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# ACCESSING KELNET RESOURCES THROUGH ERNET AND INTERNET

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## Introduction

ERNET ( acronym for the "Education and Research in Computer Networking) is a project under the aegis of United Nations Development Program (UNDP) and the Department of Electronics (DOE), Government of India. All five IITs and IISc, Bangalore are the participating Institutions. The National Centre for Software Technology (NCST\_ forms the core of ERNET activities in INDIA and serves as link with other National Library Networks such as INFLIBNET/DELNET/BONET/MALIBNET/CALIBNET/SIRNET etc., and international networks of networks Internet, IIT-KGP site of ERNET is the gateway for KELNET existing at the Indian Institute of Technology, Kharagpur Library. The system of information exchange is accomplished by means of computer systems configured to function as gateways. The message traverses from one gateway to another in a way the postal mail goes from one post-office to another, on its way to destination. CISCO Router system christened "merry" functions as the gateway for IIT-KGP. The Meteor III computer is connected to the Institute backbone and configured using TCP/IP software. Within the ERNET community, a fuller range of services such as network bulletin board service, x.500 based directory service, file transfer, remote login, information retrieval through tools like gopher: and access to databases etc. are available. List servers and anonymous ftp servers are also installed. The E-mail facility is available as ERNET traffic.

Any computer system ( machine) available over this network connected through NCST, Bombay can access INTERNET via UUNET using available software tools like gopher, archie etc., Equally, KELNET may be accessed from any of the INTERNET sites. Link between KELNET and INTERNET is established via the Telephone Lines/ satellite

link. The tangible benefits of international connectivity can be seen in increased collaborative efforts, access to remote resources, and inaccess to general information and databases.

With the modest progress and activities of the automation group of IIT-KGP in recent years, it is now possible to access the Library information available at IIT-KGP (KELNET) alongwith other participating libraries on INTERNET via ERNET. With the experience gained from experimentation with the information resources of the participating libraries and institutions, a large part of our resources that are available on KELNET have been placed on LAN and INTERNET through ERNET. It is hoped that this paper will inspire other libraries and other networks to take shape at a faster pace to create National Resource Wealth for any information seeker.

### **1. Library Automation at IIT Kharagpur**

The Central library heralded library automation in a modest way in mid 1987 with two PCs installed as terminals to central computing facility (CYBER). These were used on an experimental basis to perform sundry house keeping jobs within the library. Later in 1990 the library acquired minicomputer MAGNUM-II (68030) was acquired and a book database of one lakh books was created. This was subjected to various manipulations including that of an in-house development of software. This provided a great insight into library automation and inculcated the computer culture amongst the library staff. In 1993, progress of automation was accelerated by acquiring an EISA based 486 Computer System with 16 MB RAM and 1.05 GB HDD along with other relevant accessories and a software package capable of automating most of the in-house operations. This has been connected to the campus network. The changing trend in information storage technology and the availability of CD-ROM databases, necessitated the addition of two dedicated CD-ROM Workstations 80486 (33 Mhz) with necessary CD-ROM Drives was acquired in 1994.

### **2. KELNET Resources**

The Information available on KELNET can be categorized into :

- 1) Internally generated Databases that is accessible through the network
- 2) Commercially procured databases (CCOD/ CD-ROM) that can be accessed within the library. It is hoped that in the near future these will also be accessible through the campus network and

to other participating library net works for resource sharing. At present search results can be sent through ERNET E-mail facility.

## **2.1 Internally Generated Databases**

Out of the total collection of the library of 3,00,000 Volumes including 2,00,00 Books, 70,000 Back volumes of Periodicals, 1500 Institute Ph.D. Theses, and other items such as Micro-fiche, Standards, Reports, etc., the following are available through/ on KELNET.

- i) Bibliographic data of 1.6 lakh books
- ii) All the Journals and Titles (4000 Nos)
- iii) Backvolume data of 20,000 out of 75,000 Collections.
- iv) Current Subscription details (1100 Nos.) and Recent arrival data.
- v) Institute Theses (Ph.d) about 1400 Theses.
- vi) Foreign Theses (in Micro roll) about 160 Theses.
- viii) Data of USER records (3500 members) and Issue/ Return details.

