# BENCHMARKS
THE COMPUTING CENTER

University of North Texas
VOLUME 9 NUMBER 5
OCTOBER 1988

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SERVICES AVAILABLE TO USERS OF THE 
UNT COMPUTING FACILITIES

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:

- Computing Center: (817) 565-2324
- Help Desk: (817) 565-4050
- Graphics Lab: (817) 565-3479
- ISB/1/O Area: (817) 565-3890
- BAI/O Area: (817) 565-2350

All personnel listed below can be contacted either by calling the Computing Center or by sending them electronic mail on MUSIC/SP (ID-codes follow each name. All IDs are on BITNET node UNTMUSIC).

BENCHMARKS - Claudia Lynch (AS04)
Information & ID-Codes; Disk Space Problems - Marilyn Jett
Statistical/Research Support - George Morrow (AS01), Pana Sitthiwong (AC09), Phanit Laosirirat (AC44)
Academic ADABAS/COM-PLETE - Janis Burkham (AC55)
CRSP & COMPUSTAT Problems - George Morrow (AS01), Phanit Laosirirat (AC44)
Student Programming Problems - CSCl Dept., GAB Room 542A; BCIS Dept., BA Room 152
Problems with JCL, Passwords, or Operating Systems; or Communication/Terminal Problems - Help Desk
Data Entry; Test Scoring & Analysis - Betty Grise
Administrative Applications - Coy Hoggard
Printout Retrieval - ISB or BAI/O Operators

DIALING-UP UNT COMPUTERS OVER 
THE TELEPHONE

Phone numbers for the Local Area Network (LAN) are:
300/1200 BAUD: (817) 565-3300, (817) 565-3499
2400/1200/300 BAUD: D/IV METRO 420-6000, 429-9314
Area code 214 must dial 817 before the METRO number.

The numbers that accommodate multiple baud rates have an autobaud feature that requires you to hit the <RETURN> key repeatedly so that the receiving modem can determine the appropriate baud rate. When you have established a communications link, the # prompt will appear on your screen and you can enter one of following CALL commands to connect with the computer of your choice.

CALL 8040 connects with the NAS/8083 (support line editing or PCWS).
Operating environments available are: MUSIC/SP, VM/CMS.

CALL 3270 connects with the NAS/8083 through a 3270 protocol converter (supports full-screen editing). Operating environments available are: MUSIC/SP, VM/CMS, ADABAS/COM-PLETE, PHOENIX

CALL DEC connects with the VAXcluster (VMS, Enlive)
CALL 780 connects with the Research VAX (Unix)
CALL 3000 connects with the Libraries' HP-3000 (Bibliographic database)

CALL 6800 connects with the NBI (Unix)

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HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS: FALL 1988*

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<tr>
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<th>Times</th>
<th>Days</th>
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<tr>
<td>Computing Center RJE</td>
<td>Noon-Midnight</td>
<td>Sunday</td>
</tr>
<tr>
<td></td>
<td>7 a.m.-Midnight</td>
<td>Monday</td>
</tr>
<tr>
<td></td>
<td>7 a.m.-Tuesday-Midnight, Saturday</td>
<td>Tuesday-Saturday</td>
</tr>
<tr>
<td></td>
<td>(Open 24 hours/day)</td>
<td></td>
</tr>
<tr>
<td>ISB 110 Terminal Area</td>
<td>2-10 p.m.</td>
<td>Sunday</td>
</tr>
<tr>
<td></td>
<td>7:30 a.m.-Midnight</td>
<td>Monday-Thursday</td>
</tr>
<tr>
<td></td>
<td>7:30 a.m.-6 p.m.</td>
<td>Friday</td>
</tr>
<tr>
<td></td>
<td>9 a.m.-6 p.m.</td>
<td>Saturday</td>
</tr>
<tr>
<td>College of Business</td>
<td>Noon-11:45 p.m.</td>
<td>Saturday, Sunday</td>
</tr>
<tr>
<td></td>
<td>8:15 a.m.-11:45 p.m.</td>
<td>Monday-Thursday</td>
</tr>
<tr>
<td></td>
<td>8:15 a.m.-7:45 p.m.</td>
<td>Friday</td>
</tr>
<tr>
<td>GAB 550C</td>
<td>2 p.m.-Midnight</td>
<td>Sunday</td>
</tr>
<tr>
<td></td>
<td>8 a.m.-Midnight</td>
<td>Monday-Thursday</td>
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<tr>
<td></td>
<td>8 a.m.-5 p.m.</td>
<td>Friday</td>
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<tr>
<td></td>
<td>2 p.m.-8 p.m.</td>
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<td>Noon-10 p.m.</td>
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<td></td>
<td>Noon-5 p.m.</td>
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*Hours may vary. Check MUSIC/VAX News and/or posted schedules for exceptions.

