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Abstract

OCLC's ILL PRISM Transfer (IPT) is a method for transferring the data from an electronic interlibrary loan form to OCLC's ILL Review File. This article explains the IPT process and Olivet Nazarene University's IPT program development using HTML forms, C programming, and OCLC formatting. The authors provide their IPT development as freeware to the Internet and library communities.

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Introduction

Database search engines used in libraries should all have either a document delivery method or an interlibrary loan module — or perhaps both. With many electronic periodical databases now including holdings modules, searchers know immediately whether the library owns the journal and issue, since holdings information in or around the citation tells them whether or not the library owns the source needed. If the library does not own it, there should be a way

integrated in the database search mechanism to order the item from another source — certainly from another library.

For those libraries using OCLC for their interlibrary loan processes, there is a way to connect the ILL process with the search process and do it electronically, even if the database search engine does not have an ILL module. That process is called "ILL PRISM Transfer." Developed by OCLC and Colorado State University,[i] it is an ILL electronic transfer method that is likely to grow and flourish, especially as search engine programmers see the light and add ILL modules, and eventually, ILL IPT modules, to their commercial products like OCLC has done to their FirstSearch product.[ii]

ILL Forms

Traditionally, the ILL process starts with the library patron filling out a paper form. Paper forms work well because they are inexpensive, easily created, portable, and many people can use them at the same time. Paper forms are not good for ILL staff, however, because they have to retype them, and handwriting is not always legible, which makes it even more difficult.

Some larger universities create proprietary electronic forms in which the data is sent electronically to the ILL department. Usually, this method is available only on campus and is expensive to develop. But the patron does the typing, which brings some efficiencies to the process, although in some cases, depending on how the program is written, the ILL department staff still has to retype it.

Using HTML forms developed to be published on the World Wide Web adds some additional benefits. Smaller institutions can develop these forms because they are easier to

program and therefore cost less.   Because of the growing ubiquity of Internet-connected computers, it is imperative to develop ILL processes that fit in with this new trend.   After all, more research is being done at a distance, in the dorm, at home, etc., and processes for obtaining the needed research material must keep up.

Electronic forms also have the benefit of forcing patrons to fill out key fields.   They can also force numerics to be filled in instead of alphas, important when you want a date instead of "ASAP."

Being able to connect the form to the rest of the ILL process via OCLC is a particularly great benefit.   IPT development does take more serious programming of the sort most librarians probably will not be able to accomplish.   Development may take up to several weeks, depending on how familiar the programmer is with the demands of the task.   But the information in this article should cut down on the development time, if the developing institution uses a UNIX host as its Internet server.

Web Form Development

Many non-technical people today are adding pages to the World Wide Web which means they are programming in HTML.   Programming forms on the Web is one of the more advanced HTML techniques, but it can be done with a little study.   Readily available HTML editors can also help with the process by automating form creation and/or speeding up code selection.

Certain fields in the form should be required: patron information (name, phone number, and perhaps, address, status), citation of the material wanted, need-before date (or "kill date") requiring numerics, etc.   Other OCLC desired fields can be included, also, like identification of

material as a dissertation, ERIC document, a proceeding and the like.

Fields in the form should be laid out on the page in a professional way. Field names should be clear, like items should be grouped together, and progress through the form should be logical. Forms placed in tables work well; they look integrated and organized.

Most if not all Web forms must have a cgi program running in the background to accept and process the form data. It is this program which controls the way in which required fields get processed or the way formatted data gets checked.

The ONU Solution: ONU-ILL

IPT has five steps: 1) An electronic form; 2) a file format converter that changes the data into the FirstSearch/ILL format; 3) an ftp transport component; 4) the establishment of an OCLC ftp account and payment of its annual fee; and 5) the processing of OCLC Review File requests. The first three of these requirements must be programmed by the local institution, which makes it difficult for many libraries to institute IPT. Olivet Nazarene University has developed a program, "ONU-ILL" (written in capitals), that develops the full IPT process. ONU-ILL (in caps) has three parts: 1) two web forms, book and periodical; 2) a processing module called "onu-ill" (lower case); and 3) a submission module called "onu-illsend."