## **2.2 Procured**

- i) CCOD ( Current Contents on Diskette) : ( Loaded On Hard Disk)

The following Categories are loaded on the Workstations and Details of Author/Title of Article/Address ( Reprint Address)/ Journal Name/ Issue/ Volume etc. are retrievable ( Availability 1991-Till Date).

- a) Engineering, Technology and Applied Sciences.
- b) Physical, Chemical and Earth Sciences with Abstracts.
- c) Social and Behavioral Sciences.
- d) Life Sciences. (1991 only)

- ii) CD-ROM ( Compact Disc Read Only Memory)

- a) INSPEC Full Set From ( 1992 - Till date)  
Covering aspects of physics, electronics, electrical engineering, computer science, control and information technology. This definitive source from the Institution of Electrical Engineers has now been combined with PROQUEST Searchware for easy access to this computer database. ( Runs in DOS Based Systems)
- b) Elsevier Science Publishers Catalogue on CD-ROM for 1993 and 1994 ( Runs in Microsoft Windows based Systems)
- c) ER Mapper 4.0 Image processing software for Earth Sciences

- (Runs in SPARC SUN OS 4.1 Solaris 1.1 System)
- iii) Databases Under (Trial and Evaluation Offer)
- a) Active Library on CORROSION-Elsevier Science Publishers hypermedia systems. This contains description of contents of the Reference Cube, Case Studies, Corrosion Control measures, The quick Reference Cube, and the various books (4 books full text with diagrams) and database on corrosion which are included in the Active Library.
  - b) Concise Engineering Technology Index 7-1/2 years in one CD-ROM ( Silver Platter Product ) ( searchware SPIRS)
  - c) Dialog Subdisc: ( Dialog Product ) ( Searchware ONDISC) on  
a) Civil b) Mechanical c) Compendex Plus
  - d) IEEE/IEE Publications On CD-ROM is a full text retrieval facility covering the IEEE/IEE publications which can be viewed on the screen and printout may be obtained if desired. (UMI/ ( IEEE/IEE) Product) ( Searchware PROQUEST)

### 3. Procedure for Accessing KELNET

In order to navigate KELNET library resources available at IIT-KGP, via computer network the ip address 144. 16. 192.17 may be used. This will link the user computer to IIT-KGP Library computer. The user computer will then act as a terminal to the Central library machine for a "Remote Login". This terminal should establish compatibility for trouble-free working. The login for public use is "search" and requires no password. The user may also access us in computer talk, if permitted at their end. The iternity of commands and the terminal screen displays for a procedure for library resource browsing is given in annexure I. The procedure for file transfer is given as annexure II.

Suggestions and questions may be mailed/talked as under:

ftp @library. iitkgp. ernet. in (or)

library @library. iitkgp. ernet. in

or

talk library @library iitkgp. ernet. in

### 4. Problems and Prospects

Networks provide an ideal mechanism for accessing and distributing the data available in the databases. This also reflects the changing trend of libraries from 'just - in - case' Collections to "Just - in - time" access model. Documents can now be accessed and delivered on paper, on-line, or on CD-ROM. Electronically they may be full image, full text ASCII, or both. The sharing of information via networks is

efficient in time, cost, and security. Users' familiarity with this emerging media should be encouraged by making the technology more friendly to human comfort. Just as the Ethernet/FDDI is the Backbone facility of Campus LAN, today's librarians must be confident and make sure that the libraries are the Backbone of Information source (s)/ resource: and contribute by assuming a corresponding role in Global Information Infrastructure (GII) of resource sharing and accessibility to information. But all this depends upon the smooth functioning and constant availability of computer network links. Although the links overseas are available constantly and have automatic arrangements to transfer users to other machines is known to ensure functioning of links under operational controls of intermediary agencies. Many of these are under development and testing stage. It is hoped that in the near future anyone would be able to use the network with confidence and reliability.

**References**

Cerf, V; "Networks" Scientific American, V 265 No 3 Sept. 1991 pp 72-81.  
Electronic Library : User Orentation Manual, Kharagpur, IIT, 1994  
Wood , David C:  
"Computer networks : A Survey" in Computer Communications ed. by Wushow Chou, NY. Prentice-Hall, 1985; Chap. 14.

