by *Ralph Lee Scott*

Dynamic Reference Linking

Reference linking is a relatively new concept in librarianship. Some of you may be familiar with the 856 MARC record field, which is a type of static reference linking. For example, in the online public access catalog (OPAC) when you look under the title *National Wildlife*, there is a 856 link in the MARC record that links via a Web browser to the site: www.nwf.org. This works very well as long as the link remains the same. If, however, the National Wildlife Organization changes its name or the URL becomes obsolete, then the MARC record becomes out of date. The aim of dynamic reference linking is to develop a dynamic system to seek out and re-direct the link to the correct location using an open URL reference interface.

Dynamic Reference Linking is sometimes called Context Sensitive Linking, because the linking occurs within the context of your database. For example, if you have an OPAC, NCLIVE, or Web of Science database at your library, Dynamic Reference Linking would attempt to integrate these sources into a seamless interface for your patrons. If a patron located, either through an OPAC or a table-of-contents service, an article that they wanted to view in full text, it would be the task of the Dynamic Reference Linking provider to locate a full-text copy of the article that the library has subscribed to. The source where the article was found is called the "Referrer." The full-text article is called the "Referent," while the Dynamic Reference Linking provider is called the "Resolver." When the Resolver receives a request (the Referent) from a computer, it attempts to use the metadata in the URL of the Referent to locate where the full text can be found. What is important with Dynamic Reference Links (sometimes called a Link Server) is that the journey from the patron to the source is transparent to the user. No matter where your resources are located, they are all cross-linked through the server.

The server can identify not only the request and the source, but also the user category. This type of server allows different levels of access between faculty, students, and community users, thus assuring that licensing agreements are being met in actual day-to-day use. The open URL becomes a sort of hook upon which the request is hung. This hook is sent to the Link Server where it is processed and routed. The Link Server maintains a series of rules in its database by which it determines the routes of requests received. You can enter into the server all of the full-text holdings that you have from NCLIVE. The server would then route requests for full-text articles provided by NCLIVE to the appropriate vendor. Similar in-house digital files can be entered into the server to route the patron to the appropriate file.

Some of the set-up for the Link Server system is on the provider's operational level. You will need, for example, to contact the staff at NCLIVE to have the dynamic links enabled through their server system. This process will have to be also conducted with non-NCLIVE vendors such as the vendor for your library's OPAC and full-text providers such as JSTOR. The actual installation of the SFX software is through a highly scripted Unix software installation, which includes the SFX code as well as needed standard server, database management, and Perl and Java software.

Basically, the SFX program functions as a MySQL database, which holds the list of the referrers and attempts to match the incoming referent with a this list of referrers. The interface of these database files occurs to the user via a drop-down Web menu where one can select a number of options. If you select an author's name, you can choose which databases you would like the search run in. This, of course, has all been previously set up as to which referrers (vendors) and referents (reference sources) are to be used. One can also add services to the Link Server such as document-delivery forms (which will present to the user your ILL request form), OPAC searches (for locally held journals), and an author e-mail address look-up service, which is provided by SFX as a value-added component.

There are a number of continuing operational issues with Dynamic Reference Linking. As library journal holdings change they must be updated in the SFX database. Often vendors change URLs, sometimes without notice. With some consortial agreements, no-cost access to journal articles may be limited to a specific number of articles per year, after which fees will apply. This all has to be tracked and processed by the Link Server. While the value of Dynamic Reference Linking is obvious to patrons and librarians, a good amount of work needs to be done to make the Link Server function as intended. Dynamic Reference Linking promises to be an exciting and challenging task.