INFLIßNET

NEWSLETTER

Contents   Page

Editorial Board

Dr. Jagdish Arora

Sh. Rajesh Chandrakar

Published by

Message from Director's Desk

After Dr. T. A. V. Murthy relinquished his charge as the Director of the INFLIBNET Centre in June 2006, the Centre was run by Acting Directors for more than a year with highly restricted financial and administrative powers. Several important issues were pending for decisions at various levels and the Centre was beleaguered with several disabling problems that needed urgent redressal. A number of new initiatives have been taken after my joining the Centre that would have long lasting impact on functioning of the Centre. Some of the new initiatives are as follows:

❖ *Appointment of Contractual Manpower at the INFLIBNET:* The Centre appointed 17 computer and library professionals on contractual basis. The contractual appointments were made against positions that were lying vacant for past several years. Moreover, clearance from the UGC was also obtained for filling-in positions that had fallen vacant in last one year.

❖ *New Web Site for the UGC-INFONET Digital Library Consortium:* The web site for the UGC-INFONET Digital Library Consortium was completely revamped with detailed information on e-resources being subscribed, member universities, searchable interface for e-journals, tutorials on each resource, downloadable list of journals along with their URLs, FAQ, Contact details of publishers, etc.

❖ *Appointment of SOUL Coordinators:* The INFLIBNET's Governing Body and Council approved appointment of seven SOUL Coordinators and 18 technical assistants at enhanced rates of remunerations for different geographical regions in the country based on number of SOUL installations. Additional manpower and coordinators would help the Centre to address the problem of maintenance of SOUL software effectively and efficiently.

❖ *Attachment Training Programme for Practicing Librarians and Computer Professionals in North-Eastern Region:* The Centre has

launched Attachment Training Programme for Practicing Librarians and Computer Professionals from North-East Region who would work at the INFLIBNET Centre along with its experienced staff. The trainees from North-East would be resident at the INFLIBNET Centre for a period ranging from 3 to 6 months.

❖ *Additional Manpower under the UGC-Infonet Digital Library Consortium:* The INFLIBNET's Governing Body and Council approved appointment of 6 additional staff members to take care of additional activities under this programme.

❖ *Projects on Electronic Theses & Dissertations (ETD):* As desired by Prof. Thorat, Chairman, UGC and President of INFLIBNET Council, the Centre has submitted a major project for implementation of Electronic Theses and Dissertations (ETD) in universities to the UGC.

❖ *College Model of the UGC-INFONET Digital Library Consortium:* The College Model of the UGC-INFONET Digital Library Consortium that was pending for a long time is likely to see light of the day. The Centre has submitted a major project to the UGC for implementing college model of the Consortium. As on now, the ICT infrastructure and requirement of e-resources in CPE and Autonomous colleges is being assessed by the Centre.

❖ *Increase in Internet connectivity :* The Internet Bandwidth of all the universities is being increased to 2mbps.

Besides, the Centre, after taking possession of the land allocated to it in Infocity, Gandhinagar, has started the process for appointment of an Architect for construction of its Permanent Institute Building. A number of highly reputed and renowned Architects have applied for the Project. The Centre is in the process of identifying an appropriate Architect for designing and construction of its permanent Institute Building.

The Centre has approached various universities for updating Union Database of Books and Ph.D Theses. I am thankful to the library fraternity for responding to our call and sending the bibliographic data for the above mentioned union catalogues in large numbers. Through this Newsletter, I would once again request all librarians of universities to kindly contribute to this noble endeavour.

The INFLIBNET Newsletter, in its last issue (Vol. 14 (2&3), April-September, 2007) has started feature articles on "Cutting-edge technology in LIS". Continuing the trend, this issue of the newsletter has an article on "Access Management in Digital Libraries".

Dr. Jagdish Arora

PLANNER 2007: Report

The 5th PLANNER (Promotion of Library Automation and Networking in North Eastern Region) was organized by the INFLIBNET Centre, Ahmedabad in collaboration with the Gauhati University at Guwahati (Assam) on "Libraries as a Global Information Hub: Perspective and Challenges" during 7th & 8th December 2007. The PLANNER is an annual event of the Centre with the basic objective of promoting library automation and networking in the North Eastern States of India. The 1st convention was held in Shillong in 2003 followed by 2nd in Imphal (2004), 3rd in Silchar (2005) and 4th in Aizwal (2006). 274 delegates participated in PLANNER 2007 besides INFLIBNET officials, guests, students, members of the organizing committees and its subcommittees. The number of delegates from different states including delegates from neighbouring country Bhutan attended the convention. Dr. A S Chandel from Department of Library & Information Science, NEHU, Shilong acted as a Convention Director and Shri M N Bora, Former Librarian, Tezpur University acted as Rapporteur General of the Convention.

