Computing Center Newsletter   LTS Publications

8-1-1989

Computing at Lehigh

Lehigh University

Recommended Citation

Computing at Lehigh

Contents

PostScript Graphics - Scott Joplin's "The Entertainer"

Note: This is a campus-wide mailing of *Computing at Lehigh*. If you do not already receive *Computing at Lehigh*, but would like to receive future issues, either fill out and return the form on the last page of this issue, or fill out the form electronically on the Network Server by typing **IN CCMAILLIST** at the LUNA main menu.

From the Director

William R. Harris (WRH0@LEHIGH)

I hope you all had an enjoyable summer. We at the Computing Center have been busy making changes that will enhance your use of the Computing Center's facilities this year.

Those of you who dial into Lehigh computers from off campus, or connect to off-campus computers from Lehigh, should note that the new 1200/2400 baud modems have been installed. This was done in response to the input we received from you via the survey we did last year.

Those who use public sites should note that we are in the process of upgrading the memory on the Zenith Z-158 microcomputers having only 512K to 640K. The memory of the public site HP LaserJet Series II printers has been upgraded to 2.5MB, which should reduce the problems experienced by some when printing more complex graphs. The Packard Lab lecture room located at Room 416 has had a new projection system and microcomputer installed for instruction.

The Microcomputer Store has greatly increased its offering of equipment, with the addition of the IBM PS/2 line and the Apple Macintosh line of computers. (For more information on these lines, see the article entitled "Micro Store to Sell IBM, Apple & Zenith Micros".) The Computing Center is in

---

Lehigh University Computing Center Hardware
CDC CYBER 180 Model 850 (32 MBytes Memory, NOS/VE V1.4.2)
IBM 4381 Model 11 (16 MBytes Memory, VSE/SP V2.1.5)—Administrative
IBM 4381 Model 13 (24 MBytes Memory, VM/SP HPO V1.5.0, MUSIC/SP V1.2)—Network Server
VAX 8530 (32 MBytes Memory, VMS V5.1)

Computing Center Directory

Information About Policies and Plans
Director
  William R. Harris ....(215) 758-3830
Associate Director
  of Computing Consulting Services
  Timothy J. Foley 758-3830
Associate Director
  of Computing Facilities
  Carol D. Lidie 758-3989
Systems Programming Manager
  Kevin R. Weiner ...758-3991
Microcomputer Store Manager
  Robert R. Kendi 758-4606
User Services Manager
  Monica A. Newman 758-3990

Information About Bills Received
  Administrative Associate
  Pamela S. Steigerwalt 758-3825
  Accounting Assistant
  Annette L. Ruhe 758-3825

Consulting
  User Consultants
  Blair R. Bernhardt 758-3994
  Frederick W. Chapman 758-3218
  Dean E. Nelson 758-4988
  Linda S. Orr 758-5152
  Richard A. Silvius 758-3985

Information About Software Availability
  Software Librarian - Mainframe
  Judith K. Allio 758-3993
  Software Librarian - Microcomputer
  Doris A. Oravec 758-4592

Systems Status, Technical Information
  On-duty Consultant
  758-4141

General User Information
  Administrative Clerk
  Lori F. Hertzog 758-3990
  Accounts Coordinator
  Ann Marie Matusa 758-3992

Information About Tapes and Supplies
  Data Processing Tape Librarian
  Constance L. Carlton 758-4140

General Information

Computing at Lehigh is a report on computing, published four times a year 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
Central Site Users' Area, 180 Fairchild-Martindale		
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
Central Site Microlab, 292 Fairchild-Martindale		
Sun	12:00 noon – 12:00 midn	no consulting
Mon–Thu	6:30 am – 12:00 midn	no consulting
Fri	6:30 am – 10:00 pm	no consulting
Sat	9:00 am – 8:00 pm	no consulting
Drown, Room 208		
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
Fritz Lab Annex, Room A3		
Mon–Fri	8:00 am – 10:00 pm	no consulting
Grace, Room 28		
Sun	24 hours	2:00 pm – 12:00 midn
Mon–Thu	24 hours	1:00 pm – 12:00 midn
Fri–Sat	24 hours	1:00 pm – 5:00 pm
Libraries: Fairchild-Martindale, Linderman, & Media Center		
Sun	12:00 noon – 12:00 midn	no consulting
Mon–Sat	8:00 am – 12:00 midn	no consulting
Maginnes, Room 491		
Mon–Fri	8:00 am – 10:00 pm	no consulting
Sat	9:00 am – 1:00 pm	no consulting
Mountaintop Campus, B103 Building A		
Mon–Thu	6:30 am – 10:30 pm	no consulting
Fri	6:30 am – 5:30 pm	no consulting
Mountaintop Campus, D109, D117 Building A		
Mon–Thu	6:30 am – 10:30 pm	1:00 pm – 4:00 pm
Fri	6:30 am – 5:30 pm	1:00 pm – 4:00 pm
Packard, Room 502		
Mon–Thu	8:00 am – 10:00 pm	10:00 am – 10:00 pm
Fri	8:00 am – 10:00 pm	10:00 am – 5:00 pm
Sat	8:00 am – 2:00 pm	no consulting
Whitaker, Room 257		
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

Business Hours

Business Office, 394 Fairchild-Martindale
  Mon–Fri   8:15 am – 12:00 noon
            1:00 pm – 4:45 pm
User Services, 185/194/196 Fairchild-Martindale
  Mon–Fri   8:00 am – 12:00 noon
            1:00 pm – 5:00 pm
Microcomputer Store, 524 Brodhead Ave.
  Mon–Fri   9:00 am – 5:00 pm
Operations, 171 Fairchild-Martindale
  Mon–Fri   8:00 am – 11:30 am
            1:00 pm – 4:30 pm
Operator Support/Machine Room, 179 Fairchild-Martindale
  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

Liquid Ink Plots
  Tue,Fri   8:00 am – until done

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.

Computer	On-Campus Phone (300-19.2K Baud)	Off-Campus Phone (1200/2400 Baud)	Network Node Name	Network
Network Server	(NS) Ext. 46000	974-6000	LEHIGH	BITNET
CYBER 850	(CDC) Ext. 46800	974-6800	CDC1.CC.Lehigh.EDU	Internet
VAX 8530	(VAX) Ext. 46400	974-6400	VAX1.CC.Lehigh.EDU	Internet

Director, from front cover

the process of installing seven new Macintosh II computers at the Central Site Users' Area. These computers will be connected to the same LAN as the MS-DOS machines at that location.

The NOS operating system on the CYBER has finally been eliminated, with the NOS/VE operating system remaining. This necessitated the removal of the line printer, since NOS/VE does not provide support for it. In place of that line printer, we added another IBM 3820 laser printer.

Much LUCC documentation has been updated this summer. I encourage you to check the list in the "LUCC Technical Bulletins and User Guides" article, and to acquire the up-to-date documentation for the software and computers you normally use. As usual, we will be offering many seminars this Fall, and I welcome you to sign up when they are announced.

New software has been added to the LUCC Software Library. A complete list of new software may be viewed on the Network Server, by entering **IN NEWSOFT** at the LUNA main menu. I would like to remind you that various conditions apply to the use of the microcomputer software provided by Lehigh, and to encourage you to follow the conditions specified. The list of available microcomputer software, accessible on the Network Server after entering **IN MICRO** at the LUNA main menu, includes information about any restrictions regarding the use and copying of the software. According to our licensing agreements, some of the software may be copied for your on-campus use, but many products may not be copied for off-campus use. Following these conditions is the responsibility of all of us and will make future offerings easier and less expensive to provide.

