


1-1-1988

# Computing at Lehigh

Lehigh University

Follow this and additional works at: <http://preserve.lehigh.edu/lts-computing-center-newsletter>

 Part of the [Computer Sciences Commons](#), and the [Library and Information Science Commons](#)

---

## Recommended Citation

Lehigh University, "Computing at Lehigh" (1988). *Computing Center Newsletter*. 69.  
<http://preserve.lehigh.edu/lts-computing-center-newsletter/69>

This Newsletter is brought to you for free and open access by the LTS Publications at Lehigh Preserve. It has been accepted for inclusion in Computing Center Newsletter by an authorized administrator of Lehigh Preserve. For more information, please contact [preserve@lehigh.edu](mailto:preserve@lehigh.edu).

# Computing at Lehigh

Lehigh University's  
Computing Center Newsletter

January 1988  
Volume XV, Number 3

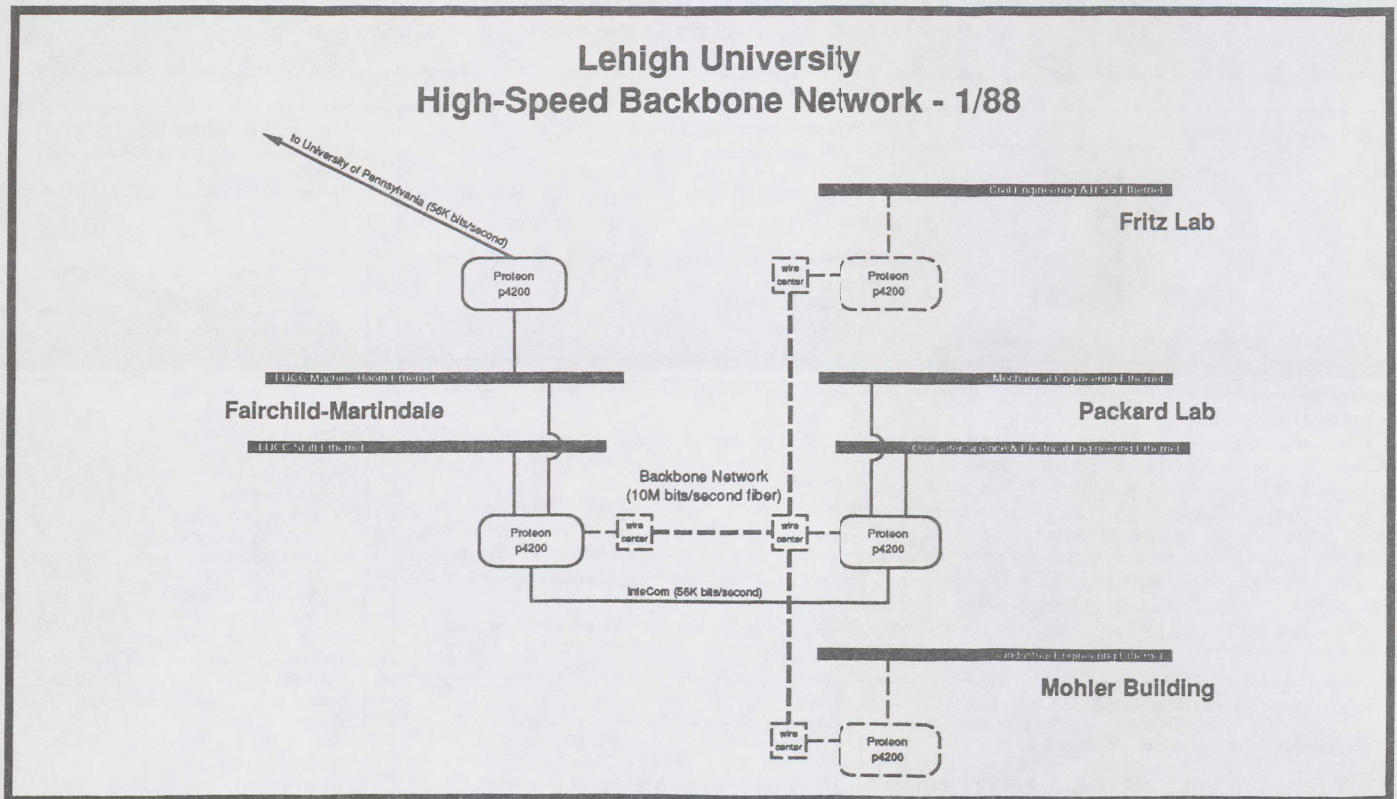


Figure 1

## General Interest

From the Director	1
Destruction of Intellectual Property	13
Seminar Registration	14
Auditorium Enhancements	14
Glancing Back	14
Consultant's Corner	15
Multiple CDCNET Connections	15
GNU Emacs and Non-DEC Terminals	15
Setting VAX/VMS File Protections	15

## From the Director

William R. Harris

### Introduction

In October 1987 the LUCC Visiting Committee was on campus. The Committee's written report had not been submitted at the time of this

See Director, page 3

## Mainframe Computing

DEC 20 Migration	1
LUThesis Available for Scribe's Device PostScript	.5
PostScript Font Families for Scribe	.5
CYBER Software Library	.5
New Releases	
SLAM II 4.0 under NOS/VE	5
TSP V4.0E under NOS/VE	6
VAX Software Library	.6
New Releases	
LPAGE Available under VAX/VMS	6

## Migrating Files from the DEC 20

### Using Magnetic Tape

Joel W. Robertson

The migration article in the November 1987 issue of Com-

See Migrating, page 4

## Micro Computing

Site License with Borland	1
Virus!	7
3.5 inch Floppy Drive	7
EXP Printing: HP LaserJet Plus/Series II Locations	7
Micro Software Library	.8
New Releases	
WATFOR-77 Bug Fixes	8
FSTAL V2.23—Printing	
Freestyle Documents on Talaris	9
Larger EXP Fonts	9
STATGRAPHICS V2.6	9
PC/PILOT V4.0—Authoring Language	10

## Site License with Borland

Judith K. Allio

Lehigh University has signed an Educational

See Borland, page 6

## Network Operation

LU Backbone Network	1
On-Line File Reload Request Forms	12
NetDial V4.2 Released	12
BITNET User's Guide Available	13
TERRA V1.4 Available	13

## Lehigh University Backbone Network

Mark Miller

Over the past year, the Lehigh University Computing Center has been planning and building a high-speed backbone network with the objective of linking the various departmental networks. A backbone network

See Backbone, page 10

### Lehigh University Computing Center Hardware

CDC CYBER 180 Model 850 (32 MBytes Memory, NOS V2.5.3 & NOS/VE V1.2.3)  
 DECSYSTEM-20 Model 2065 (2 MWords Memory, TOPS-20 V6.1(50)-3)  
 IBM 4381 Model 11 (8 MBytes Memory, VSE/SP V2.1.5)—Administrative  
 IBM 4381 Model 13 (16 MBytes Memory, VM/SP V1.4, MUSIC/SP V1.2)—Network Server  
 VAX 8530 (32 MBytes Memory, VMS V4.6)  
 Zenith Z-100 PC Series & Z-200 PC Series (512 KBytes Memory, MS-DOS V2.10 & 3.20)

### Computing at Lehigh est. 1986



Lehigh University's Computing Center Newsletter

User Services External Report (USER) est. 1973  
 LUCC Microcomputer Newsletter est. 1986

General Editor ----- Joel W. Robertson  
 Copy Editor ----- Monica A. Newman

194 E.W. Fairchild-Martindale Library and Computing Center #8b  
 Lehigh University  
 Bethlehem, PA 18015  
 (215) 758-3990

### Computing Center Directory

Information About Policies and Plans

Director  
 William R. Harris . . . . . (215) 758-3830  
 User Services Manager  
 Timothy J. Foley . . . . . 758-3990  
 Operations Manager  
 Carol D. Rauch . . . . . 758-3989  
 Microcomputer Store Manager  
 Robert R. Kendi . . . . . 758-4606  
 Systems Programming Manager  
 Kevin R. Weiner . . . . . 758-3991

Information About Bills Received

Administrative Associate  
 Joseph P. Holzer . . . . . 758-3825  
 Accounting Assistant  
 Annette L. Ruhe . . . . . 758-3825

Consulting

User Consultants  
 Blair R. Bernhardt . . . . . 758-3994  
 Frederick W. Chapman . . . . . 758-3218  
 Linda S. Gingery . . . . . 758-5152  
 Monica A. Newman . . . . . 758-3995  
 Joel W. Robertson . . . . . 758-3985  
 Kenneth R. van Wyk . . . . . 758-4988

