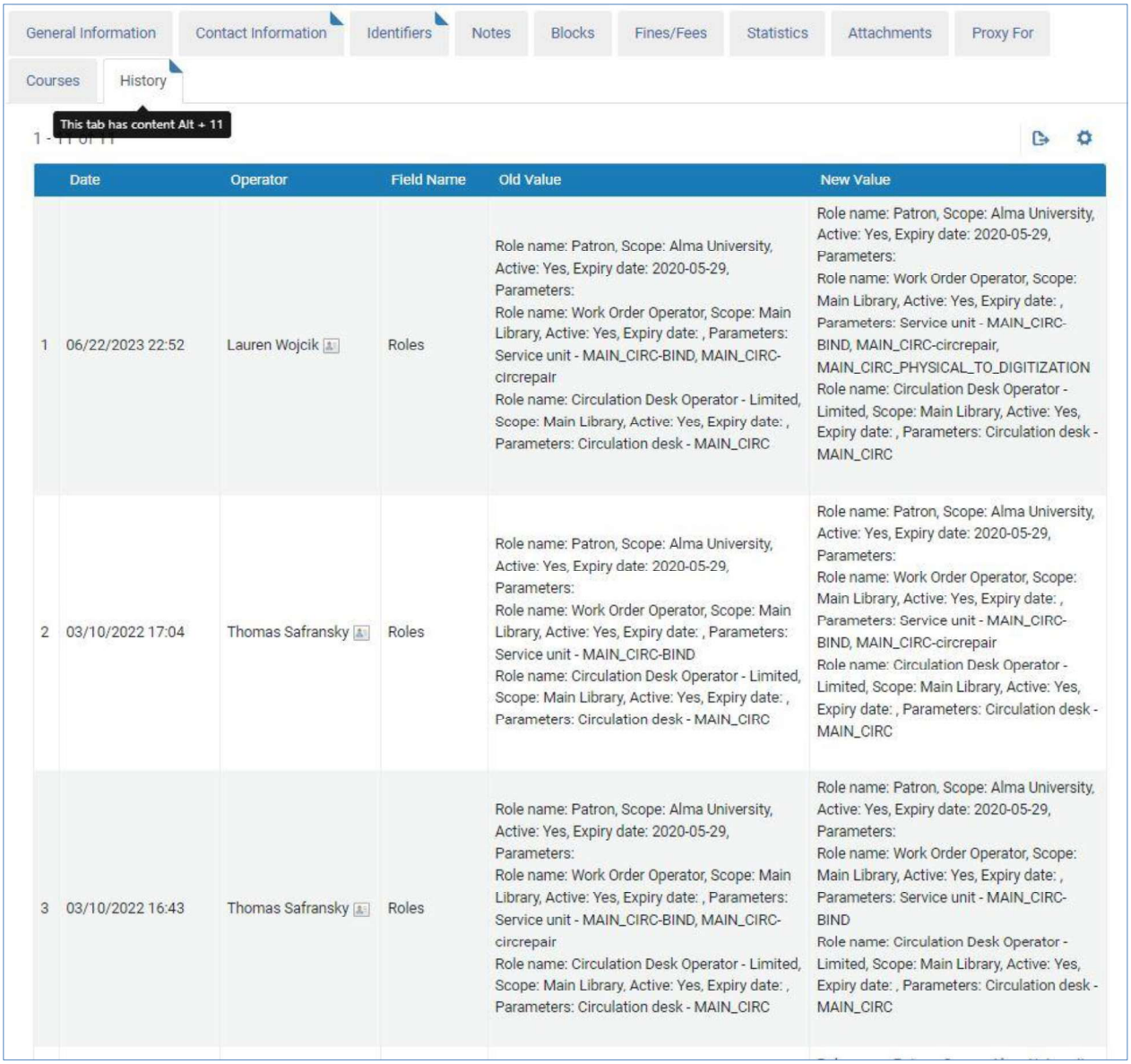
i) Updates patron records individually and globally.

Ex Libris: Alma allows staff with appropriate roles to create, modify, and delete patron records individually. The Update notify users job in Alma enables the global update of a set of patron records. Additionally, Alma can integrate with institutional systems holding patron information to update patron records either through scheduled batch load synchronization or via the Alma Users API

j) Provides a historical record of patron updates.

Docusign Envelope ID: 5119F65D-C8FC-48F2-A5FF-59B8F24406F6

Ex Libris: Yes, Alma provides a historical record of patron updates.



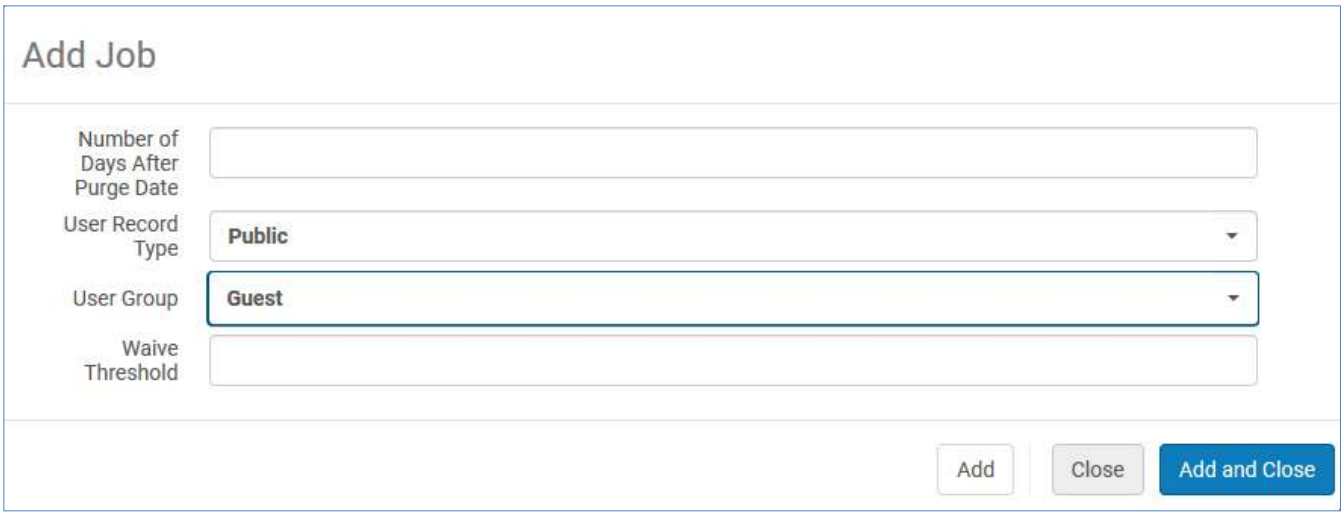
	Date	Operator	Field Name	Old Value	New Value
1	06/22/2023 22:52	Lauren Wojcik	Roles	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND, MAIN_CIRC-circrepair Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND, MAIN_CIRC-circrepair, MAIN_CIRC_PHYSICAL_TO_DIGITIZATION Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC
2	03/10/2022 17:04	Thomas Safransky	Roles	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND, MAIN_CIRC-circrepair Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC
3	03/10/2022 16:43	Thomas Safransky	Roles	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND, MAIN_CIRC-circrepair Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC	Role name: Patron, Scope: Alma University, Active: Yes, Expiry date: 2020-05-29, Parameters: Role name: Work Order Operator, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Service unit - MAIN_CIRC-BIND Role name: Circulation Desk Operator - Limited, Scope: Main Library, Active: Yes, Expiry date: , Parameters: Circulation desk - MAIN_CIRC

k) Purges inactive accounts.

Ex Libris: Library staff can purge users whose purge date has passed. To purge users, the staff creates a job where the purge parameters are defined. The purge users job validates the following:

- The user has fine/fees up to the threshold amount
- The user has no outstanding loans

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l) Blocks automatically, such as for overdue materials and bills owed, and allows manual blocks to be added by library staff.

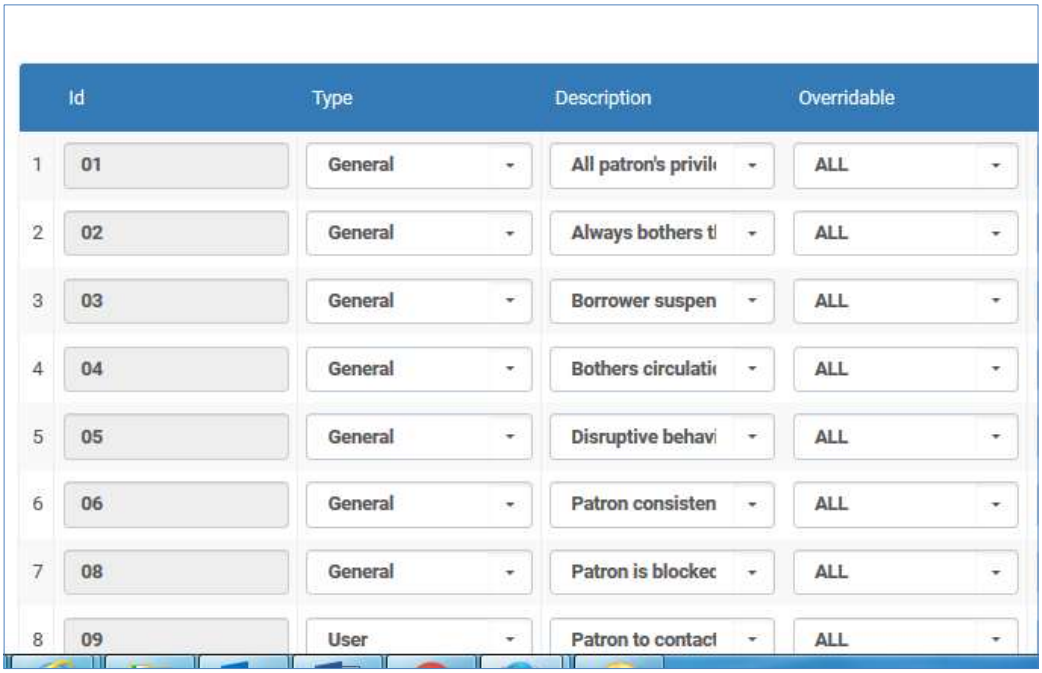
Ex Libris: Alma supports automatic and manual blocking of patrons. Automatic blocks are applied based on library-defined rules; for example, if a patron has more than X number of overdue items or owes the library above a library-defined threshold. These rules can vary for different item types and for different patron groups.



In addition, patron specific blocks can be defined and assigned to a patron record. If any blocks have been placed, the circulation operator will be notified upon scanning the patron's ID.

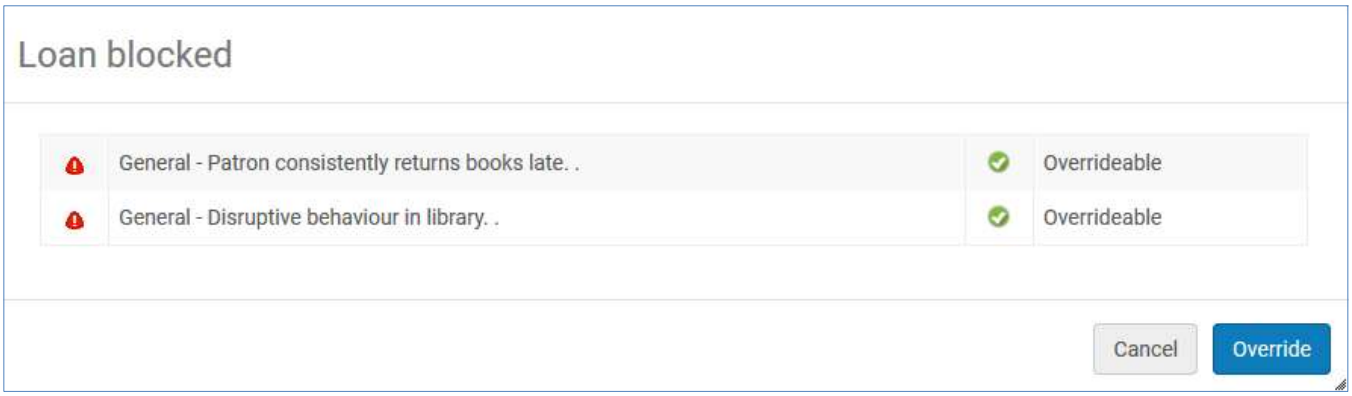
Hold shelf notifications include an indication to the patron if blocks are expected to prevent the loan from taking place.

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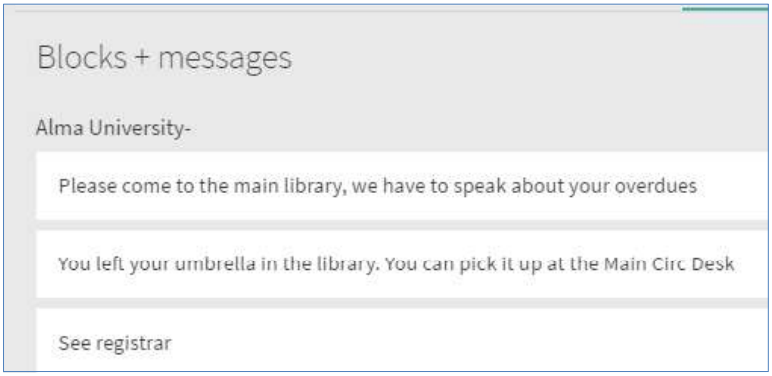


	Id	Type	Description	Overridable
1	01	General	All patron's privil	ALL
2	02	General	Always bothers t	ALL
3	03	General	Borrower suspen	ALL
4	04	General	Bothers circulati	ALL
5	05	General	Disruptive behavi	ALL
6	06	General	Patron consisten	ALL
7	08	General	Patron is blocke	ALL
8	09	User	Patron to contact	ALL

If any blocks have been placed on the user, the operator will be notified upon scanning the patron's ID. Circulation staff members with the relevant roles have the ability to override blocks, according to the policies determined by the institution.



Patrons can view their blocks with descriptions in Primo in their My Account section:



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f. Compatibility

Explain how the solution conforms to the Z39.50 applications layer protocol, as well as its interoperability with third party resources.

Ex Libris: Alma supports Z39.50 and SRU for search and retrieve.
See Z39.50 (https://developers.exlibrisgroup.com/alma/integrations/Z39.50) and SRU (https://developers.exlibrisgroup.com/alma/integrations/SRU) on the Ex Libris Developer Network. OAI-PMH is supported as well.

Z39.50

An institution's catalog can be made searchable by external applications. This may be required for a number of purposes. For example, if the institution serves as a copy cataloging source or participates in a resource sharing network, it's catalog may need to be searched externally.

For general information about the Z39.50 protocol,
see http://www.loc.gov/z3950/gateway.html#about

If a Z39.50 Server integration profile is configured, Alma listens for incoming Z39.50 searches. If an incoming request is detected, Alma returns a Z39.50 response, which includes record information in either MARC or OPAC format, depending on your client configuration.

Alma supports copy cataloging by integrating the search and import of records located in external databases directly into the MD Editor. External searches may be done with any search target/database that is supported by Ex Libris Data Services and that has been enabled by your institution. This search is based on Z39.50 as well.

SRU/W

Alma allows you to open your institution to SRU/SRW (search retrieval via URL/Web service, an XML based protocol) searches for the purpose of integration with external systems that want to search the Alma repository. To activate this capability, each institution must define and activate its own SRU Server integration profile and also indicate whether to return availability information in the response to SRU queries.

The following core SRU operations are supported in Alma:

- explain
- searchRetrieve

The search via SRU allows querying the bibliographic record using the same search indexes as the staff search interfaces. It is possible to configure Alma to return availability information as part of the SRU response, which provides details on the inventory related to the bibliographic record. Availability information is stored in the AVA (physical availability), AVE (electronic availability) and AVD (digital availability) fields.

OAI-PMH

Alma implements the following OAI roles:

- Data Provider - OAI-PMH is supported by Alma for exposing metadata via the 'General publishing' module
- Service Provider - Alma uses OAI-PMH as a basis for importing metadata

For more details see https://developers.exlibrisgroup.com/alma/integrations/oai

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Alma supports a wide range of industry standards and protocols enabling cooperation and collaboration. 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

i. Provide a full list of third party software that the proposed solution is currently interoperable with. The list can be included as a clearly marked attachment in the Vendor's offer response.

Ex Libris: Alma supports the exchange of data using interfaces like EDI, OAI-PMH, SIP2, NCIP, import and export metadata in MARC-XML format as well as extensive Restful APIs. A full list of third party software integrations is included earlier in the response.

Alma provides exceptional integration with a range of third-party applications and key enterprise systems used on campuses today, including for services such as financial and ordering systems, self-check, interlibrary loan, proxy services, collection agency services and ERP systems, and discovery.

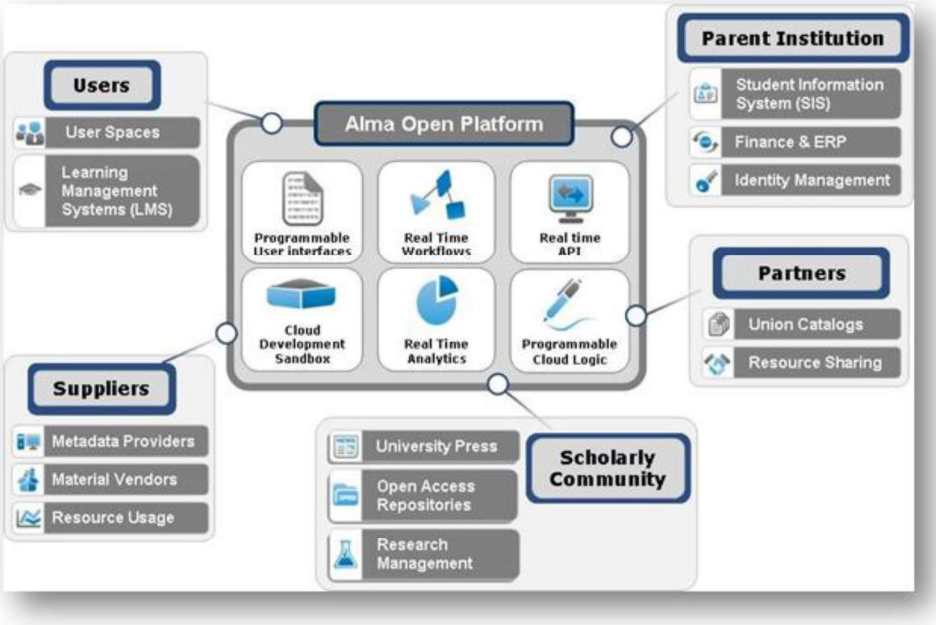
Achieving Alma's seamless handshaking with external systems, integration points are based on both evolving and well-established trend market standards. In addition to standards, Alma's integration approach makes use of plugin -capabilities, allowing institution-specific adaptations to specific systems and needs. The framework for utilizing integration points with third-party systems is the Integration Profile. The Integration Profile is where integration definitions may be set up for many types of Alma-supported integrations, including systems such as:

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- **Self-check** (this is described in section e. Circulation)
- **Resource sharing systems** (this is described in section e. Circulation)
- **Link resolution and proxies** (see below)
- **Collection agency services** (this is described in section e. Circulation)
- **Discovery interfaces** (this is described in section i. Discovery)
- **Cataloging clients** (this is described in section d. Cataloging)
- **Learning management systems** (this is described in section 3.5)
- **Financial management systems** (this is described in section a. Acquisitions)
- **Student Information systems** (this is described in section e. Circulation)

A unified and centralized platform, the Integration Profiles provide a single interface for defining the different required attributes for a variety of integrated systems.

The diagram below shows the variety of integration interfaces of Alma with multiple third-party systems using its open platform.

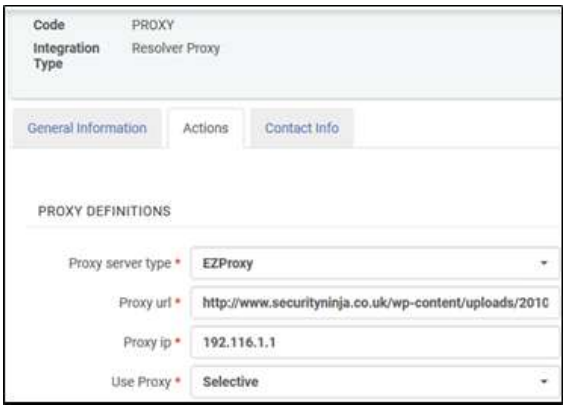


Link Resolution and Proxy Servers.

Integrated into Alma's embedded link resolver is a redirection into a proxy server instead of directly to a vendor platform, to provide access to the full text of a resource.

As with all integrations between Alma and other systems, the definition of the institution's proxy server is managed in an "External System Integration Profile". This profile encapsulates all the needed definitions for the link resolution component to create a correct URL to the Proxy Server. Alma supports EZProxy, LIBProxy, OpenAthens, and WAM.

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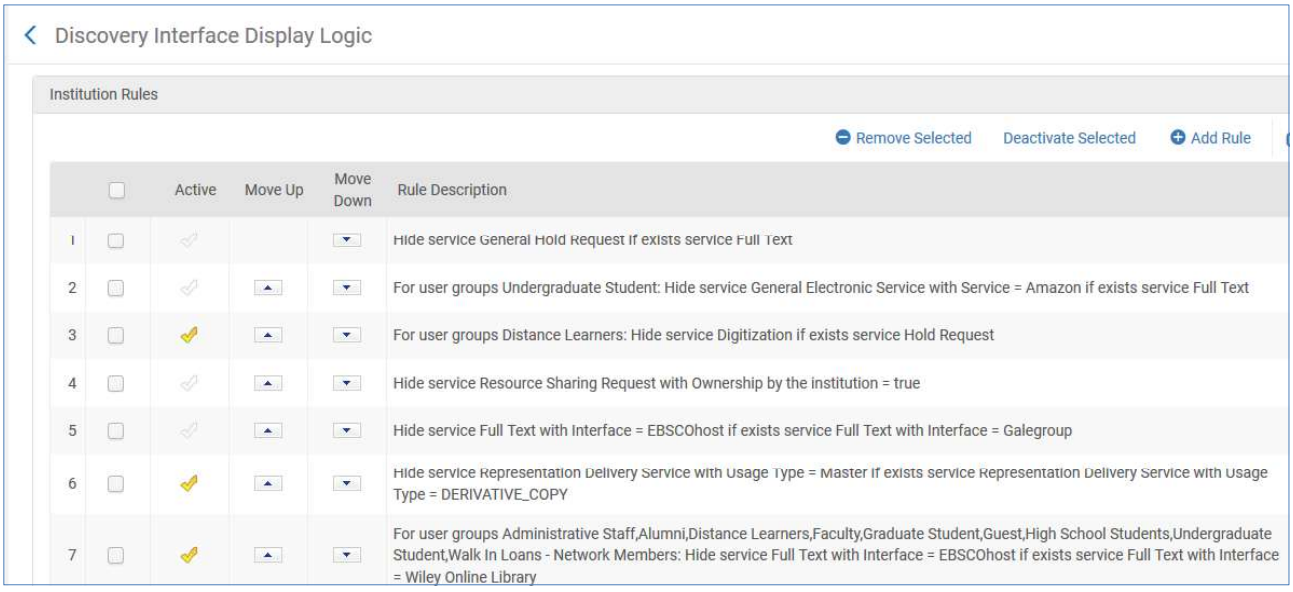


The Alma Link Resolver responds to an incoming OpenURL and changes it to an electronic link by automatically including additional proxy information in the resolved URL. Some institutions use a single proxy server, in which case one proxy profile should be defined. If an institution uses several proxy servers, a proxy profile should be defined for each proxy server. You must then define the relevant proxy for each electronic collection, service, or portfolio.

Alma includes an embedded Link Resolver which provides patrons with context-sensitive electronic, digital and print services. The embedded link resolver is a standard functionality in Alma (no additional subscription fee is required) and is based on Ex Libris' experience delivering the SFX link resolver to over 2500 institutions worldwide.

The Alma link resolver offers services via a menu that can be customized by the institution, defining the labels of the services and the order which they appear.

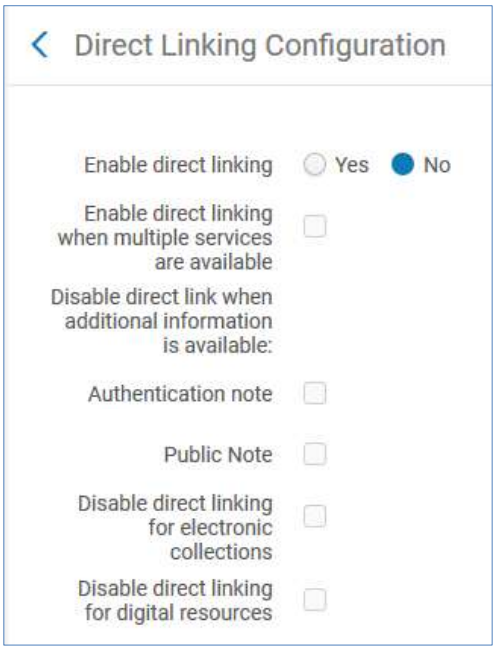
In addition, the institution can define display logic rules among services based on local preferences; for example, if an electronic journal is available from more than one provider, the institution can boost one provider over the other. The institution also can define logic rules among different service types, such as not offering a document delivery service if a full text service exists for the electronic resource. An example of these library configurable rules can be seen in the following screen capture:



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When the OpenURL resolves to multiple records, Alma will attempt to merge equivalent records into one unified list of services. When the records are deemed non-equivalent the user will be presented with a list of records based on the institution's defined display logic rules among services.

If only one resource is found, the library can configure the link resolver to link directly to the electronic resource, bypassing the electronic service page:



Alma augments the OpenURL in various ways (e.g. DOI) , and from various sources such as Crossref, Pubmed and more in order to enrich the context object and provide enhanced link resolution.

CKB electronic resources can be localized to reflect institution-specific information such as administrative/access information, coverage information for electronic journal titles, public notes, etc.

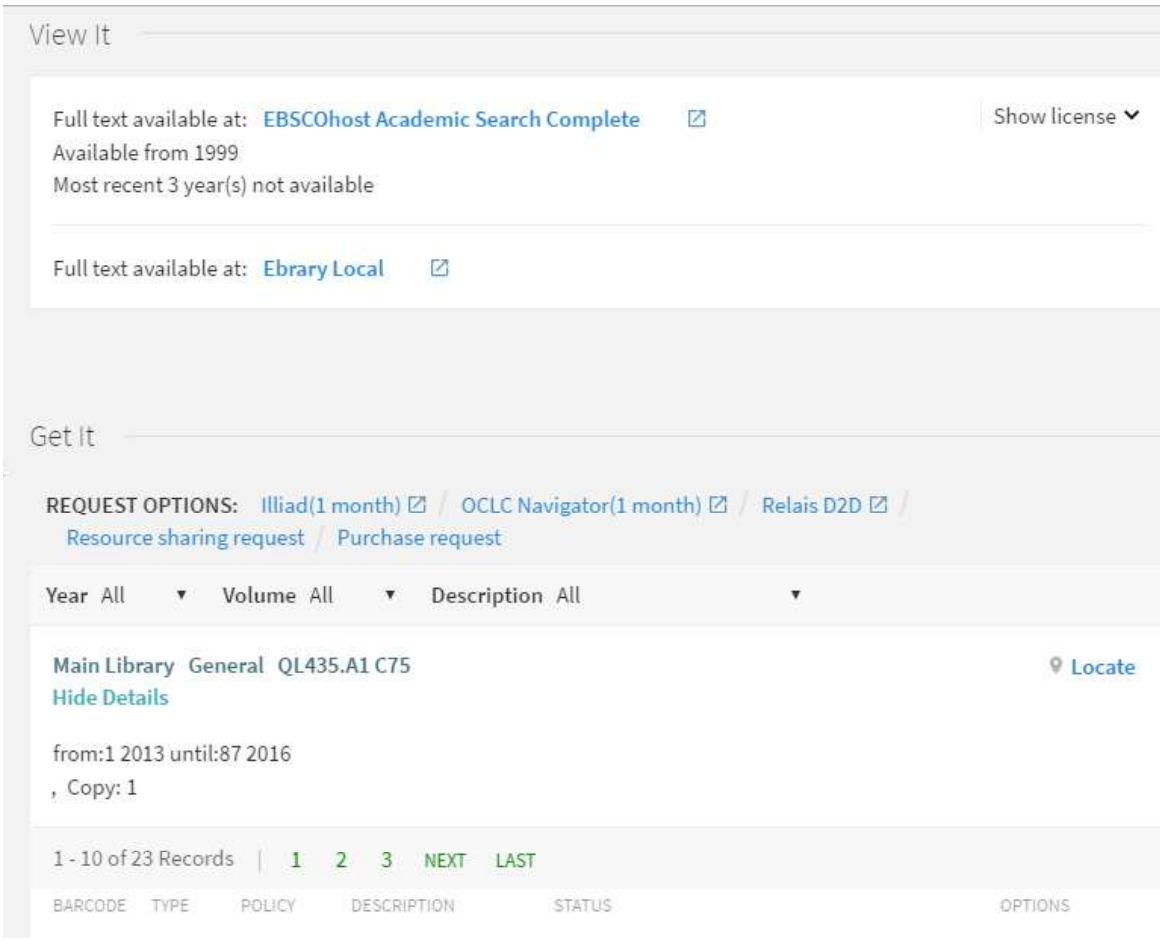
Where the OpenURL resolves to multiple records, Alma will attempt to merge equivalent records into one unified list of services. When the records are deemed non-equivalent the user will be presented with a list of records based on the institution's defined display logic rules among services.

The link resolver will link to all available options, including print. An example can be seen following (in Primo) of a record with print and electronic versions of a record. Users can check the availability for the electronic version via the View It and the print version from the Get It:



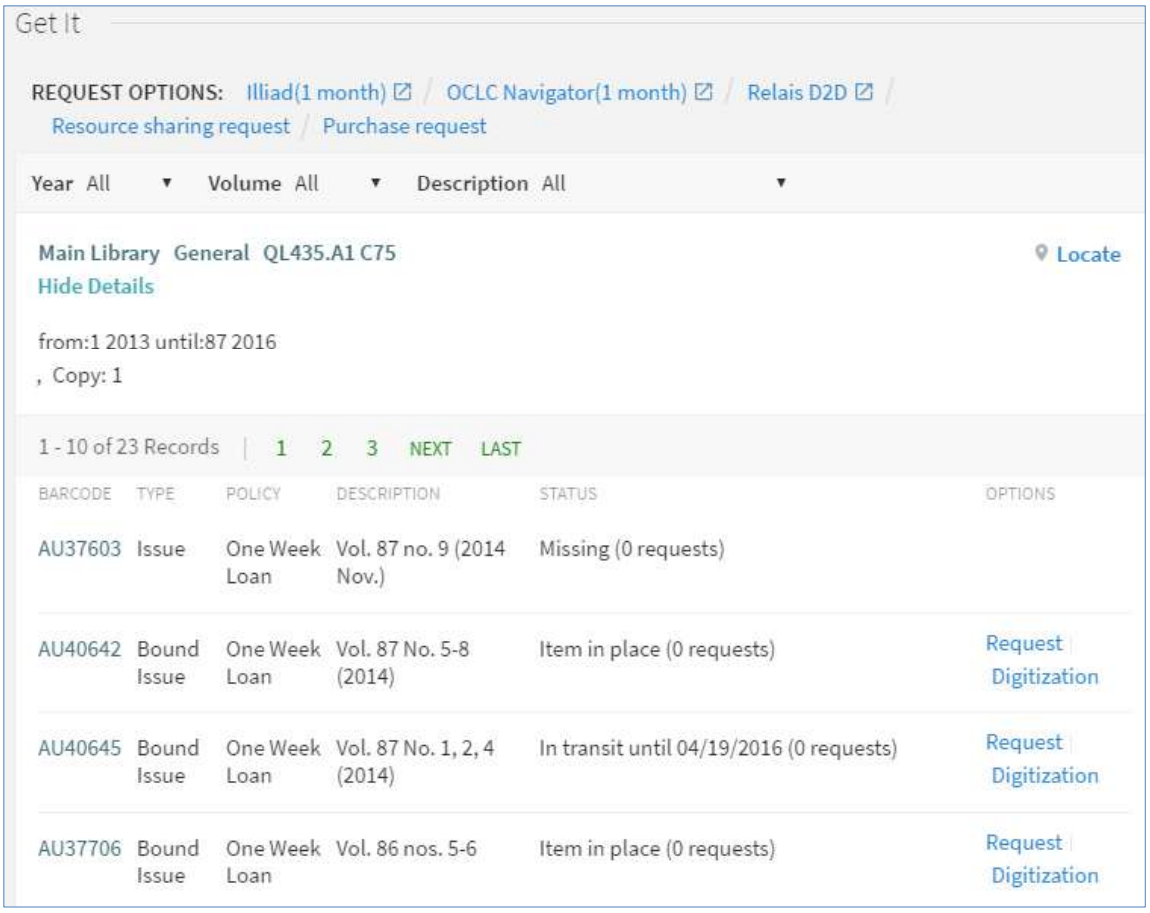
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Patrons have access to the full text versions (View it):



And can view the items in the library's repository (Get It):

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g. Compliance

i. NCCCS is seeking a solution that is compliant with ADA, FERPA and PCI standards. Explain how the proposed solution conforms to the following Federal and industry standards:

Ex Libris: Alma and Primo VE conform to ADA standards by ensuring accessibility for users with disabilities. It complies with the American Disabilities Act 1990 (ADA) and the UK Equality Act 2010 by applying high-contrast display, adjusting luminosity levels, providing alternatives to non-accessible methods, and compatibility with screen readers. The solution also adheres to leading international accessibility standards such as W3C Web Content Accessibility Guidelines 2.0 and Section 508 of the Rehabilitation Act. In terms of FERPA compliance, the solution provides multi-tier access control based on industry best practices. It requires staff member authentication prior to accessing the system, assigns privileges based on roles, encrypts sensitive patron information, maintains an audit trail of data access, and tracks data exports with written approvals from institutions and students or parents. Regarding PCI standards, the solution does not store or process credit card information. Only products within the PCI scope, such as Alma and Leganto, include a redirect to an authorized PCI payment processor. Ex Libris performs an annual attestation process for PCI-DSS compliance for these products

a) Americans with Disabilities Act (ADA) (https://www.ada.gov/law-and-regs/ada/

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Ex Libris: All Ex Libris' products and services comply with the requirements of American Disabilities Act 1990 (ADA). Ex Libris is committed to ensuring that its existing software and planned releases comply with accessibility standards.

The application is compliant by applying a high-contrast level of the display, by adjusting the luminosity level of the display, and by applying alternatives to non-accessible methods, such as JavaScript or AJAX components. The application is also compatible with screen readers for the visually impaired.

The accessibility of the Primo interface for users (inc. HTML and CSS) has been validated by several rounds of usability studies. The Primo user interface was designed to comply with leading international accessibility and industry standards: The W3C Web Content Accessibility Guidelines 2.0, level "Double-A" Section 508 of the Rehabilitation Act (29 U.S.C. 794d). We adhere to the following accessibility guidelines:

- HTML Standards and Accessibility
- XHTML 1.0 Transitional
- WCAG 2.0 Guidelines Priority 2 (with exceptions)
- Section 508 (with exceptions)
- CSS 3

The interface is navigable without a mouse and has been tested successfully with JAWS. The current roadmap includes WCAG 2.1 level AA with minimal exceptions.

i) In addition to being ADA compliant, explain how the proposed solution addresses point and click access, and the use of keyboard commands.

Ex Libris: As far as possible, hot keys (keyboard shortcuts) have been defined for functions in the system; this is especially true for circulation functions.

We continuously test and enhance support for JAWS for Alma and Primo. For Primo we have recently added voice search for English and other languages.

As part of our VPAT assessments we have evaluated Alma and Primo based on feedback from individual users with disabilities and an external accessibility company. The following tools and methods have been used to test and validate accessibility:

- NVDA with Firefox
- WAVE (web accessibility evaluation tool), provided by WebAIM
- Color Contrast Analyzer, provided by WebAIM
- Chrome aXe Extension
- Mozilla Web Developer Add-On
- Other Browser developer tools
- High contrast browser plugin
- Manual keyboard checks
- Manual code inspection

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Alternative keyboards or alternative pointing devices have not been tested with our solutions yet. We take this as an action point and will investigate further if there are customers using these devices and which challenges users face using such equipment.

b) Family Educational Rights and Privacy Act (FERPA)

Ex Libris: Alma conforms to FERPA guidelines by providing multi-tier access control based on the security industry's best practices. Such controls consist of (but are not limited to):

- Staff member authentication prior to accessing Alma
- Each staff member has privileges and access to data according to his/her role
- Only authorized staff members have access to patron data, to view and edit
- Alma's browser sessions are encrypted using SSL
- Sensitive Patron information is encrypted

Alma maintains an audit trail of access to patron data that has been exported. This information may be used in conjunction with the institutions' written approvals by students and/or their parents to track any export of patron's data outside of Alma.

c) Payment Card Industry (PCI) standards (https://www.pcisecuritystandards.org/)

Ex Libris: Ex Libris does not store or process credit cards. Only our Alma and Leganto products are within PCI scope because they include a redirect to an authorized PCI payment processor. On an annual basis, Ex Libris performs an attestation process for Alma and Primo. The PCI-DSS documentation can be supplied upon request.

d) Personally identifiable information https://nvlpubs.nist.gov/nistpubs/legacy/sp/nistspecialpublication800-122.pdf

Ex Libris: Ex Libris is ISO 27018:2014 (Protection of PII) compliant. ISO 27018:2014 defines the controls and guidelines for implementing measures to protect Personally Identifiable Information (PII) for the public cloud computing environment. Additionally, Ex Libris was the first company in the library industry to achieve ISO 27701:2019 certification which provides a code of practice for maintaining the privacy of data in a privacy information management system (PIMS). This standard establishes privacy requirements, helps organizations manage risks related to personally identifiable information (PII), and outlines a comprehensive set of operational controls that can be mapped to various regulations.

Alma conforms to FERPA guidelines by providing multi-tier access control based on the security industry's best practices. Such controls consist of (but are not limited to):

- Staff member authentication prior to accessing Alma
- Each staff member has privileges and access to data according to his/her role
- Only authorized staff members have access to patron data, to view and edit
- Alma's browser sessions are encrypted using SSL
- Sensitive Patron information is encrypted

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Alma maintains an audit trail of access to patron data that has been exported. This information may be used in conjunction with the institutions' written approvals by students and/or their parents to track any export of patron's data outside of Alma.

e) Web Content Accessibility Guidelines 2.1 standards https://www.w3.org/TR/WCAG21/

Ex Libris: The World Wide Web Consortium (W3C's) published standards and accessibility guidelines (Web Content Accessibility Guidelines (WCAG) and Web Accessibility Initiative (WAI)) are generally regarded as the main guidelines used during interpretation of the UK Disability Discrimination Act 1995, the Equality Act 2010 and subsequent amendments.

All Ex Libris' products and services comply with the requirements of the Equality Act 2010, as well as those of the American Disabilities Act 1990 (ADA).

Ex Libris is committed to ensuring that its existing software and planned releases comply with accessibility standards. Alma was developed in line with the WAI guidelines. The application is compliant by applying a high-contrast level of the display, by adjusting the luminosity level of the display, and by applying alternatives to non-accessible methods, such as JavaScript or AJAX components. The application is also compatible with screen readers for the visually impaired. As far as possible, hot keys (keyboard shortcuts) have been defined for functions in the system; this is especially true for circulation functions.

h. Consortia

i. The proposed ILS solution should be scalable to include fifty-eight (58) community college and System Office libraries, and additional satellite campus and branch libraries. NCCCS also desires the solution to share bibliographic records between colleges.

Ex Libris: Alma is a scalable, multitenant solution well-suited for large consortia like NCCCS, supporting all 58 community college libraries, the System Office, and future satellite or branch locations.

We are proposing that each college be implemented with its own instance of Alma and Primo VE as well as a Network Zone.

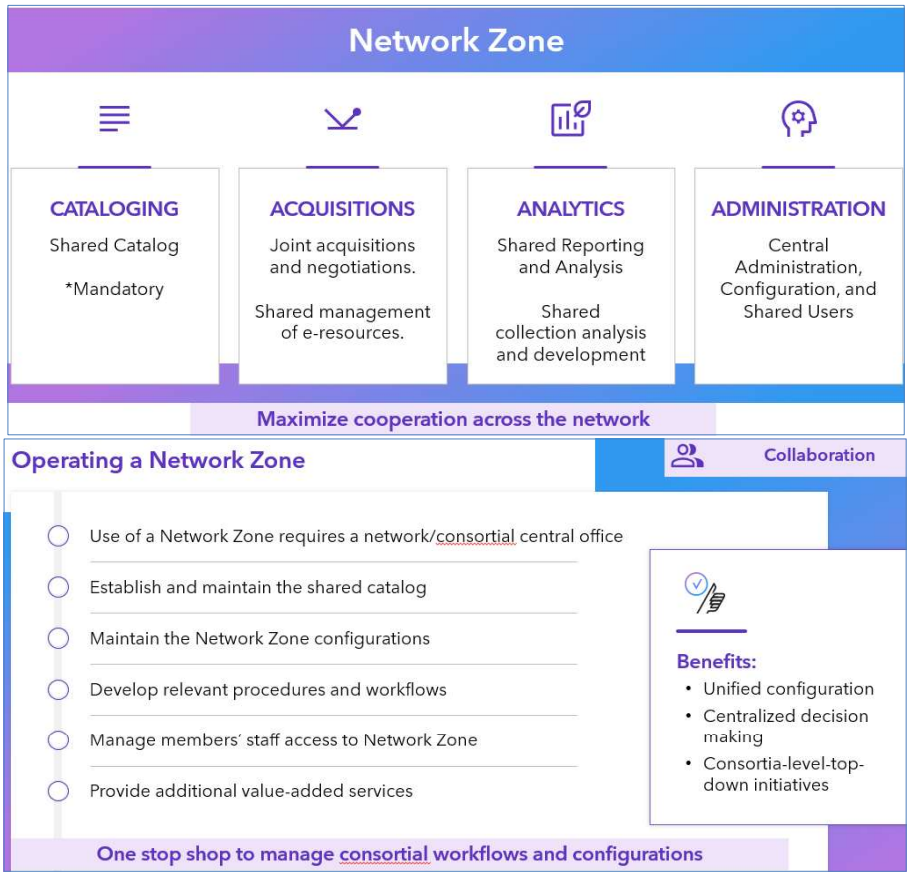
Alma enables collaborative metadata management through its **Community Zone**, which provides shared electronic resources and authority records accessible to all member libraries. Additionally, the **Network Zone** allows institutions to manage bibliographic and authority records centrally or locally, depending on administrative preferences. Libraries can create, import, or link records at either level, with changes to network-managed records automatically reflected in linked local records. Local extensions can also be added to network records, allowing for institution-specific customization without disrupting shared data.

Alma's Network Zone offers a variety of features supporting the needs of a collaborative network. These include:

- Shared Catalog,
- Shared Acquisitions,
- Shared Negotiation,
- Shared Management of e-resources,

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- Shared Users,
- Shared Analytics,
- Shared Administration and
- Shared Discovery.



This flexible structure supports shared cataloging, acquisitions, fulfillment policies, vendor records, and resource sharing workflows—ensuring consistency and efficiency across the system. Alma also facilitates shared analytics, normalization routines, and import profiles, while the **Ex Libris Developer Network** offers tools for integration and innovation.

Alma's **cloud-based architecture** ensures there are no system limitations on the number or size of libraries. It supports scalability at multiple levels:

- **Horizontally**, by adding more application and database servers.
- **Vertically**, by increasing server resources like CPU and RAM.
- **Dynamically**, by deploying new Alma instances as needed, based on institutional volume and growth projections

This infrastructure is supported by load balancing, dedicated resources for online transactions, batch jobs, and reporting, and real-time monitoring tools to ensure performance and reliability even during peak usage

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Together, these capabilities make Alma an ideal solution for NCCCS's goals of scalability and collaborative bibliographic record sharing.

a) Describe in detail the solution's scalability.

Ex Libris: Alma is designed for scalability; because it is deployed in the cloud environment, there are no system limitations as to the number of libraries or their capacity. This architecture allows for:

- Alma to be deployed in multiple instances in each data center, without limitation on the number of parallel instances that may be deployed; and
- Each Alma instance can contain many libraries (depending on their size) in a multi-tenant architecture.

This allows us to scale Alma at multiple levels:

- An Alma instance can scale:
    - Horizontally – by adding additional application servers and database servers; and
    - Vertically - by adding additional cores, RAM, etc., to existing servers.
- An additional Alma instance can be deployed as needed via automatic deployment tools.

When a new institution is added to Alma, it is deployed in the most appropriate instance, based on its volume, and new instances are opened in advance as needed, based on our pipeline.

The Alma SaaS environment is built to handle usage fluctuations and peaks in several ways:

- Access to the Alma application is done via a load balancer that routes customers to an available application server.
- Online transactions, batch jobs and reports are each performed via dedicated resources to prevent disruption to online transactions caused by heavy jobs or reports run by users; and
- Deployment of end-point monitoring tools for high visibility.

Our monitoring tools help us gauge performance, and in the event of any service degradation, our cloud engineers are supplied with the appropriate tools. For example, if a server's resources are being consumed at a sudden high rate, an engineer is notified and can change the load balancer rules to allocate more resources for online transactions.

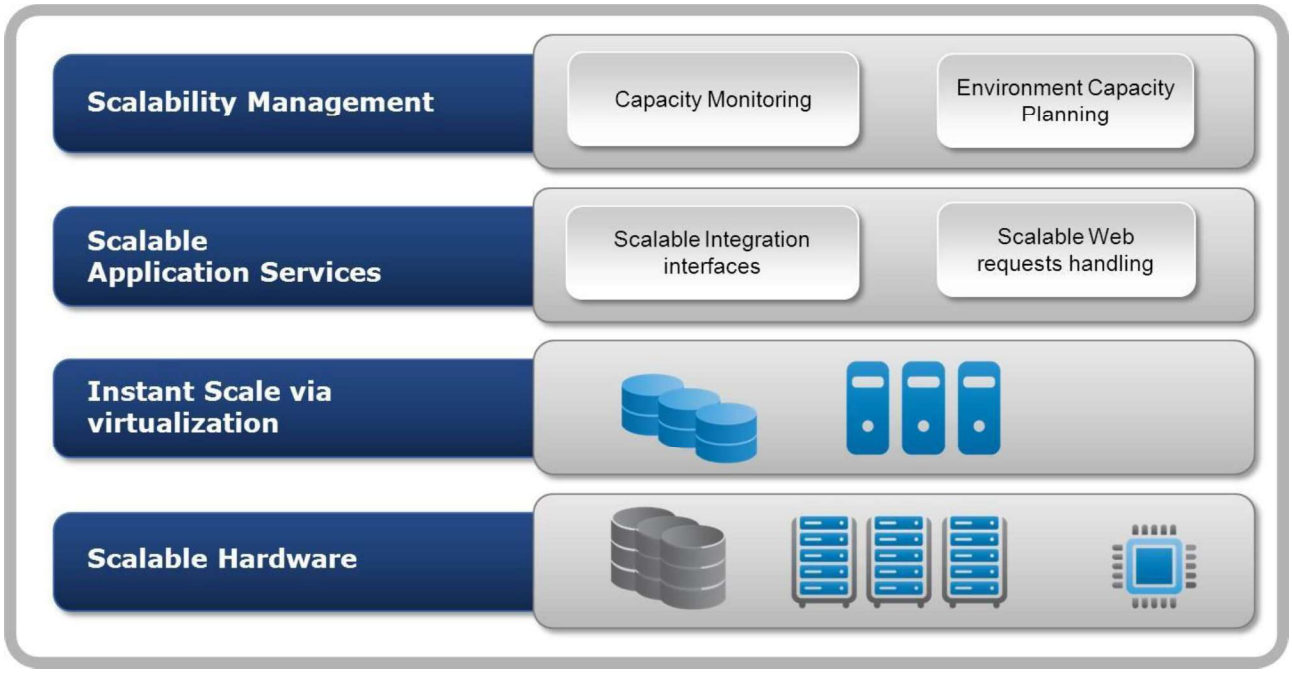
While Alma and Primo are sized for the hosted environment according to user parameters provided by the institution, the application can handle fluctuations as described above.

Ex Libris is committed to providing our customers with a highly secure and reliable environment for our cloud-based solutions. We have developed and deployed a multi-tiered security model that covers all aspects of cloud-based Ex Libris systems. The security model and controls are based on international protocols and standards as well as industry best practices, such as ISO/IEC 27001 and 27018 (Security Standard for cloud-based solutions), the standard for information security management systems (ISMS). All communication between browsers and the Alma cloud is secured. Personal patron information (such as ID, email, address) is kept securely encrypted in the Alma database.

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Alma: Capacity Management on infrastructural level

Alma is based on the multi-tenancy architecture in which one instance of Alma supports multiple institutions. To allow for growth in a cost-effective manner, Alma is designed to scale throughout its layers:



Scalability management:

Alma's cloud engineers oversee capacity planning and system monitoring. To plan for growth, the cloud engineers track our existing and ongoing implementations, as well as our future pipeline, to make sure we have the required capacity. At the same time, they monitor our existing customers' growth and the system's performance trends. This approach ensures that Ex Libris can provision more hardware to meet our customers' needs in real time.

Addressing performance issues at high workloads

Because a multi-tenancy environment serves many customers, we designed Alma to provide flexibility.

This is done in several ways, a few examples of which are:

- The data is saved in the Character Large Object (CLOB) data type, which allows for an unlimited number of data elements. An example of such usage is all MARC records as well as inventory objects.
- Many of the entities in Alma have a tab for notes, allowing for an unlimited number of notes records.
- Whenever required, values for fields are managed in a mapping table to allow for full customization on the institution level.

b) Explain, in detail, how the solution shares bibliographic records between colleges.

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Ex Libris: Alma's solution for sharing bibliographic records between NCCCS colleges is facilitated through its centralized metadata management environment, which includes the Institution Zone and the Community Zone. The Institution Zone represents the individual library and allows linking of inventory records to metadata records in the Community Zone. This eliminates the need to download shared records to the local catalog. Libraries can also copy catalog records from the Community Zone into their local catalog. The Community Zone contains synchronized authority catalogs, ensuring access to authority control without the need for local synchronization.

Sharing Bibliographic Records in Alma's Network Zone

As part of your collaborative work within Alma, the **Network Zone (NZ)** enables NCCCS institutions to efficiently share and manage bibliographic records across the consortium. Below is an overview of how this process works and how your institution can participate effectively.

What Is the Network Zone?

The Network Zone is a **centralized catalog** that allows all member institutions to:

- Share bibliographic records.
- Avoid duplication.
- Maintain consistency across the consortium.

How NCCCS Institutions Can Share Records:

Creating or Importing Records into the NZ

- Institutions can **create new records** directly in the NZ or **import** them from external sources.
- Alma automatically attempts to **match** imported records with existing NZ records to prevent duplication.

Linking Local Records to NZ Records

- Local records can be **linked** to existing NZ records, ensuring updates in the NZ are reflected locally.
- Alternatively, institutions may **copy** NZ records into their Institution Zone (IZ) without linking, creating independent records.

Permissions and Access Control

- The NZ administrator can **control which institutions** are allowed to import records into the NZ.
- Each institution can be toggled ON/OFF for NZ import permissions.

Editing and Extending Records

- Institutions with appropriate permissions can **edit NZ records**.
- Local extensions can be added to NZ records, which are visible only to the local institution and do not affect the shared record.

Repository Search and Cataloging

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- Catalogers can search across the **Institution Zone, Community Zone, and Network Zone**.
- With the enable_nz_record_assignment parameter enabled, catalogers can be assigned to edit NZ records across institutions.

Training and Support

We recommend reviewing the training module:
Shared Bibliographic Records in the Network Zone
This 9-minute session covers:

- Performing repository searches in the NZ.
- Actions available on shared bibliographic data.
- Saving records in the NZ.

ii. Include in the offer a detailed plan and procedure for onboarding new libraries to the ILS and include:

Ex Libris: New members would undergo an implementation project like the initial implementation which would include data migration, configuration, and training. Please see section describing the process: section j. Cost-sharing adjustments would be based on the new member's subscription parameters and reviewed with your Ex Libris software sales manager.

a) Detailed data migration procedures, including the Consortium, the new library's, and Vendor responsibilities, related to the migration of the new library's data.

Ex Libris: The migration process is the same for a new library as it was for the initial migration. The Central Office would be responsible for providing access to the Network Zone.

b) Detailed system configuration procedures, including the Consortium, the new library's, and Vendor responsibilities, related to system configuration due to the addition of a new library to the Consortium.

Ex Libris: As described above, the library will complete streamlined workbooks in the design phase to make initial configuration decisions that will be fine-tuned later in the implementation. Ex Libris consultants provide guidance on making initial decisions. Most configuration work during the build phase will be handled by Ex Libris consultants, with advanced configuration topics handled toward the end of the phase. Once the library Alma administrators are certified (before go-live), Alma configuration on the production environment will be opened, and the library can assume management of configuration.

Alma is based on configurable workflows and enables great flexibility when it comes to post-implementation configuration. However, the implementation should be used as the period to make important decisions as to how the libraries and their data are mapped, to avoid the potential expense and effort of later major changes.

Implementations include two primary areas that may be challenging to change post-implementation:

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1. Decisions related to the organizational structure within Alma - key elements such as libraries and locations. These are fundamental building blocks that will appear in most of the other Alma entities, so changing these configurations later may entail substantial effort.
2. Mapping definitions required for data migration should be carefully defined and verified once a test load is delivered. Massive changes of the data after implementation phase can require additional effort and expense.

Central Configuration Dashboard:

The **Consortia Central Configuration Dashboard** is designed to centrally manage configurations within an Alma Network Zone. It provides a user-friendly menu that allows the central office to manage either full or selective distribution of configurations to member institutions within the network. This eliminates the need for central office staff to log in to each member institution individually.

To offer flexibility in how configurations are applied, the central office can choose from three distribution modes:

- **Proposed** – Member institutions can choose to adopt or modify the central configurations.
- **Imposed** – Member institutions are required to use the central configurations without changes.
- **Hybrid** – A combination of both approaches, where some configurations are proposed and others are imposed.

Selective distribution allows specific configurations to be inherited by selected member institutions. In Alma's architecture, configurations defined at a lower level typically override those at a higher level. For example, library-level settings can override institution-level ones. However, when the **Imposed** mode is used at the network level, this default behavior can be overridden, enabling the central office to enforce a consistent set of configurations across the consortium.

c) Detailed testing procedures, including the Consortium's, the new library's and Vendor responsibilities, related to testing due to the addition of a new library to the Consortium

Ex Libris: Testing procedures related to the addition of a new library to the Consortium involve multiple responsibilities and steps:

- **Consortium Responsibilities:** The Consortium is responsible for coordinating the testing process and ensuring seamless integration of the new library into the existing system.
- **New Library Responsibilities:** The new library is responsible for providing necessary data and information for migration, actively participating in testing activities, and verifying that the system meets their specific requirements and workflows.
- **Vendor Responsibilities:** Ex Libris is responsible for supporting the data migration process, ensuring compatibility with the new library's systems, and providing technical assistance during testing and implementation.

Testing procedures typically involve data extraction, transformation, and loading into the new system, followed by comprehensive testing of functionalities, workflows, and integrations to ensure a smooth transition and optimal performance.

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d) Detailed security procedures, including the Consortium's, the new library's and Vendor responsibilities, related to security due to the addition of a new library to the Consortium.

Ex Libris: When adding a new library to the Consortium, detailed security procedures need to be followed to ensure the integrity and confidentiality of the data. The Consortium, the new library, and the Vendor all have specific responsibilities related to security.

1. **Consortium Security Procedures:** The Consortium should have robust security measures in place to protect the shared data and resources. This includes access control mechanisms, encryption protocols, regular security audits, and incident response plans.

2. **New Library Security Procedures:** The new library joining the Consortium must adhere to the Consortium's security policies and guidelines. This involves implementing secure authentication methods, data encryption, staff training on security best practices, and compliance with industry standards.

3. **Vendor Security Responsibilities:** Ex Libris provides services to the Consortium and its member libraries have a responsibility to maintain the security of the systems and data they handle. This includes secure transmission of data, adherence to data protection regulations, and prompt response to security incidents.

Overall, a collaborative approach to security is essential, with all parties working together to ensure the confidentiality, integrity, and availability of the shared resources within the Consortium.

e) Detailed summary of the types of support and training Vendor will provide to the Consortium and the new library during the onboarding process included in the basic contract. Provide a summary of additional services available outside the basic contract and their fees.

Ex Libris: New libraries to the consortium would need to follow the same training plan as completed during the initial implementation.

Training is conducted via several channels throughout the implementation; starting during the Onboarding phase and continuing beyond go live. Training content is timed to align with the relevant implementation activities at each project phase. The training channels are listed here, followed by more comprehensive explanations of each. An overview of our Alma Education Services and other training documentation be found online in our Knowledge Center: https://knowledge.exlibrisgroup.com/@api/deki/files/124086/Ex_Libris_Alma_Education_Services_11_2021.pdf?revision=1

1. Recorded functional training
2. Technical discussions
3. Alma workshop/workflow consultation
4. Alma administrative certification
5. Continuing education

1. Recorded functional training

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Audience: Library project team (including testers, functional experts, and trainers)

Format: Recorded sessions and hands-on activities

Timing: Begins during the onboarding period immediately after project kickoff and continues throughout Define phase

Description: Initial training covers all major functional areas of Alma, including initial training on configuration. The key goal is to cover fundamentals so that the library staff are prepared to test the initial data migration and begin adapting the workflows to suit local needs. Each session includes recorded presentation and demonstrations, hands-on activities, and the presentations used by our trainers so that library trainers can refer to them and adapt them to train other library staff. The delivery of these sessions is scheduled throughout the Define phase and paired with topical Q&A sessions with the Ex Libris implementation team for the relevant week's training.

These functional trainings (including all subsequent updates based ongoing system development) will continue to be available for the lifetime of your Alma subscription. Initial trainings serve as a good resource to brush up on unfamiliar topics or to train staff that are new to Alma.

In order to promote interactive testing of Alma workflows prior to the delivery of the migrated data, a sandbox environment is provisioned during the customer onboarding period at project kickoff. The sandbox is used to conduct hands-on exercises that accompany the recorded training. Configuration settings within the sandbox are open to the library to support development of configuration knowledge and insight into the impact of configuration settings on system functionality.

2. Technical Discussions

Audience: Library project team, functional experts

Format: Live web discussions

Timing: Build phase through project close

Description: Once the initial data migration is delivered in a configured Alma environment, the focus of training shifts from "vanilla" workflows to workflows customized to the needs of the library. This is handled via weekly calls. Having the topical calls scheduled on a week to week basis allows the project teams to dive into much more detailed questions than prerecorded training affords. These functional calls continue throughout the life of the project, and the topics are determined by discussions with the libraries as the project progresses.

3. Alma workshop/workflow consultation

Audience: Library team, functional experts

Format: Onsite or remote discussion and demonstration, typically 3-4 days or as defined in contract

Timing: Near the beginning of the Build phase, once initial data testing is complete

Description: As the libraries' attention shifts to adapting basic workflows to its own needs, the project has an onsite visit scheduled. This is an opportunity to discuss any open questions from the initial training, the needs of the libraries, and the range of configuration possibilities in Alma. The format is typically guided demonstration, where the Ex Libris product expert will demonstrate end-to-end workflows in the migrated environment. This demonstration will be launching point

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for answering questions, discussing the goals of workflows and how to adapt them efficiently in Alma, and what additional configuration decisions need to be made. This then sets the tone for the following functional calls—focused on the needs of the library and how the systems can support those needs.

4. Alma administrative certification

Audience: System librarians who will configure Alma

Format: Recorded trainings, final test

Timing: Near the end of the Build phase before cutover begins

Description: To prepare the library to configure Alma after go-live, a separate administrative certification program is offered. Each library chooses at least two representatives who will be the local experts at administering Alma and performing the more advanced aspects of configuration. This certification process both cultivates local expertise and provides a path for further development of the more advanced aspects of Alma administration. The program consists of recorded trainings covering configuration of each major functional area of Alma. The program culminates in an online test to be taken by each participant. Once the test is passed and the library has gone live with Alma, production environment configuration access will be opened so that administrators have full control over configuration of the Alma institution. Note that sandbox environment configuration access is open throughout the project.

5. Continuing education

Audience: Any library staff who use Alma

Format: Recorded sessions, release notes, "What's New" videos, "Ask the Expert" sessions, Ex Libris Technical Seminar

Timing: Ongoing

Description: Because of the rapid development of Ex Libris products and the growing user base for our next generation solutions, Ex Libris maintains a considerable investment in ongoing education. Our goal is to make a variety of formats available to support different learning styles and different depths of background knowledge.

The following are the key channels:

- Post-Implementation Consulting Services Hours:
    - Ten consulting service hours to help you maximize Alma and Primo.
    - Ex Libris product experts work with you, building a structured plan to address your library's needs through targeted training, workflow consultation, and feature enablement
- Recorded sessions: As functionality develops, extended training in the Ex Libris Knowledge Center continues to be generated and updated. This is a mix of new sessions on advanced topics and updates to existing training.
- Release notes: New functionality is always described in the notes for each release, including a link to more extended documentation when appropriate. Release notes are an excellent starting place to determine what new features might be relevant to your library.

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- What's New videos: Certain new features are complex or novel enough to warrant more demonstration. In such cases, short (typically about 5 minutes) recorded overviews will highlight how to use these functions via demonstration within the system. What's New videos are embedded in the online help in the relevant section, so users can find them when referencing the standard documentation as well.
- Ask the Expert: Regular live web sessions are held in which a product expert covers a predefined topic in depth. These function like a Q&A in which some answers are demonstrated in the system.
- Ex Libris Knowledge Days (formerly Technical Seminar). Ex Libris hosts an annual technical meeting immediately prior to the annual user group meeting (hosted by ELUNA). This consists of meetings between Ex Libris and library developers from institutions using all Ex Libris products. This meeting has a significant Alma and Primo focus, including live versions of some recorded trainings and topics. This two-day event is an opportunity for you to attend presentations, hands-on workshops, practical exercises, and question-and-answer sessions. It includes many advanced training and topical sessions sharing how systems have been adapted based on local needs.
- Premium Services: Once you have been live with Alma for some time and your library's needs evolve, more hands-on assistance with optimizing workflows or enabling new system features might be required. For this reason, Ex Libris offers additional one-on-one premium paid Expert Services for libraries that are already in production. During a Premium Service engagement, a product expert may analyze opportunities for workflow optimization, deliver individualized training, or provide hands-on configuration assistance to set up new services. These and other services can be adapted as the library's unique requirements develop.

Training is included as part of the implementation and subscription costs. Additional expenses would include travel for onsite visits (based on actual cost), and optional services such as attendance at Ex Libris Knowledge Days, and Premium Services.

The onboarding plan can be included as a clearly marked attachment in the Vendor's RFP response.

Ex Libris: The timeframe for Alma and Primo VE implementation until go-live can range from four months for a small, standard implementation to six months for a large, complex institution. For multiple institutions that are implementing together, we can support a longer project duration that would have all institutions going live at the same time or we can support a cohort or phased approach where groups of institutions would go live in waves.

The project duration is defined in the contract. A high-level project plan indicating the major milestones is prepared and agreed upon by both sides. This plan serves as a commitment for the customer and Ex Libris to allocate the relevant resources, complete assigned tasks, and meet agreed upon deadlines for the implementation of the relevant solutions.

Here is an example of a high-level sample sample timeline:

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The project team is to be composed of Ex Libris and customer staff resources, who will be responsible for the implementation of Alma.

Customer High-Level Responsibilities

- Implement Alma within the agreed upon timeframe, according to the agreed upon scope
- Appoint a library project team and a single project coordinator who will serve as the primary contact for the Ex Libris project manager
- Form a team of functional experts from the institution
- Manage the internal customer project team

Customer Detailed Responsibilities

- Actively participate in training, functional meetings, and workshops delivered by Ex Libris
- Gather and provide initial Alma, Primo, and third-party integrations configuration input using form/workbooks provided by Ex Libris.
- Provide post-configuration feedback based on end-to-end review of Alma, Primo, and third-party integrations configuration and functionality in the defined time frame.
- Coordinate all data migration efforts:
    - Gather and provide data migration input using forms/workbooks provided by Ex Libris including:

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        - Extracted data:
            - Extract data from Ex Libris systems using Ex Libris provided and supported tools.
            - Extract data from Non-Ex Libris source systems following the data format requirements provided by Ex Libris (if the customer is unable to provide data in required formats in the project test load timeframe, the Alma project schedule will need to be re-scheduled)
        - Migration forms
        - Data structure description for non-Ex Libris source systems
        - Input data for print to electronic transformation during migration (if required)
    - Provide all migration input by delivery dates specified by Ex Libris
    - Review and test data migrated to Alma and provide feedback in the defined time frame
- Provide library staff training

Customer Roles

Project Lead

- Manage involvement of customer project team resources
- Serve as the primary project contact for the Ex Libris project manager
- Work with the Ex Libris project manager on work planning/deadline management
- Work with Ex Libris to monitor progress and track status
- Drive issue resolution and escalation as appropriate at customer site
- Status reporting to customer management and team members at customer site

Functional Expert

- Provide expert input into all areas of business processes. This is likely to include: Acquisitions, Resource Management, Fulfillment, data in all listed areas, Public Services
- Facilitate and perform functional review activities
- Report issues found during testing to Ex Libris via CRM
- Provide team updates on testing progress
- Actively participate in training, functional meetings, and workshop

Training

- Deliver training to internal customer library staff
- Develop, modify, or re-use training materials provided by Ex Libris as needed

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- Actively participate in training, functional meetings, and workshop delivered by Ex Libris

Data Integration/Authentication/Technology Team Lead and Supporting Resources

- Provide information/technical expertise regarding customer's existing systems and environments, and help develop/validate overall technical solution architecture
- Monitor/assist/support the development/deployment of customer single sign-on solution
- Ensure necessary customer technology resources are involved as needed to support project activities
- Support testing and debugging activities
- Coordinate technology touch points and processes on a day-to-day basis

Administrator

- Become proficient in Alma and Primo configuration (attend Alma certification training postimplementation)
- Open Ex Libris Support cases as needed
- Handle day-to-day technology requests after launch

The backgrounds and job titles of individuals who fill customer roles may differ from library to library according to the organizational structure, staffing, and other details specific to each organization. Ex Libris provides information about the roles and responsibilities required to participate in Alma implementation, and the customer determines which individuals on their staff are capable and available to fulfill these roles. Roles may be filled by multiple individuals, and a single individual may fulfill one or more roles. Regardless, most tasks are performed in collaboration with the Ex Libris project manager, and according to the mutually agreed project plan. Generally, all roles are expected to participate throughout the implementation project, although activity levels will vary throughout the process.

Please refer to the Getting Ready for Alma and Primo Implementation document available on the Ex Libris Knowledge Center for more information:

https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Implementation_Guides/02Getting_Ready_for_Alma_and_Discovery_Implementation

The table below provides a high-level overview of the tasks and responsibilities in a typical Alma implementation. Additional details about these tasks and milestones are included above.

Phase	Milestone / Task	Library	Ex Libris
Onboarding	Project scope, schedule, and communication plan reviewed and agreed upon	X	X
	Environments provisioned		X

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	Access to sandbox provided		X
	Project analysis	X	X
	ILS data extract validation and review	X	X
Define	Kickoff meeting	X	X
	Review Alma training	X	
	Configuration and migration input provided	X	
	Relevant source systems (ILS, digital repositories, ERM, link resolver, other integration points) prepared	X	
	Configuration form finalized	X	
	Alma configuration and data migration		X
Build	Access to Alma production delivered		X
	Third-party integrations configured	X	
	Primo integration delivered		X
	Alma workshop	X	X
	Functional + data review and feedback	X	
	Customer staff training	X	
	Alma Certification program – training and exam	X	X
	Cutover period	X	X
Deploy	Go-Live	X	
	Project closure and handoff	X	X
	Post-implementation survey	X	
	Transition from implementation to support mode	X	X

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i. Discovery Service

i. NCCCS is seeking an ILS solution with a wide array of interface and result output options. Describe the proposed solution's interface and output options related to the Discovery Service. Include an explanation of how the proposed solution supports the following items:

Ex Libris: The proposed solution for NCCCS is Primo VE, which offers a unified solution for the discovery and delivery of library materials in various formats. The interface of Primo VE provides users with two search interfaces: a simple keyword search and an advanced search. Libraries can customize the interfaces by defining pre-search limiters, types of limiters, sorting options, and more. Users can input various types of information such as title, author, ISBN, or citation information for searches. Primo VE supports semantic searching and auto-complete functions to offer search suggestions based on popular queries and local collections. The interface also includes features like browsing by author, title, subject, and call number, as well as suggested new searches and topic facets for exploring subjects. Additionally, Primo VE integrates article recommendations from the Ex Libris bX recommender service, providing users with related articles for serendipitous discovery. The output options of Primo VE include displaying search results from shared resources, local resources, and the Central Discovery Index in a single merged list sorted by relevance. The Central Discovery Index includes scholarly resources from various publishers and aggregators. Primo VE also supports the creation of discovery paths via material relations, such as citation trails, bX recommendations, virtual browse function, and more. The solution leverages AI through the Primo Research Assistant, allowing users to submit queries in natural language and receive narrative responses with inline references to recommended resources

New Primo VE UI

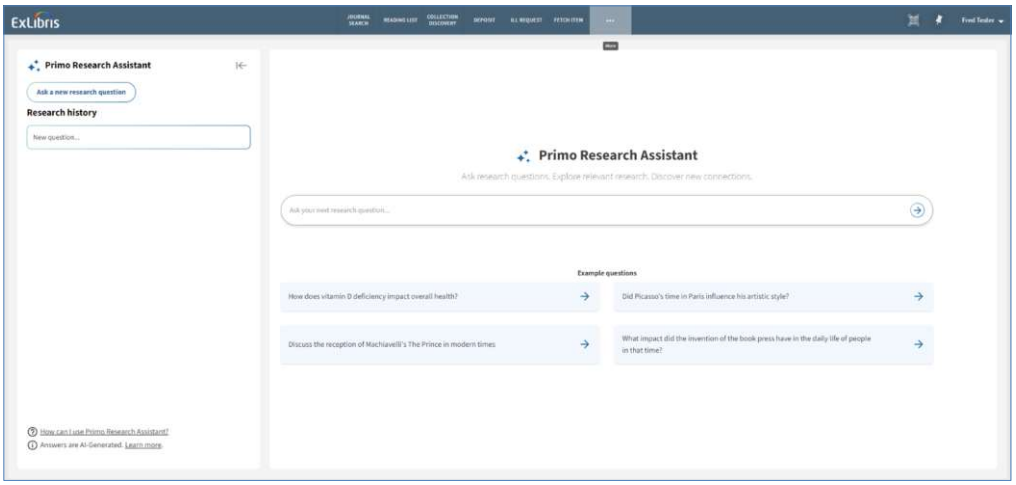
We are in the early stages of developing the Next Discovery Experience. This project encompasses 4 areas of focus that we hope will answer the following questions:

1. New UI: How does the new UI meet new user expectations?
2. Linked Open Data Experience: How can users use Linked Data in Discovery today?
3. User Engagement Analytics: How can you start understanding what your users are doing?
4. Discovery Research Assistant: When can you start using Generative AI in Primo and Summon? Feature Highlights include:

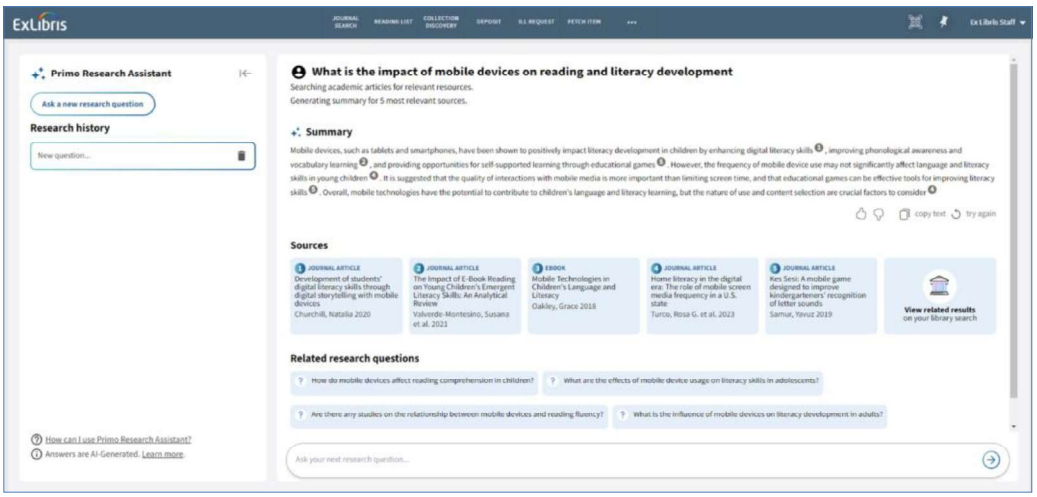
- Natural Language Queries
- Summary Answer with References
- Links to the Full Text
- Links to the Full Result List in Primo

We anticipate the Research Assistant being available for testing in Q4 2024

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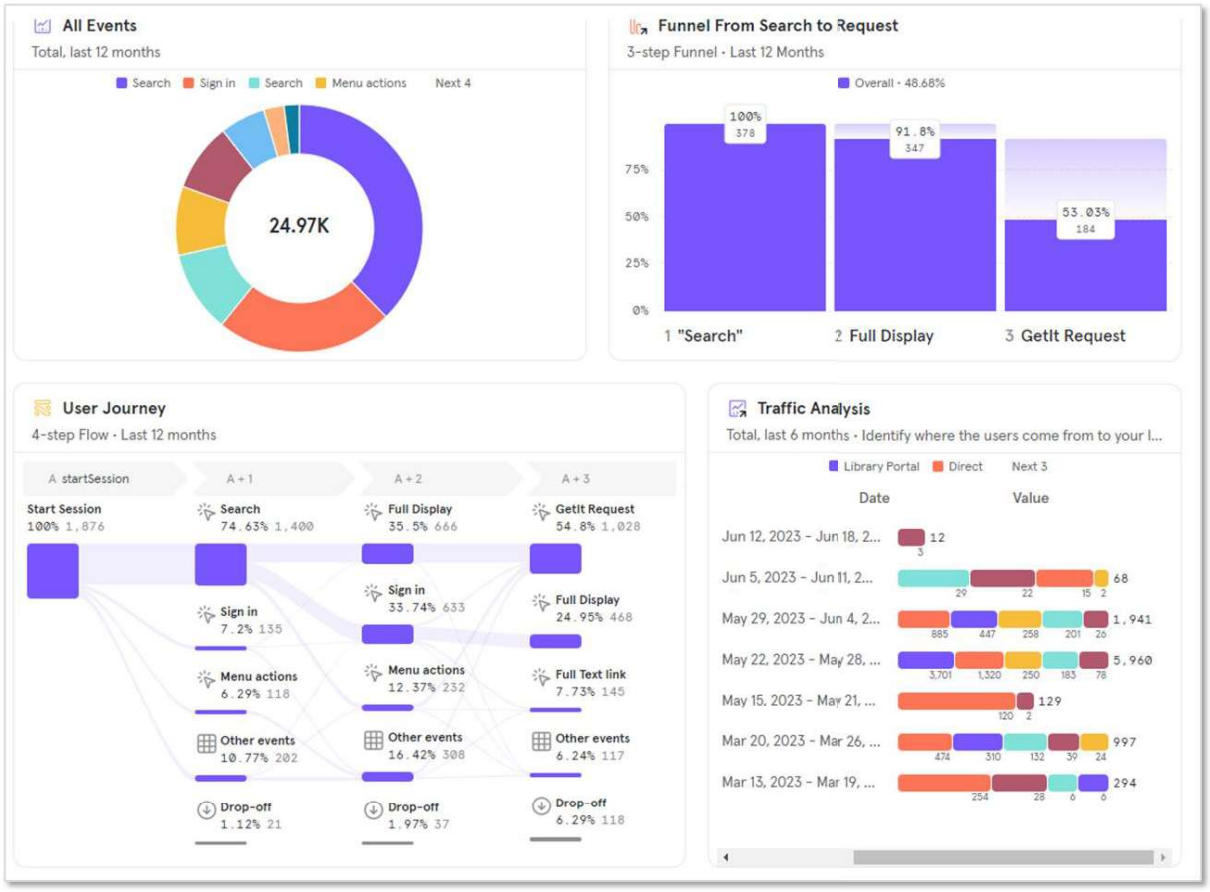


Primo Research Assistant



Primo Research Assistant

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User Engagement Analytics

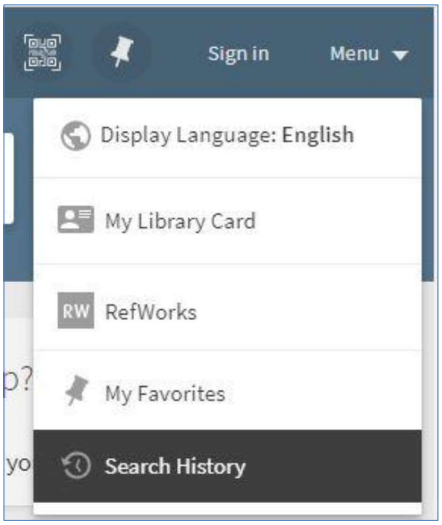
a) Web browser visual user interface

Ex Libris: Primo VE can be accessed by any device with a web browser.

b) Language interfaces (English/Spanish)

Ex Libris: There are translation options in the discovery interface. When a library user is logged into their account, they have the option to choose the language they would like the interface to appear in. Search results can also be limited by language.