Image 1: Dignitaries on the Dais (Prof. Narendra Lahkar, Organizing Secretary, Dr. R K Chadha, Joint Secretary, Loksabha, Prof. Amarjyoti Chaudhury,Vice Chancellor, Gauhati University, Prof. Mihir Kanti Choudhury, Vice Chancellor, Tezpur University, Dr. Jagdish Arora, Director, INFLIBNET Centre and Sh. H G Hosamani, Scientist B, Joint Convener) During the Inaugural Session of 5th PLANNER 2007

Inaugural Session

The convention commenced with the Anthem of the Gauhati University by the students of the Department of Library & Information Science which was followed by the felicitation of the Guests. The Chief Guest of the convention, Prof. Mihir Kanti Choudhury, Vice Chancellor, Tezpur University inaugurated the programme by lighting the lamp. Prof. Chaudhury called upon the library professionals to be more proactive towards the academic needs of the community and highlighted the changing trends in academic enviornment and the role to be played by librarians in this context. Organizing Secretary of the Convention, Prof. Narendra Lahkar welcomed the delegates, invitees, students and media. Prof. Lahkar conveyed his gratitude towards LIS professionals for their enthusiasm and participation in a large number. He thanked to the INFLIBNET Centre for

assigning the responsibility of organizing the convention at Gauhati University. Dr. Jagdish Arora, Director, INFLIBNET Centre, as Guest of Honour, discussed various activities of the Centre and presented statistics on usage of e-resources by students and faculty in universities in phased 1 and its impact of their research productivity. Dr. Arora expressed his satisfaction on the response received by the library professionals of the North East and also from different parts of the country. Dr. R K Chadha, Joint Secretary, Loksabha Library briefly discussed theme of the convention. The Chair of the Convention, Prof. Amarjyoti Choudhury, Vice Chancellor, Gauhati University highlighted the role of libraries and the librarians in the society in general and academic field in particular. Sh. H G Hosamani, Joint Convener of the PLANNER 2007 extended vote of thanks to the delegates, invitees and guest of the convention including media.

Image 2: Dr. Jagdish Arora, Director INFLIBNET Centre lighting the lamp during Inaugural Session of PLANNER 2007

Dr. R K Chadha delivered the keynote address on the theme of the convention. He emphasized on the changing role of librarians in view of ICT based products and services that are being introduced in modern libraries. He emphasized that the librarians should concentrate on the interest of the users as their expectations are more from the modern library. Dr. Chadha elaborated on traditional services in print-based environment that has now been transformed to web-based library services and urged the librarians to adopt to these new services. He also narrated several web-based services, hitherto, non-existent in print-based environment. He called upon librarians to develop library websites, subject portals and pathfinders for the benefit of library users. He argued that the librarians, as early inhibitors of web, should develop an edge over other community in adopting new technologies. Dr. Chadha also elaborated on the concept of digital divide and talked about open access as a method to fill-in this divide. He urged the librarians to create their simple library home pages including basic information about the library, policies, virtual library tours, etc to attract the users. Dr. Chadha further advises to go step by step to develop their information services like adding library calendar, interactive user education, FAQs, feedbacks, library web sites, linkage to information sources, book marks, subject gateways and library portals. Dr. Chadha suggested creation of more Indian databases. He advised the librarians to be familiar with the Intellectual Property Rights (IPR).

Theme A: Information Management

The theme on Information Management was divided in three technical sessions, that were chaired by Prof. A Buragohain, Prof. A K Baradal and Prof. Pravakar Rath. Rapporteurs for the three sessions were Dr. R K Barman, Dr. S N Singh, Sh. Niraj Barua and Sh. S Kannan, respectively. In all, there were twelve papers presented on this theme.

Theme B: Borderless Libraries

The theme on Borderless libraries was divided in three technical sessions that were chaired by Dr. V D Srivastav, Prof. N N Sharma and Dr. R K Chadha. Rapporteurs for the three sessions were Dr. Mukesh Saikia, Sh. M Maltesh and Sh. Mukut Sharma, respectively. In all, 19 papers were presented on the theme.

Image 3: Delegates of the PLANNER 2007 Convention

Valedictory Session

The Centre presented mementos to the invitees of the PLANNER 2007 as a mark of gratitude for their help and co-operation for successfully conducting the event at Guwahati. Prof. AS Chandel, Convention Director expressed his satisfaction on the quality of the papers presented during the convention. Prof. Chandel hoped that the convention will guide the professionals for taking up the challenges and opportunities in building modern libraries. Mr. MN Borah, the Rapporteur General presented detailed report on the convention. Prof. Narendra Lahkar discussed different aspects of organizing the event and expressed his gratitude for the cooperation he received from all corners of the country including from the INFLIBNET Centre. Mr SC Roy, speaking as Guest of Honour, during valedictory, identified the responsibilities that the librarians are required to shoulder in order to keep abreast with changing scenario. Sri Roy also suggested librarians to be sincere and hard working so as to facilitate better use of library resources. During the valedictory session, the Assamese version of SOUL Manual in CD was released, which was translated by Dr. Dilip Kalita and Prof. Narendra Lahkar on the request made from the Centre.