Information About Software Availability

Software Librarian  
 Judith K. Allio . . . . . 758-3993  
 Systems Status, Technical Information  
 On-duty Consultant  
 . . . . . 758-4141

General User Information

Data Processing Assistant  
 Ann Marie Matusa . . . . . 758-3990  
 Accounts Coordinator  
 Doris A. Oravec . . . . . 758-3992  
 Information About Tapes and Supplies  
 Data Processing Tape Librarian  
 Monica M. Herrera . . . . . 758-4140

### Computer Access

On-Campus  
 CYBER 850  
 (300-19.2K Baud) . . . (cdc) Ext. 46800  
 DEC 20  
 (300-9600 Baud) . . . (dec20) Ext. 46200  
 IBM 4381  
 (300-19.2K Baud) . . . (ns) Ext. 46000  
 VAX 8530  
 (300-19.2K Baud) . . . (vax) Ext. 46400  
 Off-Campus  
 CYBER 850  
 (300/1200 Baud) . . . . . 974-6800  
 DEC 20  
 (300/1200 Baud) . . . . . 974-6200  
 IBM 4381  
 (300/1200 Baud) . . . . . 974-6000  
 VAX 8530  
 (300/1200 Baud) . . . . . 974-6400

### General Information

*Computing at Lehigh* is a bi-monthly report on computing, published by the Lehigh University Computing Center. Article contributions are primarily by Computing Center staff, although users are also encouraged to contribute. Instructions for submitting articles can be found at the end of this newsletter.

Subscriptions to *Computing at Lehigh* are free of charge to those in the Lehigh University Computing Center user community and to other interested parties. Those who wish to subscribe to *Computing at Lehigh* or make changes regarding their subscription should return the mailing list form included at the end of this newsletter.

Distribution of *Computing at Lehigh* is through Lehigh University campus mail for campus subscribers and through U. S. Postal Service First Class Mail for non-campus subscribers.

*Computing at Lehigh* is formatted with XEROX's Ventura Publisher™ and printed on a PostScript™ printer.

### Public Site Hours (Academic Schedule)

	Room Hours	Student Consulting Hours
<b>Central Site Users' Area, 180 Fairchild-Martindale</b>		
Sun	12:00 noon - 12:00 midn	12:00 noon - 12:00 midn
Mon-Thu	6:30 am - 12:00 midn	8:00 am - 12:00 midn
Fri	6:30 am - 10:00 pm	8:00 am - 5:00 pm
Sat	9:00 am - 8:00 pm	10:00 am - 8:00 pm
<b>Central Site Microlab, 292 Fairchild-Martindale</b>		
Sun	12:00 noon - 12:00 midn	no consulting
Mon-Thu	8:00 am - 12:00 midn	no consulting
Fri	8:00 am - 10:00 pm	no consulting
Sat	9:00 am - 8:00 pm	no consulting
<b>Central Site Special Equipment Room, 182 Fairchild-Martindale</b>		
Sun	12:00 noon - 12:00 midn	12:00 noon - 12:00 midn
Mon-Thu	8:00 am - 12:00 midn	9:00 am - 12:00 midn
Fri	8:00 am - 5:00 pm	9:00 am - 5:00 pm
Sat	10:00 am - 8:00 pm	10:00 am - 8:00 pm
<b>Drown, Room 208</b>		
Mon-Thu	8:00 am - 10:00 pm	no consulting
Fri	8:00 am - 6:00 pm	no consulting
Sat	8:00 am - 1:00 pm	no consulting
<b>Educational Technology Center, B103 Building A</b>		
Mon-Thu	8:00 am - 10:00 pm	no consulting
Fri	8:00 am - 4:00 pm	no consulting
<b>Fritz Lab Annex, Room A3</b>		
Mon-Fri	8:00 am - 10:00 pm	no consulting
<b>Grace, Room 28</b>		
Sun	24 hours	2:00 pm - 12:00 mid
Mon-Thu	24 hours	1:00 pm - 12:00 mid
Fri-Sat	24 hours	1:00 pm - 5:00 pm
<b>Libraries: Fairchild-Martindale, Linderman, &amp; Media Center</b>		
Sun	12:00 noon - 12:00 midn	no consulting
Mon-Sat	8:00 am - 12:00 midn	no consulting
<b>Maginnes, Room 491</b>		
Mon-Fri	8:00 am - 10:00 pm	no consulting
Sat	9:00 am - 1:00 pm	no consulting
<b>Packard, Room 502</b>		
Mon-Thu	8:00 am - 10:00 pm	1:00 pm - 10:00 pm
Fri	8:00 am - 5:00 pm	1:00 pm - 5:00 pm
Sat	8:00 am - 1:00 pm	no consulting
<b>Whitaker, Room 257</b>		
Mon-Thu	8:00 am - 8:00 pm	10:00 am - 12:00 noon 1:00 pm - 3:00 pm
Fri	8:00 am - 5:00 pm	10:00 am - 12:00 noon 1:00 pm - 3:00 pm
<b>Whitaker, Room 439</b>		
Mon-Thu	8:00 am - 8:00 pm	no consulting
Fri	8:00 am - 5:00 pm	no consulting

### Business Hours

<b>Business Office, 394 Fairchild-Martindale</b>	
Mon-Fri	8:15 am - 12:00 noon 1:00 pm - 4:45 pm
<b>User Services, 185/194/196 Fairchild-Martindale</b>	
Mon-Fri	8:00 am - 12:00 noon 1:00 pm - 5:00 pm
<b>Microcomputer Store, Sayre Building #26</b>	
Mon-Wed	9:00 am - 5:00 pm
Thu	9:00 am - 7:00 pm
Fri	9:00 am - 5:00 pm
<b>Operations, 171 Fairchild-Martindale</b>	
Mon-Fri	8:00 am - 11:30 am 1:00 pm - 4:30 pm
<b>Operator Support/Machine Room, 179 Fairchild-Martindale</b>	
Sun	2:00 pm - 10:00 pm
Mon-Thu	8:00 am - 12:00 midn
Fri	8:00 am - 10:00 pm
Sat	9:00 am - 5:00 pm

### Special Forms Processing Hours

<b>CYBER 850</b>	
Liquid Ink Plots	
Tue, Fri	8:00 am - until done
<b>DEC 20</b>	
/Forms: Unline	
Daily	2:00 pm - until done
/Forms: Laser	
Daily	4:00 pm - 6:00 pm (Sat. until 5:00 pm)
<b>Network Server</b>	
Talaris	
Daily	3:00 pm - 4:00 pm
<b>VAX</b>	
/Queue=Talaris	
Daily	11:00 am - 1:00 pm (Except Sun.) 6:00 pm - 8:00 pm (Except Sat.)

### Consulting Policy

Consultants are provided to assist users in the use of Lehigh University's computer resources. Consultants are not authorized to interpret course assignments, write code, or debug program logic.

When in need of a consultation, users are requested to contact the LUCC student consultants (present at several of the public sites and at ext. 84141), who are hired to augment the full-time staff consultants.

### *Director, from front cover*

writing, but oral comments emphasized the need for Lehigh to do more strategic planning for computing and networking. To quote:

"Lehigh has outlined ambitious plans for university expansion especially in research activity. The Science-based nature of Lehigh's research directions implies that considerable growth of computing capability will need to occur to support these new initiatives. It is recommended that such a plan be developed and become the basis for Lehigh's future tactical plans for information technology development."

The next visit of the Committee is expected to occur in the spring of 1989. It is the goal of the Computing Center to have available for that meeting a Five Year Strategic Plan, which would include short range plans in the process of implementation.

### **The Planning Process**

The planning process is critical to an effective plan. It must involve collecting the necessary information, establishing the constraints, setting priorities, and providing feedback to those affected so that they, in turn, can plan.

The planning process must be continuous, and woven into the management process to the point where it is indistinguishable from the management process. The process should produce a rolling plan, in which each year the next year becomes the short range plan and the long range plan is extended. The plan should be updated continuously, and sharpen as the future becomes clearer and the environment changes.

Input to LUCC's planning process will be provided in many ways, one of which is by the survey that was recently distributed and currently being analysed. A survey will be distributed annually.

Committees are valuable for input and criticism of the plan. The Computing Center Advisory Committee (CCAC) is one such committee. College planning and computing committees are also important, and so communication with them is important.