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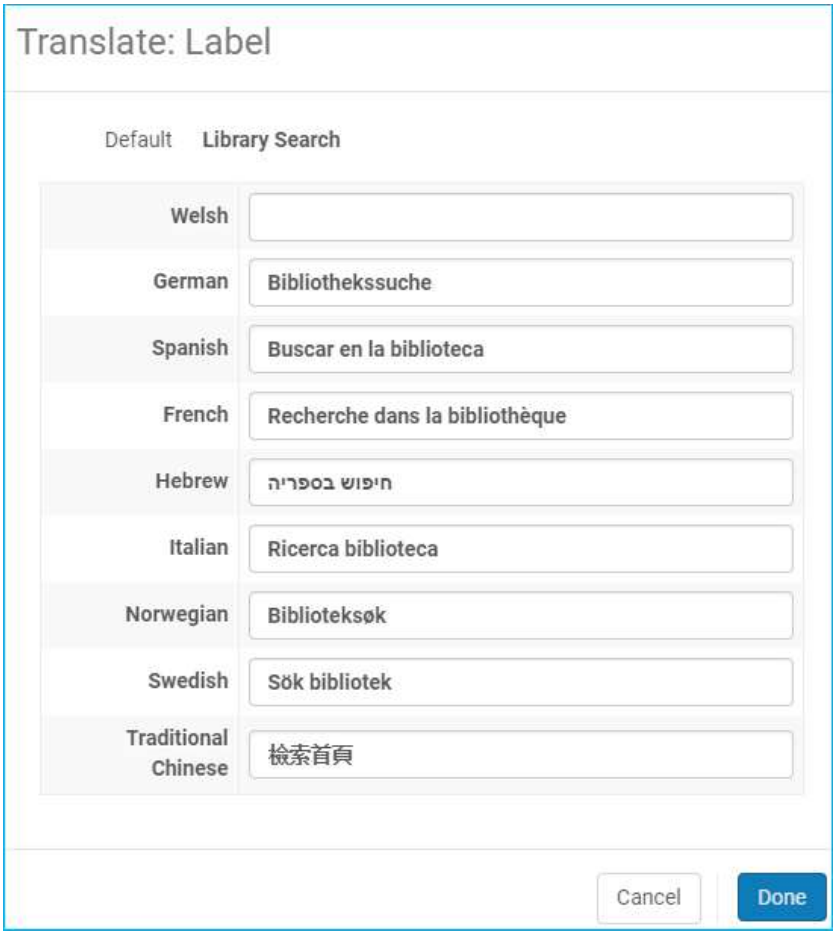


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Clicking the World icon allows you to change or add the translations into many other languages:

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You can also amend translations/names of search scopes, link resolver menus and notifications.

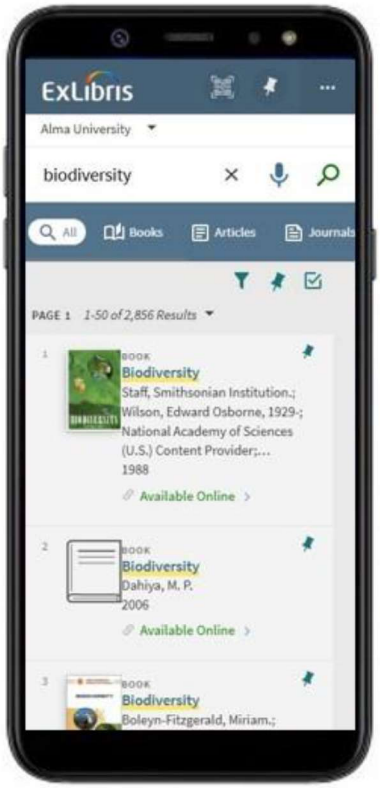
c) Smartphone interface with Responsive Design

Ex Libris: Primo VE provides a full responsive design for all devices by using Angular. The interface scales and re-arranges according to viewport size, so that functions are reachable and usable, whether used on smartphone, tablet or desktop.

One of the key advantages of Primo's User Interface is the way it displays over mobile and tablet devices, making Primo searches available from any device, any time. To provide the best "on the go" experience, we are using Angular HTML5 technology for responsive design.

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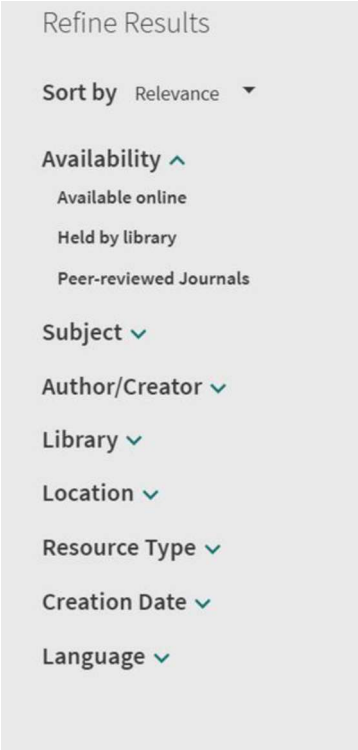


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d) Predictive Keyword Searching (auto-fill, auto suggest, predictive searching, faceted searching)

Ex Libris: The Primo VE auto-complete function supports users further, by offering suggestions as a user enters search terms. The suggestions are derived from popular queries in the Primo VE search logs; from journal titles and subjects contained in the Central Discovery Index and from authors, titles, and subjects from the institution's local collections. By taking into account the institution's local collection, Primo VE ensures that auto-complete suggestions are drawn from items that are available to the user.

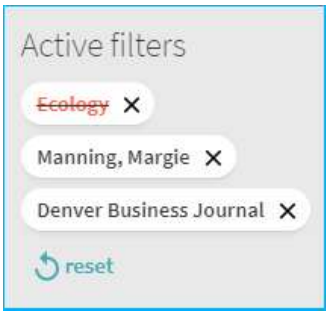
Facets are available in search results to refine result sets. Primo VE is implemented with a large number of facets. However, the library may modify the facets, add new facets, and change the order in which the facets are displayed. Facets delivered with Primo VE include collection, location, material type, language, publication date, online items only, and more.



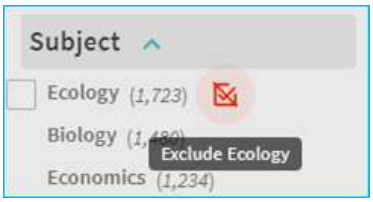
Search results are automatically refreshed when facets are selected or deselected. The Reset option allows users to remove all facet values applied to the current search.



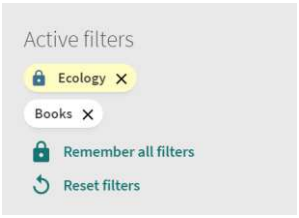
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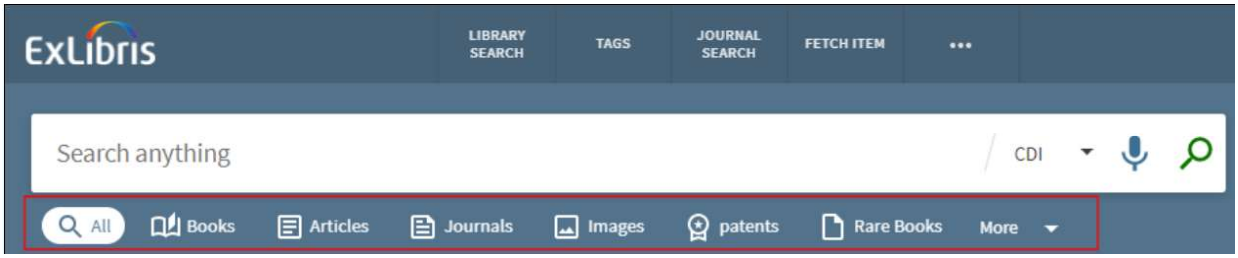
Primo provides the option to apply facets inclusively or to exclude certain values.



Primo provides the option to make the facets sticky for the session cross several searches , user can apply this using the Lock icon on active filters



Primo VE also includes a resource type filter ribbon that appears under the basic search box to enable users to filter their results by resource type.



e) Limiting searches to a specific library (institution) or groups of libraries within the Consortium.

Ex Libris: Administrators can control the facets that will be displayed, their order and the internal sorting of the values. Fields not part of the default facet display can be defined as local fields and assigned as facets. You can create a maximum of 10 local facet/search fields. The process entails

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defining the local fields as appropriate and then enabling for search and/or faceting within Primo VE.

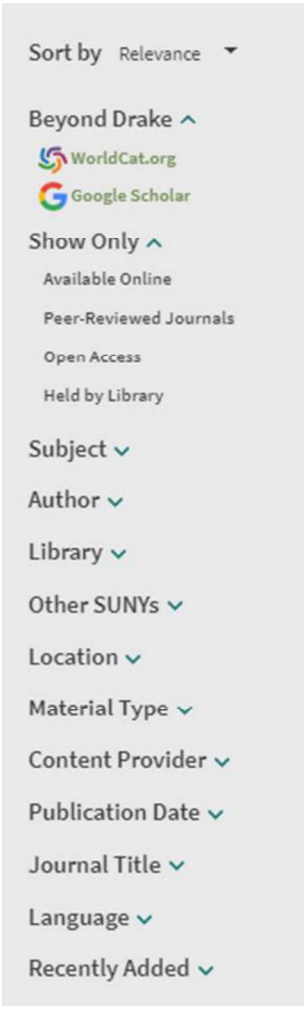
Institutions within managed networks can benefit from central administration of Primo VE, if they so choose. The Central Package, which is managed from the NZ, provides a standard look and feel that member institutions in collaborative networks can use either as is without further customizations or as a template to make modifications specific to their institution. However, individual institutions can choose which data from other libraries to show. Local administrators can choose to include/exclude physical inventory from member institutions, to display member libraries separately (with separate facets opening up below the library facet), or to include physical inventory from other members' libraries with the library facet.

Facets enable users to filter their search results based on specific metadata (such as resource type and author). When a facet is opened, it displays a list of values and the number of results found with each value. The Brief Results tab enables you to configure how facets appear in the brief results. For details on how information is mapped from the source records to facet values in Primo VE, see the Facet sections in Mapping to the Display, Facets, and Search Sections in the Primo VE Record.

Dynamic facets can be added by defining a local field using search and facet normalization rules; instructions are provided on our Knowledge Center: https://knowledge.exlibrisgroup.com/Primo VE/Knowledge_Articles/How_to_create_a_dynamic_facet_in_Primo VE_VE

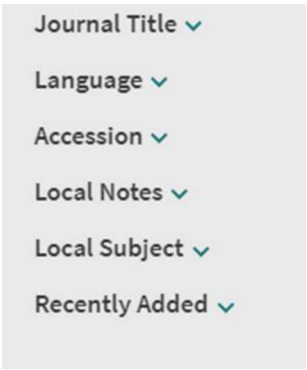
Below is an example of the facets displayed on SUNY Brockport's discovery page, which includes links for searching in WorldCat and Google Scholar, as well as a facet for other SUNY libraries:

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Instructions for creating an external search facet are provided at the following link:
https://www.orbiscascade.org/programs/systems/pcsg/Primo VE-ve-toolkit/external-search-facet/

The University of South Carolina provides facets for the Accession number, Local Notes, and Local Subject:



f) The ability to narrow returned search results

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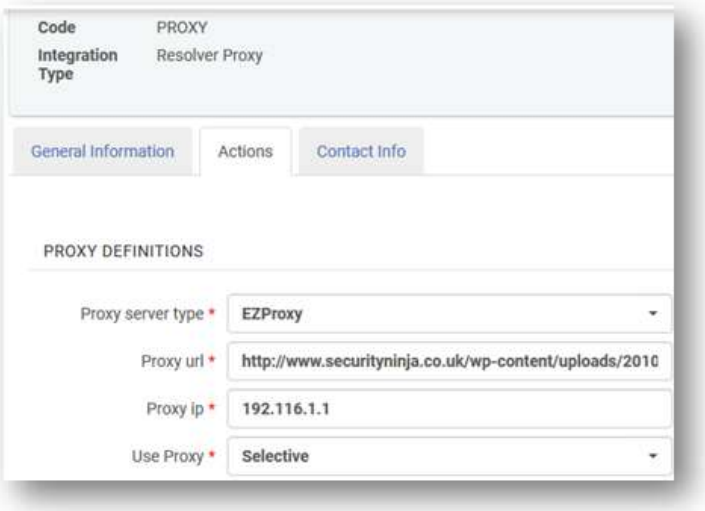
Ex Libris: Search results can be narrowed using the facets described above.

g) Authentication by patron type to access secure websites and restricted resources (EZproxy ® (OCLC))

Ex Libris: Alma enables you to permit or deny access to electronic resources (portfolios, services, or collections) from specific libraries and campuses within an institution. When access is limited, patrons searching or browsing in Discovery from a restricted location (based on their IP address) do not see the resource in the search results, and cannot access the resource contents. You can configure IP ranges for a library in Alma. The IP ranges identify a patron's location when considering resource availability and when holdings by location in a Locations Ordering Profile.

Integrated into Alma's embedded link resolver is a redirection into a proxy server instead of directly to a vendor platform, to provide access to the full text of a resource.

As with all integrations between Alma and other systems, the definition of the institution's proxy server is managed in an "External System Integration Profile". This profile encapsulates all the needed definitions for the link resolution component to create a correct URL to the Proxy Server. Alma supports EZProxy, LIBProxy, OpenAthens, HAN, and WAM.



The Alma Link Resolver responds to an incoming OpenURL and changes it to an electronic link by automatically including additional proxy information in the resolved URL. Some institutions use a single proxy server, in which case one proxy profile should be defined. If an institution uses several proxy servers, a proxy profile should be defined for each proxy server. You must then define the relevant proxy for each electronic collection, service, or portfolio.

Alma supports a number of authentication schemes, which are defined using Alma's Integration Profiles. An institution may choose to use more than one. Supported authentication schemes include:

- LDAP

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- SAML2 based authentication such as Shibboleth
- OAuth based authentication with Facebook or Google
- CAS

OpenAthens can integrate with ADFS, LDAP or SAML.

h) Link from the Discovery Service to multimedia and e-content (e-books, e-journals, videos, e-audiobooks)

Ex Libris: Primo VE supports the ability to harvest resources from the library catalog and other local repositories. Through an intuitive interface, end users can discover and access resources from the Alma Institution Zone (local institutional holdings, digital collections, etc.) and commercial and open access resources through the Central Discovery Index (CDI). The CDI includes commercial and open-access content from primary and secondary publishers and aggregators. Results are based on the full-text, abstracts and metadata for articles, books, newspaper articles and more. Primo VE presents results from shared resources and local resources as well as from the central index in a single merged list, sorted by relevance. We have forged agreements with hundreds of publishers and content aggregators, and we continue to work with our customers to seek out the broadest and highest quality content to extend the Central Discovery Index (CDI). Just a few examples of content providers included in the CDI are Gale, Wiley, JSTOR, CrossRef, Sage, SpringerLink, ABC-CLIO, and Elsevier Scopus. The Central Discovery Index includes over 5 billion scholarly resources of global and regional importance. The records include a mix of scholarly material—primarily articles and e-books—but also conference proceedings, newspaper articles, audio, video, reviews, legal documents, and more. The number of resources in the CDI is constantly growing as additional resources are added.

Multi-media resources are supported in two main ways. First, collections of e-resources such as video collections like Alexander Street are available for activation in the community zone and discoverable by patrons in Primo.

The second way that multimedia resources are supported is through local storage and management using Alma Digital. As a unified solution, Alma is designed to manage a broad range of digital collections, in addition to electronic and print resources. Digital content managed in Alma utilizes the same unified workflows as other resource types, leveraging the same consistent user interface while providing extended functionality to accommodate the special needs of digital collections.

Depending on the use case and needs of NCCCS both options may be applicable.

E-resource Management:

Alma is a unified platform and handles resources of all types, regardless of format. This means that much of the functionality for e-resource management uses the same workflows as with physical resource management, allowing for consistent training, reporting, and a platform for workflow enhancements that applies to resources of any type.

Alma's workflows support streamlining a variety of purchasing models for electronic journals and electronic books, including:

- Individual title subscriptions;
- Individual title purchases;

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- Full collection subscriptions;
- "Selective" (partial) collection subscriptions; and
- Patron-driven acquisition of e-books.

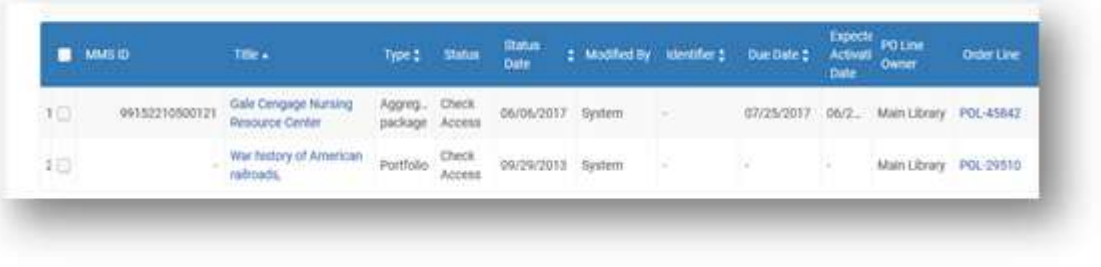
A Central KnowledgeBase (CKB) managed, maintained and updated by Ex Libris, tracks the most up-to-date vendor offerings in the shared data services environment. When acquiring a new collection, libraries may search the CKB and, when they find the collection they wish to acquire, initiate an acquisition workflow based on either the full collection or a selective subset of titles they have licensed from the vendor. The workflow may begin with a trial, pass through purchasing, and ultimately end up in activating the resource for all users.

Search for and Order an Electronic Resource:

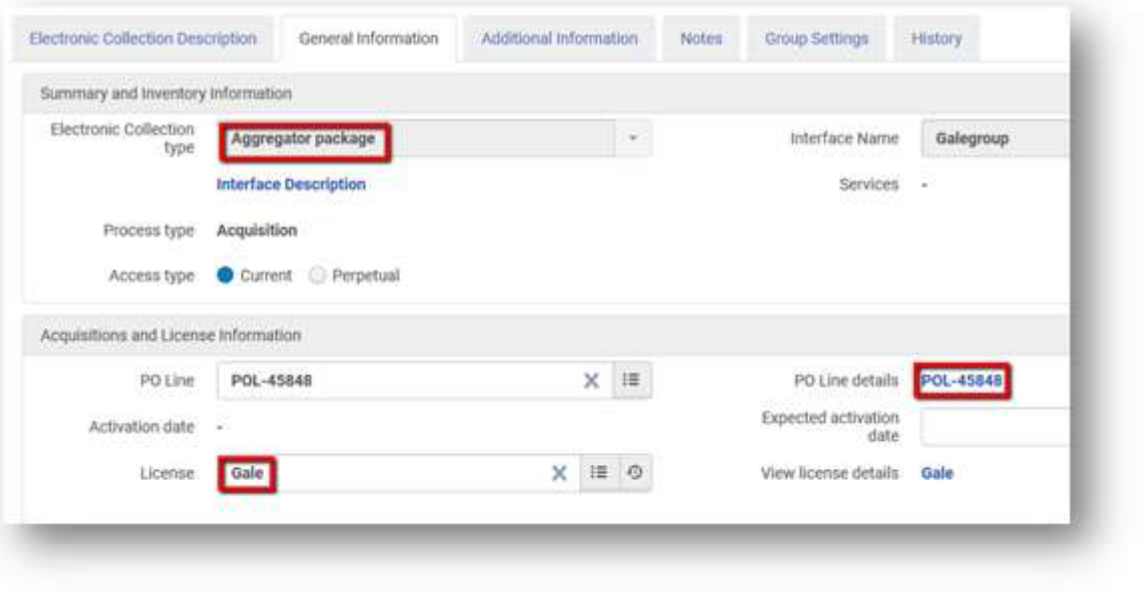


Based on agreements with the vendor, once the order has been sent, the library will be able to activate the e-resource. Staff members activate new electronic resource material in the system using a wizard from the Activation Task List.

Here, a staff member performs various activities related to activating the resource, including verification that the resource is available (using Alma's embedded link resolver functionality), determination of the specific contents and coverage of the resource, and then making it available for discovery by the end user.



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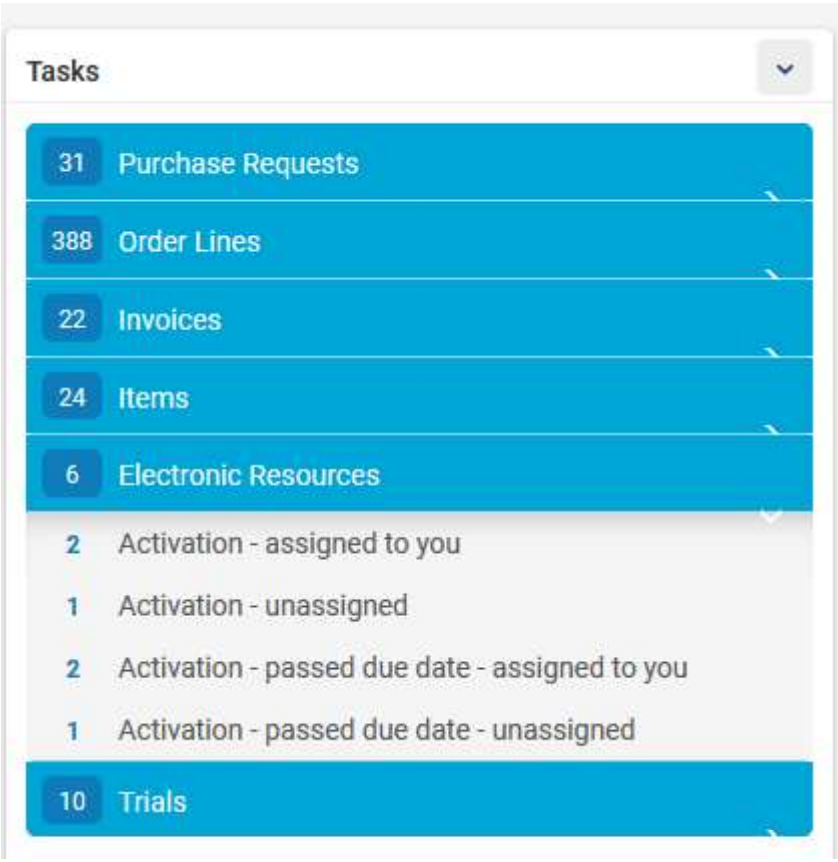


Once activated, descriptive metadata (bibliographic records) for the titles will automatically be added to the local catalogue. Additionally, link resolution is built in; Alma will respond to any requests from discovery environments, with a menu with links to full text for all resource types: print, electronic and digital.

When a subscription is nearing conclusion, Alma will prompt staff to initiate an evaluation process for the collection. In the evaluation function, staff may view information about usage, cost, and how the collection has changed, in order to decide whether to renew or cancel the subscription. Cancellation will automatically remove the descriptive records from the catalogue.

Alma supports assignment of tasks to staff members, and communication and notifications to users. A staff user will see due tasks in the Tasks widget on their dashboard:

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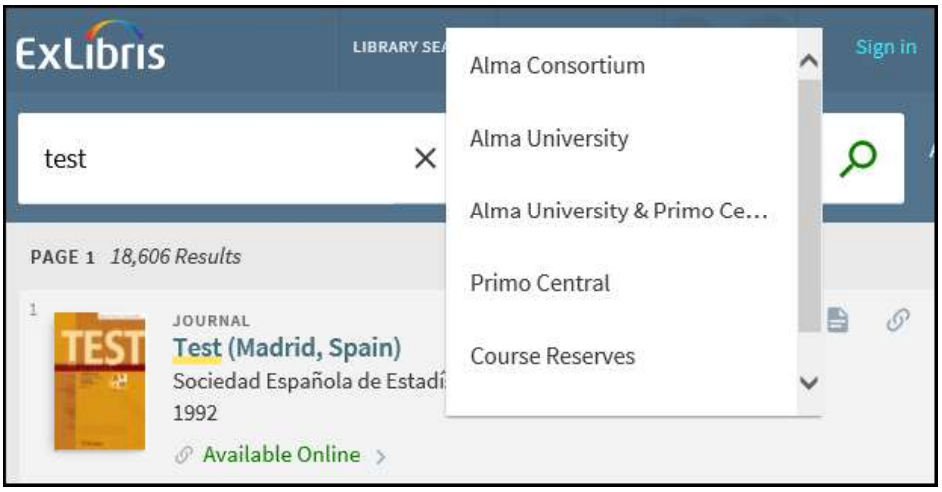


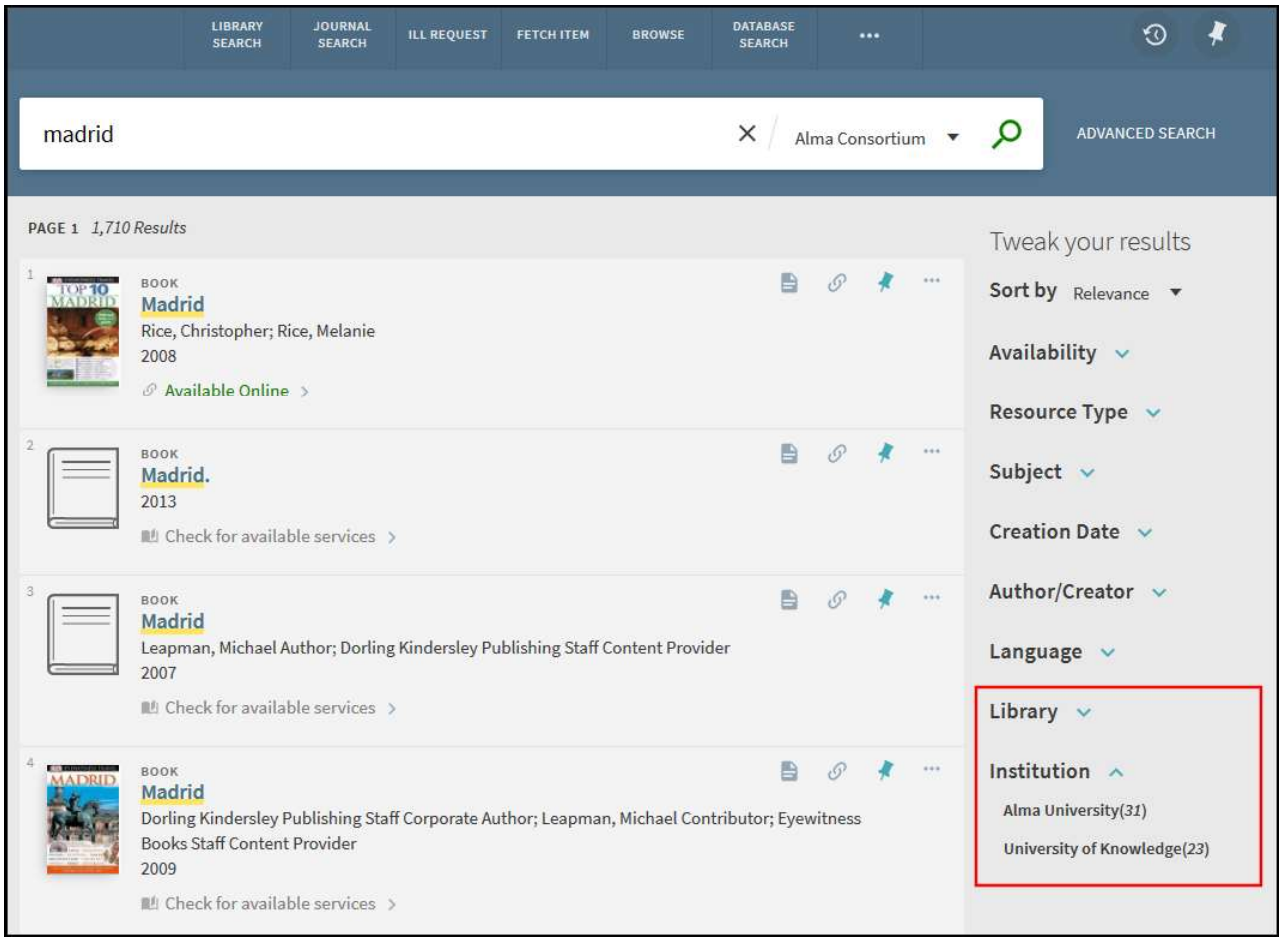
i) Capabilities and vendor support for each Library's page level customization

Ex Libris: Yes - each member can have their own customized view.

Primo VE supports collaborative networks, which are groups of institutions (such as a consortium) that may share the management of metadata records and/or other Alma services (such as fulfillment or resource sharing). To support collaborative networks, you can configure a Primo VE view to search all institutions, receive availability of print resources that are held by all institutions, and request applicable print services for resources that are held by all institutions.

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j) Search box widgets

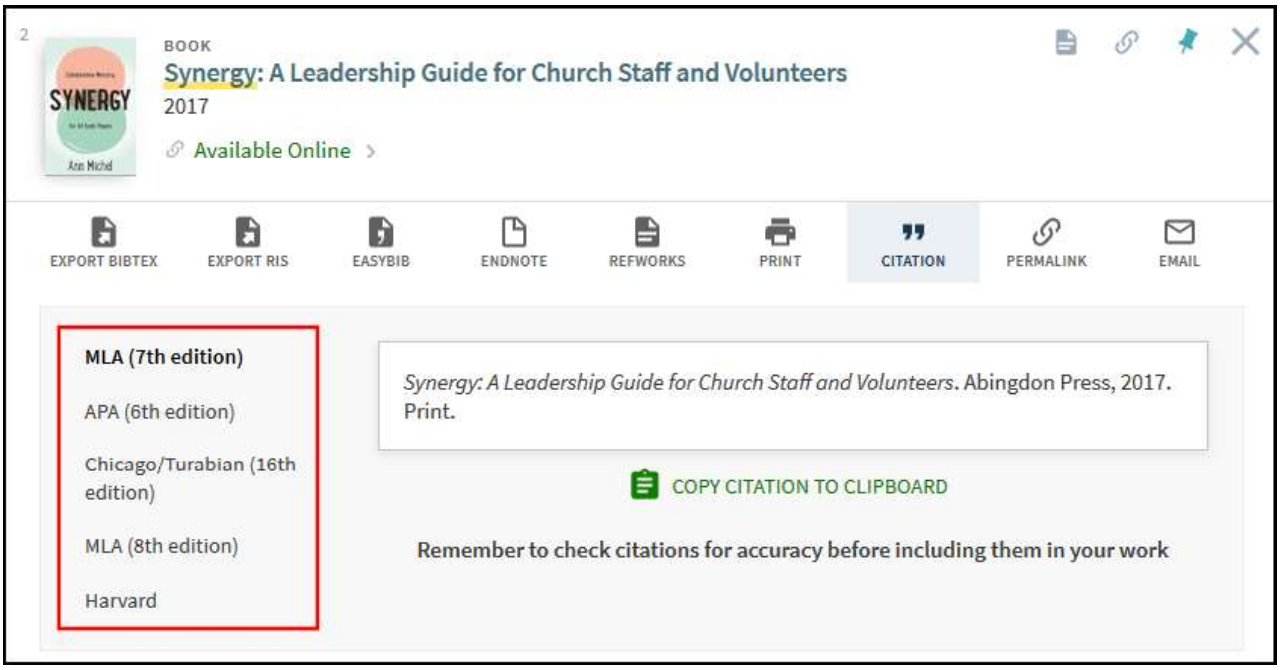
Ex Libris: Thanks to the "Open Search" compliance – a simple Primo search box can be integrated in a webpage, browser search box or it can be called via a mobile phone. It can be smoothly integrated on an internal portal or a public website.

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Libraries have the freedom to create several local search boxes that can push search requests to different subjects or collections. It can be smoothly integrated in your library or institution website.

k) Auto-generated citations

Ex Libris: Out of the box, Primo VE supports the following citation styles: APA (6th edition), Chicago/Turabian (16th edition), Harvard, MLA (7th edition) and MLA (8th edition).



Primo also allows you to use any citation styles that have been defined with the Citation Style Language (CSL) and stored in GitHub's CSL Style Repository.

Institutions can use the Citations Styles List page to manage and include additional citation style languages.



	Code	Label	Order	Enabled
1	modern-language-association-7th-edition	MLA (7th edition)	1	True
2	apa	APA (6th edition)	2	True
3	turabian-fullnote-bibliography	Chicago/Turabian (16th edition)	3	True
4	modern-language-association	MLA (8th edition)	4	True
5	harvard-kings-college-london	Harvard	5	True

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l) Single sign-on

Ex Libris: Primo VE supports single sign-on. Users can sign in directly from search results. Primo can authenticate users using either a federated single-sign-on authentication system (for example based on the SAML 2.0 browser SSO Profile) or using non-federated authentication. Currently, non-federated authentication options include LDAP-based authentication.

m) Usage statistics, analytics, top queries

Ex Libris: Primo VE Analytics allows the library to run reports on discovery activity. Primo Analytics is provided with standard out of the box reports, but the library can also adapt these and create its own reports, or use/adapt reports shared by other libraries in the Community Zone.

Primo analytics allows reporting on End User Actions in Primo, Types of devices used in Primo sessions, Primo Facet usage, Primo Popular Searches, Primo Sessions and Primo Zero Result Searches.

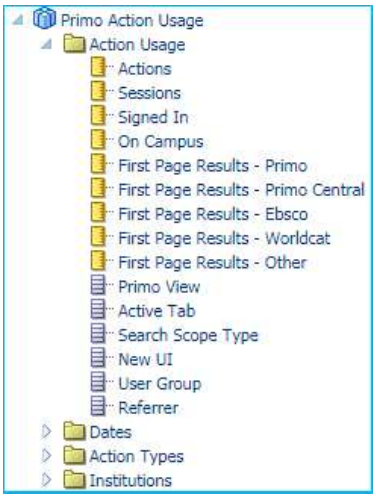
Please find below an example of Most Popular Searches report below:

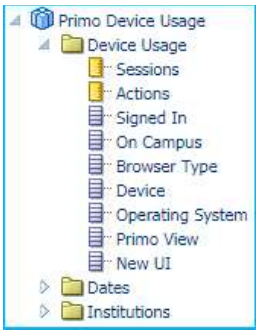
Month (date) Mar 2018

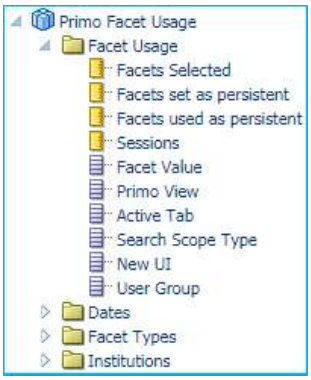
Search String	Searches	Results	Signed In
cell	26	20,571,918	9
fire and fury	6	51,010	4
oireachtas	5	5,220	5
climate change	4	3,538,159	2
primo	3	226,517	2
airliner world	2	7	0
brief guide parliament	2	128,457	0
cell online	2	3,191,579	0
enquête sur les normes éthiques et politiques	2	174	2
global warming	2	913,053	2
mdecine	2	16,082	1
nasa	2	1,353,590	1
pubmed	2	19,380,819	2
trying to save piggy sneed	2	145	2
blog	1	1,450,988	1
crustaceana	1		1
dictionnaire	1	85,705	1
droit	1	528,017	1
ebsco	1	45,236	1
feminism	1	443,365	1
histoire	1	887,695	1
history	1	31,090,500	1
how parliament works	1	506,897	1

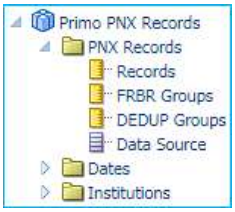
The following subject areas are available for Primo:

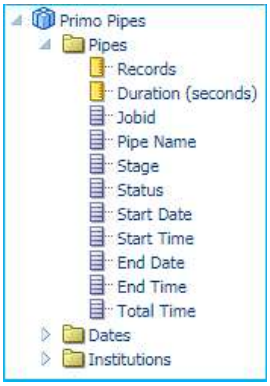
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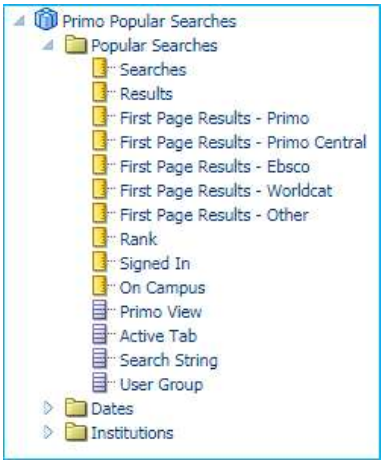


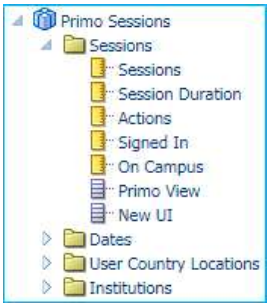


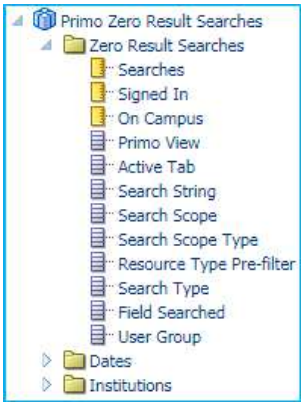






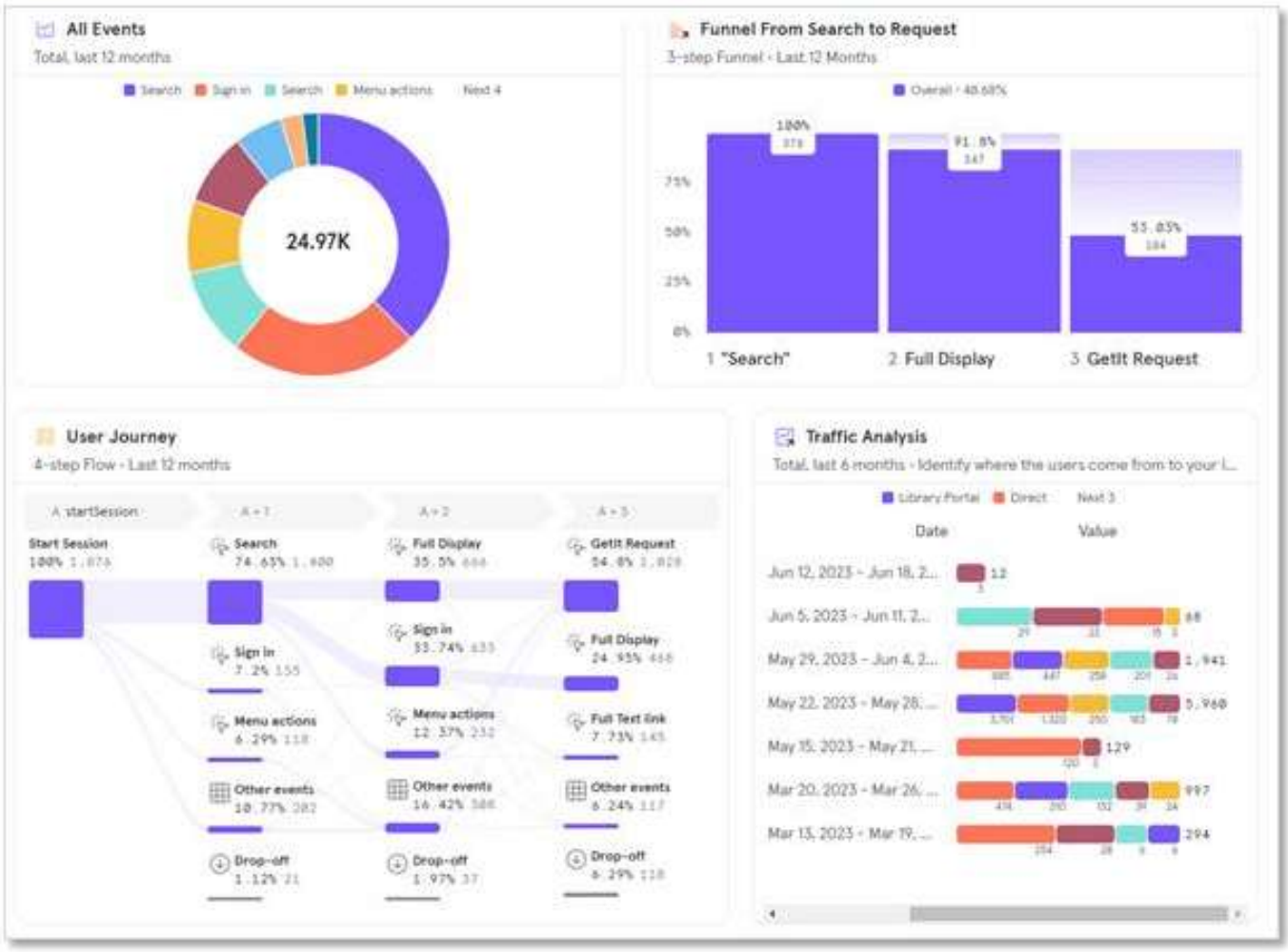






As part of the Next Discovery Experience (NDE) vision for the coming years, we are introducing an advanced analytics platform that utilizes Mixpanel. We chose an integration with Mixpanel because of its dynamic and interactive analytics that complement the NDE by providing actionable insights and a more granular view of user activities and journeys.

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Mixpanel Integration with NDE

Mixpanel is a web and mobile analytics platform that helps businesses track and analyze user interactions in their digital products. For NDE, it tracks anonymous real-time data about user behaviour, enabling libraries to understand the following activity to make data-driven decisions and to improve user engagement and retention:

- Get to know patrons better.
- Analyze user journeys to improve user experience.
- Identify drop-offs in user behavior to increase success metrics.

In addition, Mixpanel enables customers to generate insights and smart recommendations and to go beyond basic data collection and reports.

We are currently in the process of integrating Mixpanel with Primo VE, by sending a subset of Primo VE events directly to Mixpanel. This enables us to build out-of-the-box (OTB) dashboards that provide real-time, event-based insights and learn the capabilities of Mixpanel.

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We are working closely with the newly established Primo Engagement Analytics Focus Group, with participants from the following institutions: Dartmouth College, Freie Universitaet Berlin, University of York, SLSP consortium, University of Toronto, Drexel University, Weizmann Institute of Science, University of Texas at Dallas, University of Edinburgh and University of California. Where we have an ongoing collaboration and discussions on different aspects of the Mixpanel integration.

We have also initiated an Early Adoption Program for a limited number of Primo VE customers. Customers that registered to this program can use Mixpanel Analytics alongside their current OBI Analytics on top of their existing Primo VE views. The roll out of this program is planned for September – December 2024.

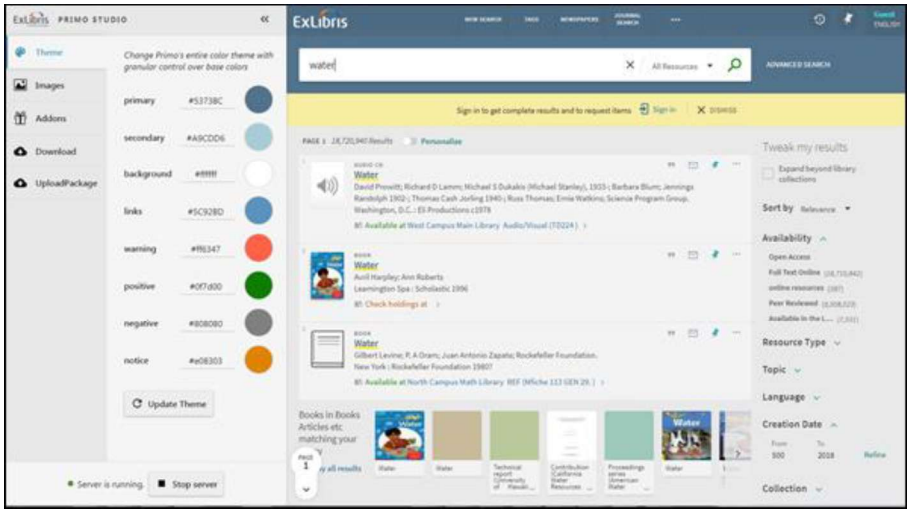
For additional product documentation and videos, see Mixpanel for Primo VE - Early Adoption and Mixpanel for Primo VE Customers.

n) Customization of the Discovery Service at the HTML/XHTML/CSS level

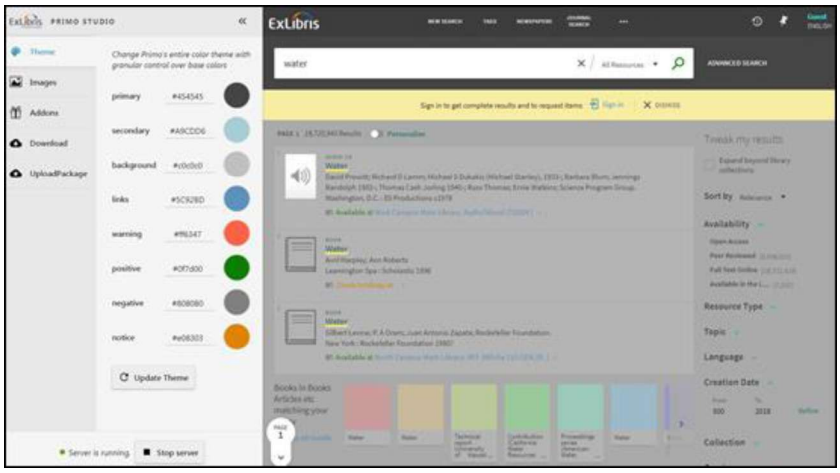
Ex Libris: The Primo UI is very flexible and can be customized according to the institution's branding by adjusting the standard Primo CSS file. The CSS-driven UI enables the library not only to change fonts and colors but also to hide UI components and change their layout. Primo is highly customizable and flexible thanks to the Open Discovery initiative and even more now with Primo Studio. Primo Studio allows users to easily configure Primo New UI.

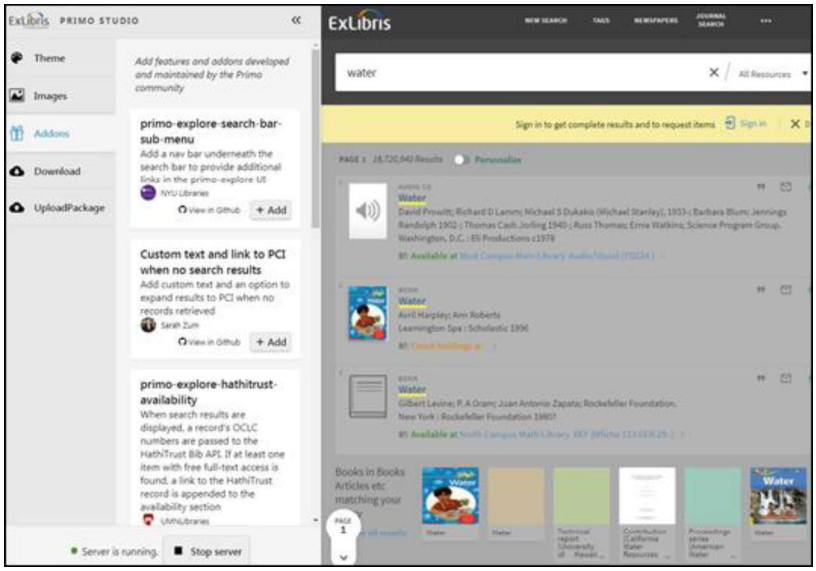
Primo Studio allows you to quickly and easily:

- Configure your color theme.
- Upload files:
    - Library Logo
    - Favicon
    - Resource Type Icons
- Add features developed by the Primo Customer community
- Upload an existing package and work on it.
- Download the customization you created as a zip file that can be uploaded.



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For more information about Primo Studio, please see the following video:

https://www.youtube.com/watch?v=chheoAcNpnQ

Staging port for testing configurations

Ex Libris: The Primo VE sandbox environment is designed to provide a means for you to develop, test, and train without making your changes visible to patrons and compromising the data in your production environment. The Primo VE sandbox environments are completely isolated from your Primo VE production environment so that any actions performed in the sandboxes do not affect your production environment and any actions performed in your production environment do not affect the sandboxes.

As part of Primo and Alma standard offering, Ex Libris provides a standard sandbox for both Alma and Primo VE. The standard sandbox contains a significant amount of data (about 70,000 records) provided by Ex Libris that you can use for staff training and testing business scenarios, new

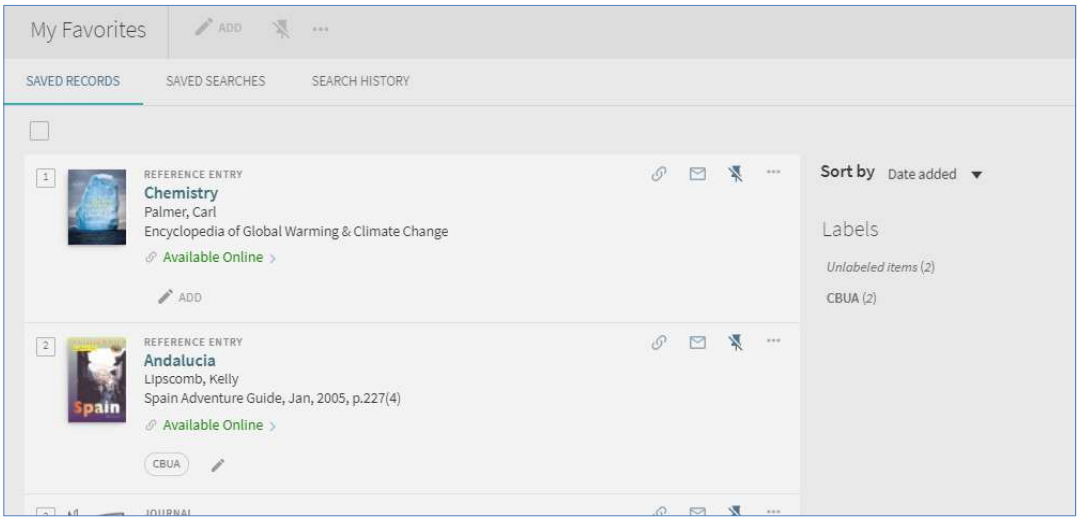
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enhancements, and integration with other systems, without affecting your production environment. Changes in the Alma sandbox are seen within the Primo VE sandbox.

p) Profiles for Personalized Library Services

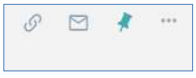
Ex Libris: Primo VE provides several tools to enhance the user experience and provide flexibility in tailoring Primo VE to individual preferences.

Primo VE allows users to save search results to a Favorites list and to save searches to rerun later. Users can also configure email or RSS alerts for saved searches so can be informed when new results for the search are added to Primo VE. Search results can be saved, emailed or printed, and users can export citations from the list to third parties.

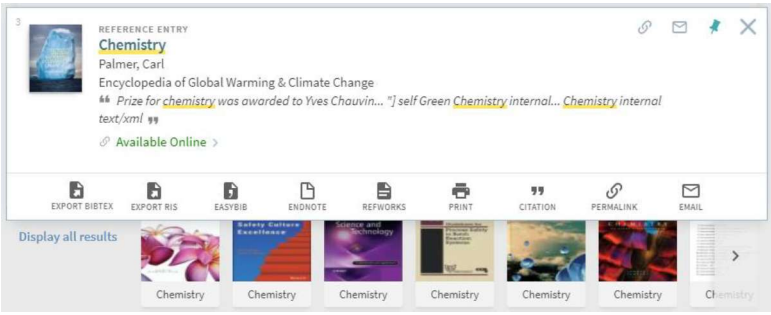




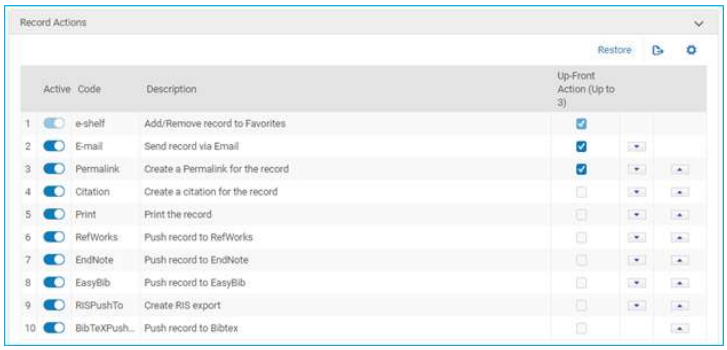
By default, Primo VE displays the Permalink, E-mail and Favorites icon in the brief view. Clicking the Dots icon provides further options including push-to options for reference management systems, printing and citation (all options are also displayed in the full record view):



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The order of the Record Actions can be sorted according to your needs. In addition, you can define the actions (excluding the Favorites option) to appear directly in the brief view.



A newly implemented search bar in the user's My Favorites > Saved Record section, allows users to easily search for their records of interest.



Users can also add labels to their favorites in order to organize them.

Users can also personalize search results by setting their preferred discipline preferences, which are retained during the session for guests and unsigned users and between sessions for signed-in users. Personalized settings boost the rankings of electronic records that match their preferred disciplines. This type of ranking is particularly helpful for ambiguous searches, where search results come from a variety of disciplines or include a large set of articles. It does not replace topic facets or act as a filter. It simply adjusts the ranking algorithm to the general discipline of the user.

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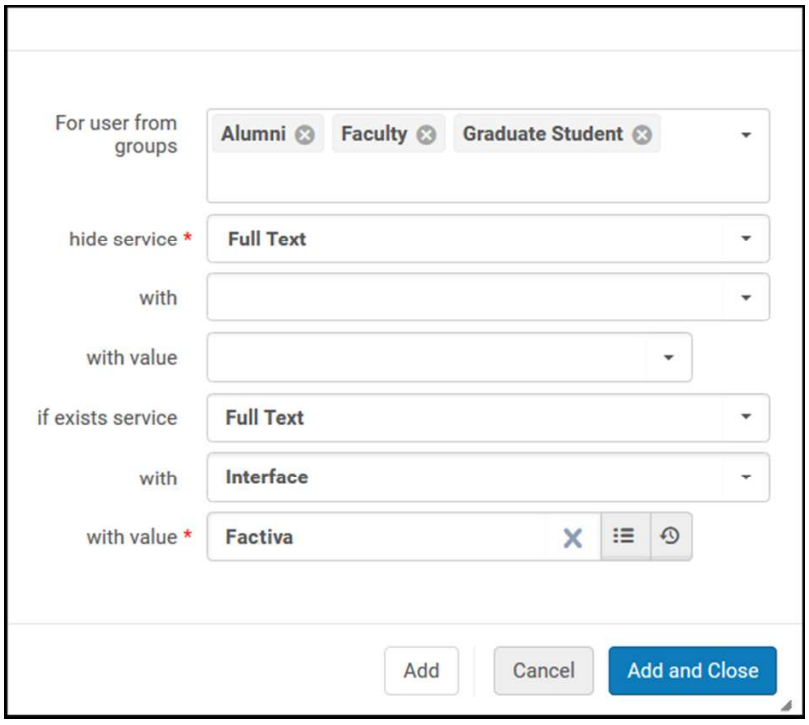


The Discovery Interface **Display Logic** options enable you to configure the following discovery options for Primo VE (such as hiding fulfillment services, configuring general electronic services (GES), and configuring the order of services). Part of these rules include options to hide or display services based on a patrons user group.

Display logic rules define when the following fulfillment services should not appear in Primo and Primo VE:

- Booking request – Request to reserve an item at a specific time.
- DB service – Link to the core interface of a third-party database.
- Digitization – Request to have an item or part of an item scanned so that it can be viewed on a computer.
- Full text – View the full text for an item online.
- General electronic services – Links that can be created by an institution for any purpose. For information about general electronic services (GES), see General Electronic Services.
- General hold request – Request to have an item held at a circulation desk when the holdings record is empty or request an issue for a journal regardless of whether any of its issues have been cataloged. For more information on general hold requests, see Creating a General Hold Request.
- Hold request – Request to have an item held at a circulation desk.
- Open Access – View open access full text (for example, hide open access if full text exists or hide full text if open access exists).
- Purchase request – Request an item to be purchased. For more information, see Purchase Requests.
- Representation Delivery Service – View a digital item.
- Resource sharing request – Request to retrieve an item from another institution when the patron's institution does not have the item.
- Selected full text – Links to full text (full text may not be available to all articles in the Journal).

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ii. Explain how the following specifications are incorporated in the proposed solution:

a) E-Commerce Interface

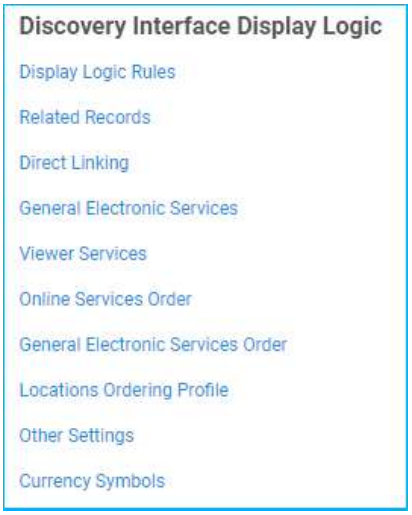
Ex Libris: Primo VE does not provide options for an e-commerce interface. Patrons can suggest that the library purchase a title using the purchase request options. NCCCS libraries can customize the menu links in Primo VE and link out to an e-commerce interface.

b) URL Link resolver

Ex Libris: Alma and Primo VE allow you to granularly define the Link Resolver's behavior and appearance.

Apart from configuration that you do on specific resources, Alma provides most link resolution configuration under the "Discovery Interface Display Logic" menu.

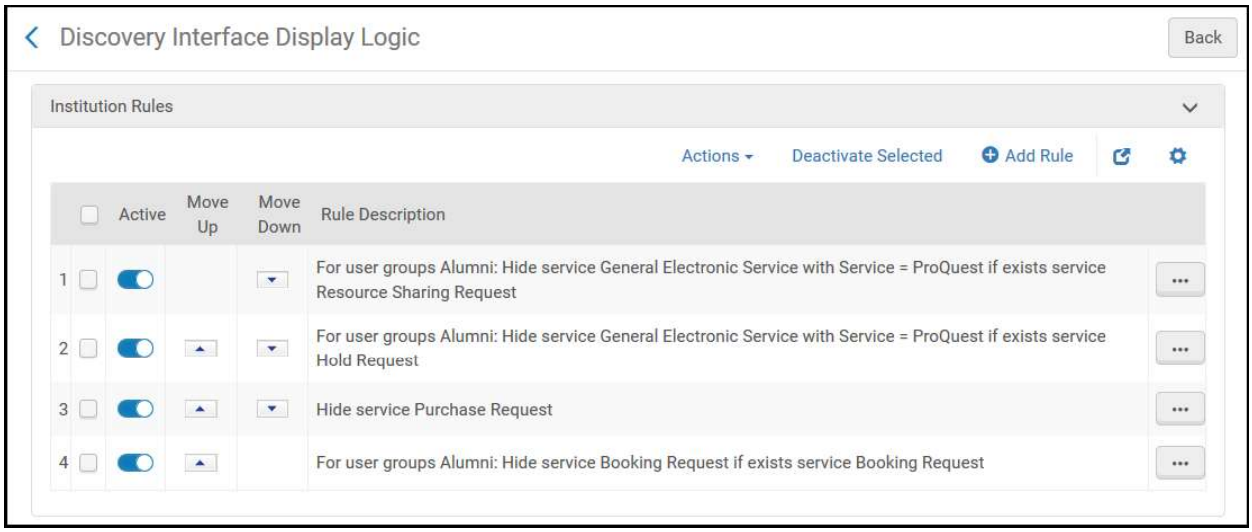
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Display logic rules define when the following fulfillment services should not appear in Primo. The following services can be set against parameters such as availability of a resource, user group and library/location:

- Booking request – Request to reserve an item at a specific time.
- DB service – Link to the native interface of a third-party database.
- Digitization – Request to have an item or part of an item scanned so that it can be viewed on a computer.
- Full text – View the full text for an item online.
- General electronic services – Links that can be created by an institution for any purpose.
- General hold request – Request to have an item held at a circulation desk when the holdings record is empty, or request an issue for a journal regardless of whether any of its issues have been cataloged. For more information on general hold requests
- Hold request – Request to have an item held at a circulation desk.
- Purchase request – Request an item to be purchased.
- Representation Delivery Service – View a digital item.
- Resource sharing request – Request to retrieve an item from another institution when the patron's institution does not have the item.
- Selected full text – Links to full text (full text may not be available to all articles in the Journal).

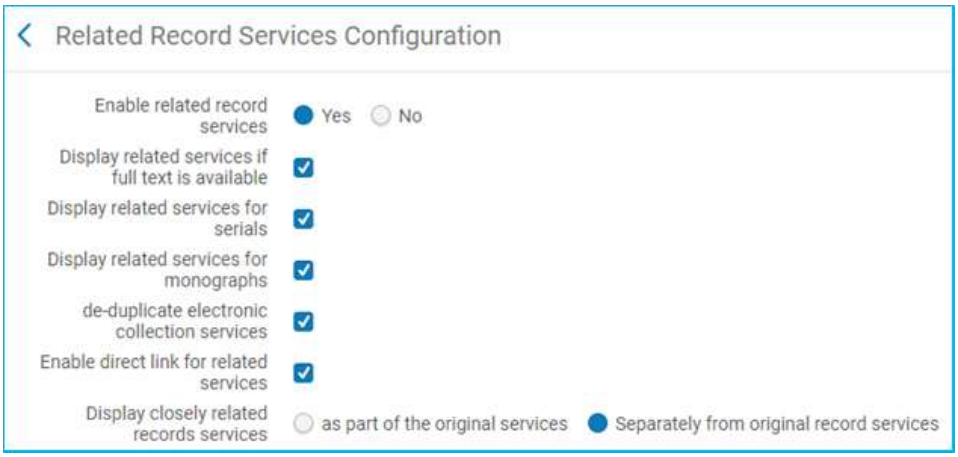
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For more information, please refer to:

https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/030Fulfillment/080Configuring_Fulfillment/100Discovery_Interface_Display_Logic

While the Discovery Interface Logic restricts services according to your preference, the Related Record Services Configuration page enables you to configure the electronic services for related titles that appear in the Primo.



- Display related services if full text is available
    - Display services for related records if full text is available. Services for related records are not shown if there is a full-text service for the original record in the OpenURL.
- Display related services for serials
    - Display related services for serials (which have a Journal material type).
- Display related services for monographs
    - Include related services for monographs (which have a Book material type).
- Deduplicate electronic collection services

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    - Use deduplication of electronic collection services for remote related services. This causes Primo to display only one service if related records are associated with the same electronic collection.
- Enable direct link for related services
    - Turn on the direct-linking feature.
- Display closely related record services
    - How closely-related services (which are defined with MARC 773 or 774 fields in the bibliographic record) should appear:
        - **As part of the original services** – Closely-related services are placed in the list of regular services in Primo View It with no indication that these services are for related titles.
        - **Separately from the original record services** – Closely-related services are placed under the Services for Related Titles section in Primo View It.

In addition to services found in your own collection (such as full text, requests, and so forth), Alma enables you to define general HTTP services (such as searches in ProQuest dissertations and Amazon.com, Ask a Librarian, and so forth) to present to patrons in Primo.

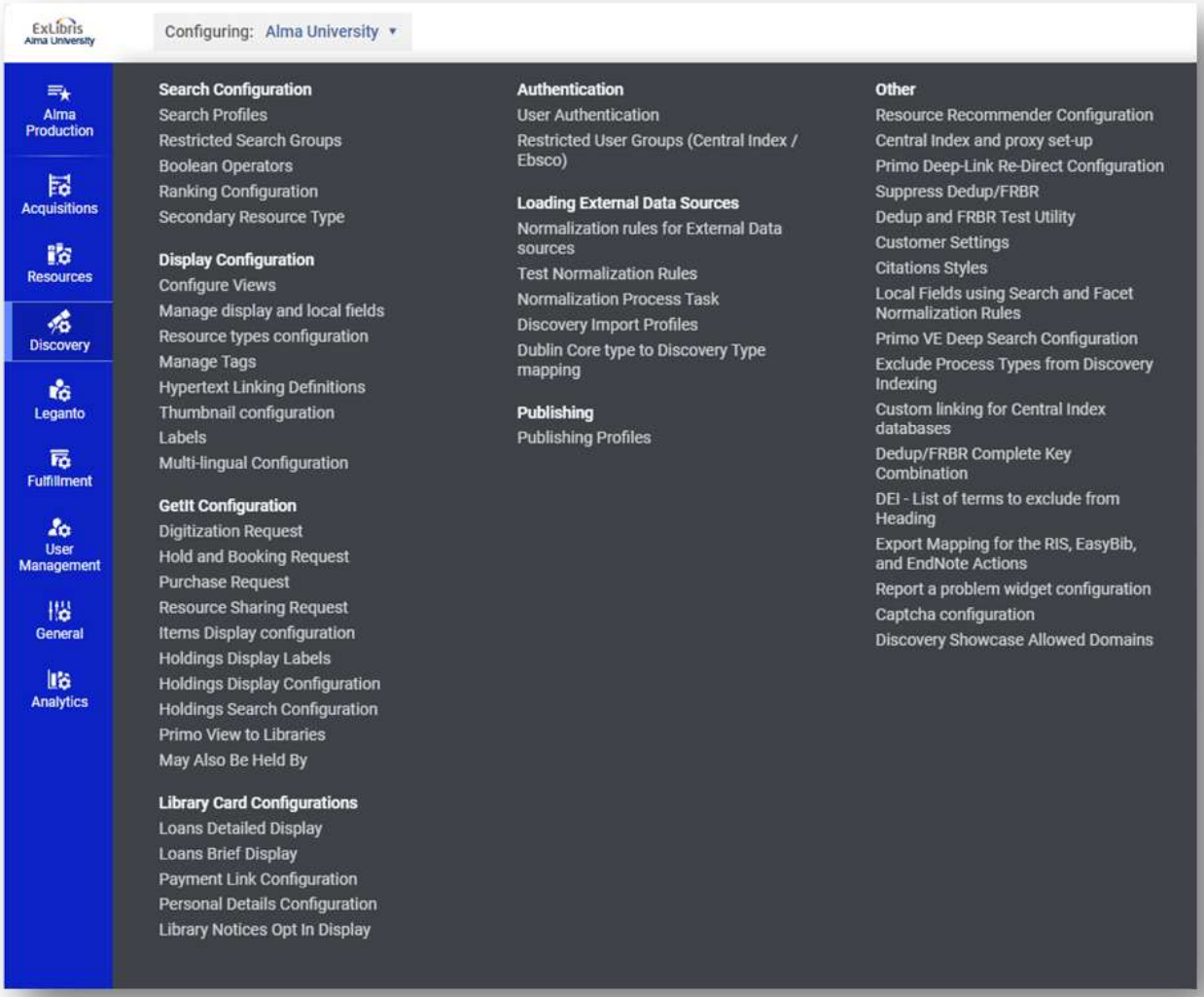
In order to create a general electronic service, you must be familiar with the syntax of the service's URL, which includes any parameters that are required to query or access specific information from the service. The service's URL along with OpenURL context object attributes returned from Alma's link resolver are used to define the URL template, which Alma uses to create the service link that appears in Primo View It and/or Get It.

In addition, you can configure the following display settings for general electronic services:

- Specify service order
- Define display logic rules

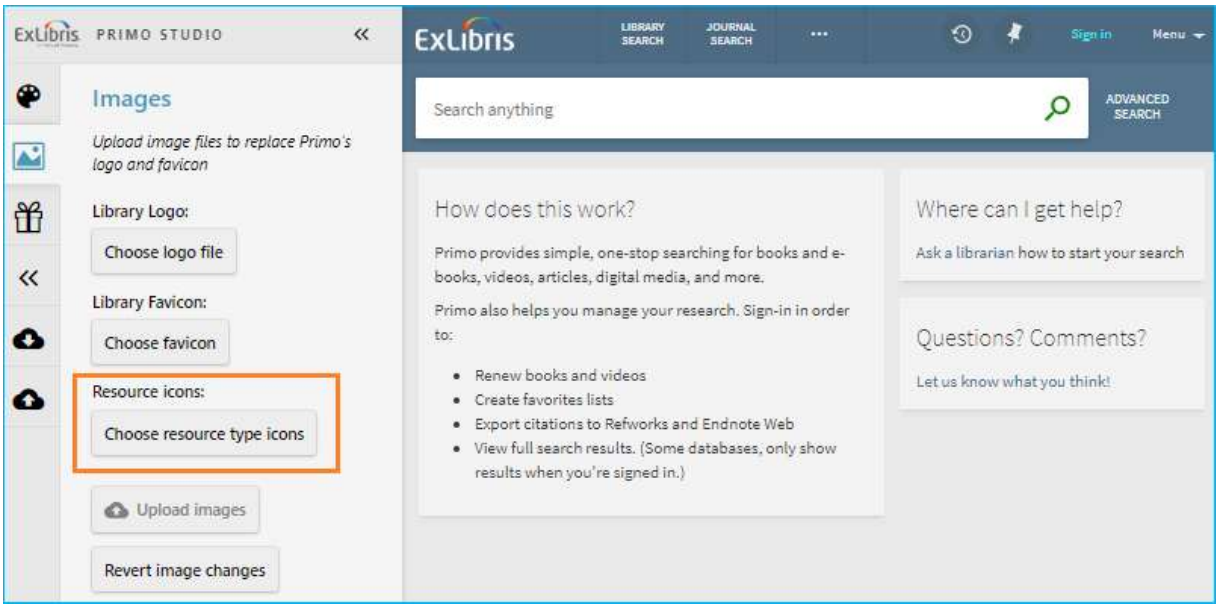
As Primo configuration is entirely done in Alma, you will also find many configuration options in the Discovery configuration menu, where you will also find customization options for resource icons, labels, brief and full record view options (in the view configuration) and many other customization options.

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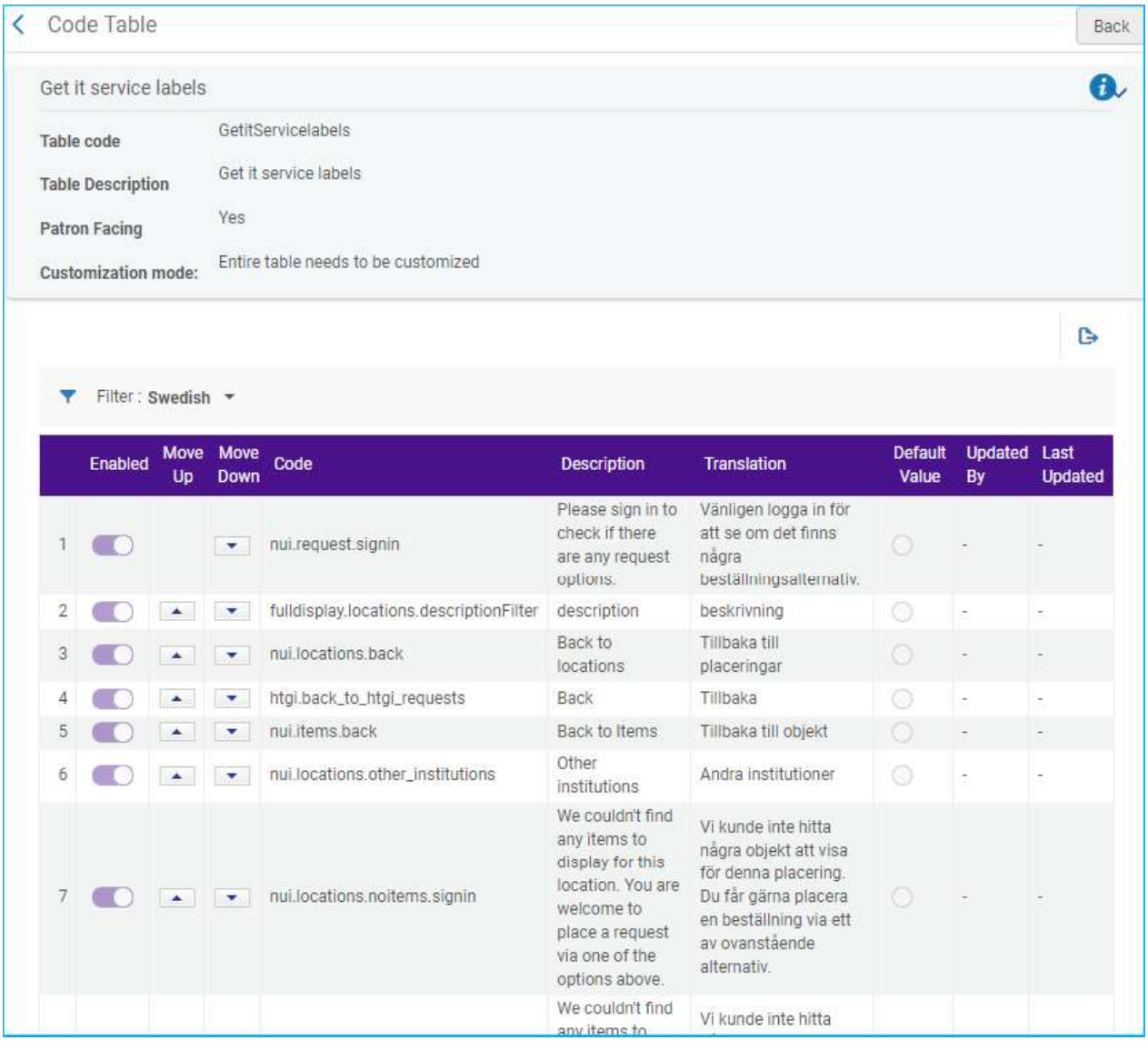
Primo Studio allows you to change the layout, color scheme, load add-ons, change icons and also change resource type icons:

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Labels (Get It configuration):

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	Enabled	Move Up	Move Down	Code	Description	Translation	Default Value	Updated By	Last Updated
1				nui.request.signin	Please sign in to check if there are any request options.	Vänligen logga in för att se om det finns några beställningsalternativ.		-	-
2				fulldisplay.locations.descriptionFilter	description	beskrivning		-	-
3				nui.locations.back	Back to locations	Tillbaka till placeringar		-	-
4				htgi.back_to_htgi_requests	Back	Tillbaka		-	-
5				nui.items.back	Back to Items	Tillbaka till objekt		-	-
6				nui.locations.other_institutions	Other institutions	Andra institutioner		-	-
7				nui.locations.noitems.signin	We couldn't find any items to display for this location. You are welcome to place a request via one of the options above.	Vi kunde inte hitta några objekt att visa för denna placering. Du får gärna placera en beställning via ett av ovanstående alternativ.		-	-
					We couldn't find any items to	Vi kunde inte hitta			

c) Patrons placing holds on specific copies

Ex Libris: Patron-placed requests in Alma are placed on a title. This provides the patron with an easy-to-understand service, and all details for getting the most appropriate copy are handled by the system, subject to institutional policies and rules. If the patron is requesting a journal title or a multi volume title (i.e. the title has items with descriptions/enum/chron) the request is then placed on the item level rather than the title level, to allow the user to select the needed item.

d) Patrons placing holds on specific volumes

Ex Libris: This is supported, see question c) above.

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e) Provide four levels of holds to include institution's main library and branches, district level, state, and national levels.