Dr. Jagdish Arora congratulated Dr. Lahkar and his team for organizing the convention successfully. Dr. Arora called upon the library professionals to avail the opportunities extended by different bodies including the INFLIBNET Centre in order to develop the libraries in the region. Dr. Sanjay Kumar Singh, Assistant Organizing Secretary of the Convention proposed vote of thanks to delegates, members of organizing team, representatives from the INFLIBNET Centre and authorities of the University.

Database Update

Updation of union databases of various library resources has been one of the most important activities of the Centre since its inception. In the beginning, Centre funded potential universities of the country for automating their libraries and for creating bibliographic records of the library resources that, in turn, led to the growth of union catalogues at the Centre. The following union databases have been the consequences of the maneuvering effort of the Centre and the universities

Sr. No.	Database	No. of Records
1.	Books	75,46,314
2.	Theses	1,87,000
3.	Current Serials	13,881
4.	Serials Holding	17,700
5.	Subject Experts	15,800
6.	NISSAT Experts	24,000
7.	Research Projects	10,000

SOUL Update

SOUL software developed and maintained by the Centre has been installed at 1455 institutions till December 2007. The state-wise distribution of SOUL software is given below:

Sr. No.	Name of the State	Total Installation
1	Andhra Pradesh	184
2	Arunachal Pradesh	1
3	Assam	50
4	Bihar	9
5	Chandigarh	52
6	Chhattisgarh	8
7	Daman	2
8	Delhi	15
9	Goa	1
10	Gujarat	333
11	Haryana	19
12	Himachal Pradesh	13
13	Jammu & Kashmir	44
14	Jharkhand	2
15	Karnataka	25
16	Kerala	95
17	Madhya Pradesh	123
18	Maharashtra	220
19	North-Eastern States	66
20	Nepal	2
21	Orissa	7
22	Pondicherry	3
23	Punjab	26
24	Rajasthan	36
25	Tamil Nadu	22
26	Uttar Pradesh	31
27	Uttaranchal	14
28	West Bengal	52
TOTAL		**1455**

SOUL Training Programme

SOUL is an integrated library management software that works under client-server environment. The software is suitable for any library including college and special libraries. The software has been integrated into six modules viz. Acquisition, Cataloguing, Circulation, Serials Control, OPAC, and Administration to take care of the functions and activities of academic libraries. The Centre provides training on installation and implementation of SOUL to its users. So far, 64 such training programmes have been completed successfully. During this quarter, following training programmes were organized at the Centre:

TP No.	Period	No. of Participants
63	15th to 19th October 2007	19
64	26th to 30th November 2007	18

Delegates of 63rd SOUL Training Programme at INFLIBNET Centre with INFLIBNET Staff

Delegates of 64th SOUL Training Programme at INFLIBNET Centre with INFLIBNET Staff

SOUL Support Unit @ INFLIBNET Centre

The Centre has set-up a SOUL Support Unit with dedicated staff and telephone line for the benefit of SOUL users. SOUL users may contact the SOUL support unit in case of any SOUL related problem:

Telephone No. 079-26300007 between 9.30 hrs to 18.00 hrs on working days.

IRTPLA Training Programme, Hyderabad, December 17-21, 2007

The IRTPLA was conducted at Bankatlal Badruka College of Technology, Hyderabad, A.P during 17th to 21st December 2007. Prof. Laxaman Rao, Director, Staff Academic College, Osmania University, Hyderabad inaugurated the workshop as Chief Guest. Air Commodore K S Ananda Rao, Director & CEO of BBCIT, Hyderabad presided over the function and Mrs Sushma Jagirdar, Librarian & Coordinator of IRTPLA proposed vote of thanks. Sh H.G Hosamani, Scientist B (LS), INFLIBNET Centre, Dr Ramchandra Rao, Director, Institute of Library Science & Study Centre for IGNOU, Hyderabad, Dr Ashok Babu, Chief Librarian of Advanced Systems Laboratories of DRDO, Ms Mary Iber, Cornell College Library USA, and Sh. Pragnesh Kumar Parekh, INFLIBNET were the resource persons. 28 participants from nearby universities and colleges attended the programme. Following course contents were covered during the programme:

1) About the INFLIBNET Activities and Services;
2) UGC Infonet Digital Library Consortium;
3) Integrated Library Management Software;
4) Quality Information Services;
5) Building of Digital Libraries; and
6) Hands-on practice on SOUL software.