Ad Hoc committees will be formed to address major strategic computer and networking topics. One topic may be as narrow as the replacement of the aging microcomputers on campus, while others may be as broad as setting the overall priorities of LUCC with respect to major computing developments and the services expected in light of Lehigh opportunities and constraints. The CCAC will play a pivotal role in the establishment of Ad Hoc committees.

Feedback on the plan must be gathered as a measure of the plan's relevance to University goals and objectives. Once a

planning document is produced, it must be distributed and become the "talking piece" for meetings with Vice Presidents, Deans and their computing representatives, for meetings with departments, and for meetings with students. The CCAC should be heavily involved in this public part of the process.

### **The State of LUCC**

The Computing Center has undergone major change over the last three years. Three changes in facilities have caused dramatic shifts in the services provided and in LUCC's user clientele. In 1985, the major computing service was provided on mainframes, where academic use was evenly distributed among instruction and research. The influx of microcomputers to campus led to a major shift in instructional computing from mainframes to micros. Instructional use of mainframes has dropped by 70% since 1985. Research computing volume on mainframes has doubled since that time, and is currently increasing at a rate of about 40% per year. This increase has been the result of University Sponsored Research growth, since Externally Sponsored Research use has dropped by about 25% during the period.

The installation of the InteCom system in August of 1986 brought another influx of new users to the Computing Center. The Network Server mainframe (available since January of 1987), plus the influx of micros, caused the number of users of LUCC's services to grow from approximately 1,500 in 1985 to over 5,000 in 1987. The new computers, operating systems, applications software, and new users have taxed the service potential of the Center, even though five new people were added to the staff to support the networking services.

The Computing Center is now supporting nine different operating systems on computers from four different vendors. In addition to the support of Lehigh computers, LUCC has made access to NSF supercomputers available. The Visiting Committee was quick to point out the need to consolidate the number of offerings in the future; in doing so, it raised one of the most difficult and far reaching questions for the Center. As we are consolidating, there will be pressure to add even more vendor's computers and operating systems—for example, workstation computers and supercomputers.

The changes of the last few years have given the Computing Center a higher profile on campus. The Visiting Committee found the users and administration very pleased with the services provided. The problem that this new profile brings is the difficulty of continuing with the present level of service while moving forward and providing new and enhanced services. Within the constraints of budget, personnel, and space, the only answer to future demands is consolidation through priority setting accomplished by good planning. ♦

# Mainframe Computing

## Migrating, from front cover

puting at Lehigh described procedures for migrating files from the DEC 20. Unfortunately, the procedure for migrating files to the CYBER 850 via magnetic tape was not complete at the time Computing at Lehigh went to press. The following article describes this procedure. For instructions on migrating files to the VAX (using the Migrate program) or to a micro (using Kermit), please refer to the November issue.

Migrating files from the DEC 20 to the CYBER 850 via magnetic tape involves copying the files from the DEC 20 to a tape and then copying the files from the tape to the CYBER 850. A tape for migrating files can be made available for use by doing one of the following:

- Log a currently-owned tape with the tape librarian.
- Purchase a magnetic tape from the LUCC tape librarian and have her log it.
- Use an LUCC scratch magnetic tape. These tapes are intended for uses of short duration. Data will be saved for only seven calendar days; at the beginning of the eighth day, the tape will be erased without consulting the user. The vsn (volume serial number) for a scratch tape may be obtained from the tape librarian.

### On the DEC 20

After logging in to the DEC 20, instruct the operator to initialize the tape with an ANSI (American National Standards Institute) label by running the PLEASE program and then typing the messages as shown below. The initialization will effectively erase the tape. Notice that both user input and system responses are shown.

```
@PLEASE
Enter text, terminate with CTRL/Z to wait for response,
or ESCape to send message and exit
PLEASE BLANK TAPE vsn ANSI-LABELED.^Z (^Z means press Ctrl-z)
[PLSOPN Operator at TOPS20 has been notified at hh:mm:ss]

hh:mm:ss From Operator Terminal 176:
=> OK.
Enter new text (Same terminators)
Thank you.$ ($ means press Esc.)
[PLSOPN Operator at TOPS20 has been notified at hh:mm:ss]
@
```

Notice that **vsn** represents the volume serial number assigned to the tape by the tape librarian. A tape must only be initialized with an ANSI label once.

In order to write to the tape, it must first be mounted on the the tape drive by entering the MOUNT command as shown below:

```
@MOUNT TAPE MT: /VOLID:vsn /LABEL:ANSI /WRITE
[Mount request MT queued, request #nnn]
```

The TOPS-20 prompt will not reappear until after the tape is on the tape drive and ready for use, at which time the system messages

```
[Tape set MT, volume vsn mounted]
[MT: defined as MT0:]
@
```

will be displayed.

To copy files to the tape, enter

```
@COPY filespec MT: ,
@@ASCII
@@ (Simply press Return here.)
@
```

where **filespec** represents the name of a file to be copied to the tape. Note that the filespec can contain the \* "wildcard" character to copy multiple files. (The filespec \*.\* would copy all files.)

Commands to manipulate the tape, along with the positioning of the tape before and after each command, are shown below:

Command	Tape Command Actions	
	Tape Positioning Performed by Command Before Action	Tape Position Achieved After Action
REWIND MT:	none	LBOT (Logical beginning of tape) Positions tape to logical beginning of tape.
SKIP MT: n	none	after next n file(s) Positions tape after the next n file(s).
SKIP MT: LEOT	none	LEOT (Logical end of tape) Positions tape to logical end of tape.
DIRECTORY MT:	LBOT	LBOT Displays names of files stored on tape.
COPY filespec MT: , ASCII	none	LEOT Copies filespec to tape and sets LEOT at the end of the last file copied.
TYPE MT:filespec	none	after last file typed Displays specified file(s) found beyond current tape position.

After all of the desired files are copied to the tape, enter the DIRECTORY command and subcommand as shown below:

```
@DIR MT: ,
@@LPT
@@
@
```

This will produce a printed copy of the names of the files on the tape; the list may then be used when assigning names to the files as they are copied to the CYBER 850.

When finished with the tape, dismount it by entering

```
@DISMOUNT TAPE MT:
[Tape dismounted, logical name MT: deleted]
@
```

**On the CYBER 850**

Access the CYBER 850 and log in. Issue the COPDT (COPY\_DEC\_TAPE) command as shown below to copy the files from the ANSI-labeled tape to the CYBER 850. To store files under NOS, enter

```
/COPDT, vsn
REQUESTING TAPE vsn, PLEASE WAIT...
```

where vsn represents the volume serial number of the ANSI-labeled tape containing the files from the DEC 20. To store files under NOS/VE, enter

```
/COPDT 'vsn'
Requesting tape. Please wait...
```

For each file that is copied from the tape, the following messages will appear. Under NOS:

```
COPYING FILE TO DISK...
INPUT FILE - TAPE          nn RECORDS READ

STORE file as <DEC0001>?
```

Under NOS/VE:

```
nnn bytes in file 1
Enter file name <DEC_vsn_1>
```

To select the default name for the file (displayed in brackets), press Return. To assign a different file name, type the name and press Return. After each file is copied, the following information will be displayed to indicate that the file has been copied and properly stored. Under NOS:

Filename	Size PRUS (words)	Last Modification
DEC0001	n (nnn)	yy/mm/dd hh.mm.ss
Total Size ... n (nnn) in 1 files.		

Under NOS/VE:

```
:NVE.XLEHIGH.DEC_vsn001_2.1 created: nnn bytes
```

Under NOS, COPDT will respond with the following termination messages after copying the last file from the tape:

```
CIO ERROR 21 ON TAPE.

COPDT DONE. (IGNORE THAT "CIO ERROR 21 ON TAPE." LINE ABOVE.)

$REVERT.CCL
/
```

Under NOS/VE, COPDT simply exits. ♦

**LUThesis Available for Scribe's Device PostScript**

Document type LUThesis is now available for device type PostScript, for the Scribe document production system under VAX/VMS. (Scribe's device PostScript formats files for such printers as LUCC's PrintServer 40 laser printer.) The LUThesis document type conforms to the format required for Lehigh University theses and dissertations.

To have Scribe use the LUThesis document type, place the following line at the beginning of the manuscript (.MSS) file:

```
@Make (LUThesis)
```

The font family selected by LUThesis is NewCentury-Schoolbook. See the article "PostScript Font Families for Scribe" for information on how to select an alternate font family. ♦

**PostScript Font Families for Scribe**

The Scribe document production system is able to use any one of several different font families when formatting a document for a device capable of changing fonts. Of the font families defined in Scribe, only the following are resident on the PrintServer 40 PostScript laser printer attached to the VAX 8530: AvantGarde, Helvetica, NewCentury-Schoolbook, and TimesRoman.