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TCP/IP and the ARPA Internet - Part I

By Billy Barron, VAX System Manager (BILLY@UNT.VAX) and Darrell Davis, Former VAX Programmer/Operator

Editor's Note: This is the first in a series of articles discussing the ARPA Internet.

The VAXcluster, the Research VAX, the NBI, and several microcomputers on campus are now connected to the ARPA Internet. The ARPA Internet is made up of several research related networks including ARPANET, NSFNET, MILNET, and parts of CSNET. The members of the ARPA Internet include many universities, companies, and US government computer centers.

The software used by the ARPA Internet is called TCP/IP. TCP/IP (Transmission Control Protocol/Internet Protocol) is a suite of protocols that link dissimilar computer systems over local-area and wide-area networks. TCP/IP's user interface is a series of programs that include TELNET, FTP, and SMTP. The TELNET program allows local users to log into most of the hosts on the ARPA Internet if they have accounts on the remote machine. FTP (File Transfer Protocol) is an utility to copy files between various machines. SMTP (Simple Mail Transfer Protocol) allows MAIL to be sent between any two machines on the Internet.

An ARPA Internet address specifies a network host on the ARPA Internet. An ARPA Internet host name consists primarily of two parts: a host and a domain. A domain is a group of computers in one organization. The domains are organized as a tree according to organizational or administrative boundaries. Each node of the tree, or domain, is given a label and a label needs only be unique within its domain. The name of the domain is the concatenation of all the labels of the domains from the root to the current domain, listed from right to left separated by dots.

The ARPA Internet is made up of several top-level domains:

- EDU - educational organizations
- GOV - civilian government organizations
- MIL - Department of Defense
- NET - administrative organizations for networks such as CSNET, UUCP, and BITNET
- ORG - other organizations

Since UNT is a university, UNT falls under the EDU domain. The UNT subdomain of EDU is "UNT". Thus, the "full" UNT domain is "UNT.EDU". Currently, the UNT.EDU domain is divided into two subdomains: ACS (Academic Computing Services) and CSCI (Computer Science department).

The host names for the major University of North Texas hosts are:

VAXcluster
  VAXA  vaxa.acs.unt.edu
  VAXB  vaxb.acs.unt.edu
ResearchVAX  dept.csci.unt.edu
NBI  nbi.csci.unt.edu
The figure below shows how a host at UNT fits into the hierarchy of domains.

COM GOV EDU MIL NET ORG
(Top-level domains)

UTEXAS UNT MIT EDU Subdomains

CSIC ACIS UNT Subdomains

DEPT NBI VAXA VAXB UNT Hosts

The following is a diagram showing the official Internet host name for VAXB on the UNT VAXcluster and how it is made up of host and domain names.

vaxb.acs.unt.edu

host domain

hostname

See the ARPANET, TCP/IP, TELNET, FTP, TCPFINGER, NSLOOKUP, and MAIL HELP topics on the VAXcluster for more information.

IMSL Library Updated

The IMSL Library has undergone a major revision, resulting in the creation of three separate new and improved libraries, collectively referred to as the IMS Library Edition 10. The three libraries are:

- MATH/LIBRARY Version 1.0 - general applied mathematics.
- STAT/LIBRARY Version 1.0 - statistics.
- SFUN/LIBRARY Version 2.0 - special functions.