User Awareness Programme on E-Resources, GNDU, Amritsar, October 29, 2007

A One-Day User Awareness Programme on E-Resources was organized at Bhai Gurudas Library, Guru Nanak Dev University, Amritsar on 29th October 2007. The programme was inaugurated by the Vice Chancellor of the University, Prof. Jai Rup Singh. While inaugurating the programme, Prof. Singh emphasized on the importance of the e-resources and knowledge to the research scholars. More than 200 delegates attended the awareness programme including faculty, researchers from various departments and the library staff. Sh. Suresh Chauhan from the INFLIBNET Centre represented the programme. The participating publishers of UGC-Infonet Digital Library Consortium made demonstrations and presentations on their e-resources subscribed under the Consortium.

Delegates of the One Day User Awareness Programme at GNDU, Amritsar

Topics on Cutting-Edge Technology in LIS

The article on Access Management in Digital Libraries is a part of the new series of articles on the cutting-edge technology in LIS. The first article in the series was published in the Newsletter, Vol. 14, No.2-3 (2007). The author of this article Dr. Jagdish

Arora, Director of the Centre has attempted to cover the "Access Management System in Digital Libraries". It is being published into two parts; first part of the article deals on "Authentication and Authorization" and second part of the article on "Access Control and Secured Digital Communication" will be published into the forthcoming issue of the newsletter, Vol.15, No.1.

Access Management in Digital Libraries, Part I: Authentication and Authorization

1. Introduction

Access management variably called, access control, terms and conditions, licensing conditions and Digital Rights Management (DRM) refers to control of access to digital objects and collections. Digital Rights Management (DRM) is a system of solutions created or designed as a means to prevent unauthorized access, duplication and illegal distribution of copyrighted digital media. The DRM technology was created for the publishers as a means to stop illegal reproduction and distribution of their products. In online environment, the scope of DRM can be leveraged to control access, usage of digital objects and to impose restrictions on their misuse. It consists of the four components, i.e. i) license agreements and policies; ii) user authentication and authorization); iii) accuracy and integrity of digital content; and iv) accessibility including permissions to operate on digital objects or its metadata. License agreements and policies for providing access to digital libraries are negotiated between the publishers and librarians. Users are authenticated and authorized to access content of a digital library as per the terms and conditions of license agreement. Users, duly authenticated, are allowed access to information according to their nature of clearances and authority, while unauthorized users are blocked from accessing information. Confidentiality is of paramount importance in digital libraries containing national

defence information or highly proprietary information. Accuracy or integrity means the continuing integrity of information stored in digital object servers. Managers of a digital library must not allow accidental or intentional corruption of information stored in it by unauthorized users or programs. Accessibility means that a secure computer system must keep information available to its users. The hardware and software of a computer system should keep working efficiently and the system should be able to recover quickly in case of disaster. Moreover, users are given access to digital contents with permissions to download (in case of users) and to add, edit, delete or amend in case of editors (Russell, D and Gangemi, G.T., 1991).

It is not only essential to ensure security of data on servers and clients but also during communication between clients and servers and vice versa to ensure authenticity and integrity of data. It is possible for a hacker to eavesdrop on communication between a user's browser and a Web server and hack sensitive information, such as a credit card number, login ID and passwords, etc. Techniques of data encryption are used for communicating sensitive information such as user's password and PIN codes. Encryption renders data unintelligible and unusable even if accessed by an unauthorized person. Digital certificates are deployed to establish secure communication between clients and servers.

2. Need for Access Management and Security

Access management and computer security are two very important issues in all commercial web applications including digital libraries. Given the fact that electronic content can be copied much more easily, content owners have a greater need for imposing measures to control misuse of their content in digital format. IP authentication and password access, two most commonly used authentication methods, are not able to protect the

content from being duplicated or shared, thus creating a need for greater rights management controls. At the same time, digital media distribution can bring a variety of new business opportunities for owners or generators of content who incorporate the right technologies to control access on the digital content.

Access management is necessary for commercial digital collections because their access is restricted to its subscribers or licensed users. Even when access to digital collections is provided openly, access control is required for assigning responsibilities for operations such as additions, updation, edition and deletion of full-text content as well as metadata. Moreover, a well-managed digital library requires tracking of all changes made so that the collections can be restored if mistakes are made or computer files are corrupted.