Libraries should be able to shorten their institutions' development time of IPT significantly by using ONU's programming as a model or template for their own development. Olivet Nazarene University has made ONU-ILL freely available on the World Wide Web at Olivet's library home page: http://www.olivet.edu/Departments/Library.

The Web Forms

The ONU ILL Web forms were created in tables to conform with most of Olivet's other Web pages. To group the forms logically, they were divided into three main areas: Requester Information, Item Information, and Other Information. A number of interesting points can be made about why particular parts of the forms were created the way they were.

Requesters are asked their status by having them click on a radio button. Faculty, staff, undergrad, and grad are valid options, but "other" is not. If "other" is selected, the form will process normally, but will be stopped by ILL staff. If the cgi program had been programmed to reject forms that had "other" selected, it is likely the requester would just change the status to another (inaccurate) selection. ILL staff can also get hints about invalid requests from the mailing address field.

The copyright warning on the ILL periodical form must also be actively checked "Yes, I will comply" for the form to be processed.

The required field, "I have checked that Benner Library does not have this item," defaults to "No," so the requester must actively select "Yes." A "No" response will not process. A hypertext link is provided in the ILL book form to the library's online catalog BLIS so the requester can check immediately and answer a truthful "Yes." Another hypertext link is provided in the ILL periodical form to Benner Library's periodical holdings list, which is published in Olivet's library Web pages.

There is an option to enter ERIC document numbers in the dissertation/thesis field. "Conference proceedings" is also an option.

Three fields ask for source information, "Where I found this information," "If a print

source, include page and year," and "If a database, include search keywords." This source data gets sent to the OCLC :verified: field as of Version 2.01 of the ONU-ILL program.

Olivet does not charge its patrons for routine requests, but it does have a minimum charge for rush requests. The form defaults to "routine request," so "rush request" must be actively checked. An amount the requester is willing to pay must also be checked.

The "kill date" (need-before date) is confusing to patrons so this field includes quite a bit of (not-so-well-worded) explanation. The field requires numerics in the form **yyyymmdd** to force a date (well, a number of some kind), and will reject alphas like the infamous "ASAP."

The ONU-ILL program as written makes six to nine fields required, depending on the form. Only one character will make most of these required fields process, so avoiding processing requests with invalid or obviously inaccurate fields is not possible. Further, more-in-depth error checking could be programmed, but even then, all eventualities cannot be covered. ILL staff can weed such requests. Other libraries may choose to include more required fields or error checking than did Olivet. Each site will have to balance the amount of error they will tolerate with the additional development time it takes to eliminate it.

How the ONU-ILL Program Works

After the library patron completes the ILL Web form and clicks on "Submit Query," the HTML source code invokes a CGI processing module called "onu-ill." This program has four parts: it calls Un-Cgi, checks for missing required data, writes the record in ASN/BER format, and asks for verification.

Un-Cgi[iii] is a freeware front-end program for processing Web forms on UNIX computer

systems.   Without Un-Cgi, a programmer would need to write a set of routines to translate the values of the HTML form's fields into environment variables appropriate for UNIX programming. Un-Cgi does this process automatically, so there's no need to re-write what's already been done.

The onu-ill processing module then checks variables against what is required, missing data, etc.   If data is missing or invalid, a "Missing Information" page displays and points out which fields have been inadequately filled out.   After missing and invalid information is corrected, a correctly filled-out form calls an OCLC program, "build_ill_asn," to build the data structure in the ASN/BER format that OCLC requires.   The onu-ill program writes the data in the new structure in a /tmp directory where it waits for verification via a "Please Verify Your Information" page that displays to the patron.

After the patron doublechecks for accuracy and makes any further changes as needed, the request is finally sent.   A "Request Sent!" page then displays, thanking the patron for the ILL request and offering links back to either ILL form, to the library home page, or to the institution home page.

At that point, the ONU-ILL submission module, "onu-illsend" has submitted the ILL request to OCLC via Internet File Transfer Protocol (ftp).[iv]   The data ends up in an OCLC ftp account, which the institution has been issued via an OCLC EDX Assessment form application process (and annual fee paid).   OCLC then processes the data in your ftp account hourly during the day and once at night, and the data ends up as OCLC-formatted requests in your ILL Review File.