You may continue to refer to these subroutines by calling them from a FORTRAN program that is compiled and linked by the procedure FORVCLG. References to the old IMS Library (edition 9.2 and prior) routines will be automatically routed to the new routines through the IMSL Interface Library.

Further information about the IMSL Libraries can be obtained from George Morrow, Academic Computing Services Consultant, 565-2324.

Wide Area Networks Handout Corrected

Several corrections have been made to the Wide Area Networks handout (Making Connections: An Introduction to the Use of Wide Area Networks at the University of North Texas) announced last month's Benchmarks. If you received a copy of the handout before 9/28/88 you should make note the following changes:

- Page 4 - The Research VAX in the Computer Science department is now a part of CSNET.
- Page 5 - The current nodenames for the VAXen, due to some very complex reasons, are UNT VAX, NTS UVAXA, and NTS UVAXB.
- Page 20 - The first return address, for ARPANET, CSNET, and NSFNET should read:

  userid%NTVAXBDECNET@UNTADNX.CC.UTEXAS.EDU

Text Archives for the Liberal Arts Researcher

By Tim Rindflesch, University of Minnesota Computing Center - TCR@UMNACVX (Reprinted, with minor alterations, from the University of Minnesota Academic Computing Services and systems publication, The ACSS Newsletter).

It is becoming increasingly popular to use the computer for text analysis, a technique in which texts of often considerable size are scrutinized for content, linguistic structure, or for other characteristics, such as scribal practice.

If you are interested in using the computer to analyze large amounts of text, the first problem you face is making the textual material accessible to the programs being used. If you have the data available in printed form, it is possible to use a scanner to read the printed material into the computer. However, amassing large amounts of printed text represents a considerable investment of time and money. You may therefore want to take advantage of texts that are already available in machine-readable form.

The following two organizations provide machine-readable texts (on either magnetic tapes or floppy disks) to researchers at a reasonable cost:

The Norwegian Computing Centre for the Humanities
The Norwegian Computing Centre for the Humanities specializes in large corpora (up to a million words) of modern English, representing written material as well as transcripts of conversations, which include information on pauses and intonation. (Audio tapes of the spoken corpora are also available.) In addition to the Brown Corpus and the LOB (Lancaster-Oslo/Bergen) corpus of American and British English respectively, they have large samples of Australian and Indian English. Some of these texts are available in both a tagged and an untagged version where the tagged version includes grammatical information about each word in the text. They also offer complete concordances of selected corpora.

The price of these materials ranges from modest to considerable. For example, the Brown Corpus (a million words, untagged) costs $70. A tagged version of the LOB Corpus costs about $225. A complete concordance of the tagged LOB Corpus is $600 (five 2400-foot magnetic tapes).

The Oxford Text Archive
The corpora offered by the Oxford Text Archive are not as large as those of the Norwegian Computing Centre for the Humanities, but Oxford has a much wider range of material: some 800 texts of varying size in twenty-five languages, including English and other European languages, as well as Classical Greek, Latin, Sanskrit, and Arabic, in addition to less well known languages like Fulfulde and Malay.

Most of the texts are standard literary works, however, some are transcripts of dictionaries. (The total size of the Oxford Text Archive is 1000 megabytes.) The prices of the Oxford texts are quite reasonable. The Archive charges separately for the texts and for the magnetic media on which the texts are provided. Dictionaries are $100, while all other texts are $10 per text. There is an additional charge of either $50 for a magnetic tape or $30 for a floppy disk.

Both organizations ask that purchasers sign a statement that materials will be used for non-profit research only. Prepayment is required.

If you would like more information about these archives, contact Claudia Lynch at the UNT Computing Center, 565-2324 (AS04@UNTVM1).


