Using a Combination Proxy Server / PURL Server for Off-Campus Access to Restricted Databases: A Solution for the University of Iowa

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Like many college and university libraries across the country, the University of Iowa Libraries continues to purchase more and more licenses for web-based resources, most of which are mounted remotely on the publishers' web servers. Though there are many ways for publishers to restrict access to their licensed databases, most have settled on one of four standard means for authentication.

Some publishers issue a single institutional name and password which is required for accessing the site, presumably with the expectation that, somehow, the library will "discreetly" disseminate this single name and password to its potentially 30,000-person user base. Other publishers insist on issuing an individual name and password for each library patron who is authorized to access the site, or use some combination of unique name and password and institutional name and password. This is both an administrative nightmare and a potential violation of the American Library Association's Code of Ethics which protects "each library user's right to privacy and confidentiality." Rarely, but occasionally, publishers entrust the library to institute its own means of authentication. Most of the time, however, publishers simply request a list of valid IP addresses or IP subdomains for authorized access, a solution which is often the easiest for them to implement. While IP-based authorization generally provides convenient on-campus access to licensed databases, the problem occurs with off-campus faculty and students trying to access a restricted database through a commercial Internet Service Provider (ISP).

Many libraries, including the University of Iowa, have implemented a proxy server to address this need. Faculty and students dialing in from off-campus configure their web browsers to use the library's proxy server. When an end user tries to access a remote IP-restricted database, the user is first prompted to authenticate with the proxy server. After authentication, the end user's request for a web page is sent to the proxy server and the proxy server issues the request to the remote resource. Since the proxy server is physically on the campus network, it carries an authorized IP address. Thus, the library assumes the responsibility for authenticating who is and who is not authorized to use the proxy server. At the University of Iowa, this authentication is tied to the library's patron database.
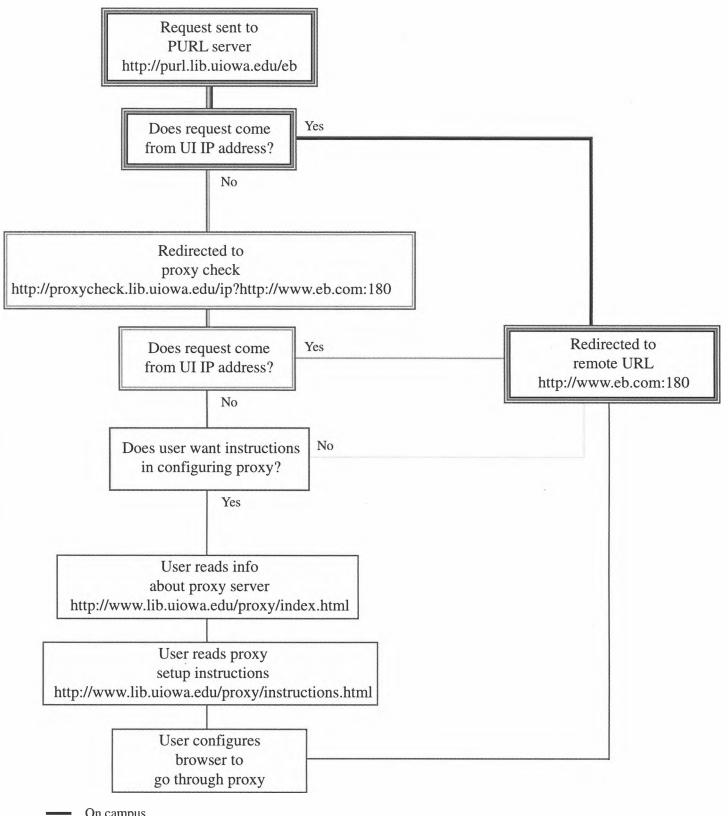
From a technical standpoint, the solution works, and most institutions stop at this point. The problem arises, however, in marketing the proxy server so that faculty and students are aware of its existence and learn how to configure their web browsers to use it. The University of Iowa Libraries has taken an extra step with a PURL (persistent URL) server.

At the time a license for an IP-restricted database is signed, the database is cataloged, the proxy configuration file is updated, and a PURL address is created for the resource. This PURL address, then, is used in all links provided by the library and in any publicity for faculty and students.

Using a PURL address has many advantages, including the ability to update an address in just one location if a URL changes, as well as the ability to gather some usage data on remote resources by logging hits on the PURL server. As far as the proxy server is concerned, however, the PURL server provides a unique way to self-market the proxy server and provide instructions to faculty and staff on configuring their web browsers to use the proxy server at the point of need. Specifically, the PURL server checks to see if the user has a campus IP address. If so, the user is instantly redirected to the remote resource. If not, the PURL server returns a set of instructions on how users can configure their browsers to access the proxy server and then links to the remote database when the configuration is complete.

This solution has enabled thousands of University of Iowa students and faculty to learn about the proxy server with little direct marketing on the part of the library, and users are given the instructions at the point of need just in time. This presentation will discuss the technical aspects of how the proxy and PURL servers work together and describe the workflow in place to maintain the data on both.

University of Iowa Libraries
Libraries-Wide Information System
Proxy/PURL Server Configuration

Request sent to
PURL server
http://purl.lib.uiowa.edu/eb

Does request come
from UI IP address? — Yes

No

Redirected to
proxy check
http://proxycheck.lib.uiowa.edu/ip?http://www.eb.com:180

Does request come
from UI IP address? — Yes

No

Redirected to
remote URL
http://www.eb.com:180

Does user want instructions
in configuring proxy? — No

Yes

User reads info
about proxy server
http://www.lib.uiowa.edu/proxy/index.html

User reads proxy
setup instructions
http://www.lib.uiowa.edu/proxy/instructions.html

User configures
browser to
go through proxy

On campus

Off campus / UI affiliated; proxy server set up and already authenticated

Off campus / UI affiliated; proxy server set up but not yet authenticated this session

Off campus / Not UI

Off campus / UI affiliated; proxy not configured on client's end

ps 7/22/98

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Libraries-Wide Information System
Proxy/PURL Server Configuration

Request sent to
PURL server
http://purl.lib.uiowa.edu/eb

Does request come
from UI IP address?

Yes

No

Redirected to
proxy check
http://proxycheck.lib.uiowa.edu/ip?http://www.eb.com:180

Does request come
from UI IP address?

Yes

No

Redirected to
remote URL
http://www.eb.com:180

Does user want instructions
in configuring proxy?

No

Yes

User reads info
about proxy server
http://www.lib.uiowa.edu/proxy/index.html

User reads proxy
setup instructions
http://www.lib.uiowa.edu/proxy/instructions.html

User configures
browser to
go through proxy

- On campus
- Off campus / UI affiliated; proxy server set up and already authenticated
- Off campus / UI affiliated; proxy server set up but not yet authenticated this session
- Off campus / Not UI
- Off campus / UI affiliated; proxy not configured on client's end

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