



SALES DOCUMENTATION

Binding Integration: ABLE, LARS, LINCPlus

Ex Libris

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1. BACKGROUND

This document presents the history of Ex Libris' involvement with three systems—ABLE, LARS, and LINCPlus—and information on how to integrate them into ALEPH 500.

A separate, technical document from the ALEPH 500 Version 16 Web Guide is appended at the end detailing what is required to implement External Binding Integration with ALEPH 500.

Binding software comes in two parts: one for the library and the other for the bindery. The bindery part is run in the actual binding factory, with input from the library part of the program. We will deal here only with the library code, not that of the bindery.

Libraries on version 14.2+ should be able to use one program or the other. (See Appendix 2.)

Both ABLE and LARS/LINCPlus have the following minimum requirements on the ALEPH server:

- The binding license needs to be activated
- Several environmental variables need to be added to ALEPH. These will vary depending on how the library wants the systems to interact.

Detailed information can be found in Appendix 1, which is taken from the ALEPH 500 Version 16 Web Guide.

1A. INFORMATION FROM THE EX LIBRIS ALEPH 500 WEB PAGE ON BINDING

Ex Libris ALEPH 500 system supports the two major external binding systems in use today: ABLE™ and LARS. Support for LARS is via LINCPlus from SF-Systems.

Developments in ABLE and LINCPlus enable both to read and write files to the other, so that, on the library-side of the equation, ABLE can read and write files compatible with LARS systems.

Both systems allow the library binding operator to capture data from the ALEPH system by means of wanding the item-level barcode and immediately importing the relevant data (e.g., author, title, call number, description, barcode) into the target binding system (i.e., ABLE or LINCPlus/LARS). Following the review and optional editing of the extracted data, the information is saved in the binding module. Institutions have the option of registering the titles as out and indicating their due-date within ALEPH. Upon return of the binding lot, both systems support batch check-in of the binding lot.

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The article at the end from the ACME web site has been edited to exclude the reference to III.

For more information on ABLE™:

<http://www.icibinding.com/bindingautomation/able-aag.htm>

<http://www.acmebook.com/629>

<http://www.acmebook.com/forms/Filer/filetree/helpdocs/libraryuserguide.pdf>

For more information on LARS:

<http://www.icibinding.com/bindingautomation/lars-aag.htm>

For more information on LINCPlus:

<http://www.sf-systems.com/>

<http://www.icibinding.com/bindingautomation/lincplus-aag.htm>

2. ABLE

The ABLE system is the property of ABLE Ventures, LLC, a partnership of binders; Programming Concepts, Inc., the software company responsible for the software itself; and Mekatronics, Inc., a major manufacturer of binding machinery. Not all of the binderies using ABLE are actually members of the partnership, but most are. (Heckman is one that is not.) At least one of the binderies, ICI (which owns a number of bindery plants) supports both ABLE and LARS. While Heckman has recently begun to offer ABLE, they are still largely in the LARS camp and have once again made clear their corporate preference for LARS (with LINCPlus as the LARS front-end for the libraries).

We connect to ABLE via Z39.50 (Z-link). The mapping of fields takes place within ABLE. MIT has done this already for their purposes.

We anticipate that MIT and Harvard will go live with ALEPH/ABLE this fall as the first production customers of the joint product.

2A. ABLE PARTNERS AND LICENSEES

The following are the ABLE partners and licensees:

- **Acme Bookbinding** (Massachusetts)
- **ICIBinding Corporation**
 - Binding Unlimited (Michigan)
 - Crawford Bindery (Ohio)

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- General Bookbinding Co. (Ohio)
- Hawaii Library Bindery (Hawaii)
- Library Bindery Co. of PA (Pennsylvania)
- Mid Atlantic Bookbindery (Virginia)
- Northwest Library Bindery (Washington)
- Southeast Library Bindery (North Carolina)
- **Kater-Crafts Bookbinders** (California)
- **Lehmann Bookbinding, Ltd.** (Canada)
- **National Library Binding Co. of Georgia** (Georgia)
- **Ocker & Trapp Library Bindery Inc.** (New Jersey)
- **Heckman Bindery, Inc.** (Licensee) (Indiana)
- **Houchen Bindery Ltd.** (Licensee)
 - Houchen Bindery (Nebraska)
 - Everett's Bindery (Missouri)
 - University Bindery (Louisiana)
- **Mekatronics, Inc.** (Bindery Equipment Manufacturer) (New York)
- **Programming Concept, Inc.** (Software Developer) (New York)