By Claudia Lynch, Benchmarks Editor (AS04@UNTVM1)

Benchmarks readers, in an unprecedented flurry of responses, have set the record straight on the usage of the words "affect" and "effect." It all started rather innocently, when I consulted the dictionary on the usage of these words and misread the definitions. The result of this confusion was the headline in the June/July issue of Benchmarks that read "University Name Change Affects Computer Users." The title, of course, should be "University Name Change Affects Computer Users." Here is what Webster's Ninth New Collegiate Dictionary (1983, Springfield Mass., p. 397) has to say about effect (I "missed" the word noun in the last sentence).

>effect vt (1589) 1. to cause to come into being 2 a: to bring about often by surrounding obstacles: ACCOMPLISH <— a settlement of a dispute > b: to put into effect < the duty of the legislature to — the will of the citizens > syn see PERFORM

Usage The confusion of the verbs affect and effect is not only quite common but has a long history. . . . The noun affect is sometimes mistakenly used for effect. Except when your topic is psychology, you will seldom need the noun effect.
Computing Center Short Courses

The Computing Center is offering the following short courses during the latter portion of the 1988 Fall Semester. Please pre-register to attend (a registration form is provided at the end of this issue). A maximum of 15 people will be admitted to each of the Introduction to MUSIC/SP classes, parts I & II. A maximum of 20 people will be admitted to each of the remaining classes.

1. Introduction to MUSIC/SP, Part I – MUSIC/SP is the primary interactive operating system employed by most academic users to access the NAS/8083 IBM-compatible mainframe computer at UNT. MUSIC users have access to a variety of programming languages, a sophisticated word processing system, and several statistical analysis packages. MUSIC also gives you the capability to submit batch jobs to the MVS operating system. Topics covered include gaining access over the Local Area Network, logging on and off, changing your password, and creating, editing, and storing files using the full-screen editor.

Three separate two-hour sessions to be held in Room 110 of the Science Library (ISB):

Monday, October 24: 6–8 p.m.  
Instructor: Kevin Mullet
Tuesday, October 25: 10 a.m. – Noon  
Instructor: Panu Sittiwong
Wednesday, October 26: 9–11 a.m.  
Instructor: Janis Burkham

2. Introduction to MUSIC/SP, Part II – This course provides an in-depth look at various useful programs and utilities that are available on MUSIC/SP. Topics covered include accessing on-line help facilities, using electronic mail, routing output to high-speed printers, and writing files to secondary storage such as disk and tape. A working knowledge of MUSIC is required.

A two-hour session to be held in Room 110 of the Science Library (ISB):

Monday, October 31: 3–5 p.m.  
Instructor: Philip Baczewski

3. Introduction to SAS – SAS is one of the most widely implemented data analysis systems within business and education. SAS is particularly well suited for data set manipulation and includes an extensive procedure library providing a wide range of analytical tools. This course is recommended for individuals who plan to incorporate statistical analyses into their research. Topics covered include the reading of data into SAS, simple data transformations, recoding variables, labeling output, and performing simple univariate and bivariate analyses. Prior knowledge of MUSIC/SP is required.

A two-hour session to be held in Room 110 of the Science Library (ISB):

Thursday, October 27: 1–3 p.m.  
Instructor: Phanit Laoshirat

4. Introduction to SPSS$^X$ – SPSS$^X$ is the latest version of this popular data analysis system originally developed for social scientific research. While SAS is slightly more powerful for the analysis of complex datasets, many users find SPSS$^X$ to be easier to learn. SPSS$^X$ also includes more flexible facilities for collapsing and labeling variables. This course is recommended for individuals who plan to incorporate statistical analyses into their research. Topics covered include the reading of data into SPSS$^X$, simple data transformations, recoding variables, labeling output, and performing simple univariate and bivariate analyses. Prior knowledge of MUSIC/SP is required.

A two-hour session to be held in Room 110 of the Science Library (ISB):
Friday, October 28: 9-11 a.m.        Instructor: Phanit Laosirirat

5. File Handling with SAS, SPSS, and BMDP – Anyone who uses these common statistical packages frequently should be aware of procedures available to simplify reading and processing datasets. Variable formats, labels, and computed variable information can be stored in a dataset and recalled in a future job with one command. This course shows you how to use simple JCL along with the statistical software to make your jobs run much more quickly and smoothly. Familiarity with at least one of the packages mentioned is necessary.