**Annexure-1 Procedure for  
KELNET resource browsing**

Feed Command as under to obtain following displays :  
\$ telnet library (or if named server is implemented)  
\$ telnet library. iitkgp.ernet. in  
(or)  
\$ lelnet 144. 16. 192. 17  
To obtain the following display.  
Trying 144.16.192.17  
Connected to library. iitkgp.ernet, in  
Escape Character is  
UNIX System V Release 3.2 ( library. iitkgp.ernet. in)  
ttyp0)  
login : search <Enter the account "search" and press Enter>  
password : < Press Enter>  
KELNET Menu will be displayed as under :

Central Library Information Service

Please Choose any of the Options Currently Available

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1. KNOW YOUR LIBRARY
2. LIBRARY RULES
3. RECENT ARRIVALS ( BOOKS)
4. RECENT ARRIVALS ( CURRENT PERIODICALS)
5. CURRENT LIBRARY CIRCULARS
6. OPAC ( ON-LINE PUBLIC ACCESS CATALOG)
7. CD-ROM DATABASE SERVICES
8. CCOD (CURRENT CONTENTS ON DISKETTE) SERVICES
9. STANDARDS/THESES/ REPORTS/MICROFORMS/ MICROFICHE
10. LIBRARY AUTOMATION STATUS
11. COTINUING EDUCATION PROGRAM
12. ACADEMIC INFORMATION
13. QUIT

ENTER THE CHOICE NUMBER AND PRESS ENTER==>>

(e.g.) If option 6 is chosen and entered your system will seek answer to a query relating to a check-up for terminal type. You may check it by feeding, "Y" in which case the following screen will be displayed

**OPAC Search**

YOUR TERMINAL MUST BE A VT 100, ANSI OR EMULATOR.

DO'S FOR VT 100 COMPATIBLE TERMINAL EMULATION

Use of "Fn" keys in OPAC Search is achieved

by invoking the NUMERIC KEY PADS as under

1. Make sure Numeric Keypad [NUM ] IS ON [LOCK]

2. Use Numeric Keypad keys as FUNCTION KEYS (F1, F2,F3.....F10)

F1--> numeric key pad 1 + numlock ON

F2--> numeric key pad 2 + numlock ON

F10-->numeric key pad 0 + numlock ON

DO'S FOR ANSI TERMINAL EMULATION

Use Function Keys F1,F2.....F9 as it is

and for F10 Use <Esc> Key

If the terminal check-up query is replied 'N' or otherwise the next screen will lead you to a library search menu providing various options as under:

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### Public Access Cataloge

#### SEARCHES

Books and other materials  
Selected article database  
Journals  
Subject wise Journals

#### RECENT ARRIVALS

Books and other materials  
Journals

#### ITEMS STATUS

Find Borrower Item/Reserves  
Find Item status/ Reserves  
Put on Reserve

<Ret>- Sel lf/Rt/Up/Sn-Arrows Pg Up-Help F10=quit

User may select appropriate option in the above menu and proceed with his/her query. The results may be instantaneously viewed at subsequent screens. After the query is done, process may be logged off and link disconnected.

### Annexure II Procedure for file transfer

Use the ftp Command of TCP/IP Software and the utility of it to list files, change directory and transfer data form the remote sites to the local site so that printouts of data resident in host network computer could be taken and use these files may be used at any time convenient later on.

```
$ Feed Command as under :  
$ Ftp library ( or if named server is implemented)  
$ ftp library. iitkgp. ernet. in  
    (or)  
$ ftp 144. 16. 192.17
```

#### The following display will appear

```
Connected to library  
220 library. iitkgp.ernet. in FTP Server ( Version 5.60#1 Ready)  
Now Enter the account name anonymous  
Name (machine Name) : ( login name) : anonymous
```

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the following display will appear