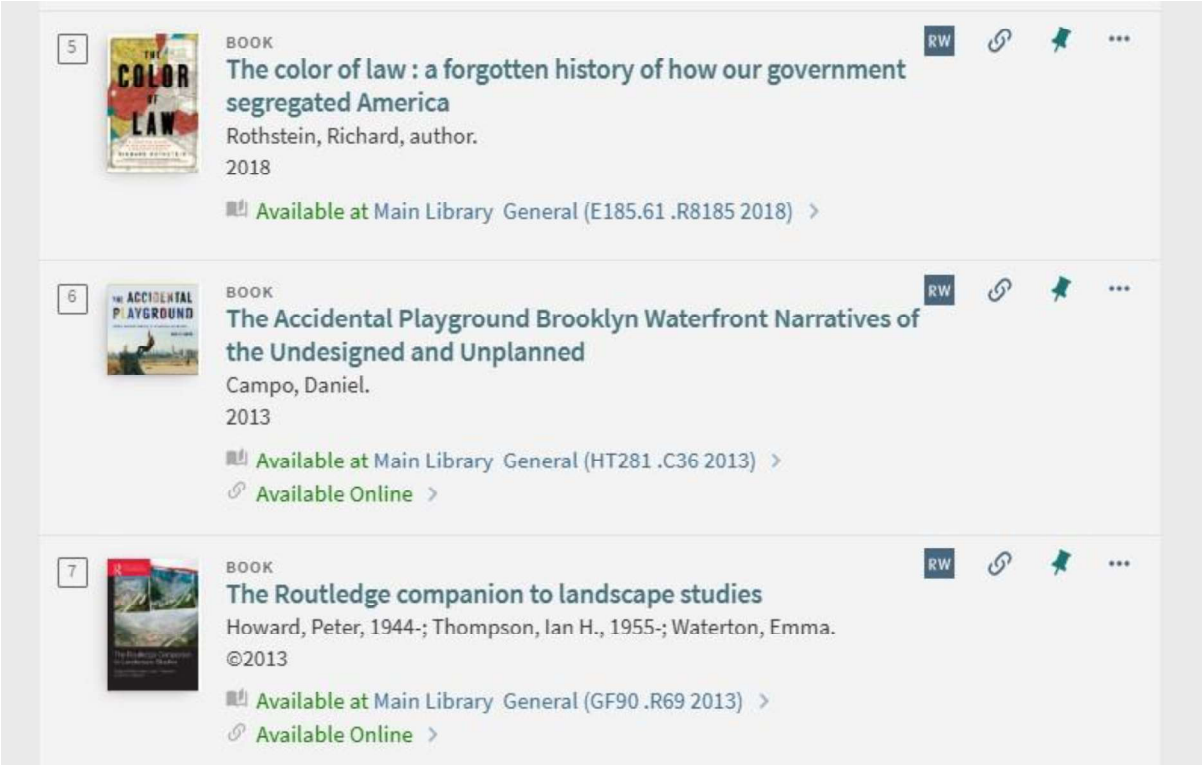
Ex Libris: Alma includes a variety of levels:

- Network Zone
- Institution Zone
- Campus
- Library

Alma can connect to national catalogs using Z39.50 and NCIP. Your patrons will be able to place requests at all of these levels.

f) Specifying item locations in the first results display screen

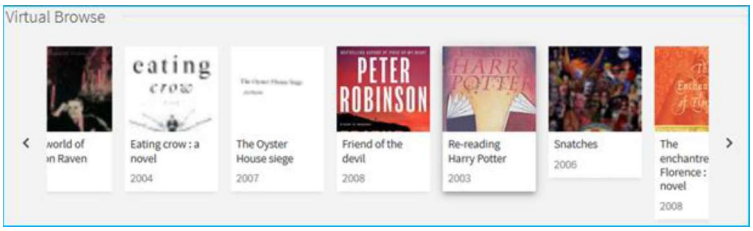
Ex Libris: Item locations and call numbers are available on the results list screen. An example of this is pictured below:



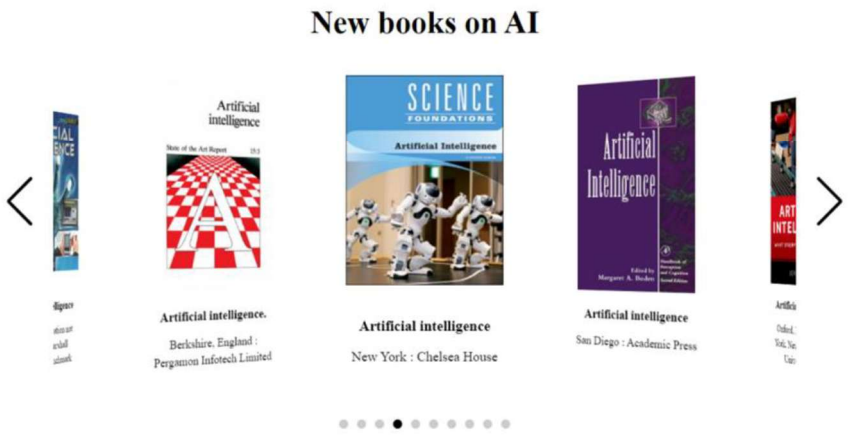
g) Shelf-browse by library

Ex Libris: The Virtual Browse feature in Primo VE's Front End search results page allows users to browse items based on the location of an item in the search results. The feature includes thumbnails of item covers, and users can navigate through items on the shelf, starting at the selected item's browse/call number value.

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In addition, the new Primo VE Showcase tool enables you to embed a visual carousel of records tailored to the library's specifications, helping libraries promote their content in other websites. The Primo VE Showcase utilizes Primo VE searches with pre-filters, conditions, and facets to dynamically display results. For example, it can show new books about a specific subject that were added to the catalog in the last 7 days, using a subject filter and date facet. As new records are added that match your search query's parameters, they automatically appear on your website, allowing users to scroll through and click on each thumbnail.

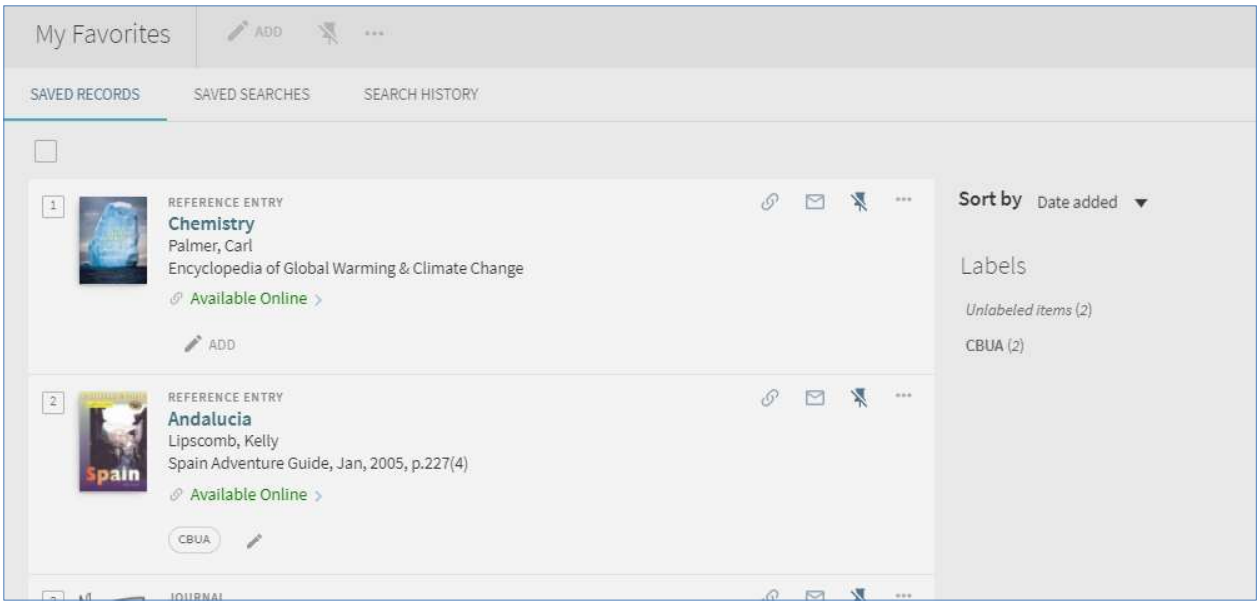


The Primo VE Carousel can be embedded into another website such as Canvas or a LibGuide. Instructions on how to embed the carousel can be found at the following blog post: https://developers.exlibrisgroup.com/blog/primo-showcase-how-to-embed/

h) Content alert service matching user profile

Ex Libris: Primo allows end-users to save search results to a Favorites list and to save searches to rerun later. Users can also configure email or RSS alerts for saved searches so can be informed when new results for the search are added to Primo.

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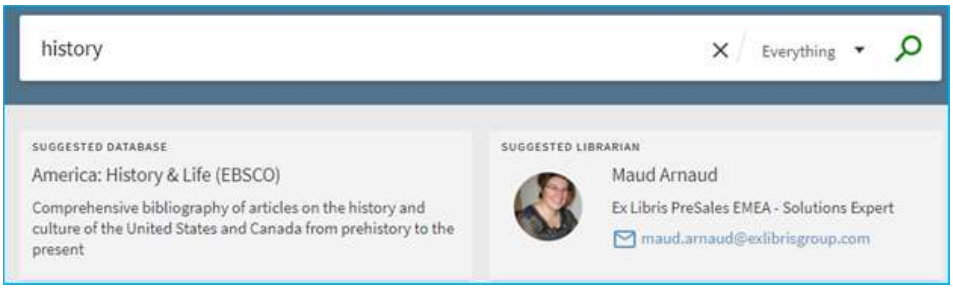


Additionally, Ex Libris provides 2 recommender services for Primo:

a) The bX recommender - bX provides users with other relevant articles for the same topic. While the initial article serves as an entry point, the recommended material can provide new inspiration for learning and broaden the scope of research. bX harvests link resolver usage data from many academic institutions around the world. bX recommendations are based on link resolver usage, they are truly platform- and content-neutral. The usage is generated through discovery systems, A&I databases, publisher platforms, and any other source that links users to full text via a link resolver. bX is a subscription service that is embedded into Primo and other solutions.

b) The Resource Recommender - A new feature that allows the library to provide users with resources of interest based on search terms. This feature brings a variety of options. Apart from external sources such as databases, web portals, blogs, archives and more, you may also suggest subject matter librarians located at NCCCS. Patrons can be provided with contact details (e.g. an email address) to get in touch about their research activities.

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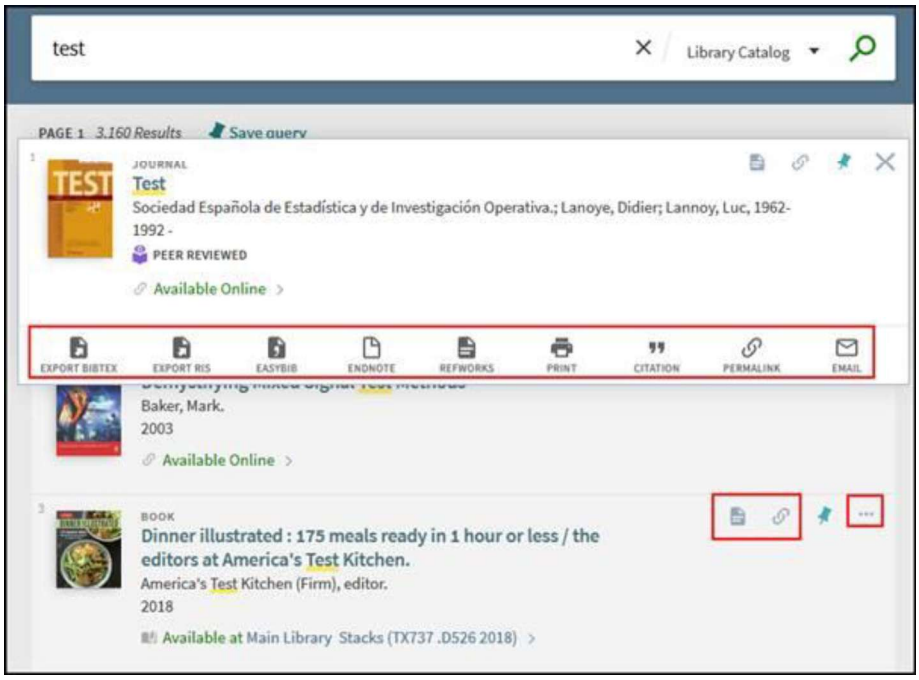
There are currently 5 types of recommendation types and 3 additional custom types for local purposes:

- Database
    - A collection of data organized to optimize search and retrieval of information, typically focused on a specific topic or research area.
- Library Guide
    - A subject guide, course guide, information portal, or a set of research help pages created by the library to help library users.
- Website
    - A group of World Wide Web pages, made available online by an individual, organization, educational institution or government.
- Person
    - A reference desk person, subject specialist or librarian able to assist users in specific subject areas.
- Library Information
    - Information about a library, including its opening hours and location.
- Custom Recommendation 1,2,3
    - This type can be customized to fit a local resource type

i) Integration with Citation/Reference manager software

Ex Libris: Primo VE enables you to export one or more records to other applications (such as print, email, and citation managers) from the Brief Results, Full Display, **My Favorites > Saved Records**, and **My Library Card > Loans/Requests** pages.

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Export Actions as Shown on the Brief Display Page

In addition to the export actions, the Export All Results option enables users to export all results from the Brief Results page.

- **Export BibTex** – Export the record to BibTex format and save it in a file. To export to BibTex format, choose a file encoding and then select **DOWNLOAD**.



Export to BibTex Format

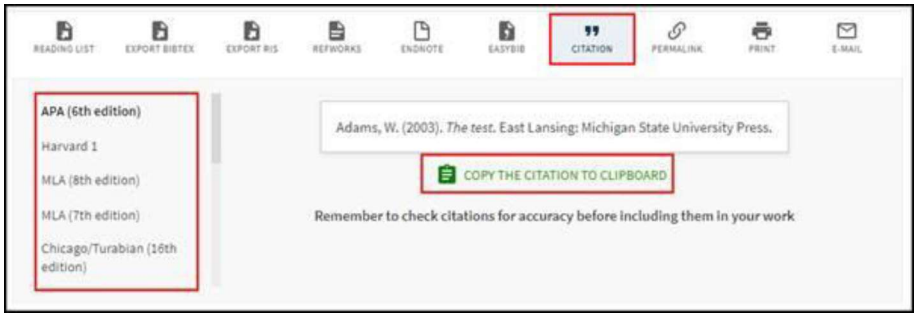
- **Export RIS** – Export the record to RIS format and save it in a file. To export to RIS format, choose a file encoding and then select **DOWNLOAD**.



Export to RIS Format

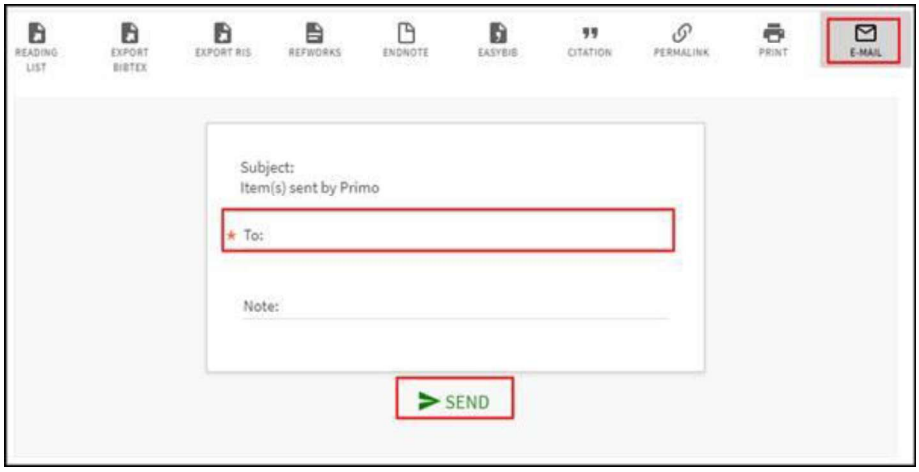
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- **EasyBib**, **RefWorks**, and **EndNote** – Export the record to RIS format, and save it directly to any of these citation managers.
- **Citation** – Create a citation in a specified format for the record. To create a citation, specify a citation style in the left pane and then select **COPY THE CITATION TO CLIPBOARD**.



Create Citation for Record

- **Permalink** – Create a permalink for the record.
- **Print** – Send the record's details, locations, and availability information to a specified printer.
- **Email** – Send the record's details, locations, and availability information to a specified email address. To send to email, specify an email address and then select **SEND**. If you are signed in, the Note field appears, which enables you to include an optional note with the email. For email configuration information, see the **Email Records Letter** template in Configuring Alma Letters.



Send to Specified Email Address

- **Export to Excel** – Download a record's details and link to an Excel or CSV file. To export the record to a file, choose a file type and then select **DOWNLOAD**.

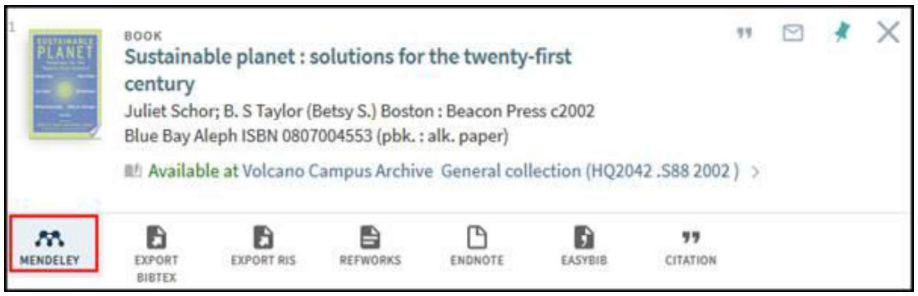
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Export to Excel

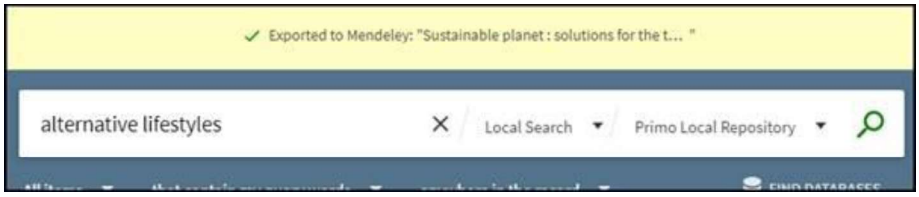
When using the CSV file type for non-Latin languages, we recommend that you use Notepad to open the file, but if you prefer to use Excel, ensure that you use UTF-8 encoding.

- **Mendeley** – Export the record to your personal Mendeley account.



Mendeley Export Action in Brief Display

After selecting the Mendeley option, Primo prompts users to connect to their Mendeley accounts. Once connected, Primo automatically exports the record. If the export is successful, the following message appears at the top of the page:



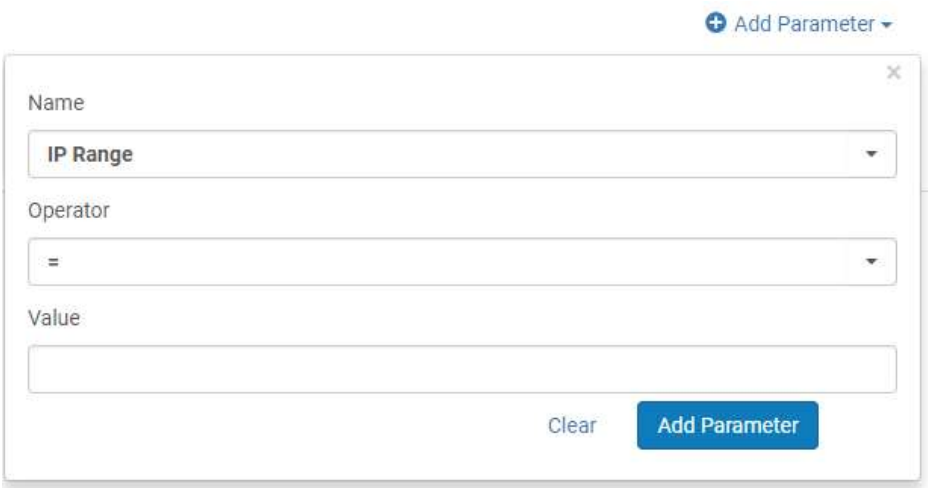
Successful Mendeley Export Message

iii. The following specifications are optional functions that NCCCS would like to see included in the proposed solution, but which do not require responses to this RFP. The Vendor can describe how the proposed solution handles each of the following specifications:

a) Allows geolocation or GPS authentication for OPAC users

Ex Libris: Access to resources and services can be restricted through IP ranges based on a user's location:

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You may also restrict certain search scopes through IP address and/or user group.

b) Patron customizable capabilities and personalization for: Interface look and feel (skins); requesting alerts for new content via keyword; User-created favorites list.

Ex Libris: Primo VE offers a range of customizable capabilities and personalization options for patrons, enhancing their interaction with the library's resources:

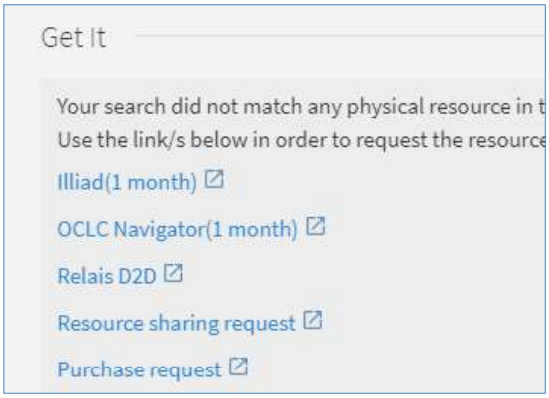
- **Interface Look and Feel (Skins):** The interface of Primo VE can be customized through a downloadable customization package available via the Discovery configuration menu in Alma. This package allows libraries to add logos, change icons, colors, and more. Additionally, a Primo customization interface (Primo Studio) provides real-time previews of changes, enabling libraries to tailor the interface to their branding and user preferences. This customization tool also serves as a marketplace for extensions developed by the global community, allowing further personalization of the user interface.
- **Requesting Alerts for New Content via Keyword:** Users can save searches and configure email or RSS alerts for these saved searches. This feature ensures that patrons are informed when new results matching their search criteria are added to Primo VE. This capability allows users to stay updated on new content relevant to their interests.
- **User-Created Favorites List:** Patrons can save search results to a Favorites list, which can be organized with labels for easy retrieval. Users have the option to email or print these saved results, and they can export citations to third parties. The Favorites feature is accessible in both the brief and full record views, providing flexibility in managing and accessing saved resources.

c) Offers patrons a purchase option (including as an option for each library)

Ex Libris: Yes. A user can make a Purchase Request directly in the Primo Discovery Interface. Each library can have their own Primo VE interface with a purchase request option.

If a user searches for an item in Primo, especially if they expand results to beyond the library's collection, they can place a Purchase Request by clicking the link to the form that will be situated in the **GetIt** section of the record.

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A form opens populated with values from the existing bibliographic record:



The order is created and is listed on the Purchase Requests page in Alma.

In addition, Primo VE enables the institution to add a link to the Main Menu of their Primo interface to enable users to make a Purchase Request for any title by filling in a blank Purchase Request form.



As with other requests, it is worth noting that permission to access any of these request forms can be restricted to certain user groups. For example, UTAS may have a policy that only Faculty can place Purchase Requests, so the link to the form will only be visible to users that are classified as being in the faculty user group.

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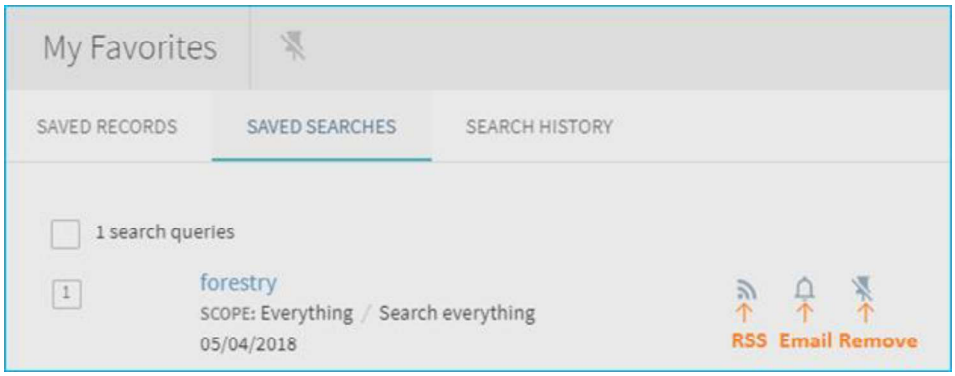
d) RSS notifications

Ex Libris: The library can create a new books list to display in Primo. This can be done using an RSS feed from Alma or using an automated Alma Analytics report of new items. For more information see https://developers.exlibrisgroup.com/blog/Automated-New-Books-List-for-Primo. Users may also subscribe to search-term based email or RSS notifications for new resources.

A 'New Records' facet is available to drill down results to newly added resources:



Saved searches also allow users to subscribe to RSS Feeds or Email alerts for newly acquired resources:



iv. Indicate if the proposed ILS solution interfaces with EBSCO, ProQuest, and multiple other databases.

Ex Libris: Primo allows users to discover all relevant library materials from a variety of electronic resource vendors such as ProQuest, Gale, Jstor and others. External data sources such as digital repositories, Libguides and others can be loaded into Primo and made discoverable.

In addition, Primo can be set up to search external indexes with the Primo interface. Primo supports searching WorldCat API and EBSCO search API and will display the results within the Primo interface.

Libraries can also search in an external index using a search Webhook configuration, and see their results in the Primo user interface.

j. Migration/Implementation

i. In addition to the information provided in response to Section 3.3.6, provide the following:

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a) Detailed data migration plan to include all items that to be migrated to the new System at the time of implementation, including the Consortium's and Vendor responsibilities, related to the migration of the following data types:

Ex Libris: Ex Libris has developed a comprehensive implementation methodology that supports rapid migrations of complex data from multiple systems into a cloud platform while allowing library staff to reassess their workflows in the new environment. The structure of activities and milestones ensures risk management through iterative testing, training, and configuration guided by a dedicated project team throughout the life of the project.

The scope of an implementation includes project management, data migration services, training, configuration planning and setup, and policy/workflow planning. All projects are assigned an Ex Libris implementation team led by the project manager, who will guide the project from kickoff to conclusion, and who will collaborate with the library to create a mutually-agreed-upon plan for the project that includes scope, roles, and timeline (within the requirements defined in the contract). Other members of the Ex Libris implementation team include implementation consultants, trainers, technical consultants, and data migration analysts to support the migration, training, configuration, and other activities throughout the project. These services are included as part of the base implementation cost.

Ex Libris offers a solution for a Library Management and Resource Discovery System to the library which is based on our standard SaaS products Alma and Primo VE, enriched by individual customization according to customer's needs and input. The project will be carried out by Ex Libris in close cooperation with the customer. Ex Libris offers implementation assistance, data migration from the legacy systems, configuration services, consulting, project management, and training services as part of our policy to tailor the solution to the institution's needs and to help the local project team members to learn how to use the system to its fullest capabilities.

The Ex Libris implementation strategy leverages the extensive implementation experience, as well as the library science and technical knowledge of our staff, to bring Ex Libris solutions into production efficiently and effectively. Ex Libris has over 30 years of experience in the development and delivery of software and services to libraries all over the world.

The implementation is a joint partnership, calling on the strengths of each party. Ex Libris staff can apply the knowledge they have gained and best practices they have developed through over a thousand projects to perform the majority of the initial technical work for the library. Therefore our team will contribute its experience in tasks as migration, system configuration, project team training and project management, while the library has expert knowledge of their data, collections, and workflows. Rather than focusing on one-time technical tasks, library staff can focus on the intellectual aspects of their work that demonstrate the value they bring to their organizations and users.

We take a service-oriented approach, whereby Ex Libris performs the initial configuration, data migration, and other implementation tasks, based on the customer's input and local expertise. The input is gathered using streamlined workbooks and is focused on the information required at various points throughout a project. Training is provided in a blended approach of recorded sessions, instructor-led web sessions and onsite workshops and takes place throughout the project, as required.

The timeframe for Alma and Primo VE implementation until go-live can range from four months for a small, standard implementation to six months for a large, complex institution. For multiple institutions that are implementing together, we can support a longer project duration that would have all institutions going live at the same time or we can support a cohort or phased approach

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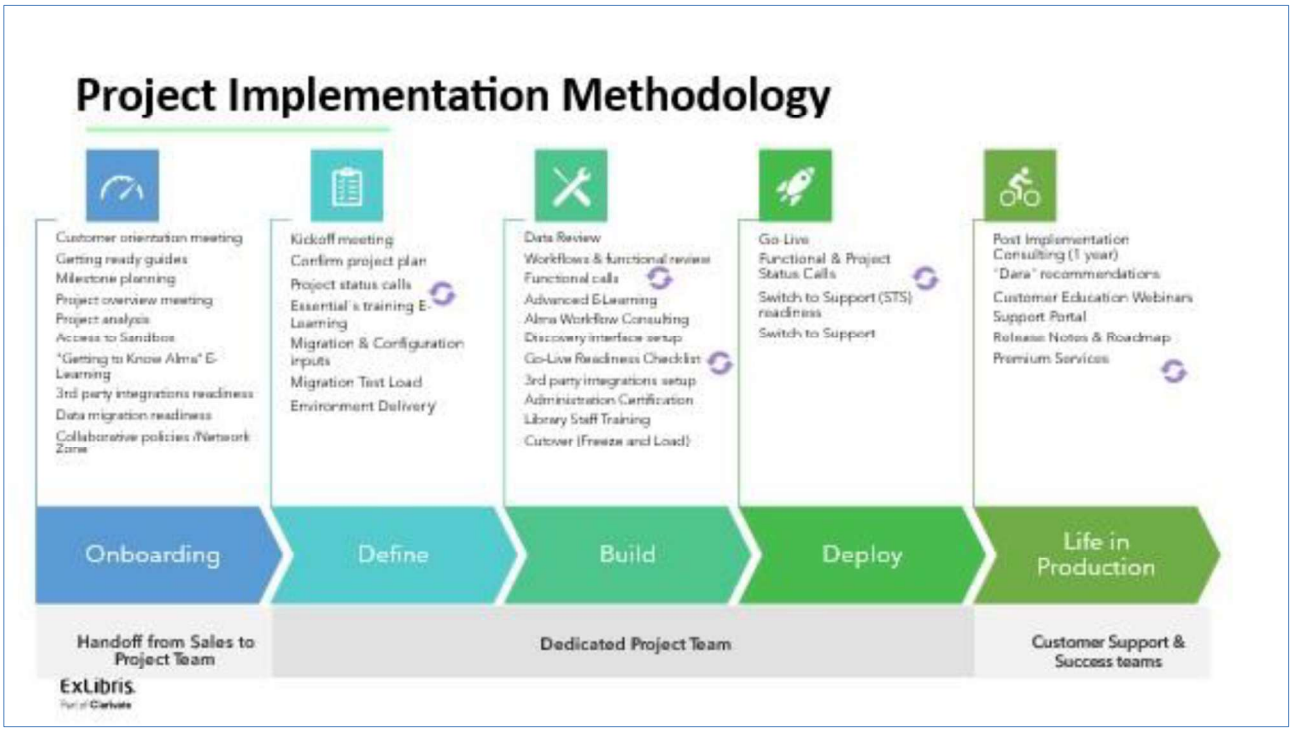
where groups of institutions would go live in waves. The project duration is defined in the contract. A high-level project plan indicating the major milestones is prepared and agreed upon by both sides. This plan serves as a commitment for the customer and Ex Libris to allocate the relevant resources, complete assigned tasks, and meet agreed upon deadlines for the implementation of the relevant solutions.

The Ex Libris implementation methodology is a framework of phases, tasks, and milestone dates based on best practices and years of Ex Libris Professional Services experience. The methodology enables repeatability as well as the management of expectations, which are critical to the success of Alma and Primo VE implementation.

Alma and Primo VE Implementation Projects - Project Phases

The following graph illustrates the standard phases of a standard Alma/Primo VE project. The paragraphs thereafter explain in general its different phases and components.

Phases of a standard Alma/Primo VE implementation and migration project:



Customer Onboarding: Preparing for the Implementation Project

Prior to the project kickoff, the library can take advantage of the extensive "Getting Ready" materials available in the Knowledge Center (http://knowledge.exlibrisgroup.com), which include migration guides, recorded training sessions, and getting started documents to help both library and technical staff prepare for the implementation. At this time, the library should begin identifying project stakeholders and defining a project team that includes a project lead and subject matter experts. The library may also review existing workflows to prepare to adapt them to the new system, as well as review and clean up data to prepare it for migration. These activities will be facilitated by a customer onboarding manager.

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To support initial training, Ex Libris provides the library a sandbox that includes standard data and configuration, which allows hands-on activities in parallel with the recorded trainings. The library begins the Getting to Know Alma Training, a series of recorded sessions introducing key concepts.

In parallel, Ex Libris will be preparing for the project. This includes soliciting information about the library's current environments and requirements via an implementation workbook, internal knowledge transfer of the major goals and drivers for adopting the system and reviewing environment topology analysis performed during the sales phase. These inputs are used to refine the project scope, activities, and preliminary plan.

During the Customer Onboarding phase, the customer and Ex Libris will agree upon an overall project timeframe and will identify the key project dates including kickoff, test load period, cutover period and go live.

The project manager will take over responsibility for the project from the customer onboarding manager just prior to the kickoff. At that time the project manager will create a project plan. The key dates and deadlines will be transferred to a calendar in a Basecamp project (https://basecamp.com/) which will be created for the project to be used by the project teams to manage the schedule and all communication.

The project manager will remind the project teams of upcoming deadlines via Basecamp. They will also engage in regular conversations directly with the customer project manager to ensure that all tasks stay on track.

Implementation Project: A Phased Approach

The actual implementation is broken down into three major phases with their own activities and milestones. These phases of active implementation—Define, Build, and Deploy—are detailed below. During the active implementation, Ex Libris assigns a project team that includes a project manager and primary Alma and discovery consultants, supported by additional consultants, trainers, and analysts for relevant portions of the project. Project status meetings are held between the library and Ex Libris project teams throughout the project, with the focus evolving based on the changing project activities.

Phase 1: Define

Experience has shown that the most effective training, accurate configuration decisions, and thorough testing of migrated data happens when working hands-on in an environment with the library's own data. To support this, the Define phase is predominately made up of activities that help rapidly set up and migrate into an environment where further testing and training can occur.

The project begins with a kickoff meeting that outlines activities, introduces participants, and establishes roles and responsibilities. Recurring calls between the Ex Libris and library project teams commence and continue throughout the project.

Shortly after the kickoff, migration and configuration analysis sessions are scheduled. To create and configure a baseline environment into which data is migrated, Ex Libris uses streamlined workbooks that allow the library to make initial configuration decisions without extensive background knowledge or training in Alma. The migration and configuration analysis sessions are an opportunity to review these workbooks and for the Ex Libris consultants to provide guidance on making initial decisions.

To support initial training, Ex Libris provides the library with a sandbox that includes standard data and configuration, which allows hands-on activities in parallel with the recorded trainings.

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The library begins the Alma Training, a series of recorded sessions introducing concepts and workflows.

As the Define phase progresses, the library will extract, validate, and deliver its data from source systems to be migrated according to the defined formats, tools, and procedures provided by Ex Libris that are relevant for each source system. The Ex Libris project team configures the production environment based on configuration input collected from the library, then migrates the library's data into this production environment. The phase concludes as the Alma environment is delivered with migrated data and initial configuration.

Phase 2: Build

Where the Define phase is focused on establishing a baseline environment, the Build phase leverages that environment. The primary goals of this phase include testing migrated data, tuning the baseline configuration to fit the library's needs, and learning how to use the system to support the library's needs and workflows.

The Build phase begins with the delivery of the configured Alma production environment containing the library's migrated data. Soon after, Ex Libris provides a Discovery environment integrated with Alma so that public services staff may further engage to review and provide feedback. During the Build phase, the focus is on functional and data review, with advanced configuration topics handled toward the end of the phase. To support this functional focus, most of the configuration during this phase will be handled by Ex Libris consultants.

As the library team begins testing their workflows, regular calls between the Ex Libris and library project teams shift focus to expanded functional topics in addition to project status information. During this period, the project teams use checklists provided by Ex Libris to identify key workflows and integrations that are required to go live. These checklists are used to prioritize additional configurations, trainings, discussions, and other activities to focus on during the Build phase.

During this phase, an onsite or remote workshop/workflow consultation takes place. The workshop/workflow consultation sessions are an opportunity to discuss workflows, the needs of the library, options for configuration, and other questions across all functional areas of Alma. The format is typically guided demonstration, where the Ex Libris product expert will demonstrate end-to-end workflows in the library's production environment. This demonstration will be a launching point for answering questions, discussing the goals of workflows and how to adapt them efficiently in Alma, and any additional configuration decisions that need to be made.

Approximately one month before the scheduled go-live date, the library will designate at least two individuals who will be responsible for ongoing administration of Alma, to be enrolled in the certification training course. Once the library is live with Alma and administrators are certified, Alma configuration on the production environment will be opened, and the library can assume management of configuration.

In the lead-up to go-live, internal library staff training takes place to ensure that all staff (including those not involved in the project before now) have the knowledge necessary to perform their work in Alma after going live. At the end of the Build phase, a technical services transaction "freeze" takes place in the libraries' source systems. Ex Libris then performs a cutover data load. The final stage of cutover consists of a total freeze of transactions in the source system, extracting final circulation transactions, and migrating them into the production environment prior to delivery.

Phase 3: Deploy

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The Deploy phase opens with the library going live with Alma and the linked discovery system. The project team continues to be available, and addresses any issues necessary to support the library through their first steps of Alma in production. Additional calls review functional or configuration questions that arise while working day to day in the system, and prepare for the formal project close.

The Deploy phase concludes with the library formally transitioning to the Ex Libris Customer Support Organization for ongoing support. This also signals the completion of the implementation project.

Life in Production: After the Implementation Project

Ex Libris offers Post-Implementation Consulting Services Hours to help you maximize Alma and Primo. Ex Libris product experts work with you for ten consulting service hours, building a structured plan to address your library's needs through targeted training, workflow consultation, and feature enablement.

Ex Libris is committed to ensuring that libraries' needs are met through various channels once the implementation concludes. Our dedicated Ex Libris Support team is available to assist customers with any product-related issues. This includes robust self-service online help tools as well as direct interactive assistance via the Support Portal for logging and receiving updates on Support cases.

Access to Alma training materials continues throughout the library's subscription to Alma. These sessions are regularly updated to reflect new developments and changes in system functionality, and are excellent resources for a refresher in a specific subject or in training new staff. Each Alma release includes videos of the release highlights and customers are invited to the Alma "Ask the Expert" sessions that allow customers to ask questions about using the Alma system and incorporating best practices. Customers are also welcome to register new Alma administrators for the monthly Certification program courses.

Data Migration:

Data migration is a substantial and integrated part of the Alma/Primo implementation project. Ex Libris has developed migration engines for various source systems including Sirsi Symphony and Evergreen. Data Migration to Alma involves extracting, transforming and transferring source system data and loading into the Ex Libris Alma cloud environment

More detailed information about the migration from **Symphony** to Alma can be found in the migration guide at and as an attachment:
https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Migration_Guides_and_Tutorials/Symphony_to_Alma_Data_Delivery_and_Migration_Guide

More detailed information about the migration from **Evergreen** to Alma can be found in the migration guide at and as an attachment:

https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Migration_Guides_and_Tutorials/Generic_Alma_Data_Delivery_and_Migration_Guide

The following describes the procedures for the actual migration process from the library of NCCCS's current system to Alma.

Data migration in Alma includes two rounds (test and cutover).

Migration services include:

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The following data entities will be migrated from the Customer's current ILS and from the Customer's current Link Resolver

Please note: The migration of specific elements in scope may vary between source systems and are detailed in the relevant specific source system migration guides.

- Bibliographic records [MARC21]
- Inventory
  - Print - Item records, Holdings records
  - Electronic - Full Text Targets, Electronic Titles
- Patrons' name, identifier and borrower information (password and PIN code are not migrated)
- Fulfillment
  - Loans (current)
  - Hold requests (current on hold shelf)
  - Fines & Fees (current)
  - Aggregate historical circulation statistics (loan count and last loan date at item-level)
- Acquisitions
  - Print - Vendors (vendors are migrated during the test round and are not re-migrated during cutover round), Funds, Purchase orders, Invoices
  - Electronic resource management – Licenses, Interfaces, Electronic inventory enrichment from the Customer's current ERM the Customer will be required to follow the data format requirements provided by Ex Libris
- Course reserves
  - Course Information
  - Reading lists
  - Citations

Ex Libris will:

- Provide migration guides and forms.
- Provide tools/guidelines for data extraction from Ex Libris source systems
- Provide guidelines for reviewing migrated data in Alma
- Provide support during the migration and review period
- Data migration services support single standalone institutions whereby each source database represents a single organization and Alma institution.

Customer will:

- Extract data from Ex Libris systems using Ex Libris-provided and supported tools.
- Extract data from Non-Ex Libris source systems following the data format requirements provided by Ex Libris (if the customer is unable to provide data in required formats in the project test load timeframe, the Alma project schedule will need to be re-scheduled)
- Provide input via migration forms.
- Provide data structure description for non-Ex Libris source systems
- Provide input data for print to electronic transformation during migration (if required)
- Provide all input data in migration scope by test migration round delivery date

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- Review and test data migrated to Alma and provide feedback in the defined time frame
- Review and test Alma configuration and workflows, and provide feedback in the defined time frame

Data modification or clean-up of any type is not included in the scope of the migration. This includes, but is not limited to the following:

- Eliminating duplicate records
- Correcting misspellings and errors
- Ensuring that there are consistent descriptions, punctuation, and syntax
- Resolving any other inaccuracies and inconsistencies relating to the data content

i) Patron information, including creation date, expiration date, last activity, profile, demographics (jurisdiction, gender, birthdate), notes, current checkouts, holds, unpaid bills and collection agency information.

Ex Libris: The following is taken from the Symphony to Alma migration guide: https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Migration_Guides_and_Tutorials/Symphony_to_Alma_Data_Delivery_and_Migration_Guide (The guide is provided as an attachment to our response.)

Patrons

Extract all patrons. In order to migrate any area of fulfillment (fines/ fees, loans, requests), all patrons must be migrated.

Provide the patron file in field block format as a Symphony extract that uses API access. The field block format has one field per line, with the beginning and end of the record delimited by the following line:

*** DOCUMENT BOUNDARY ***

The fields in the following table are expected. Indicate the local field names using the Migration File Validation Tool.

Optionally, add a new field at the end of each patron record called INTERNAL_EXTERNAL with one of two values: INTERNAL or EXTERNAL. This field indicates if the patron is managed internally by the library (for example, community borrowers) or externally (for example, students in the bursar's system). If this field is not provided, indicate whether or not the patron is Internal or External on the **User Group** tab of the Symphony Migration Form.

Field Name	Notes
PREFERRED_ADDR	In the 'Expected Field' column, select PREFERRED_ADDR, and then in the 'Extra Data' column, select the address which should be marked preferred in Alma.
PREFERRED_EMAIL	In the 'Expected Field' column, select PREFERRED_EMAIL, and then in the 'Extra Data' column, select the email which should be

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	marked preferred in Alma.
PREFERRED_PHONE	In the 'Expected Field' column, select PREFERRED_PHONE, and then in the 'Extra Data' column, select the phone which should be marked preferred in Alma.
USER_ID	This maps to an internal field which stores the original ID of the patron, used to match against loans and fines and blocks. If you wish to use this as an Identifier, then you should ALSO map it to a user identifier field such as UNIV_ID or BAR (barcode). To map to two fields, use the plus sign (+) to the left of the incoming field name. The validator tool will warn you that there are duplicate identifiers in the same patron, which is not allowed for 'regular' identifiers. Since this is just a warning, it is fine to ignore the warnings.
USER_TITLE	
USER_FIRST_NAME	
USER_MIDDLE_NAME	
USER_LAST_NAME	
USER_PREFERRED_NAME	
USER_LIBRARY	
USER_PROFILE	use "User Group" map
USER_STATUS	use "User Block" map. if using the external Block File, then do not use this field. Use either USER_STATUS here, or use the Block file, but not both.
USER_ROUTING_FLAG	
USER_PRIV_GRANTED	date not repeatable
USER_PRIV_EXPIRES	External users may have an empty expiration date. For internal users, migration sets a migration date (migration date + 1 year) if one

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	is not present.
USER_BIRTH_DATE	
USER_PREF_LANG	
DAYPHONE	
USER_ADDR1.LINE	Alma address line 1
USER_ADDR1.LINE1	Alma address line 2
USER_ADDR1.LINE2	Alma address line 3
USER_ADDR1.LINE3	Alma address line 4
USER_ADDR1.LINE4	Alma address line 5
USER_ADDR1.POSTALCODE	
USER_ADDR1.EMAIL	
USER_ADDR1.DAYPHONE	
USER_ADDR1.PHONE	
USER_ADDR1.FAX	
USER_ADDR2.LINE	Alma address line 1
USER_ADDR2.LINE1	Alma address line 2
USER_ADDR2.LINE2	Alma address line 3
USER_ADDR2.LINE3	Alma address line 4
USER_ADDR2.LINE	Alma address line 5
USER_ADDR2.POSTALCODE	
USER_ADDR2.EMAIL	
USER_ADDR2.PHONE	
USER_ADDR2.DAYPHONE	

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USER_ADDR2.FAX	
USER_ADDR3.EMAIL	
USER_ADDR3.LINE	
USER_ADDR3.PHONE	
USER_ADDR3.POSTALCODE	
INTERNAL_EXTERNAL	optional; this will be used to determine a patron's internal or external status. If this field is not present, then migration will consult the User Group tab, Internal? column.

Internal/External Patrons

Alma categorizes users as either external or internal. External patrons are managed by an external system, such as through a regular load from the bursar's office/campus student information system. Internal patrons are created and managed internally. Examples of internal patrons are community borrowers or alumni. Use one of the following two ways to define a patron as internal or external:

- Provide a field called INTERNAL_EXTERNAL in the Symphony patron extract, containing either "INTERNAL" or "EXTERNAL".
- Identify patrons as internal or external by user group on the Symphony Migration Form, User Group tab, Internal? Yes or No column. For example: all faculty are EXTERNAL and all community borrowers are INTERNAL.

If both methods are provided, the INTERAL_EXTERNAL field is preferred.

Identification Numbers

The migration program allows for six different types of user identifiers: Institution ID, Barcode, and Additional ID 1, 2, 3, and 4. Select one of these identifier types as the primary ID – the primary unique identifier for the patron. You may map multiple identifiers from your previous ILS. You may also consider mapping email address, a common match point in authentication systems, to an additional ID field.

The following appears in the Symphony Data Delivery Form:

##User Identifiers: values in column A are the expect Symphony field names; values in column B are your local field names. Values in column C are values to use when choosing a username in the Symphony Migration Form.##	
USER_ALT_ID	UNIV_ID
USER_ID	BAR

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USER_WEB_AUTH	ADDL_ID_1
USER_XINFO.INACTVID	ADDL_ID_2
USER_XINFO.PREV_ID	ADDL_ID_3
USER_XINFO.PREV_ID2	ADDL_ID_4

So, for example, if you want the USER_WEB_AUTH to be used for the primary ID for your users in Alma, select 'ADDL_ID_1' for the primary ID question on the Questionnaire tab of the Symphony Migration Form.

When selecting the primary ID, the first identifier found in the field is used as the primary ID, and all subsequent identifiers are kept in the userIdentifier section. The primary ID must be unique, so if there are duplicates, the first unique ID found is migrated as is, and the IDs for the second and subsequent patrons with the same ID are given a suffix of -1, -2, etc.

Identifiers may not be duplicated, even within the same patron record. See the questionnaire question DUP_ID_SAME_PATRON for options.

If the identifier selected for the primary ID is not present, the migration program creates an identifier for the patron based on the patron original ID, prefixed with ID. The migration programs do not fill in the primary ID with a non-selected identifier. Select BARCODE, UNIV_ID or ADDL ID 1, 2, 3, or 4 as the primary ID type for internal or external patrons in the Questionnaire tab of the Symphony Migration Form.

Block File

The block file is not required, but some customers may provide it.

Expected Field Name	Notes
USER_ID	Links to User ID in patron file
ITEM_ID	Links to item barcode in item
REASON	Use in "User Block" map on migration form
LIBRARY	If you want this in the block note, assign it to NOTE in the migration file validation tool, otherwise select 'Don't Migrate'
UNITS	If you want this in the block note, assign it to NOTE in the migration file validation tool, otherwise select 'Don't Migrate'
END_DATE	Placed in Block Expiry Date
CREATE_DATE	If you want this in the block note, assign it to NOTE in the migration file validation tool,

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	otherwise select 'Don't Migrate'
NOTE	If you want this in the block note, assign it to NOTE in the migration file validation tool, otherwise select 'Don't Migrate'

User Addresses

There can be several addresses, emails, and phone numbers in the patron record. The fields that are available for migration into Alma are listed in the left column. The values in the left column cannot be changed. The field names from your Symphony extract are in the middle column.

Decide which address is preferred and in the right column, the type of address. For example, you may decide that Address 2 is the mailing address, that Address 1 is home, that Address 2 is work, and so on.

Alma Address Field	Symphony Field Name	Preference and Type selection
Preferred Address Selection	**Select preferred:**	**USER_ADDR1**
USER_ADDR1	**Select type:**	select an address type for all address 1 lines here
USER_ADDR1	home, work, school, alternative	(leave blank)
etc		(leave blank)
USER_ADDR2	**Select type:**	select an address type for all address 2 lines here
USER_ADDR2	home, work, school, alternative	(leave blank)
etc		(leave blank)
USER_ADDR3	**Select type:**	select an address type for all address 3 lines here
USER_ADDR3	home, work, school, alternative	(leave blank)
etc		(leave blank)
Emails: Select type for each	**Select Preferred email:**	Which is the preferred email out of all emails?
USER_ADDR1.EMAIL	personal, work, school, ccAddress	For this particular email, which type should it be?

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etc		For this particular email, which type should it be?
Phones: Select type for each	**Select Preferred phone:**	Which is the preferred phone out of all phones?
USER_ADDR1.PHONE	home, mobile, office, officeFax	For this particular phone, which type should it be?
USER_ADDR1.DAYPHONE		For this particular phone, which type should it be?

User Identifiers

There may be a number of fields in the patron record that are user identifiers. The types of identifiers that are available for migration into Alma are listed in the left column. The typical expected field names from Symphony are in the right column. Change the field names and/or order of the right column to suit your library's extract. The values in the left column cannot be changed. Use the values in the left column to select the appropriate primary identifier in the **Questionnaire** tab of the Symphony Migration Form. If there is a field in Symphony which contains a note specific to the identifier, place that in the far right column.

Alma Identifier Type	Symphony Field Name	Symphony Field Name for Note
UNIV_ID	USER_ALT_ID	
BAR	USER_ID	
ADDL_ID_1	USER_WEB_AUTH	
ADDL_ID_2	USER_XINFO.INACTVID	
ADDL_ID_3	USER_XINFO.PREV_ID	
ADDL_ID_4	USER_XINFO.PREV_ID2	

User Statistical Categories

There may be a number of fields in the patron record that function as a statistical category only, for example, a student's department or major. The way the student borrows can be determined by the P TYPE, but you may want to track the department, so that you can get more detailed statistics on how Law students borrow, for example. Since Symphony has a large number of fields that are customizable, we provide you the option to map the data from any field to the User Statistical Categories in Alma.

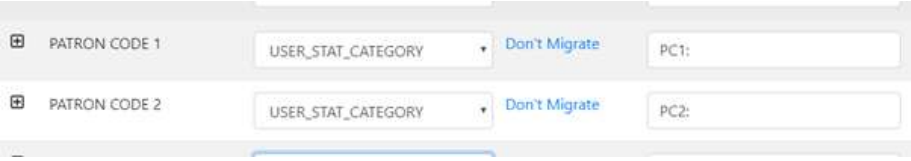
User Statistical Category	Local Field Name	Field Label

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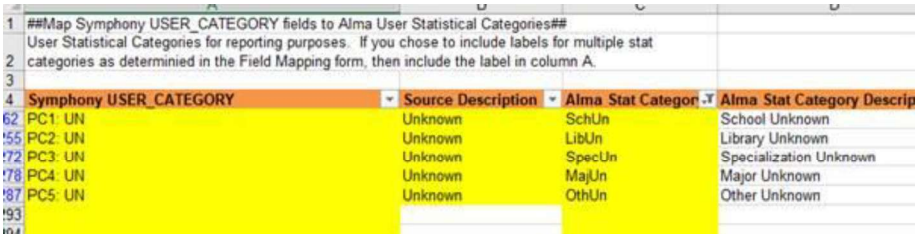
USER_STAT_CATEGORY	HOME INST	INST:
USER_STAT_CATEGORY	DEPT	DEPT:
USER_STAT_CATEGORY	SCHOOL	SCHOOL:

You can add up to 10 incoming fields. To map the values, use the UserStatCategories map in the Symphony Migration Form. If a value is not found in the map, it is migrated as is. You may provide a label if needed/required, for example if you have two different cateogries and they have the same value, for example DEPT: LAW and DEGREE: LAW. The migration program does not provide a colon so include it in your label if you want it. If you use a label, the userStatCategory map tries to map the field including the label. The first column in the userStatCategory map would be: LABEL value, for example: SCHOOL: Law.

In the Migration File validation tool, provide labels to the right of the field:



Then, in the migration form, use that label as a prefix to the values in the field. Be sure to put a space between the label and the code:



	A	B	C	D
1	##Map Symphony USER_CATEGORY fields to Alma User Statistical Categories##			
2	User Statistical Categories for reporting purposes. If you chose to include labels for multiple stat categories as determinied in the Field Mapping form, then include the label in column A.			
3				
4	Symphony USER_CATEGORY	Source Description	Alma Stat Categor	Alma Stat Category Descrip
62	PC1: UN	Unknown	SchUn	School Unknown
155	PC2: UN	Unknown	LibUn	Library Unknown
172	PC3: UN	Unknown	SpecUn	Specialization Unknown
178	PC4: UN	Unknown	MajUn	Major Unknown
187	PC5: UN	Unknown	OthUn	Other Unknown
193				

In the case above, you can see that if there were no prefix to the fields, it would not be possible to distinguish between 'UN' from PC1 and 'UN' in PC2.

Notes

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column.

Note Name	Information
LIBRARY_NOTE	
BARCODE_NOTE	
ADDRESS_NOTE	
CIRC_NOTE	CIRC_NOTE is marked by the migration programs as a popup note. This is the only user note which migration marks as a popup note.

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OTHER_NOTE	OTHER_NOTE is set to User Viewable by the migration programs. This is the only note which migration marks as user viewable.

Evergreen:

Patrons

Ex Libris expects patron records in CSV delimited format. Patron records without a record key identifier are skipped, since this is the minimum required patron information. The record key identifier is used to link the patron to other records such as loans and fines.

The following fields are expected. Indicate the local field names for the expected fields in the **Patrons** tab of the *Generic Field Mapping* form.

Full details are provided in the Evergreen – Generic Migration guide.

ii) Patrons' saved lists.

Ex Libris: This is not included in the data migration scope.

iii) Profile information for public patrons.

Ex Libris: The user group is used to distinguish groups of patrons from each other in determining different levels of circulation policies. Typical user groups are faculty, staff, and undergrad.

If patrons are being migrated, then this mapping table is mandatory.

Symphony USER_PROFILE: The Symphony patron type code, found in the USER_PROFILE field of the patron extract.

Symphony Description: A description of the Symphony patron type code, for informational purposes only. This column is not used in the mapping to Alma user group.

Alma User Group Code: The mapped group code in Alma. You can use the same codes that you used in Symphony, or you can use different codes. You can also collapse groups if desired, for example, having Freshman and Sophomore from Symphony both map to Undergrad in Alma. Do not use special characters, for example, slashes (/) or spaces in the code.

Alma User Group Description: The description of the Alma User Group. This description is loaded into the Alma code table as the description displayed in the user interface. This description can be changed easily after migration.

Internal? Y or N: Alma categorizes users as either external or internal. External patrons are managed by an external system, such as through a regular load from the bursar's office/campus student information system. Internal patrons are created and managed internally. Examples of internal patrons are community borrowers or alumni. If you select Yes, all of the patrons in the Alma userGroup are categorized as internal. If you select No, all of the patrons in the Alma userGroup are categorized as external.

Notes/Comments: Add any notes or comments for the Symphony User Profile. This column is not used during migration.

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iv) Bibliographic information, including the date the bibliographic record was added.

Ex Libris: Bibliographic records are expected in MARC format. Standard MARC is preferred, but files in MARCXML format are also acceptable. The character encoding expected from Symphony is UTF-8. If your library must export in a different character encoding, such as pre-Unicode ANSEL because your library is on the pre-Unicode c-ISAM Symphony database, inform your Ex Libris project manager.

Deliver all files with the same character encoding.

There should be a unique and consistent former system number in each bibliographic record. This is typically in the 001 field in Symphony, but it may also be found in the 035 $a with a prefix of (Sirsi) or some other field. Whichever field it is in, it should be unique and should be present for every single record.

If your system number has inconsistencies, make a note of them to your Ex Libris project consultant. For example, you may use a number like '(Sirsi)u12345' in the bibliographic record 035 $a, and administrative extracts may contain the number like '12345'. This is not common, but it can be accommodated if Ex Libris is notified.

All bibliographic records must have a unique former system number, or they will be rejected. Indicate where the former system number is on the **Bibliographic** tab of the MFVT.

Bibliographic records are migrated as is. If the date the bibliographic record was added is included in the record, it will migrate.

v) Serial volume records and/or data.

Ex Libris: Symphony manages serial issues through a master serial control record and associated checkin records or issues. The serial control record contains higher-level subscription information, and the issues contain individual receipt history.

On migration, the serial control record is either attached to an existing MARC holding record, or a new MARC holding record is created if no match is found.

Serial control records are matched to MARC holdings records using the 852_SUBFIELDS_FOR_HOL match string, usually either bc or bch (see following sections for more explanation of the match).

The information from the serial control record is mapped as follows:

HOLDING_CODE -> 852 $b (Library)

HOLDING_CODE -> 852 $c (Location)

BASE_CALLNUM -> 852 $h (call number)

other fields -> 852 $x (notes)

Issue/checkin records from Symphony are migrated to item records in Alma. The Symphony issue/checkin record maps as follows:

SERC_ID -> used to link issues to the holding record associated with the serial control record. There is no bib record key in the issue/checkin record, so this is the only way to link issues to holdings and thereafter bibs.

PRED_LIBRARY -> used to distinguish between multiple serial control records if necessary

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PRED_NAME and PRED_NUMERATION -> item description field in Alma

SERC_ID and PRED_ISSUE_ID_S -> newly-created item barcode, as <SERC_ID>-iss-<PRED_ISSUE_ID_S> (example: 12345-iss-31)

Evergreen:

If your system has MARC holding records and related item records, indicate the holding key in the item record file.

If your ILS does not store holding information in MARC/UNIMARC/KORMARC format or if not all inventory records have a holding record, for example, if **serials** records have a MARC/UNIMARC/KORMARC holding record but monograph records do not, then Ex Libris generates holdings for the items based on the item information provided.

See the 852_subfields_for_hol section in the Generic Alma Migration Guide for more information about how to determine how item records can be grouped when generating holding records.

vi) Item information, including date added, historical circulation counts, fields giving copy specific information (owning library, shelving location, current location or status, primary and secondary location), holds, and last activity.

Ex Libris: Item information is expected to be provided in tags embedded in the bibliographic record, typically in the 999. Indicate which tag contains the item in the Migration File Validation Tool.

The following table lists the expected subfields for item migration. If your item subfields have different contents, indicate the subfield mapping in the **Items** section of the Migration File Validation Tool.

The maps that are indicated in the Notes column below are found in Symphony Migration Guide. See the accompanying Symphony Migration Guide for instructions on how to complete this form.

Expected Field Name	Expected Subfield	Notes
Call Number	|a	
Volume Number	|v	see Volume Information section below. This string is placed in the item's Description field, and is normally like 'Vol. 12 No. 5, May 2020'.
Class Scheme	|w	use “Call Number Type” map
Copy Number	|c	
Barcode Number	|i	

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Library	|m	use "Alma Location" map
Last Activity mm/dd/yyyy	|d	this is not used. If you want to keep it, put it in a note
Date of last loan return	|e	Last date YYYYMMDD of the last loan return for the item. To see this value in Alma, search for the item under 'Physical Items' and on the results list click 'Other details'.
Number of Pieces	|j	maps to PIECES field
Current Location	|k	use "item base status" map
Home Location	|l	use "Alma Location" map
Number of loans	|n	Number of loans for the item. To see this value in Alma, search for the item under 'Physical Items' and on the results list click 'Other details'. Alma increments the loan count for items currently on loan, so it is recommended that you send (loans - 1) for currently loaned items.
Number of in house loans	|q	Number of in-house loans for the item. To see this value in Alma, search for the item under 'Physical Items' and on the results list click 'Other details'.
Item Type	|t	use "Item Type" map
Acquisitions Date	|u	maps to Arrival Date
Provenance	|x	
Material Type	|y	See Material Types section below Note: it is possible to have the material type in any incoming

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		subfield, such as |x or |z. However, we must define a default subfield for the Migration File Data Validator (field mapping). So, wherever your incoming Material Type is, map it to |y in the tool.
Price	|p	Inventory Price
REPLACEMENT_COST	|p	Use only if this is an actual replacement cost. If not, put only in the Inventory price field above.
Inventory Number	|o.NUM_INV	
Receive Number		In order to use the Receiving Number in Alma, you must configure an item sequence of type Receiving Number (Config menu -> Resources -> General -> Item Sequences). See Configuring Physical Item Sequences.

Item Notes

Any additional subfields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column. The subfields listed in the Default Local Subfield column are those that are expected by Ex Libris. If you use other field names or have subfields that you want to include in the migration, but are not expected by Ex Libris, you can rearrange them using the Migration File Validation Tool. The text in the Note Label column are used as a prefix to the subfield contents and can be modified, as desired.

Note Name	Default Local Subfield	Note Label
PUBLIC NOTE		
FULFILMENT_NOTE	|r	Circulate Flag
FULFILMENT_NOTE	|o.PUBLIC.	
NON_PUBLIC_NOTE_1	|o	Item Notes or Comments
NON_PUBLIC_NOTE_1	|o.CIRCNOTE.	

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NON_PUBLIC_NOTE_1	|h	Holding Code
NON_PUBLIC_NOTE_2	|f	Date Inventoried
NON_PUBLIC_NOTE_2	|g	Times Inventoried
NON_PUBLIC_NOTE_3	|e	Date Last Charged
NON_PUBLIC_NOTE_3	|n	Total Charges
STAT_NOTE_1	|q	In House Charges
STAT_NOTE_2	|x	
STAT_NOTE_3	|z	

Item Statistics Notes (STAT_NOTE_*) can use controlled vocabulary when statistics_note_controlled is set to true. For more information, see Configuring Item Statistics Notes.

Special note prefixes

Some subfields have a code at the beginning of the note

Example:
|o .PUBLIC this note shows to the public
|o .CIRCNOTE this note is a fulfillment popup note
|o .STAFF this note is internal for staff only

In order for the migration tool to handle these different note types, we treat them as different subfields. That is, the migration tool thinks we have the following subfields:

|o

|o.PUBLIC.

|o.STAFF.

|o.CIRCNOTE.

In the migration validation tool, these separate 'subfields' are detected, and presented as options for migrating. If the validation tool detects a 'subfield', it must be mapped, even if you want it to go to the same note as the subfield without any label. If you choose 'Do not migrate' for one of these, for example the O.STAFF. line, then these notes will not be migrated - they will NOT be included in the general 'O' subfield.

Item Barcodes

While Symphony allows item barcodes to be duplicated, Alma does not. The item barcode must be unique in Alma, although it may be left blank.

The item barcode is migrated according to the following rules:

- If the barcode is empty, leave as empty in Alma.

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- If the barcode exists but is not unique:
    - First item barcode encountered – migrate as is.
    - Second and subsequent item barcodes encountered – migrate as <barcode>-<item_key>.

Serial issues are given a barcode based on the serial control number (SERC_ID) and the issue number (PRED_ISSUE_ID_S). Serial issue barcodes are not required in Alma, but if a serial issue goes on loan or is requested, it is required. Therefore, migration creates a unique barcode, just in case.

Material Types

The material type in Alma is a description of the type of material the item is such as book, map, issue, DVD, compact disc, etc. It is controlled by a fixed list of physical resource material types in Alma. Each item in Alma must have a material type specified.

If not provided in the extract, the migration automatically assigns a material type based on Bibliographic record LDR and 007 fields. There is no customer input required for this part of the migration as the Alma types are fixed. The material type in migration is derived from the resource type which is constructed by Alma based on the bib header information. To see a description of how the resource type is determined, see the Resource Type Field description.

Optionally provide a valid Alma item material type code based on information in Symphony. This is not part of the Symphony extract and requires additional manipulation of the file before submission to Ex Libris. Valid values are listed in the table below. The material type and item subfield |y are not Symphony standard; however, customers may place a value in this field for use as a material type that can be mapped to an Alma material type.

Not providing this subfield will populate item material type based on Bib fixed fields.

An explanation of material types is found on the following page: Configuring Physical Item Material Type Descriptions. Consult the Alma menu option under Configuration -> Resources -> Physical Material Type Descriptions for a list of Alma material types in use.

Volume Information – Request Special Export from Symphony

We recommend that you request from Symphony a modification to your bib/item export program so that your volume information is exported in a subfield separate from the call number. The earlier you can request this, the better.

In the standard bib/item export, the volume information for an item is included with the call number of the item. In this case, we have call number information like this:

LB 1139.23 .E27 2006 V.1 NO. 11

LB 1139.23 .E27 2006 V.1 NO. 12

LB 1139.23 .E27 2006 V.2 NO. 1

LB 1139.23 .E27 2006 V.2 NO. 2

In the case above, it is not possible to separate the call number 'LB 1139.23 .E27 2006' away from the volume information to create a holding record with that call number.

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Previous Symphony customers have requested and purchased a modification to the bib/item export, which separates the volume information out into a separate subfield. In the above case, there were four items with the same call number, but different volumes. After the request was made, those four items became:

<subfield code="a"> LB 1139.23 .E27 2006</subfield>

<subfield code="v">V.1 NO. 11</subfield>

<subfield code="a">LB 1139.23 .E27 2006</subfield>

<subfield code="v">V.1 NO. 12</subfield>

<subfield code="a">LB 1139.23 .E27 2006</subfield>

<subfield code="v">V.2 NO. 1</subfield>

<subfield code="a">LB 1139.23 .E27 2006</subfield>

<subfield code="v">V.2 NO. 2</subfield>

Customers who have Symphony API access can perform this task themselves.

The above information is provided as if the bibs came in MARCXML format. If you are providing bibs in MARC format, the difference is more like:

(where 999 is the tag which contains embedded item information)

=999 \\$aLB 1139.23 .E27 2006 V.1 NO. 11wLCc2$i002016319$d12/21/2012$f12/21/2012$g2$lSTACKS$mBARRIE$q1$rNsYtREF-BOOK$u8/15/1996$xPRINT$zUNKNOWN

vs, after modification

=999 \\$aLB 1139.23 .E27 2006 $v V.1 NO. 11$wLC$c2$i002016319$d12/21/2012$f12/21/2012$g2$lSTACKS$mBARRIE$q1rNsY$tREF-BOOK$u8/15/1996$xPRINT$zUNKNOWN

Separating the volume from the call number is especially important when generating holdings records based on item call numbers. If we use the entire call number to generate holding information, we would make one holding with the modified export, and four holdings with the non-modified export.

After the change is made, subfield $a is mapped to call number, and $v is mapped to Volume number, which is in turn placed in the item's Description field, the normal spot for volume-specific text in Alma.

For more explanation on determining holding record grouping, see the Inventory section in the Symphony to Alma Migration Guide.

Evergreen:

Item Records

Ex Libris expects item records in one of two formats:

- CSV delimited format. Items that do not have a BIB key are not migrated.
- Item field data which are embedded in bibliographic tags in the BIB extract.

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Suppressed Item Records

All suppressed item records are migrated to Alma as regular items (not suppressed). However, specific locations can be marked as suppressed in Alma so that groups of items can be suppressed from public view.

Holding Record and Item Record Relationship

If your system has MARC holding records and related item records, indicate the holding key in the item record file.

If your ILS does not store holding information in MARC/UNIMARC/KORMARC format or if not all inventory records have a holding record, for example, if serials records have a MARC/UNIMARC/KORMARC holding record but monograph records do not, then Ex Libris generates holdings for the items based on the item information provided.

See the 852_subfields_for_hol section in the Generic Alma Migration Guide for more information about how to determine how item records can be grouped when generating holding records.

Embedded Item Record

If the item record is embedded in the bibliographic record, for example in a 949 tag, you may use the **Items** tab on the *Generic Field Mapping* form.

When providing embedded items, all information about the item must be contained in the indicated field (for example 949). We cannot take information from other fields in the bibliographic record. There are two exceptions to this:

- The bib key is taken from the regular place in the bib
- The call number could be taken from CALLNO_TAG, see section 'Call Number from Bib tag' above.

In the *Generic Field mapping* form, indicate the tag (for example, 949) that contains the embedded item. Then, place the subfield code in the *Generic Field Mapping* form in the appropriate field, for example:

LIBRARY $m

LOCATION $n

ITEM_CALL_NO $c

When an item is embedded in the bib record, there is usually not an item key. In this case, the item key is generated based on the bib key, like 123-1, 123-2, etc, where the bib key is 123. The link between items and loans/requests/fines is usually the item barcode for embedded items.

Item Record

The following format is used for a generic item record in CSV format and Embedded item record. For CSV, records should be provide one record per line, with quotes and commas or semicolons. Provide a header at the top. If something is allowed to be repeatable, provide the repeated information with a semicolon.

vii) Holds information, including current status of items on hold, a complete waiting list in order by date placed, and whether a hold is for a title or a specific item or volume.

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Ex Libris: Extract only request transactions where the item is trapped and on the hold shelf waiting for pickup. Provide the request files in one of two ways: in field block format as a Symphony extract that uses API access, or in csv format. The fields in the following table are expected in both cases. Indicate the local field names using the Migration File Validation Tool.

Field Name	Notes
ITEM_ID	matches barcode |i in bib/item file
ITEM_LIBRARY	
DATE	The request date in Alma is always set to the migration date. If you want to keep this original request date, move it to a note.
EXPIRY_DATE	For migration purposes, the expiration date can not be • empty • prior to the migration date • more than 30 days in the future In these cases the migration programs set it to migration date + 30.
USER_ID	matches USER_ID in patrons
HOLD_PICKUP_LIBRARY	

Any additional fields not listed above may be put into notes. T

Note Name	Default Local Fields
NON_PUBLIC_NOTE	(none)

Evergreen:

Requests/Holds

Extract only those hold requests where the item is waiting on the hold shelf for pickup.

Provide the request files in comma or semicolon delimited format. The following fields are expected. Indicate the local field names for the expected fields on the Requests tab of the *Generic Field Mapping* form.

Alma does not allow migrated holds to be created earlier than the migration date. Therefore, the following dates are not used:

REQUEST_DATE, HOLD_DATE, CREATE_DATE, UPDATE_DATE.

For all the dates above, the migration date is used. If you want to retain them, put them in a note.

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Field Name	Repeatable?	Notes
ITEM_IDENTIFIER	N	One or the other of ITEM_IDENTIFIER or ITEM_BARCODE is required, but not both
ITEM_BARCODE	N	
USER_IDENTIFIER	N	links to ORIGINAL_ID in patron file
PICKUP_LIBRARY	N	will be sent through Alma Location Map
REQUEST_DATE	N	Date hold request was initiated. Not used; if you want to keep it, move it to a note.
EXPIRATION_DATE	N	Date hold request will expire. Alma does not allow the expiration date to be - empty/missing - prior to the migration date - more than 30 days in the future In these three cases, the expiration date is set to migration date + 30 days.
HOLD_DATE	N	Date item was placed on hold shelf. Not used; if you want to keep it, move it to a note.
CREATE_DATE	N	Create Date is not retained in Alma; if you wish to keep this, move it to a note.
UPDATE_DATE	N	Update date is not used; if you want to keep it, move it to a note.

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Field Name	Repeatable?	Notes
CREATE_ID	N	
UPDATE_ID	N	
LIBRARY_ID	N	Sent through Alma Location Map

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column. The fields listed in the Default Local Field column are those that are expected by Ex Libris. If you use other field names or have fields that you want to include in the migration but are not expected by Ex Libris, you can rearrange, add, or subtract fields on the right, as necessary. If you want to include multiple local fields in the same Alma note, make as many copies of the line in the spreadsheet as needed for all note name/local field combinations.

viii) Transaction information, including all open financial transactions associated with an existing item and patron barcodes/IDs.

Ex Libris: Fines and Fees (Bills)

Extract only current bills, or fines and fees as they are called in Alma.

Provide the bills file in field block format as a Symphony extract that uses API access. The field block format has one field per line, with the beginning and end of the record delimited by the following line:

*** DOCUMENT BOUNDARY ***

The fields in the following table are expected. Indicate the local field names using the Migration File Validation Tool.

Field Name	Notes
ITEM_ID	matches barcode |i in bib/item file
BILL_AMOUNT	outstanding balance
BILL_REASON	use in fine fee type map in migration form
BILL_DATE	date fine was created (if return date empty)

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RETURN_DATE	date fine was created
BILL_LIBRARY	this value will be sent through the location map
USER_ID	matches USER_ID in patrons

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column.

Note Name	Default Local Fields
FINE_FEE_COMMENT	AMOUNT
FINE_FEE_COMMENT	DUE_DATE
FINE_FEE_COMMENT	CHARGE_DATE

Evergreen:

Fine and fees information is not mandatory, but when it is provided, Ex Libris expects active fine and fee information in csv format (preferably as an outstanding active balance total in the patron CSV extract). Only active (outstanding) fine and fee information is migrated, and only the outstanding balance of each individual fine/fee; partial payment information is not preserved. The following fields are expected. Indicate the local field names for the expected fields in the Fines/Fees tab of the *Generic Field Mapping* form.

Field Name	Repeatable?	Notes
FF_PATRON_ID	N	Links to ORIGINAL_ID in patron file
FF_ITEM_ID	N	Links to Item ID in item file
FF_CREATE_DATE	N	
FF_UPDATE_DATE	N	
FF_CREATE_ID	N	
FF_UPDATE_ID	N	

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Field Name	Repeatable?	Notes
FF_LIBRARY_ID	N	
FF_TYPE	N	Use the Fine Fee map in the *Generic Migration Form*
FF_SUM	N	Provide outstanding amount only; this may be delivered as a negative number (i.e. a credit)

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column. The fields listed in the Default Local Field column are those that are expected by Ex Libris. If you use other field names or have fields that you want to include in the migration but are not expected by Ex Libris, you can rearrange, add, or subtract fields on the right, as necessary. If you want to include multiple local fields in the same Alma note, make as many copies of the line in the spreadsheet as needed for all note name/local field combinations.

Orders

Historical/Closed Orders

Symphony customers can provide up to 10 years of historical (closed) orders. However, only current open orders (in the current fiscal year) will be linked to funds with an encumbrance transaction. If you provide fund information for closed orders the fund information is placed in a note.

If you provide funds for previous fiscal years, they are only used to make expenditure transactions for invoices.

Linking to Inventory

Alma requires each order record to be linked to inventory. During migration, every attempt is made to identify a bibliographic record or item record that is attached to the order. If no inventory can be identified, the order is rejected/not migrated.

Symphony does not require each order record to be linked to inventory. Therefore, there may be some orders in Symphony that are standalone and are rejected by migration. In Symphony, there may be order records with bibliographic record information, but are not actually cataloged yet. Make sure that all orders have a linked bibliographic record prior to exporting your order files for migration to Alma.

Even when Symphony does have a link to the bibliographic record, sometimes the link is not readily identifiable with the standard order export. Symphony orders export provides identifiers

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in the order which may link to various tags in the bib, such as ISSN, ISBN, possibly LC number. However, these identifiers have limitations, in that the identifier must be placed in the order by the library staff (this is not always done), and also there may be mismatch problems with duplicate identifiers in bib records or punctuation differences.