I hope you have a good year and find the services of the Computing Center helpful in your work.♦

Mainframe Computing

NOS/VE Update

Sandra L. Johnson   (LUSLJ@CDC1.CC.Lehigh.EDU)

On the 23rd of August, the NOS operating system was removed from the CYBER, leaving NOS/VE as the only operating system on the machine. The migration to NOS/VE took place over the last few years, and now the majority of software previously available under NOS can be accessed under NOS/VE. (See the end of this article for a list of NOS software that @y(N) due to lack of use @y(N) was not made available under NOS/VE.) *Whoa!*

There are three changes that have taken place as a direct result of the removal of NOS. They are:

- The CYBER 850 is no longer a BITNET node, but does remain an Internet node. Users may still send and receive BITNET mail through the Internet (as described in the following item). BITNET addresses, which were of the form *username@LEHICDC1*, are now Internet addresses of the form

```
username@CDC1.CC.Lehigh.EDU
```

- The BITNET program for sending mail to and reading mail from BITNET and other external networks is no longer available under NOS/VE; NOS/VE's MAIL program or QUIck_Mail facility is to be used. The use of the MAIL program for sending/reading external network mail is described in a NOS/VE bulletin accessed by typing **BULL BITNET** at the NOS/VE prompt. MAIL is also described in the *NOS/VE User's Guide*, which is available for reference at the Central Site Users' Area, the Drown, Grace and Packard sites, and the Fairchild-Martindale Library (on one-day reserve). The guide is also available for purchase at the University Bookstore.

- The CYBER line printer has been removed. The default printer for the CYBER is now an IBM 3820 laser printer. Users desiring *line printer style* output may queue their output to the VAX dot matrix line printer by issuing the PRINT command in this manner:

```
PRINT filename Q=SYS$PRINT
```

Note that this printer is much slower than the old CYBER line printer (600 versus 2000 lines-per-minute).

CYBER users who have not used the system recently may be interested to know that:

- SPSS 9.0 is not available under NOS/VE. SPSS command files will have to be converted to SPSS^X-compatible form.

- TWODEPEP users will have to upgrade to PDE/PROTRAN.

- The COMPASS assembler is unavailable. Programs and routines written in COMPASS will have to be rewritten in some other language.

- FORTRAN programs must meet the ANSI FORTRAN-77 Standard in order to compile under NOS/VE. (See the article entitled "New NOS/VE Software" for information about NOS/VE's F4VE conversion aid.)

The following software has been dropped from the CYBER due to lack of use:

- Pack System (replaced by SCA on the VAX)
- DECODFN

- CALPLO
- QGERT
- MPOS

- CHESS
- BOX4 and BOX5
- GASPIV ♦

New NOS/VE Software

MINIMOS 4 Available

MINIMOS 4 has recently been installed under NOS/VE. MINIMOS is a highly user-oriented software tool for the two-dimensional numerical simulation of planar MOS transistors. MINIMOS 4 is an improved version of MINIMOS 1, which is also available (as simply "MINIMOS") under NOS/VE. To run MINIMOS 4, enter:

```
MINIMOS4
```

at the NOS/VE prompt.

MINIMOS 4 documentation, entitled *MINIMOS 4 User's Guide*, can be found (in documentation rack no. VII) at the Central Site Users' Area.

SUPREM II Available

SUPREM II (Standard University PRocess Engineering Models) is now available under NOS/VE. SUPREM II simulates the processing of silicon semiconductor devices along a one-dimensional axis perpendicular to the surface of the silicon wafer. To run SUPREM II, enter:

```
SUPREM inputfilename outputfilename
```

at the NOS/VE prompt.

The use of SUPREM II is described in the *SUPREM II for NOS/VE* manual and the *SUPREM II Users Manual*. Both of these manuals can be found at the Central Site Users' Area, in documentation rack no. VII.

F4VE FORTRAN Conversion Aid Available

LUCC has recently acquired a new NOS/VE utility called F4VE, which aids in the conversion of NOS FORTRAN Extended Version 4 (FORTRAN-66) programs to NOS/VE FORTRAN (FORTRAN-77).

The most typical form for invoking F4VE is:

```
F4VE I=FTN4FILE O=VEFTNFILE L=LISTFILE
```

where *FTN4FILE* is the name of the file containing the FORTRAN 4 source code, *VEFTNFILE* is the name to be assigned to the file containing the converted source code, and *LISTFILE* is the name of the file which will contain a list of all lines which were either inserted, replaced, deleted, or require manual conversion. A complete list of parameters available for the call to F4VE may be obtained by typing:

```
DISCI F4VE
```

Complete documentation for F4VE can be found in Chapter 12 of the CDC manual entitled *Migration From NOS to NOS/VE Standalone*, which is available for reference (No. R0260) in LUCC's Library located at 185 Fairchild-Martindale.

IMSL PROTRAN Available

IMSL PROTRAN, a family of problem-solving systems, is now available under NOS/VE. PROTRAN consists of the following four products:

- MATH/PROTRAN Version 2.0, for mathematical problems
- STAT/PROTRAN Version 2.0, for statistical problems
- LP/PROTRAN Version 2.1, for linear programming problems
- PDE/PROTRAN Version 2.0, for two-dimensional partial differential equation problems

To run PROTRAN, enter at least the following:

```
PROTRAN I=inputfilename
```

at the NOS/VE prompt. Listed below are all of the parameters that can be used with the PROTRAN command.

- **INPUT_FILE (I)** This parameter, which is required, specifies the input file that is to be processed by PROTRAN. IMSL suggests that this file name have the extension _PRO for user clarity. This extension is not required when specifying the input file; the order of search for the input file is *filename_PRO* and then *filename*.

- **OUTPUT_FILE (O)** This optional parameter specifies the output file. If this parameter is not specified, the file will have the same name as the input file but with an _LS extension.

- **FORTRAN_FILE (F)** This optional parameter of type *file* specifies the FORTRAN source generated by the PROTRAN preprocessor. If this parameter is not specified, the file will have the same name as the input file but with an _F extension.

- **BINARY_MODULE (B)** This optional parameter of type *file* specifies the binary module which results from the compilation of the FORTRAN source generated by the PROTRAN preprocessor. If this parameter is not specified, the file will have the same name as the input file but with a _B extension.

- **LIBRARY_MODULES (L)** This optional parameter of type *list of files* specifies libraries containing any external routines called from the PROTRAN input file. There is no default for this parameter.

- **GRAPHICS (G)** This optional parameter of type *keyword* is applicable to IMSL PDE/PROTRAN only. The possible values are **CALCOMP** or **NOGRAPH**. The default for this parameter is **CALCOMP**.

Documentation for PROTRAN consists of the following manuals:

- *MATH/PROTRAN User's Manual*
- *STAT/PROTRAN User's Manual*
- *LP/PROTRAN User's Manual*

- *PDE/PROTRAN User's Manual*

These manuals are available for reference at the Central Site Users' Area (in a documentation cabinet labelled "CYBER"), and (on one-day reserve) at the Fairchild-Martindale Library. ♦

Scribe Version 7 Available on VAX

A new version of Scribe, Version 7(1700), was installed on the VAX 8530 during the summer. To access this version for the remainder of a login session, enter the command:

```
USE SCRIBE7
```

at the VMS prompt. A document can then be processed with Version 7 by entering the command:

```
SCRIBE7 filename
```

at the VMS prompt, where *filename* is the name of the Scribe input (.MSS) file.

On September 25, shortly after the next deadline for theses and dissertations to be completed, Version 7 will become the default version of Scribe on the system. Version 6 will remain on the system for a reasonable period after Version 7 becomes the default. To access Version 6 after Version 7 becomes the default, issue the **USE SCRIBE6** and then **SCRIBE6 filename** commands.

In addition to a number of bug fixes, a number of new features and enhancements to existing features have been added to Scribe in Version 7. These include: straddling cells in a table; continuing table captions on consecutive pages; producing landscape tables, figures, or other text in portrait documents; floating environments to the top or bottom of a particular page; having tables and graphics span multiple columns of text; producing vertical justification; and, placing "generated" portions (such as the Table of Contents) in another location of a document. All of the new features and enhancements, as well as the bug fixes and unfixed bugs, are listed in the *Release Notes for Version 7(1700)*. These release notes can be viewed at one's workstation by entering the command:

```
TYPE LU$LIB:[SCRIBE_7]RNOTES.TXT /PAGE
```

at the VMS prompt. A copy of the release notes can be printed on the PrintServer 40 at the Central Site by entering the command:

```
PRINT LU$LIB:[SCRIBE_7]RNOTES.TXT /Q=TEXT
```

at the VMS prompt.

One of the new features most sought after is the ability to mix portrait and landscape modes in a document, which can be done on PostScript devices such as LUCC's PrintServer 40. Thus, its use is briefly described later in this announcement.