A two-hour session to be held in ISB 123:

Tuesday, November 1: 9-11 a.m.        Instructor: Claudia Lynch

6. Introduction to VAX/VMS, Part I – VMS is the interactive operating system used on the Digital Equipment Corporation (DEC) VAXcluster. Nearly all popular programming languages are supported under VMS. The topics covered in this course include gaining access to the VAXcluster through the Local Area Network, logging in and out, changing your password, creating files and directories, creating login command files, using the EDT editor, and defining logicals and symbols.

A two-hour session to be held in Room 110 of the Science Library (ISB).

Wednesday, October 26: 3-5 p.m.        Instructor: Kevin Mullet

7. Introduction to VAX/VMS, Part II – This course provides a more detailed examination of VMS commands and utilities. The topics covered in this course include use of the electronic mail and messaging systems, creating command files, advanced editing using TPU, and sending mail through BITNET. Prior experience using VAX/VMS is required.

A two-hour session to be held in Room 110 of the Science Library (SB).

Tuesday, November 1: 3-5 p.m.        Instructor: Billy Barron

8. Introduction to BITNET – BITNET is a network linking more than 600 computers at over 300 institutions and research centers. This course covers the basic concepts of BITNET, file transfers across BITNET sites, and other services that are available on this computer network. Faculty and graduate students needing to exchange information with other universities and research institutions in the U.S., Canada, Europe, or Japan will benefit greatly from attending this course. Prior knowledge of at least one of the following interactive operating systems is required: CMS, MUSIC, VAX.

A two-hour session to be held in the Academic Computing Conference Room (ISB 123):

Wednesday, November 2: 10 a.m.--Noon        Instructor: Philip Baceweski

9. Introduction to Procomm and PCWS – Both of these short courses deal with Personal Computer to mainframe communications. Introduction to Procomm presents an overview of using PC Work Station, a communications package which is specifically written to allow terminal access and file transfer capabilities between an IBM PC or compatibles and the MUSIC/SP operating system. Topics covered will include setting up PCWS communications parameters, connecting to MUSIC over the UNT local area network, using PCWS's full-screen capabilities, and using PCWS for file transfer between MUSIC and the PC. Introduction to Procomm provides an overview of the Procomm communications package for Personal Computers or compatibles. Procomm provides several different terminal emulation modes, and supports several file transfer protocols including KERMIT and XMODEM. Topics covered include setting communications and file transfer parameters, setting up and using Procomm's dialing directory, and connecting to UNT mainframes through the local area network.

These courses will be held in Terrill Hall, room 247, at the following times:

Introduction to Procomm:        Thursday, November 3, 2-3 p.m.
Instructor: Kevin Mullet

Introduction to PCWS:        Thursday, November 3, 3-4 p.m.
Instructor: Kevin Mullet
‘Computer Terms,’
According to the Associated Press

By Claudia Lynch, Benchmarks Editor (AS04@UNTVMI)

The Associated Press (AP) has a manual entitled Associated Press Stylebook and Libel Manual: The Journalist’s Bible, which has a section called "Computer Terms" which is chock-full of misconceptions. Dimitri Vulis, of the CUNY Graduate School Department of Mathematics (DLV@CUNYVMSI), and his wife, Maryam Inzel, of the Fordham University College of Lincoln Center Department of Science and Math, set about to try to have the errors corrected. They didn’t have much luck with AP, so Mr. Vulis has taken to sharing the “funnier” definitions with the computer community. Following are a few choice ones.

- ASCII - An acronym for American Standard for Computer Information Interchange. It is used for communications among most computers and is usually sent in seven-bit word length.
- Artificial Intelligence - A computer that thinks like a human.
- Bulletin Board - In videotex, a bulletin board consists of public messages contributed by the individual computers users. The messages can be read by anyone connected to the system.
- DOS - An acronym for disk operating system. Spell it out. It is composed of one or more diskettes on which data can be stored and one or more disk drives to read the information stored on disks.
- Global Search - a search that covers all data stored in a computer.
- Holograph - a three-dimensional image generated by a computer.
- Intelligent Terminal - a programmable terminal.