Sometimes an order in Symphony is linked to a bib record using the catalog key, which is an internal database number, but the catalog key is not usually a standard field in the order export.

Customers may be able to make a direct link from the order to the bib record using the catalog key, but only using a direct connection to the database, outside of the normal Symphony order extract. For instructions which provide some advice on doing this, contact your Ex Libris project manager who can provide a separate document. If you are able to get the catalog key related to the order line, place it in a field in the order for example called CATALOG_KEY. The order will have two fields: LINE_TITLEID and CATALOG_KEY. However, we don't want to use LINE_TITLEID - we prefer to use CATALOG_KEY. So, in the migration file validation tool where you are allowed to map fields, map CATALOG_KEY to the LINE_TITLEID, instead of using LINE_TITLEID. Placing the CATALOG_KEY in the LINE_TITLEID field using the field mapping will provide a direct link to the bib.

Ex Libris assumes the CATALOG_KEY is in the field you indicate as the bib key in the field mapping form. If this is not the case, that is if CATALOG_KEY links to a different marc field, let your Ex Libris project manager know what the other field is.

When a catalog key is not present, migration attempts to link the order record to bibliographic records using standard identifiers such as ISSN and ISBN. However, there are drawbacks to this since sometimes staff members do not enter the ISSN/ISBN consistently, or the numbers do not match exactly because of extra characters such as parentheses, etc. The best method for assuring your orders have linked inventory is adding the catalog key to the exported order record.

If a bibliographic record can be identified, then the order is migrated. Lack of a bibliographic record is a primary reason for rejection of order records. Lack of a vendor record is another common reason for rejection.

Providing Order Records

Provide order records in field block format as a Symphony extract that uses API access. The field block format has one field per line with the beginning and end of the record delimited by the following line:

*** DOCUMENT BOUNDARY ***

The fields in the following table are expected. Indicate the local field names using the Migration File Validation Tool.

If you will be providing invoices, ORDERLINE_KEY is required to link orders to invoices. See the invoice section below.

Field Name	Notes
ORDR_ID	Purchase order line number must be unique per vendor in Alma. Symphony provides multiple orders with the same order number, each in a different fiscal year. In order to avoid

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	duplication in Alma, the migration engine appends the year to the order number for non-current fiscal years; the current year does not have a year appended. If invoices are provided, then the unique order line number will be ORDERLINE_KEY instead. The unique order number described above (i.e. ORDR_ID + year) is still used as the PO_NUMBER (PO header) when invoices are provided.
ORDR_LIBR	The ordering location of the library (order unit).
ORDERLINE_KEY	Required if providing invoices (see the Invoices section below)
FISCAL_CYCLE	Migration programs check for current fiscal cycle and accrual accounting cycle in fiscal cycle questions of the migration form.
VEND_ID	
ORDR_TYPE	
ORDR_DATE_READY	
ORDR_DATE_MAILED	
ORDR_DATE_CANCEL	
ERP_NUMBER	
LINE_ITEM_ID	
LINE_UNIT_PRICE	
LINE_VEND_CURR	
LINE_EXCHANGE	
LINE_COPIES	
LINE_EXTEND_PRICE	
LINE_TITLEID	Used to link order to bib; customer may also want to keep this in the POL_ADDL_NUM; put

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	CATALOG_KEY here (using the MFVT) if you are able to export orders with the catalog key
LINE_RENEWAL_DATE	
NOTE	
HOLDING_CODE	Used to determine the intended inventory location for the library. Use the Holding code map.
DIST_DATE_RECEIVED	Date checked to determine order status. If you want to keep the original date, also put in note.
FUND segment: These fields are repeatable as a group. Fund segments should be embedded within LINE_ITEM segments.	
LINE_FUND_ID	
FUND_DATE_PAID	
FUND_AMT_PAID	
FUND segment ends	

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column.

Note Name	Default Local Field
POL_VEND_REF_NO	This line cannot be duplicated; place only one local field name here.
POL_ADDL_NO	This line cannot be duplicated; place only one local field name here.
POL_RECEIVING_NOTE	This line cannot be duplicated; place only one local field name here.
PO_NOTE	This line can be repeated as many times as necessary; multiple local fields can be placed in this note.
POL_NOTE	This line can be repeated as many times as necessary; multiple local fields can be placed in this note.

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Inventory related to Orders: Items, Holdings

After the correct bibliographic record has been identified, orders can further be linked directly to an item or a holding. First, an attempt is made to use direct links specified in the order record, and second, an attempt is made to find a related inventory using the intended inventory location.

In Alma, certain orders can have item records associated with them, and other orders can have holding records associated with them. Generally speaking, non-monographic orders are linked to a holding record, and monographic (one time) orders are linked to an item record.

The specific chart for Items vs Holdings is below:

POL_ LINE_TYPE	Link to Holdings	Link to Items
PRINTED_JOURNAL_CO PRINT_CO PRINT_SO_NONMON	Y	N
PRINTED_BOOK_OT PRINT_OT PRINTED_BOOK_SO PRINT_SO	N	Y
OTHER_SERVICES_*	N	N

* Other Services orders are intended to be used for services not related to inventory and are therefore used very rarely.

Order Linked to Appropriate Item or Holding

When an item record is linked to a monographic order in Symphony, the migration programs attempt to link the order record to the linked item record. If multiple orders are linked to a single inventory (item), the first order found will be linked to the inventory. There is no attempt made to select the 'best' order to link to the item at this point, and Alma cannot link inventory directly to multiple orders. The second and subsequent orders is loaded as not linked to inventory but has the intended inventory location in the receiving note.

Orders Linked to Non-Appropriate item or Holding or Not Linked

There may be cases where an order in Symphony has a linked item but it is not the correct type - i.e. a continuous order cannot be linked to an item. In this case, the migration programs will not link any inventory to the order. Similarly, there may be orders in Symphony which are not linked to an item and are only linked at the bib level. In these cases, the migration program attempts to link orders to existing inventory based on location match, and again only one inventory can be linked to a single order.

When no location match is found, the inventory location is placed in the receiving note.

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Linking Orders and the Implication with P2E

Once an order has been linked to inventory, if the inventory will be transformed to electronic later in the migration process by P2E, then linked orders receive first priority for transforming.

Stated another way: during P2E, an inventory record may be transformed to electronic. An order will be transformed to electronic along with the inventory. When selecting the related order that will be transformed, priority is given to an order that is linked directly to the inventory, even if other orders on the same bib and in the same location have more recent status dates or a better status.

Continuous Purchase Orders That Were Invoiced in the Current Fiscal Year

This situation is seen primarily at the end of a fiscal year, just prior to fiscal year rollover. When there is a continuous purchase order in the current fiscal year that has been received and invoiced, there is a potential for there to be double posting of funding amounts.

- since the order is considered open/SENT, there will be an encumbrance created for this order
- since there is a completed invoice for this order, there will be an expenditure created for this invoice

The encumbrance and the expenditure are on the same fund in the same fiscal year. In Symphony, the invoice and the order are linked and the encumbrance is suppressed from the active amounts. Be aware that this may make the encumbrance amount for certain funds appear higher in Alma than they are in Symphony. This issue is resolved after the encumbrances roll over to the next fiscal year. Until then, customers may want to increase the allowed over-encumbrance percentage for affected funds.

This situation will happen throughout the fiscal year, but is more pronounced at the end of the year after many continuous orders have been received and invoiced. At the beginning of the fiscal year, this situation is not as pronounced, because not very many continuous orders will have been invoiced. If you are migrating around the end/beginning of a fiscal year, you may want to consider rolling over in Symphony prior to migration in order to lessen the effects of this situation.

Orders, Invoices, and Fund Balances

During the migration process, fund transactions are generated for the following:

- Open Orders in the current fiscal year (encumbrances)
- Invoices in all fiscal years (expenditures)

Notice that encumbrances are not generated for orders in any previous (non-active) fiscal years. Therefore, fund balances in previous (non-active) fiscal years will only reflect invoice transactions (expenditures).

Symphony, on the other hand, shows encumbrances for orders in previous (non-active) fiscal years. This will make the fund balances in Symphony and Alma very different, and customer should be aware of this when checking their data.

Transactions of Amount 0.00

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Symphony allows for transactions to be of value 0.00 for all purchase orders (encumbrances). In Alma, encumbrances or open orders of amount 0.00 are changed to 1.00. The following types of orders (Acq method) can be open with amount 0 on the order, but with no transaction/link to fund: GIFT, DEPOSITORY, EXCHANGE, TECHNICAL, and orders with the 'no charge' flag set to Y.

PO Entry Point (Status)

The following algorithm is used to determine the place in the ordering workflow. *OT means One-Time, determined by the PO Line Type mapping tab. *SO and *CO mean Standing order or Continuous order, also determined by PO Line Type tab.

When FISCAL_CYCLE is earlier than the current fiscal cycle, then CLOSED. Alma does not allow open orders in previous fiscal years.

When FUND_DATE_PAID has a date (is not NEVER) and POL_LINE_TYPE = *OT, then CLOSED

When ORDR_DATE_CANCEL has a date which is earlier than today, then CANCELLED

When DIST_DATE_RECEIVED has a date AND mapped POL_ACQ_METHOD = 'GIFT' and POL_LINE_TYPE = *OT, then CLOSED

When DIST_DATE_RECEIVED has a date (and POL_ACQ_METHOD is not GIFT) and POL_LINE_TYPE = *OT, then WAITING_FOR_INVOICE

When ORDR_DATE_MAILED has a date (is not NEVER), then SENT

else NEW

Orders in Review Status or Waiting for Renewal

The migration programs fill out the following elements based on incoming data:

- PO Line type
- PO Entry Point
- PO Invoice Status
- Send date
- Expected receiving interval/date

Alma can have a further status of 'In Review'. Migration does not set the 'In Review' status, but rather the 'In Review' status is set by a series of rules using the elements above and possibly other elements. The initial set of rules used to determine these further statuses is not controlled by the customer; it is controlled by Alma Development. Customers are often frustrated by the statuses set for NEW orders:

- when NEW and OT (one time), the status is set to 'In Review'
- when NEW and CO or SO (continuous), the status is set to 'Waiting for Renewal'

You can find out more about the PO Review Rules, and how to turn rules on or off, by consulting the page Configuring Purchasing Review Rules.

Invoices

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Provide the invoice file in xml format as a Symphony extract that uses API access (Print Invoice Report).

Modifications to the Invoice Extract

If you want to migrate invoices from Symphony, you MUST modify the standard invoice and order output and provide the fund file differently.

Most customers have difficulty with these steps. Be sure to get the invoice file out early so that Ex Libris can check it in advance of your first testload file delivery.

Perform the following steps to modify the invoice and order output:

1. Add a unique order identifier, <orderlinekey>, to the invoice line. Additionally, you must modify the orders so that a matching ORDERLINE_KEY is in the related order. The standard fields, <orderlinenumber> and LINE_ITEM_ID, are not enough to provide a unique link between the two files.

Programming hint: In order to link order lines with invoice lines, use the combination invoice id + fiscal cycle + library + vendor code.

The <orderlinekey> *must* be within the individual <invoiceline> stanza. Only one <orderlinekey> per <invoiceline> stanza is allowed.

1. Add the fundID(s) to the invoiceLine stanza. The standard invoice output from Symphony provides the fundID in a separate fundSummary stanza outside of the invoiceLine stanzas. Ex Libris cannot work with fund information at the invoice header level. It must be at the line level. Ex Libris must have a fund specified per invoice line, within the <invoiceline> stanza.
2. Add the currency code of the invoice to the invoice header section, in three-character standard currency designation (e.g. USD, EUR).

If the invoice is in a foreign currency, the fund stanzas in the invoiceLine stanzas must contain local currency and foreign currency amounts, along with the exchange rate used at the time of payment.

Also, be sure to include multiple fund stanzas within the invoiceLine stanza in the case of multiple funds per invoice line (split funding). Each line must have the funding sources within the line. The standard Symphony invoice extract includes split funding at the invoice header level, so this must be changed by the customer.

For more information on how this was accomplished by previous Symphony to Alma customers, check with your Ex Libris project manager, and they can provide an extra text file with helpful assistance for doing this extra work.

Additionally, if you are migrating invoices, you must provide all of the funds for all of the fiscal years for which you have invoices. Add an additional field at the end of each fund line with the Fiscal Year. For example, you may have:

MAIN,Main Ledger,,,21345,Film,LIB,,$0.00,2026

MAIN,Main Ledger,,,21345-25,Film,LIB,,$0.00,2025

MAIN,Main Ledger,,,21345-24,Film,LIB,,$0.00,2024

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Additionally, the fund codes must be unique, even across fiscal years. The fund code for the current fiscal year should be un-suffixed, and the fund codes for previous (non-active) fiscal years should be suffixed, as shown in the example above.

Fields Expected

The fields in the following table are expected. Indicate the local field names using the Migration File Validation Tool.

There may be fields in the extract that are not listed below. The migration programs do not need the data in the missing fields.

Field Name	Notes
library	
invoiceID	
vendorID	
invoiceControlNumber	
total/vendorAmount	
total/vendorAmount currency	
total/vendorAmountPaid	
total/vendorAmountPaid currency	Not a preferred method of currency detection, because it is a single character thtat can be ambiguous (such as $ meaning USD or CAD). It is recommended to use the currency field added post-export.
dateCreated	
dateModified	
dateInvoiced	
dateReady	
dateLocked	
extendedInfo/entry Note	
The fundSummary stanza is ignored in favor of a fund tag or stanza within each invoice line	

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stanzas.	
createdBy	
modifiedBy	
proRata	Y/N
currency	In three-letter ISO code, e.g. USD, EUR, etc.. This is the preferred currency field. If not available, the migration programs attempts to use the single-digit code in total/vendorAmountPaid currency.
invoiceLine: repeatable group, fields below	
invoiceLine attribute: lineType	The line type attributes are added to the invoice line note
lineNumber	
amountInvoiced/vendorAmountPaid	
amountInvoiced/vendorAmountPaid currency	
amountInvoiced/nativeAmountPaid	
amountInvoiced/exchangeRate	
datePaid	
checkNumber	
orderID	
fiscalCycle	
Funding: Provide either a single <fundId> tag for all invoice lines, or provide a <fund> stanza for all invoice lines (do not mix). Either the fundId tag or the fund stanza must be within the invoiceLine stanza.	
fundId (single tag)	This field is not present in the standard output for all invoice lines. Use an API call to add it to all invoice lines.
fund stanza:	The tag <percentage> might be provided but is

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<fund> <fundID> <amountPaid currency="USD"> <fiscalCycle> </fund>	needed and is not used by the migration programs.
orderlineKey	This is different than the orderLineNumber that is provided by Symphony. The number for this field is added by an API call, and is a number that can be used to directly link to the order extract's ORDERLINE_KEY.
NumberOfCopies	
vendorFinalPrice	
dateCreated	
dateModified	
createdBy	
modifiedBy	
numberofLines	
numberofLinesPaid	

Any additional fields not listed above may be put into notes. The possible note fields in Alma items are listed in the following chart in the Note Name column.

Note Name	Default Local Field
INV_NOTE	numberOfLines
INV_NOTE	numberOfLinesPaid
INV_NOTE	numberOfCopies
INV_NOTE	numberOfCopiesPaid
INVL_NOTE	checkNumber
INVL_NOTE	extendedInfo Note

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ix) Summary holdings and check-in history information for serial records.

Ex Libris: Symphony manages serial issues through a master serial control record and associated checkin records or issues. The serial control record contains higher-level subscription information, and the issues contain individual receipt history.

On migration, the serial control record is either attached to an existing MARC holding record, or a new MARC holding record is created if no match is found.

Serial control records are matched to MARC holdings records using the 852_SUBFIELDS_FOR_HOL match string, usually either bc or bch (see following sections for more explanation of the match).

The information from the serial control record is mapped as follows:

HOLDING_CODE -> 852 $b (Library)

HOLDING_CODE -> 852 $c (Location)

BASE_CALLNUM -> 852 $h (call number)

other fields -> 852 $x (notes)

Issue/checkin records from Symphony are migrated to item records in Alma. The Symphony issue/checkin record maps as follows:

SERC_ID -> used to link issues to the holding record associated with the serial control record. There is no bib record key in the issue/checkin record, so this is the only way to link issues to holdings and thereafter bibs.

PRED_LIBRARY -> used to distinguish between multiple serial control records if necessary

PRED_NAME and PRED_NUMERATION -> item description field in Alma

SERC_ID and PRED_ISSUE_ID_S -> newly-created item barcode, as <SERC_ID>-iss-<PRED_ISSUE_ID_S> (example: 12345-iss-31)

x) Acquisitions fund and vendor records.

Ex Libris: Fund records are not exported from Symphony. Rather, they are entered into an Excel migration form, then exported to CSV and delivered to Ex Libris for loading into Alma. All funds must be listed on a single tab (the first tab on the spreadsheet) before exporting to CSV. You can submit separate CSV files, but they must be physically separate files and not multiple tabs on the same sheet. Each csv file must contain a header line with the field names, as described below.

In the fund file, LEDGER CODE, LEDGER NAME, FUND CODE, and FUND NAME are mandatory. Ledgers are mandatory and if your institution does not have ledgers in the current ILS, define one general ledger for use in Alma.

Note that fund and ledger codes are unique across the entire fiscal period, not just within specific hierarchies. Therefore, there should be no fund or ledger code duplication in the spreadsheet submitted. This uniqueness restriction applies across ledger codes, summary fund codes, and fund codes.

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For Symphony migrations which migrate only orders, all of the funds go into a single active fiscal period. Therefore, when migrating only orders (not invoices), there is only one fiscal year and the fund codes in that fiscal year have to be unique among themselves.

However, when a Symphony customer is also migrating invoices, the customer makes multiple entries for each fund code, one for each fiscal year. In this case, the funds must still have different codes. Since in Alma the fund code is maintained as it rolls over to the next fiscal period, the recommendation is that the fund codes be structured like:

current fiscal year: CODE

previous fiscal years: CODE-2019, CODE-2018,CODE-2017, etc.

Ledger codes should be disambiguated in the same way when invoices for multiple fiscal years are being migrated.

The invoice file must be updated so the fund_id in the invoices matches the corresponding fund code in the fund file. It is not necessary to update the fund codes in the order file, since only the current open orders are linked to a fund - so the FUND_ID in the order file can remain as CODE (example code for a fund in the current fiscal year). Orders from previous fiscal years may have the fund structured like CODE, but since orders in previous fiscal years are closed automatically and are not linked to funds, this CODE only goes to a note in the PO.

Funds are grouped under summary funds, and summary funds/funds are grouped under ledgers. Only one level of summary fund is allowed in the extract; however, it is a simple task in Alma to create a new summary fund after migration and drag other summary funds underneath it.

Field Name	Notes
LEDGER CODE	May be repeated across lines to group funds under a single ledger. The only special characters this can contain are: dash (-), underscore (_), <space>
LEDGER NAME	May be repeated across lines to group funds under a single ledger
SUMMARY FUND CODE	Not mandatory, may be repeated across lines. The only special characters this can contain are: dash (-), underscore (_), <space>
SUMMARY FUND NAME	Not mandatory, may be repeated across lines
FUND CODE	Alphanumeric, not repeatable. Must be unique, even across ledgers. The only special characters this can contain are: dash (-), underscore (_), <space>
FUND NAME	Alphanumeric, repeatable
LIBRARY	Library code, in the Symphony form of the code. There can be multiple libraries here,

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	separated by a semicolon. This field can be left empty, which means that all libraries in the institution can use the fund. If the central order library is used in the migration form, this field is ignored and all funds are set to the institution level, meaning that all libraries in the institution can use the fund.
EXT ID	External ID for linking to an external source, if one exists.
ALLOCATION	Allocation, in base (local) currency, of the current fiscal year's funds.
FY	Fiscal year, if customer is providing previous year funds for invoices.
NOTE	Will be placed on Note tab of funds screen

Evergreen:

Questionnaire Tab

ACQ mode

Code: ACQ_MODE

Options: Select Yes or No depending on whether or not you have contracted with Ex Libris to migrate any Acquisitions data.

Default currency for Ledgers and Funds

Code: ACQ_CURRENCY

Default: USD

Options: List the currency used for all of your funds. Orders can have other currencies and be translated to the default currency, but funds must have a single base currency.

The currency should be a three-letter code, as listed in http://en.wikipedia.org/wiki/ISO_4217

Fiscal Period Cycle Pattern

Code: FISCAL_PERIOD

Default: 01-07-1 (fiscal period starts on July 1 (01-07) and lasts for one year (-1).

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Options: To have functioning ledgers, fiscal periods are required. Specify your fiscal period as DD-MM-C (Day-Month-Cycle). For example, a one year fiscal period starting on January 1 is indicated by: 01-01-1. A one year fiscal period starting on July 1 is indicated by: 01-07-1.

Alma currently supports one-year fiscal period cycles.

Which year do you use to name the fiscal year?

Code: FISCAL_PERIOD_NAME

Default: second

Options: Specify if the fiscal period is named with the first year or the second year.

- second – if fiscal period runs July 1 2014 through June 30 2015, then the fiscal year is named 2015.
- first – if fiscal period runs July 1 2014 through June 30 2015, then the fiscal year is named 2014.

If your fiscal period runs from January 1 through December 31, this question is not necessary.

Current Fiscal Year

Code: CURRENT_FISCAL_PERIOD

Default: determine by date of conversion

Options: This question is important around the beginning/end of the fiscal period. If you do not know how to answer this, select determine by date of conversion. The options are:

- Determine by date of conversion – The conversion program uses the fiscal period that includes the date of conversion.
- Select a year from the dropdown box.

For example, if the date of conversion is June 15, 2017, and your fiscal year ends on June 30, 2017, then selecting 'determine by date of conversion' will place the active fiscal year as 2016-2017. If you wish to start fresh on July 1 with the new fiscal year, then select the year from the drop-down that corresponds to the 2017-2018 fiscal period.

Accrual Accounting

Code: ACCRUAL_ACC_FY

Default: No – do not make an additional fiscal year

Options: If your library uses accrual accounting, you can instruct Ex Libris to make an additional fiscal year. When an additional fiscal year is created, it will be after the current fiscal year. For

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example, if the current active fiscal year is 2016, then the additional year, also active, will be 2017. The options are the following:

- No – do not make an additional fiscal year.
- Yes-No Funds – make an additional fiscal year but leave it empty. The library will then need to create funds for this fiscal year after go-live.
- Yes-duplicate funds – make an additional fiscal year and also fill it with funds that are the same codes as the funds in the current fiscal year. No allocations are made.

Yes-duplicate funds can only be used if the customer has contracted for Acquisitions migration.

Customer Input – Acquisitions Data Migration

Use these questions only if you have contracted with Ex Libris to migrate your acquisitions information.

Central Order Library

Code: CENTRAL_ORDER_LIB

Default: None

Default Order Library

Code: DEFAULT_ORDER_LIB

Default: First library found on the Alma Library list

Options for Central and Default Order Library: The Order Location field specifies the order location for orders in the previous system. The migration attempts to map the location field to the corresponding Alma Library. If you want to override this field and instead assign an order library to all migrated orders, fill in a value for the Central Order Library question. Otherwise, if you want to use the order location field to determine the order library, leave the Central Order Library question blank and fill in a value in the Default Order Library question. In this case, the migration attempts to determine a library based on the order location field and only when a library is not specified or a mapping is not found does it use the Default Order Library as a second choice.

Default claiming period

Code: ORDER_CLAIM

Default: 90

Options: Default claim used for vendors and orders (if applicable), in days.

xi) Summary of what information cannot be migrated.

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Ex Libris: The following list describes what is not migrated to Alma:

1. **History Logs**
    - **Transaction history** such as past checkouts, returns, and fines paid are **not migrated**.
    - Alma does not support importing historical circulation logs from Symphony.
2. **Detailed Circulation Data**
    - Only **current loans** and **active requests** are migrated.
    - **Past circulation activity**, including borrowing history and usage statistics, is not included.
3. **Acquisitions Data**
    - Acquisitions data (e.g., purchase orders, invoices, vendors) is **only migrated if explicitly contracted**. We have offered this as a part of our cost proposal.
4. **Fines and Fees**
    - Only **active fines and fees** are migrated.
    - **Resolved or historical fines** are not included in the migration.
5. **Course Reserves**
    - Course data is migrated **only if the service is purchased** and included in the contract.
    - Otherwise, course reserves and related metadata will not be transferred.
6. **System-Specific Configuration**
    - Local Symphony configurations, such as custom scripts, workflows, and system preferences, are not migrated.
    - These must be reconfigured manually in Alma.
7. **Reports and Analytics**
    - Symphony-generated reports and analytics are not migrated.
    - Alma uses its own analytics platform, and historical data must be archived separately if needed.
8. **User Notes and History**
    - Only **active user records** are migrated.
    - **User notes, borrowing history, and other historical user data** are not included unless explicitly mapped and supported.
9. **Serial Prediction Patterns**
    - These are not migrated and must be recreated in Alma.
10. **Electronic Resource Linking**
    - Alma does not migrate Symphony's linking mechanisms for electronic resources.
    - These must be re-established using Alma's Community Zone or other linking tools.

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b) Detailed system configuration plan, including the Consortium's and your company's responsibilities, related to the implementation of the ILS.

Ex Libris: The project team is to be composed of Ex Libris and customer staff resources, who will be responsible for the implementation of Alma.

Customer High-Level Responsibilities

- Implement Alma within the agreed upon timeframe, according to the agreed upon scope
- Appoint a library project team and a single project coordinator who will serve as the primary contact for the Ex Libris project manager
- Form a team of functional experts from the institution
- Manage the internal customer project team

Customer Detailed Responsibilities

- Actively participate in training, functional meetings, and workshops delivered by Ex Libris
- Gather and provide initial Alma, Primo, and third-party integrations configuration input using form/workbooks provided by Ex Libris.
- Provide post-configuration feedback based on end-to-end review of Alma, Primo, and third-party integrations configuration and functionality in the defined time frame.
- Coordinate all data migration efforts:
    - Gather and provide data migration input using forms/workbooks provided by Ex Libris including:
        - Extracted data:
            - Extract data from Ex Libris systems using Ex Libris provided and supported tools.
            - Extract data from Non-Ex Libris source systems following the data format requirements provided by Ex Libris (if the customer is unable to provide data in required formats in the project test load timeframe, the Alma project schedule will need to be re-scheduled)
        - Migration forms
        - Data structure description for non-Ex Libris source systems
        - Input data for print to electronic transformation during migration (if required)
    - Provide all migration input by delivery dates specified by Ex Libris
    - Review and test data migrated to Alma and provide feedback in the defined time frame
- Provide library staff training

Customer Roles

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Project Lead

- Manage involvement of customer project team resources
- Serve as the primary project contact for the Ex Libris project manager
- Work with the Ex Libris project manager on work planning/deadline management
- Work with Ex Libris to monitor progress and track status
- Drive issue resolution and escalation as appropriate at customer site
- Status reporting to customer management and team members at customer site

Functional Expert

- Provide expert input into all areas of business processes. This is likely to include: Acquisitions, Resource Management, Fulfillment, data in all listed areas, Public Services
- Facilitate and perform functional review activities
- Report issues found during testing to Ex Libris via CRM
- Provide team updates on testing progress
- Actively participate in training, functional meetings, and workshop

Training

- Deliver training to internal customer library staff
- Develop, modify, or re-use training materials provided by Ex Libris as needed
- Actively participate in training, functional meetings, and workshop delivered by Ex Libris

Data Integration/Authentication/Technology Team Lead and Supporting Resources

- Provide information/technical expertise regarding customer's existing systems and environments, and help develop/validate overall technical solution architecture
- Monitor/assist/support the development/deployment of customer single sign-on solution
- Ensure necessary customer technology resources are involved as needed to support project activities
- Support testing and debugging activities
- Coordinate technology touch points and processes on a day-to-day basis

Administrator

- Become proficient in Alma and Primo configuration (attend Alma certification training postimplementation)
- Open Ex Libris Support cases as needed
- Handle day-to-day technology requests after launch

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The backgrounds and job titles of individuals who fill customer roles may differ from library to library according to the organizational structure, staffing, and other details specific to each organization. Ex Libris provides information about the roles and responsibilities required to participate in Alma implementation, and the customer determines which individuals on their staff are capable and available to fulfill these roles. Roles may be filled by multiple individuals, and a single individual may fulfill one or more roles. Regardless, most tasks are performed in collaboration with the Ex Libris project manager, and according to the mutually agreed project plan. Generally, all roles are expected to participate throughout the implementation project, although activity levels will vary throughout the process.

Please refer to the Getting Ready for Alma and Primo Implementation document available on the Ex Libris Knowledge Center for more information:

https://knowledge.exlibrisgroup.com/Alma/Implementation_and_Migration/Implementation_Guides/02Getting_Ready_for_Alma_and_Discovery_Implementation (provided as an attachment)

The table below provides a high-level overview of the tasks and responsibilities in a typical Alma implementation. Additional details about these tasks and milestones are included above.

Phase	Milestone / Task	Library	Ex Libris
Onboarding	Project scope, schedule, and communication plan reviewed and agreed upon	X	X
	Environments provisioned		X
	Access to sandbox provided		X
	Project analysis	X	X
	ILS data extract validation and review	X	X
Define	Kickoff meeting	X	X
	Review Alma training	X	
	Configuration and migration input provided	X	
	Relevant source systems (ILS, digital repositories, ERM, link resolver, other integration points) prepared	X	
	Configuration form finalized	X	
	Alma configuration and data migration		X
Build	Access to Alma production delivered		X

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	Third-party integrations configured	X	
	Primo integration delivered		X
	Alma workshop	X	X
	Functional + data review and feedback	X	
	Customer staff training	X	
	Alma Certification program – training and exam	X	X
	Cutover period	X	X
Deploy	Go-Live	X	
	Project closure and handoff	X	X
	Post-implementation survey	X	
	Transition from implementation to support mode	X	X

c) Detailed test plan, including the Consortium's and your company's responsibilities, relating to:

Ex Libris: Alma data migration includes many data elements that may be transient or dynamic. These may include checkouts, holds, item status, patron status and patron blocks. Holds are fully migrated except for unfilled holds, which are reported during migration for library staff to take manual action. Item statuses that don't map exactly to Alma statuses will be flagged and clearly marked within Alma to indicate the potential need to review or clear the flag. Statuses that map cleanly will migrate directly into the relevant status in Alma. There is a short time during the cutover period when circulation activities are frozen in the source system and performed offline to be migrated to Alma as a final step before going live with Alma, which allows uninterrupted circulation throughout the project (including during the final cutover).

Item and circulation history are not included in the migration scope to Alma. However, a full historical circulation report is provided along with the migration outputs from the legacy system. As we fully realize the importance of circulation statistics for library for collection development/weeding, migration of historical item-level aggregated circulation statistics (including last loan date and total number of loans -a number which can represent a count from the source system/s as far back as is provided) may be migrated as statistical / reportable fields within the Alma item record for reference and integrated use within Alma.

Ex Libris will:

- Provide migration guides and forms.
- Provide tools/guidelines for data extraction from Ex Libris source systems

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- Provide guidelines for reviewing migrated data in Alma
- Provide support during the migration and review period
- Data migration services support single standalone institutions whereby each source database represents a single organization and Alma institution.

Customer will:

- Extract data from Ex Libris systems using Ex Libris-provided and supported tools.
- Extract data from Non-Ex Libris source systems following the data format requirements provided by Ex Libris (if the customer is unable to provide data in required formats in the project test load timeframe, the Alma project schedule will need to be re-scheduled)
- Provide input via migration forms.
- Provide data structure description for non-Ex Libris source systems
- Provide input data for print to electronic transformation during migration (if required)
- Provide all input data in migration scope by test migration round delivery date
- Review and test data migrated to Alma and provide feedback in the defined time frame
- Review and test Alma configuration and workflows, and provide feedback in the defined time frame

Data modification or clean-up of any type is not included in the scope of the migration. This includes, but is not limited to the following:

- Eliminating duplicate records
- Correcting misspellings and errors
- Ensuring that there are consistent descriptions, punctuation, and syntax
- Resolving any other inaccuracies and inconsistencies relating to the data content

i) Developing scripts and performing testing for typical functional situations.

Ex Libris: Testing is a substantial part of the implementation project. It starts after test migration and initial configuration load is completed and customer has received access to the future production system. Testing relates to

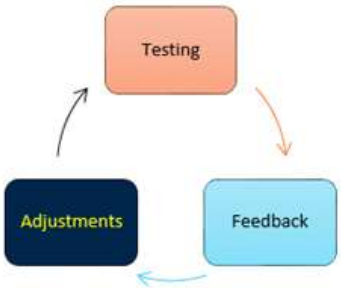
- Configuration (functionality and workflows)
- Data migration
- Authentication setup
- 3rd party systems integrations

There are testing guides available to support the customer during this phase

- Testing Fulfillment Data Migration to Alma
- Testing Resource Management Data Migration to Alma
- Testing Acquisitions Data Migration to Alma
- Sample Testing Checklist

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It's an iterative process meaning the customer provides feedback to Ex Libris as they go along with the testing. Ex Libris adjusts the configuration (if possible) or in case of a data migration issue fix the migration process for the cutover load (if possible).



The testing phase is concluded with the Go live readiness checklist that the customer is being asked to go through in order to make sure that all essential workflows are functioning properly and the system is ready to be taken into production.

All new developments are fully tested by our QA team – including regression testing. Alma's agile methodology for development lessens the likelihood of new functionality impacting on existing functionality. QA is conducted as an ongoing process, achieved by the QA staff working together with the development team. In addition, automatic sanity testing is performed on a weekly basis.

Prior to each release, customers can test new functionalities and enhancements within their sandbox environment two weeks before the release is deployed to the production environment.

ii) Developing scripts and performing testing for abnormal functional situations.

Ex Libris: See above i).

iii) Developing scripts and performing system (stress) performance testing.

Ex Libris: Ex Libris employs a comprehensive approach to testing and performance evaluation, which includes the use of sandbox environments and automated testing tools. Alma's development process incorporates Agile Scrum methodology, where QA is an integral part of the development sprints. This ensures that testing is conducted early and continuously throughout the development cycle, allowing for the identification and resolution of issues promptly.

For system performance testing, Ex Libris uses Selenium as a web application automation tool. Selenium allows for the simulation of user interactions with the system, which can be used to test the performance and stress of the system under various conditions.

Additionally, Ex Libris provides sandbox environments for both Alma and Primo VE, which are isolated from the production environment. These sandboxes allow for safe testing of changes, including performance testing, without affecting the live system. The Alma Premium sandbox, available after "Go Live," offers a full replication of the production environment, enabling realistic performance testing scenarios.

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Overall, the combination of automated testing tools and sandbox environments provides a robust framework for developing scripts and performing system performance testing, ensuring high-quality and reliable software delivery.

iv) Developing and performing testing for data conversion.

Ex Libris: Developing and performing testing for data conversion during the migration to Alma involves several key steps and considerations:

- **Sandbox Testing:** Alma provides a sandbox environment that is crucial for testing data conversion. The Alma sandbox allows institutions to test changes and new enhancements without affecting the production environment. This includes testing business scenarios and integration with other systems. The sandbox is isolated from the production environment, ensuring that any actions performed do not impact live data.
- **Data Migration Rounds:** The migration process includes two rounds: a test migration and a cutover migration. During the test migration, data is extracted from the current system, transformed, and loaded into the Alma environment. This allows for thorough testing of data and configurations before the final cutover.
- **Testing in Implementation Environment:** After the test load, the customer tests the data and configuration in the implementation environment. This step is crucial for identifying any issues that need to be addressed before the final migration.
- **Use of Migration Guides:** Ex Libris provides detailed migration guides and forms to assist in the data conversion process. These guides outline the mapping details for each source system and are used to ensure accurate data conversion.
- **Customer Involvement:** The library project team is involved in providing data structure descriptions and input for the migration forms. They also review and test the migrated data and provide feedback within a defined timeframe.
- **Testing Using Agile Methodology:** Alma follows the Agile Scrum methodology, which includes ongoing QA testing as part of the development sprints. This approach allows for early detection and resolution of issues, contributing to the quality of the product.

Overall, the testing for data conversion in Alma is a comprehensive process that involves multiple stages and collaboration between Ex Libris and the customer to ensure a smooth transition to the new system.

v) Developing and installing a test database.

Ex Libris: Ex Libris provides an Alma Standard sandbox as part of Alma's standard offering, included as part of the Alma subscription. This sandbox contains a significant amount of data (about 70,000 records) provided by Ex Libris that you can use for staff training and testing Alma business scenarios, new enhancements, and integration with other systems, without affecting your production environment.

After "Go Live", Ex Libris also offers an Alma Premium sandbox (for an additional annual fee). This sandbox contains a full replication of the data and configurations from your production environment. It can also be used for training, testing, and development purposes. When you purchase the Premium sandbox, it replaces your Standard sandbox.

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d) Detailed security procedures, including the Consortium's and your company's responsibilities, related to the implementation of the ILS.

Ex Libris: When adding a new library to the Consortium, detailed security procedures need to be followed to ensure the integrity and confidentiality of the data. The Consortium, the new library, and the Vendor all have specific responsibilities related to security.

1. **Consortium Security Procedures:** The Consortium should have robust security measures in place to protect the shared data and resources. This includes access control mechanisms, encryption protocols, regular security audits, and incident response plans.

2. **New Library Security Procedures:** The new library joining the Consortium must adhere to the Consortium's security policies and guidelines. This involves implementing secure authentication methods, data encryption, staff training on security best practices, and compliance with industry standards.

3. **Vendor Security Responsibilities:** Ex Libris provides services to the Consortium and its member libraries have a responsibility to maintain the security of the systems and data they handle. This includes secure transmission of data, adherence to data protection regulations, and prompt response to security incidents.

Overall, a collaborative approach to security is essential, with all parties working together to ensure the confidentiality, integrity, and availability of the shared resources within the Consortium.

As Alma and Discovery is a hosted solution, it is Ex Libris' strong recommendation that no secure private data such as social security numbers or other sensitive information be stored or passed to Alma or Discovery. All data is transferred to the Ex Libris Alma environment via secure FTP.

Additionally, as part of implementation, any email or FTP address is anonymized/scrubbed to ensure no stray communications are sent to external parties (vendors, patrons, etc.) during testing. These addresses are unanonymized/ scrubbed upon Go-Live in coordination with your Ex Libris project management team.

e) Detailed summary of the types of support and training your company will provide specific to the initial system implementation. Provide a comprehensive training plan of services included in a basic contract and the optional services and corresponding fees available to colleges.

Ex Libris: Training is conducted via several channels throughout the implementation; starting during the Onboarding phase and continuing beyond go live. Training content is timed to align with the relevant implementation activities at each project phase. The training channels are listed here, followed by more comprehensive explanations of each. An overview of our Alma Education Services and other training documentation be found online in our Knowledge Center: https://knowledge.exlibrisgroup.com/@api/deki/files/124086/Ex_Libris_Alma_Education_Services_11_2021.pdf?revision=1

1. Recorded functional training
2. Technical discussions
3. Alma workshop/workflow consultation
4. Alma administrative certification

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5. Continuing education

1. Recorded functional training

Audience: Library project team (including testers, functional experts, and trainers)

Format: Recorded sessions and hands-on activities

Timing: Begins during the onboarding period immediately after project kickoff and continues throughout Define phase

Description: Initial training covers all major functional areas of Alma, including initial training on configuration. The key goal is to cover fundamentals so that the library staff are prepared to test the initial data migration and begin adapting the workflows to suit local needs. Each session includes recorded presentation and demonstrations, hands-on activities, and the presentations used by our trainers so that library trainers can refer to them and adapt them to train other library staff. The delivery of these sessions is scheduled throughout the Define phase and paired with topical Q&A sessions with the Ex Libris implementation team for the relevant week's training.

These functional trainings (including all subsequent updates based ongoing system development) will continue to be available for the lifetime of your Alma subscription. Initial trainings serve as a good resource to brush up on unfamiliar topics or to train staff that are new to Alma.

In order to promote interactive testing of Alma workflows prior to the delivery of the migrated data, a sandbox environment is provisioned during the customer onboarding period at project kickoff. The sandbox is used to conduct hands-on exercises that accompany the recorded training. Configuration settings within the sandbox are open to the library to support development of configuration knowledge and insight into the impact of configuration settings on system functionality.

2. Technical Discussions

Audience: Library project team, functional experts

Format: Live web discussions

Timing: Build phase through project close

Description: Once the initial data migration is delivered in a configured Alma environment, the focus of training shifts from "vanilla" workflows to workflows customized to the needs of the library. This is handled via weekly calls. Having the topical calls scheduled on a week to week basis allows the project teams to dive into much more detailed questions than prerecorded training affords. These functional calls continue throughout the life of the project, and the topics are determined by discussions with the libraries as the project progresses.

3. Alma workshop/workflow consultation

Audience: Library team, functional experts

Format: Onsite or remote discussion and demonstration, typically 3-4 days or as defined in contract

Timing: Near the beginning of the Build phase, once initial data testing is complete

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Description: As the libraries' attention shifts to adapting basic workflows to its own needs, the project has an onsite visit scheduled. This is an opportunity to discuss any open questions from the initial training, the needs of the libraries, and the range of configuration possibilities in Alma. The format is typically guided demonstration, where the Ex Libris product expert will demonstrate end-to-end workflows in the migrated environment. This demonstration will be launching point for answering questions, discussing the goals of workflows and how to adapt them efficiently in Alma, and what additional configuration decisions need to be made. This then sets the tone for the following functional calls—focused on the needs of the library and how the systems can support those needs.

4. Alma administrative certification

Audience: System librarians who will configure Alma

Format: Recorded trainings, final test

Timing: Near the end of the Build phase before cutover begins

Description: To prepare the library to configure Alma after go-live, a separate administrative certification program is offered. Each library chooses at least two representatives who will be the local experts at administering Alma and performing the more advanced aspects of configuration. This certification process both cultivates local expertise and provides a path for further development of the more advanced aspects of Alma administration. The program consists of recorded trainings covering configuration of each major functional area of Alma. The program culminates in an online test to be taken by each participant. Once the test is passed and the library has gone live with Alma, production environment configuration access will be opened so that administrators have full control over configuration of the Alma institution. Note that sandbox environment configuration access is open throughout the project.

5. Continuing education

Audience: Any library staff who use Alma

Format: Recorded sessions, release notes, "What's New" videos, "Ask the Expert" sessions, Ex Libris Technical Seminar

Timing: Ongoing

Description: Because of the rapid development of Ex Libris products and the growing user base for our next generation solutions, Ex Libris maintains a considerable investment in ongoing education. Our goal is to make a variety of formats available to support different learning styles and different depths of background knowledge.

The following are the key channels:

- Post-Implementation Consulting Services Hours:
    - Ten consulting service hours to help you maximize Alma and Primo.
    - Ex Libris product experts work with you, building a structured plan to address your library's needs through targeted training, workflow consultation, and feature enablement

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- Recorded sessions: As functionality develops, extended training in the Ex Libris Knowledge Center continues to be generated and updated. This is a mix of new sessions on advanced topics and updates to existing training.
- Release notes: New functionality is always described in the notes for each release, including a link to more extended documentation when appropriate. Release notes are an excellent starting place to determine what new features might be relevant to your library.
- What's New videos: Certain new features are complex or novel enough to warrant more demonstration. In such cases, short (typically about 5 minutes) recorded overviews will highlight how to use these functions via demonstration within the system. What's New videos are embedded in the online help in the relevant section, so users can find them when referencing the standard documentation as well.
- Ask the Expert: Regular live web sessions are held in which a product expert covers a predefined topic in depth. These function like a Q&A in which some answers are demonstrated in the system.
- Ex Libris Knowledge Days (formerly Technical Seminar). Ex Libris hosts an annual technical meeting immediately prior to the annual user group meeting (hosted by ELUNA). This consists of meetings between Ex Libris and library developers from institutions using all Ex Libris products. This meeting has a significant Alma and Primo focus, including live versions of some recorded trainings and topics. This two-day event is an opportunity for you to attend presentations, hands-on workshops, practical exercises, and question-and-answer sessions. It includes many advanced training and topical sessions sharing how systems have been adapted based on local needs.
- Premium Services: Once you have been live with Alma for some time and your library's needs evolve, more hands-on assistance with optimizing workflows or enabling new system features might be required. For this reason, Ex Libris offers additional one-on-one premium paid Expert Services for libraries that are already in production. During a Premium Service engagement, a product expert may analyze opportunities for workflow optimization, deliver individualized training, or provide hands-on configuration assistance to set up new services. These and other services can be adapted as the library's unique requirements develop.

Training is included as part of the implementation and subscription costs. Additional expenses would include travel for onsite visits (based on actual cost), and optional services such as attendance at Ex Libris Knowledge Days, and Premium Services.

Onsite Training:

As part of your implementation services, we will deliver **onsite** workshops which are included in our premium training offerings. These workshops are intended to be interactive engagements to review library workflows and configuration settings. Workshops will be preceded by completion and review of Alma elearning videos with the Ex Libris project team. Our expectation is that workshop attendees will have completed the essential set of Alma trainings prior to attending a workshop.

An effective workshop is three to four days in length allowing time to cover all topics related to Alma workflows in-depth.

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Your Ex Libris project team will work directly with the members of your project team to ensure that they have the knowledge and resources to train staff at each member library. This is a train the trainer approach. To ensure that the trainers have the knowledge and resources needed to develop a training plan, we further propose the first onsite workshop early in the project directed at consortium staff and key members from first wave institutions who will be responsible for building training and documentation assets for the larger group. The agenda will include a review of the training assets available to the libraries in the Ex Libris Knowledge Center and guidance on the development of a training plan for the larger group along with high level functional overviews.

Our training approach is as follows:

- **Watch** *"Getting to Know Alma"* online tutorials to get an introduction to Alma and learn about the major functional areas
- **Practice** using Alma in your sandbox, using the guided exercises provided in *"Getting to Know Alma"*
- **Watch** Alma Essentials eLearning, Configuration tutorials, Integrations with External Systems and Extended eLearning videos
- **Work** with your Ex Libris project team to home in on site-specific questions and scenarios
- **Participate** in your institution's Alma Workshop and fine-tune your workflows
- **Become** a certified Alma Administrator by completing and passing the self-paced online training course and exam

f) Detailed summary of all migration/implementation costs to be incurred by the NCCC System Office and the colleges.

Ex Libris: Please see our cost proposal, which includes our comprehensive implementation and migration fee.

g) Detailed plan and costs for onboarding additional community colleges which may choose to join the Consortium at a future date.

Ex Libris: New members would undergo an implementation project like the initial implementation which would include data migration, configuration, and training. Cost-sharing adjustments would be based on the new member's subscription parameters and reviewed with your Ex Libris software sales manager.

The Vendor's proposed implementation plan can be included as a clearly marked attachment in the Vendor's RFP response.

k. OPAC

i. NCCCS seeks a solution that has a function-rich online catalog. Explain how the proposed solution's reporting supports the following functionality:

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Ex Libris: Primo VE is Ex Libris' end-user interface to Alma and is optimized to fully leverage the advanced capabilities provided by Alma for smart fulfillment, digitization on-demand, course reserves, patron driven acquisitions and more. Primo VE is a unified solution for the discovery and delivery of the full spectrum of library materials—print, electronic, and digital—regardless of format and location. The integration between Alma and Primo VE supports consortial capabilities, such as direct patron interaction, consortial user accounts, etc. It also provides a unified search that allows for smooth and streamlined discovery across all of an organization's institutions, while still providing the patron with a single view into the institution's holdings, using Primo VE's "view" functionality. This capability provides a flexible way for patrons to conduct discovery in a single institution, as well as at the consortial level, from a single interface.

Alma and Primo VE are tightly integrated. The Primo 'My Account' area provides authenticated users with the ability to manage their account including the option to view and edit (if applicable):
- Loans/Historic Loans (with option to renew)
- Requests/Reservations (on physical items, digitization, resource sharing (ILL), etc.)
- Fines and Fees (List and active balance) – with the possibility of integrating with a payment provider for online payments
- Blocks and Messages
- Personal Settings (for contact details, credentials, SMS settings, result and language settings)
- Lists of saved resources (Favorites) – users can email citations to themselves or third parties
- Saved searches and alerts

Primo VE supports the ability to harvest resources from the library catalog and other local repositories. Through an intuitive interface, end users can discover and access resources from the Alma Institution Zone (local institutional holdings, digital collections, etc.) and commercial and open access resources through the Central Discovery Index (CDI). The CDI includes commercial and open-access content from primary and secondary publishers and aggregators. Results are based on the full-text, abstracts and metadata for articles, books, newspaper articles and more. Primo VE presents results from shared resources and local resources as well as from the central index in a single merged list, sorted by relevance. We have forged agreements with hundreds of publishers and content aggregators, and we continue to work with our customers to seek out the broadest and highest quality content to extend the Central Discovery Index (CDI). Just a few examples of content providers included in the CDI are Gale, Wiley, JSTOR, CrossRef, Sage, SpringerLink, ABC-CLIO, and Elsevier Scopus. The Central Discovery Index includes over 5 billion scholarly resources of global and regional importance. The records include a mix of scholarly material—primarily articles and e-books—but also conference proceedings, newspaper articles, audio, video, reviews, legal documents, and more. The number of resources in the CDI is constantly growing as additional resources are added.

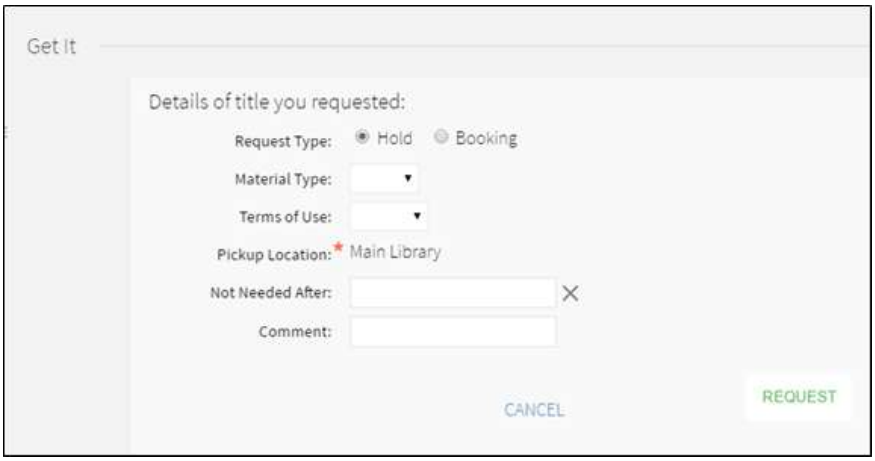
a) Patrons creating holds.

Ex Libris: Alma supports staff and patron-initiated hold requests and recalls. Alma's Request Management functionality uses built-in workflow engines to control the processing of the requests throughout the different stages in the request's lifecycle. Using the workflow engines standardizes request management throughout Alma, regardless of the type of request.

The patron places the request from the discovery interface, or library staff create the request for the patron in Alma. Alma, utilizing internal item location processes, identifies the most suitable item for fulfilling the request, and triggers the request workflow process on the specific item. The considerations for selecting a specific item are based on item availability and ease of fetching. For example, Alma will prefer an item that is already shelved at the requested pickup location.

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When using Primo for discovery and placing the request, the item details are already provided as part of the request and only the pickup location (which can be predetermined by the library) is required:



In Primo, patrons are able to view their requests from the My Account link. The Status column gives information about the status of the request (e.g. in process), and the patron's place in the queue.

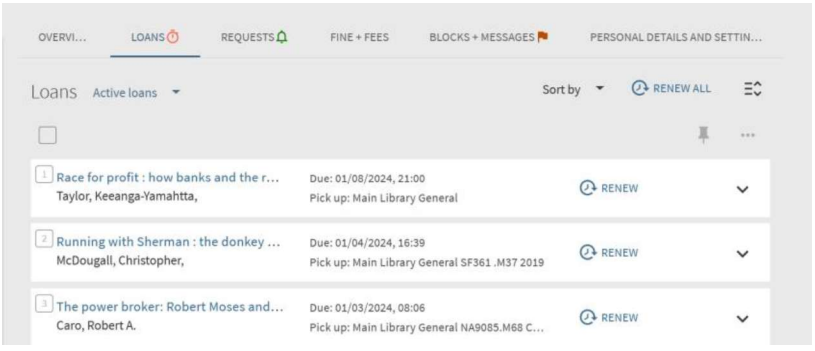
When an item on loan to a patron is then requested by a second patron, a recall request may be created for the original loan. The recall process is initiated if the Loan Recalls Configuration is set to activate a recall for the submitted request type.

Alternatively, staff may place the request or recall from Alma.

b) Patrons renewing items.

Ex Libris: Yes. Patrons have access to a robust set of features in their Primo VE accounts, one of which includes allowing them to view lists of checked out items and to renew these items if allowed by the library's Terms of Use.

Renewals can be done for a particular item or in batch. The renew option is only displayed for items where renewal is possible:

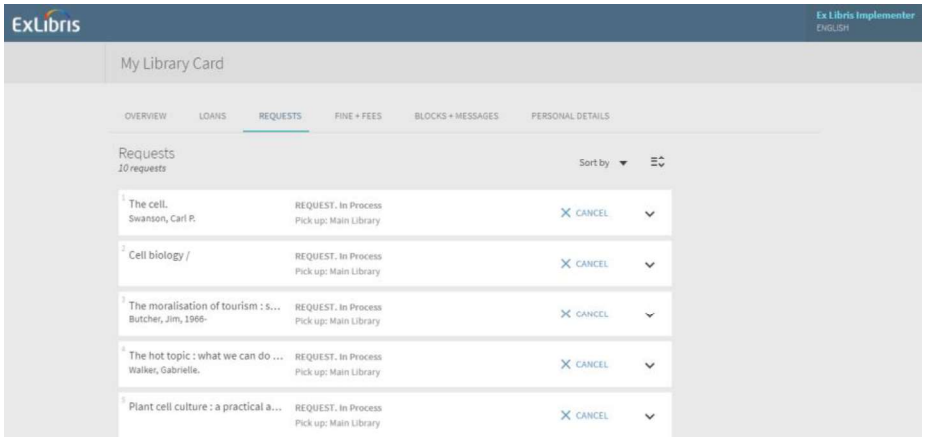


Library Terms of Use are applied in Alma and are an aggregation of library defined policies relating to a specific fulfillment service type (loans, requests, etc.).

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Alma enables you to define various limits that apply to the patrons who use the services of the institution and libraries within the institution. Patron limits are checked and applied when a patron attempts to borrow or renew a resource from the library.

Patrons can also cancel requests in the Requests tab of My Library Card:



Patrons can cancel borrowing requests at any point in the process.

c) Mobile cataloging.

Ex Libris: Both Alma and Primo VE can be accessed from a mobile device or tablet. Cataloging can be done in Alma through the metadata editor.

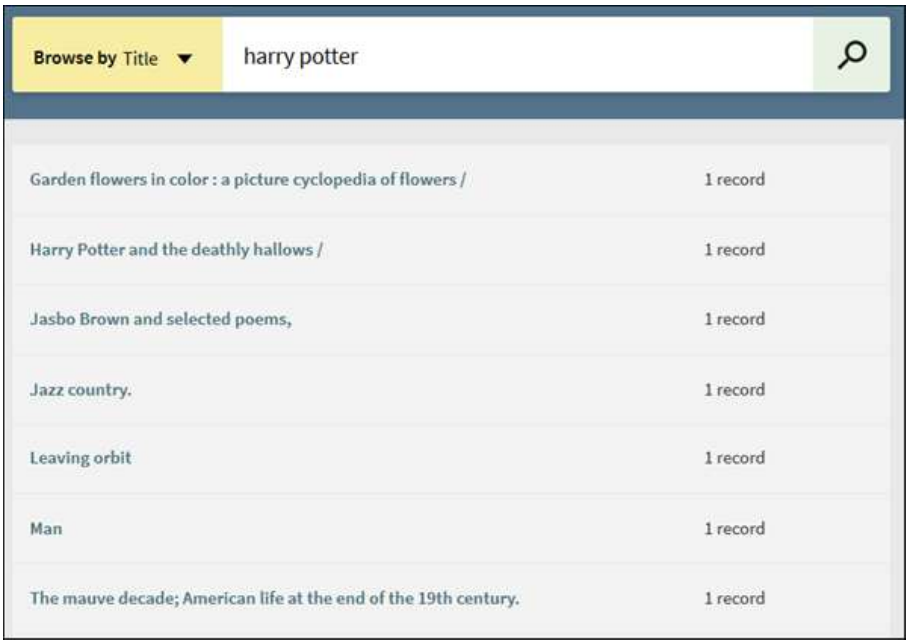
d) Browsing and search results display using a Google or Amazon-like experience with social media and the ability to post reviews

Ex Libris: Primo's browse search returns an alphabetical list (based on the type of browse selected and the search terms specified by the user). Each item in the results list returns a list of related records. Currently, the following types of browse searches are supported: Author, Title, Subject (based on a selected vocabulary), and Call Numbers of the following types: Library of Congress, Dewey, SUDOC, and others.



The following figure shows an example of the alphabetical list returned by a title browse. Users can then click one of the items in the list to display the brief results for the item.

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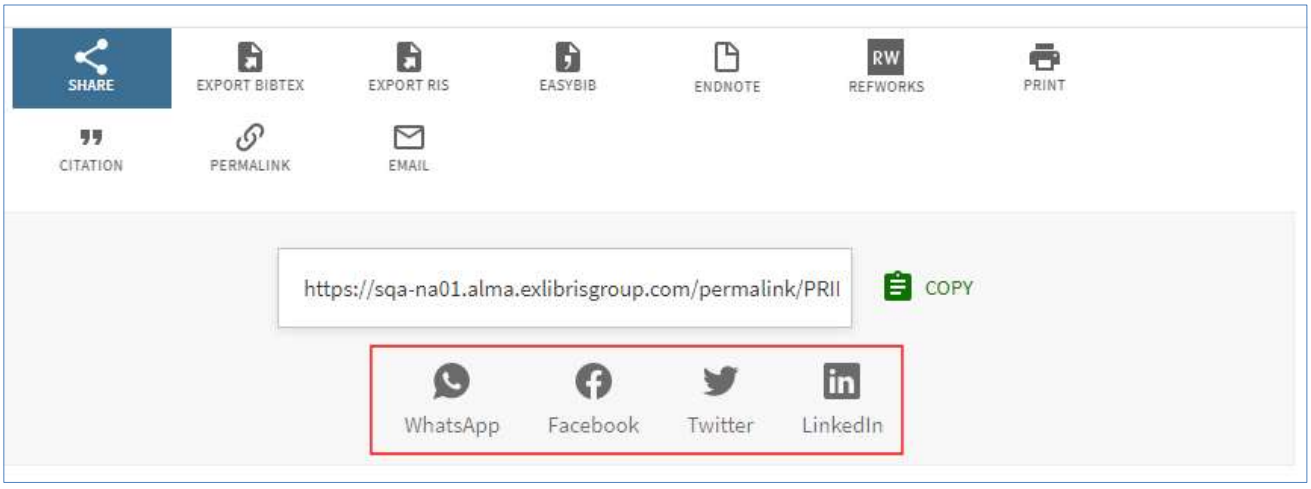


For more information on configuration possibilities, please refer to the following page:

https://knowledge.exlibrisgroup.com/Primo/Product_Documentation/020Primo_VE/055Configuring_Advanced_Search_Interfaces_for_Primo_VE/Configuring_Browse_Search_for_Primo_VE

Primo creates permalink URLs for search results, which can be shared with others in order for them to run the same search. These can be accessed from the Brief Results, Full Display, My Favorites>Save Records, and My Library Card>Loans/Requests pages.

Primo allows users to share the record's permalink with other users using the following social media applications: WhatsApp, Facebook, Twitter and LinkedIn. In addition, users can save the record's permalink to the clipboard by selecting **COPY**.



QR codes are also displayed on main pages and individual item records to enable sharing of search results or records. QR codes are enabled by default.

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e) Patrons suspending or unsuspending holds.

Ex Libris: Suspending or pausing hold requests is not supported.

f) Integrating with other discovery overlay vendors

Ex Libris: We strongly recommend using Primo VE as the best Discovery system with Alma. The tight integration between Alma and Primo provides many benefits in terms of user experience and administration of the system. Primo VE is a new Primo deployment model simplifying Primo backend processes and further optimizing the management of Primo with Alma by utilizing the Alma platform. Primo VE offers an inherent discovery layer over Alma resources and – in addition - other resources managed by the library that need to be exposed to patrons.

Primo VE, coupled with the new Primo UI, will enable users to benefit from:

- Major operational improvements and the streamlining of publishing processes
- Real-time discovery of records created in Alma
- Significantly improved product implementation process, including easier configuration and setup
- Unified back-office management of Primo and Alma, and reduction of duplicate admin processes
- Enhanced user experience

Ex Libris also supports an integration between Summon and Alma, and several libraries also use open-source systems such as Blacklight and a handful use EDS. For sites that use an alternative discovery service, Primo is still necessary via the Primo API to pull in local holdings and to provide linking information. Alma integrates with open-source discovery systems using several protocols and methodologies. At the core of the integration is the Alma publishing process that enables integration between Alma and third-party systems, based on the bibliographic information stored in Alma.

This section summarizes the integration points:

1. Search and retrieve information about library resources: In order to enable this functionality, all types of Alma data (such as physical, electronic, and digital data) must be published and loaded into the discovery tool's DB.
2. Retrieve real time availability information on library resources: Discovery system can query Alma for the real time availability of print materials, using the Retrieve BIB API. This API is based on the MMS ID (BIB ID in Alma), which is retrieved as part of the publishing process in 001 field.

Ultimately, using Primo is a simpler and more effective option requiring less staff time to maintain and providing a more streamlined patron experience.

g) Supporting Single Sign On (SSO) functionality.

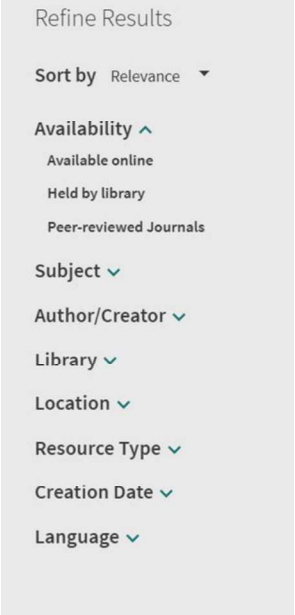
Ex Libris: Primo VE supports single sign-on. Users can sign in directly from search results. Primo can authenticate users using either a federated single-sign-on authentication system (for example based on the SAML 2.0 browser SSO Profile), or using non-federated authentication. Currently, non-federated authentication options include LDAP-based authentication.

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h) Predictive keyword searching entry and relevant search results

Ex Libris: The Primo VE auto-complete function supports users further, by offering suggestions as a user enters search terms. The suggestions are derived from popular queries in the Primo VE search logs; from journal titles and subjects contained in the Central Discovery Index and from authors, titles, and subjects from the institution's local collections. By taking into account the institution's local collection, Primo VE ensures that auto-complete suggestions are drawn from items that are available to the user.

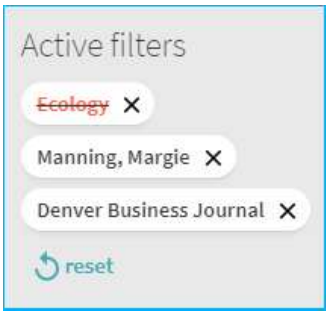
Facets are available in search results to refine result sets. Primo VE is implemented with a large number of facets. However, the library may modify the facets, add new facets, and change the order in which the facets are displayed. Facets delivered with Primo VE include collection, location, material type, language, publication date, online items only, and more.



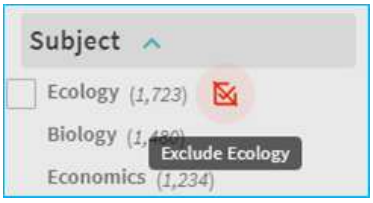
Search results are automatically refreshed when facets are selected or deselected. The Reset option allows you to remove all facet values applied to the current search.



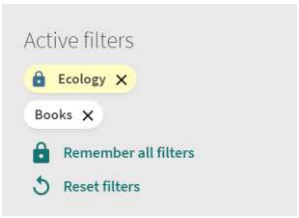
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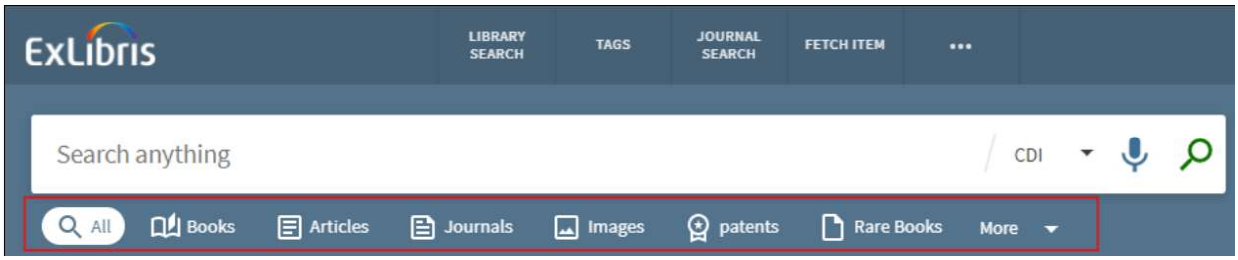
Primo provides the option to apply facets inclusively or to exclude certain values.



Primo provides the option to make the facets sticky for the session cross several searches, the user can apply this using the Lock icon on active filters



Primo VE also includes a resource type filter ribbon that appears under the basic search box to enable users to filter their results by resource type.



i) Easily identifiable links and access to electronic resources; and customizable options on how results display.

Ex Libris: Primo VE offers several features that enhance the accessibility and customization of search results for electronic resources. Users can easily identify links and access electronic

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resources through the Primo interface, which supports access for non-authenticated guests and provides direct links to licensed resources that require authentication. This is done directly from the result display in Primo without requiring the user to leave the interface.

Customization options for how results display are extensive in Primo VE. Libraries can configure search scopes to allow users to pre-filter searches by library or collection. Additionally, users can narrow their search results using facets, which can be customized by the library to include collection, location, material type, language, publication date, and more. Facets can be applied inclusively or to exclude certain values, and they can be made sticky for the session across several searches.

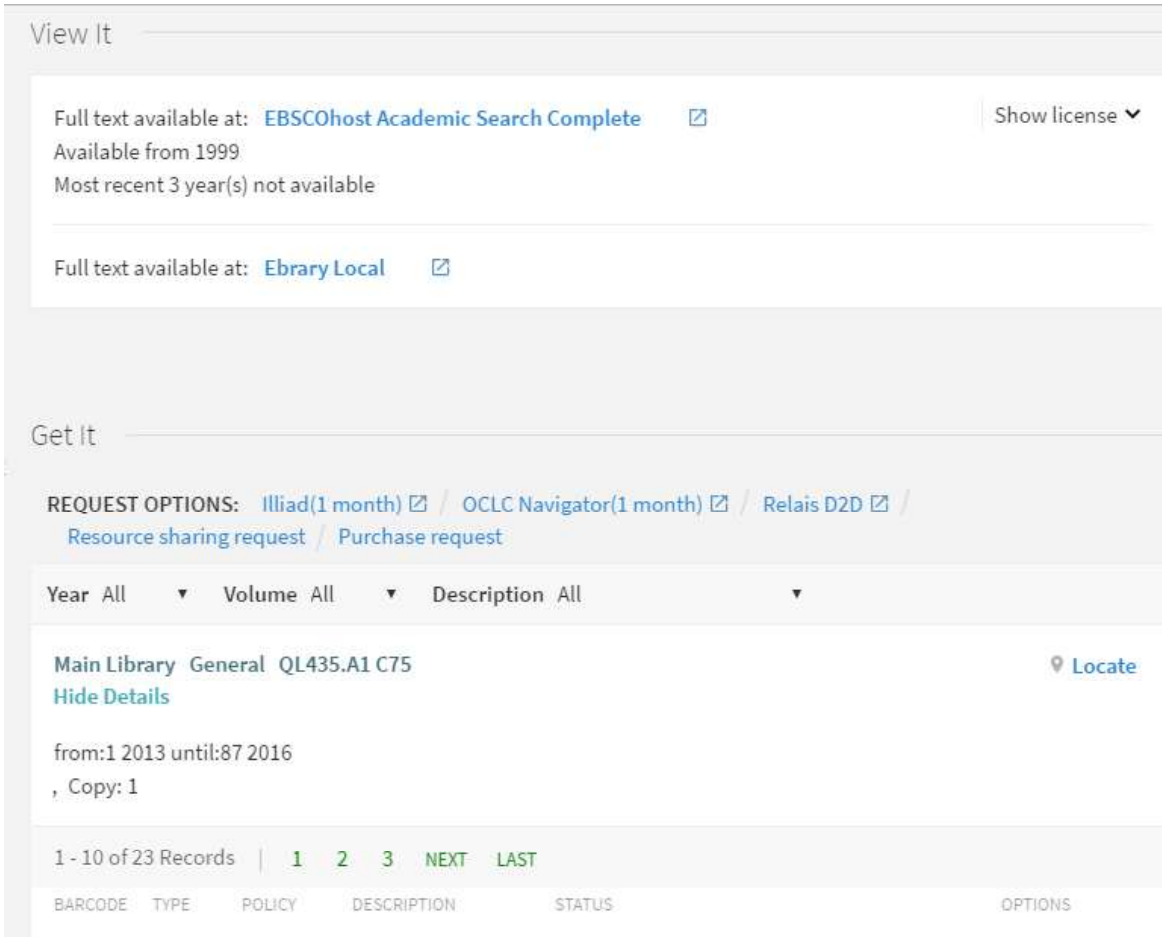
Primo VE also allows for the customization of the user interface through Alma's Discovery configuration. This includes changing icons, logos, color schemes, and adding extensions.

The link resolver will link to all available options, including print. An example can be seen following (in Primo VE) of a record with print and electronic versions of a record. Users can check the availability for the electronic version via the View It and the print version from the Get It:



Patrons have access to the full text versions (View it):

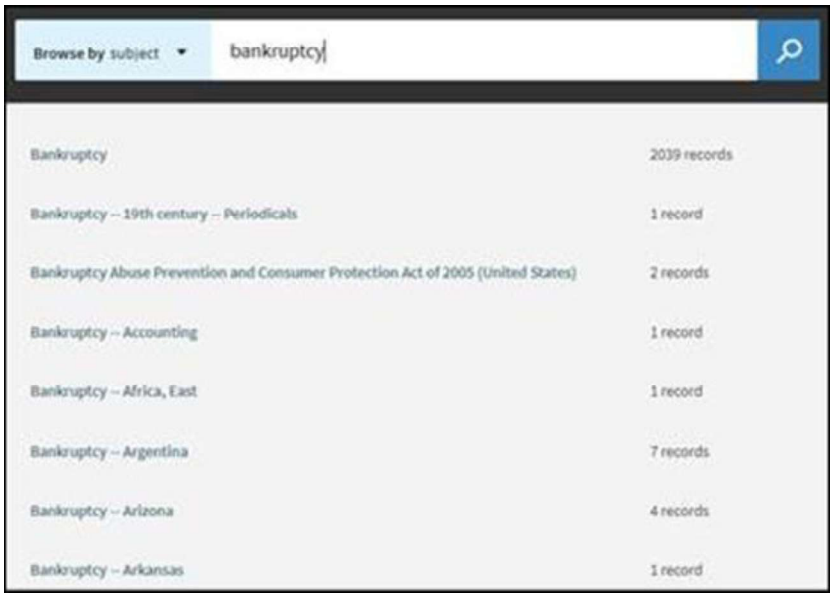
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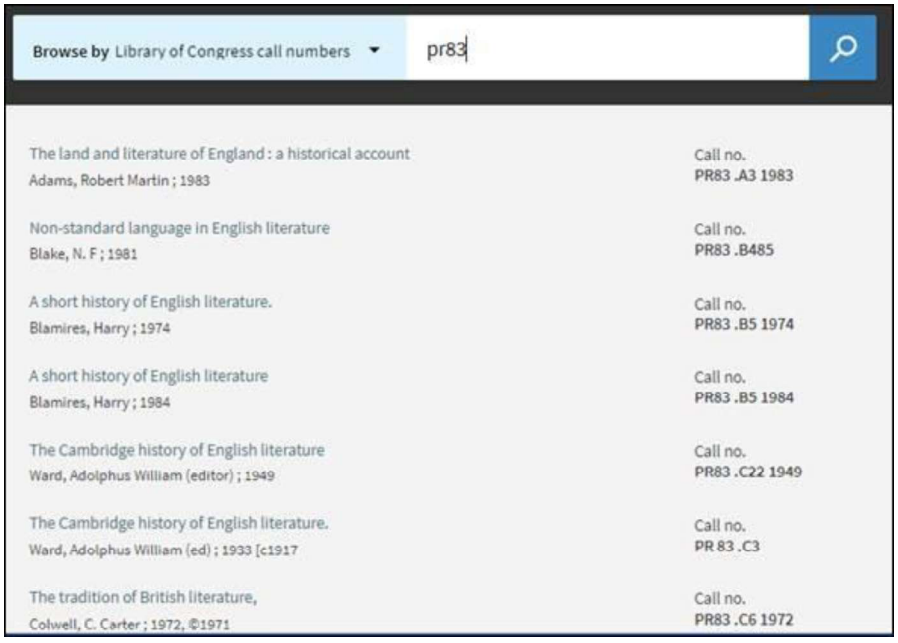
j) Web-style browsing.

Ex Libris: Primo's Browse search allows you to browse library material (local material only) in order to find information of relevance quickly. You can browse material by author, title, subject and call number. The library can select which of these browse options you will provide. When browsing by author, title or subject results will be grouped together; you can click an underlined entry to see its associated records:

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It is also possible to browse by call number, which returns a list of associated records in brief format. Clicking a title displays its full record:



Primo provides suggested new searches, and the topic or subject facets provide additional ways for users to explore a subject. Finally, Primo uses concepts of serendipitous discovery to suggest new resources to researchers. A distinguishing feature that libraries using Primo can offer their users is recommended articles from scholarly journals.

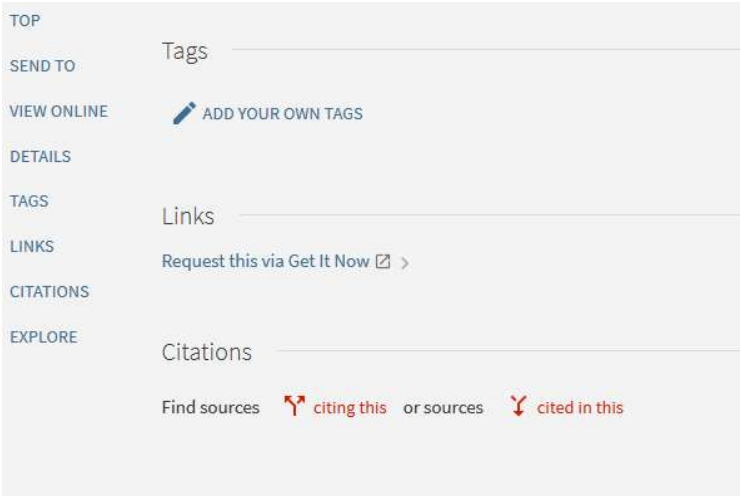
Primo integrates article recommendations from the Ex Libris bX recommender service directly into the user interface, providing even more value to end users. The recommended items can be displayed directly in the Primo results set. The bX recommender is significant because it uses an approach other than the suggested new searches below the facets; instead, it recommends related articles that do not necessarily share the original item's keywords, subjects, creator, or

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source, thereby enabling serendipitous discovery of items the user may have never thought to look for. bX Recommendations display in the Related Reading section of a record's full display.