3. User Authentication

User authentication is the first level of security mechanism to protect a computer system hosting digital libraries from unauthorized users. Authentication basically means ascertaining credentials of a user that allow him or her to establish the right to use a network identity. Login and passwords and IP filtering are two methods that are commonly deployed for authenticating users, although there are a number of other mechanisms in vogue for authenticating a user before s/he is provided access to a digital library. User authentication mechanisms can be incorporated into firewall, a particular application, a document, or a network operating system such as Linux, Windows NT or Windows 2000. Some of the important authentication mechanisms are given below:

3.1. Log-in ID and Password-Based Access

The most common means of access control requiring the matching of a username with its associated password. Log-in ID and password

allow publishers or producer of information to control access of their electronic resources. There are two types of passwords:

i) Fixed Passwords

User authentication is most often performed with fixed passwords. However, the fixed passwords remain vulnerable to guessing. Despite their inherent weaknesses, fixed passwords are used widely because of ease to use and implementation. However, because of their transparent mobility, passwords can be misused to access publisher's contents as it can be passed around by the users in subscribing institutions.

ii) Dynamic Passwords

It is also possible to generate a chain of dependent or independent one-time passwords to the user. However, since it is very difficult to remember several passwords, users will be forced to keep this list somewhere either on paper, or in a file on their computers. Software solutions are now available to manage login IDs and passwords (Haller et al, 1998).

3.2. Challenge-Response Authentication

The challenge / response scheme is used to prove identity of a user to the server by demonstrating knowledge of a secret that is known to the user and the server. Once a user sends proper response to challenge, s/he may again be prompted to answer another challenge concerned with the identity of the user. These challenge / response schemes are often implemented with hardware tokens. The HTTP/1.1 Digest Authentication standard (which is implemented in Microsoft Internet Explorer) is an example of a software-based challenge/response scheme. Challenge / response authentication mechanisms are designed to resist replay attacks, i.e., an adversary should not be able to re-use a particular response to authenticate in another session with another challenge (Claessens, et al, 2002).

Challenge-response protocols are also used to assert things other than knowledge of a secret value. CAPTCHAs, for example, are meant to determine identity between a person and a computer program. The challenge sent to the viewer is a distorted image of some text, and the viewer responds by typing in that text (used in Hotmail, Gmail, etc.). The distortion is designed to make automated optical character recognition (OCR) difficult, preventing a computer program from passing as a human. Cryptographic-based challenge-response authentication involves using a password as the encryption key to transmit randomly-generated information as a challenge, whereupon the other end must return as its response in a similarly-encrypted value (Wikipedia, 2007).

3.3. IP Filtering

The Internet Protocol (IP) address is a string of numbers assigned to every device (i.e. server, client, routers, firewall, bridges, printers, Internet fax machines, etc) connected to the Internet in order to identify and communicate with each other. An IP address consists of 4 parts separated by dots, e.g. 202.141.130.75. Every machine that is on the Internet has a unique IP address, if a machine does not have an IP address, it can not be connected to the Internet. In other words, the IP address acts as a locator for one IP device to find another and interact with it. IP addresses can also be assigned dynamically by a service provider.

IP filtering is very easy to implement for a subscribing institution who is required to provide IP addresses or its ranges to the publisher. The publisher, in turn, is required to maintain a database of IP ranges that are enabled to access its electronic resources and check all incoming requests for digital material against its IP database. Most publishers prefer providing IP-based access to their resources. IP-based access poses problems for those not in the campus and those are traveling (Lynch, C, 1998).

3.4. Web Cookies

HTTP cookies, web cookies or cookies, are parcels of text sent by a server to a web browser and then sent back unchanged by the browser each time it accesses that server. HTTP cookies are used for authenticating, tracking, and maintaining specific information about users, such as site preferences and the contents of their electronic shopping carts. Authentication information are stored in cookies on a user's browser, so that the user is not required to provide repeated authentication information when navigating from resource to resource.

Most browsers allow users to decide whether to accept cookies, but rejection makes some websites unusable. Cookies are generally used for authentication in combination with other authenication mechanism such as Log-in ID / password and IP filtering (Wikipedia, 2007).

3.5. Web Proxy

In context of user authetication, proxy server is a combination of software and hardware that acts as an intermediary between users and the Internet and enables authorized user of an institution to access licensed electronic resources, when connecting to the Internet from outside the premises of their institution.

Ezproxy (http://www.oclc.org/us/en/ezproxy/) is one of the popular proxy server program that is easy to setup and easy to maintain for providing users with remote access to web-based licensed databases. It operates as an intermediate server between users and subscribed e-resources. Users connect to EZproxy, which, in turn, connects on their behalf to subscribed e-resources and obtain requested web pages and send them back to the users. Since EZproxy runs on a machine on the network of subscribing institution, e-resource publisher sees the requests as coming from an authorized IP address and permits access.