2B. ABLE PRICING

Financially, among the ABLE binderies at least ACME plans to charge its libraries an additional ABLE fee beyond the cost of the ALEPH/ABLE software itself. Other binderies offering ALEPH/ABLE may or may not do the same. This is from ACME's quotation to Harvard:

[Basic cost is \$7500 plus 15% annual maintenance; the income is split between the ABLE partnership and Ex Libris; the latter is not mentioned in Paul's paragraph below]:

\$7500 for the Ex Libris license plus support payable to Ex Libris. \$2000 for the first ABLE license and \$500 for each additional license equals \$7000 for 11 HCL libraries payable to ABLE Ventures LLC. There will be a \$500 per license support charge per year from ABLE. This includes bug fixes, problem solving and upgrades due to product evolution. This fee is subject to change. For the 11 accounts you mention the support fee is \$5500 per year. Support is included in year #1 and mandatory in following years.

During the last two years, ABLE has undergone a major rewrite and is now available as version 6.6 (<http://www.acmebook.com/629>). The ABLE library manual is available at <http://www.acmebook.com/forms/Filer/filetree/helpdocs/libraryuserguide.pdf> if you care to consult it (80 pages). (It is labeled 'Volume 2' to distinguish it from the manual used in the bindery itself.)

From Paul Parisi, President of Acme Bookbinding and General Manager of the ABLE Partnership, March 30 2003:

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ABLE has a new release coming out next week with enhanced Z-link functionality (Z39.50 support). We then will handle some bug fixes and move onto the enhancements project that was just funded--which includes the Ex Libris project. I imagine that this will have a pretty quick turn-around and you are near the top of the list.

I am anxious to begin placing the interface at libraries so that we can both get some mileage from this. The Ex Libris binding interface is the only two-way, barcode driven, full featured (monograph and serial) interface that I am aware of.

2C. ABLE DEVELOPMENT

Of the two systems, ABLE and LARS, ABLE is clearly the better supported. (See below.) ABLE claims that the libraries that use ABLE account for 75% of the library binding market. (The figure is flexible, since Heckman is actually the largest single library binder in North America, but its production is really more LARS than ABLE.) Nevertheless, it is clear that ABLE is a viable product that has regular maintenance and support.

It is worth noting that ABLE can both read and write LARS files. LARS ability in this regard is unclear, but LINCPlus claims that it can go both ways (LARS and ABLE) as well.

ABLE runs entirely via a Web interface. There is nonetheless software that must be downloaded and configured on the library PCs used to access ABLE, as well as some setup, principally mapping of ALEPH fields to Z39.50 fields for the ABLE program to be able to pull and massage the incoming data efficiently. The server can be hosted locally or by remote (at the bindery).

Paul Parisi is very involved in ABLE development. Parisi's bindery, ACME, is a large and very well respected binder for the New England region. Their web-site is worth consulting: <http://www.acmebook.com/> The July 8 2003 issue of the Web newsletter features the topic: "Binding Preparation—Swipe a Barcode and You're Done" (article appended).

He notes in his article:

Major binderies have adopted the ABLE™ solution for several reasons. ABLE™ is proven—over 18 years. ABLE™ is supported by a mature software developer (over 25 years in business) with a broad base of clients in many markets and a deep staff of programmers. ABLE™ is browser-based, a true Internet application, that requires no local support or installed software. Binders are moving their library accounts over to ABLE™ for these reasons and because of the interface opportunity that ABLE™ offers. ABLE™ has achieved the critical mass needed to allow ILS vendors to trust this solution—it works for every library.

Parisi has also been active in NISO binding standards development, and ABLE complies with this standard.

2D. LIBRARIES HELD IN COMMON BY ALEPH AND ABLE

ACME:

- Harvard
- MIT
- Boston College
- Brandeis
- Hebrew College

ICIBinding:

ICIBinding is a holding company that owns a number of separate binding plants across the country. Some of their customers are ours as well and at least one (UTK) has bought a binding module from Ex Libris.