331 Guest login ok, Send indent as password

Now Enter Your E-mail address for password

password : < mail address>

230 Guest login OK, access restrictions apply

To view the Directory files, type the following command

ftp > ls - al < Press ENTER>

Now the following display will appear

150 open ASCII mode data transfer for /bin/ls ( 0 bytes)

total 34

```
-rw-----      1 ftp ftp 1068 Apr 08 1994 . cshrc
-rw-----      1 ftp auth  0 Nov 05 18:19 . last login
-rw-----      1 ftp ftp 1416 Apr 10 1994 . login
-rw-----      1 ftp ftp  971 Apr 10 1994 . login. old
-rw---r---r----- 1 ftp ftp  764 Apr 15 1994 READ ME
-rw---r---r----- 1 ftp ftp 1051 Oct 26 09:17 SITEINFO
-rw---r---r----- 1 ftp ftp  366 Apr 10 1994 WELCOME
-dr---xr---xr---x--- 2 ftp ftp  80 Apr 08 1994 bin
-dr---xr---xr---x--- 2 ftp ftp  48 Apr 08 1994 dev
-dr---xr---xr---x--- 2 ftp ftp  64 Apr 08 1994 etc
-rw---r---r----- 1 ftp ftp 1290 Nov 05 19:20 !s-lr
-rw-----      1 ftp ftp  639 Sep 27 15:09 mbox
-dr---xr---xr---x--- 13 ftp ftp  576 Aug 24 15:00 pub
-dr---xr---xr---x--- 2 ftp ftp  48 Apr 08 1994 Shlib
-drw---xr---xr---x---2 ftp ftp  368 Nov 01 10:04 Startup-
                        search
-drw---xrw---xrw---x--2 ftp ftp  608 Sep 30 13:37 uploads
```

226 Transfer Complete

1121 bytes received in 0.32 sec (3.4 Kbytes/S)

To change the directory to pub directory enter the following command

ftp> cd pub

The following display will appear



250 CWD Command Successful

ftp> ls -al

**Pub:**

Total 28

...rw---r---r-----	1	ftp	ftp	1439	Apr	14	1994 READ ME
-drwxr---xr---x--	4	ftp	ftp	64	Aug	12	09:21 aerospace
-dr---xr---xr---x---	4	ftp	ftp	400	Nov	05	18:38 cdrom
-drwxr---xr---x--	2	ftp	ftp	368	Aug	24	14:58 contest
-drwxr---xr---x--	9	ftp	ftp	528	Apr	19	1994 electronic- books
-drwxr---xr---x--	2	ftp	ftp	368	Aug	24	15:02 miscella- neous
-drwxr---xr---x--	4	ftp	ftp	192	Sep	15	17:16 multimedia
-drwxr---xr---x--	2	ftp	ftp	96	Apr	08	1994 ncsi
-drwxr---xr---x--	2	ftp	ftp	352	Oct	26	09:20 novell
-drwxr---xr---x--	2	ftp	ftp	176	Apr	08	1994 sunsite
-drwxr---xr---x--	2	ftp	ftp	480	Aug	15	1994 unix
-drwxr---xr---x--	5	ftp	ftp	1856	Apr	14	1994 wuarchive

To get back the Home Directory,

Enter the Following Command.

ftp>cd..

The Following display will appear

250 CWD Command Successful

To copy a file from remote machine to local machine enter the following command

ftp> get README

The Following display will appear

200 Port Command Successful

150 opening ASCII mode data transfer for README (143, bytes)

226 Transfer Complete

Local : README remote : README

1447 bytes received in 0.014 Seconds ( 1e + 02 K bytes)

ftp>

**Note:**

- 1) The README files contains a summary of directory and useful files in KELNET anonymous ftp site. The user interested in details may open it ( this is ASCII text) and read for relevant description and instructions.

The contents of file SITEINFO would be as under :

Name	:	Library. iitkgp. ernet. in
IP-Address	:	144.16.192.17
Postal-Address	:	Central Library, IIT Kharagpur 721 302, WB,INDIA
Telephone	:	(03222) (2221-4) Ext.3060
Fax	:	(03222) 2303 &/or 2606
Electronic-Address	:	ftp@ library. iitkgp. ernet. in
Contact	:	Automation Group, Central Library, IIT, Kharagpur
Location	:	Kharagpur 721302, West Bengal, India.
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