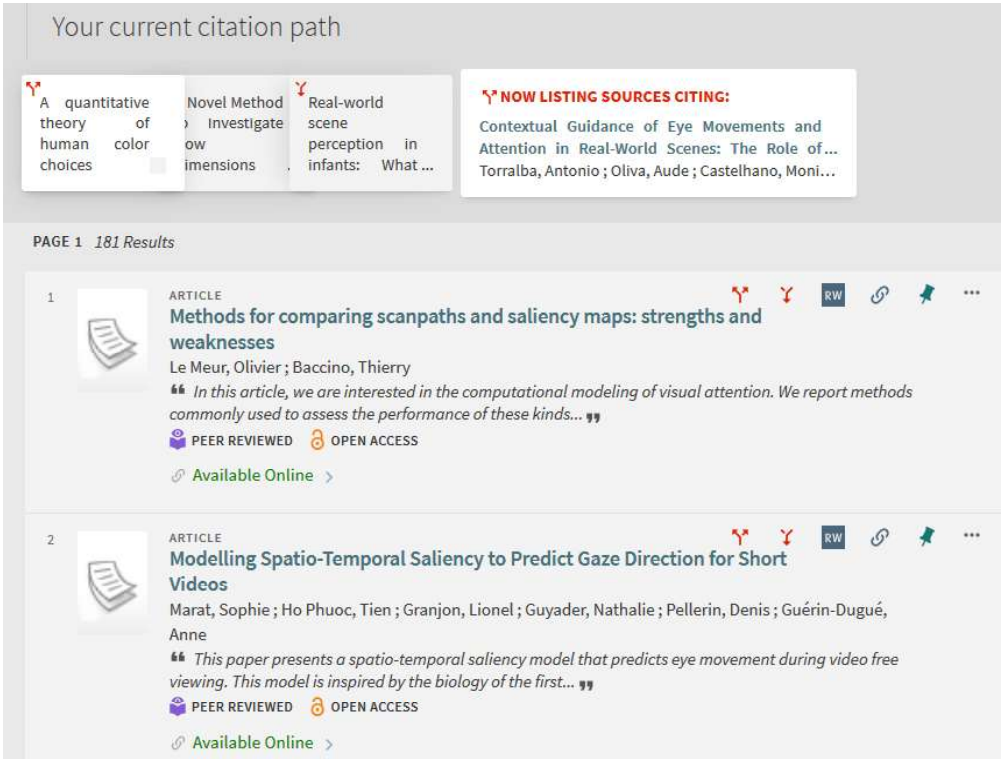
Additionally, "citation trails" is an exploration tool in Primo that helps users find related articles and to explore the topic of the seed article further. Primo currently matches the metadata provided by CrossRef with the records in the Central Discovery Index (CDI) to build the citation trails. Only records that belong to the collections that your institution has activated in the CDI will appear in the lists.

The screenshots below demonstrate the evolution of a citation trail as a user clicks from one citation to the next:





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Discovery paths via material relations

Relations between documents provide a means for the user to learn more about its context, find other similar material that is relevant for their search, and learn more about a topic of interest. Such relations can be created in different ways.

We provide the following examples of discovery paths via data relations:

- **A citation trail:** Connects items that cite each other and thus replicating a discovery behavior whereby users go from one reference list to the next to find material

- **The bX recommender**: Provides article recommendations based on what other users used together

- **A virtual browse function**: Allows the user to browse bookshelves virtually

- **Collection discovery (Primo)**: Delivers users the ability to browse through items that are part of a special collection the library provides for them

- **More records in the same course –** Allows the user to see additional records that are in the same course reading list

- **More records in the same collection -** Allows the user to see additional records that are in the same Alma collection

We recently released the first services based on material relations, coming from our graph database. With these relations, users can start with one item of interest and find more without having to run an additional search. This includes relations between:

- Books and book reviews

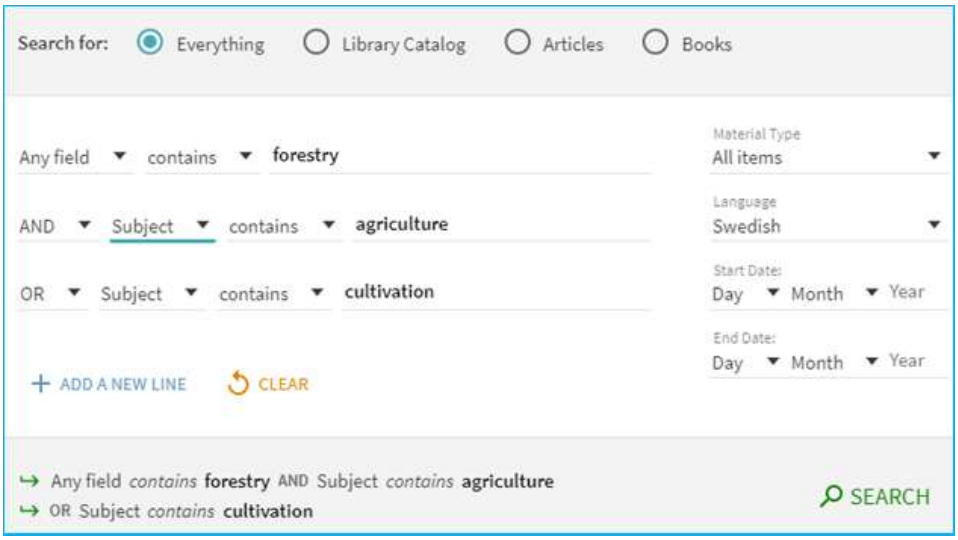
- Book chapters and other chapters of the same book

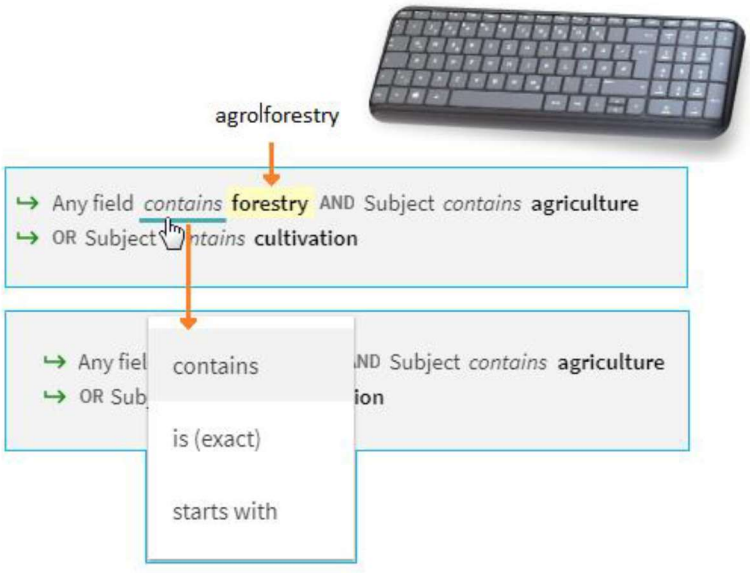
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- Articles and research data

k) Utilizing of Boolean operators

Ex Libris: Primo provides simple google-like search as well as advanced search. The default search is a keyword Boolean "AND" search. Other search types (Boolean, "OR", "NOT", wildcards, truncation, and phrases) are supported in the basic and advanced search boxes. The system also supports "Starts with" or left-anchored searches for titles. When searching via advanced search you will be able to modify the search string based on the search fields and operators:





l) A library application available for mobile devices.

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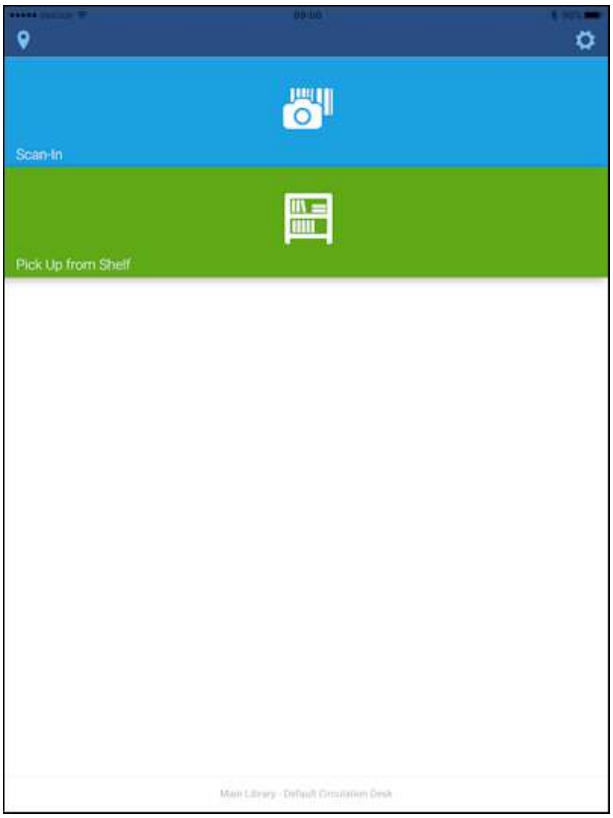
Ex Libris: As Alma and Primo VE are a fully browser-based system it is possible to use the product on devices (Smartphones and Tablet) for flexible working practices. All functionality, including lending, is available via a tablet which can be used at the bookshelves.

m) Mobile access for library staff to perform inventory and mobile circulation desk functions.

Ex Libris: In addition, staff users have access to the Alma Mobile App, which allows users to operate daily library activities. Librarians can perform fulfillment activities on the go, even scanning item barcodes to register in-house use from anywhere in the library. Built on a flexible advanced mobile-application framework, Alma Mobile will grow to include more features, such as work-order processing, item returns, the creation and processing of sets, inventory management, and even mobile analytics.



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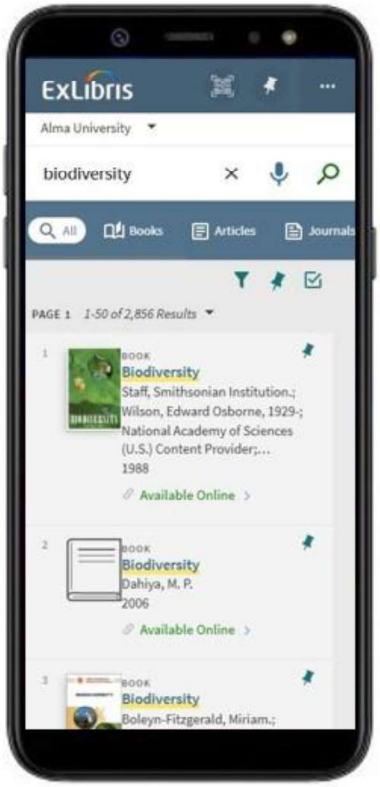
n) Responsive web design

Ex Libris: Primo VE provides a full responsive design for all devices by using Angular. The interface scales and re-arranges according to viewport size, so that functions are reachable and usable, whether used on smartphone, tablet or desktop.

One of the key advantages of Primo's User Interface is the way it displays over mobile and tablet devices, making Primo searches available from any device, any time. To provide the best "on the go" experience, we are using Angular HTML5 technology for responsive design.



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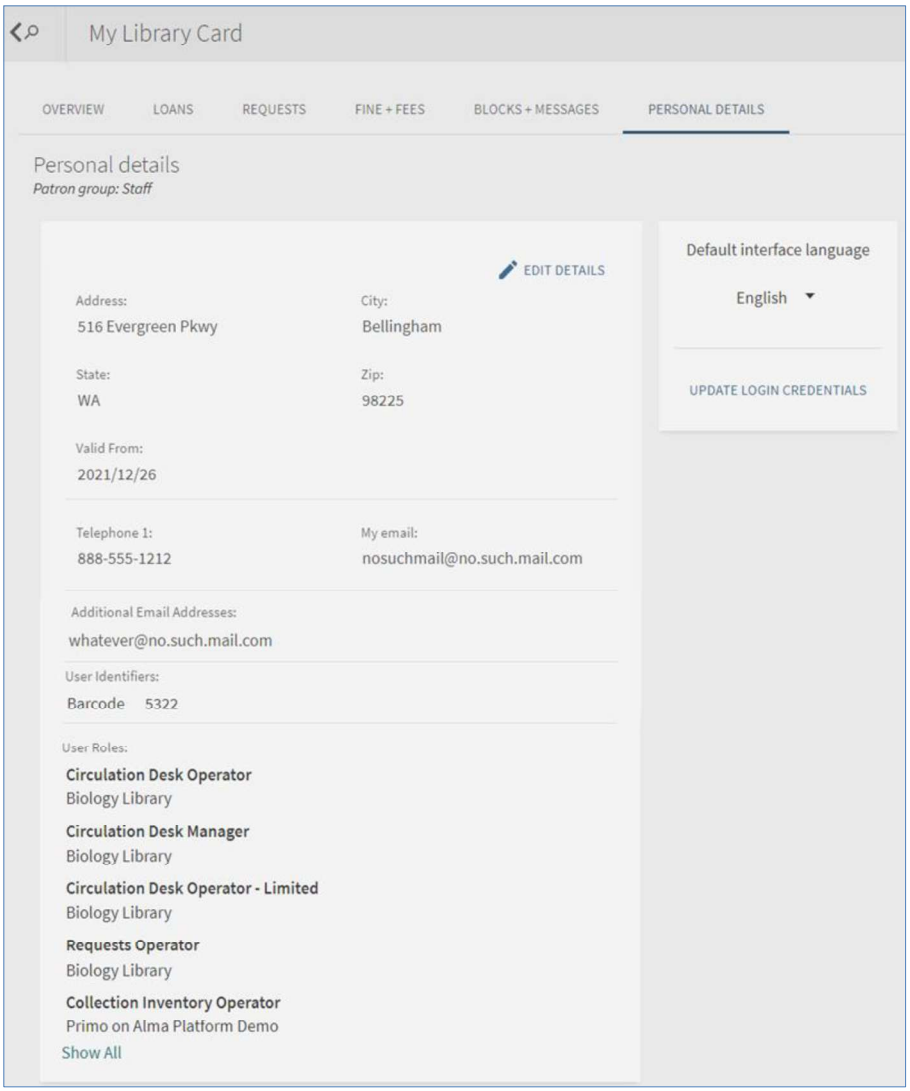
ii. Explain how the proposed solution supports the following functions:

a) Patrons can edit addresses.

Ex Libris: Patrons can edit and change the following via their account:

- Personal details such as address, phone number, email
- SMS settings
- Language settings

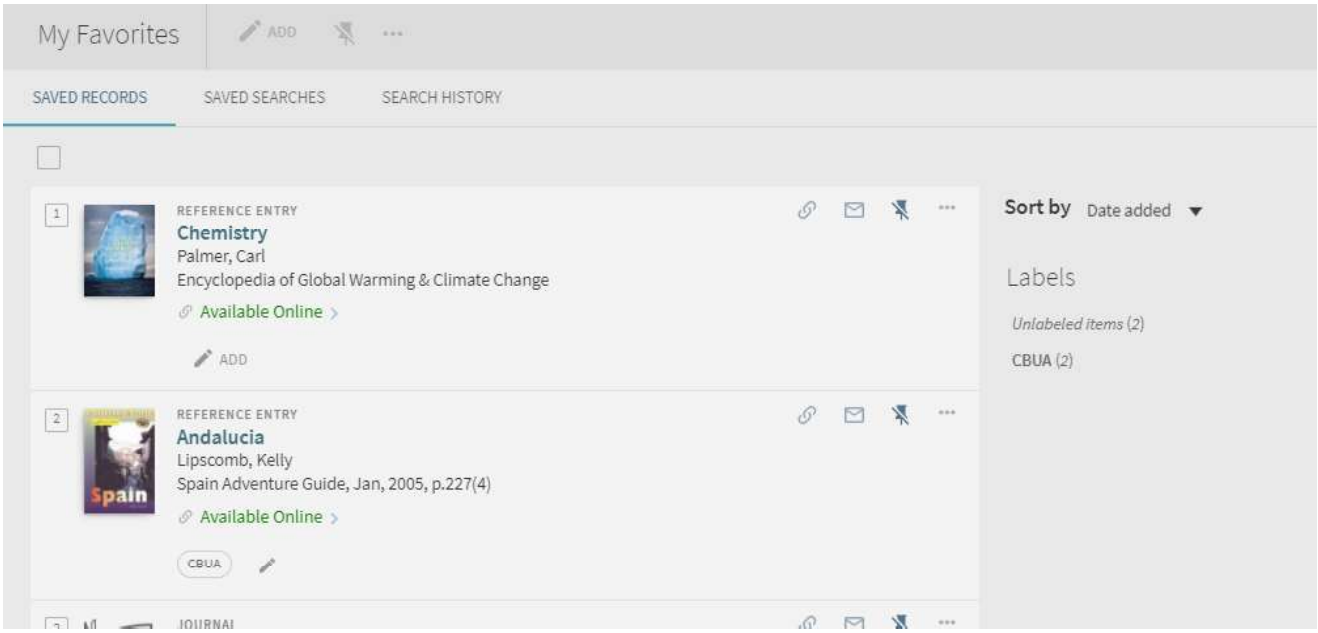
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b) Patrons can create book lists.

Ex Libris: Primo VE allows end-users to save search results to a Favorites list and to save searches to rerun later. Users can also configure email or RSS alerts for saved searches so can be informed when new results for the search are added to Primo.

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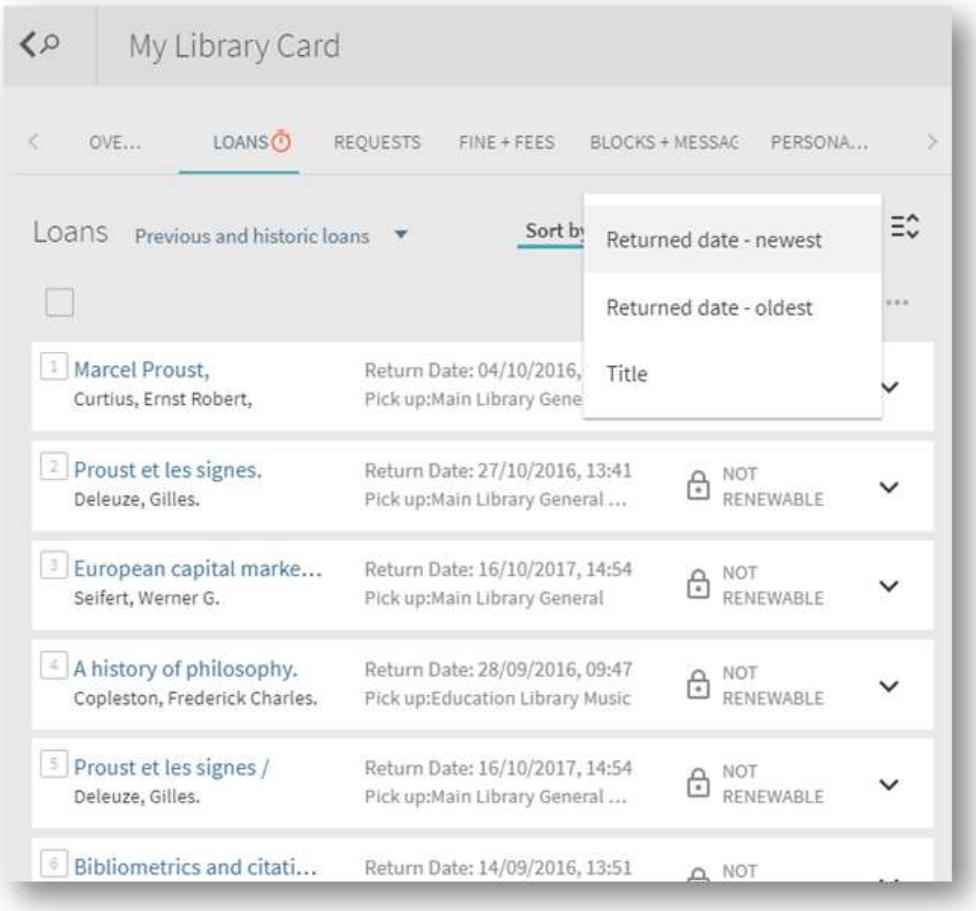




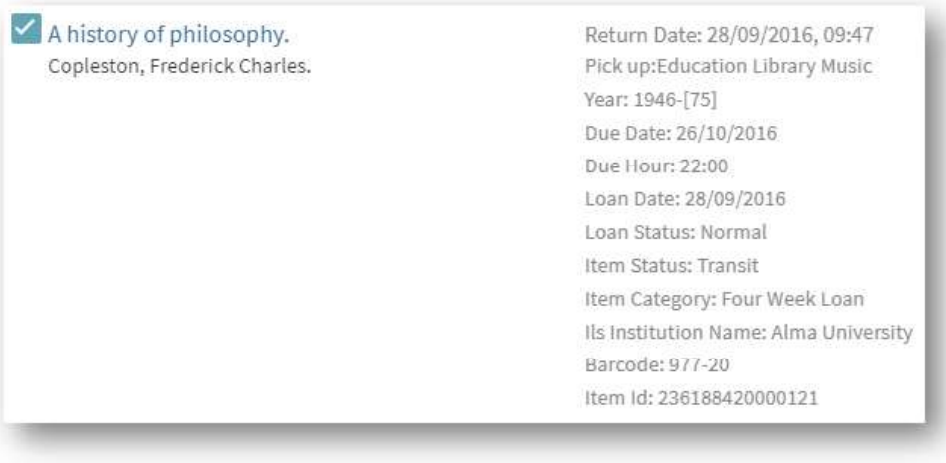
c) Patrons can opt-in for a list of check-out history.

Ex Libris: Users can see their loan history by selecting 'previous and historic loans' in the list of loans. Sorting is possible by 'return date - newest', 'return date - oldest' and title.

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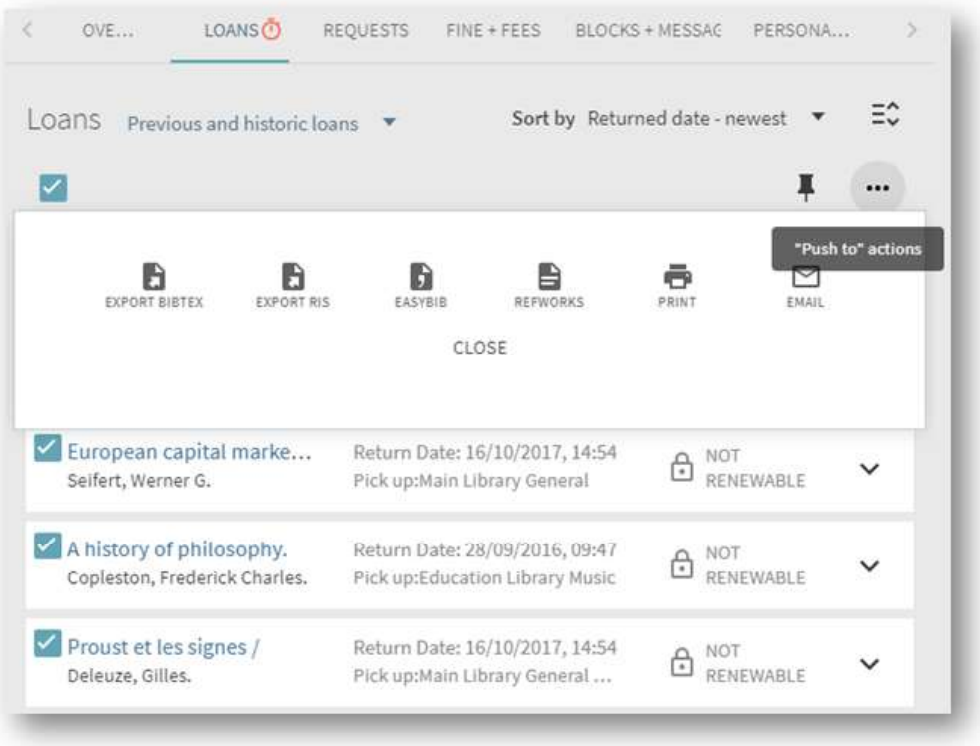


Each (historic) loan entry can be expanded to see details of the loan and item:



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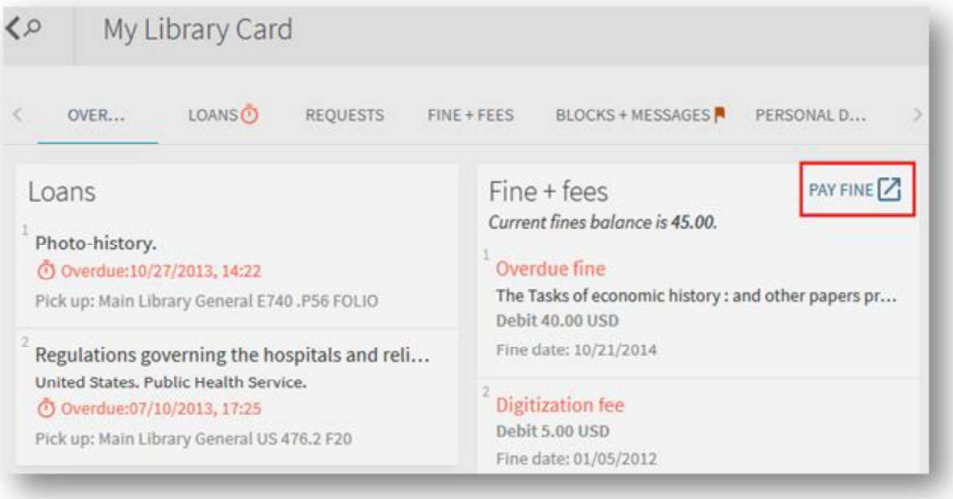
Current and historic loans can be selectively (including selection of all items) chosen for push-to actions, including export to the preferred reference management system, email sending and printing. The pin icon also allows users to save items to the user's favorites list.



d) Patrons can pay fines through a user interface.

Ex Libris: Online payment of fines can be provided via the patron's library account pages in Primo.

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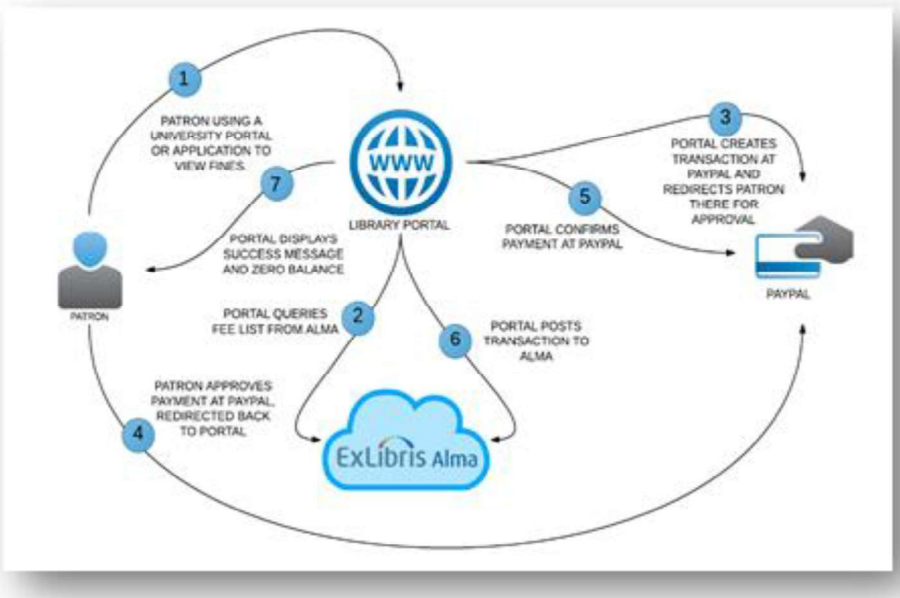
The institution can use Alma's open RESTful APIs to communicate with online payment providers.

In addition, Alma APIs allows institutions the freedom to integrate with any payment system from an institution's portal application or even from Primo.

The general flow for integrating with any payment system is the same, and can be summarized as follows, using PayPal as an example:

1. A patron requests to view his fees on a student portal
2. The portal queries Alma and displays a list of fees and the balance. The patron requests to pay his fees via PayPal
3. The portal creates a transaction in PayPal for the relevant amount, then redirects the patron's browser to PayPal for approval
4. The patron logs into PayPal and approves the payment and payment method. PayPal redirects the browser back to the portal application
5. The portal executes the payment in PayPal using the specified transaction code
6. Once confirmation is received from PayPal, the portal posts the payment to Alma to be reflected in the patron's account
7. The portal displays a confirmation message and a zero balance

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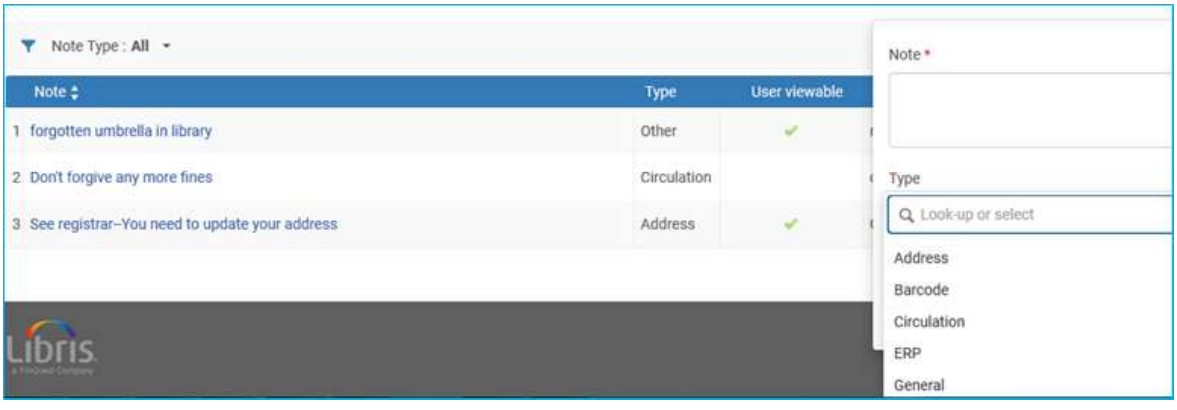


e) Library staff can post notes in the online catalog for a specific patron to view.

Ex Libris: User record notes may be added by the library, or received from the external master record, if importing records from a student record system. When added by the library, they are NOT overridden by the master record. There is no limit on the number of notes that may be added. Each note may be up to 2000 characters long.

Notes can be -

- Internal - viewable by circ staff only
- Public - viewed by the patron from My Account in Primo

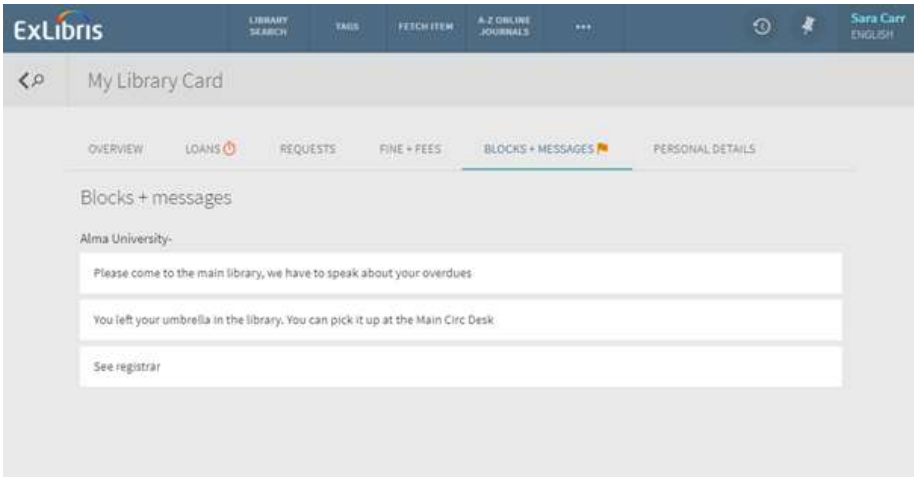


From the Patron Services menu staff users can view internal Notes and User Notes:

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User viewable notes in Primo:



As part of Alma's Self-check integration, the following information can be transmitted (in addition to actions):

- Patron information
- Item information
- Patron status

iii. The following specifications are optional functions that NCCCS would like to see included in the proposed solution but are not required responses to this RFP. The Vendor can describe how the proposed solution handles each of the following specifications

a) Integration of and showing the catalog on social media.

Ex Libris: NCCCS libraries can integrate with online chat, social media platforms, and subject guides such as LibGuides.

Primo VE users can save search queries and use them again without having to reformulate the query. They can also define alerts to be delivered via e-mail or RSS when newly acquired items are added that fit their search criteria. Primo VE also allows for the integration of third-party social network systems such as Facebook. Leveraging Primo VE's open architecture, clients have also embedded additional social media integration as well as other site-specific customizations, including integration with Twitter and more.

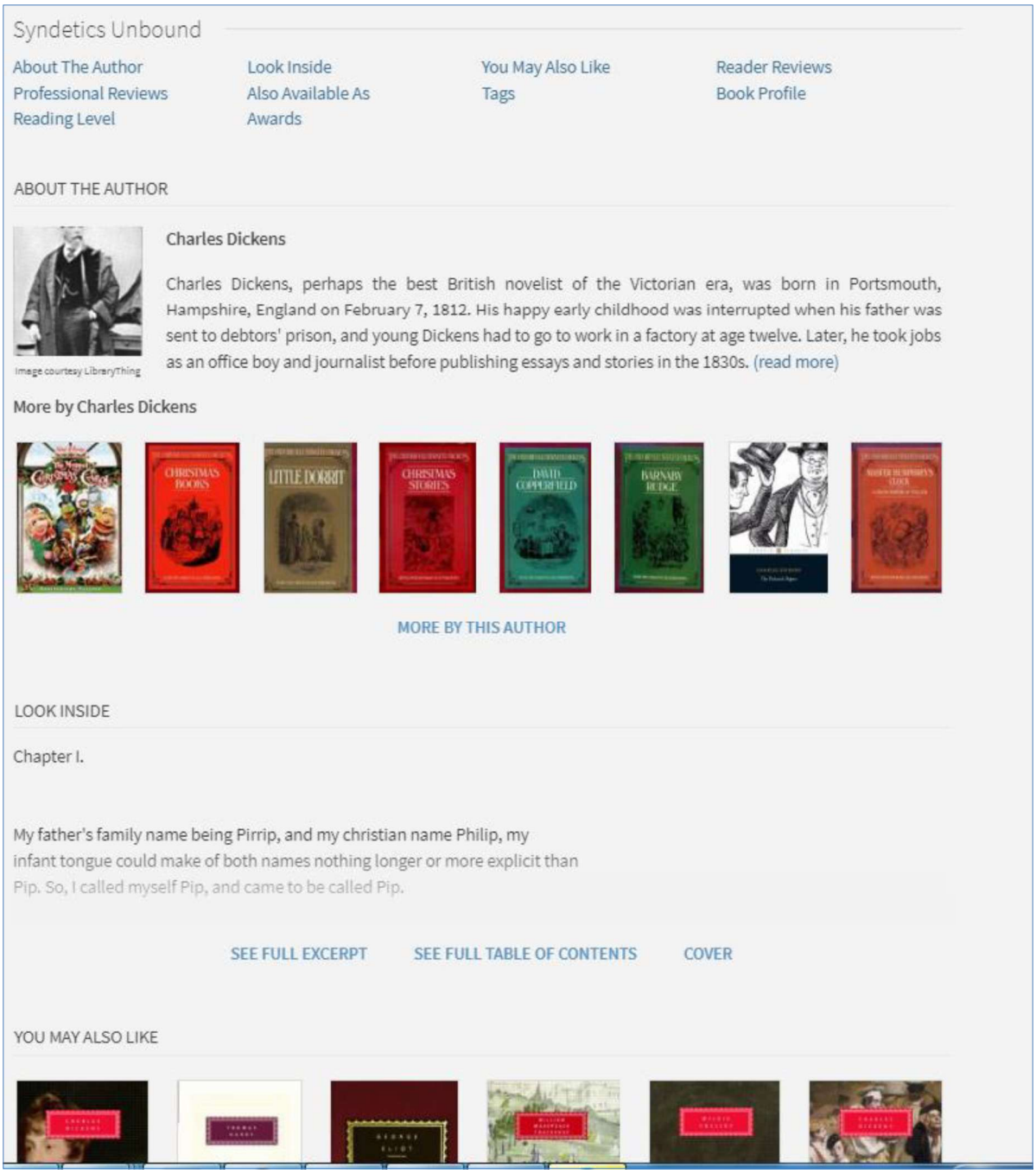
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b) Compatibility with added content vendors to create book reviews.

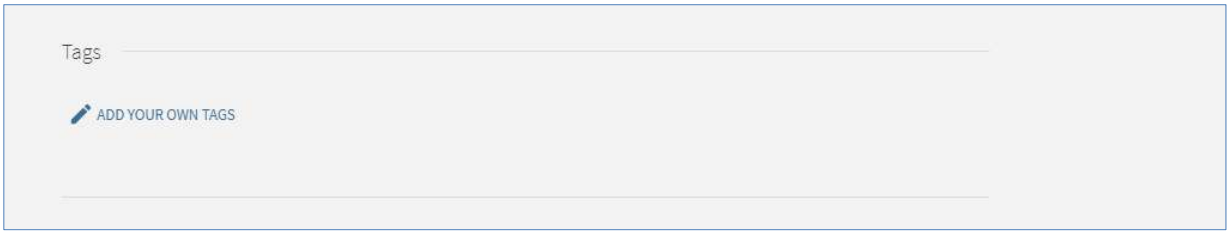
Ex Libris: Ex Libris helps libraries improve the research experience and expand exploration by integrating Syndetics Unbound with the Ex Libris Primo® discovery service.

The integration with ProQuest® Syndetics Unbound, a groundbreaking online enrichment service, enables libraries to create a better discovery experience for today's researcher while maximizing the value of their collections. Libraries can display Syndetics Unbound data on their Primo detail pages to showcase items and increase user engagement. Researchers see familiar elements such as title recommendations, author information, look-inside-the-book pages, series information, professional reviews, reader reviews, tags, book profiles, and awards.

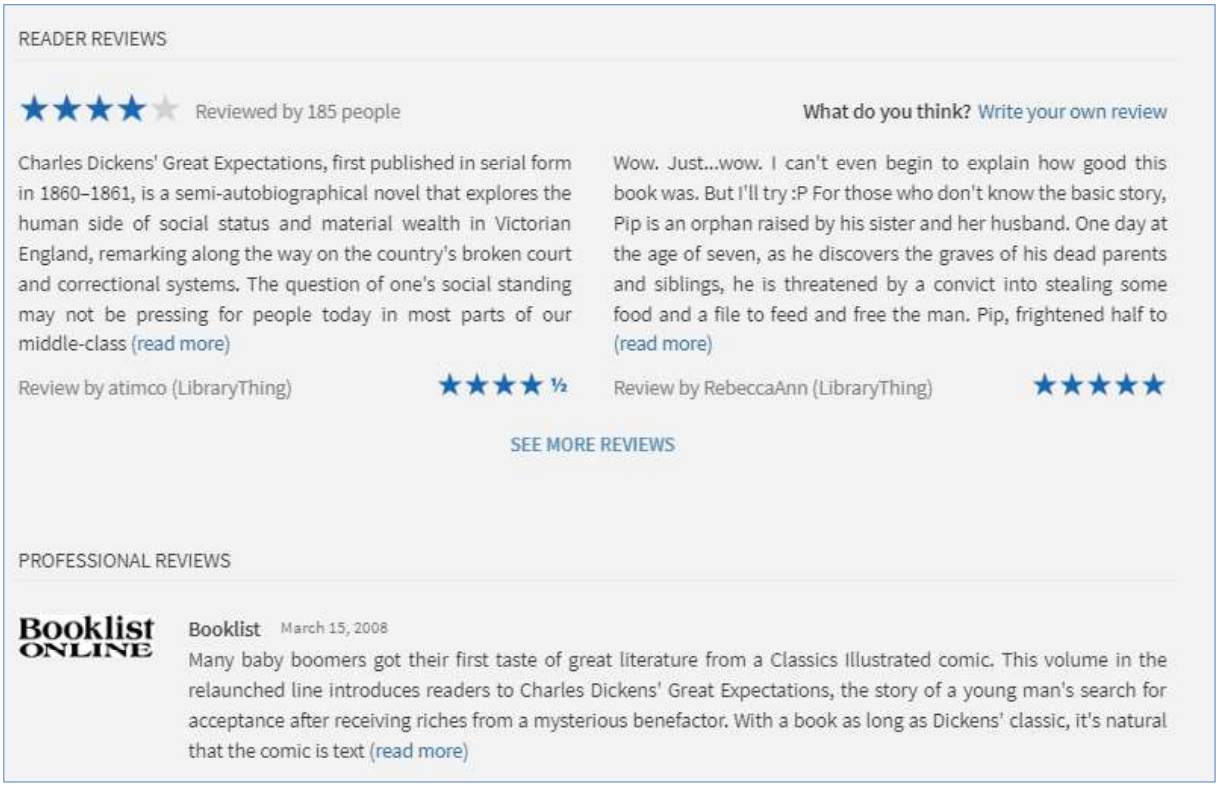
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Users can add tags to citations in Primo:



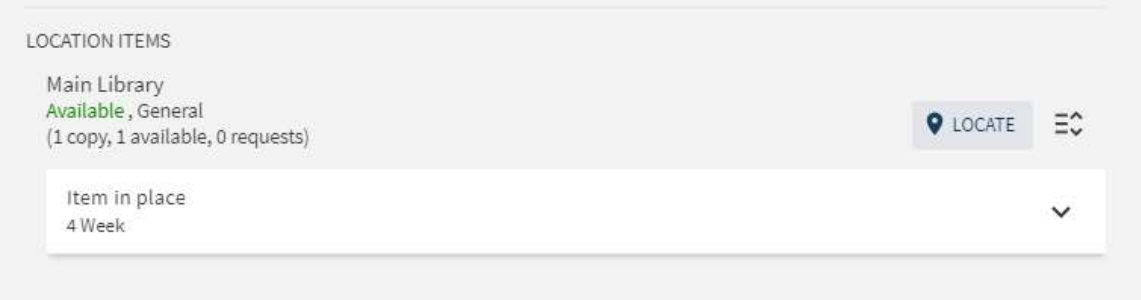
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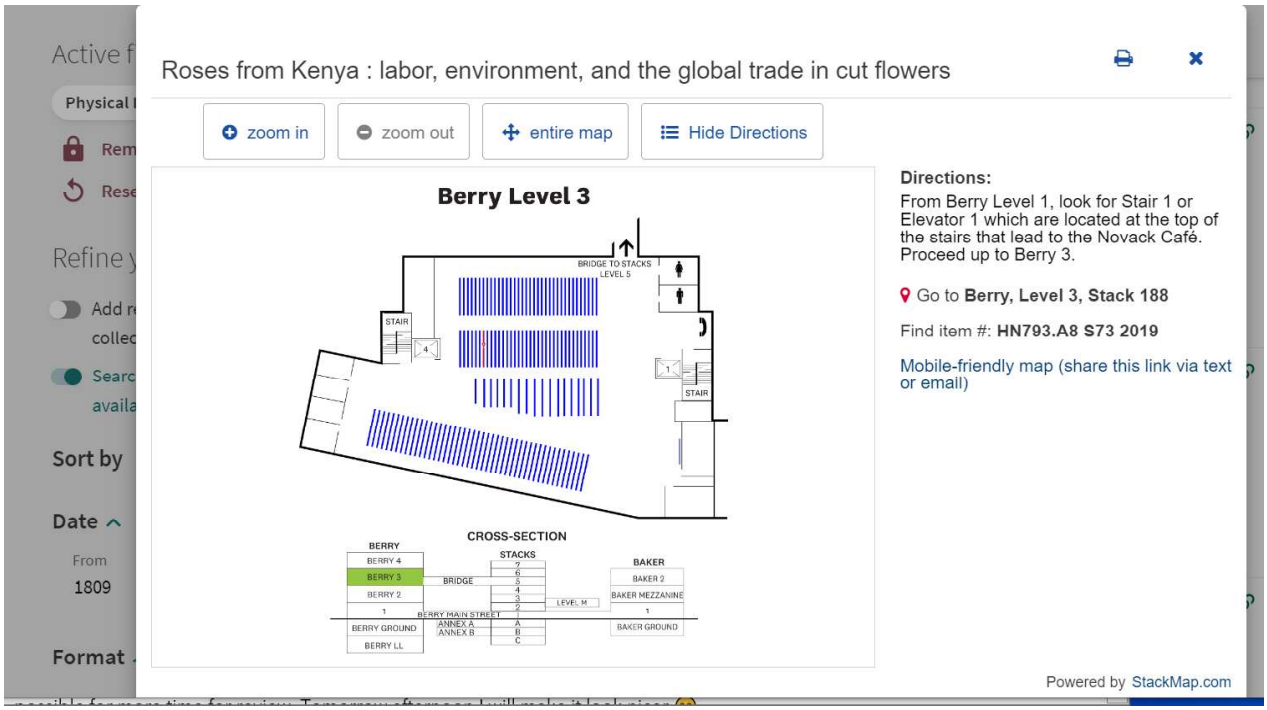
c) Ability to trace items to a specific location within the library, such as with geo-coded books.

Ex Libris: NCCCS will find a standard integration point for library maps. Many customers have integrated location maps with Primo VE.

Ex Libris develops products on an open platform to encourage users to create their own integrations and innovations. For example see this post about integration with Stackmap: https://developers.exlibrisgroup.com/blog/Primo-Alma-and-StackMap-integration.



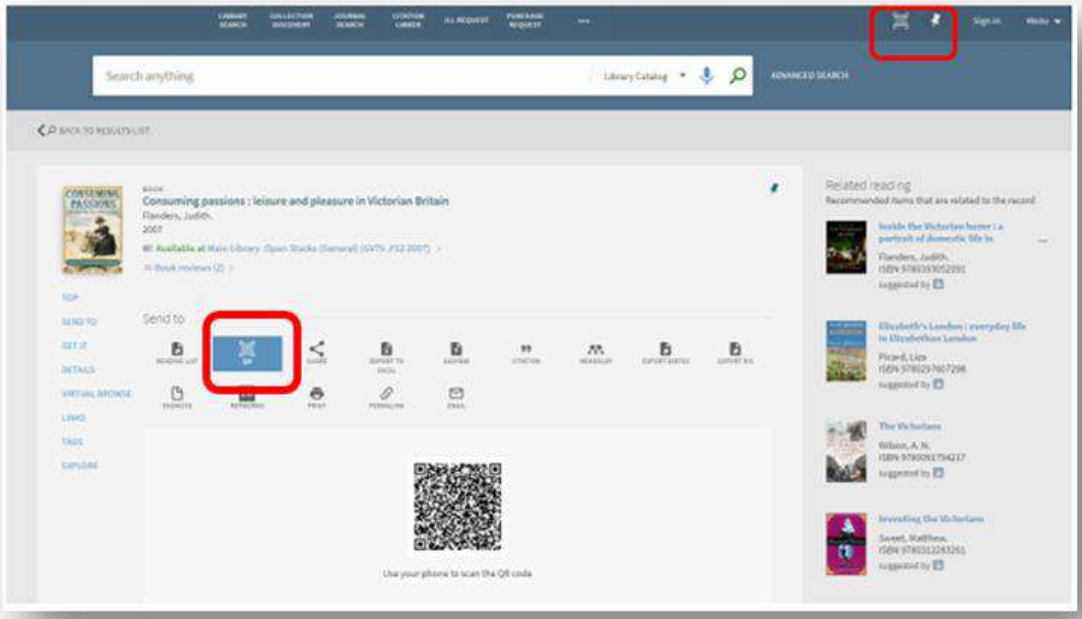
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d) Ability to embed and support QR (quick read) codes

Ex Libris: Primo VE displays, by default, a QR code for every item. The QR code is displayed in the full record and on the menu bar:

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e) Ability of a patron to create a user ID

Ex Libris: Generally, the patron's user ID comes from the institution. It is also possible to create a self-registration form via Alma's APIs

The Alma Create Users API allows the library to design and deploy a patron self-registration form. The Create Users API allows patrons to provide the information required. It can be used with an institution-developed web form to create users.

The form can be used to assign them whatever user group the library wishes, for example one that would be limited in its allowed fulfillment privileges until library staff confirm the registration. The Web form can be used to register students from outside the institution ('internal' users in Alma terminology) and to assign passwords that will be managed by Alma's authentication service, without requiring a library set LDAP or other authentication system.

Please refer to our Developer Network for more information:

https://developers.exlibrisgroup.com/alma/apis/users/POST/gwPcGly021r0XQMGAttqcNyT3YiaSYVA/0aa8d36f-53d6-48ff-8996-485b90b103e4

It would be possible to create alerts for self-registration via the Alma Analytics reporting tool.

f) Support of digital content (photos, documents, audio files, integration with the LMS, etc.)

Ex Libris: Primo VE can harvest data from digital repository systems, either using OAI-PMH or by ingesting and normalizing other structured data.

Primo currently supports MARC, Dublin Core, as well as any generic XML allowing the library to normalize any XML-based metadata standard into the Primo metadata standard.

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Primo searches in parallel in the Central Discovery Index (CDI), which includes hundreds of millions of materials of global or regional significance, and in the local Primo index, which includes any material that the library deems relevant. This can include finding aids, images, materials from institutional repositories, and datasets. Primo can search for any object type that can be normalized to XML including audio, video, and digital files of all types.

I. Reporting

i. NCCCS seeks a solution with broad reporting functionality. Describe the proposed solution's reporting functionality in general terms related to:

Ex Libris: Alma and Primo Analytics is used for the generation of a variety of reports, as well as for generating statistics from various library activities. Analytics is built into Alma and Primo throughout the system and is very flexible. Alma comes with a wide range of preconfigured reports and dashboards, all of which are customizable. In addition, designated staff may create reports of interest to other roles within the library and provide dashboards for staff, enabling them to access the defined reports. Alma communicates with external systems such as PeopleSoft, Banner, and more, allowing staff to run reports on up-to-date data across the institution.

Alma's analytics function provides a Business Intelligence solution centrally installed on Alma servers in the cloud. The solution serves all Alma customers, but the data of each institution is separated from other institutions, based on the Alma SaaS model. Alma Analytics is designed to work over the Web and in the cloud so libraries can run out-of-the-box reports as well as create and run ad-hoc reports without the need for third-party reporting tools. Consortium members also have the ability to run reports on the level of the network.

Alma Analytics provides a full suite of capabilities for creating and exposing reports, and presenting dashboards of summary data using this tool:

- From screens within Alma;
- From dashboards specifically tailored to a particular staff role;
- As widgets that are accessible from lobby areas within Alma; and
- As pushed reports, sent to the interested staff as emails.

All reports can be exported in a variety of formats including: PDF, Excel, PowerPoint, mht, csv, tab delimited and xml.

a) Ongoing notifications and real-time monitoring of the NCCCS network and server availability including performance auditing and related capabilities.

Ex Libris: Real-time monitoring of Alma Analytics is a part of our overall 24/7 monitoring. Ex Libris monitors the performance of Alma 24X7X365. Alma's components are redundant and provide high availability:

- All servers support active-active fault tolerance
- Database components have automatic fail-over

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- Our data center is planned at any given time to provide over 15% of the required capacity. We maintain stand- by servers ready in case of multiple-server failure
  The Ex Libris data center maintains a clear mitigation plan for any malfunction scenario (hot standby\cold standby, etc.)
- The Ex Libris data center provides 24x7 support for all hardware components with our vendors, with an SLA for replacement hardware on site when needed. The 24x7 hub Team provides 24x7 first-line support (in tandem with regular support personnel) for all cloud production environments, using advanced monitoring and dashboard capabilities

Alma is designed with multiple layers of real-time monitoring of all facets of the solution. These layers include:

- Hardware (servers, storage, networking, FW, LB and all other devices)
  Operating system level monitoring
- Database monitoring
- Application-level logs reflecting errors including database issues, software issues, and business level issues
- Application performance as measured in the servers
- Internet performance
- Security

All components (physical and logical) are fault-tolerant with redundancy. All critical components work in active-active mode, such that loss of a component is invisible to users. In some cases, failover may result in very short outages (of a few minutes), and the return to full availability is completely automatic.

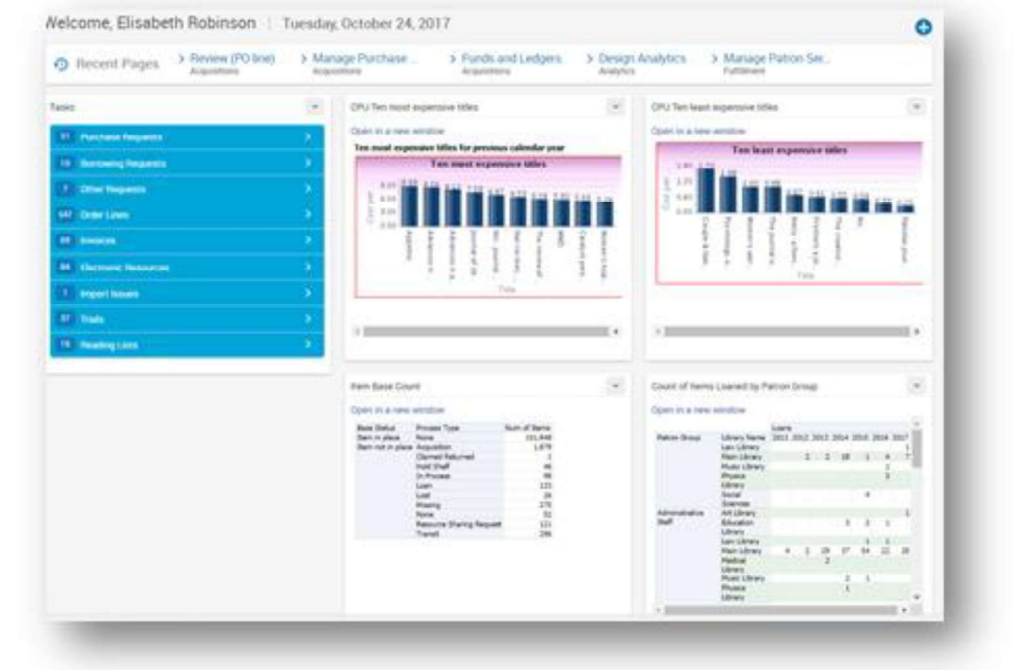
Monitoring teams are equipped with processes for provisioning decisions based on application performance monitoring and degradation of service scenarios.

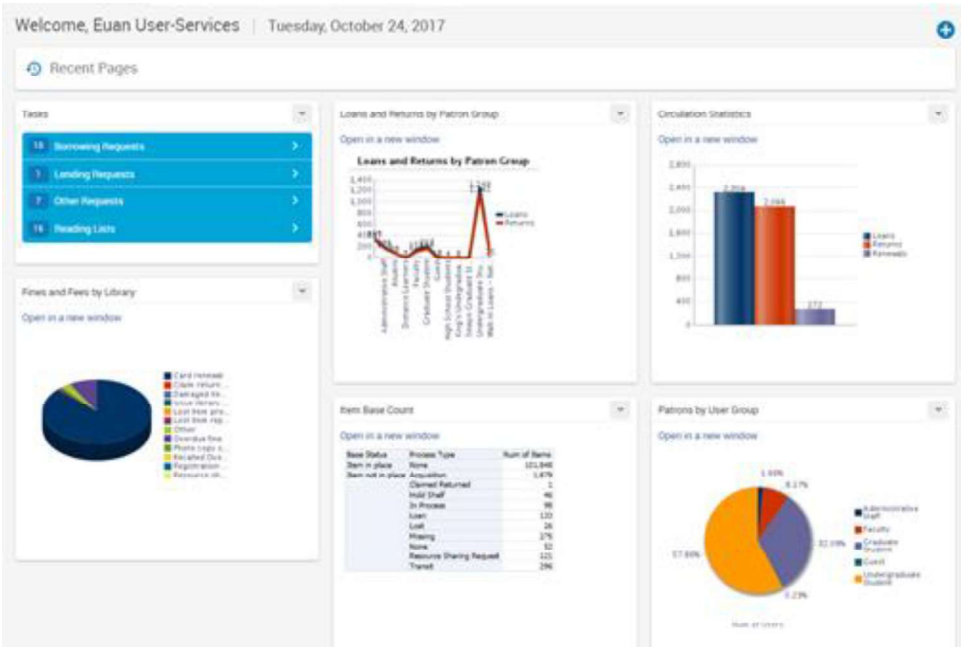
b) Reporting functionality via a single point of entry (i.e., dashboard) that supplies, at a minimum, the information included for each institution the NCCCS system level.

Ex Libris: Each Alma institution is supplied with its own instance of Alma Analytics. The system level and Central Office staff will also have access to Network Zone analytics.

Staff users can access these reports in a variety of ways. Personal dashboards are available for all Alma staff users to customize according to their roles and responsibilities. Below are examples of dashboards created by a system administrator and a circulation staff member:

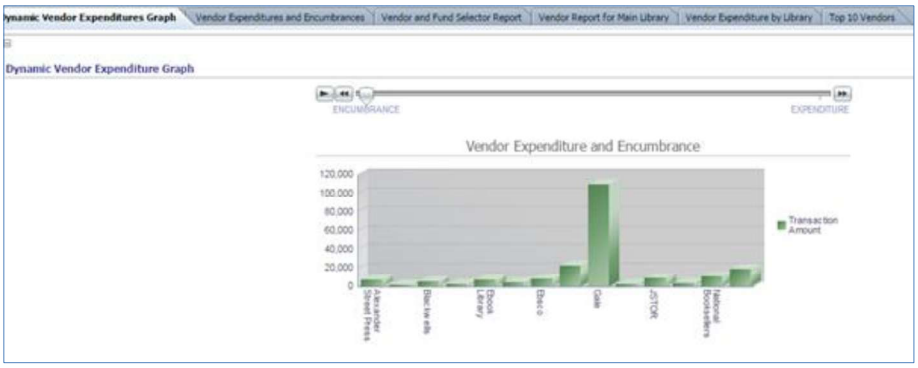
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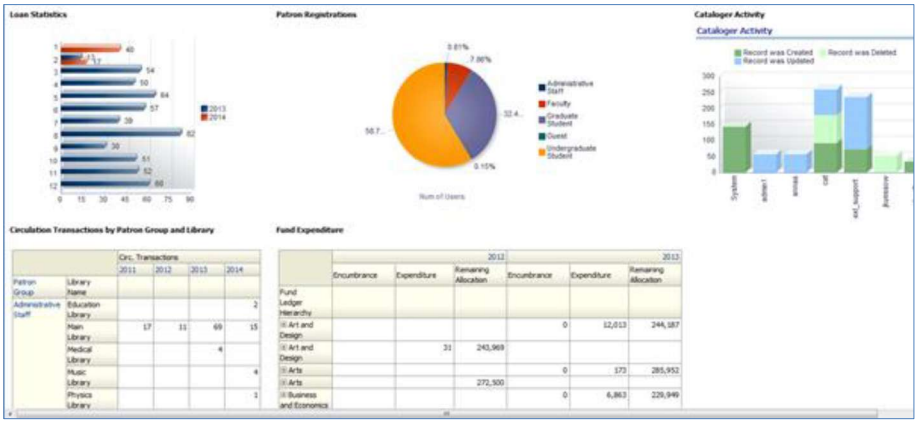


Dashboards also provide a useful tool for gathering a number of reports together for easy viewing. The dashboards can be tabbed so the user can navigate from one tab to the next in order to review report outputs. An example of a Vendor Expenditures dashboard can be seen following:

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An example of a metrics dashboard with a variety of report outputs:



c) Reports in various formats. List the formats.

Ex Libris: All reports can be exported in a variety of formats including: PDF, Excel, PowerPoint, mht, csv, tab delimited and xml.

d) Analytics capabilities included in the basic platform and additional analytic services that are optional and charged to clients.

Ex Libris: All Analytics functionality is included with your subscription to Alma.

e) Analytics and storage costs and optional service costs.

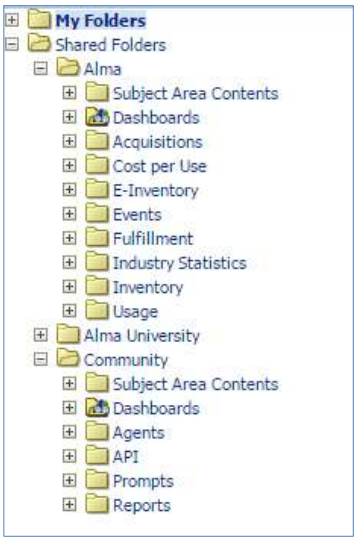
Ex Libris: There are no additional storage or optional costs. All Analytics functionality is included.

ii. Include a description how the proposed reporting solution specifically supports the following functionality:

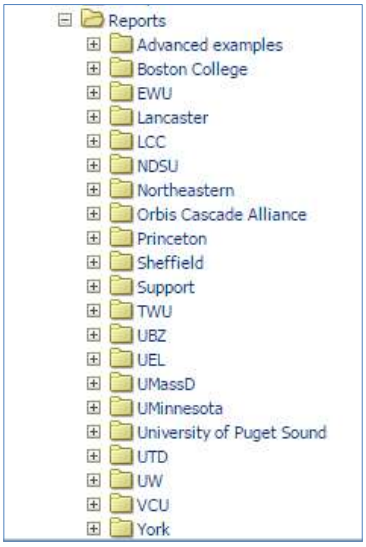
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a) Saves reports templates

Ex Libris: In addition to the institution folder (Alma University in the screen capture below), there is a Community area, that allows staff from all Alma institutions to post reporting options that can be shared by the entire Alma Community. An example of this can be seen in the following screen captures. The Consortia also has its own shared folder system, similar to the Community reports that allows the central office to create report templates that can be used by all members.



Community Reports:



b) Schedules reports daily, weekly, monthly, or for a one-time use

Ex Libris: Alma Analytics provides for the automated dissemination of reports. For example, library staff can schedule a report to run periodically; authorized staff may then subscribe to the report and receive the output in an email sent automatically based on the report schedule (e.g. daily, weekly, monthly). In this way, a staff member can get reports delivered to his/her email at

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fixed intervals without the need to log into Alma. Reports can also be viewed and downloaded for one time use.

c) Exports reports in different file formats, including .xls, .csv, .docx, and .pdf

Ex Libris: All Alma Analytics reports can be exported in a variety of formats including PDF, Excel, PowerPoint, mht, csv, tab delimited and xml.

Sets/lists of data can also be exported throughout Alma in Excel format.

All data in Alma is stored in a Unicode character set—specifically UTF-8.

d) E-mail, text and phone notices

Ex Libris: Reports and notices to users can be emailed. Notices to users (different than reports) can be sent via SMS. Phone call notices are not supported. Reports can be made available via APIs to use in locally created integrations.

e) Notices for holds, overdue materials, and items on reserve

Ex Libris: Alma provides comprehensive support for notices related to holds, overdue materials, and items on reserve. These notices can be sent via email or SMS, depending on the patron's preferences. For holds, when an item is picked from the shelf and sent to the hold shelf at the circulation desk, an email is sent to the requesting patron indicating the last date the item will remain on the hold shelf. If the patron fails to pick up the item by the expiration date, a notification is sent, and the item's request expires. Staff can manage these notifications and extend expiration dates if necessary.

For overdue materials, Alma automatically sends overdue notices and courtesy notices to patrons. These notices are configurable and can be set to warn patrons if loans are overdue by a certain number of days. Additionally, a lost item profile can be set up to mark a loan as lost and send a lost item bill if loans are overdue beyond a specified period.

Notices for items on reserve can be customized using Alma's XML and XSL files, allowing libraries to control the styling and content of the notices. This customization can be done at the institution or library level, and the delivery schedule of notices can also be configured.

f) Statistical customizable reports by individual libraries on usage, inventory, financial and other requests.

Ex Libris: Alma Analytics provides comprehensive capabilities for generating statistical customizable reports by individual libraries on various aspects such as usage, inventory, financials, and other requests. Libraries can utilize Alma's built-in analytics to create reports on usage statistics by journal, database, publisher, platform, and subscriber. These reports allow libraries to drill down on data elements such as year range and titles, providing detailed insights into resource usage.

For inventory, Alma Analytics offers reports on the number of printed books and serials, e-resources, and circulation statistics. Libraries can filter these reports by various criteria such as vendor, classification code, and date of acquisition.

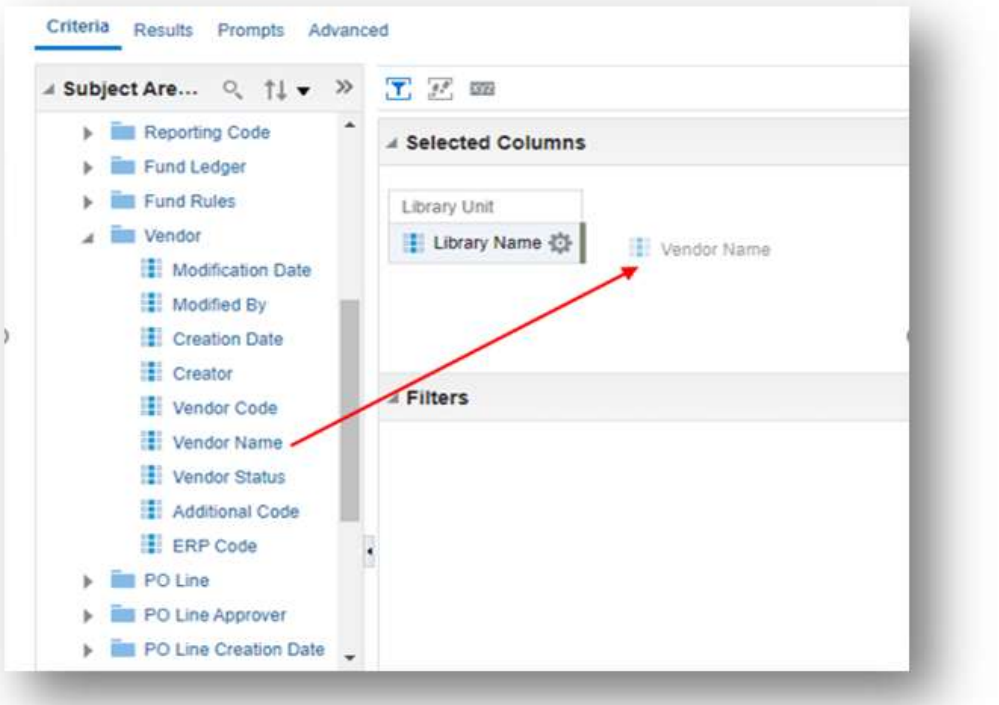
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Financial reports in Alma Analytics cover data from funds, vendors, transactions, and purchase types. Libraries can generate reports on current committed spend per fund, expenditure by ledger and fund, and more. These reports can be customized to show data by date, month, quarter, and year.

Additionally, Alma Analytics supports the creation of reports on interlibrary loan and document delivery information, acquisition data, and system use, such as the number of searches and popular search terms. The platform allows for the creation of both operational day-to-day reports and more analytical decision-support reports.

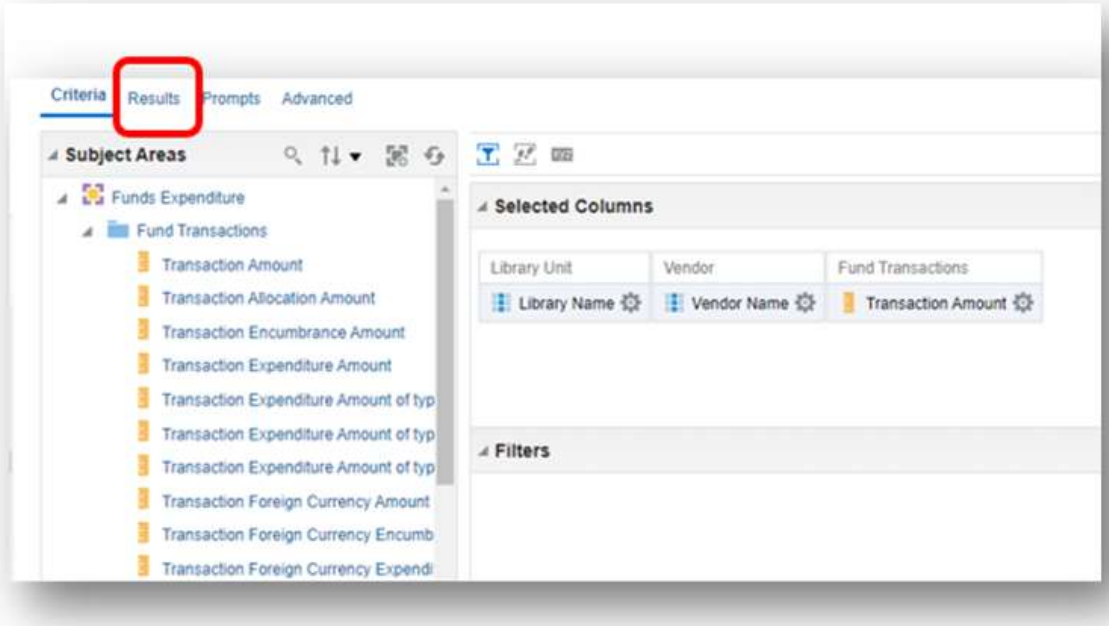
Alma Analytics is highly flexible, allowing libraries to create ad-hoc reports without the need for third-party tools. Reports can be exported in various formats, including CSV, Excel, and PDF, and can be scheduled for automated dissemination to staff via email.

Creating a report or customizing an existing report is simple; after choosing the relevant subject area the staff user drags and drops relevant fields from the subject area on the left, to the right-hand pane.

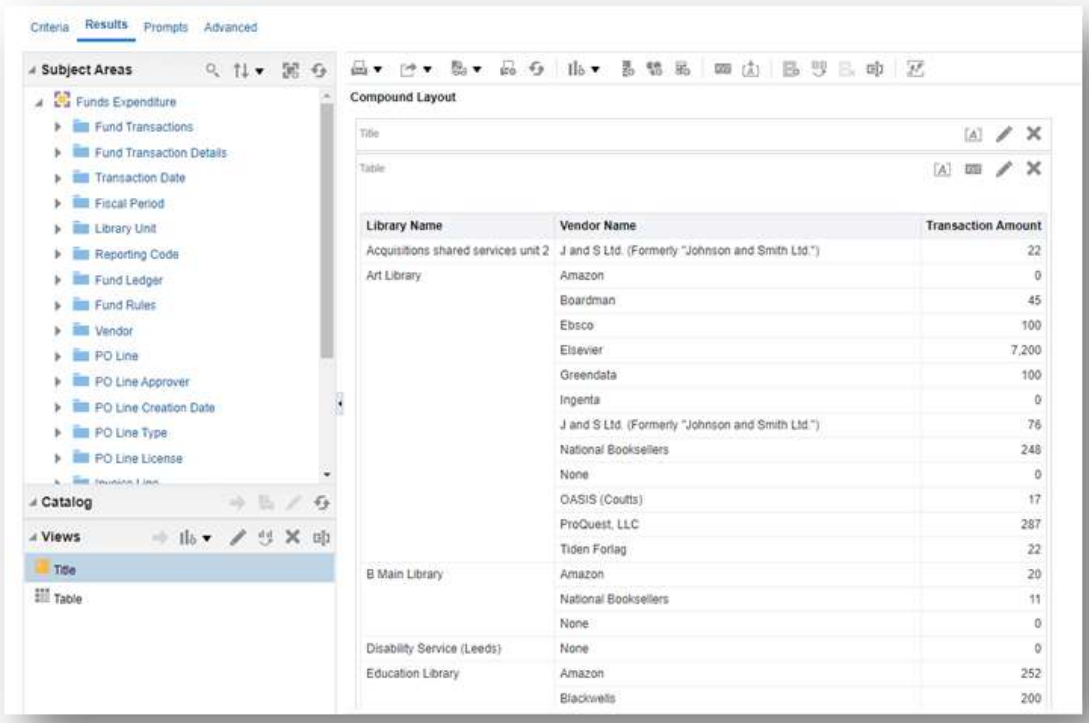


Results can be viewed, and filters and other options can be applied in order to give the desired outcome.

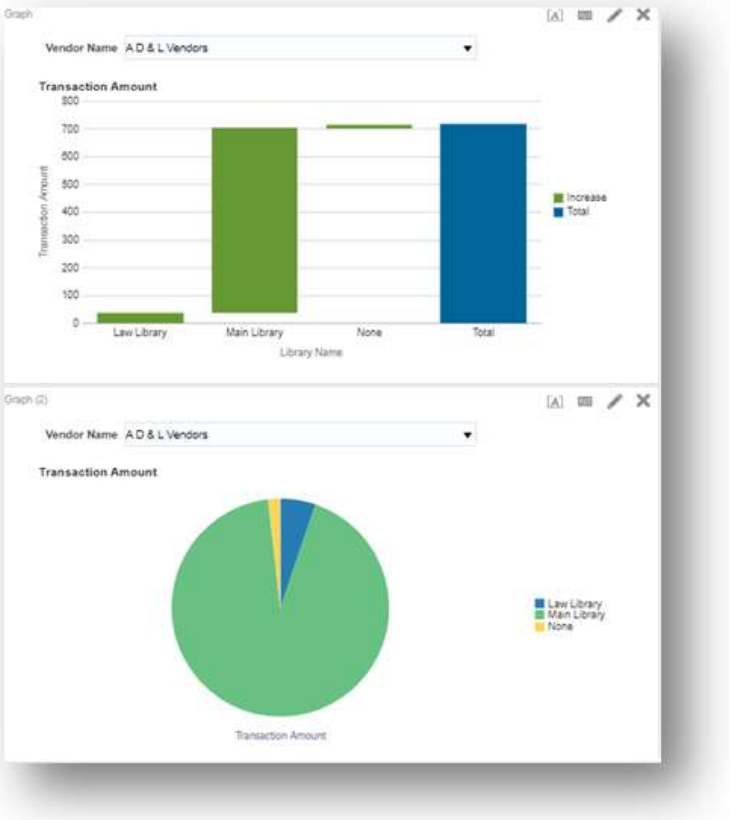
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A graphic representation can be added or chosen as the final report output.



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g) System provided standard reports currently available in the ILS with a list of the reports that are standard in the proposed solution. The list can be included as a clearly marked attachment in the Vendor's response.

Ex Libris: Yes. More than 250 standard reports are supplied with Alma, in the following functional areas:

- Acquisitions
- Analytics usage
- API usage
- Consortia
- Cost per use
- Digital inventory
- e-inventory
- Events
- Fulfilment
- Inventory

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- Purchase requests
- Titles
- Database usage
- Link resolver usage
- COUNTER (release 5)
- Users

Any of these reports can also be used as a basis for customized reports if required.

List of out of the box reports:

https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/080Analytics/060Out-of-the-Box-Reports

We have also included a PDF attachment listing all OOB reports.

h) Offline capabilities - whether reports can be generated to identify conditions associated with circulation used during offline mode

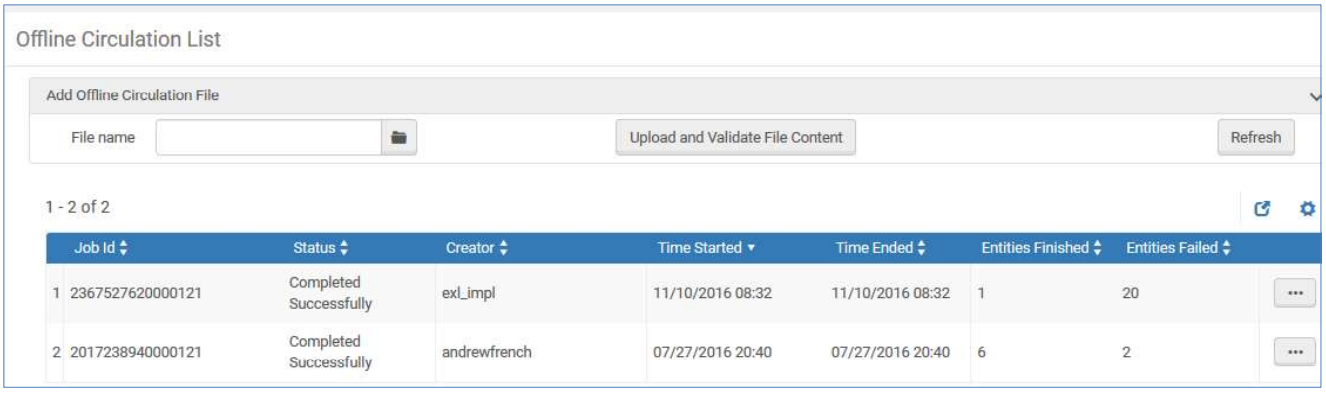
Ex Libris: Alma can generate a report of offline circulation activity.

Alma includes an offline circulation tool that will allow for the continuation of check-in and check-out activities when the system is available. The offline circulation tool can be installed locally and allows the data to be synced back to Alma when the network connection is back following a network failure. In addition, as Alma is hosted in the cloud, in case of local network outage there is also the option of using 3G or 4G mobile networks to access the system, enabling normal operations.

The offline circulation utility can be downloaded from the Developers Network.