- CUNY: Graduate Center, Brooklyn College, Queens College
- SUNY: Brockport, Cortland, Health Science
- University of Delaware
- Library of Virginia
- University of Tennessee – Knoxville
- University of Maryland / Law Library

ABLE™ documentation and sample screenshots are available in a separate document, “ABLE™ for Sales”.

3. LARS

LARS is the other heavyweight of the binding industry. The code was written by Hank Racette. Several of the larger binderies have the source code—Heckman and ICIBinding among them—but they do little with it. Racette relocated to the Southwest 2 years ago and is largely incommunicado. Bridgeport National Bindery contracted with him to write extensions to the LARS code to work with ALEPH but he has never delivered. We do not have a direct interface with ALEPH but only via LINCPlus, for which they developed a DLL (software code). LINCPlus uses this DLL rather than Z39.50 to link.

Hank Racette
Arden Lake Technologies, Inc.
<http://www.ardenlake.com>

Heckman, which is the largest single library binder in the US, has been the primary bindery with whom we have been dealing in terms of joint testing. They have, however, been back and forth

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on the question of support or extension of support for LARS, LARS/LINCPlus, or ABLE. Most recently they have been in contact with ICIBinding and have committed to LARS/LINCPlus.

We are awaiting a date for an installation involving LINCPlus at the University of Maryland in late August, 2003.

3A. LIBRARIES HELD IN COMMON BY ALEPH AND LARS

Heckman:

- PALNI libraries
- Notre Dame
- University of Iowa
- Texas Tech University
- University of Maryland (College Park)

ICIBinding:

- University of Michigan
- University of Florida

4. LINCPlus

SF-Systems is a small (4 person) software company that has a tie with a bindery in Smith Falls, Ontario (hence the **SF**-Systems) that has written a standalone program for library binding. Ex Libris has a memorandum of understanding with them about our offering it as an ALEPH 500 binding module. (ABLE would like to have the same understanding, but we are constrained to deal with both for now.) They have an agreement in place with SIRSI. LINCPlus is being used in a number of places, mostly in a completely standalone fashion without ILS-integration.

LINCPlus requires a Windows-client to be installed on the machines that connect with ALEPH.

We have a substantial number of LARS libraries as ALEPH customers and this is one means of offering them a binding interface and binding software that integrates with their existing systems. It can be used as a standalone even if the library does not have a binder with an automated solution.

They have tutorials and documentation available, and we have basic sales information that they have prepared. I have also included their training documentation for easy reference.

An important point to note is NISO compliance. LINCPlus reports:

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“Regarding the NISO set of binding elements, this standard isn't being used to any extent in the binding community to date, however LINCPlus does support all binding elements and in the future we can have LINCPlus create files (required by binders) in formats as needed. LINCPlus actually supports more elements specific to binding than contained within the NISO standard.”

LINCPlus documentation and sample screenshots are available in a separate document, “LINCPlus for Sales”.

4A. LINCPlus’ (OWN) SALES TIPS TO ILS VENDORS

Sales Tips for LINCPlus

No doubt you’ll come across this question: Why use LINCPlus? Here are some reasons to help you answer that question:

- ✓ LINCPlus was developed using feedback from two of North America’s largest binderies: Heckman and ICI Binding
- ✓ LINCPlus was designed with the objective of reducing re-keying of publication data during the binding preparation process
- ✓ Fully integrated version will offer ‘check-in’ and ‘check-out’ features accessed by LINCPlus with the use of a bar code
- ✓ Shipped with ‘text-capturing’ capability, to be upgraded at no charge to the fully-integrated (NCIP) version
- ✓ LINCPlus data files contain ALL the data required by modern library bookbinders
- ✓ Any library bookbinder will be able to use LINCPlus data – our LINCPlus Converter currently converts LINCPlus job files into LARS lot/ttx files at the bindery and the ABLE Converter will be available in 2003
- ✓ In 2003, the LINCPlus Companion will allow bookbinders to create update files for ANY LINCPlus library. This update file will contain relevant bindery specific data required by the library such as binding types, instructions, layout codes used, material colours, foil types, etc.
- ✓ LINCPlus is now being adopted by leading ILS vendors (Sirsi, Ex Libris, epixtech)

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- ✓ Future enhancements to LINCPlus will include a scripting editor, periodical collapsing initiator and versions in other languages
- ✓ Dramatic time savings at the library when preparing publications for binding. Increased accuracy allows libraries to assign less experienced users to binding preparation tasks
- ✓ Binders are supporting ILS vendor efforts to sell LINCPlus to libraries.