**BENCHMARKS FORUM**

BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the Benchmarks editor (AS04@UNTVMI) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.

**Question:** I received a copy of PROCOMM from the Computing Center, but I can’t execute it. Why?

**Answer:** PROCOMM is distributed as an ARCHived file so that all the files can be contained on one 360K diskette. You must de-archive the PROCOMM files before you can execute the program. If you check the directory of the PROCOMM diskette, you will see two files with the extension of ARC. The file named PC242.ARC contains all the PROCOMM system files, and the file named PC24DOC.ARC contains all the PROCOMM documentation. Enter the command READ at the DOS prompt, to get information on how to de-archive the PROCOMM files. The de-archived version of PROCOMM will work fine.

**Question:** I need to access the Video Store Demo Database in ADABASA. Should I sign on to STNATA, STNATB, or STNATC to write and submit my NATURAL programs?

**Answer:** All three sign-ons will provide you access to the Video Store Demo Database.

**Question:** I signed-on to STNATA to write and submit my NATURAL programs to access my team’s database files which reside on ADABASB. My programs won’t work and I am denied access to my team’s database files. What’s wrong?

**Answer:** If your team’s database files reside on ADABASB, then you must write and submit your NATURAL programs in STNATB. Unlike the Video Store Demo Database, database files created by ADABAS users in BCIS classes must be accessed with the NATURAL system assigned to the ADABAS system (A, B, or C) in which the user-created database files reside.

Benchmarks Reader/User feedback is encouraged. Send all letters, suggestions, etc to (AS04@UNTVMI) or to the Benchmarks Editor at:

University of North Texas Computing Center
NT Station, Box 13495
Denton, Texas 76203

Cards & Letters
Customize Your
MUSIC Editing in
PCWS

By Philip Baczewski, MUSIC
Time-Share Coordinator
(AC12@UNT/MUSIC)