To select a font family, include the following @Style command at the beginning of the Scribe document:

```
@Style (FontFamily "fontfamily")
```

where fontfamily is the name of the font family. For example, to select the AvantGarde font family, use:

```
@Style (FontFamily "AvantGarde")
```

♦

**CYBER Software Library**

Judith K. Allio

**SLAM II Now Available under NOS/VE**

SLAM II is now available on the CYBER 850, under NOS/VE only. Note that the version available under NOS/VE is 4.0, while that available on the DEC 20 under TOPS-20 is 3.2.

The Interactive Execution Environment (IEE) capability, listed as the only new feature in v4.0, is not yet available under NOS/VE.

SLAM II may be accessed and run by typing:

```
SLAM I=file O=ofile US=uroutine UMP=uprogram
```

where `ifile` is the input file, `ofile` is the output file, `uroutine` is a file containing a compiled, user-supplied sub-routine, and `uprogram` is a file containing a compiled, user-supplied main program. `O=ofile`, `US=uroutine`, and `UMP=uprogram` are optional and may be omitted. If `O=ofile` is omitted, the output is written to file `SLAM_OUT` when running SLAM interactively; when running SLAM from a batch job, output is automatically sent to the line printer.

Use of SLAM II is described in a textbook entitled *Introduction to Simulation and SLAM II*, and in the *SLAM II Quick Reference Manual*. Both the textbook and the reference manual are available in LUCC's library, and (on one-day reserve) in the Fairchild-Martindale library. A copy of the reference manual is also available in the central site users' area. ♦

### TSP Now Available Under NOS/VE

TSP (Time Series Processor), version 4.0E, is now available on the CYBER 850, under NOS/VE only. To access and run TSP, enter:

```
TSP ifile ofile
```

where `ifile` is the name of the input file and `ofile` is the name of the output file.

Use of TSP is described in the *Time Series Processor Version 4.0 Reference Manual* and the *Time Series Processor Version 4.0 User's Manual*, available for reference at the central site users' area, 208 Drown, and (on one-day reserve) at the Fairchild-Martindale library. ♦

## VAX Software Library

### LPAGE Available under VAX/VMS

The LPAGE program is now available under VAX/VMS. LPAGE extracts a copy of selected pages from a file formatted for printing on the Talaris 1200 laser printer (e.g., Scribe .TAL files). The extracted pages are written to a file which can then be printed on the Talaris.

To run LPAGE, enter

```
LPAGE
```

at the VAX/VMS prompt. LPAGE will prompt for: the name of the file from which to extract pages, the name of a file to

which to write the extracted pages, and the pages to extract. Specifying the pages `2,10-15,48-` would instruct LPAGE to extract a copy of the second page of the file (which may not necessarily be page 2 of the document), the tenth through the fifteenth pages, and the forty-eighth page through the last page.

To print the file on the Talaris, enter

```
PRINT filespec /QUEUE=TALARIS
```

where `filespec` is the name of the LPAGE output file. Note that LPAGE always writes from the beginning of the output file, i.e., it does not append to an existing file. ♦

## Micro Computing

### Borland, from front cover

Limited Site and Distribution License Agreement with Borland International, Inc., to use certain Borland software products. Under the agreement, Borland grants to Lehigh University the right to install the software on *Lehigh-owned* computing systems for use on campus only. Software products included in the agreement are:

Program	Version
Turbo Pascal	4.xx
Turbo Pascal Database Toolbox	1.xx
Turbo Pascal Editor Toolbox	1.xx
Turbo Pascal Tutor	2.xx
Turbo Pascal Num. Methods Toolbox	1.xx
Turbo Pascal Graphix Toolbox	1.xx
Turbo Pascal (Mac)	1.xx
Turbo Prolog	1.xx
Turbo Prolog Toolbox	1.xx
Turbo Basic	1.xx

Turbo C	1.xx
Reflex	1.xx
Reflex Workshop	1.xx
Reflex (Mac)	1.xx
Eureka	1.xx
Sidekick	1.xx
Sidekick (Mac)	2.xx
Superkey	1.xx
Gameworks	1.xx
Word Wizard	1.xx

Note that LUCC has not yet received the software; its availability will be announced under INfo topic CCNEWS on the Network Server, as well as in *Computing at Lehigh*.

Under the agreement, faculty, staff, and students will be able to purchase at substantially discounted prices *personal* copies of these software products (packaged with documentation) from the Microcomputer Store. Also available at a reduced price will be Borland's Quattro and Turbo Lightning. ♦

## Virus!

### How to Protect Your Computer from Deadly Diseases

Kenneth R. van Wyk

Shortly before Thanksgiving 1987, a computer "virus" was discovered on many of LUCC's public site microcomputer diskettes. A computer virus is a computer program which "infects" other programs in a manner similar to its biological counterpart—it produces an identical copy of itself in another program. This copy has the ability to do the same, thereby proliferating the virus. This copying, by itself, would do little harm. Unfortunately, as with a real virus, a computer virus generally does do harm after it has spread. The virus, which was discovered at Lehigh by several LUCC student consultants, destroys the disk on which it resides (the "parent" disk) after creating four copies of itself. Each of these four "children" has the ability to create four new children, self-destruct, and so on.

Because virus programs are quite easy to write, particularly for microcomputers, it is extremely important to know how to safeguard against them—as well as against other data destructive programs known as Trojan horses or bombs. The single most important safeguard is for users to have a *copy* of all of their data stored in a safe, uninfected place. The importance of having good backup copies cannot be overstressed. Another important safeguard is to be careful when acquiring software—particularly public domain software. There have been several instances in which a public domain program (such as a game) has turned out to be a "Trojan horse." One Trojan horse is the NOTROJ program which purports to protect the user's computer from Trojan horse programs. Instead, it waits until the victim's hard disk is more than 70% full, after which it erases the entire contents of that disk. Another important safeguard is to know how to detect a data destructive program. This safeguard is not as easy to execute as the previous two.

The virus discovered at Lehigh leaves some telltale signs of its existence. When the virus copies itself onto another disk,

the write-date of the COMMAND.COM file—where the virus is placed—is altered. An alert user doing a DIRectory might notice that the write date of his or her COMMAND.COM file is, for example, November 1987. The user might then suspect that something is wrong, since operating system files, such as COMMAND.COM, should not change. Also, a write-protect tab on a target disk causes a "write protect error" even when only a DIRectory of the target disk is requested.

Since a virus, Trojan horse, etc., can be very difficult to detect, some software has been developed to offer some protection. Such software can detect certain types of programs which attempt to do things which could destroy data. If a program does try to do something which could destroy data, the data protection program forewarns the user. For example, if a program attempts to format a disk, the data protection program asks whether or not the attempted operation should be performed. The user then has the opportunity to disallow the format. Some of these data protection programs are memory resident utilities which can be set up to do things such as flag (and allow the user to abort) any read, write, format, or verify request for a disk. Most viruses, Trojan horses, etc., will at some point attempt to write to a disk. If a program appears to be writing to a disk at an "odd" time (such as during a DIRectory listing), then the user should become suspicious. Other data protection software is non-resident; it searches programs for potentially destructive code. A COMMAND.COM file infected by Lehigh's virus would cause such a program to report that the file contains code which could destroy data.

The bottom line is that users should back up their (hard and floppy) disks, be wary of newly acquired software (particularly public domain), and check such software using data protection programs. ♦

### 3.5 inch Floppy Drive Available

A 3.5 inch floppy drive has been added to a Zenith 158 PC located in the Special Equipment Room of the Computing Center. This machine is available for copying information be-

tween 5.25 inch diskettes and 3.5 inch diskettes. A boot disk is available from the student consultants. ♦

### EXP Printing: Hewlett-Packard LaserJet Plus/Series II Locations

When printing a document on a Hewlett-Packard LaserJet, EXP users have sometimes been surprised to find that the text of their documents was printed in the wrong font with incorrect letter spacing. This often occurs because the LaserJet printer being used is the original model of the LaserJet. Hewlett-Packard has introduced three LaserJet printers since this model: the LaserJet Plus, the LaserJet 500 Plus, and the

LaserJet Series II. These newer models have more capabilities than the original model, including memory for storing downloaded fonts—a feature that EXP requires.