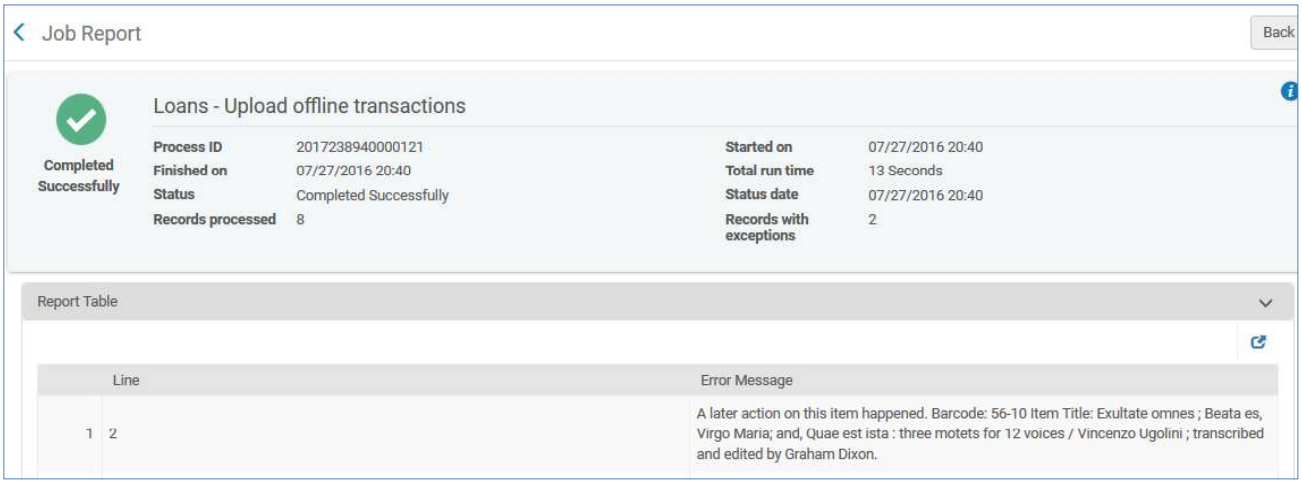
Transactions are uploaded from the offline client back to Alma. The offline circulation client stores patron barcodes and item barcodes. Loans are generated when the offline circulation files are uploaded to Alma. To upload offline loans and returns, on the Offline Circulation List page click in the File Name field and select the .dat file containing the list of loans and returns performed during connection downtime. Click Upload and Validate File Content.

The job is displayed in the table at the bottom of the page. Its status is displayed in the Status column.



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To view details of a job, click View for the relevant job. The Job Report page opens, detailing the number of items processed successfully and unsuccessfully.



i) Ability to run concurrent reports for multiple Community Colleges and the expected wait time for commencement and completion of this process.

Ex Libris: There is no limitation on the number of staff logins available (within the number of users covered by the Library's Alma subscription) and no limitation on simultaneous access to Alma Analytics.

Alma Analytics is based on a data warehouse created from the online transaction databases and does not run any queries directly on the operational system. A snapshot of data is taken from Alma every 24 hours. The ETL process then takes place. Because Alma Analytics does not use the production Alma data, running reports has no impact on system performance. Because OAS is also cloud-based, the system can be scaled to allow many customers to use the service with minimal impact on performance.

Each NCCCS institution would have access to Alma Analytics standard file structure:

- Local reports at the institution
- Out of the box reports provided by Ex Libris
- Network Level reports
- Community Reports shared across the Alma community of 2500 libraries.

As a member of a consortium with a Network Zone, the NCCCS central office also has the ability to create reports that use data from the Network Zone. More information about this can be found here:
https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/100Managing_Multiple_Institutions_Using_a_Network_Zone/Analytics_When_Using_a_Network_Zone/Configuring_Analytics_to_Display_Network_Zone_Information

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j) State the maximum number of reports that can be run concurrently.

Ex Libris: Our proposal is for each Community College to be implemented as their own Alma institution. One Community College running a report will have no impact on the ability for other community colleges to run theirs. Additionally, Alma Analytics is based on a data warehouse created from the online transaction databases and does not run any queries directly on the operational system. This means that there is no interference with the operations of the system.

To reiterate: Alma's analytics function provides a Business Intelligence solution centrally installed on Alma servers in the cloud. The solution serves all Alma customers, but the data of each institution is separated from other institutions, based on the Alma SaaS model. Alma Analytics is designed to work over the Web and in the cloud so libraries can quickly and efficiently run out-of-the-box reports as well as create and run ad-hoc reports without the need for third-party reporting tools. Consortium members (such as NCCCS) also have the ability to run reports on the level of the network.

iii. Explain how the solution supports the following actions:

a) Listing of items loaned to other libraries in the past.

Ex Libris: Using the Borrowing Requests area, it is possible to create reports and dashboards for the Borrowing Requests area making it possible to answer the following types of business questions:

- Which partners were requested
- Request counts
- Which type of users issue the requests
- Time statistics between request and arrival
- How many requests were rejected
- How many requests were completed

The diagram below displays the data elements available for statistical analysis under the Borrowing Request Details Subject Area.

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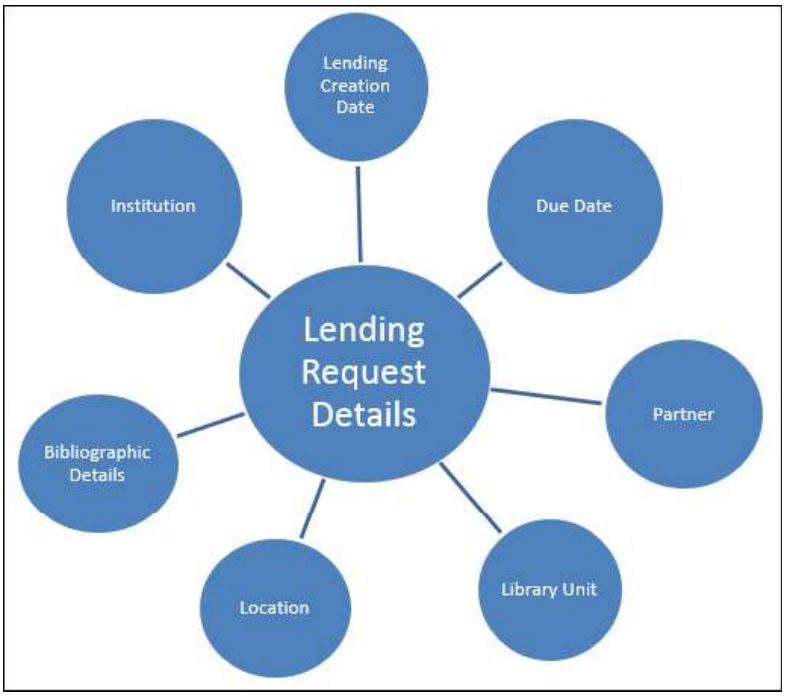


Using the Lending Requests area, it is possible to create reports and dashboards for the lending requests area and is able to answer the following types of business questions:

- Which partners were requested?
- Lending Request counts
- Which type of users issue the requests
- Time statistics between request and sent

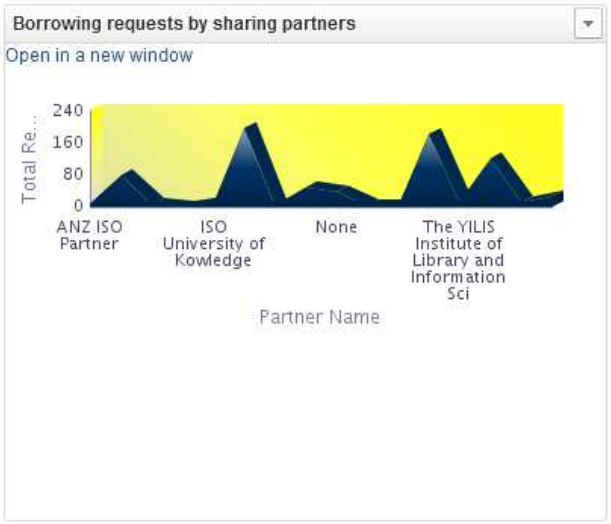
The diagram below displays the data elements available for statistical analysis under the Lending Request Details Subject Area:

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An example of two widgets (for borrowing and lending) on the Resource Sharing staff user's desk top:





b) Running reports at each library without waiting on another library's reports to finish.

Ex Libris: This is supported. Each NCCCS College will have its own instance of Alma as well as Analytics. No institution would need to wait for another institution to finish running a report. Alma provides the option for institutions working within a collaborative network to gather business information on various activities across the network.

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This allows for improved business processes across various business areas. Staff users can create reports that will give a view of data from multiple institutions in the network. This can help in making informed decisions regarding areas such as acquisitions, resource sharing and fulfillment.

c) Supplying information on recovery point for reports and system records.

Ex Libris: Part of the overall Ex Libris recovery plan includes the recovery of the entire institution's data to the last point a backup was taken. Ex Libris takes several data snapshots per day and also maintains a full backup at an offsite remote secured location. This data includes the entire institution's data and configuration.

Alma is a true multi-tenant solution, and as such the complete data of all of Alma customers is backed up together. Recovery of a customer's specific data can be done on several levels, depending on the nature of the recovery needed.

In some cases, customers can use their most recent exports of their bibliographic and holding records in order to load them again to Alma as a means for recovery. Or, for example, when patron records are loaded from the institutional student information system, the SIS can serve as a source for recovery of student data. In rare cases where data recovery is required and the customer cannot utilize any of Alma's existing capabilities, the customer is asked to open a support case for data recovery, which is handled by Ex Libris engineers. If the recovery is possible (this depends on the nature of the data loss and its dependency on other data elements in the system), then Ex Libris engineers will recover the data or advise the customer on ways they can do it. In general, Ex Libris does not charge for data recovery requests as long as these are a rare occurrence.

m. Serials

i. NCCCS desires that the proposed solution has functionality to handle serial publications. Describe how the proposed solution manages serial publications. Include in the description how the proposed solution handles the following tasks:

Ex Libris: Alma includes full support for the management of electronic and print serials including the following:

Prediction patterns: Alma support full prediction pattern functionality based on the MARC standard 853 field.

Receiving - Issues are received using the receive functionality in Alma, utilizing the concept of a 'receiving department'. This also helps support the reflection of a typical separation between serial and monograph handling in the library. The department is tied to a specific location in the institution, which helps route the physical item to its permanent location. In this way, the staff user will only see titles belonging to his/her associated department on the Receive Screen.

Item creation – With prediction pattern support, it is possible to create serial items in advance of their receive date based on a prediction template.

Label Printing - Alma can integrate with locally-used label printing applications through downloading a local component that utilizes web services to communicate with Alma and the local label printer.

Claiming - In Alma, by default, claims are configured to be processed automatically. They can, however, also be generated on-demand. Automatic claims are created for a Purchase Order (PO)

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line that has not been received within the expected number of days after placing the order (based on parameters defined in the vendor record) or by the expected receipt date.

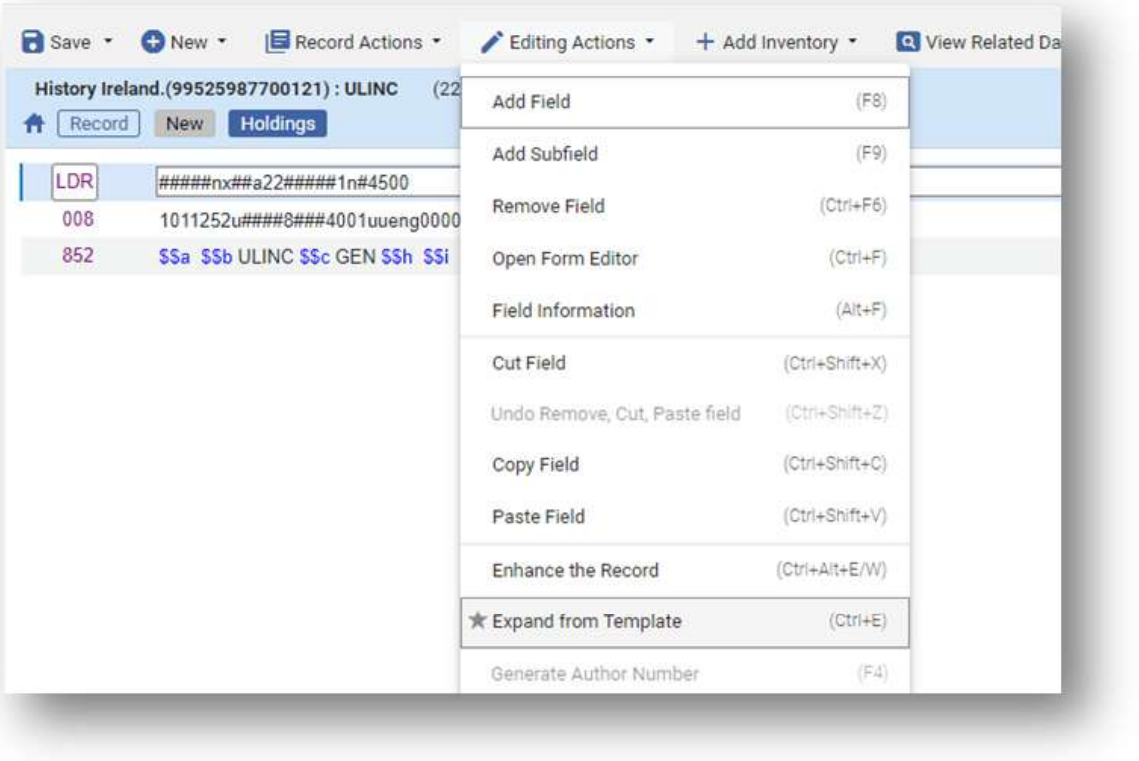
Binding - Alma supports workflows related to binding. Staff can review a list of issues and create a bound volume. All of the item records for the issues incorporated in the bound volume will be marked as withdrawn, and will not display in the Discovery Tool.

Routing – As part of Acquisitions management, it is possible to define if a subscription should be routed as well as defining members of the routing list. This information will display as part of new issue creation.

a) Prediction of issues with all pattern types (irregular, monthly, weekly)

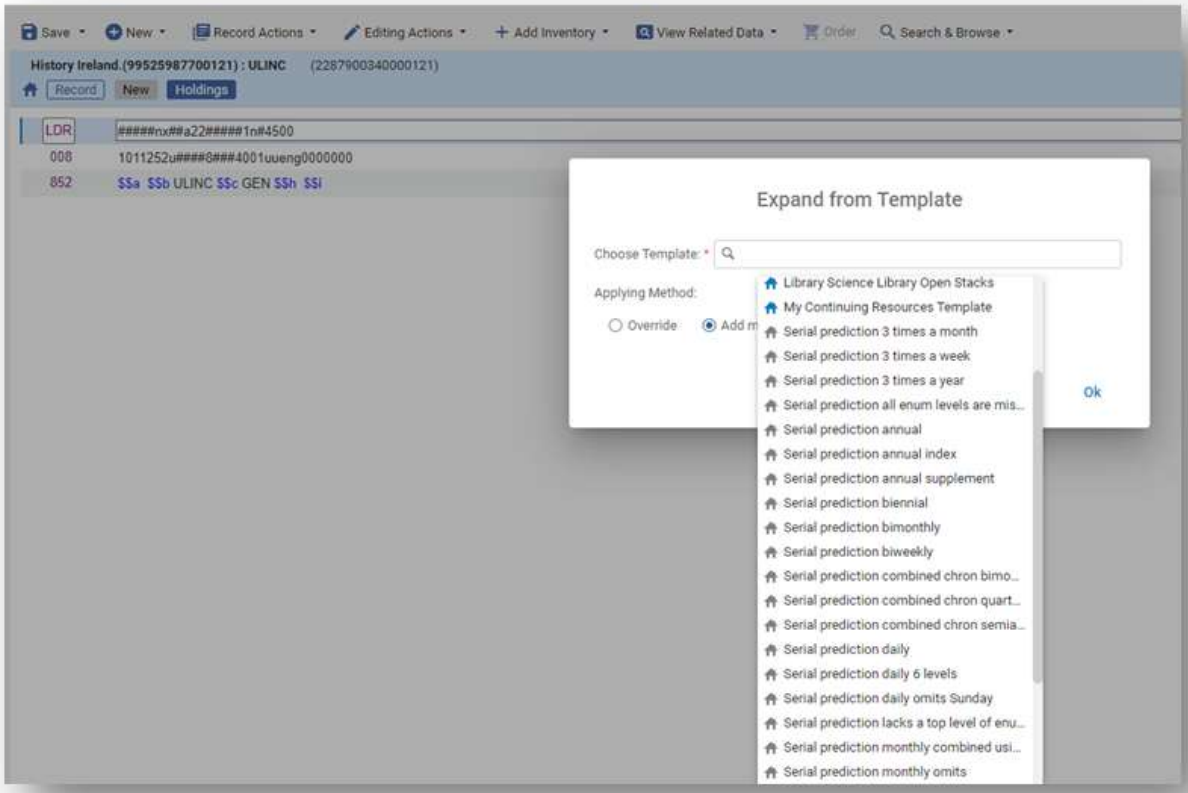
Ex Libris: Alma supports full prediction pattern functionality based on the MARC standard 853 field. The first step in the workflow is to create an order record for the serial title. As part of the order creation (manually or as an imported record), a holding record is created. At this stage, this is a basic record with an 852 field with library and location information inherited from the parameters in the order record.

Alma supports a long list of out of the box templates for most of the patterns that can be expected for a serial publication. To add a pattern to the existing holding record, the cataloger chooses the Expand from Template option in the Edit menu of the MD Editor:

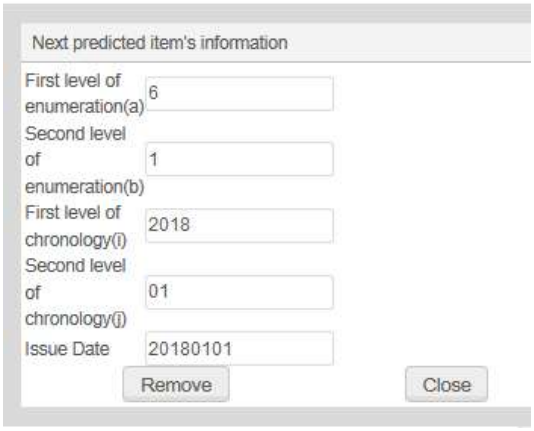


The list of templates displays:

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Parameters can be viewed and modified if necessary (for example the expected issue date).



The cataloger can then open the predicted items – choosing Save to save and open expected issues, or Discard if the data is not correct and the 853 field needs to be updated.

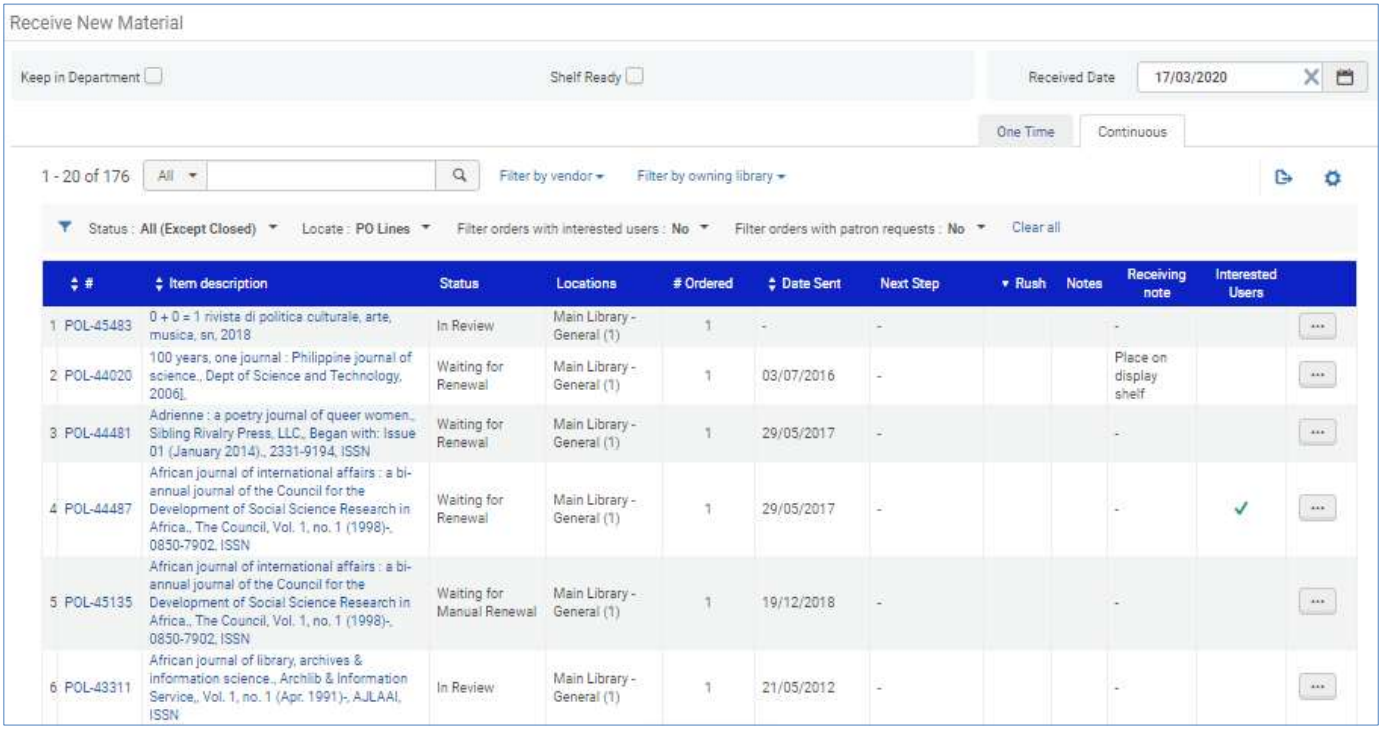
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Predicted Items

	Description	Status	Expected Arr
1	v.6:no.1(2018:Jan.)	Item not in place	2018-01-04
2	v.6:no.2(2018:Apr.)	Item not in place	2018-04-04
3	v.6:no.3(2018:July)	Item not in place	2018-07-04
4	v.6:no.4(2018:Oct.)	Item not in place	2018-10-04

b) Check-in of issues

Ex Libris: Staff members receive new print material into the system using a dedicated receiving "workbench". They locate the relevant purchase order lines with the material received, and then receive the items. Additionally, at this stage staff can add barcode information, perform copy cataloguing, etc. When relevant, they can also indicate whether further work must be performed (i.e., it needs to remain in Technical Service) before the material is available to the library for which it was ordered. Continuous materials such as journals have a dedicated tab for receiving to differentiate where essential - i.e. keep order lines open and provide applicable statuses and information (such as order lines waiting for renewal).

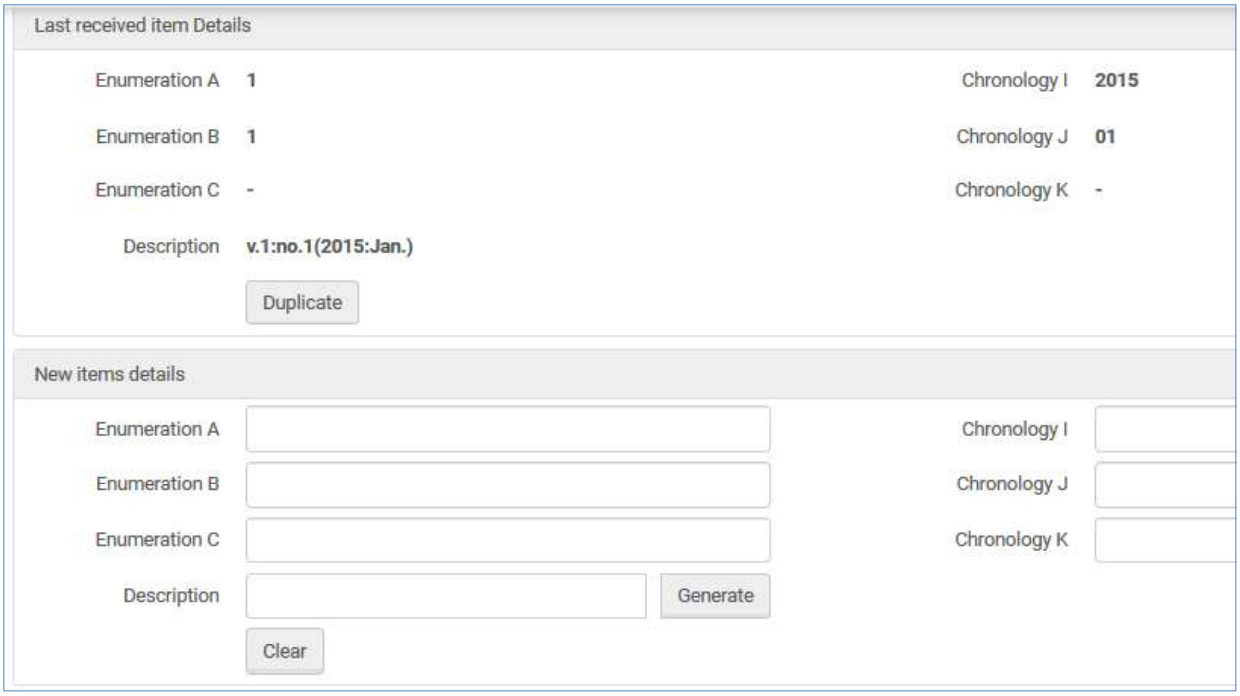


Many serials are published at irregular intervals. While Alma covers a variety of receiving intervals, including omissions, very often there is no data about how many issues will be published in a defined time period (e.g. a year), or when a new issue will be published. It is sometimes possible to create a prediction pattern for the publication that will approximate the general behavior pattern of the publication. For other serial titles the staff user might choose to receive each issue as it arrives. Alma has strong, efficient functionality to help the staff user with these workflows.

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As with receiving regularly published issues that have been created using the Alma publication pattern functionality, irregular issues are received from the Continuous tab on the Receive screen.

Clicking on 'Receive Items' opens a screen with information about the last received issue.

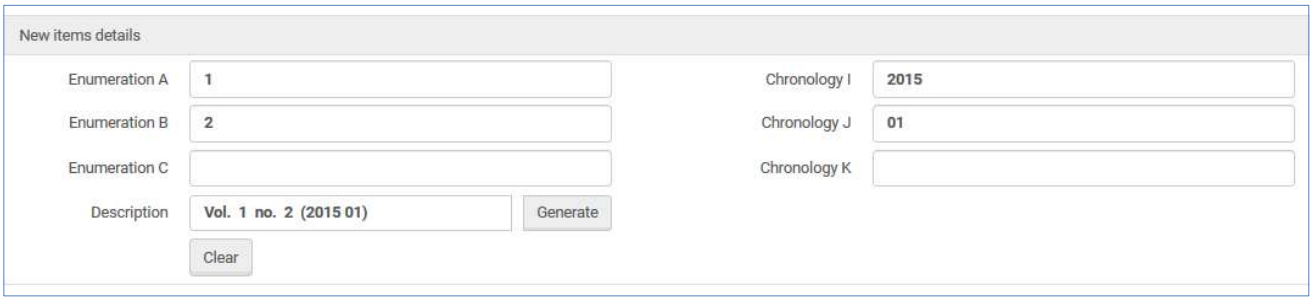


The first section of the screen displays information about the serial title, vendor and order line information (hypertext linked), location, and the option to navigate to the linked holdings record.

Receive settings can be defined – e.g. if the item needs to stay in the department, receiving date and so forth.

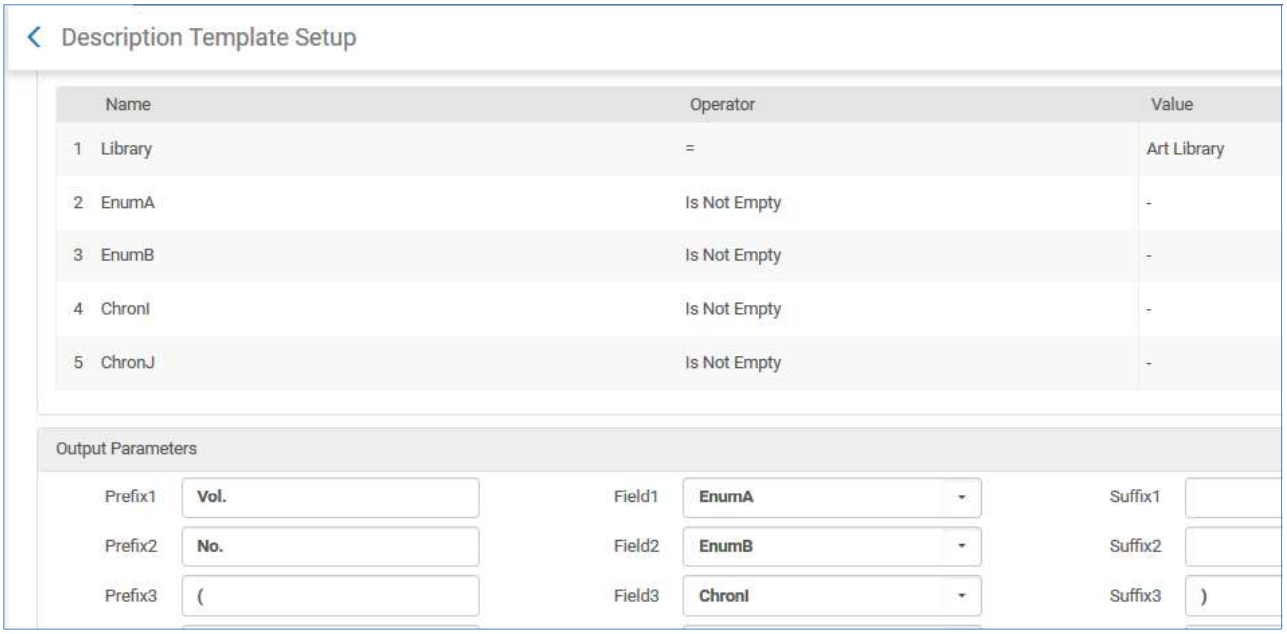
The next section shows details of the last item received. Clicking on the 'Duplicate' button creates a new issue based on the parameters of the displayed issue. This approach helps ensure consistency in recording the data for new issues. Changes can then be made relevant for the new issue.

Alternately, the new item details section can be filled in manually. The Generate button next to the Description field will generate a description based on the input in the enum and chron fields. Library defined description templates will populate the field with the relevant description for volume, issue, etc.



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An example of a description template:



Where needed also special, double issues or supplements can be registered. This can be done from the list of issues/items or through Alma's quick cataloguing functionality which allows staff to easily attach items/issues to existing holdings.

c) Claiming of issues

Ex Libris: Alma will automatically create holdings and item records as needed at the point of order. This may include: creating holdings with a call number drawn from the bibliographic records and creating item records with the location drawn from the PO line.

Alma supports automatic claims processing by default; however, claims can also be generated manually. Automatic claims are created for a Purchase Order (PO) line that has not been received within the expected number of days after placing the order or by the expected receipt date.

Claims are automatically posted to the Task List where authorized staff can select to review and take further action if desired.

Possible actions include updating the expected receipt date based on new information provided by the vendor or cancelling the purchase order line if necessary. Updating the item information resets the expected receipt date and removes the item from the task list.

Claim information for serials can be generated automatically in Alma on the level of the title and on the issue level. It is generated based on data in the vendor record (subscription grace period) and in the PO Line (subscription interval.

For vendors that support this feature, claims are sent using EDI for both one-time and continuous orders.

Order Lines with claims will display in the Alma Task List (based on the roles of the staff user).

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n. Hosting

Describe hosting requirements for the proposed solution. NCCCS requests that the Vendor include in their offer disaster recovery and business continuity plans. Both plans can be included as clearly marked attachments in the Vendor's RFP response.

Ex Libris: Alma and Primo VE are provided as SaaS services. No local hosting is needed. Ex Libris is responsible for recovery and maintains a business continuity plan which is implemented following a disruption to service. The Ex Libris cloud services group has classified disasters and emergencies into the following three levels: minor, major, and catastrophic.

- **Minor Disaster** - A minor disaster is characterized by an expected downtime of no more than 48 hours. Damage can be to hardware, software, and/or operating environment. Ex Libris cloud services could be restored to normal operations at the primary site and repairs can be started as soon as possible.
- **Major Disaster** - A major disaster is characterized by an expected downtime of more than 48 hours but less than 7 days. A major disaster will normally have extensive damage to system hardware, software, networks, and/or operating environment. Ex Libris cloud services could be restored to normal operation with the assistance of certain recovery teams who will be called to direct restoration of normal operations at the primary site.
- **Catastrophic Disaster** - A catastrophic disaster is characterized by expected downtime of greater than 7 days. The facility is destroyed to the extent that an alternate facility must be used.

Damage to the system hardware, software, and/or operating environment requires total replacement/renovation of all impacted systems. The implementation of the Disaster Recovery Plan in a remote recovery site is required to restore Ex Libris cloud services to normal operation.

In the event of a major or catastrophic event, data recovery is performed using backups retrieved from the disaster site from the offsite backup locations. After identifying salvageable equipment, early data recovery efforts first focus on restoring the operating system(s) for each system. Next, mission critical system data is restored. After system data is restored, individual customer data is restored.

Please see https://knowledge.exlibrisgroup.com/Cross-Product/Security/Statements/Ex_Libris_Cloud_Services_BCP_v2.8 for full details of our Business Continuity Plan, including strategies and components used. Our BCP is attached to our response.

i. Describe how the solution offers consistent and reliable peak hour response times.

Ex Libris: Alma is designed for scalability; because it is deployed in the cloud environment, there are no system limitations as to the number of libraries or their capacity. This architecture allows for:

- Alma to be deployed in multiple instances in each data center, without limitation on the number of parallel instances that may be deployed; and
- Each Alma instance can contain many libraries (depending on their size) in a multi-tenant architecture.

This allows us to scale Alma at multiple levels:

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- An Alma instance can scale:
    - Horizontally – by adding additional application servers and database servers; and
    - Vertically - by adding additional cores, RAM, etc., to existing servers.
- An additional Alma instance can be deployed as needed via automatic deployment tools.

When a new institution is added to Alma, it is deployed in the most appropriate instance, based on its volume, and new instances are opened in advance as needed, based on our pipeline.

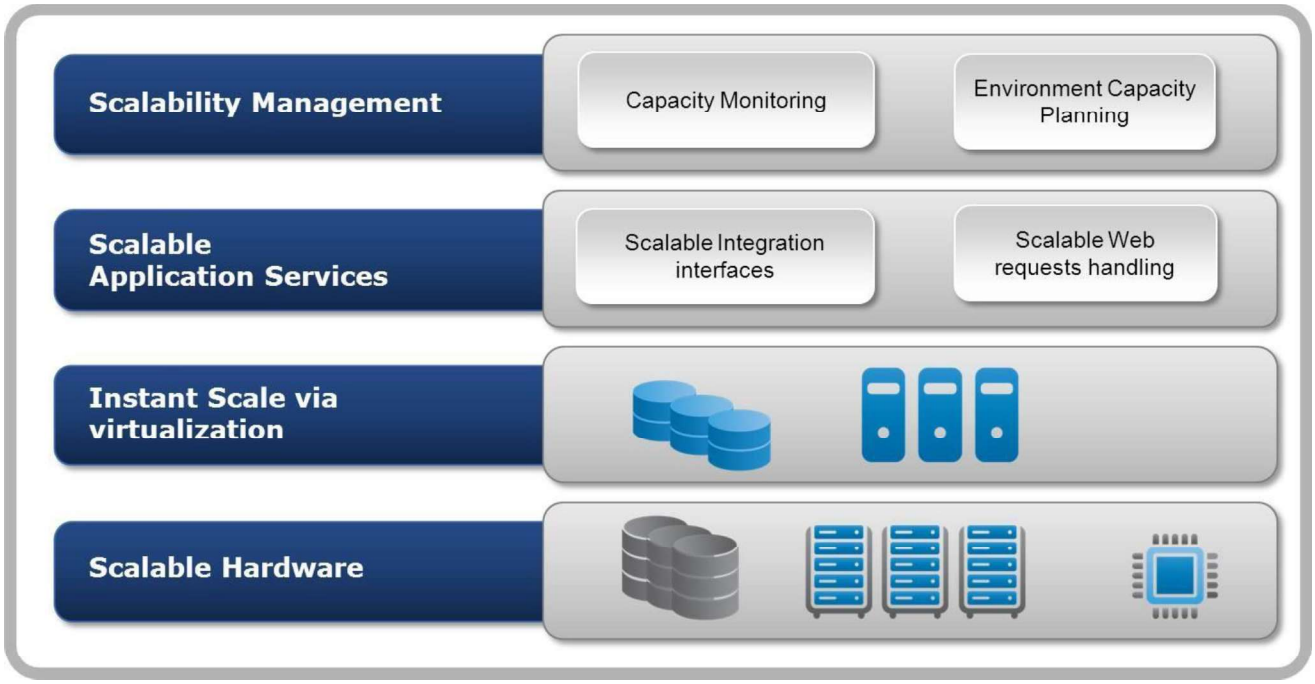
The Alma SaaS environment is built to handle usage fluctuations and peaks in several ways:

- Access to the Alma application is done via a load balancer that routes customers to an available application server.
- Online transactions, batch jobs and reports are each performed via dedicated resources to prevent disruption to online transactions caused by heavy jobs or reports run by users; and
- Deployment of end-point monitoring tools for high visibility.

Our monitoring tools help us gauge performance, and in the event of any service degradation, our cloud engineers are supplied with the appropriate tools. For example, if a server's resources are being consumed at a sudden high rate, an engineer is notified and can change the load balancer rules to allocate more resources for online transactions.

Alma: Capacity Management on infrastructural level

Alma is based on the multi-tenancy architecture in which one instance of Alma supports multiple institutions. To allow for growth in a cost-effective manner, Alma is designed to scale throughout its layers:



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Scalability management:

Alma's cloud engineers oversee capacity planning and system monitoring. To plan for growth, the cloud engineers track our existing and ongoing implementations, as well as our future pipeline, to make sure we have the required capacity. At the same time, they monitor our existing customers' growth and the system's performance trends. This approach ensures that Ex Libris can provision more hardware to meet our customers' needs in real time.

Addressing performance issues at high workloads

Because a multi-tenancy environment serves many customers, we designed Alma to provide flexibility.

This is done in several ways, a few examples of which are:

- The data is saved in the Character Large Object (CLOB) data type, which allows for an unlimited number of data elements. An example of such usage is all MARC records as well as inventory objects.
- Many of the entities in Alma have a tab for notes, allowing for an unlimited number of notes records.
- Whenever required, values for fields are managed in a mapping table to allow for full customization on the institution level.

Ex Libris monitors the performance of Alma 24X7X365. The monitoring of Alma covers both the infrastructure and business transactions level. That is, our 24X7 hub monitors not only the connection performance to Alma and our servers' side response performance but also the performance of business transactions such as z39.50 connection to Alma, circulation transactions performance and more.

As with every multi-tenant solution, Alma has Governance Thresholds that ensure that no single institution negatively impacts other Alma institutions, prevent performance degradation and help reduce the risks of malicious attacks.

Such Governance Thresholds exist in a few areas of the system for example importing and exporting data to/from Alma:

	Peak (working day) - records per hour	Off-Peak (night) – records per hour
Export	0.3M	1.2M
Manipulate	0.15M	0.6M
Import (**match by system ID**)	0.15M	0.6M

o. Training and Support

NCCCS seeks training and support for the proposed solution, including onsite training. NCCCS expects onsite training to be held at one location in each of the six (6) library districts. Training shall include face-to-face and/or regional site visits, online synchronous

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and asynchronous on-demand training and resources. Library directors, circulation staff, and catalogers are the target audience of the training that the Vendor provides. Describe the proposed training program, and how it conforms to this specification. Include in the response the approach to the following items:

Ex Libris: As part of your implementation services, we will deliver **onsite** workshops which are included in our premium training offerings. These workshops are intended to be interactive engagements to review library workflows and configuration settings. Workshops will be preceded by completion and review of Alma elearning videos with the Ex Libris project team. Our expectation is that workshop attendees will have completed the essential set of Alma trainings prior to attending a workshop.

An effective workshop is three to four days in length allowing time to cover all topics related to Alma workflows in-depth.

Your Ex Libris project team will work directly with the members of your project team to ensure that they have the knowledge and resources to train staff at each member library. This is a train the trainer approach. To ensure that the trainers have the knowledge and resources needed to develop a training plan, we further propose the first onsite workshop early in the project directed at consortium staff and key members from first wave institutions who will be responsible for building training and documentation assets for the larger group. The agenda will include a review of the training assets available to the libraries in the Ex Libris Knowledge Center and guidance on the development of a training plan for the larger group along with high level functional overviews.

Our training approach is as follows:

- **Watch** *"Getting to Know Alma"* online tutorials to get an introduction to Alma and learn about the major functional areas
- **Practice** using Alma in your sandbox, using the guided exercises provided in *"Getting to Know Alma"*
- **Watch** Alma Essentials eLearning, Configuration tutorials, Integrations with External Systems and Extended eLearning videos
- **Work** with your Ex Libris project team to home in on site-specific questions and scenarios
- **Participate** in your institution's Alma Workshop and fine-tune your workflows
- **Become** a certified Alma Administrator by completing and passing the self-paced online training course and exam

i. 24/7/365 Help Desk and Support Services

Ex Libris: Ex Libris is committed to providing customers with timely and accurate customer service. We hire highly skilled professionals with extensive library experience; many of these individuals are degreed librarians. New staff members participate in our ground-up training program to become proficient in all areas of our products, from installation and implementation to general application support. To keep our support staff informed, we conduct regularly scheduled refresher programs that include knowledge sharing with our implementation group.

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Ex Libris customers have access to a Customer Support Portal, which allows customers to open, update, and track support Cases handled by Ex Libris Support. Each Case is assigned a Case number for tracking, and it is included in all communications about a particular Case. Support Cases are assigned response levels to help us prioritize issues, communicate in a timely manner and provide a means for us to measure our performance. For down systems or components, support is available around the clock, 24 hours a day, 7 days a week, 365 days a year.

Access to the Ex Libris support staff is provided five days a week, 8:30 am to 5:30 pm, U.S. Central time. Support for critical issues, such as a down system, is provided 24x7 including weekends and holidays.

ii. 24/7/365 Accessible Training, Tutorials, FAQs, and Documentation

Ex Libris: Apart from training provided as part of the project, our Knowledge Center is free of charge and available online to everyone 24/7 with an ever-growing repository of interactive lessons about Ex Libris solutions, including Alma training with numerous videos and training materials:

- Alma Essentials – Introductory sessions to learn how to work with Alma
- Implementation Tutorials – Basic Training sessions regarding migration to Alma and Alma configuration
- Extended Training – Advanced Topics and supplementary Training
- Alma Administration Certification – Prepares Administrators and System Librarians to respond to library configuration requests.
- Ask the Alma Expert – Q&A Sessions on various Alma topics (live and recorded sessions)
- Release Highlight Videos – Tutorials for new features in Alma

This means that library staff, whether new to Alma, in an administrative role or simply need a refresher, can access all training materials at any time.

The Knowledge Center provides institutions with access to knowledge that will enable staff members to maximize the capabilities of Ex Libris Alma and Primo (and other Ex Libris products).

The Alma Training landing page:

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iii. Peak hour response time from Help Desk

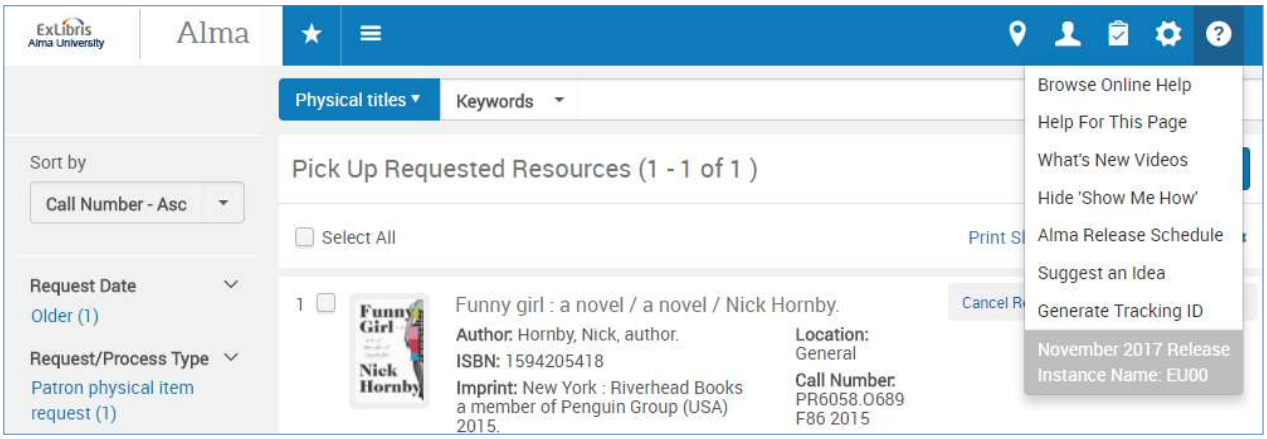
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Ex Libris: Please find a table with response levels and response times accompanied with descriptions below:

Response Level	Description	Initial Response
I	• The Service is not available	1 hour
II	• An inoperable production module	2 hours
III	• Other production performance related issues, typically a module feature working incorrectly	1 business day
IV	• Non-performance related incidents, including: general questions, requests for information, documentation questions, enhancement requests	2 business days

iv. Integrated help button functionality and contextual help

Ex Libris: Alma provides full, up-to-date online help throughout the system, including context sensitive 'Help for this Page'.



The Chat Support channel allows interactive and immediate interaction with a support analyst and promotes easier and faster support interaction.

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The Chat feature allows customers to contact the support desk via a Chat widget embedded in the Alma interface or from a support site. The user is connected to the right Support Analyst. The Chat widget currently supports text chat and the exchange of files. For platform products, the library controls who has access to the chat widget via user Roles

The Chat option is intended to address Tier 1 enquiries:

- 'How to' questions
- Simple configurations
- Behavior queries
- Known bugs
- Other simple queries

p. Disaster Recovery and Business Continuity

NCCCS requires process, policies, and procedures for recovery or continuation of core technology infrastructure for its Cloud-hosted solution in the event of a natural or any other disaster. Describe the proposed Disaster Recovery Plan that contains detailed instructions on how Vendor will back up and recover the proposed system and its databases. Specifically, describe how the solution provides disaster recovery and business continuity at various levels. At minimum, provide:

Ex Libris: Ex Libris has a well-developed backup plan consisting of multiple daily snapshots including a full daily backup. The backups are stored at the data center site and in a remote secured location over a private dedicated fast secured line. This guarantees that at any point in time, in case of a disaster, Ex Libris holds copies of the data onsite and in a remote and secured disk backup. On a regular basis, Ex Libris performs a system backup to back up application files, database files, and storage files. The privacy controls in practice at the company apply as well to all backup files. All backup files are subject to the privacy controls in practice at Ex Libris. Ex Libris has a 10-week retention policy. The restore procedures are tested on an ongoing basis to ensure rapid restoration in case of data loss. Part of the overall Ex Libris recovery plan includes the recovery of the entire institution's data to the last point a backup was taken. Ex Libris takes several data snapshots per day and also maintains a full back up at an offsite remote secured location. This data includes the entire institution's data and configuration.

Ex Libris is responsible for recovery, and maintains a business continuity plan which is implemented following a disruption to service. In the event of a major or catastrophic event, data recovery is performed. After identifying salvageable equipment, early data recovery efforts first focus on restoring the operating system(s) for each system. Next, mission critical system data is restored. After system data is restored, individual customer data is restored. The length of time that the process takes depends on the point of time from which data is required to be restored and whether we can utilize our onsite backups or will we be required to utilize offsite backups. A full restore from onsite backups could be performed within 12 hours depending on the exact scenario and usage of the onsite backups. As stated above Ex Libris maintains a Business Continuity Plan, as well as a Security Incident Response Policy, both can be viewed and downloaded at our Knowledge Center:
https://knowledge.exlibrisgroup.com/Cross_Product/Security/Policies

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We have also included a copy of our Business Continuity Plan as an attachment to our response.

a. Detailed course and instance back-up capabilities.

Ex Libris:

Redundancy Strategies

The following are the redundancy strategies available on the Private cloud Services environment:

- **Active/Active Load balancing** - Traffic is split evenly between 2 or more servers for critical servers. Upon failure of one of the servers, traffic is shifted automatically and seamlessly to the working server.
- **Active/Active Anti-virus** – Traffic is split between 2 or more anti-virus scan devices for balancing. The traffic is shifted automatically and seamlessly to the working server.
- **Active/Passive Network** – The External Network comes from a primary dedicated line with automatic failover into a secondary dedicated line. The internal network is redundant at all layers.
- **Active/Passive Multiply ISP providers** – Multi ISP connected to the primary site using Managed Internet Route Optimizer with automatic fail over.
- **Active/Passive Firewall** – Network traffic uses primary Firewall with automatic failover to a secondary Firewall.
- **Active/Active Storage** – Data is split between 2 or more storage controllers for balancing and take over in case of fail.
- **Available on-site server capacity** – Also referred to as "Onsite Cold Equipment." In the event of a catastrophic hardware failure that cannot be resolved in a timely manner, the virtualized instance of the customer's hosted environment will be mounted from an existing standby server that has been preloaded with the appropriate OS and administrative applications. Where needed, customer data restoration would then be performed from onsite or offsite backups.

Backup Strategies

Ex Libris has a well-developed backup plan consisting of multiple daily snapshots including a full daily backup. The backups are made to a separate set of disks which offers a much more reliable fast retrieve backup media and is stored at the site and in a remote secured location over a private dedicated fast secured line. This guarantees that at any point in time, in case of a disaster, Ex Libris holds copies of the data onsite and in a remote and secured disk backup. On a regular basis, Ex Libris performs a system backup to back up application files, database files, and storage files. On-site backup are kept for 14 days, off-site backup files are retained for 10 weeks. The privacy controls in practice at the company apply as well to all backup files. All backup files are subject to the privacy controls in practice. The restore procedures are tested on an ongoing basis to ensure rapid restoration in case of data loss.

- **On-site backup** – Full backup for OS platform, application, and customer data are performed at least daily (multiple snapshots during the day for critical services/systems) using storage snapshot technology. The backups are kept for 14 days on-site at a separated set of disks. The snapshots are automatically mounted with specific access

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restriction values seen by the operating system in a special set of directories allowing for an easy and immediate restore at any time by authorized personnel.

- **Off-site backup** – Full backup for OS platform, application, and customer data are performed daily using snap mirror technology over a private dedicated fast secured network connection from the primary data center to an off-site backup location using the same storage technology as the storage at the primary location. Subject to the privacy controls in practice, Ex Libris maintains the off-site backup locations in the same territory (NA, EMEA, and APAC) as the primary locations with a sufficient best practice physical distance. The backups can be retrieved back to the main data center 24/7 by authorized personnel. The backups are kept at the off-site backup managed locations for 10 weeks.

b. Application snapshots (including redundancy) of all instances in a manner that could be used to stand up an alternative data center.

Ex Libris: See above.

c. Disaster recovery and business continuity accessibility on daily, weekly, and monthly levels.

Ex Libris: Ex Libris has a comprehensive disaster recovery and business continuity plan that operates on daily, weekly, and monthly levels to ensure data protection and service continuity.

Daily Level: Ex Libris performs multiple daily snapshots and a full daily backup of all data, which includes application files, database files, and storage files. These backups are stored both onsite and at a remote secured location, ensuring that data is always available for recovery in case of a disaster. Daily backups are crucial for maintaining up-to-date data and configurations, allowing for rapid restoration if needed.

Weekly Level: On a weekly basis, Ex Libris maintains a retention policy that ensures backups are kept for a specified period, allowing for data recovery from any point within the last 10 weeks. This policy provides a buffer for data restoration in case issues are discovered after the daily backup cycle.

Monthly Level: The restore procedures are tested on an ongoing monthly basis to ensure rapid restoration in case of data loss. This regular testing is part of Ex Libris's commitment to maintaining a robust disaster recovery plan, ensuring that all systems and processes are functioning correctly and can be relied upon in the event of a disaster.

Ex Libris's business continuity plan is designed to handle different levels of disasters, from minor to catastrophic, with specific recovery procedures for each scenario. The plan includes the recovery of the entire institution's data to the last point a backup was taken, ensuring minimal data loss and service disruption.

q. Back-ups and Restore Features

The State prefers a solution that provides backup and restoration services as needed. Describe the solution's backup and restoration features providing a schedule and format for backups and restoration.

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Ex Libris: Our BCP Plan detailed above provides backups as needed, as determined by Ex Libris. We ensure data integrity for all of our customers.

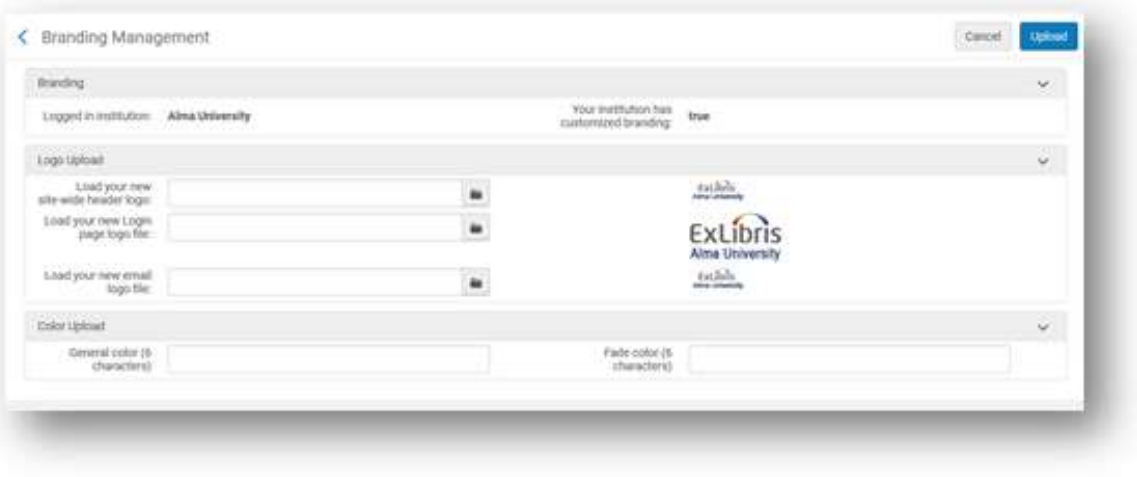
r. Configuration and Branding

NCCCS desires a hosting solution that allows theme configuration. Describe how the proposed solution will deliver branded instances for each community college to create a unique appearance. Please also describe how the solution will:

a. Provide the functionality for community college administration to configure individual instances to create a unique appearance (i.e., branding).

Ex Libris: We are recommending that each NCCCS instance have its own Alma instance. This will permit each College to have its own unique branding and configurations. Alma enables you to define a header logo, email logo, and/or login page logo for your institution. You can also change the default blue in the user interface to a different color. To configure Alma branding, you must have the General System Administrator role.

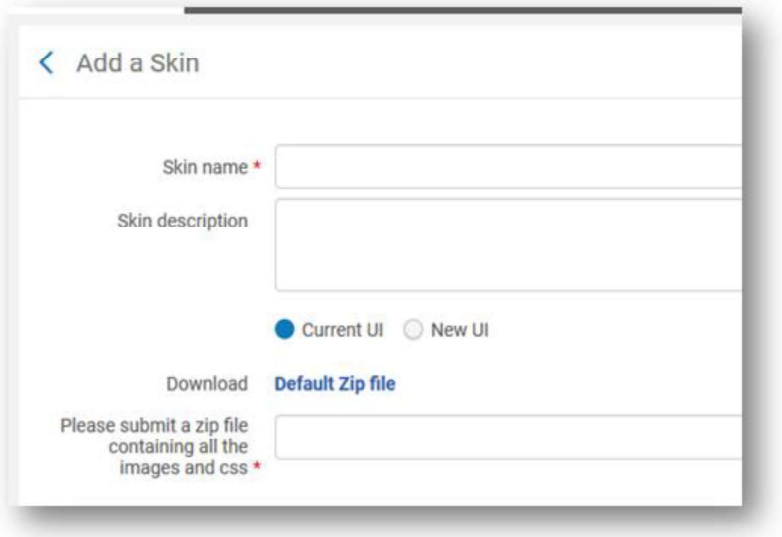
These elements are configured on the Branding Management page:



Alma also allows the institution to modify the CSS (and associated image files) that the system uses for the delivery tabs by uploading a customized CSS.

You can view and configure skins from the Manage Skins page:

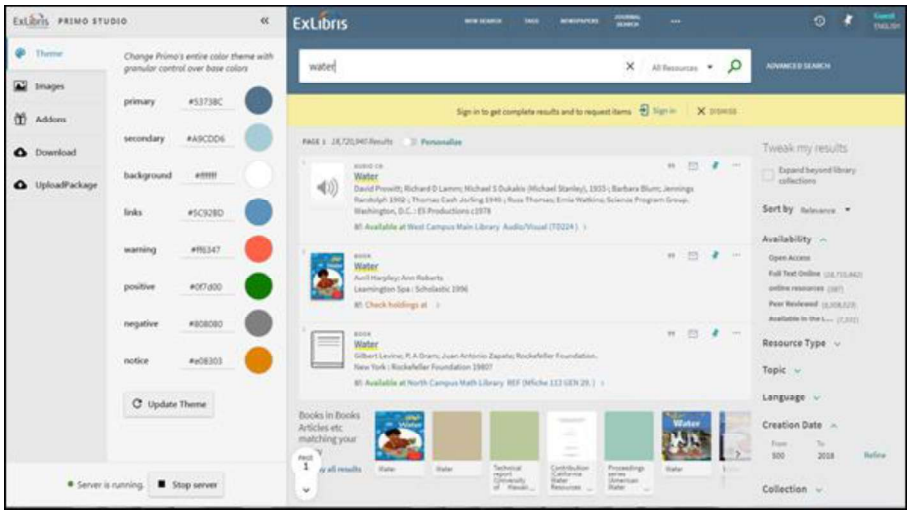
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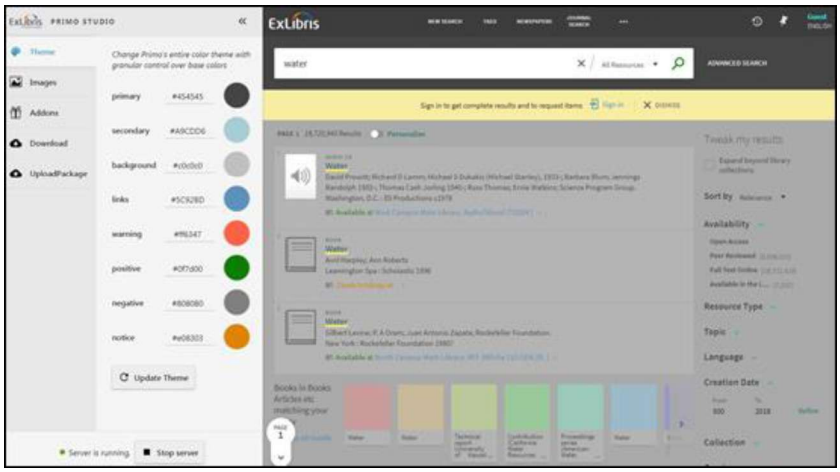
Primo VE is highly customizable and flexible thanks to the Open Discovery initiative and even more now with Primo Studio. The Primo Studio is a project that allows users to easily configure Primo New UI.

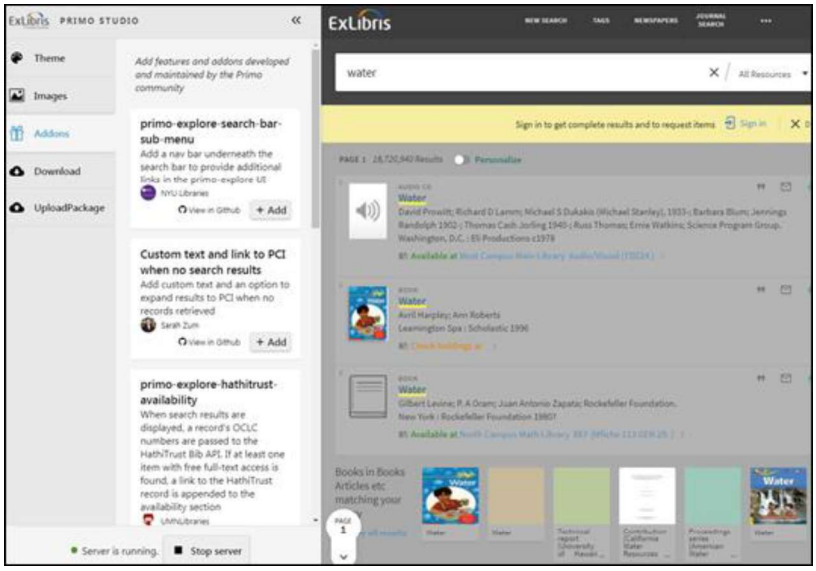
Primo Studio allows you to quickly and easily:

- Configure your color theme.
- Upload files:
    - Library Logo
    - Favicon
    - Resource Type Icons
- Add features developed by the Primo Customer community
- Upload an existing package and work on it.
- Download the customization you created as a zip file that can be uploaded.



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For more information about Primo Studio, please see the following video:

https://www.youtube.com/watch?v=chheoAcNpnQ

b. Identify, vet, and implement third party integrations (Community College and System-wide levels).

Ex Libris: To identify, vet, and implement third-party integrations at both the Community College and System-wide levels, the following steps and considerations are essential:

Identification of Integration Needs

- Determine the specific third-party applications and enterprise systems that need to be integrated with Alma. This includes financial and ordering systems, self-check, interlibrary loan, proxy services, collection agency services, ERP systems, and discovery interfaces.

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- Assess the institutional requirements for integration, such as the need for self-check machines, resource sharing systems, and learning management systems.

Vetting Process

- Utilize the Integration Profile framework in Alma to define integration requirements and ensure compatibility with Alma-supported systems.
- Review the open APIs provided by Ex Libris, which facilitate integration with other institutional systems. These APIs are available on the Ex Libris Developer Network.
- Engage with the Ex Libris Implementation Team for advice and assistance in configuring integrations, especially for complex systems like VLEs and HR systems.

Implementation

- Set up Integration Profiles for each third-party system, ensuring that all necessary attributes are defined for seamless integration.
- Utilize the API Console, a sandbox environment provided by the Ex Libris Developer Network, to test integrations before full implementation.
- Coordinate with the Ex Libris project manager and internal project teams to manage the integration process, including data migration and system configuration.
- Ensure regular synchronization of user data from systems like SIS into Alma, using the appropriate integration profiles and methods.

Testing and Validation

- Conduct thorough testing in the sandbox environment to validate the functionality and performance of integrations.
- Review and test data migrated to Alma, providing feedback within the defined time frame.
- Utilize the API Dashboard to manage implementations and view usage analytics, ensuring integrations are functioning as expected.

Ongoing Support and Maintenance

- Maintain open communication with Ex Libris for ongoing support and updates to integrations, especially when new releases are deployed.
- Participate in training and workshops provided by Ex Libris to stay updated on best practices and new features.

c. Provide access to Vendor approved integrations to all the community colleges.

Ex Libris: Alma provides extensive integration capabilities with vendor systems, allowing community colleges to access vendor-approved integrations. These integrations are facilitated through Alma's open interfaces and APIs, which are freely accessible via the Ex Libris Developer Network. This platform serves as the main vehicle for realizing the system's openness philosophy, providing a comprehensive set of RESTful APIs for integration with external systems, such as vendor systems, Enterprise Resource Planning (ERP) systems, metadata management systems, and remote storage systems.

Alma supports real-time acquisition integration with vendors using APIs, enhancing the integration between Alma and vendor systems to support seamless workflows and increase

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efficiency for staff-related processes. For example, the "Check Availability and Pricing" tool in Alma allows libraries to search vendors like ProQuest OASIS and Askews and Holts for resources and view pricing information. Orders created on the OASIS platform can be automatically passed to Alma via API connection.

Additionally, Alma supports electronic data interchange (EDI) using the UN EDIFACT standard for electronic communications of order and invoice information. This allows for automated processes such as sending purchase orders and receiving invoices, which are linked to the vendor's record in Alma.

These integration capabilities ensure that community colleges can efficiently manage their acquisitions and streamline their workflows by leveraging vendor-approved integrations through Alma's robust platform.

d. Provide functionality to load vetted integrations via a self-service process.

Ex Libris: During the implementation process, we work with you to set up your high priority integrations for Go- Live. Following Go Live you are free to set up additional integrations as needed with no intervention from Ex Libris.

s. Integration Capabilities

a. Describe how the solution integrates with NCCCS ERP, NCCCS' student information systems (Colleague and Banner).

Ex Libris: Alma supports the import of user records. Alma also supports patron record imports from Ellucian Banner.

The integration between Alma and a Student Information System (SIS) is configured in an integration profile of type "Users". If your institution has several SIS systems, a separate profile should be defined for each of them.

There are few usages in which Alma and SIS can be integrated:

The common usage is import and synchronize external users from SIS into Alma.

2 additional usages are available, but are not commonly in use:

- Export user blocks
- Export user

For more information please see our Developers Network site for full information and examples about the different integration options available with Alma - https://developers.exlibrisgroup.com...a/integrations

As stated above, the loading of external users from the Student Information System can be performed in one of two modes

1. Import and
2. Synchronize.

The synchronize modes is an ongoing load, used to update external users and add new ones. The IT department and the library must determine the identifier that Alma and the HR system have in common in order to provide a matching point when synchronizing external users in Alma with the

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incoming data from the HR system. This may be the primary identifier or any other identifier, unique cross-institution or cross-type. For each external user in the input file, the synchronization job attempts to find a match according to the defined match identifier. All the existing external users are checked, regardless of the SIS to which they initially belonged. (Internal users are not considered for matching purposes.)

If no match is found, the synchronization job adds the user as a new external user or rejects the user, according to criteria selected in the external system profile. The addition of a new external user is similar to the addition of a new user via the import mode.

If a match is found (that is, the external user already exists in Alma), all the external information of the user is replaced as follows:

- Core information – All the fields are replaced by those in the input file. Only the following fields are not replaced if they were updated manually (or if they are empty in the incoming user record): User group, Job title, PIN number, User language.
- Related segments (identifiers, addresses, phone numbers, email addresses, notes, blocks, and statistics) – The existing external segments are deleted and the segments from the input file are added. Internal segments (that were added manually) are not deleted.

It might happen that a patron comes to the circulation desk, and the circulation staff finds that no such user exists in Alma. This can happen, for example, for a new student, whose information was not yet loaded from the student information system. In such a case, the circulation staff can perform a "fast registration" of the user: the user will be created manually as an external user. The information will be updated by the next synchronization.

b. Describe how the solution utilizes an array of automated and integrated functionalities to create and maintain user accounts.

Ex Libris: The solution utilizes a comprehensive array of automated and integrated functionalities to create and maintain user accounts effectively. Alma supports the integration with multiple institutional systems, such as the Student Information System (SIS) and campus HR systems, to manage user accounts. This integration is configured through Alma's Integration Profiles, allowing for seamless synchronization of user data. The integration supports various authentication schemes, including LDAP, SAML2, OAuth, and CAS, ensuring secure and flexible access management.

User accounts can be created and maintained through both manual and automated processes. For instance, Alma allows staff users to manually create user accounts at the circulation desk using the Quick User Management screen, which facilitates the updating of essential mandatory fields. Additionally, Alma can import and synchronize external users from SIS into Alma using zipped XML files placed at a secure FTP location. This process is managed through the User Integration Profile, which can be scheduled to run regularly or activated on demand.

The system also supports role-based management, where permissions for all library functions are handled via predefined roles and templates. This allows for automatic role assignment based on library-defined rules, reducing the need for manual configuration and enabling bulk updates when necessary. Furthermore, Alma's user management functionality includes tools for searching and filtering users by various criteria, enhancing the efficiency of user account management.

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Overall, the integration with institutional systems, combined with the role-based management and automated synchronization processes, ensures that user accounts are maintained accurately and efficiently, reflecting any changes in the institutional systems promptly.

c. Describe how the solution provides integration functionality to enroll/unenroll users automatically.

Ex Libris: Alma is synchronized with your Student Information System. This updates patron accounts, removes accounts if they are no longer enrolled and adds accounts for newly enrolled students. Staff can also remove locally managed patrons manually as needed.

d. Describe how the solution provides integration with third-party communication services (such as Microsoft Office 365

Ex Libris: Alma and Primo allow for integration with Microsoft Office 365. Integration with Microsoft products includes:

- Exports from within the Analytics area (Alma and Primo) to Microsoft Excel or Powerpoint
- Exports of result lists from Alma and Primo to Microsoft Excel
- Integration with email to send notifications to users, such as overdues, etc.

Alma and Primo can also provide single sign-on via Microsoft Azure Active Directory, or any other SAML compliant system through the SAML protocol.

Additional integrations with Microsoft solutions can be set up using our optional Library Open Workflows Solution.

e. Describe how the solution provides integration with the NCCCS' open education resource platform openNCCC , https://opennccc.nccommunitycolleges.edu

Ex Libris: Leganto, our optional course resource list solution can link to a variety of resources including Open Educational resources like openNCCC. If supported by openNCCC, records could be added to Primo VE for Discovery by your end users using APIs or OAI-PMH harvesting.

t. Technical Support

Please describe what technical support capabilities will be included in your supported hosting solution. Provide a narrative regarding Vendor-conducted technical support. Describe how the solution will provide methods of technical support, response timeframes involved, and other support-related information for your solution. Also, provide a complete narrative of how the solution will handle priority requests in an emergency, including the escalation process(es) concerning priorities and emergencies. This narrative should include a root cause analysis report of the system failure and implement preventative measures to avoid future reoccurrence. See also Department of Information Technology Terms and Conditions, paragraph 4), Access Availability, Remedies. Vendor is encouraged to attach the solution's Service Level Agreement.

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Ex Libris: The Ex Libris Global Support Organization's (GSO) vision is to provide a world-class customer support by constantly meeting customer satisfaction while improving its organizational efficiency. The Ex Libris GSO provides support for all Ex Libris customers and products worldwide.

It is an organization committed to a best-practices approach that establishes and delivers consistent and predictable service levels, allowing for tiered escalation of support cases, transparency of processes, and unified response levels for all products through a continual measurement and improvement process.

We hire highly skilled professionals, many of them qualified librarians or with extensive library experience. New staff members participate in our ground-up training program to become proficient in all areas of our products, procedures and processes.

The GSO is a worldwide organization, with support personnel in all regions as well as our global headquarters. In order to improve our organizational efficiency and constantly meet customer satisfaction, as stated in our vision, we must *Think Global and Act Local*. This means that all our workflows, processes and SLAs are global, shared by all support teams in all regions. This allows better internal cooperation and control, easier reporting, enhanced performance management and contributes to our increasing organizational efficiency.

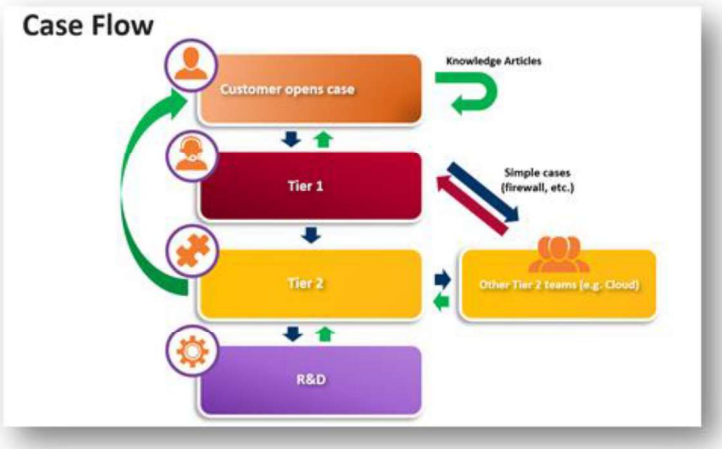
Of course we must also work and communicate with our customers during their local business hours, according to their local cultural norms and be attentive to their specific configurations and needs. Our support staff deployed in the various regions serve our customers in this manner, making sure that satisfaction is achieved.

The GSO also works in close cooperation with Ex Libris Development, Cloud services, Product Management and Implementation Teams when applicable, always representing the best interest of our various customers.

Our products are supported in a three tier model:

- Tier1 – First point of contact for all customers. Tier1 staff are familiar with more than one product and are acquainted with the customer's variety of products. They handle most of the application and functional cases. Tier1 staff are spread throughout the different regions.
- Tier2 – Cases that cannot be resolved in Tier1 and require a specific expertise within the different module of a certain product are transferred to Tier2. Tier2 staff are highly specialized and have in depth technical knowledge of the different modules of each product. Tier2 staff are spread throughout the different regions.
- Research & Development - Cases that required code change are transferred to Tier3 staffed by dedicated development teams. They perform the code change which will then be included in the next versions according to the product road map and release schedule. Tier3 staff are mainly located in the Ex Libris headquarters.

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There is a regional support director for each region: EMEA, North America and APAC. The regional director oversees all the support activity in their region and is in charge for the customer satisfaction in that region.

Communications with customer support are done mainly using Salesforce, a world-class CRM system.

Each support case has a priority defined by the customer, in order to ensure that Ex Libris addresses them in the appropriate order.

Please find a table with response levels and response times accompanied with descriptions below:

SLA Matrix:

Response Level	Description	Initial Response
I	• The Service is not available	1 hour
II	• An inoperable production module	2 hours
III	• Other production performance related issues, typically a module feature working incorrectly	1 business day
IV	• Non-performance related incidents, including: general questions, requests for information, documentation questions, enhancement requests	2 business days

Support Case Process

The reporting and management of support cases is as follows:

1. The customer opens a support case using Ex Libris CRM, choosing its Priority as described above.

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2. For System-Component Down cases, the customer may also send an email to 24X7hub@Ex Librisgroup.com with the following details:

- Name of institution
- Contact name
- A phone number (with the country code) or an e-mail address where we can reach you
- Your support case number
- Name of the product which is experiencing a problem

1. For System-Component Down cases, the Ex Libris 24X7 Hub will make initial contact with the customer contact to acknowledge the Service case report, confirm the problem details and proceed to solving the issue. Note: in case the problem is not eligible for emergency support, the customer will be notified and the issue will be handled in its adequate priority.
2. Support cases are forwarded to Ex Libris Development in case there is a need for a code change (bug), or in case the support analysts cannot fully solve the issue. Workarounds will be provided by support, wherever possible, before cases are forwarded to Development.
3. The current status of all support cases can be tracked anytime in the CRM.

Access to the Ex Libris support staff is provided five days a week, 8:30 am to 5:30 pm, local time. Support for critical issues, such as a down system, is provided 24x7 including weekends and holidays.

As described above, Ex Libris customers have access to our Salesforce Customer Portal, which allows customers to open, update, and track support cases handled by Ex Libris support at any time.

The Ex Libris CRM allows customers to:

- Open, close, and add information to support cases, and check their status.
- Search the support knowledge base for answers and solutions of issues.
- Export full support case information to Excel to issue reports.
- Retrieve support cases published from other institutions.
- Self-manage customer profile and email preferences.

Additionally, to enhance the application support experience, and in response to customer suggestions, Ex Libris has introduced Support Chat to our product suite.

The Chat Support channel allows interactive and immediate interaction with a support analyst and promotes easier and faster support interaction.

The Chat feature allows customers to contact the support desk via a Chat widget embedded in the product interface or from a support site. The user is connected to the right Support Analyst. The Chat widget currently supports text chat and the exchange of files. For platform products, the library controls who has access to the chat widget via user Roles

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The Chat option is intended to address Tier 1 enquiries:

- 'How to' questions
- Simple configurations
- Behavior queries
- Known bugs
- Other simple queries

24/7 support

The Ex Libris 24x7 hub is a unique unit within Ex Libris that works 24 hours a day, 7 days a week, 365 days a year. The 24x7 hub monitors the Ex Libris cloud and takes immediate steps to remedy any issue alerted by our monitoring systems. The 24x7 hub is also there to handle down systems reported by customers at any time of the day or night. If they cannot resolve the issue, they have a wide infrastructure of experts on call that can be triggered and work until the system is back up. During the whole time, the 24x7 hub communicates with the customers, updating them with the status, what steps are taken and estimation for resolution where applicable.

Escalation procedure

There is a clearly defined escalation procedure for each region, starting from an escalation to the engineer handling the support case, through the team leader and manager in charge and until the regional support director. Dedicated email addresses have been made available for this purpose and can be used by the customers in case of need.

Our escalation procedure can be found on the login page of the Support Portal and are available at any time.

Root Cause Analysis:

For any security or privacy event, a root cause analysis is performed afterwards, and based on the lessons learned, additional controls may be implemented throughout the various layers of protection in place as needed.