Use of the new features and enhancements in Scribe 7(1700) is fully described in the *Scribe Document Produc-*

tion System Supplement for Version 7(1700). This, along with the *Release Notes for Version 7(1700)*, can be found with the *Scribe User Manual* at the Central Site Users' Area (in documentation rack no. III), 208 Drown, 28 Grace, 502 Packard, and the Fairchild-Martindale Library (on one-day reserve). At the Bookstore, this supplement is only available packaged with the *Scribe User Manual* and the supplements for Versions 5 and 6; those who wish to purchase a supplement for Version 7 separately should contact LUCC's Software Librarian at ext. 83993.

A new manual, entitled *Scribe Advanced User Manual*, is also available at the Central Site Users' Area (in documentation rack no. III) and the Fairchild-Martindale Library (on one-day reserve). This new manual contains edited and revised documentation from the *Database Administrator's Guide*, and consolidates advanced Scribe commands and constructs from past supplements. It also contains documentation on advanced features implemented in this release. Note that this new manual replaces the *Database Administrator's Guide*. Also note that information about device drivers and font support is now contained in a new document called *Fonts and Drivers*. This new document can be found at the end of the *Scribe Advanced User Manual*.

Questions concerning the use of Scribe Version 7 can be directed to User Services, as should reports of problems.

Producing Text in Landscape Mode

The ability to print text in landscape mode, which is valuable for figures and tables wider than the document line width, is done by using the Rotate environment attribute. This attribute is different from the Rotate attribute of the @Graphic command. Note that this new Rotate attribute, when added (without the Fixed attribute described below) to a particular environment, causes page breaks before and after the printing of the environment. This new Rotate attribute must be included within the long form of the desired environment, as follows:

```
@Begin[Environment-name, Rotate direction]
```

where *environment-name* is usually: Figure, Table, FullPage-Figure, or FullPageTable. *Direction* can have one of four values: Left, Right, In, or Out. Left rotates the environment 90 degrees counterclockwise and Right rotates the environment 90 degrees clockwise. The values In and Out pertain to double-sided documents only. In rotates the environment such that the top of the environment is toward the binding or

inside of the page. Out rotates the environment such that the top of the environment is toward the outside of the page.

The table in the following example would be printed on a page by itself, with the top of the table along the left edge of the paper. The caption would also be printed in landscape mode, and would be placed at the bottom of the table. However, any page heading or page footing would be printed in portrait mode.

```
@Begin[Table, Rotate Left]
@StandardTable[Name=TableOne, . . . ]
        .
        .
        .
@End[TableOne]
@Caption[The first data set]
@End[Table]
```

Portrait and landscape modes can also be mixed on a page. (However, note the restriction described below.) For example, a particular table or figure can be rotated to landscape mode and be printed on a page with text in portrait mode. Consider the following example:

```
This text precedes a table to be printed
in landscape mode.  The table will be
printed with the top toward the left side
on the page (Rotate Left), the left at the
bottom margin of the page (FlushLeft), and
the top of the table 1.65 inches from the
left edge of the paper (Fixed 1.65inches).

@StandardTable[Name=Test, Columns=6, Boxed...]
@Begin[Test, FlushLeft, Rotate Left,
        Fixed 1.65inches]
        .
        .
        .
@End[Test]
```

It is the Fixed attribute which prevents page breaks around the table, causing the table to be printed on the same page as the text preceding it. Note that when mixing landscape and portrait modes on a page, the caption for a figure or table to be printed in landscape mode will be printed in portrait mode.

In summary, a figure or table — including its caption — can be printed in landscape mode on a page by itself. A figure or table can be printed in landscape mode on a page with text in portrait mode, but any caption will be printed in portrait mode.♦

New Minitab Version on VAX

Minitab, a general purpose statistical program, has been upgraded on the VAX 8530 to Version 7.1. Minitab can be run by entering:

```
MINITAB
```

at the VMS prompt. This new version includes substantial program enhancements, such as statistical process control (SPC) capabilities and a new command for the analysis of general linear models (GLM). A summary of all of the new features and enhancements included in the upgrade to Version 7.1 can be found on the system; this summary can be accessed by entering **NEWS** at the Minitab prompt. To print this summary on the PrintServer 40 at the Central Site, enter:

```
PRINT SYS$MINITAB:NEWS71.DAT /Q=TEXT
```

at the VMS prompt.

Also available on the system is a list of known problems in Version 7.1. This list can be viewed at one's workstation by entering:

```
TYPE SYS$MINITAB:PROBLEMS_71.DOC /PAGE
```

and printed on the PrintServer 40 at the Central Site by entering:

```
PRINT SYS$MINITAB:PROBLEMS_71.DOC /Q=TEXT
```

Use of Minitab is described in the *Minitab Handbook Second Edition* and the *Minitab Reference Manual Release 7*, both of which are available for reference at the Central Site Users' Area (in documentation rack no. IX) and the Fairchild-Martindale Library (on one-day reserve). An online HELP facility is also available; it is invoked by entering **HELP** from within Minitab.♦

Help in a BIG Way: Online Text

Sandra L. Johnson (LUSLJ@CDC1.CC.Lehigh.EDU)

The term *online text* refers to any help information that is accessible through a computer program that displays textual information on the terminal. Online text, which can be either a full-blown user's manual or general information on a selected topic, is especially useful to the occasional user who knows what he or she wants to do, but is unsure of the exact commands to do it. The user can call up the text, read the applicable material, exit the help program, and then continue working.

Typically, this type of help is available on commonly used operating system commands, but is sometimes provided with vendor-supplied software. As examples of the latter, SAS (on the VAX) has a **HELP** command that provides text on executing SAS procedures, and SIR (on the CYBER) has a separate online help text facility that is run independently of the SIR system. (For further information on SAS and SIR's help facilities, or online help provided with other software packages, refer to the vendor software manuals.)

Basically, at LUCC, two types of online text are available: help that is provided by the vendor as part of the operating system or applications package; and, help that is written locally and is, in general, site-specific. Complete manuals for NOS/VE and VX/VE (the Unix shell running on the CYBER) exist on the CYBER, and help text on selected topics is available online for VMS. On NOS/VE and VMS, there is also a bulletin utility which provides users with up-to-date information on such issues as new software, software access methods, and operating system changes as well as with general announcements.

NOS/VE Online Text

The BULLETIN utility provides bulletins about such items as new software access methods. Whenever a new bulletin has been added since a user last logged in, the command

```
BULLETIN
```

is automatically issued, which causes the titles of the eight most recent bulletins to be displayed — as well as instructions for using BULLETIN. The BULLETIN commands, which are to be issued at the NOS/VE system prompt, are:

- **BULLETIN INDEX** - which provides a list of the titles of all of the available bulletins, in reverse chronological order.
- **BULLETIN bulletinname** - which provides the text of the specified bulletin.
- **BULLETIN bulletinname Q=VE** - which produces a copy of the specified bulletin on a Central Site IBM 3820 laser printer.

NOTE: *References to function keys in the following description of the NOS/VE full-screen help facility apply to the user who has accessed the CYBER via the NetDial program and MS-Kermit. If using some other form of communication, be sure to read the function key labels that appear at the bottom of the screen and choose the appropriate key(s).*

NOS/VE also provides online access to ALL system manuals via the **HELP** command. Type:

```
HELP
```

at the NOS/VE system prompt to gain access to these online manuals. NOS/VE will respond by displaying the TOPICS menu for NOS/VE help. Topics preceded by a '+' have subtopics; press F8 (function key F8) to **EXPAND** the topic to its associated subtopic list. Shift-F1 (REDUCE) will return to the topic list. Topics preceded by a '-' are not expandable; select these by pressing F5 (TEXT). Press F5 (whose label is now TOPICS) to return to the TOPICS screen.

Topic 8 on the main TOPICS menu allows for access to every other available online manual provided by CDC. Select topic 8 by positioning the cursor on it and pressing F5 (TEXT). Use PgUp and PgDn to peruse the list and locate a specific manual — or just to see what's available. (Note that just because a manual exists doesn't mean that LUCC has the product which the manual describes.) Select a manual by putting the cursor on it (with the arrow keys) and pressing

Shift-F1 (DO). A menu for the manual will be displayed in either TOPICS or manual format.

TOPICS format manuals are distinguished by the word "TOPICS" at the top, reverse video line, and the distinctive +/- before each topic name. Information is accessed as described above for the main TOPICS menu.