Ezproxy works by dynamically altering the URLs within the web pages provided by the publishers of e-resources. The server names within the URLs of these web pages are changed to reflect the EZproxy server instead, causing users to return to the EZproxy server as they access links on these web pages. The result is a seamless access environment for the users without the need for automatic proxy configuration files.

3.6. Athens
(http://www.athensams.net/)

Athens is an access and identity management service by Eduserv Technologies Ltd. to provide secure single sign-on to multiple subscription-based web resources combined with user management capability. Athens replaces the multiple usernames and passwords necessary to access subscription based content with a single username and password that can be entered once per session. It operates independently of a user's location or IP address. Organisations adopting the Athens service can choose between the Classic Athens service, where usernames are held by Eduserv Technologies and Local Authentication, where usernames are held locally and security tokens are exchanged via a range of protocols: SAML, Shibboleth or Athens Devolved Authentication (AthensDA). Over 4.5 million users worldwide are using Athens to gain access to over 300 protected online resources via the Athens service.

3.7. Shibboleth
(http://shibboleth.internet2.edu/)

Shibboleth is a open source middleware software which allows sites to make informed authorization decisions for individuals and provide access to subscription-based electronic resources. Shibboleth leverages campus identity and access management infrastructures to authenticate individuals and then sends information about them to the resource site, enabling the resource provider to make an informed authorization decision about authenticity and authorization of a user. Using Shibboleth-enabled access simplifies management of identity and access permissions for both Identity and Service Providers. It allows for cross-domain single sign-on and removes the need for content providers to maintain usernames and passwords. Unlike "Classic Athens" where user names are held by Eduserv Technologies (developers of Athens), user names in case of Shibboleth are held by individual institutions. Once a user visits "Shibboleth-enabled e-resource", he / she is redirected to his / her Identity Provider Service (IDP) so as to complete the process of authentication and authorization. (Wikipedia, 2007)

Shibboleth is developed in an open and participatory environment, is freely available and released under the Apache Software License. Security Assertion Markup Language (SAML), and XML standard, are used in Shibboleth for exchanging authentication and authorization data between an identity provider (subscribing institution) and a service provider (publisher of an e-resource).

3.8. Referring URL

Referring URL (Teets and Murray, 2006) is a method for enabling authentication based on the URL. Users generally visit various digital libraries through their Library's web sites. When a user clicks on a link given in a web page, the user's browser sends a request to the clicked URL along the URL of "referring site". This "sent along" URL is called a referring URL. The referring URL can be used for authenticating a user. Ezproxy, a proxy server program that is used for allowing off-campus access to e-resources, can be configured to check the referring URLs and automatically authenticate users. From the users' perspective, simply clicking links on a specified web site leads to access to subscribed e-resources. Referring URL provides seamless and transparent authentication to the user for accessing subscribed e-resources (Useful Utilities, 2007).

3.9. Kerberos

(http://web.mit.edu/ kerberos/www/)

Kerberos is an IETF-defined network authentication protocol, which allows individuals communicating over an insecure network to prove their identity to one another in a secure manner utilizing a trusted third party, called Key Distribution Center (KDC). It is also a suite of free software published by Massachusetts Institute of Technology (MIT) which implements this protocol. Its designers aimed primarily at a client-server model, and it provides mutual authentication, i.e. both the user and the server verify each other's identity. Kerberos protocol messages are protected against eavesdropping and replay attacks as it uses symmetric key cryptography that requires a trusted third party registration. Extensions to Kerberos can also provide for the use of public key cryptography during authentication.

Kerberos protocol are used in web server programs like Apache, routers and switches Internetwork Operating System (IOS), e-mail clients (Eudora and Mulberry), Operating System (Mac OS, Microsoft Windows (2000 and later), LDAP, FTP and Telnet kerberos-enabled clients.

4. User Authorization

The process of authentication ascertains the identity of a user, while authorization defines his or her permissions in terms of access to e-resources and extent of its usage. Authorization is granted to the successfully authenticate users according to his / her rights information available in the Access Management System (AMS). A user duly autheticated by one of the authentication mechanism described above may actually be entitled to access only a portion of digital collection subscribed by his / her institution. For example, an authenticated user may be authorised to access electronic journals from a publisher's site but not electronic books, reference sources or other resources dependeing on what his institution has subscribed to. Typically all users in an institution are authorized to access all the subscribed e-resources. However, it is possible to define different levels of authorization for different categories of personnel in an institution. Besides, authorizing users of a digital collection, authorization also addresses the issue of responsibilities assigned to different personnel invloved in development of a digital library and their respective authorities in terms of addition, deletion, editing and uploading of records into a digital library. Personnel involved in development of a digital library may be assigned different levels of authority. Authorization is more challenging than authentication, especially for widely distributed digital libraries. Access control is one method for enforcing authorization. Typically, it assumes that the user or entity has already been authenticated. Access control policies that are in vogue are as follows (Vemulapalli, S., 2002):

4.1. Mandatory Access Control (MAC)

Mandetory Access Control (MAC) is generally more suited for high security authorizations. It is based on classification of objects and users according to security levels, where access is granted only if the security levels of objects and users match or the user's level is higher.