For additional information about how Alma provides security and privacy safeguards please refer to the following:
https://knowledge.exlibrisgroup.com/Alma/Product_Materials/050Alma_FAQs/Cloud_Infrastructure/Security_and_Privacy

Customers Survey

Ex Libris has thousands of customers using a variety of Ex Libris products locally or in hosted/SaaS environments. Our desire to achieve a high level of quality and customer satisfaction is at the core of our service. Therefore, GSO sends a one-click customer survey upon case closure. Besides rating their satisfaction, customers get an opportunity to leave their feedback. Every piece of feedback we receive is reviewed and acted upon, including reaching back the customer and sharing our action items. We measure our work also by using the results of these surveys at all levels within the GSO, from the support engineers, through the team leaders, managers and support directors.

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Since they were introduced, the customer surveys have been a reality changer for the GSO, as they allow the organization to get firsthand, detailed feedback from the customers. We constantly gain deeper and more vast knowledge of our customers, what is important to them and what they wish for when being served.

We balance support activities between the different regions. We have 174 people working in Ex Libris support, with more than 30 team members based in North America.



u. Maintenance/Upgrades

Vendor-managed maintenance and upgrades are integral to NCCCS' ILS solution. Therefore, NCCCS prefers detailed procedures on how maintenance is handled including upgrades, releases, patches, and required downtime. Provide the Solution's communication plans for the scheduled hardware and software maintenance, including upgrade timeframes that are conducted during off hours and the notification process to communicate to the community colleges' administrators. Vendor should describe its rollout process for updates including validation and acceptance from administrators. Within this description:

a. Indicate the number of instances provided to each institution: production and sandbox.

Ex Libris: We are proposing 58 Alma institutions (instances) each with Primo VE, a Network Zone, a Premium Network Zone Sandbox and two Premium institution zone sandboxes.

b. Include ad-hoc sandbox refresh of production instance. (i.e. as needed)

Ex Libris: As part of Alma's standard offering, included as part of the Alma subscription, Ex Libris provides an Alma Standard sandbox. This sandbox contains a significant amount of data (about 70,000 records) provided by Ex Libris that you can use for staff training and testing Alma business

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scenarios, new enhancements, and integration with other systems, without affecting your production environment.

After "Go Live", Ex Libris also offers an Alma Premium sandbox (for an additional annual fee). This sandbox contains a full replication of the data and configurations from your production environment. It can also be used for training, testing, and development purposes. When you purchase the Premium sandbox, it replaces your Standard sandbox.

Institutions with an Alma Premium sandbox get an automatic refresh twice a year in February and August. Institutions with an Alma Standard sandbox may request a refresh via the Support Desk.

Please find more information about sandboxes under:

https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/Alma_Online_Help_(English)/Getting_Started/040Alma_Sandbox_Environments

c. Describe your release and upgrade process including release notes and applicable training of core functions, and integration applications.

Ex Libris: In true software-as-a-service solutions, the concept of product versions and platform upgrades is very different from that of legacy systems. Particularly in the case of Alma & Primo VE, there are no “upgrades” or “patches”; instead, new releases are deployed on a quarterly basis

Alma & Primo VE have a quarterly release cycle. On a quarterly basis the Alma release will roll out new product features/functionalities. These releases will be in February, May, August and November. Bug fixes are released on a monthly basis.

Two weeks prior to the quarterly release date – i.e., the second last Sunday of the previous month – we deploy the new release in all the sandbox environments, allowing customers to test and familiarize themselves with the features.

Release Notes are published with every new release, as well as ‘How-to’ videos and interactive guides to assist users in getting familiar with new features.

In addition, Alma may require ongoing maintenance performed by our SaaS team, such as hardware replacement, security patches, and practice of failover scenarios. The maintenance window for release deployment and other routine maintenance work falls between Saturday 8:00 PM and Sunday 6:00 AM. During this time, the system may be unavailable for short periods of time. Announcements to customers are sent seven days in advance.

v. Project Implementation

NCCCS anticipates all LMS solutions to require implementation and support during transition/migration. Provide a proposed project implementation plan. Within the implementation plan, include the strategy for migrating data from the current solution to the new solution, and include a strategy for handling data migration during a phased statewide rollout. Describe how the data migration effort will be validated. Also, provide the process for onboarding additional community colleges that includes any data migration procedures and services that are part of the process.

Ex Libris: Please see section j. Migration/Implementation.

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The contracts must allow colleges to be added and removed annually without penalty to the System. The contracts will be amended if needed each fiscal year. The fiscal year is July 1 through June 30.

Ex Libris: Our pricing is based on all 58 colleges moving to Alma and Primo VE. Changes or additions to the colleges that are a part of the contract would result in a change in the pricing we are proposing here. New colleges may be added at a later date, with pricing determined after scoping the effort required. We are happy to provide pricing if additional colleges wish to join.

Note that all implementation costs must be clearly communicated in a line-item summary. All data must be housed in the contiguous United States.

Ex Libris: Your data will be housed in one of our US Data centers. Implementation costs are included in our pricing proposal.

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4.0 COST OF VENDOR'S OFFER

4.1 OFFER COSTS

The Vendor must list, itemize, and describe any applicable offer costs in **ATTACHMENT D: COST FORM.**

These costs may include but are not limited to:

a. Base system software

Ex Libris: See annual subscription fee below (item b). Alma is provided through an all-inclusive SaaS subscription that comprises the following functional components:

- Acquisitions (including serials and license management)
- Fulfillment (including circulation, reserves, and booking)
- Metadata Management (including e-resource management)
- Link Resolution (including an A-Z journal title search which displays in Primo VE)
- Knowledgebase (including authority control)
- Discovery (provided through Primo VE)
- Analytics (reporting)
- Administration & Configuration
- Resource sharing and Document delivery- including interlibrary loan and document delivery (provided through Rapido)
- Developers Network (including APIs and other integration mechanisms)

The subscription includes hosting, back-ups, enhancements, and application support. No on-premise hardware or software required.

b. Software License fees or costs

Ex Libris: The initial annual subscription fee for Alma with Primo VE is **$457,932.**

The Subscription Fee is based on the following metrics:

- 400 Named Users
- 1,700,000 Bibliographic Titles
- 350,000 Unique e-Journals
- 600,000 FTE
- 2,050,000 Primo Documents *(these are all the items that will be discoverable by Primo VE-Ex Libris proposed discovery tool)*

Changes to the metrics outlined above may result in changes to the price proposal. Alma with Primo VE is provided based on an all-inclusive subscription encompassing print & electronic resource management workflows for NCCCS (for 58 colleges). Proposed topology is based on an Alma Network zone, 58 institution zones; and includes a Premium network zone sandbox, and two Premium institution zone sandboxes to be shared among the colleges.

Alma with Primo VE is delivered as cloud services. The initial subscription term is three years. The date of project completion (go-live) will become the anniversary date of the subscription, and the 1st subscription fee payment will be due at that time.

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The annual subscription fee may be increased by no more than 5% on an annual basis, beginning in year 2 of the initial term.

c. Customization costs

Ex Libris: Not applicable for a multi-tenant, SaaS solution. System configuration services are included in the one-time implementation fee, specified in item "g" below. Moving to the cloud lowers the required threshold for entry to basic management processes and eliminates the need for the types of customizations commonly required for legacy solutions.

Alma provides a user-friendly and highly efficient web-based interfaces for all tasks. The system expertise needed to manage the solution is significantly reduced compared to your current environment. Alma with Primo VE is delivered as a cloud service by Ex Libris and no local database expertise or maintenance is required.

Configuration and profiling are done easily via a set of configuration rules per each process (e.g., acquisition, resource management). The system-managed workflows automate many currently manual processes, reduce errors, and free staff to work on those tasks that require decision making.

d. 3rd party software, if any, required for the operation of the system

Ex Libris: Not applicable.

e. Technical and user support documentation

Ex Libris: Technical and user support documentation is available as part of the subscription and openly available in our knowledge Center.

f. Data migration cost per college

Ex Libris: We are proposing a fixed price, fixed scope comprehensive implementation for NCCCS based on the participation of all 58 colleges. Data migration is included as part of our implementation fee and is not separately itemized. The average implementation cost per college based on our proposal is $9,508.

g. All onboarding costs inclusive of required third-party and vendor resource costs

Ex Libris: The one-time implementation fee for Alma with Primo VE is **$551,457.** We are proposing a fixed price, fixed scope comprehensive implementation for NCCCS based on the participation of all 58 colleges. Our implementation methodology includes: pre-project onboarding and readiness planning, project management, provisioning and configuration of Alma with Primo VE and Rapido for print and e-resource management across acquisitions, fulfillment, resource management, standard third-party integrations (e.g. Colleague & Banner), standard authentication (CAS, Shibboleth/SAML, LDAP), comprehensive online training and data migration. We have also included 6 onsite regional training sessions to augment our standard training curriculum in response to your requirements; and certification and post-migration consulting services are also included (10 hours per cohort).

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As specified in your requirements and clarifications, we have proposed an implementation approach based upon a cohort model with 3 cohorts. However, based upon our experience, our best-practice recommendation would be to do the implementation all at once vs through a cohort-based approach. We would be interested in discussing best practices and overall approach with you as we engage with you throughout your evaluation process.

Implementation fees are due at 50% upon contract execution, 30% upon access to the cloud environment and 20% upon go-live.

There are no third-party tools or resources required.

h. Training including materials

Ex Libris: Training is included in the one-time implementation fee outlined in item "g" above. Travel and lodging expenses for the onsite training specified is not included and will be based on our actual costs. We can agree to align with NCCCS travel and expense policy.

Training materials (including recorded courses) are updated on an ongoing basis and provided throughout the duration of your subscription.

i. Existing software upgrade/integration/training

Ex Libris: The subscription fee is presented in item "b". The subscription includes hosting, back-ups, enhancements, and application support. No on-premise hardware or software is required.

j. Artificial intelligence – Generative AI integration

Ex Libris, a part of Clarivate™, has launched a comprehensive AI strategy in 2025 aimed at transforming library services and academic workflows. Their approach centers on integrating AI tools into core platforms like Alma™ and Primo™, enhancing metadata management, research assistance, and digital collection accessibility. Notable innovations include the Primo Research Assistant, which simplifies the research process for users by offering summaries and source references, and the AI Metadata Assistant for Alma, which streamlines record creation by suggesting metadata

These tools are built on the Clarivate AI platform, ensuring consistency in privacy and security. Additionally, Clarivate has expanded its Academic AI Platform with agentic AI capabilities—introducing AI Agents that can reason, plan, and execute complex tasks across academic workflows. These agents, such as those for literature review and research intelligence, are designed to support researchers, librarians, and administrators while maintaining human oversight and academic integrity

Here's a summary of the key AI tools and their benefits from Ex Libris/Clarivate's 2025 strategy:

Key AI Tools

1. **Primo Research Assistant**
    - Uses generative AI to help users explore topics, summarize content, and discover relevant sources.
    - Integrates with library search to provide contextual recommendations.
2. **AI Metadata Assistant (Alma)**
    - Automates metadata creation and enhancement.
    - Suggests subject headings and classification codes to improve cataloging efficiency.

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3. **Academic AI Platform**
    - Hosts a suite of AI Agents capable of reasoning, planning, and executing tasks.
    - Includes agents for literature reviews, research intelligence, and administrative support.

Benefits

- Improved User Experience: Simplifies research and discovery for students and faculty.
- Operational Efficiency: Reduces manual workload for librarians and administrators.
- Enhanced Metadata Quality: Ensures more accurate and discoverable records.
- Scalable Research Support: AI agents assist with complex academic workflows while maintaining human oversight.
- Secure & Ethical AI Use: Built on Clarivate's AI platform with strong privacy and governance standards.

Learn more about our ongoing AI developments on the Ex Libris Blog:

- Prioritizing Conversational Discovery at Ex Libris
- Transforming the Library Experience with Linked Open Data and AI
- A Unified Approach to Title Matching in Libraries
- Introducing Our AI Metadata Generator
- Metadata Generation for Digital Content
- Harness the Power of AI in Higher Education with Alethea

k. Storage costs

Ex Libris: The subscription includes hosting, back-ups, enhancements, and application support. No on-premise hardware or software is required. There is no additional cost for Storage.

l. Admin technical support (provide all levels of cost based on 24/7/365 availability)

Ex Libris: The subscription fee presented in item b. The subscription includes hosting, back-ups, enhancements, and application support. No on-premise hardware or software is required.

Ex Libris is committed to providing customers with timely and accurate customer service. Access to Ex Libris support staff is provided five days a week, 8:30 am to 5:30 pm Central Time. Support for critical issues, such as a down system/component, is provided 24/7/365 via the Ex Libris Hub, including weekends and holidays.

Ex Libris customers have access to our Salesforce Customer Portal, which allows customers to open, update, and track support Cases handled by Ex Libris Support at any time. The Portal will send email alerts regarding updates to support cases.

Additionally, to enhance the application support experience, and in response to customer suggestions, Ex Libris has introduced Support Chat to our product suite. The Chat Support channel allows interactive and immediate interaction with a support analyst and promote easier and faster support interaction. The Chat option is intended to address enquiries such as:

- How to' questions
- Simple configurations

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- Behavior queries
- Known bugs
- Other simple queries

Please find a table with response levels and response times accompanied with descriptions below from our SLA:

Response Level	Description	Initial Response
I	The Service is not available	1 hour
II	An inoperable production module	2 hours
III	Other production performance related issues, typically a module feature working incorrectly	1 business day
IV	Non-performance related incidents, including: general questions, requests for information, documentation questions, enhancement requests	2 business days

There is a clearly defined escalation procedure for each region, starting from an escalation to the engineer handling the support case, through the team leader and manager in charge and until the regional support director. Dedicated email addresses have been made available for this purpose and can be used by the customers in case of need. Escalation can also be triggered directly in the CRM.

m. Faculty/staff/student user support costs (based on 24/7/365 availability)

Ex Libris: The campus library will become the initial point of contact for faculty/staff/student user support.

n. Vetting cost for LTIs and integrations for applications.

Ex Libris: Integration with Learning Tools Interoperability (LTI) standards is supported natively in optional solutions such as Ex Libris Leganto reading list and learning affordability product which can be purchased as an added cost on an opt-in basis by individual colleges.

Vetting and onboarding third-party applications may incur additional costs depending on complexity, security reviews, and customization needs.

Ex Libris encourages institutions to utilize our extensive standards support, open APIs / cloud apps and community development integrations to minimize costs.

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o. Consultation hours

Ex Libris: We have included 10 hours of post implementation consulting for each cohort at no added cost (30 hours total). Our standard daily professional services rate for services beyond the implementation timeline or scope is $1,850/day. As the library's needs evolve, more hands-on assistance with optimizing workflows or enabling new system features might be required. For this reason, Ex Libris offers additional Expert Services for libraries that are already in production. During an Expert Service engagement, a product expert may analyze opportunities for workflow efficiencies, set up new services, or build custom reports. These and other services can be adapted as the library's unique requirements develop, and custom pricing is developed between the Ex Libris professional services team and the customer, depending on the customer's needs.

p. Costs for customization

Ex Libris: Not applicable for a multi-tenant, SaaS solution. System configuration services are included in the one-time implementation fee, specified in item "g". Moving to the cloud lowers the required threshold for entry to basic management processes.

Alma provides user-friendly and highly efficient web-based interfaces for all tasks. The system expertise needed to manage the solution is significantly reduced compared to your current environment. Alma with Primo VE is delivered as a cloud service by Ex Libris and no local database expertise or maintenance is required.

Configuration and profiling are done easily via a set of configuration rules per each process (e.g., acquisition, resource management). The system-managed workflows automate many currently manual processes, reduce errors, and free staff to work on those tasks that require decision making.

q. Costs incurred if college migrate to or away from this solution

Ex Libris: For the sake of clarity, other than making the customer's data available in a standard format, no other transition services are normally available or required. Ex Libris provides a transition assistance period during which it makes all customer data from its SaaS Service available (as outlined in section 10.4 of the SaaS Agreement included with this response).

r. Other services (Other costs not included in the proposed solution, including any known future cost.)

Ex Libris: Not applicable.

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These costs may include but are not limited to:

a. Base system software
b. Software License fees or costs
c. Customization costs
d. 3rd party software, if any, required for the operation of the system
e. Technical and user support documentation
f. Data migration cost per college
g. All onboarding costs inclusive of required third-party and vendor resource costs
h. Training including materials
i. Existing software upgrade/integration/training
j. Artificial intelligence – Generative AI integration
k. Storage costs
l. Admin technical support (provide all levels of cost based on 24/7/365 availability)
m. Faculty/staff/student user support costs (based on 24/7/365 availability)
n. Vetting cost for LTIs and integrations for applications.
o. Consultation hours
p. Costs for customization
q. Costs incurred if college migrate to or away from this solution
r. Other services (Other costs not included in the proposed solution, including any known future cost.)

4.2 PAYMENT SCHEDULE

Invoice to be paid at the start of the fiscal year on July 1, 2026. Invoices must include costs listed by line item.

5.0 EVALUATION

5.1 SOURCE SELECTION

A trade-off/ranking method of source selection will be utilized in this procurement to allow the State to award this RFP to the Vendor providing the Best Value and recognizing that Best Value may result in award other than the lowest price or highest technically qualified offer. By using this method, the overall ranking may be adjusted up or down when considered with or traded-off against other non-price factors.

a) Evaluation Process Explanation. State Agency employees will review all offers. All offers will be initially classified as being responsive or non-responsive. If an offer is found non-responsive, it will not be considered further. All responsive offers will be evaluated based on stated evaluation criteria. Any references in an answer to another location in the RFP materials or Offer shall have specific page numbers and sections stated in the reference.
b) To be eligible for consideration, Vendor's offer must substantially conform to the intent of all specifications. Compliance with the intent of all specifications will be determined by the State. Offers that do not meet the full intent of all specifications listed in this RFP may be considered

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deficient. Further, a serious deficiency in the offer as to any one (1) factor may be grounds for rejection regardless of overall rank.

c) The Evaluation Committee may request clarifications, an interview with or presentation from any or all vendors as allowed by 9 NCAC 06B.0307. However, the State may refuse to accept, in full or partially, the response to a clarification request given by any vendor. Vendors are cautioned that the evaluators are not required to request clarifications; therefore, all offers should be complete and reflect the most favorable terms. Vendors should be prepared to send qualified personnel to Raleigh, North Carolina, to discuss technical and contractual aspects of the offer.

d) Vendors are advised that the State is not obligated to ask for or accept after the closing date for receipt of offer, data that is essential for a complete and thorough evaluation of the offer.

5.2 EVALUATION CRITERIA

Evaluation shall include best value, as the term is defined in NCGS § 143-135.9(a)(1), compliance with information technology project management policies as defined by NCGS §143B-1340, compliance with information technology security standards and policies, substantial conformity with the specifications, and other conditions set forth in the solicitation. The following Evaluation Criteria are listed in Order of Importance.

a. How well the Vendor's offer conforms with the specifications
b. How each Vendor's offer compares with other Vendors' offers
c. Total Cost of Ownership
d. Illustration(s) and/or explanations of adherence to Section 3.3 Enterprise Specifications
e. Adherence to Section 3.2 Security Specifications
f. Vendor Schedule/Timeline for completing work
g. Strength of references relevant or material to technology area(s) or Specifications and Vendor Past Performance (The Vendor may be disqualified from any evaluation or award if the Vendor or any key personnel proposed has previously failed to perform satisfactorily during the performance of any contract with the State, or violated rules or statutes applicable to public bidding in the State.)
h. Risks associated with Vendor's offer which include Vendor errata and exceptions including, but not limited to, data loss during migration, inadequate support and training, integration issues with the ERP system and licensed resources used by the college, as well as inadequate or costly storage

5.3 BEST AND FINAL OFFERS (BAFO)

The State may establish a competitive range based upon evaluations of offers, and request BAFOs from the Vendor(s) within this range, e.g., "Finalist Vendor(s)". If negotiations or subsequent offers are solicited, the Vendor(s) shall provide BAFO(s) in response. Failure to deliver a BAFO when requested shall disqualify the non-responsive Vendor from further consideration. The State will evaluate BAFO(s), oral presentations, and product demonstrations as part of the vendors' respective offers to determine the final rankings.

5.4 POSSESSION AND REVIEW

During the evaluation period and prior to award, possession of the bids and accompanying information is limited to personnel of the issuing agency, and to the committee responsible for participating in the evaluation. Vendors who attempt to gain this privileged information, or to influence

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the evaluation process (i.e., assist in evaluation) will be in violation of purchasing rules and their offer will not be further evaluated or considered.

After award of contract the complete bid file will be available to any interested persons with the exception of trade secrets, test information or similar proprietary information as provided by statute and rule. Any proprietary or confidential information, which conforms to exclusions from public records as provided by NCGS § 132-1.2 must be clearly marked as such in the offer when submitted.

6.0 VENDOR INFORMATION AND INSTRUCTIONS

6.1 GENERAL CONDITIONS OF OFFER

6.1.1 VENDOR RESPONSIBILITY

It shall be the Vendor's responsibility to read this entire document, review all enclosures and attachments, and comply with all specifications, requirements and the State's intent as specified herein. If a Vendor discovers an inconsistency, error or omission in this solicitation, the Vendor should request a clarification from the State's contact person.

The Vendor will be responsible for investigating and recommending the most effective and efficient solution. Consideration shall be given to the stability of the proposed configuration and the future direction of technology, confirming to the best of its ability that the recommended approach is not short lived. Several approaches may exist for hardware configurations, other products and any software. The Vendor must provide a justification for their proposed hardware, product and software solution(s) along with costs thereof. Vendors are encouraged to present explanations of benefits and merits of their proposed solutions together with any accompanying Services, maintenance, warranties, value added Services or other criteria identified herein.

6.1.2 RIGHTS RESERVED

While the State has every intention to award a contract as a result of this RFP, issuance of the RFP in no way constitutes a commitment by the State of North Carolina, or the procuring Agency, to award a contract. Upon determining that any of the following would be in its best interests, the State may:

a) waive any formality;

b) amend the solicitation;

c) cancel or terminate this RFP;

d) reject any or all offers received in response to this RFP;

e) waive any undesirable, inconsequential, or inconsistent provisions of this RFP;

f) if the response to this solicitation demonstrates a lack of competition, negotiate directly with one or more Vendors;

g) not award, or if awarded, terminate any contract if the State determines adequate State funds are not available; or

h) if all offers are found non-responsive, determine whether Waiver of Competition criteria may be satisfied, and if so, negotiate with one or more known sources of supply.

6.1.3 SOLICITATION AMENDMENTS OR REVISIONS

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Any and all amendments or revisions to this document shall be made by written addendum from the Agency Procurement Office. If either a unit price or extended price is obviously in error and the other is obviously correct, the incorrect price will be disregarded.

6.1.4 ORAL EXPLANATIONS

The State will not be bound by oral explanations or instructions given at any time during the bidding process or after award. Vendor contact regarding this RFP with anyone other than the State's contact person may be grounds for rejection of said Vendor's offer. Agency contact regarding this RFP with any Vendor may be grounds for cancellation of this RFP.

6.1.5 E-PROCUREMENT

This is an E-Procurement solicitation. See ATTACHMENT B, paragraph #38 of the attached North Carolina Department of Information Technology Terms and Conditions.

The Terms and Conditions made part of this solicitation contain language necessary for the implementation of North Carolina's statewide E-Procurement initiative. It is the Vendor's responsibility to read these terms and conditions carefully and to consider them in preparing the offer. By signature, the Vendor acknowledges acceptance of all terms and conditions including those related to E-Procurement.

a) General information on the E-Procurement service can be found at http://eprocurement.nc.gov/

b) Within two days after notification of award of a contract, the Vendor must register in NC E-Procurement @ Your Service at the following website: http://eprocurement.nc.gov/Vendor.html

c) As of the RFP submittal date, the Vendor must be current on all E-Procurement fees. If the Vendor is not current on all E-Procurement fees, the State may disqualify the Vendor from participation in this RFP.

6.1.6 ELECTRONIC VENDOR PORTAL (EVP)

The State has implemented the electronic Vendor Portal (eVP) that allows the public to retrieve award notices and information on the Internet at https://evp.nc.gov. Results may be found by searching by Solicitation Number or agency name. This information may not be available for several weeks depending upon the complexity of the acquisition and the length of time to complete the evaluation process.

6.1.7 PROTEST PROCEDURES

Protests of awards exceeding $25,000 in value must be submitted to the issuing Agency at the address given on the first page of this document. Protests must be received in the purchasing agency's office within fifteen (15) calendar days from the date of this RFP award and provide specific reasons and any supporting documentation for the protest. **All protests are governed by Title 9, Department of Information Technology (formerly Office of Information Technology Services), Subchapter 06B Sections .1101 - .1121.**

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6.2 GENERAL INSTRUCTIONS FOR VENDOR

6.2.1 SITE VISIT OR PRE-OFFER CONFERENCE - RESERVED

6.2.2 QUESTIONS CONCERNING THE RFP

All inquiries regarding the solicitation specifications or requirements are to be addressed to the contact person listed on Page One of this solicitation via the Ariba Sourcing Tool's message board. Vendor contact regarding this Solicitation with anyone other than the contact person listed on Page One of this Solicitation may be grounds for rejection of said Vendor's offer.

Written questions concerning this Solicitation will be received until **May 30, 2025 at 2:00 PM Eastern Time**.

They must be submitted to the contact person listed on Page One of this Solicitation via xxx.xxx@nc.gov. Please enter "Questions Solicitation XXXX" as the subject for the message. Questions should be submitted in the following format:

REFERENCE	VENDOR QUESTION
RFP Section, Page Number	

6.2.3 ADDENDUM TO RFP

If a pre-offer conference is held or written questions are received prior to the submission date, an addendum comprising questions submitted and responses to such questions, or any additional terms deemed necessary by the State shall become an Addendum to this RFP and provided via the State's Ariba Sourcing Tool. Vendors' questions posed orally at any pre-offer conference must be reduced to writing by the Vendor and provided to the Purchasing Officer as directed by said Officer. Oral answers are not binding on the State.

Critical updated information may be included in these Addenda. It is important that all Vendors bidding on this RFP periodically check the State's Sourcing Tool for all Addenda that may be issued prior to the offer opening date.

6.2.4 COSTS RELATED TO OFFER SUBMISSION

Costs for developing and delivering responses to this RFP and any subsequent presentations of the offer as requested by the State are entirely the responsibility of the Vendor. The State is not liable for any expense incurred by the Vendors in the preparation and presentation of their offers.

All materials submitted in response to this RFP become the property of the State and are to be appended to any formal documentation, which would further define or expand any contractual relationship between the State and the Vendor resulting from this RFP process.

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6.2.5 VENDOR ERRATA AND EXCEPTIONS

Any errata or exceptions to the State's requirements and specifications may be presented on a separate page labeled "Exceptions to Requirements and Specifications". Include references to the corresponding requirements and specifications of the Solicitation. Any deviations shall be explained in detail. **The Vendor shall not construe this paragraph as inviting deviation or implying that any deviation will be acceptable. Offers of alternative or non-equivalent goods or services may be rejected if not found substantially conforming; and if offered, must be supported by independent documentary verification that the offer substantially conforms to the specified goods or services specification.** If a vendor materially deviates from RFP requirements or specifications, its offer may be determined to be non-responsive by the State.

Offers conditioned upon acceptance of Vendor Errata or Exceptions may be determined to be non-responsive by the State.

6.2.6 ALTERNATE OFFERS

The Vendor may submit alternate offers for various levels of service(s) or products meeting specifications. Alternate offers must specifically identify the RFP specifications and advantage(s) addressed by the alternate offer. Any alternate offers must be clearly marked with the legend as shown herein. Each offer must be for a specific set of Services or products and offer at specific pricing. If a Vendor chooses to respond with various service or product offerings, each must be an offer with a different price and a separate RFP offer. Vendors may also provide multiple offers for software or systems coupled with support and maintenance options, provided, however, all offers must satisfy the specifications.

Alternate offers must be submitted in a separate document and clearly marked "Alternate Offer for 'name of Vendor'" and numbered sequentially with the first offer if separate offers are submitted.

6.2.7 MODIFICATIONS TO OFFER

An offer may not be unilaterally modified by the Vendor.

6.2.8 BASIS FOR REJECTION

Pursuant to 9 NCAC 06B.0401, the State reserves the right to reject any and all offers, in whole or in part; by deeming the offer unsatisfactory as to quality or quantity, delivery, price or service offered; non-compliance with the specifications or intent of this solicitation; lack of competitiveness; error(s) in specifications or indications that revision would be advantageous to the State; cancellation or other changes in the intended project, or other determination that the proposed specification is no longer needed; limitation or lack of available funds; circumstances that prevent determination of the best offer; or any other determination that rejection would be in the best interest of the State.

6.2.9 NON-RESPONSIVE OFFERS

Vendor offers will be considered non-responsive by the State and will be rejected without further consideration or evaluation if statements such as the following are included:

- "This offer does not constitute a binding offer",
- "This offer will be valid only if this offer is selected as a finalist or in the competitive range",
- "The Vendor does not commit or bind itself to any terms and conditions by this submission",

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- "This document and all associated documents are non-binding and shall be used for discussion purposes only",
- "This offer will not be binding on either party until incorporated in a definitive agreement signed by authorized representatives of both parties", or
- A statement of similar intent

6.2.10 VENDOR REGISTRATION WITH THE SECRETARY OF STATE

Vendors do not have to be registered with the NC Secretary of State to submit an offer; however, in order to receive an award/contract with the State, they must be registered. Registration can be completed at the following website: https://www.sosnc.gov/manual/Launching_A_Business

6.2.11 VENDOR REGISTRATION AND SOLICITATION NOTIFICATION SYSTEM

The NC electronic Vendor Portal (eVP) allows Vendors to electronically register with the State to receive electronic notification of current procurement opportunities for goods and Services available at the following website: https://evp.nc.gov.

This RFP is available electronically on the electronic Vendor Portal (eVP) at the following website: https://evp.nc.gov.

6.3 INSTRUCTIONS FOR OFFER SUBMISSION

6.3.1 GENERAL INSTRUCTIONS FOR OFFER

Vendors are strongly encouraged to adhere to the following general instructions in order to bring clarity and order to the offer and subsequent evaluation process:

a) Organize the offer in the exact order in which the specifications are presented in the RFP. The Execution page of this RFP must be placed at the front of the Proposal. Each page should be numbered. The offer should contain a table of contents, which cross-references the RFP specification and the specific page of the response in the Vendor's offer.

b) Provide complete and comprehensive responses with a corresponding emphasis on being concise and clear. Elaborate offers in the form of brochures or other presentations beyond that necessary to present a complete and effective offer are not desired.

c) Clearly state your understanding of the problem(s) presented by this RFP including your proposed solution's ability to meet the specifications, including capabilities, features, and limitations, as described herein, and provide a cost offer.

d) Supply all relevant and material information relating to the Vendor's organization, personnel, and experience that substantiates its qualifications and capabilities to perform the Services and/or provide the goods described in this RFP. If relevant and material information is not provided, the offer may be rejected from consideration and evaluation.

e) Furnish all information requested; and if response spaces are provided in this document, the Vendor shall furnish said information in the spaces provided. Further, if required elsewhere in this RFP, each Vendor must submit with its offer sketches, descriptive literature and/or complete specifications covering the products offered. References to literature submitted with a previous offer will not satisfy this provision. Proposals that do not comply with these instructions may be rejected.

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f) Any offer that does not adhere to these instructions may be deemed non-responsive and rejected on that basis.

g) **Only information that is received in response to this RFP will be evaluated.** Reference to information previously submitted or Internet Website Addresses (URLs) will not suffice as a response to this solicitation.

6.3.2 OFFER ORGANIZATION

Within each section of its offer, Vendor should address the items in the order in which they appear in this RFP. Forms, attachments or exhibits, if any provided in the RFP, must be completed and included in the appropriate section of the offer. All discussion of offered costs, rates, or expenses must be presented in Section 4.0. Cost of Vendor's Offer.

The offer should be organized and indexed in the following format and should contain, at a minimum, all listed items below.

a) Signed Execution Page AND all pages of this solicitation document in ONE (1) PDF. This includes:

- Attachments A and B
- Completed Description of Vendor Submitting Offer Form (Attachment C)
- Completed Cost Form of Vendor's Offer (Attachment D)
- Completed and Signed Vendor Certification Form (Attachment E)
- Completed Location of Workers Utilized by Vendor Form (Attachment F)
- Completed References (Attachment G)
- Completed Financial Statements (Attachment H)

b) Vendor Response to Specifications and Requirements

c) Security Vendor Readiness Assessment Report (VRAR)

d) Architecture Diagrams

e) Detailed Project Timeline

f) Errata and Exceptions if any

g) Vendor's License and Maintenance Agreements if any

h) Vendor may attach other supporting materials that it feels may improve the quality of its response. These materials should be included as items in a separate appendix.

6.3.3 OFFER SUBMITTAL

Due Date: **June 20, 2025**

Time: **2:00 PM Eastern Time**

IMPORTANT NOTE: It is the Vendor's sole responsibility to upload their offer to the Ariba Sourcing Module by the specified time and date of opening. Vendor shall bear the risk for late electronic submission due to unintended or unanticipated delay, including but not limited to internet issues,

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network issues, local power outages, or application issues. Vendor must include all the pages of this solicitation in their response.

Sealed offers, subject to the conditions made a part hereof, will be received until **2:00 PM Eastern Time** on the day of opening and then opened, for furnishing and delivering the commodity as described herein. Offers must be submitted via the Ariba Sourcing Module with the Execution page signed and dated by an official authorized to bind the Vendor's firm. Failure to return a signed offer shall result in disqualification.

Attempts to submit a proposal via facsimile (FAX) machine, telephone, email, email attachments, or in any hardcopy format in response to this Bid SHALL NOT be accepted and will automatically be deemed Non-Responsive.

a) Submit **one (1) signed, original electronic offer** through the Ariba Sourcing Module.

b) The Ariba Sourcing Module document number is: WS1497877511

c) All File names should start with the Vendor name first, in order to easily determine all the files to be included as part of the vendor's response. For example, files should be named as follows: Vendor Name-your file name.

d) File contents **SHALL NOT** be password protected, the file formats must be in .PDF, .JPEG, .DOC or .XLS format, and shall be capable of being copied to other sources. Inability by the State to open the Vendor's files may result in the Vendor's offer(s) being rejected as Non-Responsive.

e) If the Vendor's proposal contains any confidential information (as defined in Attachment B, Section 1, Paragraph #18), then the vendor must provide one (1) signed, original electronic offer and one (1) redacted electronic copy.

For Vendor training on how to use the Ariba Sourcing Tool to view solicitations, submit questions, develop responses, upload documents, and submit offers to the State, Vendors should go to the following site: https://eprocurement.nc.gov/training/vendor-training.

Questions or issues related to using the Ariba Sourcing Tool itself can be directed to the North Carolina eProcurement Help Desk at 888-211-7440, Option 2. Help Desk representatives are available Monday through Friday from 7:30 AM EST to 5:00 PM EST

7.0 OTHER REQUIREMENTS AND SPECIAL TERMS

7.1 VENDOR UTILIZATION OF WORKERS OUTSIDE OF U.S.

In accordance with NCGS §143B-1361(b), the Vendor must detail the manner in which it intends to utilize resources or workers in the RFP response. The State of North Carolina will evaluate the additional risks, costs, and other factors associated with such utilization prior to making an award for any such Vendor's offer.

Complete ATTACHMENT F - Location of Workers Utilized by Vendor and submit with your offer.

7.2 FINANCIAL STATEMENTS

The Vendor shall provide evidence of financial stability by returning with its offer 1) completed Financial Review Form (Attachment H), and 2) copies of Financial Statements as further described hereinbelow. As used herein, Financial Statements shall exclude tax returns and compiled statements.

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a) For a publicly traded company, Financial Statements for the past three (3) fiscal years, including at a minimum, income statements, balance sheets, and statements of changes in financial position or cash flows. If three (3) years of financial statements are not available, this information shall be provided to the fullest extent possible, but not less than one year. If less than 3 years, the Vendor must explain the reason why they are not available.

b) For a privately held company, when certified audited financial statements are not prepared: a written statement from the company's certified public accountant stating the financial condition, debt-to-asset ratio for the past three (3) years and any pending actions that may affect the company's financial condition.

c) The State may, in its sole discretion, accept evidence of financial stability other than Financial Statements for the purpose of evaluating Vendors' responses to this RFP. The State reserves the right to determine whether the substitute information meets the requirements for Financial Information sufficiently to allow the State to evaluate the sufficiency of financial resources and the ability of the business to sustain performance of this RFP award. Scope Statements issued may require the submission of Financial Statements and specify the number of years to be provided, the information to be provided, and the most recent date required.

7.3 FINANCIAL RESOURCES ASSESSMENT, QUALITY ASSURANCE, PERFORMANCE AND RELIABILITY

a) Contract Performance Security. The State reserves the right to require performance guaranties pursuant to NCGS §143B-1340(f) and 09 NCAC 06B.1207 from the Vendor without expense to the State.

b) Project Assurance, Performance and Reliability Evaluation – Pursuant to NCGS §143B-1340, the State CIO may require quality assurance reviews of Projects as necessary.

7.4 VENDOR'S LICENSE OR SUPPORT AGREEMENTS

Vendor should present its license or support agreements for review and evaluation. Terms offered for licensing and support of Vendors' proprietary assets will be considered.

The terms and conditions of the Vendor's standard services, license, maintenance or other agreement(s) applicable to Services, Software and other Products acquired under this RFP may apply to the extent such terms and conditions do not materially change the terms and conditions of this RFP. In the event of any conflict between the terms and conditions of this RFP and the Vendor's standard agreement(s), the terms and conditions of this RFP relating to audit and records, jurisdiction, choice of law, the State's electronic procurement application of law or administrative rules, the remedy for intellectual property infringement and the exclusive remedies and limitation of liability in the DIT Terms and Conditions herein shall apply in all cases and supersede any provisions contained in the Vendor's relevant standard agreement or any other agreement. The State shall not be obligated under any standard license and/or maintenance or other Vendor agreement(s) to indemnify or hold harmless the Vendor, its licensors, successors or assigns, nor arbitrate any dispute, nor pay late fees, penalties, legal fees or other similar costs.

7.5 RESELLERS

If the Offer is made by a Reseller that purchased the offered items for resale or license to the Agency, or offered based upon an agreement between the Offeror and a third party, and that the proprietary and

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intellectual property rights associated with the items are owned by parties other than the Reseller ("Third Parties"). The Agency further acknowledges that except for the payment to the Reseller for the Third Party items, all of its rights and obligations with respect thereto flow from and to the Third Parties. The Reseller shall provide the Agency with copies of all documentation and warranties for the Third Party items which are provided to the Reseller. The Reseller shall assign all applicable third party warranties for Deliverables to the Agency. The State reserves all rights to utilize existing agreements with such Third Parties or to negotiate agreements with such Third Parties as the State deems necessary or proper to achieve the intent of this RFP.

7.6 DISCLOSURE OF LITIGATION

The Vendor's failure to fully and timely comply with the terms of this section, including providing reasonable assurances satisfactory to the State, may constitute a material breach of the Agreement.

a) The Vendor shall notify the State in its offer, if it, or any of its subcontractors, or their officers, directors, or key personnel who may provide Services under any contract awarded pursuant to this solicitation, have ever been convicted of a felony, or any crime involving moral turpitude, including, but not limited to fraud, misappropriation or deception. The Vendor shall promptly notify the State of any criminal litigation, investigations or proceeding involving the Vendor or any subcontractor, or any of the foregoing entities' then current officers or directors during the term of the Agreement or any Scope Statement awarded to the Vendor.

b) The Vendor shall notify the State in its offer, and promptly thereafter as otherwise applicable, of any civil litigation, arbitration, proceeding, or judgments against it or its subcontractors during the three (3) years preceding its offer, or which may occur during the term of any awarded to the Vendor pursuant to this solicitation, that involve (1) Services or related goods similar to those provided pursuant to any contract and that involve a claim that may affect the viability or financial stability of the Vendor, or (2) a claim or written allegation of fraud by the Vendor or any subcontractor hereunder, arising out of their business activities, or (3) a claim or written allegation that the Vendor or any subcontractor hereunder violated any federal, state or local statute, regulation or ordinance. Multiple lawsuits and or judgments against the Vendor or subcontractor shall be disclosed to the State to the extent they affect the financial solvency and integrity of the Vendor or subcontractor.

c) All notices under subsection A and B herein shall be provided in writing to the State within thirty (30) calendar days after the Vendor learns about any such criminal or civil matters; unless such matters are governed by the DIT Terms and Conditions annexed to the solicitation. Details of settlements which are prevented from disclosure by the terms of the settlement shall be annotated as such. Vendor may rely on good faith certifications of its subcontractors addressing the foregoing, which certifications shall be available for inspection at the option of the State.

7.7 CRIMINAL CONVICTION

In the event the Vendor, an officer of the Vendor, or an owner of a 25% or greater share of the Vendor, is convicted of a criminal offense incident to the application for or performance of a State, public or private Contract or subcontract; or convicted of a criminal offense including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, attempting to influence a public employee to breach the ethical conduct standards for State of North Carolina employees; convicted under State or federal antitrust statutes; or convicted of any other criminal offense which in the sole discretion of the State, reflects upon the Vendor's business integrity and such

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vendor shall be prohibited from entering into a contract for goods or Services with any department, institution or agency of the State.

7.8 SECURITY AND BACKGROUND CHECKS

The Agency reserves the right to conduct a security background check or otherwise approve any employee or agent provided by the Vendor, and to refuse access to or require replacement of any such personnel for cause, including, but not limited to, technical or training qualifications, quality of work or change in security status or non-compliance with the Agency's security or other similar requirements.

All State and Vendor personnel that have access to data restricted by the State Security Manual and Policies must have a security background check performed. The Vendors are responsible for performing all background checks of their workforce and subcontractors. The State reserves the right to check for non-compliance.

7.9 ASSURANCES

In the event that criminal or civil investigation, litigation, arbitration or other proceedings disclosed to the State pursuant to this Section, or of which the State otherwise becomes aware, during the term of the Agreement, causes the State to be reasonably concerned about:

1) the ability of the Vendor or its subcontractor to continue to perform the Agreement in accordance with its terms and conditions, or

2) whether the Vendor or its subcontractor in performing Services is engaged in conduct which is similar in nature to conduct alleged in such investigation, litigation, arbitration or other proceedings, which conduct would constitute a breach of the Agreement or violation of law, regulation or public policy, then the Vendor shall be required to provide the State all reasonable assurances requested by the State to demonstrate that: the Vendor or its subcontractors hereunder will be able to continue to perform the Agreement in accordance with its terms and conditions, and the Vendor or its subcontractors will not engage in conduct in performing Services under the Agreement which is similar in nature to the conduct alleged in any such litigation, arbitration or other proceedings.

7.10 CONFIDENTIALITY OF OFFERS

All offers and any other RFP responses shall be made public as required by the NC Public Records Act and NCGS 143B-1350. Vendors may mark portions of offers as confidential or proprietary, after determining that such information is excepted from the NC Public Records Act, provided that such marking is clear and unambiguous and preferably at the top and bottom of each page containing confidential information. Standard restrictive legends appearing on every page of an offer are not sufficient and shall not be binding upon the State.

Certain State information is not public under the NC Public Records Act and other laws. Any such information which the State designates as confidential and makes available to the Vendor in order to respond to the RFP or carry out the Agreement, or which becomes available to the Vendor in carrying out the Agreement, shall be protected by the Vendor from unauthorized use and disclosure. The Vendor shall not be required under the provisions of this section to keep confidential, (1) information generally available to the public, (2) information released by the State generally, or to the Vendor without restriction, (3) information independently developed or acquired by the Vendor or its personnel without reliance in any way on otherwise protected information of the State. Notwithstanding the foregoing restrictions, the Vendor and its personnel may use and disclose any information which it is otherwise required by law to

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disclose, but in each case only after the State has been so notified, and has had the opportunity, if possible, to obtain reasonable protection for such information in connection with such disclosure.

7.11 PROJECT MANAGEMENT

All project management and coordination on behalf of the Agency shall be through a single point of contact designated as the Agency Project Manager. The Vendor shall designate a Vendor Project Manager who will provide a single point of contact for management and coordination of the Vendor's work. All work performed pursuant to the Agreement shall be coordinated between the Agency Project Manager and the Vendor Project Manager.

7.12 MEETINGS

The Vendor is required to meet with Agency personnel, or designated representatives, to resolve technical or contractual problems that may occur during the term of the Agreement. Meetings will occur as problems arise and will be coordinated by Agency. The Vendor will be given reasonable and sufficient notice of meeting dates, times, and locations. Face to face meetings are desired. However, at the Vendor's option and expense, a conference call meeting may be substituted.

7.13 RECYCLING AND SOURCE REDUCTION

It is the policy of this State to encourage and promote the purchase of products with recycled content to the extent economically practicable, and to purchase items which are reusable, refillable, repairable, more durable, and less toxic to the extent that the purchase or use is practicable and cost-effective. We also encourage and promote using minimal packaging and the use of recycled/recyclable products in the packaging of goods purchased. However, no sacrifice in quality of packaging will be acceptable. The Vendor remains responsible for providing packaging that will protect the commodity and contain it for its intended use. Vendors are strongly urged to bring to the attention of the purchasers at the NCDIT Statewide IT Procurement Office those products or packaging they offer which have recycled content and that are recyclable.

7.14 SPECIAL TERMS AND CONDITIONS -RESERVED

7.15 AGENCY TERMS AND CONDITIONS – RESERVED

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ATTACHMENT A: DEFINITIONS

1) **24/7/365:** A statement of availability of systems, communications, and/or supporting resources every hour (24) of each day (7 days weekly) throughout every year for periods specified herein. Where reasonable downtime is accepted, it will be stated herein. Otherwise, 24/7/365 implies NO loss of availability of systems, communications, and/or supporting resources.
2) **ADA:** Americans with Disabilities Act
3) **Authority Record:** A record that contains the standardized forms of names for people, corporate bodies (for example, societies, businesses, institutions, etc.), meetings, titles, and subjects.
4) **Batchloading:** A process by which records to be processed are collected into batches. The records in a batch are loaded all at once. Automated method of processing bibliographic and local holdings records (LHR) submitted by libraries and vendors into WorldCat® (OCLC).
5) **Bibliographic Record:** Contains the cataloging information that describes the physical format and intellectual content of a single entity (a book, video, computer file, CD, etc.). Catalogers create records by encoding this information using tags, indicators, and subfield codes in a standard format called MARC 21 (MAchine-Readable Cataloging). Each record is divided into fields (author, title, subjects, etc.). Fields are subdivided into subfields (place of publication, publisher, etc.).
6) **Boolean Operator:** A Boolean Operator is a conjunction used to filter results by combining or excluding specific words and terms in queries.
7) **Consortium:** Community College Libraries in North Carolina
8) **Claiming of Issues:** A notice sent to a vendor or publisher that a serial has not been received within a reasonable amount of time.
9) **Connexion® (OCLC):** An application that allows users to create and edit bibliographic and authority records.
10) **Cybersecurity Incident (NCGS § 143B-1320):** An occurrence that:
    a. Actually or imminently jeopardizes, without lawful authority, the integrity, confidentiality, or availability of information or an information system; or
    b. Constitutes a violation or imminent threat of violation of law, security policies, privacy policies, security procedures, or acceptable use policies.
11) **Deliverables:** Deliverables, as used herein, shall comprise all Hardware, Vendor Services, professional Services, Software and provided modifications to any Software, and incidental materials, including any goods, Software or Services access license, data, reports and documentation provided or created during the performance or provision of Services hereunder. Deliverables include "Work Product" and means any expression of Licensor's findings, analyses, conclusions, opinions, recommendations, ideas, techniques, know-how, designs, programs, enhancements, and other technical information, but not source and object code or Software.
12) **Digital Content:** Products available in digital form
13) **EDI:** Electronic Data Interchange
14) **ERP:** Enterprise Resource Planning
15) **FERPA:** Family Educational Rights and Privacy Act
16) **FRBR:** Functional Requirements for Bibliographic Records

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17) **Goods:** Includes intangibles such as computer software; provided, however that this definition does not modify the definition of "goods" in the context of NCGS § 25-2-105 (UCC definition of goods).
18) **Holds:** The ability for users to request materials from the home library or other libraries via interlibrary loans.
19) **ILL:** InterLibrary Loan: Occurs when an item that is outside the consortium (CCLINC) and the home library is requested by a user.
20) **ILS:** Integrated Library System
21) **Item:** Any asset held by a library that can be checked out using an assigned barcode.
22) **MARC:** MAchine Readable Cataloging
23) **NCCCS:** North Carolina Community College System
24) **NCDIT or DIT:** The NC Department of Information Technology
25) **Notice:** A written communication (electronic or hard copy) that informs an individual or entity of an event.
26) **OCLC:** Online Computer Library Center, Inc.
27) **Offline Mode:** When a computer or other device is not turned on or connected to other devices.'
28) **OPAC:** Online Public Access Catalog
29) **Open Market Contract:** A contract for the purchase of goods or Services not covered by a term, technical, or convenience contract.
30) **PCI:** Payment card industry
31) **Peak Hour Response Time:** The peak hour is the hour with the maximum number of transactions.
32) **PII:** Personally Identifiable Information
33) **Prediction of Issues:** Journals or magazines are published weekly, monthly, irregularly, quarterly or annually. Serials control allows a "Prediction of issues" with the date expected for receipt.
34) **Predictive Keyword Searching:** The use of keyword search, filtering and sampling to automate portions of an e-discovery document review.
35) **Proxy Server:** A dedicated computer or a software system running on a computer that acts as an intermediary between an endpoint device, such as a computer, and another server from which a user or client is requesting a service.
36) **QR/Quick Read:** Quick Response Code is a 2-dimensional barcode that can be read by smart phones
37) **RDA:** Resource Description and Access
38) **Reasonable, Necessary or Proper:** as used herein shall be interpreted solely by the State of North Carolina.
39) **Recovery Point:** the age of files that must be recovered from backup storage for normal operations to resume if a computer, system, or network goes down as a result of a hardware, program, or communications failure.
40) **Request for Proposal (RFP):** The RFP is a formal, written solicitation document typically used for seeking competition and obtaining offers for more complex services or a combination of goods and services. The RFP is used when the value is over $10,000. This document contains specifications of the RFP, instructions to bidders and the standard IT Terms and Conditions for Goods and Related Services. Users should add Supplemental Terms and Conditions for Software and Services, when

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applicable

41) **Reserves:** Course materials are placed on reserve by faculty for their students and usually held behind the circulation desk.

42) **Responsive Web Design:** An approach to web page creation that makes use of flexible layouts, flexible images and cascading style sheet media queries. The goal is to build web pages that detect the visitor's screen size and orientation and change the layout accordingly.

43) **RFID:** Radio Frequency Identification

44) **RFP:** Request for Proposal

45) **SaaS:** Software as a Service

46) **Security Breach:** As defined in NCGS § 75-61.

47) **Self-Checkout:** Machines for self-service checkout of library materials.

48) **Significant Security Incident (NCGS § 143B-1320):** A cybersecurity incident that is likely to result in demonstrable harm to the State's security interests, economy, critical infrastructure, or to the public confidence, civil liberties, or public health and safety of the residents of North Carolina. A significant cybersecurity incident is determined by the following factors:

    c. Incidents that meet thresholds identified by the NCDIT jointly with the NC Department of Public Safety (NCDPS) that involve information:
        i. That is not releasable to the public and that is restricted or highly restricted according to the Statewide Data Classification and Handling Policy; or
        ii. That involves the exfiltration, modification, deletion, or unauthorized access, or lack of availability to information or systems within certain parameters to include (i) a specific threshold of a number of records or users affected as defined in NCGS § 75-65 or (ii) any additional data types with required security controls.
    d. Incidents that involve information that is not recoverable or cannot be recovered within defined timelines required to meet operational commitments defined jointly by the State agency and the NCDIT or can be recovered only through additional measures and has a high or medium functional impact to the mission of an agency.

49) **SIP 2:** Session Initiation Protocol

50) **SSO:** Single sign-on. SSO is a session and user authentication service that permits a user to use one set of login credentials (e.g., name and password) to access multiple applications.

51) **StackMap:** An application that locates any physical resource within a library space.

52) **Suspend Hold:** To suspend a hold means to pause the hold.

53) **The State:** The State of North Carolina, and its Agencies.

54) **Vendor:** Company, firm, corporation, partnership, individual, etc., submitting an offer in response to a solicitation.

55) **WCAG 2.1:** Web Content Accessibility Guidelines

56) **Z39.50:** Refers to the International Standard, ISO 23950: "Information Retrieval (Z39.50): Application Service Definition and Protocol Specification", and to ANSI/NISO Z39.50.

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ATTACHMENT B: DEPARTMENT OF INFORMATION TECHNOLOGY TERMS AND CONDITIONS

Section 1. General Terms and Conditions Applicable to All Purchases

1) **DEFINITIONS:** As used herein;

   Agreement means the contract awarded pursuant to this RFP.

   Deliverable/Product Warranties shall mean and include the warranties provided for products or deliverables licensed to the State in Section 2, Paragraph 2 of these Terms and Conditions unless superseded by a Vendor's Warranties pursuant to Vendor's License or Support Agreements.

   Purchasing State Agency or Agency shall mean the Agency purchasing the goods or Services.

   Services shall mean the duties and obligations undertaken by the Vendor under, and to fulfill, the specifications, requirements, terms and conditions of the Agreement.

   State shall mean the State of North Carolina, the Department of Information Technology (DIT), or the Purchasing State Agency in its capacity as the Contracting Agency, as appropriate.

2) **STANDARDS:** Any Deliverables shall meet all applicable State and federal requirements, such as State or Federal Regulation, and NC State Chief Information Officer's (CIO) policy or regulation. Vendor will provide and maintain a quality assurance system or program that includes any Deliverables and will tender or provide to the State only those Deliverables that have been inspected and found to conform to the RFP specifications. All Deliverables are subject to operation, certification, testing and inspection, and any accessibility specifications.

3) **WARRANTIES:** Unless otherwise expressly provided, any goods Deliverables provided by the Vendor shall be warranted for a period of 90 days after acceptance.

4) **SUBCONTRACTING:** The Vendor may subcontract the performance of required Services with Resources under the Agreement only with the prior written consent of the State contracting authority. Vendor shall provide the State with complete copies of any agreements made by and between Vendor and all subcontractors. The selected Vendor remains solely responsible for the performance of its subcontractors. Subcontractors, if any, shall adhere to the same standards required of the selected Vendor and the Agreement. Any contracts made by the Vendor with a subcontractor shall include an affirmative statement that the State is an intended third party beneficiary of the Agreement; that the subcontractor has no agreement with the State; and that the State shall be indemnified by the Vendor for any claim presented by the subcontractor. Notwithstanding any other term herein, Vendor shall timely exercise its contractual remedies against any non-performing subcontractor and, when appropriate, substitute another subcontractor.

5) **TRAVEL EXPENSES: All travel expenses should be included in the Vendor's proposed costs. Separately stated travel expenses will not be reimbursed.** In the event that the Vendor, upon specific request in writing by the State, is deemed eligible to be reimbursed for travel expenses arising under the performance of the Agreement, reimbursement will be at the out-of-state rates set forth in NCGS §138-6; as amended from time to time. Vendor agrees to use the lowest available airfare not requiring a weekend stay and to use the lowest available rate for rental vehicles. All Vendor incurred travel expenses shall be billed on a monthly basis, shall be supported by receipt and shall be paid by the State within thirty (30) days after invoice approval. Travel expenses exceeding the foregoing rates shall not be paid by the State. The State will reimburse travel allowances only for days on which the Vendor is required to be in North Carolina performing Services under the Agreement.

6) **GOVERNMENTAL RESTRICTIONS:** In the event any restrictions are imposed by governmental requirements that necessitate alteration of the material, quality, workmanship, or performance of the Deliverables offered prior to delivery thereof, the Vendor shall provide written notification of the necessary alteration(s) to the Agency Contract Administrator. The State reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or to cancel the Agreement. The State may advise Vendor of any restrictions or changes in specifications required by North Carolina legislation,

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rule or regulatory authority that require compliance by the State. In such event, Vendor shall use its best efforts to comply with the required restrictions or changes. If compliance cannot be achieved by the date specified by the State, the State may terminate the Agreement and compensate Vendor for sums then due under the Agreement.

7) **PROHIBITION AGAINST CONTINGENT FEES AND GRATUITIES:** Vendor warrants that it has not paid, and agrees not to pay, any bonus, commission, fee, or gratuity to any employee or official of the State for the purpose of obtaining any Contract or award issued by the State. Vendor further warrants that no commission or other payment has been or will be received from or paid to any third party contingent on the award of any Contract by the State, except as shall have been expressly communicated to the State Purchasing Agent in writing prior to acceptance of the Agreement or award in question. Each individual signing below warrants that he or she is duly authorized by their respective Party to sign the Agreement and bind the Party to the terms and conditions of this RFP. Vendor and their authorized signatory further warrant that no officer or employee of the State has any direct or indirect financial or personal beneficial interest, in the subject matter of the Agreement; obligation or Contract for future award of compensation as an inducement or consideration for making the Agreement. Subsequent discovery by the State of non-compliance with these provisions shall constitute sufficient cause for immediate termination of all outstanding contracts. Violations of this provision may result in debarment of the Vendor(s) as permitted by 9 NCAC 06B.1206, or other provision of law.

8) **AVAILABILITY OF FUNDS:** Any and all payments to Vendor are expressly contingent upon and subject to the appropriation, allocation and availability of funds to the Agency for the purposes set forth in the Agreement. If the Agreement or any Purchase Order issued hereunder is funded in whole or in part by federal funds, the Agency's performance and payment shall be subject to and contingent upon the continuing availability of said federal funds for the purposes of the Agreement or Purchase Order. If the term of the Agreement extends into fiscal years subsequent to that in which it is approved, such continuation of the Agreement is expressly contingent upon the appropriation, allocation and availability of funds by the N.C. Legislature for the purposes set forth in this RFP. If funds to effect payment are not available, the Agency will provide written notification to Vendor. If the Agreement is terminated under this paragraph, Vendor agrees to take back any affected Deliverables and software not yet delivered under the Agreement, terminate any Services supplied to the Agency under the Agreement, and relieve the Agency of any further obligation thereof. The State shall remit payment for Deliverables and Services accepted prior to the date of the aforesaid notice in conformance with the payment terms.

9) **ACCEPTANCE PROCESS:**
   a) The State shall have the obligation to notify Vendor, in writing ten calendar days following provision, performance (under a provided milestone or otherwise as agreed) or delivery of any Services or other Deliverables described in the Agreement that are not acceptable.
   b) Acceptance testing is required for all Vendor supplied software and software or platform services unless provided otherwise in the solicitation documents or a Statement of Work. The State may define such processes and procedures as may be necessary or proper, in its opinion and discretion, to ensure compliance with the State's specifications, and Vendor's Product Warranties and technical representations. The State shall have the obligation to notify Vendor, in writing and within thirty (30) days following installation of any software deliverable if it is not acceptable.
   c) Acceptance of Services or other Deliverables including software or platform services may be controlled by an amendment hereto, or additional terms as agreed by the Parties consistent with IT Project management under NCGS §143B-1340.
   d) The notice of non-acceptance shall specify in reasonable detail the reason(s) a Service or given Deliverable is unacceptable. Acceptance by the State shall not be unreasonably withheld; but may be conditioned or delayed as required for installation and/or testing of Deliverables. Final acceptance is expressly conditioned upon completion of any applicable inspection and testing procedures. Should a Service or Deliverable fail to meet any specifications or acceptance criteria, the State may exercise any and all rights hereunder. Services or Deliverables discovered to be defective or failing to conform to the specifications may be rejected upon initial inspection or at any later time if the defects or errors contained in the Services or Deliverables or non-compliance with the specifications were not

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reasonably ascertainable upon initial inspection. If the Vendor fails to promptly cure or correct the defect or replace or re-perform the Services or Deliverables, the State reserves the right to cancel the Purchase Order, contract with a different Vendor, and to invoice the original Vendor for any differential in price over the original Contract price.

10) **PAYMENT TERMS:** Monthly Payment terms are Net 30 days after receipt of correct invoice (with completed timesheets for Vendor personnel) and acceptance of one or more of the Deliverables, under milestones or otherwise as may be provided in Paragraph 9 (Acceptance), or elsewhere in this solicitation, unless a period of more than thirty (30) days is required by the Agency. The Purchasing State Agency is responsible for all payments under the Agreement. No additional charges to the Agency will be permitted based upon, or arising from, the Agency's use of a Business Procurement Card. The State may exercise any and all rights of Set Off as permitted in Chapter 105A-1 *et seq*. of the N.C. General Statutes and applicable Administrative Rules. Upon Vendor's written request of not less than thirty (30) days and approval by the State or Agency, the Agency may:
    a) Forward the Vendor's payment check(s) directly to any person or entity designated by the Vendor, or
    b) Include any person or entity designated in writing by Vendor as a joint payee on the Vendor's payment check(s), however
    c) In no event shall such approval and action obligate the State to anyone other than the Vendor and the Vendor shall remain responsible for fulfillment of all Contract obligations.
11) **EQUAL EMPLOYMENT OPPORTUNITY:** Vendor shall comply with all Federal and State requirements concerning fair employment and employment of the disabled, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin or physical disability.
12) **ADVERTISING/PRESS RELEASE:** The Vendor absolutely shall not publicly disseminate any information concerning the Agreement without prior written approval from the State or its Agent. For the purpose of this provision of the Agreement, the Agent is the Purchasing Agency Contract Administrator unless otherwise named in the solicitation documents.
13) **LATE DELIVERY:** Vendor shall advise the Agency contact person or office immediately upon determining that any Deliverable will not, or may not, be delivered or performed at the time or place specified. Together with such notice, Vendor shall state the projected delivery time and date. In the event the delay projected by Vendor is unsatisfactory, the Agency shall so advise Vendor and may proceed to procure the particular substitute Services or other Deliverables.
14) **ACCESS TO PERSONS AND RECORDS:** Pursuant to NCGS §147-64.7, the Agency, the State Auditor, appropriate federal officials, and their respective authorized employees or agents are authorized to examine all books, records, and accounts of the Vendor insofar as they relate to transactions with any department, board, officer, commission, institution, or other agency of the State of North Carolina pursuant to the performance of the Agreement or to costs charged to the Agreement. The Vendor shall retain any such books, records, and accounts for a minimum of three (3) years after the completion of the Agreement. Additional audit or reporting requirements may be required by any Agency, if in the Agency's opinion, such requirement is imposed by federal or state law or regulation. The Joint Legislative Commission on Governmental Operations and the legislative employees whose primary responsibility is to provide professional or administrative services to the Commission may audit the records of the Vendor during and after the term of this Agreement to verify accounts and data affecting fees or performance in accordance with Chapter 120, Article 13.
15) **ASSIGNMENT:** Vendor may not assign the Agreement or its obligations hereunder except as permitted by 09 NCAC 06B.1003 and this Paragraph. Vendor shall provide reasonable notice of not less than thirty (30) days prior to any consolidation, acquisition, or merger. Any assignee shall affirm the Agreement attorning and agreeing to the terms and conditions agreed, and that Vendor shall affirm that the assignee is fully capable of performing all obligations of Vendor under the Agreement. An assignment may be made, if at all, in writing by the Vendor, Assignee and the State setting forth the foregoing obligation of Vendor and Assignee.
16) **INSURANCE COVERAGE:** During the term of the Agreement, the Vendor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably

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associated with the Agreement. As a minimum, the Vendor shall provide and maintain the following coverage and limits:

a) **Worker's Compensation** - The Vendor shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of $100,000.00, covering all of Vendor's employees who are engaged in any work under the Agreement. If any work is sublet, the Vendor shall require the subcontractor to provide the same coverage for any of his employees engaged in any work under the Agreement; and

b) **Commercial General Liability** - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of $2,000,000.00 Combined Single Limit (Defense cost shall be in excess of the limit of liability); and

c) **Automobile** - Automobile Liability Insurance, to include liability coverage, covering all owned, hired and non-owned vehicles, used in connection with the Agreement. The minimum combined single limit shall be $500,000.00 bodily injury and property damage; $500,000.00 uninsured/under insured motorist; and $5,000.00 medical payment; and

d) Providing and maintaining adequate insurance coverage described herein is a material obligation of the Vendor and is of the essence of the Agreement. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The Vendor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or the Agreement. The limits of coverage under each insurance policy maintained by the Vendor shall not be interpreted as limiting the Vendor's liability and obligations under the Agreement.

17) **DISPUTE RESOLUTION:** The parties agree that it is in their mutual interest to resolve disputes informally. A claim by the Vendor shall be submitted in writing to the Agency Contract Administrator for decision. A claim by the State shall be submitted in writing to the Vendor's Contract Administrator for decision. The Parties shall negotiate in good faith and use all reasonable efforts to resolve such dispute(s). During the time the Parties are attempting to resolve any dispute, each shall proceed diligently to perform their respective duties and responsibilities under the Agreement. If a dispute cannot be resolved between the Parties within thirty (30) days after delivery of notice, either Party may elect to exercise any other remedies available under the Agreement, or at law. This term shall not constitute an agreement by either party to mediate or arbitrate any dispute.

18) **CONFIDENTIALITY:** In accordance with NCGS §§ 143B-1350(e) and 143B-1375, and 09 NCAC 06B.0103 and 06B.1001, the State may maintain the confidentiality of certain types of information described in NCGS § 132-1 *et seq*. Such information may include trade secrets defined by NCGS § 66-152 and other information exempted from the Public Records Act pursuant to NCGS § 132-1.2. Vendor may designate appropriate portions of its response as confidential, consistent with and to the extent permitted under the Statutes and Rules set forth above, by marking the top and bottom of pages containing confidential information with a legend in boldface type "**CONFIDENTIAL**". By so marking any page, the Vendor warrants that it has formed a good faith opinion, having received such necessary or proper review by counsel and other knowledgeable advisors that the portions marked confidential meet the requirements of the Rules and Statutes set forth above. ***However, under no circumstances shall price information be designated as confidential.*** The State may serve as custodian of Vendor's confidential information and not as an arbiter of claims against Vendor's assertion of confidentiality. If an action is brought pursuant to NCGS § 132-9 to compel the State to disclose information marked confidential, the Vendor agrees that it will intervene in the action through its counsel and participate in defending the State, including any public official(s) or public employee(s). The Vendor agrees that it shall hold the State and any official(s) and individual(s) harmless from any and all damages, costs, and attorneys' fees awarded against the State in the action. The State agrees to promptly notify the Vendor in writing of any action seeking to compel the disclosure of Vendor's confidential information. The State shall have the right, at its option and expense, to participate in the defense of the action through its counsel. The State shall have no liability to Vendor with respect to the disclosure of Vendor's confidential

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information ordered by a court of competent jurisdiction pursuant to NCGS § 132-9 or other applicable law.

a) Care of Information: Vendor agrees to use commercial best efforts to safeguard and protect any data, documents, files, and other materials received from the State or the Agency during performance of any contractual obligation from loss, destruction or erasure. Vendor agrees to abide by all facilities and security requirements and policies of the agency where work is to be performed. Any Vendor personnel shall abide by such facilities and security requirements and shall agree to be bound by the terms and conditions of the Agreement.

b) Vendor warrants that all its employees and any approved third party Vendors or subcontractors are subject to a non-disclosure and confidentiality agreement enforceable in North Carolina. Vendor will, upon request of the State, verify and produce true copies of any such agreements. Production of such agreements by Vendor may be made subject to applicable confidentiality, non-disclosure or privacy laws; provided that Vendor produces satisfactory evidence supporting exclusion of such agreements from disclosure under the N.C. Public Records laws in NCGS § 132-1 *et seq*. The State may, in its sole discretion, provide a non-disclosure and confidentiality agreement satisfactory to the State for Vendor's execution. The State may exercise its rights under this subparagraph as necessary or proper, in its discretion, to comply with applicable security regulations or statutes including, but not limited to 26 USC § 6103 and IRS Publication 1075, (Tax Information Security Guidelines for Federal, State, and Local Agencies), HIPAA, 42 USC § 1320(d) (Health Insurance Portability and Accountability Act), any implementing regulations in the Code of Federal Regulations, and any future regulations imposed upon the Department of Information Technology or the N.C. Department of Revenue pursuant to future statutory or regulatory requirements.

c) Nondisclosure: Vendor agrees and specifically warrants that it, its officers, directors, principals and employees, and any subcontractors, shall hold all information received during performance of the Agreement in the strictest confidence and shall not disclose the same to any third party without the express written approval of the State.

d) The Vendor shall protect the confidentiality of all information, data, instruments, studies, reports, records and other materials provided to it by the Agency or maintained or created in accordance with this Agreement. No such information, data, instruments, studies, reports, records and other materials in the possession of Vendor shall be disclosed in any form without the prior written consent of the State Agency. The Vendor will have written policies governing access to and duplication and dissemination of all such information, data, instruments, studies, reports, records and other materials.

e) All project materials, including software, data, and documentation created during the performance or provision of Services hereunder that are not licensed to the State or are not proprietary to the Vendor are the property of the State of North Carolina and must be kept confidential or returned to the State, or destroyed. Proprietary Vendor materials shall be identified to the State by Vendor prior to use or provision of Services hereunder and shall remain the property of the Vendor. Derivative works of any Vendor proprietary materials prepared or created during the performance of provision of Services hereunder shall be subject to a perpetual, royalty free, nonexclusive license to the State.

19) DEFAULT: In the event Services or other Deliverable furnished or performed by the Vendor during performance of any Contract term fail to conform to any material requirement(s) of the Contract specifications, notice of the failure is provided by the State and if the failure is not cured within ten (10) days, or Vendor fails to meet the requirements of Paragraph 9) herein, the State may cancel the contract. Default may be cause for debarment as provided in 09 NCAC 06B.1206. The rights and remedies of the State provided above shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

a) If Vendor fails to deliver or provide correct Services or other Deliverables within the time required by the Agreement, the State shall provide written notice of said failure to Vendor, and by such notice require performance assurance measures pursuant to NCGS 143B-1340(f). Vendor is responsible for the delays resulting from its failure to deliver or provide services or other Deliverables.

b) Should the State fail to perform any of its obligations upon which Vendor's performance is conditioned, Vendor shall not be in default for any delay, cost increase or other consequences

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resulting from the State's failure. Vendor will use reasonable efforts to mitigate delays, costs or expenses arising from assumptions in the Vendor's offer documents that prove erroneous or are otherwise invalid. Any deadline that is affected by any such failure in assumptions or performance by the State shall be extended by an amount of time reasonably necessary to compensate for the effect of such failure.

c) Vendor shall provide a plan to cure any delay or default if requested by the State. The plan shall state the nature of the delay or default, the time required for cure, any mitigating factors causing or tending to cause the delay or default, and such other information as the Vendor may deem necessary or proper to provide.

d) If the prescribed acceptance testing stated in the Solicitation Documents or performed pursuant to Paragraph 9) of the NCDIT Terms and Conditions is not completed successfully, the State may request substitute Software, cancel the portion of the Contract that relates to the unaccepted Software, or continue the acceptance testing with or without the assistance of Vendor. These options shall remain in effect until such time as the testing is successful or the expiration of any time specified for completion of the testing. If the testing is not completed after exercise of any of the State's options, the State may cancel any portion of the contract related to the failed Software and take action to procure substitute software. If the failed software (or the substituted software) is an integral and critical part of the proper completion of the work for which the Deliverables identified in the solicitation documents or statement of work were acquired, the State may terminate the entire contract.

20) WAIVER OF DEFAULT: Waiver by either party of any default or breach by the other Party shall not be deemed a waiver of any subsequent default or breach and shall not be construed to be a modification or novation of the terms of the Agreement, unless so stated in writing and signed by authorized representatives of the Agency and the Vendor, and made as an amendment to the Agreement pursuant to Paragraph 40) herein below.

21) TERMINATION: Any notice or termination made under the Agreement shall be transmitted via US Mail, Certified Return Receipt Requested. The period of notice for termination shall begin on the day the return receipt is signed and dated.

a) The parties may mutually terminate the Agreement by written agreement at any time.

b) The State may terminate the Agreement, in whole or in part, pursuant to Paragraph 19), or pursuant to the Special Terms and Conditions in the Solicitation Documents, if any, or for any of the following:

i) Termination for Cause: In the event any goods, software, or service furnished by the Vendor during performance of any Contract term fails to conform to any material requirement of the Contract, and the failure is not cured within the specified time after providing written notice thereof to Vendor, the State may cancel and procure the articles or Services from other sources; holding Vendor liable for any excess costs occasioned thereby, subject only to the limitations provided in Paragraphs 22) and 23) herein. The rights and remedies of the State provided above shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract. Vendor shall not be relieved of liability to the State for damages sustained by the State arising from Vendor's breach of the Agreement; and the State may, in its discretion, withhold any payment due as a setoff until such time as the damages are finally determined or as agreed by the parties. Voluntary or involuntary Bankruptcy or receivership by Vendor shall be cause for termination.

ii) Termination For Convenience Without Cause: The State may terminate service and indefinite quantity contracts, in whole or in part by giving thirty (30) days prior notice in writing to the Vendor. Vendor shall be entitled to sums due as compensation for Deliverables provided and Services performed in conformance with the Contract. In the event the Contract is terminated for the convenience of the State the Agency will pay for all work performed and products delivered in conformance with the Contract up to the date of termination.

iii) Consistent failure to participate in problem resolution meetings, two (2) consecutive missed or rescheduled meetings, or failure to make a good faith effort to resolve problems, may result in termination of the Agreement.

22) LIMITATION OF VENDOR'S LIABILITY:

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a) Where Deliverables are under the State's exclusive management and control, the Vendor shall not be liable for direct damages caused by the State's failure to fulfill any State responsibilities of assuring the proper use, management and supervision of the Deliverables and programs, audit controls, operating methods, office procedures, or for establishing all proper checkpoints necessary for the State's intended use of the Deliverables. Vendor shall not be responsible for any damages that arise from (i) misuse or modification of Vendor's Software by or on behalf of the State, (ii) the State's failure to use corrections or enhancements made available by Vendor, (iii) the quality or integrity of data from other automated or manual systems with which the Vendor's Software interfaces, (iv) errors in or changes to third party software or hardware implemented by the State or a third party (including the vendors of such software or hardware) that is not a subcontractor of Vendor or that is not supported by the Deliverables, or (vi) the operation or use of the Vendor's Software not in accordance with the operating procedures developed for the Vendor's Software or otherwise in a manner not contemplated by this Agreement.

b) The Vendor's liability for damages to the State arising under the contract shall be limited to two (2) times the value of the Contract.

c) The foregoing limitation of liability shall not apply to claims covered by other specific provisions including but not limited to Service Level Agreement or Deliverable/Product Warranties pursuant to Section II, 2) of these Terms and Conditions, or to claims for injury to persons or damage to tangible personal property, gross negligence or willful or wanton conduct. This limitation of liability does not apply to contributions among joint tortfeasors under NCGS § 1B-1 *et seq.*, the receipt of court costs or attorney's fees that might be awarded by a court in addition to damages after litigation based on the Agreement. For avoidance of doubt, the Parties agree that the Service Level Agreement and Deliverable/Product Warranty Terms in the Contract are intended to provide the sole and exclusive remedies available to the State under the Contract for the Vendor's failure to comply with the requirements stated therein.

23) VENDOR'S LIABILITY FOR INJURY TO PERSONS OR DAMAGE TO PROPERTY:

a) The Vendor shall be liable for damages arising out of personal injuries and/or damage to real or tangible personal property of the State, employees of the State, persons designated by the State for training, or person(s) other than agents or employees of the Vendor, designated by the State for any purpose, prior to, during, or subsequent to delivery, installation, acceptance, and use of the Deliverables either at the Vendor's site or at the State's place of business, provided that the injury or damage was caused by the fault or negligence of the Vendor.

b) The Vendor agrees to indemnify, defend and hold the Agency and the State and its Officers, employees, agents and assigns harmless from any liability relating to personal injury or injury to real or personal property of any kind, accruing or resulting to any other person, firm or corporation furnishing or supplying work, Services, materials or supplies in connection with the performance of the Agreement, whether tangible or intangible, arising out of the ordinary negligence, wilful or wanton negligence, or intentional acts of the Vendor, its officers, employees, agents, assigns or subcontractors.

c) Vendor shall not be liable for damages arising out of or caused by an alteration or an attachment not made or installed by the Vendor.

24) TIME IS OF THE ESSENCE: Time is of the essence in the performance of the Agreement.