Manual format menus have the name of the manual centered at the top line, and the words "Main Menu" centered below that. To select a topic, make sure the cursor is at the top of the screen (press the HOME key if it's not); then, enter the letter corresponding to the topic desired and press the Return key. These menus also provide instructions on how to use them, so be sure to read the text on the screen.

Once in a manual, use F3 (BACK) to return to the previously viewed screen. One cannot back up past the first accessed menu. Press F6 (QUIT) to get back to the 'Linking to Other Online Manuals' screen, and then F5 (TOPICS) to get back to the TOPICS menu.

Also available under NOS/VE is the LUCC-written HELP_ME command. Type:

```
HELP_ME
```

or

```
HELM
```

at the NOS/VE prompt; NOS/VE will respond with a menu like that which follows:

- **a** and **b** - Introductory (a) and Advanced (b) topics on NOS/VE, in a 'user guide' format.
- **c** - Information on LUCC applications software. Currently, guides for the locally-written GRAPHER and PHONE utilities are available.
- **d** - Information on the VX/VE (Unix) system.
- **z** - A list of all NOS/VE commands available to users, plus the ability to get more information on each of the commands.

Unix Online Text

The Unix **man** command displays pages from the Unix system manuals. Typically, the command:

```
man commandname
```

will yield the manual page for that command. Issue the command:

```
man man
```

to get the manual pages that describe using **man**. On BSD Unix systems (which VX/VE is not), the command:

```
man -k -
```

will list the header lines of all of the manual pages.

VMS Online Text

Type **HELP** at the VMS prompt, and VMS will display a screen that describes what to do at the HELP prompt "Topic?". After pressing the Return key as instructed on the screen, a list of topics on which one can get additional infor-

continued from previous page

mation will be displayed. Typing:

```
@LU
```

at the "Topic?" prompt will cause a list of LUCC-specific subjects to be displayed. At the "@LU Topic?" prompt, type a topic name to view the help text on that topic or press Return to get back to the "Topic?" prompt.

To exit the HELP facility, simply press Return at the "Topic?" prompt. Note that HELP does not provide information on every available VMS command.

The BULLETIN utility under VMS provides information on current LUCC topics, operating system changes, etc. Type:

```
BULLETIN
```

at the VMS prompt to access this utility. Type **HELP** at the "BULLETIN" prompt for information on using BULLETIN and a list of BULLETIN commands. Type **DIR** to obtain a list of bulletin headers. Pressing Return at the "BULLETIN" prompt will cause the first bulletin to be displayed; continue pressing Return and the entire text of each bulletin will be displayed.

A specific bulletin may be read by typing:

```
bulletinnumber
```

at the "BULLETIN" prompt. Type **QUIT** to exit the VMS bulletin utility. ♦

Micro Computing

Micro Store to Sell IBM, Apple & Zenith Micros

The University has negotiated agreements with additional computer vendors in order to expand the offerings available to faculty, staff, and students through the Lehigh University Microcomputer Store. In addition to the Zenith microcomputers, systems from IBM and Apple Computer are available at substantial discounts from the retail price. Maintenance on IBM and Zenith equipment will be handled by the Microcomputer Store, while service for the Apple products will be performed by a local computer dealer — with the Micro Store acting as a depot.

While any hardware offered by IBM, Apple, and Zenith may be ordered from the Microcomputer Store, the Store's finite resources preclude its stocking the entire product line of each vendor's equipment. Likewise, the Computing Center lacks the means to support the Apple product line to the extent it does the IBM and Zenith lines. In an attempt to fill certain price/performance niches, the following IBM and Zenith systems are being stocked by the Microcomputer Store.

Zenith Z-286 LP/8 Model 2　　$1,490

This system contains an 8MHz 80286 processor and 1MB base RAM operating at zero-wait states. Memory is expandable to 6MB on the system board and a total of 16MB. EMS Version 4.0 is supported in the hardware. The system includes dual 1.44MB 3½" floppy drives, two open 8/16-bit expansion slots, two serial ports, one parallel port, and VGA video with BIOS and register level compatibility of the EGA, CGA, MDA and Hercules video standards. In addition, a battery backed-up real time clock calendar, an 80 watt 115/230 auto switching power supply, a 101-key keyboard, and MS-DOS 3.3 Plus are included with the system. The Zenith ZMM-149P 14-inch monochrome (white) monitor can be bundled with the system for an additional $160.

Zenith Z-286 LP/8 Model 20　　$1,703

This is the same as the Model 2, but with a single floppy drive, a 20MB, 85ms hard drive with embedded controller, a mouse, and Microsoft Windows/286. The Zenith ZCM-1490-Z 14-inch color monitor (flat tension mask technology) can be bundled with the system for an additional $480.

Zenith Z-286 LP/12 Model 40　　$2,235

This is the same as the Model 20, but with a 12MHz processor and a 40MB, 28ms hard drive. The ZCM-1490-Z monitor ($480) is suggested as a good match for this system.

IBM Model 55-SX (061)　　$2,856

This system includes a 16MHz 80386 SX processor, 2MB of RAM (expandable to 16MB, but to 4MB without cards), Micro Channel Architecture, one serial port, one parallel port, and one pointing-device port. This system has a 1.44MB 3½" disk drive and a 60MB, 27ms hard drive. VGA graphics are standard, as is a keyboard. Three 16-bit expansion slots are provided. DOS 4.0 ($118) and a mouse ($71) are available separately. The IBM 8513 monitor, which has a 12-inch color display and a .28mm dot phosphor pitch, costs an additional $500.

IBM Model 70-E21　　$4,160

This system includes a 16MHz 80386 processor, 2MB of RAM (expandable to 16MB, but to 6MB without cards), Micro Channel Architecture, one serial port, one parallel port, and one pointing-device port. It has a 1.44MB 3½" disk drive and a 60 MB, 27ms hard drive. VGA graphics are standard, as is a keyboard. Two 32-bit expansion slots and one 16-bit expansion slot are provided. DOS 4.0 ($118), a

mouse ($71), and an 8513 color display ($500) are available separately.

IBM Model 70-A21 $5,995

This system includes a 25MHz 80386 processor, 2MB of RAM (expandable to 16MB, but to 8MB without cards), Micro Channel Architecture, one serial port, one parallel port, and one pointing-device port. It has a 1.44MB 3½" disk drive and a 120MB, 23ms hard drive. VGA graphics are standard, as is a keyboard. Two 32-bit expansion slots and one 16-bit expansion slot are provided. DOS 4.0 ($118), a mouse ($71), and an 8513 color display ($500) are available separately. Note: IBM has announced for this system a field upgrade to an i486 processor for approximately $3,200.

Apple Macintoshes: A Sampling of Options

The Macintosh SE has a Motorola 68000 CPU running at 7.8MHz, 1MB of RAM (expandable to 4MB), an internal 800KB 3½" disk drive, and a built-in 9-inch black-and-white monochrome monitor. Two serial ports and a SCSI port are provided. With keyboard and 20MB hard drive, the campus price is $2,157.

The Macintosh SE/30 utilizes a Motorola 68030 chip running at 15.7MHz with a built-in MC68882 floating-point unit. A 1.4MB 3½" disk drive, Apple Sound Chip, two serial ports, one SCSI port, and a built-in black-and-white monitor are standard. The model with an internal 40MB hard drive has 2MB of RAM and is expandable to 8MB. This system, with keyboard, sells for $2,982.

The Macintosh IIcx is equal in performance to the Mac SE/30, and includes considerably more expansion potential (3 slots versus 1). It uses the same CPU and FPU as the SE/30, as well as the same floppy drive and ports. In addition, the IIcx supports larger monitors, with grey-scale displays or color instead of just black-and-white. A system configured with an 80MB hard drive, 4MB of RAM, an Apple Extended Keyboard, a high resolution color monitor, and a Macintosh 8-bit video card sells for $6,171.♦

New Borland Site License

Lehigh University has entered into a new Educational Site License Agreement with Borland International. Under the new agreement, faculty and staff can obtain Borland products free of charge — but without documentation — for installation on University-owned machines located on campus only. Arrangements are being made for the distribution of the software under this agreement; details will be announced at a later time. Questions regarding this contract can be directed to Sandy Edmiston at ext. 84753.