The LUCC public sites that currently boast the newer LaserJet printers are: the central site users' area (Plus), the Media Center (Plus), 502 Packard Lab (Plus), and 491 Maginnes



(Series II).

The Computing Center will replace its original LaserJet models (as they wear out or as other needs arise) with newer

laser printers. It has not yet been decided whether the replacements should be LaserJet printers or PostScript printers. ♦

## Microcomputer Software Library

### WATFOR-77 Bug Fixes

Frederick W. Chapman

Three bugs in version 2.0 of WATCOM's WATFOR-77 compiler for the IBM-PC and compatibles have been discovered by various members of the LUCC user community. These bugs are described below.

- WATFOR87 (the version of the compiler which makes use of an 8087/80287 math coprocessor) does not recognize the presence of an 80287 math coprocessor in AT-compatible machines. The compiler issues the error message "Math Coprocessor not properly installed" even when the math coprocessor is properly installed.
- When *unformatted* file I/O (reading from and/or writing to a binary file) and I/O to and from the terminal occur in the same FORTRAN program, the computer appears to "hang." The machine seems to "lock up" while attempting to read input from the keyboard during program execution. (In actual fact, the machine does *not* "lock up;" that is, it is not necessary to re-boot the computer in order to recover from this error. It is more accurate to say that, in this situation, the computer does not respond in a normal manner to keyboard input.)
- Using the compiler options /TYPE and /NOXTYPE simultaneously results in the error message

```
system file error writing terminal - Invalid operation
```

(error SM-03) and may produce other strange behavior as well.

A repaired version of the WATFOR-77 compiler is now available. This version of the compiler corrects all three of the problems mentioned above. Unfortunately, the process of eliminating the above three bugs has created a new bug. However, this new bug is of a much less serious nature than the original three bugs. (Thus, we perceive—albeit dimly—the unrelenting march of "progress.")

This new bug concerns the following. In order to accommodate the file handling requirements of FORTRAN, WATFOR-77 supports three record types: text, variable-length, and fixed-length. Unformatted files which are accessed sequentially should default to the *variable-length* record type. The new bug is that such files now default to the *fixed-length* record type instead. There is a simple and effective way to get around this problem. The record type of a file can be specified as part of the file specification via what is called a "record attribute." The FORTRAN statement

```
OPEN (UNIT=n, FILE=' (V) filename' , FORM='UNFORMATTED')
```

will open the specified file as an unformatted file with variable-length records. (The record attribute, "variable-length

record type," is indicated by the "V" which is enclosed in parentheses before the name of the file. Refer to Chapter 6 of the WATCOM publication *WATFOR-77 User's Guide for the IBM PC with DOS* for additional information concerning files, record types, and record attributes.)

WATFOR-77 users can obtain a copy of the repaired version of the compiler in several ways, to be described shortly. Note that only two files in the WATFOR-77 software package have been modified: WATFOR77.EXE and WATFOR87.EXE; hence, only these two files need to be replaced. In other words, a copy of the WATFOR-77 compiler (v2.0) which has already been installed on a dual floppy or hard disk system can be upgraded simply by copying the repaired WATFOR77.EXE and/or WATFOR87.EXE files over the existing files with the same name. WATFOR-77 users who have both WATFOR77.EXE and WATFOR87.EXE are advised to upgrade both files. Users who have only WATFOR77.EXE need upgrade only that one file; likewise, users who have only WATFOR87.EXE need upgrade only that file.

Repaired versions of the files WATFOR77.EXE and WATFOR87.EXE have been uploaded to the Network Server. In order to obtain and install copies of these files, first log in to the Network Server via NetDial or TERRA. After logging in, press **Alt-q** in order to "push to DOS." At the DOS prompt, change the default disk drive and current directory to be the disk and directory which contain the old copies of WATFOR77.EXE and/or WATFOR87.EXE. Enter **EXIT** at the DOS prompt to return to the Network Server. In order to download and install the new WATFOR77.EXE and/or WATFOR87.EXE files, enter one or both of the following commands at the LUNA main menu:

```
DO FC03:WATFOR77.EXE -B -R
```

```
DO FC03:WATFOR87.EXE -B -R
```

The repaired versions of these files will replace existing copies on the user's disk (provided that the default disk drive and current directory have been properly set). At 9600 baud (the standard on-campus baud rate), the file transfer should take 8–9 minutes per file. Using NetDial (version 4.1 or higher) in "Fast" mode will cut this time in half. See the "NetDial V4.2 Released" article in this issue for more information on "Fast" mode.

WATFOR-77 users who prefer not to download WATFOR77.EXE and/or WATFOR87.EXE from the Network Server can obtain copies of these files at public microcomputing sites. The repaired versions of these files are available on floppy diskettes at the central site users' area, the Fairchild-Martindale and Linderman libraries, and the Media Center. The new WATFOR77.EXE can be found on disk 1 from the set of three WATFOR-77 diskettes for dual floppy systems

without a math coprocessor. The new WATFOR87.EXE can be found on disk 1 from the set of three WATFOR-77 diskettes for dual floppy systems with a math coprocessor. Both of these files can be found on disk 1 from the set of three WATFOR-77 diskettes for hard disk systems. Users who already have a copy of one of the above sets of diskettes can use the DOS COPY command to transfer one or both of the repaired WATFOR77.EXE and WATFOR87.EXE files onto their own copy of the WATFOR-77 software package.

Repaired versions of WATFOR77.EXE and WATFOR87.EXE have also been installed onto the Local Area Networks (LANs) at each of the public LAN sites. Once logged in to a public LAN, a WATFOR-77 user can transfer the new WATFOR77.EXE and/or WATFOR87.EXE onto a diskette which has been inserted into the A: drive by entering one or both of the following commands at the DOS prompt:

```
COPY F:\LIB\WATFOR\WATFOR77.EXE A:
```

```
COPY F:\LIB\WATFOR\WATFOR87.EXE A:
```

For additional information regarding repairs to the WATFOR-77 compiler or for assistance in obtaining and installing a copy of the relevant files, contact the author, Frederick W. Chapman, at User Services, Fairchild-Martindale Computing Center, Bldg. 8B (phone: 758-3218; Network Server user id: FC03). Please also report any problems encountered with the WATFOR-77 compiler (such as new bugs) to Mr. Chapman.

### FSTAL V2.23—Printing Freestyle Documents on the Talaris Laser Printer

Blair R. Bernhardt

Version 2.23 of FSTAL is now available. This program converts Freestyle documents into a form which can be printed on the Talaris laser printer. FSTAL runs on IBM-compatible microcomputers. Since the Talaris is attached to the VAX 8530, the DEC 2065, or the Network Server at different times of the day, FSTAL's output file can be uploaded to any of these machines for printing. (See "Special Forms Processing Hours" on page 2 for the hours during which the Talaris is attached to each machine.)

After obtaining a copy of FSTAL, run FSTAL by entering FSTAL at the DOS prompt. At the

```
Enter Input File Name :
```

prompt, enter the name of the Freestyle file. Then, at the

```
Enter Output File Name : (filename.TAL)
```

prompt, either press Return to use the output file name shown in parentheses (which will be the input file name with the extension ".TAL") or enter a different file name. The output file is the one to be uploaded to the mainframe and queued for printing on the Talaris laser printer.

Use Kermit to upload the output file to the VAX or to the DEC, and use PCWS to upload the file to the Network Server. To print the file on the VAX, enter

```
PRINT filename.TAL /QUEUE=TALARIS
```

(where filename.TAL is the name of the uploaded file). To print the file on the DEC, enter

```
PRINT filename.TAL /FORMS:LASER
```

To print the file on the Network Server, begin by entering FI at the LUNA main menu. Next, at the "File operations" menu, enter P for "Print a file". Finally, specify the name of the file, change the name of the printer from IBM3820 to TALARIS, and press the Return key.

FSTAL is available at the central site circulation window and on LUCC's public site LANs. FSTAL is also available for downloading from the Network Server, under Info topic PD-UTILS. With the cursor positioned at the PD-UTILS bulletin for FSTAL, press the Return key; then, while the bulletin is displayed, press the F4 function key to download FSTAL. FSTAL is documented in LUCC's Technical Bulletin #22, available from User Services and at most public sites. ♦

### Larger EXP Fonts

Wadsworth & Brooks/Cole has released larger Hewlett-Packard LaserJet fonts to Lehigh University; these fonts will also be included in the version 2.0 release of EXP (expected near April). The new fonts are approximately ten percent larger than the previous fonts. Since the screen fonts have not been changed, the character positioning within each line on the screen can, for now, only be used as an approximation.