25) DATE AND TIME WARRANTY: The Vendor warrants that any Deliverable, whether Services, hardware, firmware, middleware, custom or commercial software, or internal components, subroutines, and interface therein which performs, modifies or affects any date and/or time data recognition function, calculation, or sequencing, will still enable the modified function to perform accurate date/time data and leap year calculations. This warranty shall survive termination or expiration of the Contract.

26) INDEPENDENT CONTRACTORS: Vendor and its employees, officers and executives, and subcontractors, if any, shall be independent Vendors and not employees or agents of the State. The Agreement shall not operate as a joint venture, partnership, trust, agency or any other similar business relationship.

27) TRANSPORTATION: Transportation of any tangible Deliverables shall be FOB Destination; unless otherwise specified in the solicitation document or purchase order. Freight, handling, hazardous material

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charges, and distribution and installation charges shall be included in the total price of each item. Any additional charges shall not be honored for payment unless authorized in writing by the Purchasing State Agency. In cases where parties, other than the Vendor ship materials against this order, the shipper must be instructed to show the purchase order number on all packages and shipping manifests to ensure proper identification and payment of invoices. A complete packing list must accompany each shipment.

28) **NOTICES:** Any notices required under the Agreement should be delivered to the Contract Administrator for each party. Unless otherwise specified in the Solicitation Documents, any notices shall be delivered in writing by U.S. Mail, Commercial Courier or by hand.

29) **TITLES AND HEADINGS:** Titles and Headings in the Agreement are used for convenience only and do not define, limit or proscribe the language of terms identified by such Titles and Headings.

30) **AMENDMENT:** The Agreement may not be amended orally or by performance. Any amendment must be made in written form and signed by duly authorized representatives of the State and Vendor in conformance with Paragraph 36) herein.

31) **TAXES:** The State of North Carolina is exempt from Federal excise taxes and no payment will be made for any personal property taxes levied on the Vendor or for any taxes levied on employee wages. Agencies of the State may have additional exemptions or exclusions for federal or state taxes. Evidence of such additional exemptions or exclusions may be provided to Vendor by Agencies, as applicable, during the term of the Agreement. Applicable State or local sales taxes shall be invoiced as a separate item.

32) **GOVERNING LAWS, JURISDICTION, AND VENUE:**
   a) The Agreement is made under and shall be governed and construed in accordance with the laws of the State of North Carolina and applicable Administrative Rules. The place of the Agreement or purchase order, its situs and forum, shall be Wake County, North Carolina, where all matters, whether sounding in Contract or in tort, relating to its validity, construction, interpretation and enforcement shall be determined. Vendor agrees and submits, solely for matters relating to the Agreement, to the jurisdiction of the courts of the State of North Carolina and stipulates that Wake County shall be the proper venue for all matters.
   b) Except to the extent the provisions of the Contract are clearly inconsistent therewith, the applicable provisions of the Uniform Commercial Code as modified and adopted in North Carolina shall govern the Agreement. To the extent the Contract entails both the supply of "goods" and "Services," such shall be deemed "goods" within the meaning of the Uniform Commercial Code, except when deeming such Services as "goods" would result in a clearly unreasonable interpretation.

33) **FORCE MAJEURE:** Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations as a result of events beyond its reasonable control, including without limitation, fire, power failures, any act of war, hostile foreign action, nuclear explosion, riot, strikes or failures or refusals to perform under subcontracts, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

34) **COMPLIANCE WITH LAWS:** The Vendor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.

35) **SEVERABILITY:** In the event that a court of competent jurisdiction holds that a provision or requirement of the Agreement violates any applicable law, each such provision or requirement shall be enforced only to the extent it is not in violation of law or is not otherwise unenforceable and all other provisions and requirements of the Agreement shall remain in full force and effect. All promises, requirement, terms, conditions, provisions, representations, guarantees and warranties contained herein shall survive the expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable federal or State statute, including statutes of repose or limitation.

36) **CHANGES:** The Agreement and subsequent purchase order(s) is awarded subject to the provision of the specified Services and the shipment or provision of other Deliverables as specified herein. Any changes made to the Agreement or purchase order proposed by the Vendor are hereby rejected unless accepted in writing by the Agency or State Award Authority. The State shall not be responsible for

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Services or other Deliverables delivered without a purchase order from the Agency or State Award Authority.

37) **FEDERAL INTELLECTUAL PROPERTY BANKRUPTCY PROTECTION ACT:** The Parties agree that the Agency shall be entitled to all rights and benefits of the Federal Intellectual Property Bankruptcy Protection Act, Public Law 100-506, codified at 11 U.S.C. 365(n), and any amendments thereto.

38) **ELECTRONIC PROCUREMENT (Applies to all contracts that include E-Procurement and are identified as such in the body of the solicitation document):** Purchasing shall be conducted through the Statewide E-Procurement Services. The State's third party agent shall serve as the Supplier Manager for this E-Procurement Services. The Vendor shall register for the Statewide E-Procurement Services within two (2) business days of notification of award in order to receive an electronic purchase order resulting from award of the Agreement.

a) **The successful Vendor(s) shall pay a transaction fee of 1.75% (.0175) on the total dollar amount (excluding sales taxes) of each purchase order issued through the Statewide E-Procurement Service**. This applies to all purchase orders, regardless of the quantity or dollar amount of the purchase order. The transaction fee shall neither be charged to nor paid by the State, or by any State approved users of the contract. The transaction fee shall not be stated or included as a separate item in the proposed contract or invoice. There are no additional fees or charges to the Vendor for the Services rendered by the Supplier Manager under the Agreement. Vendor will receive a credit for transaction fees they paid for the purchase of any item(s) if an item(s) is returned through no fault of the Vendor. Transaction fees are non-refundable when an item is rejected and returned, or declined, due to the Vendor's failure to perform or comply with specifications or requirements of the contract.

b) Vendor, or its authorized Reseller, as applicable, will be invoiced monthly for the State's transaction fee by the Supplier Manager. The transaction fee shall be based on purchase orders issued for the prior month. Unless Supplier Manager receives written notice from the Vendor identifying with specificity any errors in an invoice within thirty (30) days of the receipt of invoice, such invoice shall be deemed to be correct and Vendor shall have waived its right to later dispute the accuracy and completeness of the invoice. Payment of the transaction fee by the Vendor is due to the account designated by the State within thirty (30) days after receipt of the correct invoice for the transaction fee, which includes payment of all portions of an invoice not in dispute. Within thirty (30) days of the receipt of invoice, Vendor may request in writing an extension of the invoice payment due date for that portion of the transaction fee invoice for which payment of the related goods by the governmental purchasing entity has not been received by the Vendor. If payment of the transaction fee invoice is not received by the State within this payment period, it shall be considered a material breach of contract. The Supplier Manager shall provide, whenever reasonably requested by the Vendor in writing (including electronic documents), supporting documentation from the E-Procurement Service that accounts for the amount of the invoice.

c) The Supplier Manager will capture the order from the State approved user, including the shipping and payment information, and submit the order in accordance with the E-Procurement Services. Subsequently, the Supplier Manager will send those orders to the appropriate Vendor on State Contract. The State or State approved user, not the Supplier Manager, shall be responsible for the solicitation, offers received, evaluation of offers received, award of Contract, and the payment for goods delivered.

d) Vendor agrees at all times to maintain the confidentiality of its user name and password for the Statewide E-Procurement Services. If a Vendor is a corporation, partnership or other legal entity, then the Vendor may authorize its employees to use its password. Vendor shall be responsible for all activity and all charges for such employees. Vendor agrees not to permit a third party to use the Statewide E-Procurement Services through its account. If there is a breach of security through the Vendor's account, Vendor shall immediately change its password and notify the Supplier Manager of the security breach by e-mail. Vendor shall cooperate with the state and the Supplier Manager to mitigate and correct any security breach.

39) **PATENT, COPYRIGHT, AND TRADE SECRET PROTECTION:**

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a) Vendor has created, acquired or otherwise has rights in, and may, in connection with the performance of Services for the State, employ, provide, create, acquire or otherwise obtain rights in various concepts, ideas, methods, methodologies, procedures, processes, know-how, techniques, models, templates and general purpose consulting and software tools, utilities and routines (collectively, the "Vendor technology"). To the extent that any Vendor technology is contained in any of the Services or Deliverables including any derivative works, the Vendor hereby grants the State a royalty-free, fully paid, worldwide, perpetual, non-exclusive license to use such Vendor technology in connection with the Services or Deliverables for the State's purposes.

b) Vendor shall not acquire any right, title and interest in and to the copyrights for goods, any and all software, technical information, specifications, drawings, records, documentation, data or derivative works thereof, or other work products provided by the State to Vendor. The State hereby grants Vendor a royalty-free, fully paid, worldwide, perpetual, non-exclusive license for Vendor's internal use to non-confidential deliverables first originated and prepared by the Vendor for delivery to the State.

c) The Vendor, at its own expense, shall defend any action brought against the State to the extent that such action is based upon a claim that the Services or other Deliverables supplied by the Vendor, or the operation of such pursuant to a current version of vendor-supplied software, infringes a patent, or copyright or violates a trade secret in the United States. The Vendor shall pay those costs and damages finally awarded against the State in any such action; damages shall be limited as provided in NCGS § 143B-1350(h1). Such defense and payment shall be conditioned on the following:
    i. That the Vendor shall be notified within a reasonable time in writing by the State of any such claim; and,
    ii. That the Vendor shall have the sole control of the defense of any action on such claim and all negotiations for its settlement or compromise, provided, however, that the State shall have the option to participate in such action at its own expense.

d) Should any Services or other Deliverables supplied by Vendor, or the operation thereof become, or in the Vendor's opinion are likely to become, the subject of a claim of infringement of a patent, copyright, or a trade secret in the United States, the State shall permit the Vendor, at its option and expense, either to procure for the State the right to continue using the Services or Deliverables, or to replace or modify the same to become non-infringing and continue to meet procurement specifications in all material respects. If neither of these options can reasonably be taken, or if the use of such Services or Deliverables by the State shall be prevented by injunction, the Vendor agrees to take back any goods/hardware or software, and refund any sums the State has paid Vendor less any reasonable amount for use or damage and make every reasonable effort to assist the state in procuring substitute Services or Deliverables. If, in the sole opinion of the State, the return of such infringing Services or Deliverables makes the retention of other Services or Deliverables acquired from the Vendor under the agreement impractical, the State shall then have the option of terminating the contract, or applicable portions thereof, without penalty or termination charge. The Vendor agrees to take back Services or Deliverables and refund any sums the State has paid Vendor less any reasonable amount for use or damage.

e) Vendor will not be required to defend or indemnify the State if any claim by a third party against the State for infringement or misappropriation (i) results from the State's alteration of any Vendor-branded Service or Deliverable, or (ii) results from the continued use of the good(s) or services and other Services or Deliverables after receiving notice they infringe a trade secret of a third party.

f) Nothing stated herein, however, shall affect Vendor's ownership in or rights to its preexisting intellectual property and proprietary rights.

40) UNANTICIPATED TASKS: In the event that additional work must be performed that was wholly unanticipated, and that is not specified in the Agreement, but which in the opinion of both parties is necessary to the successful accomplishment of the contracted scope of work, the procedures outlined in

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this article will be followed. For each item of unanticipated work, the Vendor shall prepare a work authorization in accordance with the State's practices and procedures.

a) It is understood and agreed by both parties that all of the terms and conditions of the Agreement shall remain in force with the inclusion of any work authorization. A work authorization shall not constitute a contract separate from the Agreement, nor in any manner amend or supersede any of the other terms or provisions of the Agreement or any amendment hereto.

b) Each work authorization shall comprise a detailed statement of the purpose, objective, or goals to be undertaken by the Vendor, the job classification or approximate skill level or sets of the personnel required, an identification of all significant material then known to be developed by the Vendor's personnel as a Deliverable, an identification of all significant materials to be delivered by the State to the Vendor's personnel, an estimated time schedule for the provision of the Services by the Vendor, completion criteria for the work to be performed, the name or identification of Vendor's personnel to be assigned, the Vendor's estimated work hours required to accomplish the purpose, objective or goals, the Vendor's billing rates and units billed, and the Vendor's total estimated cost of the work authorization.

c) All work authorizations must be submitted for review and approval by the procurement office that approved the original Contract and procurement. This submission and approval must be completed prior to execution of any work authorization documentation or performance thereunder. All work authorizations must be written and signed by the Vendor and the State prior to beginning work.

d) The State has the right to require the Vendor to stop or suspend performance under the "Stop Work" provision of the North Carolina Department of Information Technology Terms and Conditions.

e) The Vendor shall not expend Personnel resources at any cost to the State in excess of the estimated work hours unless this procedure is followed: If, during performance of the work, the Vendor determines that a work authorization to be performed under the Agreement cannot be accomplished within the estimated work hours, the Vendor will be required to complete the work authorization in full. Upon receipt of such notification, the State may:

   a. Authorize the Vendor to expend the estimated additional work hours or service in excess of the original estimate necessary to accomplish the work authorization, or

   b. Terminate the work authorization, or

   c. Alter the scope of the work authorization in order to define tasks that can be accomplished within the remaining estimated work hours.

   d. The State will notify the Vendor in writing of its election within seven (7) calendar days after receipt of the Vendor's notification. If notice of the election is given to proceed, the Vendor may expend the estimated additional work hours or Services.

41) <u>STOP WORK ORDER:</u> The State may issue a written Stop Work Order to Vendor for cause at any time requiring Vendor to suspend or stop all, or any part, of the performance due under the Agreement for a period up to ninety (90) days after the Stop Work Order is delivered to the Vendor. The ninety (90) day period may be extended for any further period for which the parties may agree.

a) The Stop Work Order shall be specifically identified as such and shall indicate that it is issued under this term. Upon receipt of the Stop Work Order, the Vendor shall immediately comply with its terms and take all reasonable steps to minimize incurring costs allocable to the work covered by the Stop Work Order during the period of work suspension or stoppage. Within a period of ninety (90) days after a Stop Work Order is delivered to Vendor, or within any extension of that period to which the parties agree, the State shall either:

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i) Cancel the Stop Work Order, or

ii) Terminate the work covered by the Stop Work Order as provided for in the termination for default or the termination for convenience clause of the Agreement.

b) If a Stop Work Order issued under this clause is canceled or the period of the Stop Work Order or any extension thereof expires, the Vendor shall resume work. The State shall make an equitable adjustment in the delivery schedule, the Agreement price, or both, and the Agreement shall be modified, in writing, accordingly, if:

i) The Stop Work Order results in an increase in the time required for, or in the Vendor's cost properly allocable to the performance of any part of the Agreement, and

ii) The Vendor asserts its right to an equitable adjustment within thirty (30) days after the end of the period of work stoppage; provided that if the State decides the facts justify the action, the State may receive and act upon an offer submitted at any time before final payment under the Agreement.

c) If a Stop Work Order is not canceled and the work covered by the Stop Work Order is terminated in accordance with the provision entitled Termination for Convenience of the State, the State shall allow reasonable direct costs resulting from the Stop Work Order in arriving at the termination settlement.

d) The State shall not be liable to the Vendor for loss of profits because of a Stop Work Order issued under this term.

42) TRANSITION ASSISTANCE If the Agreement is not renewed at the end of the term, or is canceled prior to its expiration, for any reason, the Vendor must provide for up to six (6) months after the expiration or cancellation of the Agreement, all reasonable transition assistance requested by the State, to allow for the expired or canceled portion of the Services to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Services to the State or its designees. Such transition assistance will be deemed by the parties to be governed by the terms and conditions of the Agreement, (notwithstanding this expiration or cancellation) except for those Contract terms or conditions that do not reasonably apply to such transition assistance. The State shall pay the Vendor for any resources utilized in performing such transition assistance at the most current rates provided by the Agreement for Contract performance. If the State cancels the Agreement for cause, then the State will be entitled to off set the cost of paying the Vendor for the additional resources the Vendor utilized in providing transition assistance with any damages the State may have otherwise accrued as a result of said cancellation.

Section 2: Terms and Conditions Applicable to Software as Service (SaaS)

1) DEFINITIONS:

a) "Data" includes and means information, formulae, algorithms, or other content that the State, the State's employees, agents and end users upload, create or modify using the Services pursuant to this Agreement. Data also includes user identification information and metadata which may contain Data or from which the State's Data may be ascertainable.

b) "Support" includes provision of ongoing updates and maintenance for the Vendor online software applications, and as may be specified herein, consulting, training and other support Services as provided by the Vendor for SaaS tenants receiving similar SaaS Services.

2) ACCESS AND USE OF SAAS SERVICES:

a) The Vendor grants the State a personal non-transferable and non-exclusive right to use and access, all Services and other functionalities or services provided, furnished or accessible under this Agreement. The State may utilize the Services as agreed herein and in accordance with any mutually

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agreed Acceptable Use Policy. The State is authorized to access State Data and any Vendor-provided data as specified herein and to transmit revisions, updates, deletions, enhancements, or modifications to the State Data. This shall include the right of the State to, and access to, Support without the Vendor requiring a separate maintenance or support agreement. Subject to an agreed limitation on the number of users, the State may use the Services with any computer, computer system, server, or desktop workstation owned or utilized by the State or other authorized users. User access to the Services shall be routinely provided by the Vendor and may be subject to a more specific Service Level Agreement (SLA) agreed to in writing by the parties. The State shall notify the Vendor of any unauthorized use of any password or account, or any other known or suspected breach of security access. The State also agrees to refrain from taking any steps, such as reverse engineering, reverse assembly or reverse compilation to derive a source code equivalent to the Services or any portion thereof. Use of the Services to perform services for commercial third parties (so-called "service bureau" uses) is not permitted, but the State may utilize the Services to perform its governmental functions. If the Services fees are based upon the number of Users and/or hosted instances, the number of Users/hosted instances available may be adjusted at any time (subject to the restrictions on the maximum number of Users specified in the Furnish and Deliver Table herein above) by mutual agreement and State Procurement approval. All Services and information designated as "confidential" or "proprietary" shall be kept in confidence except as may be required by the North Carolina Public Records Act: N.C.G.S. § 132-1, *et. seq*.

b) The State's access license for the Services and its associated services neither transfers, vests, nor infers any title or other ownership right in any intellectual property rights of the Vendor or any third party, nor does this license transfer, vest, or infer any title or other ownership right in any source code associated with the Services unless otherwise agreed to by the parties. The provisions of this paragraph will not be construed as a sale of any ownership rights in the Services. Any Services or technical and business information owned by Vendor or its suppliers or licensors made accessible or furnished to the State shall be and remain the property of the Vendor or such other party, respectively. Vendor has a limited, non-exclusive license to access and use the State Data as provided to Vendor, but solely for performing its obligations under this Agreement and in confidence as provided herein.

c) The Vendor or its suppliers shall at minimum, and except as otherwise agreed, provide telephone assistance to the State for all Services procured hereunder during the State's normal business hours (unless different hours are specified herein). The Vendor warrants that its Support and customer service and assistance will be performed in accordance with generally accepted industry standards. The State has the right to receive the benefit of upgrades, updates, maintenance releases or other enhancements or modifications made generally available to the Vendor's SaaS tenants for similar Services. The Vendor's right to a new use agreement for new version releases of the Services shall not be abridged by the foregoing. The Vendor may, at no additional charge, modify the Services to improve operation and reliability or to meet legal requirements.

d) The Vendor will provide to the State the same Services for updating, maintaining and continuing optimal performance for the Services as provided to other similarly situated users or tenants of the Services, but minimally as provided for and specified herein. Unless otherwise agreed in writing, Support will also be provided for any other (e.g., third party) software provided by the Vendor in connection with the Vendor's solution herein. The technical and professional activities required for establishing, managing, and maintaining the Services environment are the responsibilities of the Vendor. Any training specified herein will be provided by the Vendor to certain State users for the fees or costs as set forth herein or in an SLA.

e) Services provided pursuant to this Solicitation may, in some circumstances, be accompanied by a user clickwrap agreement. The term clickwrap agreement refers to an agreement that requires the end user to manifest his or her assent to terms and conditions by clicking an "ok" or "agree" button on a dialog box or pop-up window as part of the process of access to the Services. All terms and conditions of any clickwrap agreement provided with any Services solicited herein shall have no force

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and effect and shall be non-binding on the State, its employees, agents, and other authorized users of the Services.

f) The Vendor may utilize partners and/or subcontractors to assist in the provision of the Services, so long as the State Data is not removed from the United States unless the terms of storage of the State Data are clearly disclosed, the security provisions referenced herein can still be complied with, and such removal is done with the prior express written permission of the State. The Vendor shall identify all of its strategic business partners related to Services provided under this contract including, but not limited to, all subcontractors or other entities or individuals who may be a party to a joint venture or similar agreement with the Vendor, who will be involved in any application development and/or operations.

g) The Vendor warrants that all Services will be performed with professional care and skill, in a workmanlike manner and in accordance with the Services documentation and this Agreement.

h) An SLA or other agreed writing shall contain provisions for scalability of Services and any variation in fees or costs as a result of any such scaling.

i) Professional services provided by the Vendor at the request by the State in writing in addition to agreed Services shall be at the then-existing Vendor hourly rates when provided, unless otherwise agreed in writing by the parties.

3) WARRANTY OF NON-INFRINGEMENT:

a) The Vendor warrants to the best of its knowledge that:

i) The Services do not infringe any intellectual property rights of any third party; and

ii) There are no actual or threatened actions arising from, or alleged under, any intellectual property rights of any third party.

4) ACCESS AVAILABILITY; REMEDIES:

a) The Vendor warrants that the Services will be in good working order, and operating in conformance with Vendor's standard specifications and functions as well as any other specifications agreed to by the parties in writing, and shall remain accessible 24/7, with the exception of scheduled outages for maintenance and of other service level provisions agreed in writing, e.g., in an SLA. The Vendor does not warrant that the operation of the Services will be completely uninterrupted or error free, or that the Services functions will meet all the State's requirements unless developed as Customized Services.

b) The State shall notify the Vendor if the Services are not in good working order or inaccessible during the term of the Agreement. The Vendor shall, at its option, either repair, replace or reperform any Services reported or discovered as not being in good working order and accessible during the applicable contract term without cost to the State. If the Services' monthly availability averages less than 99.9% (excluding agreed-upon maintenance downtime), the State shall be entitled to receive automatic credits as indicated immediately below, or the State may use other contractual remedies such as recovery of damages, as set forth herein in writing, e.g., in Specifications, Special Terms or in an SLA, and as such other contractual damages are limited by N.C.G.S. § 143B-1350(h1) and the Limitation of Liability paragraph below. If not otherwise provided, the automatic remedies for non-availability of the Subscription Services during a month are:

1. A 10% service credit applied against future fees if Vendor does not reach 99.9% availability.
2. A 25% service credit applied against future fees if Vendor does not reach 99% availability.
3. A 50% service credit applied against future fees or eligibility for early termination of the Agreement if Vendor does not reach 95% availability.

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If, however, Services meet the 99.9% service availability level for a month but are not available for a consecutive 120 minutes during that month, the Vendor shall grant to the State a credit of a pro-rated one-day of the monthly subscription Services fee against future Services charges. Such credit(s) shall be applied to the bill immediately following the month in which the Vendor failed to meet the performance requirements or other service levels, and the credit will continue to be deducted from the monthly invoice for each prior month that Vendor fails to meet the support response times for the remainder of the duration of the Agreement. If Services monthly availability averages less than 99.9% (excluding agreed-upon maintenance downtime), for three (3) or more months in a rolling twelve-month period, the State may also terminate the contract for material breach in accordance with the Default provisions hereinbelow.

c) Support Services. If the Vendor fails to meet Support Service response times as set forth herein or in an SLA for a period of three (3) consecutive months, a 10% service credit will be deducted from the invoice in the month immediately following the third month, and the 10% service credit will continue to be deducted from the monthly invoice for each month that the Vendor fails to meet the support response times for the remainder of the duration of the Agreement.

5) EXCLUSIONS:

a) Except as stated above in Paragraphs 3 and 4, Vendor and its parent, subsidiaries and affiliates, subcontractors and suppliers make no warranties, express or implied, as to the Services.

b) The warranties provided in Paragraphs 3 and 4 above do not cover repair for damages, malfunctions or service failures substantially caused by:

i) Actions of non-Vendor personnel;

ii) Failure to follow Vendor's written instructions relating to the Services provided to the State; or

iii) Force Majeure conditions set forth hereinbelow. \

iv) The State's sole misuse of, or its own inability to use, the Services.

6) PERFORMANCE REVIEW AND ACCOUNTABILITY: N.C.G.S. § 143B-1340(f) and 09 NCAC 06B.1207 require provisions for performance review and accountability in State IT contracts. For this procurement, these shall include the holding a retainage of ten percent (10%) of the contract value and withholding the final payment contingent on final acceptance by the State as provided in 09 NCAC 06B.1207(3) and (4), unless waived or otherwise agreed, in writing. The Services herein will be provided consistent with and under these Services performance review and accountability guarantees.

7) LIMITATION OF LIABILITY: Limitation of Vendor's Contract Damages Liability: Reserved.

8) Vendor's Liability for Injury to Persons or Damage to Property: Reserved.

9) MODIFICATION OF SERVICES: If Vendor modifies or replaces the Services provided to the State and other tenants, and if the State has paid all applicable Subscription Fees, the State shall be entitled to receive, at no additional charge, access to a newer version of the Services that supports substantially the same functionality as the then accessible version of the Services. Newer versions of the Services containing substantially increased functionality may be made available to the State for an additional subscription fee. In the event of either of such modifications, the then accessible version of the Services shall remain fully available to the State until the newer version is provided to the State and accepted. If a modification materially affects the functionality of the Services as used by the State, the State, at its sole option, may defer such modification.

10) TRANSITION PERIOD:

a) For ninety (90) days, either prior to the expiration date of this Agreement, or upon notice of termination of this Agreement, the Vendor shall assist the State, upon written request, in extracting and/or transitioning all Data in the format determined by the State ("Transition Period").

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b) The Transition Period may be modified in an SLA or as agreed upon in writing by the parties in a contract amendment.

c) During the Transition Period, Services access shall continue to be made available to the State without alteration.

d) The Vendor agrees to compensate the State for damages or losses the State incurs as a result of Vendor's failure to comply with this Transition Period section in accordance with the Limitation of Liability provisions above.

e) Upon termination, and unless otherwise stated in an SLA, and after providing the State Data to the State as indicated above in this section with acknowledged receipt by the State in writing, the Vendor shall permanently destroy or render inaccessible any portion of the State Data in the Vendor's and/or subcontractor's possession or control following the completion and expiration of all obligations in this section. Within thirty (30) days, the Vendor shall issue a written statement to the State confirming the destruction or inaccessibility of the State's Data.

f) The State at its option, may purchase additional Transition Services as may be agreed upon in a supplemental agreement.

11) TRANSPORTATION: Transportation charges for any Deliverable sent to the State other than electronically or by download shall be FOB Destination unless delivered by internet or file-transfer as agreed by the State, or otherwise specified in the solicitation document or purchase order.

12) TRAVEL EXPENSES - RESERVED

13) PROHIBITION AGAINST CONTINGENT FEES AND GRATUITIES - RESERVED

14) AVAILABILITY OF FUNDS - RESERVED

15) PAYMENT TERMS (Applicable to SaaS):

a) Payment may be made by the State in advance of or in anticipation of subscription Services to be actually performed under the Agreement or upon proper invoice for other Services rendered. Payment terms are Net 30 days after receipt of correct invoice. Initial payments are to be made after final acceptance of the Services. Payments are subject to any retainage requirements herein. The Purchasing State Agency is responsible for all payments under the Agreement. Subscription fees for term years after the initial year shall be as quoted under State options herein but shall not increase more than five percent (5%) over the prior term, except as the parties may have agreed to an alternate formula to determine such increases in writing. No additional charges to the State will be permitted based upon, or arising from, the State's use of a Business Procurement Card. The State may exercise any and all rights of Set Off as permitted in Chapter 105A-1 *et seq*. of the N.C. General Statutes and applicable Administrative Rules.

b) Upon the Vendor's written request of not less than thirty (30) days and approval by the State, the State may:

i) Forward the Vendor's payment check(s) directly to any person or entity designated by the Vendor or

ii) Include any person or entity designated in writing by Vendor as a joint payee on the Vendor's payment check(s), however,

iii) In no event shall such approval and action obligate the State to anyone other than the Vendor and the Vendor shall remain responsible for fulfillment of all Agreement obligations.

c) For any third party software licensed by the Vendor or its subcontractors for use by the State, a copy of the software license including terms acceptable to the State, an assignment acceptable to the State, and documentation of license fees paid by the Vendor must be provided to the State before any related license fees or costs may be billed to the State.

d) An undisputed invoice is an invoice for which the State and/or the Purchasing State Agency has not disputed in writing within thirty (30) days from the invoice date, unless the agency requests more time for review of the invoice. Upon the Vendor's receipt of a disputed invoice notice, the Vendor will work to correct the applicable invoice error, provided that such dispute notice shall not relieve the State or the applicable Purchasing State Agency from its payment obligations for the undisputed items on the invoice or for any disputed items that are ultimately corrected. The Purchasing State Agency is not required to pay the Vendor for any Software or Services provided without a written purchase order from the appropriate Purchasing State Agency. In addition, all such Services provided must meet all terms, conditions, and specifications of this Agreement and purchase order and be accepted as satisfactory by the Purchasing State Agency before payment will be issued.

e) The Purchasing State Agency shall release any amounts held as retainages for Services completed within a reasonable period after the end of the period(s) or term(s) for which the retainage was withheld. Payment retainage shall apply to all invoiced items, excepting only such items as the Vendor obtains from Third Parties and for which costs are chargeable to the State by agreement of the Parties. The Purchasing State Agency, in its sole discretion, may release retainages withheld from any invoice upon acceptance of the Services identified or associated with such invoices.

16) ACCEPTANCE CRITERIA - RESEVERED

17) CONFIDENTIALITY - RESERVED

18) SECURITY OF STATE DATA

a) All materials, including software, Data, information and documentation provided by the State to the Vendor (State Data) during the performance or provision of Services hereunder are the property of the State of North Carolina and must be kept secure and returned to the State. The Vendor will protect State Data in its hands from unauthorized disclosure, loss, damage, destruction by natural event, or other eventuality. Proprietary Vendor materials shall be identified to the State by the Vendor prior to use or provision of Services hereunder and shall remain the property of the Vendor. Derivative works of any Vendor proprietary materials prepared or created during the performance of provision of Services hereunder shall be provided to the State as part of the Services. The Vendor shall not access State User accounts, or State Data, except (i) during data center operations; (ii) in response to service or technical issues; (iii) as required by the express terms of this contract; or (iv) at the State's written request. The Vendor shall protect the confidentiality of all information, Data, instruments, studies, reports, records and other materials provided to it by the State or maintained or created in accordance with this Agreement. No such information, Data, instruments, studies, reports, records and other materials in the possession of Vendor shall be disclosed in any form without the prior written agreement with the State. The Vendor will have written policies governing access to and duplication and dissemination of all such information, Data, instruments, studies, reports, records and other materials.

b) The Vendor shall not store or transfer non-public State data outside of the United States. This includes backup data and Disaster Recovery locations. The Service Provider will permit its personnel and contractors to access State of North Carolina data remotely only as required to provide technical support.

c) Protection of personal privacy and sensitive data. The Vendor acknowledges its responsibility for securing any restricted or highly restricted data, as defined by the Statewide Data Classification and Handling Policy (https://it.nc.gov/document/statewide-data-classification-and-handling-policy) that is collected by the State and stored in any Vendor site or other Vendor housing systems including, but not limited to, computer systems, networks, servers, or databases, maintained by Vendor or its agents or subcontractors in connection with the provision of the Services. The Vendor warrants, at its sole cost and expense, that it shall implement processes and maintain the security of data classified as restricted or highly restricted; provide reasonable care and efforts to detect fraudulent activity

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involving the data; and promptly notify the State of any breaches of security within twenty-four (24) hours of confirmation as required by N.C.G.S. § 143B-1379.

d) The Vendor will provide and maintain secure backup of the State Data. The Vendor shall implement and maintain secure passwords for its online system providing the Services, as well as all appropriate administrative, physical, technical and procedural safeguards at all times during the term of this Agreement to secure such Data from Data Breach, protect the Data and the Services from loss, corruption, unauthorized disclosure, and the introduction of viruses, disabling devices, malware and other forms of malicious or inadvertent acts that can disrupt the State's access to its Data and the Services. The Vendor will allow periodic back-up of State Data by the State to the State's infrastructure as the State requires or as may be provided by law.

e) The Vendor shall certify to the State:

   i) The sufficiency of its security standards, tools, technologies and procedures in providing Services under this Agreement;

   ii) That the system used to provide the Subscription Services under this Contract has and will maintain a valid third party security certification not to exceed one (1) year and is consistent with the data classification level and a security controls appropriate for low or moderate information system(s) per the National Institute of Standards and Technology NIST 800-53 revision 4. The State reserves the right to independently evaluate, audit, and verify such requirements.

   iii) That the Services will comply with the following:

      (1) Any DIT security policy regarding Cloud Computing, and the DIT Statewide Information Security Policy Manual; to include encryption requirements as defined below:

         (a) The Vendor shall encrypt all non-public data in transit regardless of the transit mechanism.

         (b) For engagements where the Vendor stores sensitive personally identifiable or otherwise confidential information, this data shall be encrypted at rest. Examples are social security number, date of birth, driver's license number, financial data, federal/state tax information, and hashed passwords. The Vendor's encryption shall be consistent with validated cryptography standards as specified in National Institute of Standards and Technology FIPS140-2, Security Requirements. The key location and other key management details will be discussed and negotiated by both parties. When the Service Provider cannot offer encryption at rest, it must maintain, for the duration of the contract, cyber security liability insurance coverage for any loss resulting from a data breach. Additionally, where encryption of data at rest is not possible, the Vendor must describe existing security measures that provide a similar level of protection;

      (2) Privacy provisions of the Federal Privacy Act of 1974;

      (3) The North Carolina Identity Theft Protection Act, N.C.G.S. Chapter 75, Article 2A (e.g., N.C.G.S. § 75-65 and -66);

      (4) The North Carolina Public Records Act, N.C.G.S. Chapter 132;

      (5) Applicable Federal, State and industry standards and guidelines including, but not limited to, relevant security provisions of the Payment Card Industry (PCI) Data Security Standard (PCIDSS) including the PCIDSS Cloud Computing Guidelines, Criminal Justice Information, The Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA); and

      (6) Any requirements implemented by the State under N.C.G.S. §§ 143B-1376 and -1377.

      (7) Any requirements implemented by the State under N.C.G.S. §§ 20-309.2(d).

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f) Security Breach. "Security Breach" under the NC Identity Theft Protection Act (N.C.G.S. § 75-60*ff*) means (1) any circumstance pursuant to which applicable Law requires notification of such breach to be given to affected parties or other activity in response to such circumstance (e.g., N.C.G.S. § 75-65); or (2) any actual, attempted, suspected, threatened, or reasonably foreseeable circumstance that compromises, or could reasonably be expected to compromise, either Physical Security or Systems Security (as such terms are defined below) in a fashion that either does or could reasonably be expected to permit unauthorized Processing (as defined below), use, disclosure or acquisition of or access to any the State Data or state confidential information. "Physical Security" means physical security at any site or other location housing systems maintained by Vendor or its agents or subcontractors in connection with the Services. "Systems Security" means security of computer, electronic or telecommunications systems of any variety (including data bases, hardware, software, storage, switching and interconnection devices and mechanisms), and networks of which such systems are a part or communicate with, used directly or indirectly by Vendor or its agents or subcontractors in connection with the Services. "Processing" means any operation or set of operations performed upon the State Data or State confidential information, whether by automatic means, such as creating, collecting, procuring, obtaining, accessing, recording, organizing, storing, adapting, altering, retrieving, consulting, using, disclosing or destroying.

g) Breach Notification. In the event the Vendor becomes aware of any Security Breach due to Vendor acts or omissions other than in accordance with the terms of the Agreement, the Vendor shall, at its own expense, (1) immediately notify the State's Agreement Administrator of such Security Breach and perform a root cause analysis thereon; (2) investigate such Security Breach; (3) provide a remediation plan, acceptable to the State, to address the Security Breach and prevent any further incidents; (4) conduct a forensic investigation to determine what systems, data and information have been affected by such event; and (5) cooperate with the State, and any law enforcement or regulatory officials, credit reporting companies, and credit card associations investigating such Security Breach. The State shall make the final decision on notifying the State's persons, entities, employees, service providers and/or the public of such Security Breach, and the implementation of the remediation plan. If a notification to a customer is required under any Law or pursuant to any of the State's privacy or security policies, then notifications to all persons and entities who are affected by the same event (as reasonably determined by the State) shall be considered legally required.

h) Notification Related Costs. The Vendor shall reimburse the State for all Notification Related Costs incurred by the State arising out of or in connection with any such Security Breach due to Vendor acts or omissions other than in accordance with the terms of the Agreement resulting in a requirement for legally required notifications. "Notification Related Costs" shall include the State's internal and external costs associated with addressing and responding to the Security Breach including, but not limited to, (1) preparation and mailing or other transmission of legally required notifications; (2) preparation and mailing or other transmission of such other communications to customers, agents or others as the State deems reasonably appropriate; (3) establishment of a call center or other communications procedures in response to such Security Breach (e.g., customer service FAQs, talking points and training); (4) public relations and other similar crisis management services; (5) legal and accounting fees and expenses associated with the State's investigation of and response to such event; and (6) costs for credit reporting services that are associated with legally required notifications or are advisable, in the State's opinion, under the circumstances. If the Vendor becomes aware of any Security Breach which is not due to Vendor acts or omissions other than in accordance with the terms of the Agreement, the Vendor shall immediately notify the State of such Security Breach, and the parties shall reasonably cooperate regarding which of the foregoing or other activities may be appropriate under the circumstances, including any applicable Charges for the same.

i) The Vendor shall allow the State reasonable access to Services security logs, latency statistics, and other related Services security data that affect this Agreement and the State's Data, at no cost to the State.

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j) In the course of normal operations, it may become necessary for the Vendor to copy or move Data to another storage destination on its online system, and delete the Data found in the original location. In any such event, the Vendor shall preserve and maintain the content and integrity of the Data, except by prior written notice to, and prior written approval by, the State.

k) Remote access to Data from outside the continental United States including, without limitation, remote access to Data by authorized Services support staff in identified support centers, is prohibited unless approved in advance by the State Chief Information Officer or the Using Agency.

l) In the event of temporary loss of access to Services, the Vendor shall promptly restore continuity of Services, restore Data in accordance with this Agreement and as may be set forth in an SLA, restore accessibility of Data and the Services to meet the performance requirements stated herein or in an SLA. As a result, Service Level remedies will become available to the State as provided herein, in the SLA or other agreed and relevant documents. Failure to promptly remedy any such temporary loss of access may result in the State exercising its options for assessing damages under this Agreement.

m) In the event of disaster or catastrophic failure that results in significant State Data loss or extended loss of access to Data or Services, the Vendor shall notify the State by the fastest means available and in writing, with additional notification provided to the State Chief Information Officer or designee of the contracting agency. Vendor shall provide such notification within twenty-four (24) hours after Vendor reasonably believes there has been such a disaster or catastrophic failure. In the notification, Vendor shall inform the State of:

   (1) The scale and quantity of the State Data loss;

   (2) What Vendor has done or will do to recover the State Data from backups and mitigate any deleterious effect of the State Data and Services loss; and

   (3) What corrective action Vendor has taken or will take to prevent future State Data and Services loss.

   (4) If Vendor fails to respond immediately and remedy the failure, the State may exercise its options for assessing damages or other remedies under this Agreement.

   The Vendor shall investigate the disaster or catastrophic failure and shall share the report of the investigation with the State. The State and/or its authorized agents shall have the right to lead (if required by law) or participate in the investigation. The Vendor shall cooperate fully with the State, its agents and law enforcement.

n) In the event of termination of this contract, cessation of business by the Vendor or other event preventing the Vendor from continuing to provide the Services, the Vendor shall not withhold the State Data or any other State confidential information or refuse, for any reason, to promptly return to the State the State Data and any other State confidential information (including copies thereof) if requested to do so on such media as reasonably requested by the State, even if the State is then or is alleged to be in breach of the Agreement. As a part of the Vendor's obligation to provide the State Data pursuant to this Paragraph 18) n), the Vendor will also provide the State any data maps, documentation, software, or other materials necessary, including, without limitation, handwritten notes, materials, working papers or documentation, for the State to use, translate, interpret, extract and convert the State Data.

o) Secure Data Disposal. When requested by the State, the Vendor shall destroy all requested data in all of its forms (e.g., disk, CD/DVD, backup tape, and paper). Data shall be permanently deleted and shall not be recoverable, in accordance with National Institute of Standards and Technology (NIST) approved methods, and certificates of destruction shall be provided to the State.

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Section 3: Terms and Conditions Applicable to Personnel and Personal Services

1) **VENDOR'S REPRESENTATION:** Vendor warrants that qualified personnel will provide Services in a professional manner. "Professional manner" means that the personnel performing the Services will possess the skill and competence consistent with the prevailing business standards in the information technology industry. Vendor agrees that it will not enter any agreement with a third party that might abridge any rights of the State under the Agreement. Vendor will serve as the prime Vendor under the Agreement. Should the State approve any subcontractor(s), the Vendor shall be legally responsible for the performance and payment of the subcontractor(s). Names of any third party Vendors or subcontractors of Vendor may appear for purposes of convenience in Contract documents; and shall not limit Vendor's obligations hereunder. Such third party subcontractors, if approved, may serve as subcontractors to Vendor. Vendor will retain executive representation for functional and technical expertise as needed in order to incorporate any work by third party subcontractor(s).
   a) Intellectual Property. Vendor represents that it has the right to provide the Services and other Deliverables without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third party. Vendor also represents that its Services and other Deliverables are not the subject of any actual or threatened actions arising from, or alleged under, any intellectual property rights of any third party.
   b) Inherent Services. If any Services or other Deliverables, functions, or responsibilities not specifically described in the Agreement are required for Vendor's proper performance, provision and delivery of the Services and other Deliverables pursuant to the Agreement, or are an inherent part of or necessary sub-task included within the Services, they will be deemed to be implied by and included within the scope of the Contract to the same extent and in the same manner as if specifically described in the Contract.
   c) Vendor warrants that it has the financial capacity to perform and to continue to perform its obligations under the Contract; that Vendor has no constructive or actual knowledge of an actual or potential legal proceeding being brought against Vendor that could materially adversely affect performance of the Agreement; and that entering into the Agreement is not prohibited by any Contract, or order by any court of competent jurisdiction.
2) **SERVICES PROVIDED BY VENDOR:** Vendor shall provide the State with implementation Services as specified in a Statement of Work ("SOW") executed by the parties. This Agreement in combination with each SOW individually comprises a separate and independent contractual obligation from any other SOW. A breach by Vendor under one SOW will not be considered a breach under any other SOW. The Services intended hereunder are related to the State's implementation and/or use of one or more Software Deliverables licensed hereunder or in a separate software license agreement between the parties ("License Agreement"). (Reserve if not needed)
3) **PERSONNEL:** Vendor shall not substitute key personnel assigned to the performance of the Agreement without prior written approval by the Agency Contract Administrator. The individuals designated as key personnel for purposes of the Agreement are those specified in the Vendor's offer. Any desired substitution shall be noticed to the Agency's Contract Administrator in writing accompanied by the names and references of Vendor's recommended substitute personnel. The Agency will approve or disapprove the requested substitution in a timely manner. The Agency may, in its sole discretion, terminate the Services of any person providing Services under the Agreement. Upon such termination, the Agency may request acceptable substitute personnel or terminate the Contract Services provided by such personnel.
   a) Unless otherwise expressly provided in the Contract, Vendor will furnish all of its own necessary management, supervision, labor, facilities, furniture, computer and telecommunications equipment, software, supplies and materials necessary for the Vendor to provide and deliver the Services and other Deliverables.
   b) Vendor personnel shall perform their duties on the premises of the State, during the State's regular work days and normal work hours, except as may be specifically agreed otherwise, established in the specification, or statement of work.

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c) The Agreement shall not prevent Vendor or any of its personnel supplied under the Agreement from performing similar Services elsewhere or restrict Vendor from using the personnel provided to the State, provided that:
   i) Such use does not conflict with the terms, specifications or any amendments to the Agreement, or
   ii) Such use does not conflict with any procurement law, regulation or policy, or
   iii) Such use does not conflict with any non-disclosure agreement, or term thereof, by and between the State and Vendor or Vendor's personnel.

d) Unless otherwise provided by the Agency, the Vendor shall furnish all necessary personnel, Services, and otherwise perform all acts, duties and responsibilities necessary or incidental to the accomplishment of the tasks specified in the Agreement. The Vendor shall be legally and financially responsible for its personnel including, but not limited to, any deductions for social security and other withholding taxes required by state or federal law. The Vendor shall be solely responsible for acquiring any equipment, furniture, and office space not furnished by the State necessary for the Vendor to comply with the Agreement. The Vendor personnel shall comply with any applicable State facilities or other security rules and regulations.

4) PERSONAL SERVICES: The State shall have and retain the right to obtain personal Services of any individuals providing Services under the Agreement. This right may be exercised at the State's discretion in the event of any transfer of the person providing personal Services, termination, default, merger, acquisition, bankruptcy or receivership of the Vendor to ensure continuity of Services provided under the Agreement. Provided, however, that the Agency shall not retain or solicit any Vendor employee for purposes other than completion of personal Services due as all or part of any performance due under the Agreement.

a) Vendor personnel shall perform any duties on the premises of the State during the State's regular work days and normal work hours, except as may be specifically agreed otherwise, established in the specification, or statement of work.

b) The State has and reserves the right to disapprove the continuing assignment of Vendor personnel provided by Vendor under the Agreement. If this right is exercised and the Vendor is not able to replace the disapproved personnel as required by the State, the parties agree to employ best commercial efforts to informally resolve such failure equitably by adjustment of other duties, set-off, or modification to other terms that may be affected by Vendor's failure.

c) Vendor will make every reasonable effort consistent with prevailing business practices to honor the specific requests of the State regarding assignment of Vendor's employees. Vendor reserves the sole right to determine the assignment of its employees. If one of Vendor's employees is unable to perform due to illness, resignation, or other factors beyond Vendor's control, Vendor will provide suitable personnel at no additional cost to the State.

d) The Agreement shall not prevent Vendor or any of its personnel supplied under the Agreement from performing similar Services elsewhere or restrict Vendor from using the personnel provided to the State, provided that:
   i) Such use does not conflict with the terms, specifications or any amendments to the Agreement, or
   ii) Such use does not conflict with any procurement law, regulation or policy, or
   iii) Such use does not conflict with any non-disclosure agreement, or term thereof, by and between the State and Vendor or Vendor's personnel

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ATTACHMENT C: DESCRIPTION OF OFFEROR

Provide the information about the offeror.

Offeror's full name	Ex Libris (USA) Inc.
Offeror's address	789 E Eisenhower Pkwy Ann Arbor, MI 48108
Offeror's telephone number	
Ownership	☑ Public ☐ Partnership ☐ Subsidiary ☐ Other (specify)
Date established	1986
If incorporated, State of incorporation.	New York
North Carolina Secretary of State Registration Number, if currently registered	1686945
Number of full-time employees on January 1st for the last three years or for the duration that the Vendor has been in business, whichever is less.	840 at Ex Libris, 11,000 at Clarivate
Offeror's Contact for Clarification of offer: Contact's name Title Email address and Telephone Number	Raymond Porter Senior Product Sales Manager raymond.porter@clarivate.com
Offeror's Contact for Negotiation of offer: Contact's name Title Email address and Telephone Number	Raymond Porter see above
If Contract is Awarded, Offeror's Contact for Contractual Issues: Contact's name Title Email address and Telephone Number	Rebecca Cohen Senior Manager, Contracts rebecca.cohen@clarivate.com
If Contract is Awarded, Offeror's Contact for Technical Issues: Contact's name Title	Raymond Porter see above

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Email address and Telephone Number	

HISTORICALLY UNDERUTILIZED BUSINESSES

Historically Underutilized Businesses (HUBs) consist of minority, women and disabled business firms that are at least fifty-one percent owned and operated by an individual(s) of the categories. Also included as HUBs are disabled business enterprises and non-profit work centers for the blind and severely disabled."

Pursuant to NCGS §§ 143B-1361(a), 143-48 and 143-128.4, the State invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled. This includes utilizing subcontractors to perform the required functions in this RFP. Contact the North Carolina Office of historically Underutilized Businesses at 919-807-2330 with questions concerning NC HUB certification. http://ncadmin.nc.gov/businesses/hub

Respond to the questions below.

1. Is Vendor a Historically Underutilized Business? ☐ Yes ☑ No
2. Is Vendor Certified with North Carolina as a Historically Underutilized Business? ☐ Yes ☑ No

   If so, state HUB classification:

   _____

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ATTACHMENT D: COST FORM

The Vendor must list, itemize, and describe any applicable offer costs which may include the following:

Note: For the matrices below, Vendors should imbed any potential Travel and Living costs for meetings into lump sum pricing below otherwise, standalone travel and living costs will be audited by the Agency and must be in accordance with state rates. See Section 5 of Attachment B for further details.

Also, shipping fees cannot be a standalone cost line item per the NCDIT Terms and Conditions. Shipping is to be FOB Destination. See Clause 27 of Attachment B for further details.

One Time Cost Component	One-Time Fee and Year One (1) of Operation	Notes
Base system cost	$Included	Our solution is provided through an all-inclusive SaaS subscription model. The subscription includes application access, hosting, back-ups, enhancements and application support.
Software license fees or costs	$457,932	Our solution is provided through an all-inclusive SaaS subscription model. We have noted here the initial annual subscription cost, which is due upon go-live. Please refer to items a. and b. of the section "**4.0 COST OF VENDOR'S OFFER**"
Customization costs	$Included	Not applicable. System configuration services are included as part of our comprehensive implementation package and included in the one-time implementation fee noted below.
Third party software, if any, required for the operation of the system	$Included	Not applicable
Technical and user support documentation	$Included	Inclusive in the subscription is ongoing access to Technical and user support documentation which is openly available via our Knowledge Center and which is updated as part of our quarterly enhancement release cadence.
Data migration cost per college	$Included	We are proposing a fixed price, fixed scope comprehensive implementation package for NCCCS based on the participation on all 58 colleges. Data migration is included as part of our implementation fee and is not separately itemized. The average implementation cost per college based on our proposal is $9,508.

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All onboarding costs inclusive of required third-party and vendor resource costs (Insert additional lines as needed)	$551,457	We are proposing a fixed price, fixed scope comprehensive implementation package for NCCCS based on the participation of all 58 colleges. Our implementation methodology includes: pre-project onboarding and readiness planning, project management, provisioning and configuration of Alma with Primo VE and Rapido for print and e-resource management across acquisitions, fulfillment, resource management, standard third-party integrations (Colleague & Banner), standard authentication (CAS, Shibboleth/SAML, LDAP), comprehensive online training and data migration. We have also included 6 onsite regional training sessions to augment our standard training curriculum in response to your requirements; and certification and post-migration consulting services are also included (10 hours per cohort).
Training, including materials	$Included	Training is included in the one-time implementation fee outlined in item "g" of the "**4.0 COST OF VENDOR's OFFER"** section. Travel and lodging expenses for the onsite training specified is not included and will be based on our actual costs. We can agree to align with NCCCS travel and expense policy. Training materials (including recorded courses) are updated on an ongoing basis and provided throughout the duration of your subscription.
Existing software upgrade / integration / training	$Included	The subscription includes hosting, back-ups, enhancements, upgrades/updates, and application support. No on-premise hardware or software is required.
Artificial intelligence – Generative AI integration	$Included	Ex Libris, a part of Clarivate™, has launched a comprehensive AI strategy in 2025 aimed at transforming library services and academic workflows. Their approach centers on integrating AI tools into core platforms like Alma™ and Primo™, enhancing metadata management, research assistance, and digital collection accessibility.
Storage Costs	$Included	The subscription fee presented includes hosting, back-ups, releases, IT maintenance, and traditional application support (including documentation). There is no additional cost for Storage.
Admin technical support (Provide all levels of costs based on 24/7/365 availability)	$Included	Ex Libris is committed to providing customers with timely and accurate customer service. Access to Ex Libris support staff is provided five days a week, 8:30 am to 5:30 pm Central Time. Support for critical issues, such as a down system/component, is provided 24/7/365 via the Ex Libris Hub, including weekends and holidays. Ex Libris customers have access to our Salesforce

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		Customer Portal, which allows customers to open, update, and track support Cases handled by Ex Libris Support at any time. The Portal will send email alerts regarding updates to support cases. See item "**I**" in section **4.0 COST OF VENDOR"S OFFER**

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Faculty/staff/student user support costs (based on 24/7/365 availability)	$Included	The campus library will become the initial point of contact for faculty/staff/student user support.
Vetting cost for LTIs and integrations for applications	$0.00	Integration with Learning Tools Interoperability (LTI) standards is supported natively in optional solutions such as Ex Libris' Leganto reading list / learning affordability product which can be purchased as an added cost on an opt-in basis by individual colleges. Vetting and onboarding third-party applications may incur additional costs depending on complexity, security reviews, and customization needs. Ex Libris encourages institutions to utilize our extensive standards support, open APIs / cloud apps and community development integrations to minimize costs
Consultation hours	$Included	We have included 10 hours of post implementation consulting for each cohort at no added cost (30 hours total). Our standard daily rate for professional services beyond the implementation timeline or scope is $1,850/day.
Costs for customization (Insert additional lines as needed)	$0.00	Not applicable for a multi-tenant, SaaS solution. Moving to the cloud lowers the required threshold for entry to basic management processes and eliminates the need for the types of customizations commonly required for legacy solutions.
Costs incurred if colleges migrate to or away from this solution.	$0.00	Our proposal already includes for all 58 institutions to participate. If there would be the need for adding an institution beyond the 58 NCCCS institutions - There would be a migration cost if joining the NCCCS system as well as a cost for being added to the Network Zone. For the sake of clarity, for those migrating away, other than making the customer's data available in a standard format, no other transition services are normally available or required. Ex Libris provides a transition assistance period during which it makes all customer data from its SaaS Service available (as outlined in section 10.4 of the SaaS Agreement included with this response).
Other Costs (Describe any cost that is not included in the proposed solution, including any future known cost)	$Included	Not applicable
	$	
	$	
Total One-Time Cost -Year 1:	**$1,009,389**	This total amount includes the 1st year subscription fee plus the total Implementation (one-time) cost.

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Cost Component	RECURRING COSTS			
	Year 2	Year 3	Year 4	Year 5
Base system cost and Maintenance	$0.00	$0.00	$0.00	$0.00
Software license fees or costs	$480,829	$504,870	$530,114	$556,619
Customization costs	$Included	$Included	$Included	$Included
Third party software, if any, required for the operation of the system	$Not applicable	$Not applicable	$Not applicable	$Not applicable
Technical and user support documentation	$ Included	$ Included	$ Included	$ Included
Data migration cost per college	$ Included	$ Included	$ Included	$ Included
All onboarding costs inclusive of required third-party and vendor resource costs (Insert additional lines as needed)	$ Included	$ Included	$ Included	$ Included
Training, including materials and revisions to documentation	$ Included	$ Included	$ Included	$ Included
Existing software upgrade / integration / training	$ Included	$ Included	$ Included	$ Included
Artificial intelligence – Generative AI integration	$ Included	$ Included	$ Included	$ Included
Storage Costs	$ Included	$ Included	$ Included	$ Included
Admin technical support (Provide all levels of costs based on 24/7/365 availability)	$ Included	$ Included	$ Included	$ Included

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Faculty/staff/student user support costs (based on 24/7/365 availability)	$ Included	$ Included	$ Included	$ Included
Vetting cost for LTIs and integrations for applications	$ Included	$ Included	$ Included	$ Included
Consultation hours	$ Included	$ Included	$ Included	$ Included
Costs for customization (Insert additional lines as needed)	$ Included	$ Included	$ Included	$ Included
Costs incurred if colleges migrate to or away from this solution.	$0.00	$0.00	$0.00	$0.00
Other Costs (Describe any cost that is not included in the proposed solution, including any future known cost)	$Not applicable	$Not applicable	$Not applicable	$Not applicable
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
	$	$	$	$
Total Recurring Costs:	**$480,829**	**$504,870**	**$530,114**	**$556,619**
Grand Total Price for Entire Contract (One Time Costs Plus 4 Years of Operation):				**$3,081,821**

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ATTACHMENT E: VENDOR CERTIFICATION FORM

1) ELIGIBLE VENDOR

The Vendor certifies that in accordance with NCGS § 143-59.1(b), Vendor is not an ineligible vendor as set forth in NCGS § 143-59.1 (a).

The Vendor acknowledges that, to the extent the awarded contract involves the creation, research, investigation or generation of a future RFP or other solicitation; the Vendor will be precluded from bidding on the subsequent RFP or other solicitation and from serving as a subcontractor to an awarded vendor.

The State reserves the right to disqualify any bidder if the State determines that the bidder has used its position (whether as an incumbent Vendor, or as a subcontractor hired to assist with the RFP development, or as a Vendor offering free assistance) to gain a competitive advantage on the RFP or other solicitation.

2) CONFLICT OF INTEREST

Applicable standards may include: NCGS §§ 143B-1352 and 143B-1353, 14-234, and 133-32. The Vendor shall not knowingly employ, during the period of the Agreement, nor in the preparation of any response to this solicitation, any personnel who are, or have been, employed by a Vendor also in the employ of the State and who are providing Services involving, or similar to, the scope and nature of this solicitation or the resulting contract.

3) E-VERIFY

Pursuant to NCGS § 143B-1350(k), the State shall not enter into a contract unless the awarded Vendor and each of its subcontractors comply with the E-Verify requirements of NCGS Chapter 64, Article 2. Vendors are directed to review the foregoing laws. Vendors claiming exceptions or exclusions under Chapter 64 must identify the legal basis for such claims and certify compliance with federal law regarding registration of aliens including 8 USC 1373 and 8 USC 1324a. Any awarded Vendor must submit a certification of compliance with E-Verify to the awarding agency, and on a periodic basis thereafter as may be required by the State.

4) CERTIFICATE TO TRANSACT BUSINESS IN NORTH CAROLINA

As a condition of contract award, awarded Vendor shall have registered its business with the North Carolina Secretary of State and shall maintain such registration throughout the term of the Contract.

Signature: Signed by: Tim McGee 79DFF63810614F1... Date: August 6, 2025 | 12:30:44 PM PD

Printed Name: Tim McGee Title: VP of Sales Operations

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ATTACHMENT F: LOCATION OF WORKERS UTILIZED BY VENDOR

In accordance with NCGS § 143B-1361(b), Vendor must identify how it intends to utilize resources or workers located outside the U.S., and the countries or cities where such are located. The State will evaluate additional risks, costs, and other factors associated with the Vendor's utilization of resources or workers prior to making an award for any such Vendor's offer. The Vendor shall provide the following:

a) The location of work to be performed by the Vendor's employees, subcontractors, or other persons, and whether any work will be performed outside the United States. The Vendor shall provide notice of any changes in such work locations if the changes result in performing work outside of the United States.

b) Any Vendor or subcontractor providing support or maintenance Services for software, call or contact center Services shall disclose the location from which the call or contact center Services are being provided upon request.

Will Vendor perform any work outside of the United States? ☑ **Yes** ☐ **No**

If yes, Vendor MUST list what countries the employees are working and in what capacity are they accessing State Data. Specifically, the State must know if the employees are Help Desk support, Technical Support and/or Coder, etc.

The data of our US customers is only stored in our US data center and is typically only accessed by Ex Libris US personnel, however, there may be circumstances requiring access by our global affiliates (such as scenarios that involve our 24x7 hub, Tier 2 Support, and implementation). Our full list of global affiliates and subprocessors is attached here.

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Ex Libris SaaS and Hosted Services
List of Subprocessors and Subcontractors

Ex Libris Services

This document applies to the following Ex Libris SaaS and Hosted Services:

Product	Europe	Americas	APAC and Others
Alma	Click here	Click here	Click here
campusM			
Leganto			
Rialto			
Primo			
Aleph Hosted			
Primo Hosted			
Rapido			
Esploro			
Voyager Hosted			
SFX Hosted			

Ex Libris Affiliate Subprocessors

The entities listed below are affiliates of Ex Libris Ltd. (collectively, "Ex Libris"). Depending on the geographic location of a customer and the nature of the services provided, Ex Libris companies may engage one or more of the following affiliates as subprocessors to deliver some or all the services provided to a customer.

All Ex Libris affiliates may provide professional, support and training services requiring access to data processing systems. Ex Libris affiliates followed by (*) also engage in overseeing data center operations (owning, operating and maintaining the data processing infrastructure located in the relevant data centers).

Data Center Facility Providers

Ex Libris uses the following third party providers for data center facilities. Ex Libris uses the "colocation" model where Ex Libris owns and manages all data processing equipment and contracts with the data center facility providers for the data center space and related power, cooling, physical security and similar services. Ex Libris refers to these third parties who do not process customer data as "subcontractors" and not "subprocessors". Unless otherwise agreed with a customer, the SaaS and Hosted Services for customers headquartered in the European Union are hosted in data centers located in the European Union.

Ex Libris Distributors

The following are authorized regional or country-specific distributors of Ex Libris Products and services. Except as indicated, distributors are generally involved in processing personal data of their respective customers.

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Europe Location

Data Centers:

Entity Name	Corporate Location	Data Center(s) Locations	Note
Equinix (Netherlands) B.V.	The Netherlands	European Union (The Netherlands)	
Digital Frankfurt GmbH	Germany	European Union (Germany)	*Until July 12 2025
Equinix (Germany) GmbH	Germany	European Union (Germany)	*Start of July 13 2025

Affiliates:

Affiliate name	Corporate Location	Note
Ex Libris (Deutschland) GmbH*	Germany	Overseeing EU data center operations
Ex Libris (UK) Limited	United Kingdom	
Ex Libris (France) SARL	France	
Ex Libris Italy S.R.L.	Italy	
Ex Libris Ltd.	Israel	
Ex Libris (Scandinavia) A/S	Denmark	
ProQuest Information and Learning Ltd.	England	
Clarivate Analytics NV	Belgium	
Clarivate Analytics (Compumark) SAS	France	
Clarivate Analytics SAS	France	
Clarivate Analytics GmbH	Deutschland	
Clarivate Analytics SAU	Espana	
Clarivate Analytics S.R.L.	Italia	
Clarivate Analytics (International) Limited Oddzial w Polsce	Poland	
Clarivate Analytics Limited	UK	

Other Subprocessors

Entity Name	Corporate Location	Note

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Amazon Web Services, Inc. (S3 Storage)	United States	Used for Leganto, Esploro and optional Alma Digital Storage for storage of Digital objects and files. The Amazon S3 location used to store these Digital Objects or Files will match the Customer's Alma geographic region: EU/Europe (EU); US (US); or Asia Pacific (Singapore). Requested audits according to AWS audit terms
Sanido SRL & Mirnet SRL	Romania	Data collection and data entry services for Esploro researcher profiles

Distributors:

Entity Name	Corporate Location	Note
ALEPH Polska Sp. z o.o.	Poland	Support, implementation and maintenance services for customers in Poland and other select customers in the European Union

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Americas Location

Data Center:

Entity Name	Corporate Location	Data Center(s) Locations
Equinix LLC	United States	United States
Cyxtera Communications, LLC	United States	Canada and United States

Affiliates:

Affiliate name	Corporate Location	Note
Ex Libris (USA) Inc.*	United States	Overseeing US and Canada data center operations
ProQuest Latam S de R.L. de C.V ProQuest Chile SPA ProQuest Colombia S.A.S	Mexico Chile Colombia	With respect to customers based in Latin America and Latin America-based campuses of other customers
ProQuest LLC	United States	Providing specific services such as creating and maintaining researcher profiles for Esploro
Clarivate Analytics LLC	US	

Other Subprocessors

Entity Name	Corporate Location	Note
Amazon Web Services, Inc. (S3 Storage)	United States	Used for Leganto, Esploro and optional Alma Digital Storage for storage of Digital objects and files. The Amazon S3 location used to store these Digital Objects or Files will match the Customer's Alma geographic region: EU/Europe (EU); US (US); or Asia Pacific (Singapore). Requested audits according to AWS audit terms
CloudFlare	United States	On-Demand Volumetric DDoS mitigation service. Implemented in DC01, DC04, DC05, DC07, DC82 (all except for Europe and China)

Distributors:

Entity Name	Corporate Location	Note

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EXLBR Tecnologia Solucoe e Servicos Ltd.	Brazil	Support, implementation and maintenance services for customers in Brazil
Sistemas Logicos Chile S.A.	Chile	Support, implementation and maintenance services for customers in Chile
Grupo Sistemas Logicos Colombia SAS	Colombia	Support, implementation and maintenance services for customers in Colombia
Grupo Sistemas Logicos, SA de CV	Mexico	Support, implementation and maintenance services for customers in Mexico

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APAC and Other Locations

Data Center:

Entity Name	Corporate Location	Data Center(s) Locations
Equinix Singapore Pte Ltd	Singapore	Singapore
Equinix Australia Pty Limited	Australia	Australia
Beijing 21Vianet Broadband Data Center Co., Ltd.	China	China

Affiliates:

Affiliate name	Corporate Location	Note
Ex Libris (Australia) Pty Ltd.*	Australia	Overseeing Australia data center operations serving Asia Pacific region (excluding China)
Ex Libris Asia Pacific Pte Ltd.*	Singapore	Overseeing Singapore data center operations serving Asia Pacific region (excluding China)
Clarivate SDN. BHD	Malaysia	
Clarivate Analytics India Private Limited	India	
Clarivate Analytics Co., Ltd	Japan	
Clarivate Analytics Pte. Ltd	Singapore	

Distributors:

Entity Name	Corporate Location	Note
Amazon Web Services, Inc. (S3 Storage)	United States	Used for Leganto, Esploro and optional Alma Digital Storage for storage of Digital objects and files. The Amazon S3 location used to store these Digital Objects or Files will match the Customer's Alma geographic region: EU/Europe (EU); US (US); or Asia Pacific (Singapore). Requested audits according to AWS audit terms
CloudFlare	United States	On-Demand Volumetric DDoS mitigation service. Implemented in DC01, DC04, DC05, DC07, DC82 (all except for Europe and China)
USACO Corporation	Japan	Support, implementation and maintenance services for customers in Japan

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FlySheet Technologies Co. Ltd.	Taiwan	Support, implementation and maintenance services for customers in Taiwan
TED Engineering Documents JSC	Vietnam	Support, implementation and maintenance services for customers in Vietnam

Notification of Updates to Subprocessors:

Ex Libris will publish updates of this List reflecting replacements and/or additions to subprocessors set forth on this List on the website where this List is located. In addition, Ex Libris will use reasonable efforts to provide notifications of such adjustments and/or additions to the e-mail addresses of Data Protection Officers (or other contact for privacy inquiries) of affected/relevant customers that have provided such information (as requested) in their signed agreement or Data Processing Addendum.

If you have not provided such contact information and are an Ex Libris customer that would like to receive such notifications, please send your request to receive notifications of updates to this List, by e-mailing your email address, name, title, institution or organization and the applicable Ex Libris services to PQ-privacy-exl@clarivate.com

Version Controls

This version: 2.3 – January 16, 2025

Previous Versions of List of Subprocessors:

2.2 – October 30, 2024

2.1 - October 10, 2024

2.0 - August 22, 2023

1.2 - December 17, 2019

1.1 - May 14, 2019

1.0 - May 8, 2018

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ATTACHMENT G: REFERENCES

The Vendor shall provide three (3) references of customers utilizing the proposed solution fully implemented in a setting similar to this solicitation's scope of work. References within like North Carolina communities / industries are encouraged.

The Vendor should have implemented the respective proposed service within the last three (3) years. Customer references whose business processes and data needs are similar to those performed by the Agency needing this solution in terms of functionality, complexity, and transaction volume are encouraged.

For each reference, the Vendor shall provide the following information:

a. Customer name.

b. Customer address.

c. Current telephone number of a customer employee most familiar with the offered solution implementation.

d. Customer email address

e. Time period over which each offered solution implementation was completed.

f. Brief summary of the offered solution implementation.

g. List of offered solution products installed and operational.

h. Number of vendor or technical staff supporting, maintaining and managing the offered solution

i. Number of end users supported by the offered solution.

j. Number of sites supported by the offered solution.

1) Florida Academic Library Services Cooperative

a. **Customer name:**

Elijah Scott (Executive Director) - (Florida Academic Library Services Cooperative (FALSC)

b. **Customer address:**

c/o University of West Florida, 5830 NW 39th Ave, Gainesville, FL 32606-5865

c. **Current telephone number of a customer employee most familiar with the offered solution implementation.**
850-922-6044

d. **Customer email address**

escott@flvc.org

e. **Time period over which each offered solution implementation was completed.**

Contracted March 2020

16 months implementation – this took a little longer because Florida wanted a vanguard pre-implementation phase which added 4 months.

f. **Brief summary of the offered solution implementation.**

Alma and Primo VE implementation services covered by this Agreement include:

1. Project management, training, customer assistance

2. Configuration (Alma and Primo VE)

3. Data migration (Alma)

4. Alma-Primo VE integration
Project was comprised onboarding phase, vanguard phase and full implementation phase.
Institutions Importing and exporting of POs and invoices between Alma and ERP system.
Uploading of user (patron) information from the Student information System
Electronic Data Interchange (EDI) messages used to communicate with the vendors (sending of orders, import of invoices)

Self check machines

For Acquisitions: Proquest OASIS – Real time ordering integration

Funds allocation loader to allocate amounts to the funds in Alma

End-user patron authentication via institutional LDAP, Shibboleth (using SAML 2.0 protocol), CAS, Social authentication

Network Zone: Ex Libris built the Alma Network Zone from the existing Customer shared databases. Ex Libris provides auto-extraction tools that were installed and run by the customer central office to facilitate data extraction

g. **List of offered solution products installed and operational.**

Alma, Alma Premium Sandboxes, Prim VEo, Primo VE Premium Sandboxes, bX Recommender, Network Zone Premium Sandbox

h. **Number of vendor or technical staff supporting, maintaining and managing the offered solution**

Ex Libris employs ~800 staff members

Ex Libris employee breakdown:
Development & Research: 349
Support: 308
Sales: 46
Admin: 98

Other: 35

i. **Number of end users supported by the offered solution.**

2100 named users

700,000 FTE

j. **Number of sites supported by the offered solution.**

40 institutions

2) Virginia Community College System

a. **Customer name:**
Tara Cassidy (VCCS Project Manager) **-** *Virginia Community College System (VCCS)*
Erin Crane (Library Technology Systems Coordinator)

b. **Customer address.**
300 Arboretum Pl Ste 200, North Chesterfield, VA 23236

c. **Current telephone number of a customer employee most familiar with the offered solution implementation.**
Tara Cassidy: 804-819-4976
Erin Crane: 804-819-4981

d. **Customer email address**
Tara Cassidy: tcassidy@vccs.edu
Erin Crane: ecrane@vccs.edu

e. **Time period over which each offered solution implementation was completed.**
Contract: Aug 2017

Implemented: 12 months

f. **Brief summary of the offered solution implementation.**

Alma and Primo VE implementation services covered by this Agreement include:

1. Project management, training, customer assistance

2. Configuration (Alma and Primo VE)

3. Data migration (Alma)

4. Alma-Primo VE integration

VCCS was implemented as multiple Alma institutions (one Alma institution for each college) with a Network Zone for shared e-resource management. A Standard Alma Sandbox before implementation and a premium Alma sandbox after Go-Live. One premium Primo sandbox. 3 separate onsite one-day regional training sessions.

Importing and exporting of POs and invoices between Alma and Peoplesoft ERP system.

Uploading of user (patron) information from the Student information System

Electronic Data Interchange (EDI) messages used to communicate with the vendors (sending of orders, import of invoices)

Self check machines

g. **List of offered solution products installed and operational.**
Alma including two premium sandboxes, Primo and Network Zone

h. **Number of vendor or technical staff supporting, maintaining and managing the offered solution**

Ex Libris employs ~800 staff members

Ex Libris employee breakdown:
Development & Research: 349
Support: 308
Sales: 46
Admin: 98

Other: 35

i. **Number of end users supported by the offered solution.**
300 named users
158,000 FTE

j. **Number of sites supported by the offered solution.**
23 Community Colleges

3) Partnership among South Carolina Libraries (PASCAL)

a. **Customer name:**

Rick Moul (Executive Director) - Partnership among South Carolina Libraries (PASCAL)

b. **Customer address:**

1122 Lady St Ste 300, Columbia, SC 29201-3240

c. **Current telephone number of a customer employee most familiar with the offered solution implementation:**

Rick: 803-856-0837

d. **Customer email address:**

Rick.Moul@pascalsc.org

e. **Time period over which each offered solution implementation was completed:**

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12 months.

f. **Brief summary of the offered solution implementation.**

Alma and Primo VE implementation services covered by this Agreement include:

1. Project management, training, customer assistance

2. Configuration (Alma and Primo VE)

3. Data migration (Alma)

4. Alma-Primo VE integration

The full implementation occurred in a single wave, that is, all institutions implemented simultaneously. There were two rounds of data migration with population of the full Netwok Zone. Period lasted 12 months.

g. **List of offered solution products installed and operational.**

Alma, Alma Premium Sandbox, Primo, Primo Premium Sandbox, bX Recommender

h. **Number of vendor or technical staff supporting, maintaining and managing the offered solution**

Ex Libris employs ~800 staff members

Ex Libris employee breakdown:
Development & Research: 349
Support: 308
Sales: 46
Admin: 98

Other: 35

i. **Number of end users supported by the offered solution.**

1,618 named users

194,122 FTE

j. **Number of sites supported by the offered solution.**

56 institutions

Since resource sharing is a key requirement, it is important for us to point out that the following are also using Alma/Primo in the state of North Carolina:

- UNC System
- Wake Forest University
- Duke University
- Davidson College
- Campbell University

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ATTACHMENT H: FINANCIAL REVIEW FORM

Vendor shall review the Financial Review Form, provide responses in the gray-shaded boxes, and submit the completed Form as an Excel file with its offer. Vendor shall not add or delete rows or columns in the Form, or change the order of the rows or column in the file.

1. Vendor Name: Ex Libris (USA) Inc.

2. Company structure for tax purposes (C Corp, S Corp, LLC, LLP, etc.): C Corp

3. Have you been in business for more than three years? ☑ Yes ☐ No

4. Have you filed for bankruptcy in the past three years? ☐ Yes ☑ No

5. In the past three years, has your auditor issued any notification letters addressing significant issues? If yes, please explain and provide a copy of the notification letters. ☐ Yes ☑ No

6. Are the financial figures below based on audited financial statements? ☑ Yes ☐ No

7. Start Date of financial statements:

   End Date of financial statements:

8. Provide a link to annual reports with financial statements and management discussion for the past three complete fiscal years:

   https://ir.clarivate.com/financials/sec-filings/default.aspx

9. Provide the following information for the past three complete fiscal years:

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(in millions)

	Latest Complete Fiscal Year Minus Two Years	Latest Complete Fiscal Year Minus One Year	Latest Complete Fiscal Year
BALANCE SHEET DATA			
a. Cash and Temporary Investments	295.2	370.7	356.8
b. Accounts Receivable (beginning of year)			
c. Accounts Receivable (end of year)	92.6	(25.5)	(28.3)
d. Average Account Receivable for the Year (calculated)			
e. Inventory (beginning of year)			
f. Inventory (end of year)			
g. Average Inventory for the Year (calculated)			
h. Current Assets	1244.6	1462.2	
i. Current Liabilities	1433.5	1600	
j. Total Liabilities	6351.2	6714.5	
k. Total Stockholders' Equity (beginning of year)			
l. Total Stockholders' Equity (end of year)	5139	5992.3	
m. Average Stockholders' Equity during the year (calculated)			
INCOME STATEMENT DATA			
a. Net Sales	2556.7	2628.8	2659.8
b. Cost of Goods Sold (COGS)			
c. Gross Profit (Net Sales minus COGS) (calculated)			
d. Interest Expense for the Year			
e. Net Income after Tax			
f. Earnings for the Year before Interest & Income Tax Expense			
STATEMENT OF CASH FLOWS			
a. Cash Flow provided by Operating Activities	646.6	744.2	509.3
b. Capital Expenditures (property, plant, equipment)	289.1	242.5	202.9