Programming Issues

In programming the IPT process, there are a number of issues that will need to be answered by the programmer. The big questions that occurred during the ONU-ILL development are as follows.

1. OCLC's specialized ASN/BER file format requirements are likely to be foreign to most computer programmers. Unknown factors usually mean there is a learning curve ahead, and unless the systems librarian can demonstrate what the programming chunks are and that they are digestible, programmers may want to put the development off. OCLC has written ILL PRISM Transfer ASN/BER utilities specifically designed to be used by local developers of IPT. Fortunately, programmers do not need to understand the cryptic ASN/BER file format required for IPT. All they have to do is write the local application code that passes the web form data to OCLC's build_ill_asn function, which assembles the data into the format OCLC needs.

2. A temporary file needs to be created before the IPT program passes the HTML form data to the verification process. A file must exist on the system in order for file transfer protocol to send it to OCLC.

This imperative results in a programming difficulty. If user A fills out a request form and sends the data for verification, the record is written to the /tmp directory. If user B's request form data gets written to the /tmp directory before user A submits the final verified request, user B's data would overwrite user A's data if it had the same file name. Timing becomes an issue, then, because the temporary file could be overwritten if a generic, hard-coded filename were used, the usual programming method in less complicated situations. ONU's solution was to use the CGI variable REMOTE_ADDR and base the changing file name on the IP address of the requesting workstation, which is unique and identifies the request point of origin.

3.   Another challenge was how to get the submission module program to automate the ftp process.   Setting up automatic ftp sessions is not something programmers do every day. According to UNIX's man pages, a dot file called ".netrc" can be used to designate a specific machine address and corresponding login ID and password.   It also allows for batch processing of ftp commands required during site-specific ftp sessions.   If the .netrc file is configured in the home directory of the user that owns the web daemon, then it will allow the establishment of an ftp process that automatically logs into other computer hosts using a specific ID and password and execute remote ftp commands.   (Security matter: the .netrc file will not work if read, write, or execute permissions for Group or Other are turned on.)

The filename in the /tmp directory must be unique but must also change from patron to patron.   The changing filename is made possible by the REMOTE_ADDR CGI variable based on the IP address of a patron's workstation, a solution to the problem noted above. The .netrc file cannot be hardcoded because this variable filename must be used in the ftp session, making automation tricky.   Solution: create a new .netrc file automatically every time a request is made so that the changing /tmp filename can be inserted into the .netrc, making the submission valid for every request.

Processing the OCLC Review File

Before IPT, ILL departments accessed the OCLC Message File (under Pending) to find ILL requests from lenders, but requests for borrowing from their own patrons had to be typed in from the above-mentioned paper forms.   With IPT, using OCLC's Passport software, local borrowing requests can be viewed in the Message File (under Review) and searched.   At the home

position, type **rv:;1** <F11> (a stacked command) and the first Review File will display. Alternately, <F6> may be pressed to view the Message File to determine whether there are any Review File entries. If there are, enter **1** <F11> to view the Review File entry numbers and **1** <F11> again at the home position to view the first Review File record.

To search the title being requested, the file must be moved to the copy display by entering **mrd** <F11>. Once the workform is in the copy display (C at the top of the screen), search the OLUC for the best bib record and holdings, which will show in the Main Display (small c at the top of the screen). Determine lenders, toggle back to the copy display, enter the lender string, and edit other fields as needed. Better yet, stack commands: **tog; :le:abc,def,ghi,jkl,mno** <F11>, which toggles you back to the copy display and adds the lender string all at once. Produce the request, **p** <F11>, and make a note of the new ILL number.

Review File Processing Problems

The Review File has a number of shortcomings, and working in it is not easy. Data in Review File fields do not transfer from the copy display to the main display. This leaves ILL personnel with the option of either having to fix inaccurate citation information in the Review File copy display or having to retype patron information in the main display. There should be a way to overlay the official OCLC record for the item requested on the Review File record so accurate citations can be married to local patron information. Also, the OCLC record number could then appear in its own field instead of having to be typed in the :verified: field or a notes field.