SF-Systems staff will always be available to answer additional questions you may have, even while with a customer.

Contact Information: *Telephone:* (613) 283-0110
Email: info@sf-systems.com
Website: www.sf-systems.com

4B. LINCPlus' VIEW OF ILS VENDORS

LINCPlus and ILS Vendors

No doubt you're wondering: Why would we want to sell LINCPlus? Here are some reasons to help you answer that question:

- ✓ LINCPlus is a full-featured binding module developed in cooperation with leading binderies and libraries
- ✓ Extensive web-based training material and support available, both to your customers and to your sales staff
- ✓ LINCPlus is immediately available for your library customers in a 'screen-capturing' version *
- ✓ SF-Systems does all the support for LINCPlus
- ✓ There is NO risk to your company and no development resources are required for the LINCPlus screen-capturing version
- ✓ SF-Systems staff will work with you to enhance the LINCPlus interface to reflect your ILS system
- ✓ A growing number of ILS vendors are adopting LINCPlus as the new standard for binding modules

* Screen-capturing version allows user to retrieve data directly from your ILS screen, making it a non-intrusive form of data access.

Integrated ILS Version

LINCPlus can be directly integrated with your ILS system for consistent data retrieval and publication status update. For example, when you scan a barcode, LINCPlus will access the selected publication and will 'check in' or 'check out' that publication to the bindery. In fact, SF-Systems has already successfully tested a direct integration with one ILS vendor, and is in the process of creating the integration for a second ILS vendor.

Direct integration will translate into dramatic time and cost savings for your customers, making LINCPlus an attractive yet reasonably priced addition to your list of ILS modules.

For more information, contact SF-Systems. Our staff will always be available to answer additional questions you may have or will respond as soon as possible if your request is sent after hours. You can also visit our website for more information on our software and a list of LINCPlus partners.

Contact Information:

Telephone: (613) 283-0110

Email: info@sf-systems.com

Website: www.sf-systems.com

5. ABLE BINDING: SWIPE A BARCODE...

Monday, June 23, 2003



Binding Preparation— Swipe a Barcode, You're Done

Paul Parisi,
Managing Partner, ABLE Ventures, LLC

Swipe the barcode and you are done. It is that easy. First the library swipes the barcode on a monograph, serial, or thesis to bring it onto their binding preparation screen. All information such as title, author, call number, ISSN, ISBN, volume, month, page numbers, and year is imported from the ILS. The book is added to the bindery shipment. Once all the books that will be sent on a shipment have been added, a single keystroke (or mouse click) checks them ALL out of the ILS and sends the necessary detail to the binder's computer. Several weeks later, when the library bound books return, a single mouse click will check them all back in. A dream of library efficiency and patron service has finally come true.

Thanks to the teamwork between ABLE Ventures, LLC, (a partnership of binders, a software company and a machinery manufacturer) and Ex Libris, (a vendor to libraries), this is now a reality. Using the Z39.50 protocol, ABLE™ (a bindery preparation module in use since 1985) pulls the MARC record and associated information from the ILS and extracts the information needed to complete the binding record. Information that remains constant, such as serial binding title, position and layout of lettering on the spine, cover color, print color, and binding style is managed by the ABLE™ software—automatically. Information that changes or is used one time only, such as serial volume, month and year or monograph binding title, author, and call number is imported from the MARC record and its adjuncts. ABLE™ maps the imported data so that it formats exactly as if it had been typed in by hand. All of this is accomplished with the swipe of a single barcode.

When the binding shipment is ready to be sent to the binder, it is “Transferred to Bindery” with a single mouse click and instantly the entire shipment of books is noted as “***Checked Out***” in the ILS at the same time. This action is reversed when the bindery shipment returns and the library selects “Receive from Bindery”—instantly checking the entire shipment back into the ILS via the Internet.

