

WEB INFORMATION SERVICES AT IIT, KHARAGPUR

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The Central Library at IIT Kharagpur is continuously exploring new IT tools and techniques for better information organisation and services. The entire collection details (OPAC) are computerised and can be accessed from the Campus LAN/ERNET WAN/Internet/WWW. The OPAC menu also keeps the Institute users informed about other details like campus academic activities, continuing education programmes and the staff directory. Now since these details are being accessed through the library website (central library link of <http://www.iitkgp.ernet.in>) any person through a computer connected to the internet can access them. Besides OPAC, a CD-ROM network facilitating access to the earlier stand alone databases subscribed in the Electronic Library, is commissioned and this facility developed with distributed access in mind could also be accessed by any Internet machine, subject to high bandwidth connectivity and shared access arrangements/copyright restrictions. The basic steps of designing web server for library applications and connectivity aspects of internet will be stressed upon. The paper will summarise the local developments and suggest an illustrative account for Indian libraries to migrate from computerised to Internet services and to emerge as workable digital libraries in the long run.

0 INTRODUCTION TO WEB

The World Wide Web or WWW or W3 was developed at CERN, the European Nuclear Research Centre at Geneva, Switzerland to allow research collaborators at different sites to share ideas and knowledge about a common project.¹ The possibility of linking separate pieces of information, easy navigation between these hypertext links, information access in a non-linear way, provision for graphics and multimedia etc., effected the prolific growth of the web. When W3 client programme runs on a computer, clicking the mouse on the active hypertext links facilitates accessing the corresponding page from some server, leading to endless navigation of information over cyber space. The user interface is independent of server type.

Information weaved on the web can be identified by its Universal (Uniform) Resource Locator (URL)², which consists of three parts: scheme (http or ftp or telnet)://host name/filename. The scheme or access mechanism used in web is the Hyper Text Transfer Protocol (HTTP), a simple request/response protocol which transfers information like text (linear/hyper), images, sound etc. The web amenable information content is tagged in the HyperText Markup Language (HTML).³

1 WEB SERVER: HOW TO APPROACH

For setting up a Web server, the components involved are:

- (a) **Hardware:** The most basic part, which could be from a simple IBM PC compatible to HP/ Silicon Graphics / DEC alpha servers.
- (b) **Software:** Comprises of two components, viz., the operating system and HTTP server software / Authoring tools / Client software.

Operating System: Any of the UNIX flavours like HP UX from HP, IRIS from Silicon Graphics, OSF from DEC, AIX from IBM, Sun OS/Solaris from SUN Micro systems (OR) any NT based server.

HTTP Server software: Different flavours of http servers are available freely on Internet and commercially. Free http servers like (http server from CERN / apache server etc.) . Commercial http servers like Netscape or Internet Information server from Microsoft, can also be used.

Authoring Tools: Many free and commercial authoring tools are available like (HotDog, HotMetal, HTMLed, Netscape 3.01 gold, Micorsoft FrontPage etc.) for designing web pages (using HTML, VRML, Java Script, Visual Basic Script, Java, ActiveX).

Client Software: Client software can be either Mosaic, Netscape Browser (or) Internet Explorer.

- (c) **Communication/Networking:** The web server has to be connected with a communication network for providing service on the Internet. Client also should have connectivity with a communication network for accessing the service on the Internet. Communication links can be either leased lines, VSAT based, Radio Links or a combination of hybrid systems.
- (d) **Content:** The content is effectively the information user accesses from your web site. The richer the information content, more and more people will access your page. Before designing a site, the

information content relevant to the application that will go in to the different pages has to be identified.

Content Creation Tools: Contents once identified for a particular application can be created using general editors (if one is familiar with those HTML syntax) or various content creation tools, available as Free/Share/Commericalware.

3 WEB SERVER AT CENTRAL LIBRARY, IIT, KHARAGPUR

(a) **Hardware**

486 DX / 66 Mhz , 540 MB HDD, 16MB RAM, CD-ROM Drive, 1.44/1.22 FDD .

(b) **Software**

Operation System: Linux 1.2.13

HTTP Server Software: http-1.5a.tar

The sample configuration files are available at ftp://144.16.192.18

Authoring Tools: Different tools used like vi editor, HTMLed, Silicon Graphics Webmagic/Cosmocreator authoring tool.

Client Software: Netscape/ Explorer browser.

(c) **Communication/ Networking**

A CISCO Router system named merry functions as the gateway for IIT-KGP. The Webserver of Central Library, is connected to the Institute backbone and provides service to National and International Network (INTERNET) through several leased/VSAT connections, ranging from 19.6 kbps to 400 kbps. All the departments including the library are connected on a powerful ATM backbone of 155 Mbps⁴ (Figure 1).