Faculty, staff, and students can order personal copies of Borland products through the Microcomputer Store. Type **IN PRICES** at the LUNA main menu for the price list.

The agreement described in the first paragraph of this article allows faculty and staff to purchase at the prices listed below (only the) manuals for programs used on their on-campus, University-owned computers.

Program	Ver.	Manual Fee
Turbo Assembler/Debugger	1.xx	$18
Turbo Basic	1.xx	10
Turbo Basic Database Tbx.	1.xx	10
Turbo Basic Editor Tbx.	1.xx	10
Turbo C	2.xx	18
Turbo Pascal	5.5x	20
Turbo Pascal Database Tbx.	4.xx	10
Turbo Pascal Editor Tbx.	4.xx	10
Turbo Pascal Gameworks	4.xx	10
Turbo Pascal Graphix Tbx.	4.xx	10
Turbo Pascal Num.Meth.Tbx.	4.xx	10
Turbo Pascal Tutor	4.xx	10

Program	Ver.	Manual Fee
Turbo Prolog	2.xx	15
Turbo Prolog Toolbox	1.xx	10
Paradox	3.xx	85
Paradox	2.xx	58
Paradox Network Pack	2.xx	58
Paradox 386	2.xx	85
Paradox OS/2	2.xx	85
Quattro	1.xx	20
Reflex: The Analyst	2.xx	20
Sprint	1.xx	25
Sidekick	1.xx	10
Sidekick Plus	1.xx	20
Superkey	1.xx	10
Turbo Lightning	1.xx	10
Turbo Lightning Word Wizard	1.xx	8
Eureka	1.xx	15

Macintosh Products

Program	Ver.	Manual Fee
Eureka	1.xx	20
Reflex Plus	1.xx	30
Sidekick	2.xx	10
Turbo Pascal	1.xx	10
Turbo Pascal Database Tbx.	1.xx	10
Turbo Pascal Num.Meth.Tbx.	1.xx	10
Turbo Pascal Tutor	1.xx	10

♦

GAUSS Upgraded to Version 2.0

The GAUSS Mathematical and Statistical System, from Aptech Systems, Inc. has been upgraded to Version 2.0. This upgrade includes:

- a new editor with block moves and search-and-replace
- automatic library support for procedures
- online help
- improved graphics
- 80387 math coprocessor support

Lehigh University has a site license for GAUSS. Under the terms of the license, Lehigh University faculty, staff, and students are free to make copies of the GAUSS package for use on campus or on personally-owned computing systems. GAUSS may be used in connection with Lehigh work or for personal use, but not in connection with any other employment or for any commercial activity. Copies of GAUSS may not be lent, sold, given, or transferred in any way to anyone outside the University.

System requirements for the GAUSS System include: an IBM PC-XT-AT-PS/2 or compatible with an 8087, 80287, or 80387 math coprocessor, and 320-640K RAM (640K required for publication quality graphics). Display devices supported by GAUSS include IBM CGA, IBM EGA, Hercules, or equivalent graphics boards and monitors. A hard disk is required to make full use of the features of GAUSS.

GAUSS diskettes (an eleven-disk set) are available for copying at the Central Site Circulation Desk and the Educational Technology Center (Room E101 Building A at the Mountaintop Campus). Instructions for copying GAUSS are also available at these sites. A user copying GAUSS should note that there are three "GAUSS V2.0 - System Files" disks (disk 1 of 11), each labelled appropriately for the microcomputer and math coprocessor it supports. The user must select the proper "GAUSS V2.0 - System Files" disk for his or her microcomputer. It is not necessary for the user to copy all three "GAUSS V2.0 - System Files" disks.

GAUSS is available for use on the local area networks (LAN's) at the following public computing sites: Central Site Users' Area, 292 Fairchild-Martindale, 208 Drown, 491 Maginnes, 502 Packard, and D109/117 Building A at the Mountaintop Campus.

GAUSS System documentation, which consists of the *GAUSS V2.0 System and Graphics Manual* and the *GAUSS Applications Modules Listing*, is available at the Central Site Circulation Desk and (on one-day reserve) at the Fairchild-Martindale Library. The *System and Graphics Manual* is also available at 502 Packard as well as at the Educational Technology Center and Rooms D109/117 of Building A at the Mountaintop Campus. The GAUSS System documentation may also be purchased from the Microcomputer Store. ◆

STATGRAPHICS 3.0 Available

STATGRAPHICS Version 3.0 is now available for MS-DOS-based microcomputers. The major changes as compared with the prior version (2.6) are reported by the vendor to be the significant enhancements to its Quality Control offerings and the automatic installation procedure. Minor enhancements were not itemized by the vendor, but can be deduced from examining a documentation update set at LUCC's Library.

Under the terms of the site license Lehigh University has for this product with STSC, Inc. faculty, staff and students are free to make copies of this software for their own non-profit, academic use. The 11-disk set (for both hard disk and dual floppy systems) is available for copying at the Central Site Circulation Desk, the Fairchild-Martindale Library Circulation Desk, and the Educational Technology Center (Room E101 Building A at the Mountaintop Campus). Copying and installation instructions are also available at those locations.

STATGRAPHICS has been upgraded to Version 3.0 on the local area networks (LAN's) at the following public computing sites: Central Site Users' Area, 292 Fairchild-Martindale, 208 Drown, 28 Grace, 491 Maginnes, 502 Packard, 257 Whitaker, and the Mountaintop Campus sites at Room B103 and Rooms D109/117 of Building A.

STATGRAPHICS 3.0 is documented in the *STATGRAPHICS User's Guide*, a two-volume set, which is available at the following locations: Central Site Circulation Desk, Fairchild-Martindale Circulation Desk, Educational Technology Center, 28 Grace, 502 Packard, 257 Whitaker, and the Mountaintop Campus site at D109/117 of Building A. The two-volume set (in softbound form) is also available for purchase at the Microcomputer Store. STSC, Inc. has also produced the two-volume set in hardbound form, as well as update sets for updating one's hardbound documentation from Version 2.6 to Version 3.0; those interested in obtaining either of these should contact Doris Oravec at ext. 84592 or at Network Server ID DAO1. ◆

WordPerfect News Items

LUCC has recently acquired two computer-based training programs and two VHS video tapes for WordPerfect (V5.0). For details, including the manner in which to borrow these materials, type **IN WP-DOC** at the LUNA main menu on the Network Server.

Further, note that LUCC has written a utility program called FSWP, for converting files from Freestyle to WordPerfect format. This program is downloadable from the Network Server under INfo topic PD-UTILS, as well as available (either on the LAN file server or on diskette) at all of the public microcomputing sites. ◆

AutoCAD Upgraded to Version 10

AutoCAD, a computer-aided design package from Autodesk, Inc., has been upgraded to Version 10. This new version features:
- complete 3-D wireframe construction
- new user-defined coordinate system
- dynamic viewing commands
- multiple viewports
- new drawing entities
- unique entity handles

AutoCAD is available on the "AutoCAD workstation" (a Zenith Z-286), which has recently been relocated to the Central Site Users' Area. The documentation for this program, the *AutoCAD Reference Manual*, *AutoCAD Tutorial*, and *AutoLISP Programmer's Reference*, is available for reference at the Central Site Circulation Desk.♦

Network Operation

NetDial 4.5 Now Available

Frederick W. Chapman (FC03@LEHIGH)

NetDial is a communications package which LUCC maintains and distributes in order to simplify access to campus computers. The latest version of NetDial — Version 4.5 — was recently released by LUCC. Distributed with this release of NetDial is a more recent version of Kermit, namely Version 2.32/A, which includes some fixes to bugs found in Kermit V2.32.

The removal of the NOS operating system from the CYBER 850 mainframe on August 23, 1989 was chiefly responsible for precipitating the new version of NetDial. The NOS option has been removed from the NetDial V4.5 main menu, and a new option which accesses the Current Contents database (also known as BRS/ONSITE) has been added. The BRS option dials the VAX 8530 mainframe and automatically logs in to the BRS account; upon login, the BRS search software is automatically started. Note that some of the items on the NetDial main menu have been renumbered as a consequence of the above deletion and addition to the main menu.