4.2. Discretionary Access Control (DAC)

Discretionary Access Control (DAC) is based on users identities and authorizations. For example, if a user provides evidence (e.g., attribute certificate) that s/he has a capability to execute certain operations on an object, then the evidence is checked and access is granted.

4.3. Role Based Access Control (RBAC)

RBAC is based on assigning roles to users. A user may have multiple roles. Users gain access authority

based on the role they are playing at the time of the request. This is similar to Windows NT access control mechanism, where users gain authorizations depending on his / her roles, like administrator, power users, back-up operators, which have necessary authority to perform required activities. Different types of access controls or combination of these are suitable for different applications and security requirements.

4.4. Content Dependent Access Control (CDAC)

While most of the digital libraries provide access to its content based on qualifications and characteristics of users rather than their identity, digital libraries may also be designed to provide content-dependent authorization to its collection. For example, a user would be given access to "A rated video" only if s/he is older than 18 years (Adam, N.R. et al, 2002, Ferrari1, E. et al, 2002).

Note: The bibliographic references of the article are being published in second part of the article in the next issue of the newsletter.

Staff News

Ms. Satyabati Devi, Project Scientist of the Centre joined University at South Africa as an Assistant Librarian. She was associated with the UGC-Infonet Digital Library Consortium for 4 years.

Sh. Rajesh Chandrakar, Scientific & Technical Officer of the Centre attended the MSD5/P-10 (Panel on Content Analysis) and P-7 (Panel on Library related Standards) Meeting of the Bureau of Indian Standards (BIS) as a member and an invitee of the committee, respectively, on 7th November 2007.

Sh. Manoj Kumar K, Scientist-D (CS) attended the CSITEd (Computer Science & Information Technology Education) 2007 International Conference organized by University of Technology Mauritius, Mauritius during November 16-18, 2007. He presented a paper entitled "Development of RFID Interface for LMS: Solutions and Techniques" co-authored by Ms. Geeta G Murjani and Ms. Bansari M Patel, Project Trainees, INFLIBNET Centre.

Dr. Jagdish Arora, Director of the Centre, as a Member of "High-Level Committee on the Upgradation of Libraries" attended the first meeting held on October 2007 at New Delhi. The Committee is constituted by Ministry of Culture, Govt. of India.

Dr. Jagdish Arora, Director of the Centre was nominated as a member of the National Steering Committee of the INDEST-AICTE Consortium, New Delhi. He has also been nominated to be the member of E-Journals Consortium Negotiation Committee of National Agriculture Project, ICAR, New Delhi.

Dr. Jagdish Arora was an invited speaker for "Education Summit" held at FICCI, New Delhi on 1st November 2007. Dr. Arora was also invited to present a Keynote address during Golden Jubilee celebration of the "Indian National Bibliography" by the National Library, Kolkata on 23rd November 2007.

Sh. Prem Chand, Scientist-C (LS) successfully completed Commonwealth Professional Fellowship 2007. He was based at the Shepherd Library, Middlesex University, London located at Hendon for three months. During his fellowship programme, he

Sh. Manoj Kumar K with the delegates of the CSITEd 2007 Conference at Mauritius

worked in the different campus libraries of Middlesex University and got acquainted with modern library system equipped with RFID, access control system, electronic resource management and virtual reference at Middlesex Learning Resource Centre, Hendon.

He has visited major university libraries in London as well as outside London and interacted with the library professionals of Bodelian Library, Oxford, British Library, Cambridge University Library, University of Manchester, London School of Economics, University of Bath, University of Edinburgh and University of Reading. Besides these universities, he also visited other important national institutes in UK who are engaged in the development of union catalogues, library consortia, access federation and content creation. Sh. Prem Chand visited EDINA, MIMAS and JISC and appraised them about the initiatives of INFLIBNET Centre. He has enriched his knowledge by attending lecture series organized by CILIP and participated in the discussion of latest issues in library and information science. The fellowship has immensely benefited him to understand the latest technology being used in libraries in UK.

E-books gaining importance in research work: GNDU V-C

HT Correspondent
Amritsar, October 29

UNIVERSITIES without research work are useless and quality research is not possible without a strong library, said Guru Nanak Dev University Vice-Chancellor Dr Jai Rup Singh while inaugurating the 'User Awareness Programme on E-resources' organised by the Bhai Gurdas Library of the University in collaboration with Information and Library Network of the University Grants Commission (INFLIBNET), Ahmedabad, here today.