Using the ABLE/Ex Libris binding interface, it is possible to automate binding preparation, to eliminate errors and manual re-keying, and to instantly update the status of an entire binding shipment—all via the Internet.

ABLE Ventures, LLC presently has 17 binderies across the United States and Canada using its software—more than 75% of the market. Better yet, the data created from ABLE™ can be used by virtually **every** library binder in North America, since we can read and write both ABLE™ and Lars formats, the two leading systems in use by library binders. Binders that presently offer the ABLE™ binding preparation software are:

- o [Acme Bookbinding](#) (Massachusetts)
- o **ICIBinding Corporation**
 - Binding Unlimited (Michigan)
 - Crawford Bindery (Ohio)
 - General Bookbinding Company (Ohio)
 - Hawaii Library Bindery (Hawaii)
 - Library Bindery Co of PA (Pennsylvania)
 - Mid Atlantic Bookbindery (Virginia)
 - Northwest Library Bindery (Washington)
 - Southeast Library Bindery (N. Carolina)
- o **Kater-Crafts Bookbinders** (California)
- o **Lehmann Bookbinding, Ltd.** (Canada)
- o **National Library Binding Co. of Georgia** (Georgia)
- o **Ocker & Trapp Library Bindery Inc.** (New Jersey)
- Heckman Bindery, Inc.** (Licensee) (Indiana)
- Houchen Bindery Ltd.** (Licensee)
 - Houchen Bindery (Nebraska)
 - Everett's Bindery (Louisiana)
 - University Bindery (Missouri)
- o **Mekatronics, Inc. (Equipment Manufacturer)** (New York)
- o **Programming Concept, Inc. (Software)** (New York)

Thousands of libraries across North America send millions of periodicals, monographs, theses and other printed materials to library binders every year. The process of preparing these books for binding has always been labor-intensive, expensive and subject to error. It involved typing information such as title, author, call number, volume, year, months, pages and more from one automated system into another. It also involved manually checking books out to the binder, one by one, and—when the bound books returned—checking them back in to let library patrons know that they were available.

This problem has been discussed at Library Binding Discussion Group meetings at ALA for years. Michael Kaplan, Director of Product Management at Ex Libris USA, Inc., came forward after one of these meetings and offered to work with us. Shortly thereafter, a binding interface was a reality.

The Library Binders share, with our library clients, the dream that every ILS vendor will allow us to interface the ABLE™ binding module with their system. ABLE™ was the first PC-based binding module released in 1985. It was the first browser-based system released in 2000. It was the first binding preparation program to write a seamless barcode driven interface that totally automates binding preparation for libraries. The ABLE™ Binding Interface will work for virtually **every library** in North America, no matter which library binder they use, but it works much better and with two-way exchange if the ILS vendor works with us.

The time has come for all libraries and library binders to work together to support the shared vision of binding preparation that is as efficient and easy as it should be. The ILS vendors have everything to gain by supporting their clients—the libraries. Greater efficiency makes their product more attractive. Waste of resources and delay in implementing labor-saving systems hurts every player that is competing for limited resources in a challenging economic time.

What is the future of the book? Is it destined to be a relic in a museum? What is the future of the research library? Will Google replace libraries? I don't think that is a likely outcome. The book as a preservation tool for the written word and the library as custodian for the collective intellectual/artistic work of mankind are a proven combination.

I propose that all library binders, preservation librarians and automated systems vendors work together to make the ABLE™ Binding Interface a reality for all. We have demonstrated that this is not a complicated or expensive task, it merely is one that needs to be pushed to the head of wish list items.

Major binderies have adopted the ABLE™ solution for several reasons. ABLE™ has proven itself over 18 years. ABLE™ is supported by a mature software developer (in business more than 25 years) with a broad base of clients in many markets and a deep staff of programmers. ABLE™ is browser-based, a true Internet application, that requires no local support or installed software. Binders are moving their library accounts over to ABLE™ for these reasons and because of the interface opportunity that ABLE™ offers. ABLE™ has achieved the critical mass needed to allow ILS vendors to trust this solution—it works for every library. ABLE™ can use existing tools to achieve the same interface simplicity for **your** ILS system that is currently working for Ex Libris and Innovative Interfaces.