The online help system in NetDial V4.5 has been revised. All help texts are now stored in separate text files (as opposed to being "hard-coded" into the NetDial program). This change was made primarily to make the online help easier to maintain, and to permit topics to contain more than one screen of information when necessary. Storing help texts in separate text files also permits users to PRINT these files if hardcopies are desired. (All of these help files have the extension "DOC"; e.g., "ASA.DOC" contains the online help for the option on accessing the Library Online Catalog.) A help topic on accessing BRS/ONSITE as well as a topic on using NetDial from off campus have been included in the NetDial V4.5 help menu.

When on campus, enter **NETDIAL** at the DOS prompt in order to start the package; this will cause NetDial to default to a baud rate of 9600 bits per second. When using a PC — on campus — which operates at 8MHz or faster, entering **FAST** at the DOS prompt will cause NetDial to default to

19,200 baud for some menu options; this "Fast Mode" also makes some additional options accessible to the user (e.g., the option "I" for using Kermit rather than PCWS when accessing the Network Server). When off campus, enter **HDIAL** at the DOS prompt in order to start NetDial for use with a Hayes-compatible modem.

The NETDIAL, FAST, and HDIAL commands all accept at least two command-line parameters. The first parameter specifies the color in which the NetDial menus are to be displayed, and the second parameter specifies which serial port is to be used for communications purposes. The HDIAL command included with the most recent release of NetDial supports two additional parameters: the third HDIAL parameter allows the user to specify various Hayes options (such as baud rate and tone vs. pulse dialing), and the fourth parameter allows the user to specify a dial prefix. These new parameters make it unnecessary to issue the "SET NET=HAYES..." and "SET PREFIX=..." DOS commands supported by previous versions of NetDial (although these commands are still supported in NetDial V4.5).

Consider the following example of HDIAL usage. When off campus, entering

```
HDIAL 3 2 2400P 1170
```

at the DOS prompt will cause NetDial to use a Hayes-compatible modem, display the NetDial menus using color 3, use the serial port COM2, use a baud-rate of 2400 bits per second, use pulse rather than touch-tone dialing, and employ a dial prefix of 1170 in order to disable call waiting on a pulse-dial phone line. Note that the third HDIAL parameter will be particularly useful to those wishing to take advantage of the University's recently-added 2400 baud modem service.

A concise description of the four HDIAL parameters along with selected examples of HDIAL usage can be displayed online by entering

```
HDIAL ?
```

at the DOS prompt. More detailed information on the use of HDIAL is available through the "H" option on the NetDial help menu.

NetDial V4.5 can be downloaded from the Network Server. For instructions on how to do so, enter **IN COMM** at the LUNA main menu.

NetDial V4.5 can also be obtained at all public microcomputing sites. At a public LAN site, simply log in to the LAN, insert a blank, formatted diskette into drive A: or B:, and enter

```
UPDATE -R A:    (or UPDATE -R B:)
```

at the DOS prompt. In some cases, a bootable disk may be used — for ease of use when subsequently running NetDial from a dual floppy system; exceptions exist because there is insufficient space on a 360K disk for both the NetDial package and versions of MS-DOS higher than 3.10. Dual floppy system users who do not copy the NetDial package onto a bootable disk must run NetDial from drive B, *since there must be a bootable disk in drive A when NetDial is run.* Before running NetDial from drive B, B must be made the default drive unless drive B is in the system PATH.

At the following locations, NetDial V4.5 is available on diskettes, which may be borrowed (for copying purposes): the Central Site Circulation Desk, the Media Center, the Fairchild-Martindale Library, the Linderman Library, and the Educational Technology Center. Copying and installation instructions for NetDial V4.5 are available at all public microcomputing sites.♦

Network Server Evolution

When the IBM Network Server mainframe was introduced in January of 1986, the variety of uses for which it would be employed and the extent of those uses could not have been anticipated. Presently, the system hosts over 250 campus services and information sources, and provides electronic mail delivery at a volume of approximately 1 million messages per year. Last semester, out of over 7000 students, faculty and staff, more than 6000 had accounts on the system, and of those, up to 75% were active in a given month. While the system has proven very successful, and has generated quite a bit of national interest, the current software and hardware environment is nearing the end of its useful life. The directions for continued development and enhancement of the present services are outlined in this article.

The Network Server hardware and its operating system software were subsidized under a joint development project with IBM and McGill University. Lehigh provided the test environment and developed a large amount of application software which supports the information services that users see today. Although the base system served as a good environment for prototyping and testing, there are severe technical limitations which will inhibit continued growth and effective use. At the time the InteCom phone system was installed, there were few alternatives for enhancing it with information service capabilities, but now the range of options is much broader.
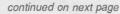
Where to Go from Here

A current goal, expected to overcome many existing problems, is the conversion of the base operating system software (MUSIC) to the more modern and widely used Unix environment. This will permit use of state-of-the-art applications and development facilities. In particular, this includes communications software which will allow full integration of the system with the growing campus backbone network, and with world-wide networks.

An associated goal is the ability to run as a distributed system. This means that programs and data would physically reside on different computers, rather than on a single mainframe as is done today. Such a system should, however, still retain the appearance of a single host to the user. Hardware resources could then be better targeted to specific application demands. Examples would be individual server machines dedicated to mail handling, output services, disk and archival storage, and database services. Another potential would be the extension of a user's local workstation environment to include all available information services as though they were part of that machine.

Still another goal is to more effectively manage the many thousands of pieces of data which make up the information system — to allow easier organization and retrieval, to better customize information access to meet a user's individual needs, and to improve the exchange of information among users. Such capabilities will come with the application of modern relational database technology and use of advanced inquiry facilities.

Present Activities

Current experimental work underway within the Computing Center includes the development of a prototype for the "New Network Server". Initially running on an IBM RT workstation under Unix, it will serve as a model for future development, as well as a feasibility demonstration to aid in securing continuing joint development support from hardware and software vendors. A principal design goal is to minimize the impact of user interface changes, while providing substantially enhanced services.

Conversion to another system platform will take some time to accomplish, but various work in progress will yield results in the near future. One example is the development of a new electronic mail facility which will address many of the problems of the current Memo program on MUSIC. New

features will include fully integrated access to world-wide networks, a more convenient user interface, and a mail archival and review capability. One of the most significant features of the new mail facility will be its ability to run on a number of different machines, including other LUCC mainframes, workstations, and even among personal computers on a local area network. A compatible mail system is also one step in assuring an easier transition to a new Network Server platform. Mail system availability is planned for the end of 1989.

Also in progress is work on providing convenient access to hundreds of national network-based discussion groups which span virtually all fields of interest. This facility, planned for Fall availability on the Network Server, will operate much like the existing bulletin board system (which is itself undergoing continuing enhancements).

Additional Plans

Some longer-term areas which are targeted for development include electronic forms, resource scheduling, and centralized FAX (facsimile) services.

- Improved integration of electronic forms handling with electronic mail will help to further reduce the flow of paper traffic on campus by allowing for easy entry, display modification and retransmission of forms.

- The problems of room and facilities reservation, along with event scheduling, are of critical importance to numerous groups and offices. An integrated campus-wide scheduling system would significantly reduce the administrative burden on these groups, as well as enhance the services they provide.

- Off-campus interactions are increasingly involving the use of FAX services. The ability to provide centralized FAX service for both outgoing and incoming transmissions, and to combine them with electronic mail, would provide access to many more users. This is especially important in light of the sometimes high cost to the University for FAX service.

Getting the Job Done

As one might imagine, many of these goals require substantially more resources to achieve than currently exist. Not only will significant manpower be needed for development and support, but the actual computing hardware will need to be enhanced to handle the load created by these new and expanded services. Larger computing and storage facilities will need to be acquired. As mentioned above, a distributed systems approach is one way in which additional hardware resources can be more effectively applied. In the end, however, external support will be needed to accomplish these goals. Working with vendors in joint efforts is a principal method by which Lehigh will be able to satisfy its own needs, and as a side benefit, serve as a continuing model and source of creative applications for the rest of the academic community.♦

Modem Service Upgraded

After reviewing the responses to LUCC's request for input about the need for 300 baud modem service, the Computing Center Advisory Committee approved the upgrading of the campus modem service from 300/1200 baud to 1200/2400 baud. The date for the cutover to the new 1200/2400 baud service was July 21.♦

Network Server: Changes to LUNA

The Network Server's spelling checker now "resides" in LUNA's UT (utilities) menu. It used to reside in the TE (text processing) menu which has been removed because, of its five options, the two unique ones were related to Scribe which is no longer available on the Network Server. The two remaining TE options, those for editing and printing, are still available under FI (file operations) — both as menu options as well as operations available from within FI's Scan option.

