

The Isaac Network: Information Seeker's Avenue to Authoritative Content

Call for Collaborators November 17, 1998

The Isaac Network is a new initiative of the Internet Scout Project, which is located in the Computer Sciences Department at the University of Wisconsin-Madison. The Isaac Network initiative is co-sponsored by the Coalition for Networked Information (CNI). A discussion session for potential collaborators and other interested parties will be held at the Coalition's Fall Task Force Meeting in December in Seattle.

The Isaac Network links together selective collections of high quality Internet resources from content providers who have hand-chosen the resources and who have developed metadata for each resource. Using the latest directory protocols and the Dublin Core metadata set, the Isaac Network provides a search interface to multiple, distributed collections of metadata. The overall goal is to allow users to submit a single query to search geographically distributed and independently maintained metadata collections and to return the combined results to the user.

The primary audience of the Internet Scout Project is the higher education community, therefore our first priority will be to include collections of interest to researchers and educators. These may include collections developed by organizations from higher education, government, public libraries, the non-profit sector, or commercial content providers. They may be collections that focus on a particular topic or discipline, or that cover a broad subject range.

Content providers who already have metadata for the Internet resources in their collection have the highest potential to be early collaborators in the Isaac Network. However, any providers of high-quality content are encouraged to join discussions about the project in preparation for possible participation later in the network's development.

Background

The explosion of information on the Internet has made it difficult for researchers and educators to locate online resources that they deem relevant and of high quality. Ultimately individuals have to decide for themselves which resources are relevant and credible in a given situation. However, the task of discovering these resources is much simplified if the pool of possibilities is narrowed to a pre-selected subset of resources chosen by information specialists to be of high quality.

Today there are numerous collections of "quality resources" available on the Web; however, they are generally individual, autonomous sites, not connected in any way to other quality collections. Internet users, especially those in academia, need the ability to send a single search command, which will reach specific quality collections, and just as importantly, only those quality collections. The Isaac Network is being built to provide end-users with a single search interface to a group of metadata collections, which contain or reference highly selective Internet resources.

The Coalition for Networked Information's Task Force meetings will be used as a mechanism to disseminate information about the progress of the project and lessons learned. CNI Task Force members may also be asked to provide comments and evaluations of the system.

Primary Goals of the Isaac Network Project:

- Utilizing metadata, provide a useful resource discovery service for quality information sources.

- Allow collaborators to continue to develop, maintain, and manage their own collections. Isaac provides a method to link the collections and will not subsume any of the individual collections. Content providers retain ownership of, control over, and credit for the metadata records shared through the network.
- Experiment with metadata standards, such as the Dublin Core, to provide a common set of attributes with which to catalog and subsequently search collections of Internet resources.
- Develop a collaborative laboratory in which we can research topics of interest, such as indexing algorithms and alternative user interfaces. We will also explore the development of a set of guidelines for connecting selective collections within the Isaac Network, and between Isaac and similar international efforts.

The Isaac Network's infrastructure uses standard Internet protocols, such as the Lightweight Directory Access Protocol (LDAP) and the Common Indexing Protocol (CIP) to distribute queries, return results, and exchange index or centroid information. To our knowledge, to date the LDAP protocol has been used only for white pages type directories. The Isaac project is the first to use an LDAP directory for metadata records about resources and to combine LDAP with CIP in a distributed index-sharing and query-routing architecture.

Collaborators

The Isaac Network will link geographically distributed metadata collections into a single, virtual metadata collection. We are primarily interested in highly authoritative collections of Internet resources that have been hand-selected by librarians or information specialists. These may include collections developed by organizations from higher education, government, public libraries, the non-profit sector, or commercial providers. (However, from a practical standpoint, collections that don't consist of primarily freely available resources will not be useful to the majority of Isaac Network users). Collections may focus on a particular topic or discipline, or cover a broad subject range.

The metadata in each repository should be high quality: specifically, it should be applied by professional catalogers or information specialists using a minimum of descriptive fielded data. The Scout Report Signpost (<http://scout.cs.wisc.edu/signpost/>) database of metadata is an example of such a repository.

The Internet Scout Project will assist collaborators by providing the following resources:

0. The software components needed by each collaborator to share their metadata over the virtual Isaac Network. All software components for the project have been developed by the Internet Scout Project or have been upgraded from publicly available software.
1. Technical support from Internet Scout Project staff in the implementation of the software at the collaborator's site.
2. Metadata development support from Internet Scout Project staff during the integration of the collaborator's collection into the Isaac Network.
3. Support materials including software documentation and user outreach information.

Given the Internet Scout Project's finite resources, we are looking for a limited number of collaborators (6 - 8) to participate in the initial phase of the testbed. We would like to partner with organizations that have and/or can provide the following:

0. An existing collection of human-mediated metadata about Internet resources that is regularly verified and updated:
 - The collection should contain more than 500 records but fewer than 20,000
 - The metadata should include at least the following fields:
 - Author
 - Title

- Subject or Keywords
- Resource Description
- URL

1. Computing resources to run the Isaac software:

- A machine directly connected to the Internet, with at least 200 Mb of free disk space running one of the following versions of Unix:
 - SunOS/Solaris
 - Digital Unix
 - HP-UX
 - AIX
 - IRIX

2. Expertise and time to work with the Internet Scout Research Team to develop data extraction/conversion tools to facilitate the export/import of metadata records and to establish mappings between metadata formats.

A general overview of the project goals and architecture is available in an article in the June 1998 issue of D-Lib Magazine, "A Distributed Architecture for Resource Discovery Using Metadata." For the Project's architecture, read Project Isaac Architecture Overview for Collaborators. Both can be accessed from the Scout Research page:

<http://scout.cs.wisc.edu/scout/research/index.html>

If you are interested in participating, please contact us at the addresses below with your interests, general information about your collection, and the URL of your site.

Susan Calcari (scal@cs.wisc.edu), Project Director. For content or technical issues, please contact Amy Tracy Wells (awel@cs.wisc.edu), Content Coordinator, or Mike Roszkowski (mfr@cs.wisc.edu), Technical Coordinator.

The Coalition for Networked Information (CNI), a joint program of the Association of Research Libraries and Educause, is an organization to advance the transformative promise of networked information technology for the advancement of scholarly communication and the enrichment of intellectual productivity. More information on CNI can be found at <http://www.cni.org/>.

The Internet Scout Project, which is funded by the National Science Foundation and is located in the Computer Sciences Department at the University of Wisconsin-Madison, is charged with assisting the higher education community in resource discovery on the Internet. To that end, the Scout Report and subsequent subject-specific Scout Reports were developed to guide the U.S. higher education community to research-quality resources. The content of all the Scout Reports is archived in the Scout Report Signpost, which holds resource descriptions on over 5000 Internet resources. More than 2500 of these resources have been cataloged using established standards such as Library of Congress subject headings and abbreviated call letters, and emerging standards such as the Dublin Core (DC). More information about the Internet Scout Project can be found at <http://scout.cs.wisc.edu/>.

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