Anyone interested in improving the efficiency of their library binding program should contact the office of the Library Binding Institute. We need your help.

APPENDIX 1 Using External Binding Software with ALEPH 500 (from ALEPH 500 Version 16 Web Guide)

USING EXTERNAL BINDING SOFTWARE WITH ALEPH 500

The external binding preparation software packages ABLE™ and LINCPlus can be used with ALEPH 500. This requires Ex Libris licensing (it is not included in the standard ALEPH 500 software package).

1. Create volumes for binding, as explained above.
2. The item barcode is read into the external software.
3. The interface can include exporting data from ALEPH through Z39.50; check-out of material, change process status and check-in.
4. Check-out: When an item is sent to a bindery, it is checked out of ALEPH in one of two ways:
 - Set the item's process status to a status that reflects that it was sent to binding. This is activated by defining the following variable in the `pc_server_default` file:

```
setenv ext_bind_process_status          SB
```

- Loan the item to the binder with the due date for the loan set to the expected arrival date of the bound item back in the library. This is activated by defining the following variable in the `pc_server_default` file:

```
setenv ext_perform_loan                 Y
```

The binder is a patron whose Patron ID is <binder name>.

5. Check in: When an item is received from a bindery, it is checked into ALEPH in one of two ways that correspond to the check-out process:
 - Reset the item's process status to the original status that existed before it was changed to sent to binding.
 - Return the item that was loaned to the binder.

Able™ uses a Z39.50 port and LINCPlus uses the pc_server port. The following special setup in pc_server_defaults is required to provide bibliographic information for LINCPlus. This setup is used to define up to 3 tags from the bibliographic record:

```
setenv ext_bind_ref_no_1          LCNum,010,a
setenv ext_bind_ref_no_2          ISBN,020,a
setenv ext_bind_ref_no_3          ISSN,022,a
```

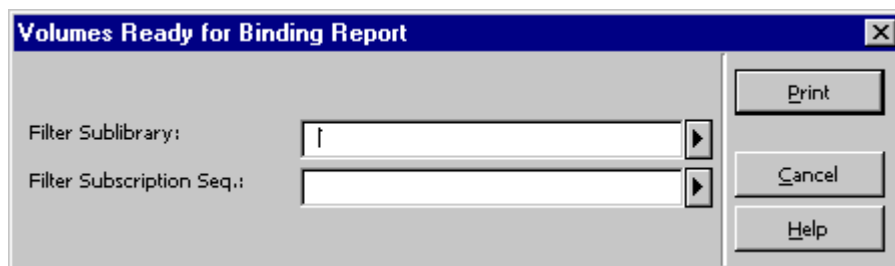
COMPLETED VOLUME REPORT

You can view or print a report for a given title, listing volumes which have all their issues checked in. This can be useful for the binding preparation process.

This report can include volumes with issues that have not arrived, according to a parameter set up in [pc_server_defaults](#) by the System Librarian. That parameter defines a maximum number of days for issues to arrive following their Expected Date of Arrival (EDA), after which the volume containing them is considered complete despite their unavailability in the library, and appears in the report.

To print the report, open the record in the Items function, and click the Completed Volumes button on the Items List tab in the upper pane.

The Volumes Ready for Binding Report window is displayed, where you can filter the data by sublibrary and by subscription (copy) sequence.



Click Print to print or view the report.

APPENDIX 2: EXTERNAL BINDING INTEGRATION

EXTERNAL BINDING INTEGRATION (RELEASES 14.2 AND HIGHER) BY
ASAF KLINE

General

The purpose of this document is to outline the interface between ALEPH and external binding applications. The interface is made up of two parts:

1. Retrieval of bibliographic information via Z39.50
2. Use of an API function for updating ALEPH when an item is sent to a bindery and when it is received back from the bindery. Refer to the *API Overview* document for more information on the structure of ALEPH API functions.

Bibliographic Information Retrieval

External binding applications can use an items barcode to retrieve bibliographic information from ALEPH's z39.50 server. By default this index is set as attribute 5555.

Embedded holdings information is an option and can be used to retrieve item specific information from the bibliographic record.