Note also that the FI menu now contains a "Q" option for determining where one's job is in the IBM 3820 laser printer queue.♦

General Interest

How to Find LUCC Software and Documentation

Doris A. Oravec (DAO1@LEHIGH)

The LUCC Software Library maintains sources of information specifying what LUCC-supplied software and documentation is available and where it can be located. The three references which are available are described below.

LUCC Online Software Catalog System

An online software catalog system, containing entries for mainframe (CYBER 850 and VAX 8530) as well as microcomputer software, is available on the VAX 8530. This system can be accessed by typing **LULIB** at the VMS prompt. (Before using the software catalog system, a user should type **SET TERM /INQUIRE** at the VMS prompt if this command is not already in his or her LOGIN.COM file.)

LULIB is a menu-driven program with which one can search by category for a list of available software. Included for each software item is the location of the software, the name and location of available documentation, and the command necessary to access the program (if the program runs on a mainframe). Use of the software catalog system is described in an online tutorial; the option to view the tutorial is presented immediately after accessing LULIB.

Microcomputer Software List

A complete list of all LUCC-supplied microcomputer software is available on the Network Server. Software is grouped by category (e.g., word processors, programming languages) within this list. Included for each software item is information about the sites at which it can be found, the number of copies at each of those sites, and the type of license agreement LUCC has with the vendor. Type **IN MICRO** at the LUNA main menu to access this list.

Documentation List

A list of LUCC and vendor publications is also available on the Network Server. Those publications which are available (free-of-charge) from User Services are presented first, followed by those available at the University Bookstore, and then those available at the Microcomputer Store. Finally, those available for reference at one or more of the public sites are presented. Type **IN DOCUMENT** at the LUNA main menu to access this list.♦

LUCC Technical Bulletins and User Guides

User Services makes a concerted effort to keep its documentation up-to-date. The following list has been provided to inform users of the most recent updates to various documents. The technical bulletins and guides in the following list may be obtained at User Services, 194 Fairchild-Martindale, as well as at the Central Site Consultant Desk; those preceded with an asterisk are also available on the Network Server.

* * #3   *Introduction to Kermit* (Rev 8/89)
  (This publication describes how to do file transfers. The *Kermit User Guide* (Rev 5/88) and the *Kermit Protocol Manual* (Rev 6/86), compiled from documentation files provided by Columbia University, provide in-depth information about Kermit. Both publications may be purchased at the Lehigh University Bookstore.)
* #5   *Accessing & Logging in to LUCC's Mainframes* (Rev 8/89)
* #7   *SPSS*^{X} *and NOS/VE Files* (Rev 8/89)

* * #8   *Intro to GNU Emacs* (Rev 8/88)
* #9   *Accessing BITNET from the Network Server* (Written 8/89)
* * #12   *Account Requestor's Guide* (Rev 6/88)
* #13   *Getting Started with DATAPLOT on VE* (Written 8/88)
* #16   *Guidelines for Preparing a Thesis/Dissertation using Scribe on the VAX 8530* (Rev 7/89)
* * #20   *InteCom Data Communications* (Rev 8/89)
* * #21   *Using the Network Server* (Rev 8/89)
* * #23   *Accessing the Network Server from Off-Campus* (Rev 8/89)
* *   *Magnetic Tape User's Guide* (Rev 8/89)
* *   *Network Server Conference User's Guide* (Written 4/89)

In order to access a technical bulletin or user guide on the Network Server, begin by typing **IN TECHBULL** at the

LUNA main menu. Tab to the desired document and press the Return key; the document will be displayed. Those who would like to print a local copy of the document on their own printers should note the full file name shown in the upper left corner of the screen (following "FILE -"). That file name could then be used with the DOwnload option of the LUNA main menu.

LUCC has written user guides which are available for purchase at the Lehigh University Bookstore, as well as available for reference at the Central Site Users' Area, at the Drown, Grace, and Packard sites, and (on one-day reserve) at the Fairchild-Martindale Library. The guides are listed below:

> *Network Server User's Guide* (Rev 8/89)
>
> *NOS/VE User's Guide* (Rev 8/89)
>
> *VAX/VMS User's Guide* (Rev 8/89)
>
> *Microcomputer User's Guide* (Written 3/89)
>
> *Graphics Manual* (Written 4/89) ♦

Consultant's Corner - Q and A

Question: Having recently purchased a microcomputer with a 1.44MB 3½" disk drive, I have discovered that most of the microcomputers around campus are equipped with 360K 5¼" drives. How does one get information from a 3½" disk to a 5¼" disk so that I may work at various public sites?

Answer: There are conversion stations at various public microcomputing sites. There are single conversion stations at both the Central Site Users' Area and the 208 Drown site. Note that these stations each contain a single 720K 3½" drive and a single 360K 5¼" drive. A single conversion station with a single 1.44MB 3½" drive and a single 360K 5¼" drive is also available at 257 Whitaker as are two similarly configured stations at 28 Grace. In addition, most microcomputers at the 292 Fairchild-Martindale and the D117 Mountaintop Building A sites can also be used for conversion; each of these microcomputers contain a single 1.44MB 3½" drive and a single 360K 5¼" drive. Additional conversion stations will be available in the future.

To ensure a problem-free conversion, it is probably best to always format 3½" diskettes at 720K. These can be read from or written to by either 720K or 1.44MB drives. To format a 3½" diskette at 720K on a 1.44MB drive (assuming that this is drive B), the command is:

```
FORMAT  B:/N:9/T:80
```

When actually copying data from the 3½" diskette to the 5¼" diskette, remember that even at 720K the 3½" diskette is capable of holding twice as much information as the 360K 5¼" diskette. The DISKCOPY command cannot be used to copy between different-sized disks.

Question: Being a new graduate student, I tried to open an account on the Network Server after logging in with **/ID OPEN**. I received a message stating that my social security number was not in the database and that I needed to contact User Services. Why is this and how do I find out what my user ID will be?

Answer: The database on the Network Server is only updated around the beginning of each semester. New graduate students and new University employees are often not in the database for the first few months they are here. Anyone not in the database can bring a copy of his or her University ID card, or the card itself, to User Services so that the pertinent information can be added to the database. Following the addition of the information to the database, the user would have to log in again to the Network Server using the **/ID OPEN** command to acquire his or her user ID (and password). However, depending upon the type of activity on the Network Server at the time, the user may have to wait until about 9:00 am the following morning to successfully open the account; the User Services secretary will inform the user as to when he or she can re-attempt opening the account.

Question: While compiling a program under NOS/VE, I received a message similar to the following:

```
SRU warning limit has been reached.
Accumulator value is 1000.
Maximum limit value is 8160.
Please enter an integer increment or
   TERMINATE_COMMAND or LOGOUT
?
```

I'd like to know more about this limit, and what I can do at this point?

Answer: The message is issued when the System Resource Unit (SRU) warning limit set for the account has been reached. An SRU is a measure of a combination of system resources such as central processor usage and input/output usage. A warning limit is set for each account to ensure that a user will have sufficient resources available to finish the current task, and also to help protect system resources from such things as runaway jobs (due to endless loops, for example). When one receives this message interactively, one would simply enter a number between 1 and the maximum limit — less the accumulator limit (which is actually the warning limit). For the example above, a number between 1 and 7160 could be entered. The larger the number entered, the longer the job will execute before this message would be received again. If the maximum number is entered and then reached, the user has no choice but to log out — as all of his or her SRU's have been used for this session. Thus, it is wise to enter a number less than the

continued from previous page

maximum.