3 INFORMATION SERVICES ON THE WEB

To provide dynamic information services⁵, it has become necessary to store them in databases for which already there are popular databases (RDBMS) available. With the popularization of the web, integration of these databases backend to web will help to facilitate live information services. Many FREE/Shareware and Commercial Gateways are available to integrate the databases.

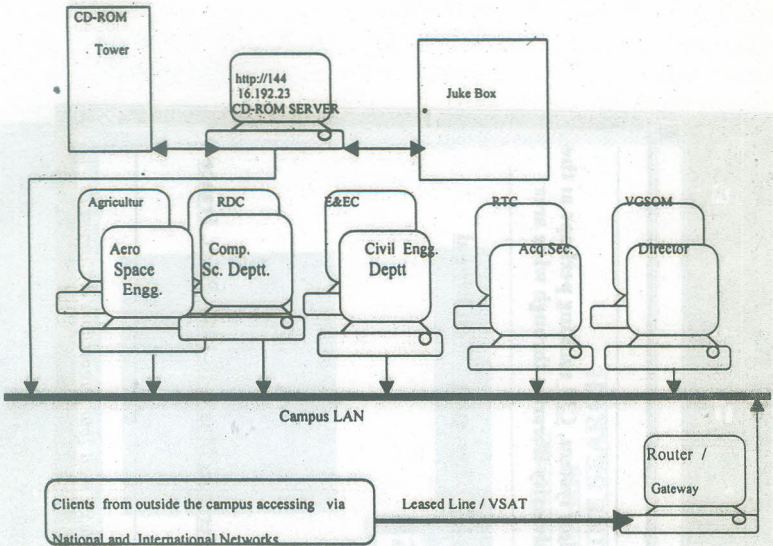


Figure 1 CD-ROM Server on WEB at IIT, Kharagpur

31 OPAC ON WEB

The entire collection of over 3 lakh specialised information sources on diverse branches of Science & Technology is available on web for searching by subject and other access points (Figure 2).

32 WEB ACCESS OF CD-ROM DATABASE

The electronic Library (EL) of Central Library has been providing CD-Rom database services over the years. But to avail the services users have to personally visit EL and also standalone version does not support multiple access simultaneously. To get over these problems, out of a project support by AICTE for Rs 8 lakhs, the automation group of Central Library has set up a workable network access to CD-Rom databases. The facility is now available through the INTRANET and can even be accessed through the INTERNET, subject to copyright restriction (Figure 3).