API Function

ALEPH offers the ability to connect to its application via an API function. This function is accessible via a toolkit that can be provided by Ex Libris. This toolkit is written in C++ and includes compression routines, communication routines and a basic test program.

The API function is made up of two "actions" that equate to the two directions of delivery that an item usually takes when bound.

CHECK-OUT: When an item is sent to a bindery, it is checked-out of ALEPH. This can take various forms.

1. The item's process status can be set to one that will reflect that it is "sent to bindery". This is activated by defining a variable in the `pc_server_default` file

```
setenv ext_bind_process_status          SB
```

2. The item can be loaned out to a “system” user with the due date for the loan set to the expected arrival date of the bound item back in the library. This is activated by defining a variable in the pc_server_default file

```
setenv ext_perform_loan                 Y
```

CHECK-IN: When an item is received from a bindery, it is checked in in ALEPH. This corresponds to the two forms above:

1. The item’s process status will be reset to the original one that existed before it was changed to “sent to bindery”.
2. The item loaned out to the “system” user will be returned.

Function Definition

```
/* CPP Header File "c1601_cpp.h" */  
  
#include "znn_comm.h"  
  
#include <string.h>  
  
#define C1601_LENGTH 847  
  
class c1601 : public znn_common{  
  
public:  
  
    c1601(){init();}  
    c1601(c1601 *znn){memcpy(this,(char *)znn,sizeof(c1601));}  
    virtual ~c1601(){}  
    void                                init(){memset(remote,'  
' ,C1601_LENGTH);cob_2_c();c_2_cob();strcpy(c1601_service,"C1601");}  
    void c_2_cob();  
    void cob_2_c();  
  
    char    c1601_service[10+1];  
    char    c1601_action[10+1];  
    char    c1601_library[5+1];  
    char    c1601_con_lng[3+1];  
    char    c1601_user_name[10+1];  
    char    c1601_user_password[10+1];  
    long    c1601_error_code;  
    long    c1601_error_control_id;  
    char    c1601_error_alpha[1+1];  
    char    c1601_error_text[200+1];  
    char    c1601_barcode[15+1];  
    long    c1601_doc_number;  
    long    c1601_item_sequence;  
    char    c1601_binder[10+1];  
    char    c1601_account_number[10+1];  
    char    c1601_department[10+1];  
    char    c1601_lot_number[10+1];  
    long    c1601_expected_arrival_date;
```

```

long    c1601_item_number;
double  c1601_item_cost;
char    c1601_field_1[100+1];
char    c1601_field_2[100+1];
char    c1601_field_3[100+1];
char    c1601_field_4[100+1];
char    c1601_field_5[100+1];

char remote[C1601_LENGTH];
};

```

ACTION: CHECKOUT

Input: Item Barcode
 Binder Name
 Account Number
 Department
 Lot Number
 Expected Arrival Date
 Item Number (in Lot)

Output: System number + Item sequence (Internal item key)

ACTION: CHECKIN

Input: Item Barcode
 Binder Name
 Account Number
 Department
 Lot Number
 Item Number (in Lot)
 Item Cost

Output: System number + Item sequence (Internal item key)

Possible Error Codes:

- 0021 Unable to find item.
- 0022 Unable to find global user information.
- 0023 Unable to find local user information.
- 0024 Item already on loan.

- 0025 Unable to delete loan.
- 0026 Unable to update item.
- 0027 Item not on loan.
- 0028 Unable to restore original item.

- 0041 Item is on hold.

ADDITION: A Rep Change is required for 15.2 sites:

rep_change #001107

Description: External Bind service - 1602 - Downgrade from 16.

This service is needed for LincPlus Item information retrieval

By: Omri (Asaf fr #716)

Module: Ext Bind

Bug Fix (Y/N): N

Rep Change (version,#):

PRB number:

Unix files:

./alephm/source/copy/C1602

./alephm/source/copy/pc_bind_c1602.cbl

./alephe/error_eng/pc_bind_c1602

PC files:

Actions:

apm

make_copy_files c1602

compile_cc pc_record_display c1602_c

crate_pc_record_display

iprou pc_bind pc_bind_c1602

Actions(General):

Customer:

Date: 2003-07-06 23:41:12