This problem can also be encountered in batch jobs. A batch job will simply abort when the SRU warning limit has been reached. To raise the warning limit from the default, issue the CHANGE_JOB_LIMIT (CHAJL) command at the beginning of the batch job, in a form similar to the follow-ing:

```
CHAJL  SRU  2500
```

which would raise the SRU warning limit to 2500. This command can also be entered interactively, or placed in one's user prolog (in which case it may not need to be placed in one's batch jobs). To determine the limits for an account, issue the **DISPLAY_JOB_LIMIT** (**DISJL**) command.♦

CCAC Highlights

The Computing Center Advisory Committee (CCAC) charter requires that CCAC meeting "highlights" be reported here, and that the full minutes be available on the Network Server. To access the minutes on the Network Server, type **IN CCACMIN** *at the LUNA main menu.*

Computing Center Advisory Committee Minutes: March 30, 1989

Members present: T. Foley, B. Fritchman, J. Hansz, W. Harris, E. Kay, R. Kendi, C. Kraihanzel, A. Larky, C. Lidie, J.G. Lutz, M. Newman, E. Ottervik, W. Schiesser, K. Weiner, J. Williams

The Committee was informed that the Microcomputer Store entered into a volume agreement with Ashton-Tate for dBase III and IV.

Copies of the Microcomputer Store Three-Year Plan were distributed, along with the Three-Year Planning Subcommittee's memo which expressed the feeling that the Store should be viewed as a service to the academic community and not as a business. In addition, the memo stressed the need for the Store — as an academic service — to remain a part of the Computing Center. The memo also recommended that the products and services offered by the Store be expanded.

The internal auditor recommended considering the realignment of the Store as an auxiliary enterprise, with product direction and selection remaining with the Computing Center. After an in-depth discussion of the realignment recommendation and the primary recommendations of the Three-Year Plan, it was decided that there should be an effort to inform the academic administration of the issues related to the Store's academic service and of the potential impact of a realignment on the academic program.

The support issues associated with adding non-DOS machines to the campus were discussed. They include issues related to having duplicate software for two kinds of machines, students doing assignments on different machines for the same class, students being required to use a different machine for different classes, etc. It was emphasized that these problems will not exist immediately and may never materialize. The Macintosh option will give a user the option to buy and use a Mac, but the user must realize the negative aspects of this decision — in that the full support which exists for the DOS machines will not be available for the Macintoshes.

Distributed to the Committee was a memo recommending the replacement of the 300/1200 baud modems with 1200/2400 baud modems. After a discussion, the proposal was endorsed by the Committee.

The Computing Center also recommended that the Talaris printer service be discontinued by July 1, because of diminishing usage. The Committee approved the recommendation.

Computing Center Advisory Committee Minutes: May 4, 1989

Members present: W. Dimm, T. Foley, B. Fritchman, W. Harris, E. Kay, R. Kendi, C. Lidie, J.G. Lutz, M. Newman, W. Schiesser, K. Weiner, J. Williams

The Committee was informed that it will be necessary to use the space designated as the Special Equipment Room for the Software Library expansion. There may also be a need to use the student consultants' space and move the student consultants to the Users' Area. A decision about this will depend on the design forthcoming from Physical Planning.

LUCC is planning to upgrade the memory in the public site Z-158's having only 512K to 640K. In addition, the memory for the public site HP LaserJet Series II's will be upgraded with an additional 2MB of memory; this is being done to facilitate the printing of more complex graphs on the printers.

Beginning April 14, LUCC left the 502 Packard public site open 24 hours a day, following the request of Dean Kane. The site had been a 24 hour one in the past, but the decision had subsequently been made to close it at night because of vandalism. On the weekend of April 21, one week after being re-established as a 24 hour site, manual racks were vandalized and $188 worth of manuals were stolen. Additionally, a manual rack and manuals have recently been stolen from the Drown site, and manuals were recently stolen from the Grace Hall site. A total of $445 worth of manuals and racks were involved.

The Committee was updated on the progress of the internal audit of LUCC. The items addressed were the decreasing sponsored research use and the corresponding increase in unsponsored use, and modifications to the LUCC accounting system.

Computing Center Advisory Committee
Minutes: May 25, 1989

Members present: W. Brichta, B. Fritchman, R. Gruver, B. Hargreaves, W. Harris, E. Kay, R. Kendi, C. Lidie, J.G. Lutz, M. Newman, K. Weiner, J. Williams

Gary Lutz stated that the next meeting of the Committee would be arranged by the new Chairperson, Ed Kay.

The Committee was informed that the IBM CTC Resellers Program Contract was signed by the University. The Microcomputer Store will announce this to the campus. The Committee was also informed that a program to sell Macintosh computers is being discussed with Apple; this plan would not include Lehigh maintenance and the stocking of inventory. This latter program is not expected to be available until the Fall semester.

It was announced that LUCC is in the process of upgrading the memory of the public site PC's having only 512K to 640K, and of upgrading the memory of the public site HP LaserJet Series II's from .5MB to 2.5MB.

The question as to what the Center is doing with regard to upgrading faculty computers was raised. It was indicated that LUCC does not have the budget to do this, although memory upgrades were provided last fiscal year with LUCC funds. The opportunity to get significant donations of PC's from vendors is small, although there may be more of an opportunity to do something in the workstation area. It was suggested that upgrade boards to upgrade the Z-158's to faster machines be looked into. It was reported that this had been investigated and that its cost effectiveness is questionable, in light of decreasing prices for 80286- and 80386-based machines. It was also pointed out that upgrades are not needed campus-wide, and where they are needed must be considered closely.

The CCAC agreed with the Software Subcommittee's recommendations to purchase $5,569 worth of software requested by faculty. The Software Subcommittee will have one more meeting this fiscal year to take care of last-minute requests. The CCAC agreed that additional purchases could be made without bringing the recommendations before the CCAC, provided that the purchases were within budget. The Subcommittee was asked to simply inform the CCAC of the action taken, via the Network Server.♦

Staff Changes

Within User Services, a number of changes have taken place. Both Ken van Wyk and Bill Finley have left the Computing Center for other academic opportunities. Ken left to become Technical Coordinator at the Computer Emergency Response Team Coordination Center at Carnegie-Mellon's Software Engineering Institute.   Bill left to become the Director of Academic Computing at Allentown College of St. Francis de Sales.

Joining User Services as a Consultant is Dean E. Nelson. Dean comes to LUCC from CIBA-GEIGY Corporation where he was a statistician in the research department. There, Dean used SAS heavily under VAX/VMS. Dean has an M.S. in Biometrics from the University of Colorado Health Science Center and a B.S. in Mathematics and Philosophy from Metropolitan State College in Denver.

Also within User Services, Doris Oravec has been promoted from her former position of Accounts Coordinator to the new position of Software Consultant/Librarian. In this position, Doris will consult with users in their efforts to select microcomputer software, as well as coordinate LUCC's purchase, maintenance and distribution of microcomputer software.   Ann Marie Matusa has been promoted into the Accounts Coordinator position from her former position of Administrative Clerk. Finally, User Services welcomes Lori F. Hertzog as the new Administrative Clerk. Lori comes to LUCC from Lutheran Services of the Lehigh Valley, where she was Secretary to the Executive. Lori is pursuing an Associate's degree in Business Administration from Northampton County Area Community College, where she has just earned a Word Processing Specialist certificate.

Within Operations, Constance L. Carlton has replaced Monica Herrera as the Data Processing Tape Librarian. Monica has moved to another position within the University. Connie has a B.A. in Drama from the University of California at San Diego, and comes to LUCC from Pentamation Enterprises, Inc. where she was employed as a computer operator.

Within the Microcomputer Store, Craig A. Warrick has replaced Tom Allen as a Computer Equipment Technician. Tom has accepted a job at the Franklin Mint, where he's involved with end-user support. Craig comes to Lehigh from Osicom Technologies, where he provided technical support on XT-, AT-, and 80386-class microcomputers. He holds an Associates degree from Lincoln Technical Institute, and a Certificate in Electronics from the Lehigh County Community College.♦

Computing at Lehigh Contribution Information

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

Contributions can either be submitted electronically via the Network Server to user BRB0, or be provided on a MS-DOS formatted diskette. Contributions sent via the Network Server must be in ASCII format (i.e., be plain text). Acceptable document formats are:

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

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

Contributed articles are included in *Computing at Lehigh* at the discretion of the Computing Center. The Computing Center reserves the right to edit all contributions. Article submissions must be received by July 31st for the August issue; September 15th for the October issue; December 15th for the January issue; and, February 10th for the March issue. 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