To install these new, larger fonts, first place a copy of the EXPFONTS.EXE file into the EXP subdirectory, either by

- downloading the file to that subdirectory from the Network Server, via entering the following at the LUNA main menu:

```
DO JWRO:EXPFONTS.EXE -B -R
```

or by

- copying that file first from the "EXP Font Disk" available at the central site circulation window and then to the EXP subdirectory.

Once the EXPFONTS.EXE file is in the EXP subdirectory, enter EXPFONTS -R to update the HP fonts.

Correspondence with Wadsworth & Brooks/Cole has revealed that EXP version 2.0 (which Lehigh will be receiving as part of the ongoing site license) will include a greater number of autoscale symbols, remove current restrictions on boxes and lines, and allow graphics to be imported. A font editor and a mailmerge program will also be included in the release.

Those having suggestions for improvement of EXP should contact Joel Robertson at ext. 83985. ♦

### STATGRAPHICS V2.6 Available

STATGRAPHICS version 2.6 has arrived and is available for copying at the central site, the Fairchild-Martindale library, and the Educational Technology Center.

Do note the following:

1. In the description of the program's system requirements, the following new statement appears: "Note

that some STATGRAPHICS procedures require 640K of RAM." Unfortunately, LUCC was unable to determine from the vendor which procedures and/or conditions require 640K.

2. There are two sets of disks for copying:
  - a 9-disk set for hard disk system use
  - a 10-disk set for dual floppy system use

There are also two sets of copying and configuration instructions. *Be sure to get the appropriate set of disks and instructions.*

The vendor documentation for version 2.6 is incorrect regarding the way in which a dual floppy user should configure his or her system and run STATGRAPHICS. Refer to LUCC's instructions mentioned above.

3. The Microcomputer Store has received documentation updates for the version 2.1 manuals it has sold. ♦

### PC/PILOT V4.0—Authoring Language

PC/PILOT has been upgraded to version 4.0. Along with some minor enhancements, this version allows calls to an external subroutine which must reside in a ".PIL" file. These enhancements are described in the PC/PILOT file README.

PC/PILOT is site licensed by Lehigh University. Five-disk sets for copying, along with copying instructions, are available at the central site users' area, the Fairchild-Martindale and Linderman libraries, and the Media Center. PC/PILOT is available for use on the LANs at the Educational Technology Center and 491 Maginnes.

The *PC/PILOT V4.0 Language Reference Manual* is available for reference at the central site circulation window, the Educational Technology Center, and the Fairchild-Martindale library (on one-day reserve). ♦

## Network Operation

### *Backbone, from front cover*

is a separate, high-speed network which links other networks. Lehigh's backbone network will use fiber-optic cable which will run between buildings. Each building will contain a router which will connect the local networks in that building to the backbone network.

Currently, the backbone network consists of two Proteon p4200 routers connected via a 56K bits/second dedicated phone line. One router is located in the Computing Center and the other is located in Packard Lab (see Figure 1 on front page). This link is the first stage of the campus-wide backbone network; it will be updated to fiber, operating at 10M bits/second, in the near future.

Connected to the Computing Center router are the two Computing Center Ethernets. One of these is in LUCC's Computer Room and the other is in the Systems Programming and User Services offices (see Figure 2 on following page). The Ethernet in the staff offices basically consists of microcomputers running several different protocols. On the Computer Room Ethernet are the DEC 20, the CYBER 180/850 and 180/810, the IBM 4381 (Network Server), and the VAX 8530. Also located on this Ethernet is another router which connects Lehigh to the Pittsburgh SuperComputer Network (PSCnet).

Connected to the router in Packard Lab are the Mechanical Engineering (ME) Ethernet and the Computer Science and Electrical Engineering (CSEE) Ethernet. On the ME Ethernet are a VAX 8300 and several MicroVAXes, and on the CSEE Ethernet are several microcomputers and Unix-based workstations.

The protocols supported by the backbone network are the Transmission Control Protocol/Internet Protocol (TCP/IP) and Digital Equipment Corporation's proprietary protocol,

DECnet. TCP/IP is the most widely supported protocol for connecting dissimilar computers, and will therefore be used for most backbone network communications. DECnet is available for easier communication between campus VAXes and MicroVAXes.

The next stage of the backbone network will be to connect the CE/ATLSS Ethernet in Fritz Lab, the network in Mohler Lab, and the developing networks at the Mountaintop campus. These connections will be accomplished as soon as fiber optic cable to these locations is available. Future plans include connecting each of LUCC's public site Local Area Networks (LANs), as well as additional departmental networks.

Many services will be available over the backbone network. Examples include remote login between machines and high speed file transfer between all connected computers. Also available will be electronic mail service, between connected machines as well as to any node on BITNET and the Internet. (The Internet is the huge collection of interconnected TCP/IP-based networks which includes ARPAnet, NSFnet, NSYERnet, MERITnet, etc.) BITNET access is provided by a mail gateway running on the Network Server located on LUCC's Ethernet. The Network Server is both a BITNET node and an Internet node and will transfer mail between the two different networks. This gateway gives BITNET access to any computer on campus connected to the backbone network.

To be available in the future is Internet access through PSCnet. PSCnet is a regional network of NSFnet (National Science Foundation Network), which in turn is part of the Internet. Such access means that, when current PSCnet routing problems—which are limiting our list of accessible networks—are solved, any computer running TCP/IP and con-

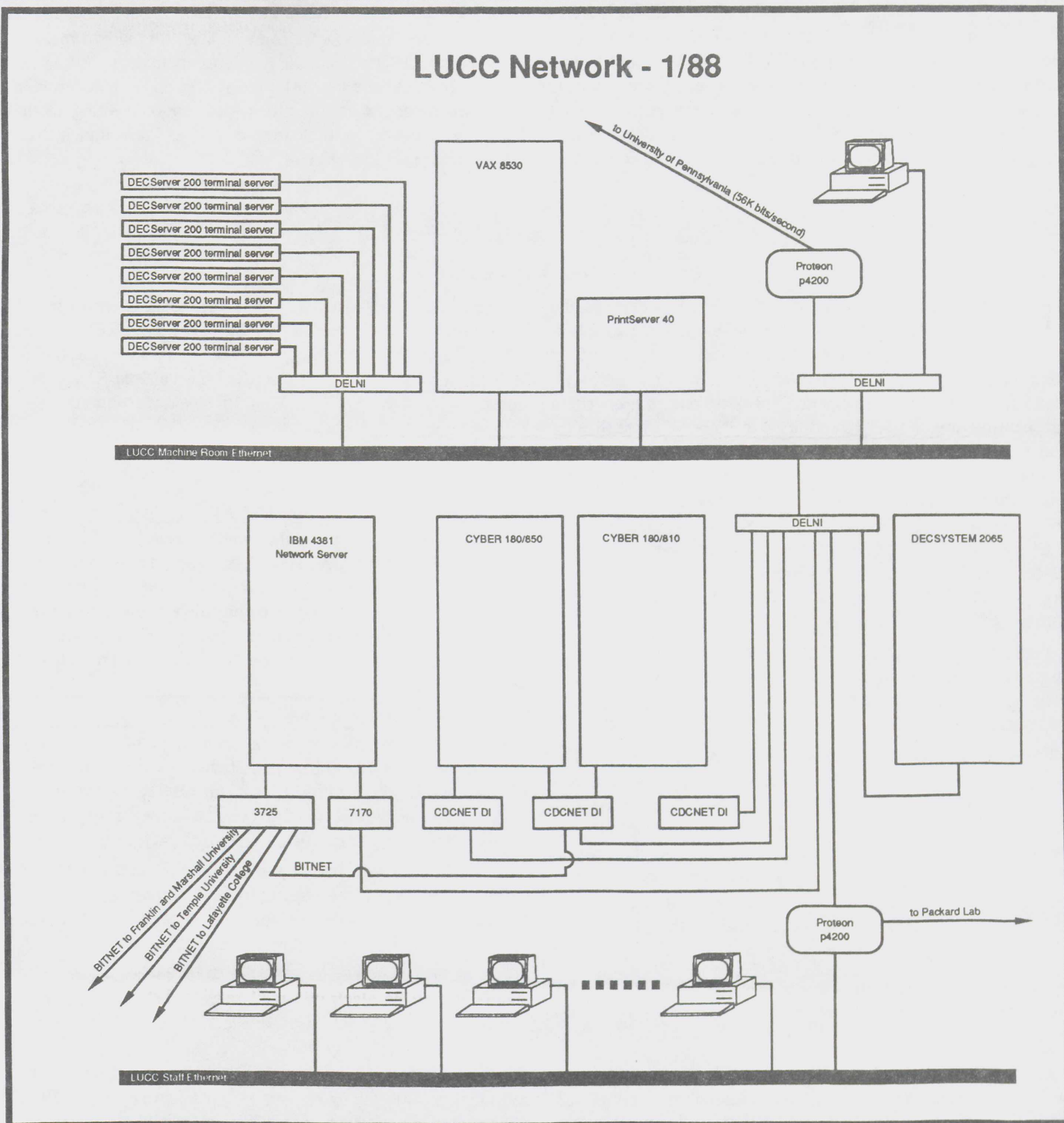


Figure 2

nected to the backbone network will be connected to the nationwide Internet.

