The Overview of Hubei Academic Digital Library

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[Abstract] This paper briefly introduced the Hubei Academic Digital Library(HBDLIB). HBDLIB includes over 100 universities and colleges. The system includes 2 data center: Wuhan University and Huazhong University of Science and Technology. The system provides shared storage disk system to store many colleges' resource and mirror of many databases. The hbdlib connect to internet through CERNet and ChinaNet. The system provides document delivery service for over 100 colleges of Hubei. The portal website provides uniform-search of many databases and OPAC of 10 main universities. The website also provides the navigation of resource of many colleges.

[Keywords] HBDLIB digital library allience resource sharing

1. Summary

The full name of HBDLIB is Hubei Province Academic and Education Digital Library. The HBDLIB services for Hubei University and college including more than 100 members. The task of HBDLIB includes building platform of hardware & software, building data center, providing database mirror for small colleges, group purchasing database and software, building document delivery network. Hubei province is a rich educational resource, now has 118 colleges and universities, teachers and students more than 100 million. Hubei Academic Digital Library Project(HBDLIB) is invest by Education Bureau of Hubei Province. The project is committed to the province's colleges and universities to provide resources sharing service system.

The project have two data centers (Wuhan University Library and Huazhong University of Science and Technology Library) and 10 resource centers by subject(Wuhan University Library, Huazhong University of Science and Technology Library, Huazhong Normal University Library, Wuhan University of Technology Library, China University of Geosciences (Wuhan) library, Huazhong Agricultural University Library, Zhongnan University of Economics and Law Library, Library of Central South University for Nationalities, Hubei University Library, Wuhan University of Science and Technology Library).

After the completion of the project, through group purchasing and sharing of resources each other, the resources available of all college and university libraries will be greatly enhanced.

The project was launched in December 2006, after more than one year of construction, is now beginning to service for users. The website is: http://www.hbdlib.cn

The HBDLIB currently provides the following services:

- 1) Union OPAC search
- 2) Full-text database service: The HBDLIB purchase a number of databases through the group purchased. School involved in the purchase for the full-text database,

teachers and students in the school to retrieve and read unlimited. If school does not order the databases, the teachers and students can access the table of content, if someone needs the full-text, can requests to the one of the 10 resource center through the document delivery system.

- 3) Union cataloging services: provide bibliographic search and downloading bibliographic data to enhance the university library cataloging quality and efficiency
- 4) ILL / document delivery services network.
- 5) Virtual Reference Service: The users can use reference librarian services real-timely through web.

2. Network and 2 data center

Hubei Province currently has 118 different types of colleges and universities. Some colleges and universities connect internet through the China Education and Research Network(CERNet), access bandwidth at 100Mbps or more and communicate each other in good condition. Some colleges and universities connect internet through the ChinaNet. The users of CERNet is very slow to access the ChinaNet, and users of ChinaNet is also very slow to access the ChinaNet.

In order to provide safe and fast service, the hbdlib sets up two data centers and two ISP(CERnet and ChinaNet). The two data centers are located in Wuhan University Library and Huazhong University of Science and Technology Library. Each data center connect to CERNet and ChinaNet at same time. The data center deploys redundant servers, storage and network devices. The two data centers connect directly through 1G fiber network. Each data center connects internet through 100M CERNet and 20M ChinaNet. In such a two data center structure, users of CERNet and ChinaNet can quickly access the hbdlib. Two data centers with redundant equipment and resources, reducing single points of failure, improve system security.

One data center services mainly for users of CERNet, the other services mainly for users of ChinaNet. Load balancing equipment can be used to balance the accessing from CERNet and ChinaNet.

3. ILL/Document delivery system

As the variety and type of the growing number of publications and prices increasing substantially, the library collection declines year by year because of the limited funds. With China's accession to WTO, the copyright protection is increasingly prominent. Previously photocopied a halt to all foreign periodicals issued, but a lot of ordering foreign journals require an extraordinary investment, which is currently the University Library unbearable. In order to meet the needs of the reader, through document delivery resource sharing is the cause of a large trend in the library.

The HBDLIB Documentation delivery system follows CALIS standards, the main server nodes are the ten resource center. The system is used for borrowing and document transmission between libraries. The system has a account management, user management, billing management, practical, consistent with the actual needs of china libraries.

The ILL/Document delivery system provides following service:

- 1) Interlibrary loan (return type). The provision of library books inter-library loans, inter-library loans have a direct way to borrow, mailing, etc.
- 2) Document delivery (non-return type). The provision of library journal articles, dissertations, conference papers, technical report, patent literature, the electronic full text databases available literature and book chapters and so on. Document delivery methods are Email, CALIS online document delivery system, fax, mail, special delivery and other self-created and artificial.
- 3) Special literature. Ancient books, microform, audio-visual materials and other documentation if the provision of services, the Library of the library can decide for themselves.
- 4) Acting on behalf of the investigation and retrieval. Hall commission to accept a user service requests to help check domestic and international institutions literature information obtained from the literature and on behalf of a literature.

The fees are following:

Copy Fee: ¥1.00/page

The HBDLIB literature: ¥2/article

Other domestic Library literature: ¥5/article

Foreign Library literature: ¥ 10/article All library can enjoy the financial subsidy.

4. Shared storage system

The storage system has a storage capacity of 20TB. The system provides storage service for all libraries of the province's colleges and universities, each library can request to apply for storage space.

The hbdlib deploys book-attached CD-ROM storage system for all libraries.

Book-attached CD-ROM Storage system: The system architecture is 2 tiers architecture. The first tier is resource harvest center. The second tier is data processing center. The resource center includes primary system and standby system, one of which locates at Huazhong University of Science and Technology, another locates at Wuhan University. The data of two systems synchronizes by synchronization software. The data processing center includes 10 data processing units locating at 10 resource center libraries.

The resource center harvests data from the data processing center, and provides storage. The data processing center responses resource bibliography, converts the CD-ROM to ISO format. If one library not belonging to the 10 data processing centers wants to process CD-ROM, the system can add account to expend the number of data processing center conveniently.

The user access the system through local OPAC system's reference: the user access the local OPAC, he (or she) searches the OPAC, and browses the detail information of the selected item, if the item includes the attached CD-ROM, the prompt icon will display, who can click the icon to browse, run or download the ISO

5. Portal website

The portal website is a comprehensive service platform for the users of hbdlib, which is the hub of resource access, user management center, information publishing platform to all-round.

The portal website bases on open source software LifeRay. The two data centers deploy at the same time. The database uses oracle 10g. The hbdlib uses two oracle systems. One is a primary database, another is standby database. The data of two oracle systems synchronizes by oracle data guard software.

The portal website has the following characteristics:

- 1. Single Sign-On: with a single login user be able to directly access a number of different applications in the system.
- 2. Application Integration: In the same window, focused on rendering the information and services in multiple systems. It can integrate with SSO system and other related systems.
- 3. Security: different permissions users can only access authorized applications and resources.