The Review File has been used for a number of years for internal purposes, such as a place to store pending requests after they have been printed for the purpose of making a paper copy to

search the shelves.   Now with external (IPT) requests mixing in, some sites have noted the confusion this creates in internal workflows.   Creating an additional workfile to separate these two processes would improve the useability of IPT.

An additional problem is that IPT, depending on how it is set up, sometimes sends sensitive information to the Review File that then gets forwarded to the lender.   Patron addresses, phone numbers and credit card numbers are useful locally, but should not be bandied about in universities all over the country.   Perhaps an additional patron field in the Review File that could be hidden from the lender would be useful for OCLC to add.

OCLC is aware of these Review File shortcomings and is working to overcome them.[v]   It is possible that an upgrade fix will already be in place by the time this article sees the light of day.

Summary

With coming improvements to the IPT process, especially to the Review file, and the programming development being provided as freeware by Olivet Nazarene University, many more OCLC-using libraries should be emboldened to move into implementing IPT.   It only makes sense that the ILL request process should eliminate all paper stages by becoming 100 percent electronic.   EDI, Electronic Data Interchange, saves companies millions of dollars a year by making it possible for companies to receive electronic data from other companies through protocols and software that are compatible across platforms, and eliminating the retyping of one company's electronic data into another company's computer.[vi]   Libraries should so benefit, too.

ILL PRISM Transfer as set up by individual libraries may be a temporary stage until database providers include the process within their search engine interfaces.   In fact, a number of

companies, like CARL, Auto-Graphics and ISM's AVISO,[vii] are already moving in this

direction.[viii]   One can only hope that all other database providers will follow, but that day may be

a few years away.   Until then, OCLC's Interlibrary Loan PRISM Transfer is a good, solid,

electronic process to implement.

BIBLIOGRAPHY

1. Evans, Andrew, Neil Matthew and Richard Stones.   Instant UNIX.   Chicago: Wrox Press Ltd, 1995.

2. Frisch, Aeleen.   Essential System Administration: Help for UNIX Administrators. Sebastopol, CA: O'Reilly & Associates, Inc, 1995.

3. Lemay, Laura. Teach Yourself Web Publishing with HTML 3.0 in a Week.   2nd ed. Indianapolis: Sams Publishing, 1996.

4. Oram, Andrew and Steve Talbott.   Managing Projects with make.   Sebastopol, CA: O'Reilly & Associates, Inc, 1991.

5. Oualline, Steve.   Practical C Programming.   2nd ed., Sabastopol, CA: O'Reilly & Associates, Inc, 1993.

NOTES

i.   Jane Smith, "Points of View: ILL PRISM Transfer," OCLC Systems and Services 10 (1994): 34-7.

ii.   Kimber L. Fender, "Patron Initiated Interlibrary Loan Through FirstSearch: the Experience of the Public Library of Cincinnati and Hamilton County," Journal of Interlibrary Loan, Document Delivery & Information Supply 6.1 (1995): 45-8.

iii.   Steven Grimm, "Uncgi," ftp posting, ftp.hyperion.com/pub, also World Wide Web posting, http://www.hyperion.com/~koreth/uncgi.html, 1 July 1996.

iv.   Jim MacDonald, "ILL PRISM Transfer," World Wide Web posting, OCLC's description of IPT, http://www.oclc.org/oclc/man/ill-ape.html, 1 July 1996.

v.   Collette Mak, Resource Sharing Consultant, Product Planning Department, Library Resources Management Division, OCLC,   telephone interview, 26 June 1996.

vi.   Don Tapscott and Art Caston, <u>Paradigm Shift: The New Promise of Information Technology</u> (New York: McGraw-Hill, 1993) 97.

vii.   Patrick Fish, AVISO U.S. Sales Manager, ISM Library Information Services, "Re: OCLC Review File requests," 6 Jun. 1996, online posting, ILL-L@USC.EDU, listserv, 27 June 1996.

viii.   Franca Rosen, Chair, ALA RASD ILL Committee, "OCLC Report (fwd)," 19 June 1996, online posting, ILL-L@USC.EDU, listserv, 27 June 1996.