To access the the database one has to connect the CDNET Server

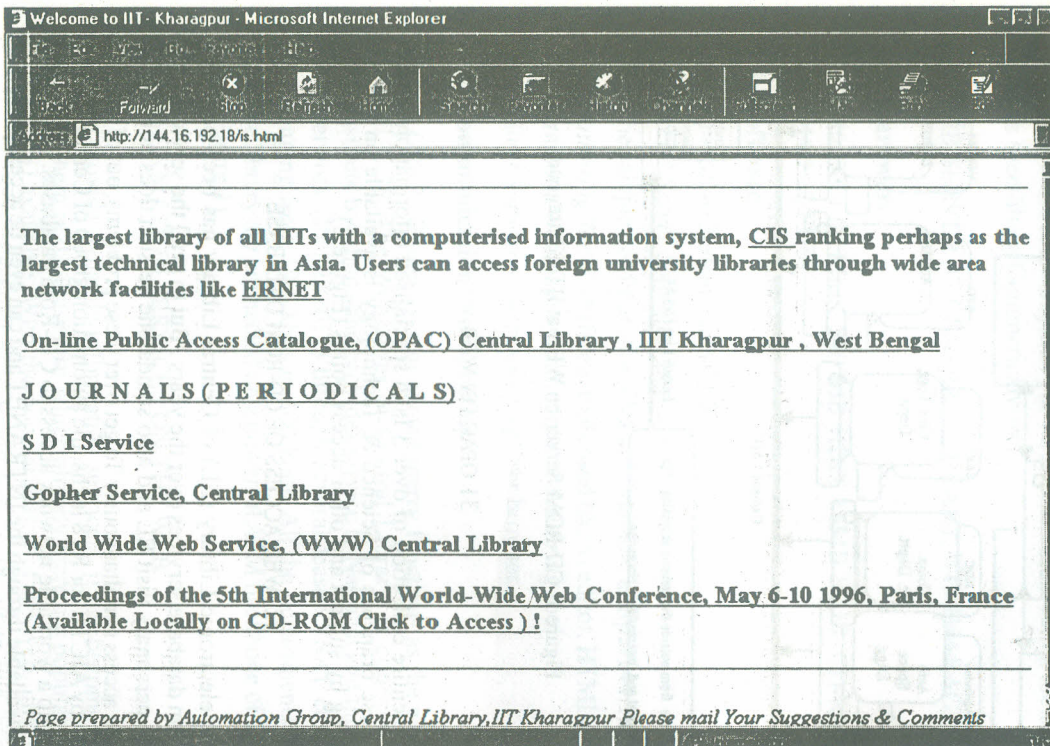


Figure 2. OPAC Link of Central Library WEB Site

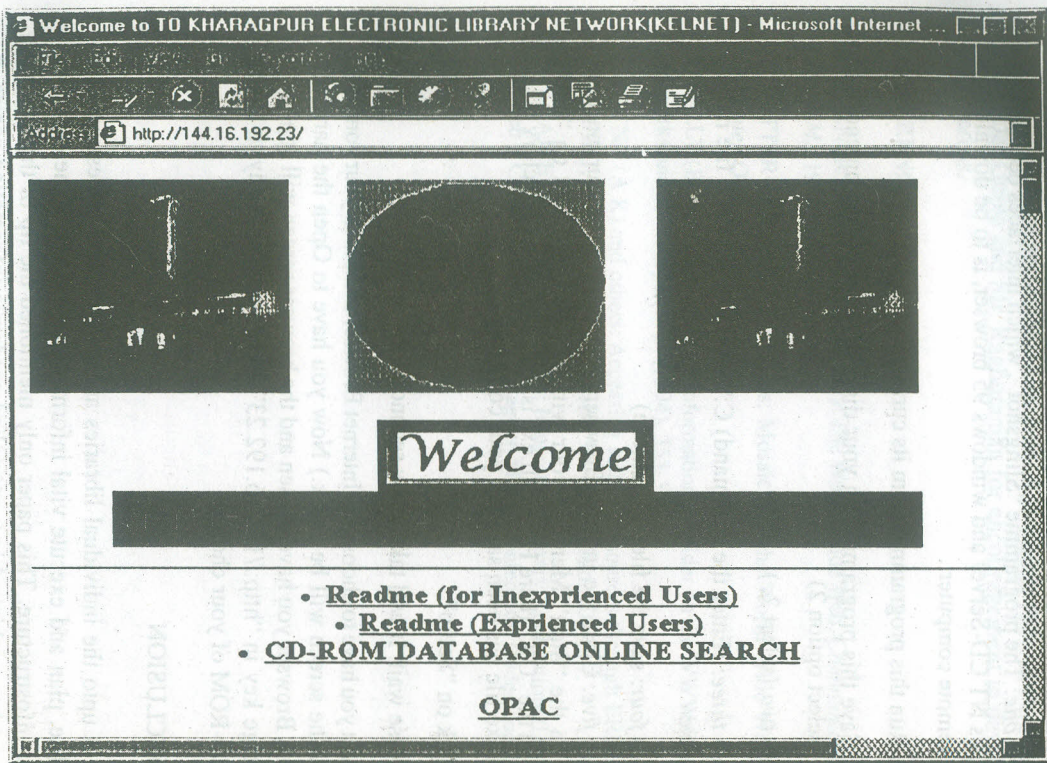


Figure 3. CD-ROM Database Link of Central Library WEB Site

http://144.16.192.23 from Internet browser of a remote workstation of WINDOWS95 platform . Then s/he.has to download the client part of the browsing software which will occupy only 97kb of space by selecting 'Install.exe'. Then from a WINDOWS main menu install.exe file has to be run which will provide a wizard to guide the users what to do the next.

Step one: The programme "Slingshot", which interfaces between the Windows NT CD-Server and windows 95 browser, is to be downloaded on the remote computer .

1. Run this programme from its current location
2. Save this programme on your disk (note : It is recommended to select option 2)

Step two:(select 2.)

Step three: (Enter the command) C:\WINDOWS\TEMP file name : install.exe

Step four: save the file. (install.exe)

Step five: Close the Internet Browser.Now to run it on your machine: Click on the "Start" Menu of your windows Screen, Click on "Run", Click on the "OK" (here H:\install.exe is the name of the directory where install.exe file has been saved in your computer)

Click on "Setup"

Please wait. It will take a few seconds

Next you have to choose the Internet Browser available in your computer. (Now the screen will be blank.) Now you have to Open the particular Internet Browser you have chosen and the browser screen will appear. At this stage key in "http://144.16.192.23". You are now ready to access any CD-ROM of your choice.

4 CONCLUSION

It is upto the individual libraries and information professionals to visualise, plan and execute vital information services, in the emerging digital infostructure. This paper only mentioned the tip of the iceberg, what we have achieved in a specialised academic information centre. A blend of commercial products and locally developed database content on the hands of computer friendly information professionals will go a long

way in improving the way information is collected, organised, provided and retrieved in this part of the globe.

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