LUCC will be developing various other services for availability over the backbone network. Currently, LUCC is working on remote printing service for the VAX 8530 and the Network Server. According to this plan, a user on any computer connected to the backbone network would be able to queue a file for printing on an LUCC VAX printer or on a

Network Server printer. Already being tested is the ability to print on the Network Server's laser printer from the VAX, and on the VAX's PrintServer 40 laser printer from the Network Server.

In order to connect to PSCnet, Lehigh University has acquired the domain name *Lehigh.EDU* and the network number 128.180. If a department wishes to connect its Ethernet to the backbone network, it needs to register its sub-domain with

the Computing Center and receive a subnet number. Any department currently setting up a TCP/IP network and having future plans to connect to the backbone network should register with LUCC and receive this departmental subnet number now. This way, the computers on the departmental network will not have to be reconfigured when its connection

is made to the backbone network. Also, this would make it possible for LUCC to include the departmental network in the long range backbone network plans. To register a department sub-domain, or get more information on connecting to the backbone network, send electronic mail to Carol Rauch, Network Server user id CDR1. ♦

## On-Line File Reload Request Forms

Doris A. Oravec

The Computing Center performs back-up dumps of the DEC 20, CYBER 850 (NOS and NOS/VE), Network Server, and VAX 8530 file systems each morning for most files *created and/or modified since the last dump*. The magnetic tapes to which these "incremental" back-up dumps are written are kept for four weeks. In addition, a dump of most files on the system is performed once a week. These "full" dump magnetic tapes are also kept for four weeks. Full dumps are performed on Friday morning for the Network Server, Friday evening for the CYBER 850, and Saturday morning for the DEC 20 and VAX 8530. On the last business day of June and December, full dumps are performed which are retained for six months. This means that the June tape is overwritten in December and vice versa.

These back-up dumps offer users the possibility of recovering a lost or deleted file, or the previous version of a file. The request to recover such a file from a back-up dump is called a "file reload request."

Formerly, a file reload request could only be submitted to User Services by completing, in writing, the appropriate Computing Center form. Now, LUCC offers the file reload request forms for on-line completion within the Network Server's Information & Services (INfo) facility. However, the on-line forms can only be used to request a reload of one's own files. A request to reload a file that belongs to another user must still be submitted in writing to User Services; the file owner's signature must be included on the form.

An on-line request form may be accessed by entering any of the following topic names at an INfo menu: DECRELD (DEC 2065 File Reload Request), CYBRELD (CYBER 850 File Reload Request), NSRELD (Network Server File Reload Request), or VAXRELD (VAX 8530 File Reload Request).

Before submitting a file reload request electronically, data should be entered into each field on the form. The two fields,

Owning Username/User Id:  
Destination Username/User Id:

are to accommodate a user who wants to request a file reload from one of his or her usernames/user ids on the mainframe to another on that *same* mainframe. Users having only one username/user id on a mainframe would always enter that username/user id in both the Owning Username/User Id and Destination Username/User Id fields. A critical field is

Date of Dump to Reload from:

Assistance in determining the appropriate date can be obtained either from the on-line HELP screen which contains the file back-up dump schedules, or from User Services at ext. 83990. The on-line HELP screen can be accessed by pressing the F1 function key from within each of these forms.

After all fields have been completed, the Return key should be pressed to submit the request to the Computing Center. If for some reason a request cannot be granted, notification will be sent to the submitter's Network Server user id. ♦

## NetDial V4.2 Released

A new release of NetDial, version 4.2, is now available. This release supports CDCNET connections to both NOS and NOS/VE on the CYBER 850. The Kermit version in this release is 2.30, which supports long packet file transfers; this can significantly increase the effective transfer rate. The .INI files were also updated to work with the new Kermit version.

The November issue of *Computing at Lehigh* includes information on how to perform long packet transfers, in the CYBER section of the "Migrating Files from the DEC 20" article. The C-Kermit resident on the VAX also supports long packet transfers, while the DEC 20's Kermit does not.

In addition to the default communication speed of 9600 baud, NetDial v4.2 supports 19.2K baud (for all of the LUCC mainframes except the DEC 20, although problems have been

observed to occur during use of the VAX at 19.2K baud). To communicate at this faster speed, enter **FAST** at the DOS prompt (instead of **NETDIAL**). This faster speed can only be achieved on PCs running at 8Mhz (i.e., a Z-158 with the speed button out) or faster machines (i.e., a Z-241 or Z-248). Note that communication at this faster speed will probably not work when software, such as a clock program, is running in the background.

Communication via serial port COM2 is also supported in this release; this can be accomplished simply by using NetDial's (or Fast's) command line parameters. The full syntax for calling NetDial is:

**NETDIAL color-num port-num**

where `color-num` can be an integer from 1 to 15 (7 is the default) and `port` can be 1 (the default) or 2. The entry

```
NETDIAL 7 2
```

instructs NetDial to provide a white menu and to use serial port COM2 to dial and connect to a host computer.

NetDial v4.2 is available for downloading from the Network Server via INfo topic COMM. It is also available for copying at LUCG's public sites as well as at the Fairchild-Martindale and Linderman libraries; the written copying instructions include details on how to install NetDial onto a hard disk. ♦

### BITNET User's Guide Available

LUCG has just prepared a *BITNET User's Guide* which is available free-of-charge from User Services. This guide describes how to use the software on the Network Server and CYBER 850 to send messages or files to users on BITNET and other external networks. The use of this software will be demonstrated at the BITNET seminar, scheduled to take place on March 2nd, from 4:10 pm to 6:10 pm in 203 Whitaker Lab. As for all seminars, advance registration is required; use the Network Server INfo facility CCREG, or the form attached to the printed copies of the Spring 1988 seminar schedule.

BITNET is an international, academic communications network of more than 2,200 computers at over 300 institutions of higher education. BITNET includes the international counterparts EARN (European Academic Research Network), NET-NORTH (in Canada) and ASIANET (Science University of Tokyo, Japan), and has gateways to networks such as ARPANet and MAILNET (thus providing access to over 10,000 computers). For the privilege of membership in BITNET, Lehigh University pays an annual fee; there is no charge to end-users for BITNET use. ♦

### TERRA Version 1.4 Available

TERRA (Transparent Environment for Remote Resource Access) has recently been updated to version 1.4. This new release is available on LUCG's public site LANs, as well as on the Network Server under INfo topic COMM. A number of features were changed for this release, including the initialization and workstation file structures; users will need to re-create those files. TERRA v1.4 now supports access to the

CYBER 850 via CDCNET; older versions no longer work for CYBER access.

TERRA is an experimental communications package, similar in function to NetDial but with more automated access features. ♦

## General Interest

### Destruction of Intellectual Property

*Bruce D. Fritchman*

Everyone would be outraged if an individual indiscriminantly went from room-to-room, office-to-office, and library-to-library destroying papers, reports and books. Recently an act of similar magnitude was committed against the Lehigh University community. A deliberate attempt was made to indiscriminantly destroy the intellectual property of faculty, students, and staff. This was done by introducing a self-perpetuating program whose primary function is to destroy computer files on both floppy and hard disks. The means of accomplishing this was to first corrupt the public-site disks and then, through the use of those disks, to corrupt user disks. Once the user disks are corrupted, they can in turn corrupt new disks on any computer on which they are used. The result is the spread of corrupted disks throughout the university and anywhere else they are used, spreading much as a disease would spread. Eventually a corrupted disk destroys the information it contains, but not before it has an

opportunity to infect other disks. Corrupted disks can be restored to their original condition if they are fixed before they destroy themselves.