Dr Singh said a strong library was necessary for constant update of knowledge by scholars. He said today e-journals have achieved a great im

---

ਅਜੋਕੇ ਸਮੇਂ ਵਿਚ ਈ-ਜਰਨਲਾਂ ਦੀ ਵਰਤੋਂ ਮਹਤਵਪੂਰਨ : ਜੈ ਰੂਪ ਸਿੰਘ

ਅੰਮ੍ਰਿਤਸਰ, 29 ਅਕਤੂਬਰ (ਹਰਜਿੰਦਰ ਸਿੰਘ ਕਲੇਰ) : ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ ਦੀ ਭਾਈ ਗੁਰਦਾਸ ਲਾਇਬ੍ਰੇਰੀ ਵੱਲੋਂ ਇਥੇ ਇਲੈਕਟ੍ਰੋਨਿਕ ਸਰੋਤਾਂ ਦੀ ਵਰਤੋਂ ਸਬੰਧੀ ਜਾਗਰੂਕ ਕਰਨ ਲਈ ਕਰਵਾਏ ਗਏ ਇਕ ਰੋਜ਼ਾ ਸੈਮੀਨਾਰ ਨੂੰ ਸੰਬੋਧਨ ਕਰਦਿਆਂ ਵਾਈਸ ਚਾਂਸਲਰ ਪ੍ਰੋ. ਡਾ. ਜੈ ਰੂਪ ਸਿੰਘ ਨੇ ਕਿਹਾ ਕਿ ਆਧੁਨਿਕ ਤਕਨਾਲੋਜੀ ਦੇ ਯੁਗ ਵਿਚ ਈ-ਜਰਨਲਾਂ ਦੀ ਵਰਤੋਂ ਬਹੁਤ ਮਹਤਵਪੂਰਨ ਹੋ ਗਈ ਹੈ।

ਅਜੋਕੇ ਸਮੇਂ ਵਿਚ ਈ-ਜਰਨਲਾਂ ਦੀ ਵਰਤੋਂ ਮਹਤਵਪੂਰਨ

ਅੰਮ੍ਰਿਤਸਰ, 29 ਅਕਤੂਬਰ (ਅਰੁਣ ਬਿੱਟੂ) - ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ ਦੀ ਭਾਈ ਗੁਰਦਾਸ ਲਾਇਬ੍ਰੇਰੀ ਵੱਲੋਂ ਇਥੇ ਇਲੈਕਟ੍ਰੋਨਿਕ ਸਰੋਤਾਂ ਦੀ ਵਰਤੋਂ ਸਬੰਧੀ ਜਾਗਰੂਕ ਕਰਨ ਲਈ ਕਰਵਾਏ ਗਏ ਇਕ ਦਿਨਾ ਸੈਮੀਨਾਰ ਨੂੰ ਸੰਬੋਧਨ ਕਰਦਿਆਂ ਵਾਈਸ ਚਾਂਸਲਰ ਪ੍ਰੋਫੈਸਰ ਡਾ. ਜੈ ਰੂਪ ਸਿੰਘ ਨੇ ਕਿਹਾ।

इन्फ्लिबनेट नेटवर्क जीएनडीयू को मुफ्त देगा ई-जनरल

ई-रिसोर्सिस से रिसर्च होगी आसान

सिटी रिपोर्टर, अमृतसर

ई-रिसोर्सिस का इस्तेमाल करना समय की मांग है और सभी को इसका ज्यादा से ज्यादा इस्तेमाल करना चाहिए। यह गुरु नानक देव यूनिवर्सिटी के वाइस चांसलर डॉ. जयरूप सिंह ने भाई गुरदास लाइब्रेरी के इस ई-रिसोर्स कार्यक्रम में कही। सेमिनार में देश-विदेश की 13 कंपनियां टेलर एंड फ्रांसिस ग्रुप, नेचर ग्रुप, एल्सेविलर, स्प्रिंगर एंड ब्लॉवर

इंफोमेटिक्स इंडिया, बनानी इंफोटेक, जिस्ट, साइंस फाइंडर, ग्लोब, एंसाक्लोपीडिया, कैंब्रिज यूनिवर्सिटी आदि ने अपनी कैंब्रिज यूनिवर्सिटी प्रेस ने इस बारे में बताया कि उनकी साइट्स में सब कुछ आसानी से मिल जाता है।

समीनार को संबोधित करते भूपेश।

ਅਜੋਕੇ ਸਮੇਂ 'ਚ ਈ-ਜਰਨਲਾਂ ਦੀ ਵਰਤੋਂ ਮਹਤਵਪੂਰਨ

ਅੰਮ੍ਰਿਤਸਰ/29 ਅਕਤੂਬਰ/ਜਾਗਰਣ