Information generated by individuals and represented in the form of computer files is considered to be their intellectual property. Intellectual property is at least as valuable as real property. Consequently, the deliberate destruction of intellectual property is a very serious offense. Because information exists in magnetic form on a disk makes it no less valuable than if it existed in the form of ink on paper. If someone burns an irreplaceable book, it is not the loss of the paper and ink that grieves us, but the loss of the intellectual content of the book.

Students need to be aware that destruction of any property, whether it be real or intellectual, is a violation of the Student Code of Conduct, and everyone needs to be aware that it is a

criminal act to deliberately destroy intellectual property. Lehigh will report anyone found to be engaged in deliberate attempts to destroy intellectual property to civil authorities for prosecution, and students found guilty of violating the code of conduct in this way face severe disciplinary action which may include immediate suspension from the university.

One may be struck by the uniqueness and even cleverness of the means by which the information has been destroyed, not at first comprehending its seriousness. One might also be struck by the vulnerability of information in this form of information storage. The fact is that most information is subject to easy destruction; books and papers are easily burned, for example. What primarily protects the information is our understanding of the seriousness of the act of destroying it. None

of us would hesitate for a moment to attempt to prevent someone from burning our papers and books as well as those of others. The same standards should be applied to anyone attempting to destroy our computer-based information.

Every effort will be made to protect information in public sites from future actions of this kind, but that alone is not enough. The destructive act was committed against each of us, and we can best protect ourselves and one another from such actions through personal vigilance. If anyone has knowledge about the acts already committed, or comes into possession of information about attempts to commit new acts of this kind, it is necessary to inform either the Computing Center or the Dean of Students Office as soon as possible. ♦

## On-line Seminar Registration Procedure

Ann Marie Matusa

A new registration procedure was implemented for the Computing Center's spring 1988 seminar series. This was done as an attempt to improve the attendance of those who had registered for the seminars. For the fall 1987 seminar series, there were registrations for all available spaces in 25 of the 31 seminars that required advance registration. However, only about 70% of those who signed up for these seminars actually attended. For the 12 additional seminars scheduled to accommodate those on waiting lists, only 40% of those who said they would attend actually attended.

The new registration procedure utilizes a registration request form and confirmation notice; in the past, seminar registrations and confirmations were handled over the telephone. A registration request form is attached to each seminar schedule mailed to the campus community, and is also available on-line on the Network Server. Those who prefer to request registrations electronically may access the on-line form by entering

IN CCREG at the Network Server's LUNA main menu. For each seminar for which an individual requests registration, either a confirmation notice of successful placement in the seminar is sent, or a notice of placement on a waiting list is sent. Individuals on waiting lists are contacted in the event that registration cancellations are received or additional seminars are scheduled. Those submitting registration requests on the Network Server will be sent confirmation or waiting list notices on the Network Server. Confirmation and waiting list notices will be sent through the U.S. or campus mail to those submitting registration requests in that manner.

Hopefully, the confirmation notices will serve as reminders to those who have registered, thereby decreasing the number of registered individuals who do not attend the seminars. Registrants unable to attend a seminar are asked to contact User Services at ext. 83990, so that their space can be offered to someone on a waiting list. ♦

## Auditorium Enhancements

Color projection systems have been installed in the auditoriums at Neville I and 203 Whitaker. The projection system in Neville I is a very high quality system which is being maintained by the Media Center. Neville I is also equipped with a half-inch (VHS) video player, a three-quarter-inch video player, and a carousel slide projector—all

of which can be remotely-controlled from the front of the auditorium. Both locations are equipped with Zenith PC's for driving the projection systems, as well as with ADI's.

Reservation requests for these rooms should be made to the Registrar. ♦

## Glancing Back

From the March 27, 1975, issue of *USER*:

Effective with the first day of classes this spring semester LUCC opened its student remote batch site in the basement of Taylor Hall (a residence hall). The site houses a CDC 734 Remote Batch terminal, featuring a 300 card per

minute reader and 300 line per minute printer. In addition to the terminal, 9 keypunches and a work area are available for the users.

♦

## Consultant's Corner

### Establishing Multiple Connections with CDCNET

One of the nicest features of CDCNET (the CYBER's communication front-end) is that it allows a user to have multiple (up to four) active sessions. Using this feature, a user could create a connection to both NOS and NOS/VE, and then switch from one to another by issuing a single CDCNET command. This technique has proven to be very convenient when migrating applications from NOS to NOS/VE.

When a connection is made via the %CREATE\_CONNECTION (%CREC) command to a particular CDCNET service (either NOS or VE), the connection is assigned a name. By default, connections are named \$A through \$D. To switch to another connection, a user would enter

```
%CHAWC connection-name
```

where **connection-name** is the name of an existing connection. (%CHAWC is an abbreviation for the command %CHANGE\_WORKING\_CONNECTION.) For example,

```
%CHAWC $A
```

would switch to connection \$A.

Users not wanting to take default connection names may specify their own when establishing the connections. For example, after entering

```
%CREC NOS NOS
```

and

```
%CREC VE VE
```

a user could switch to NOS by issuing a

```
%CHAWC NOS
```

command.

The command %DISC (an abbreviation for %DISPLAY\_CONNECTIONS) is available for obtaining a list of

the names of one's existing connections, along with the corresponding services. ♦

### GNU Emacs and Non-DEC Terminals

Although Digital Equipment Corporation only supports ADEC- and ANSI-type terminals under the VAX/VMS operating system, the GNU Emacs editor supports many terminal types. Those who wish to use GNU Emacs on a terminal which is not a DEC- or ANSI-type must declare their terminal type via a DEFINE\_EMACS\_TERM command. As an example, to inform GNU Emacs that the terminal is a Tele-Video 920c, the following should be entered at the VAX/VMS prompt:

```
DEFINE EMACS_TERM "920C"
```

Those who are unsure as to what to declare as their terminal type should contact Joel Robertson at ext. 83985. ♦

### Setting VAX/VMS File Protections

A user who wishes to make some of his or her VAX files accessible to other VAX users must change the protection of those files as well as of the directories that contain those files. For example, if user XLEHIGH wants to set the file QUOTES.TXT in subdirectory [XLEHIGH.MISC] to be readable by every user on the system, each of the following three commands should be entered at the VAX/VMS prompt:

```
SET PROTECTION=(W:E) [000000]XLEHIGH.DIR
```

(to allow access to the login directory)

```
SET PROTECTION=(W:E) [XLEHIGH]MISC.DIR
```

(to allow access to the MISC subdirectory)

```
SET PROTECTION=(W:R) [XLEHIGH.MISC]QUOTES.TXT
```

(to allow read access to the QUOTES.TXT file). ♦



### Computing at Lehigh Contribution Information

Computing at Lehigh encourages contributions for articles and *Consultant's Corner*.

We prefer that contributions either be submitted electronically via VAX 8530 mail to user EDITOR, be provided on a MS-DOS formatted 5.25 inch or 3.5 inch floppy disk, or be provided on a 3.5 inch floppy disk in Macintosh (MacWrite) format. Contributions sent via DEC 20 mail must be in ASCII format (i.e., be plain text). Acceptable MS-DOS document formats are:

- ASCII (not word-processed)
- EXP
- Freestyle
- WordStar

Printed copy is welcomed, but please also accompany the printed copy with the text in one of the above formats (especially for articles and other long contributions). All mailed contributions (whether on diskette or printed) should be sent to the following address:

Editor, *Computing at Lehigh*  
 194 Fairchild-Martindale #8b  
 Computing Center  
 Lehigh University Bethlehem, PA 18015

Articles by users are included at the Computing Center's discretion. The Computing Center reserves the right to edit all contributions.

Article submissions should be completed by the 1st of even-numbered months. Be sure to include your name, mailing address, and phone number.

### Computing at Lehigh Mailing List

Check one:

- ADD my name to the mailing list.
- CHANGE my address on the mailing list. (List both old and new addresses and be sure to include the Zip Codes.)
- DELETE my name from the mailing list. (Please include the mailing label or complete address.)

Campus

Off-Campus

Name: \_\_\_\_\_ Name: \_\_\_\_\_

Dept.: \_\_\_\_\_ Address: \_\_\_\_\_

Room & Bldg.: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Return to:

Old Mailing Address (if changing or deleting):

*Computing at Lehigh Mailing List*  
 194 Fairchild-Martindale #8b  
 Computing Center  
 Lehigh University Bethlehem, PA 18015