MUSIC users who commonly employ
PCWS to access MUSIC from the PC
may be interested in exploring some
features of PCWS which allow the
customization of the MUSIC editing
environment. PCWS (Personal
Computer Work Station) is a
communications package which provides
3270 terminal emulation support on
IBM Personal Computers or compatibles
accessing MUSIC. Because
PCWS provides the terminal emulation
mostly on the PC side of the
connection, it is possible to define
commonly used PC keystrokes to
accomplish their equivalent on MUSIC.
There are two specific features of
PCWS which allow the user to change
the PCWS editing environment. The
PCWS Function Key Facility allows
you to change the keystroke definitions
for each mode of terminal
emulation (Page mode, 3270 mode,
and VT100 mode). The PCWS Entry
Assist feature provides extra editing
features without the need for extra
features in MUSIC’s Context Editor.
When using the PCWS Function Key
Facility, most users will only want to
modify the 3270 mode keystrokes,
since these are the ones used in the
MUSIC editor as well as in other full-
screen utilities. A simple but very
useful example of key definition is
enabling the use of the Page Up and
Page Down keys on the PC to control
a function of the MUSIC editor.
In the normal MUSIC editing
environment, PF7 is set to UPPAGE
and PF8 is set to DOWNPAGE. To
also set Page Up and Page Down to
these functions, first enter PCWS’s
Function Key Facility, by pressing
ALT-N. To modify 3270 mode key
strokes you can then select 2 from the
Function Key Facility menu. Next,
press Page Down until you get to 3270
Mode Function key settings menu 3.
The last two 3270 key functions listed
in this menu are PF7 and PF8 and you
will see that the keystrokes associated
with those functions are the PC F7
and F8 keys.
To associate Page Up with PF7, use
the arrow keys to move down and
over until the cursor is sitting in the
Keystroke2 field on the same line as
PF7. Then press F1 followed by the
Page Up key. You will see the “PgUp”
designation appear. Follow the same
procedure for associating Page Down
with PF8. To make these changes
permanent, press Ese (escape key) to
exit the 3270 mode function menu
and then press F3. These settings are
stored in the file PC/#WS.KEY.
Once the above changes have been
made, your PC Page Up key will
perform a PF7 function and your Page
Down key will perform a PF8. Since
the MUSIC editor and most full
screen utilities use PF7 and PF8 for
UPPAGE and DOWNPAGE, these
PC keys become very useful when you
are using MUSIC through PCWS.
All of your PC keys can be assigned a
function except the alphanumeric
keys (a-z, 1-0, and symbols) and the
Control alphanumeric keys. This still
leaves most of the PC special function
keys and all of the ALT-alphanumeric
combinations for assignment to MUSIC PF-key functions.
The Entry Assist Function of PCWS
allows you to establish margins, tab
stops, and end-of-line signal position.
Entry Assist also enables key-press
functions such as word-left, word-
right, word delete, and tab to end of
line, as well as a cursor position
display. Entry Assist can be set to on
or off in the PCWS set-up menu 5 and
can also be toggled from terminal
display by pressing ALT-D (Document
mode). With Entry Assist on, CTRL-
<right arrow> will move to the
beginning of the next word and
CTRL-<left arrow> will move to
the beginning of the previous word.
CTRL-<delete> is the default setting
for deleting the word on which the
cursor is positioned.
If Entry Assist is on, you can press
ALT-F to invoke the Format Change
scale line. This scale line shows the
horizontal positions of the PC screen
(remember that the MUSIC full-
screen editor’s input area is positions
5 through 76). A block cursor will also
appear on the scale line. Pressing the
Tab key sets a tab stop at the cursor
position. A tab stop can be cleared by
moving the cursor over it and pressing
the Delete key.
The left margin can be set by position-
ing the cursor and pressing the <
(less than sign) key and the right
margin can be set similarly by pressing the
> (greater than sign) key. An audible
do-off-line signal (like the typewriter
OFFICE AUTOMATION NEWS

Maintenance Release of WordPerfect 5.0

WordPerfect has sent Office Automation the latest maintenance release of WordPerfect 5.0. Most of you are using the first release that has a date of May 1988. The "fixes" will be included in the new maintenance release.

If you would like to have the most current release copied on your machine, bring the original diskettes to Marquis Hall, Room 105 and I will copy the WordPerfect 1, WordPerfect 2, and Conversion diskettes. Please call 3856 and make sure I am here before coming over. I have to have the original diskettes to avoid making illegal copies.

If you have a printer problem and the most recent printer definition, they also sent me 6 printer diskettes to include the latest printers. Included in this is the fix for the Epson FX86E printer. Bring an extra diskette if you would like your printer definition copied to a diskette.

Help Books for WordPerfect 5.0

I was at the Mall last week and stopped at Software Etc. I counted twelve books to help the users with WordPerfect 5.0. The latest copy of "WordPerfectionist" the newsletter published by WordPerfect Support Group (Vol III No 2), stated that more than 30 books on some aspect of 5.0 are currently in preparation.

The WordPerfectionist reviewed three books on WordPerfect for beginners. The first was Mastering WordPerfect 5 by Susan Baake Kelly. According to the reviewers, this book has a clear, no-nonsense style that will give you a good introduction to the possibilities of WordPerfect 5.0. It was held at the printer's until the author could purchase a copy of 5.0 retail and verify the book's contents. An entire chapter is devoted to using graphics.

Using WordPerfect 5, by Charles O. Stewart, III, & The Gang of Twelve, is touted to be an ideal choice for most current and potential 5.0 users. The review said owning this book is like having a panel of experts immediately available to answer your questions about WordPerfect 5.0. Be sure to get the second printing of the book which has the picture of a computer screen with "PC News" on the front cover. The book's chief author and project coordinator, selected most of the book's authors from the WordPerfect Support Group CIS Forum contributors.

Another book reviewed was Best Book of: WordPerfect Version 5.0, by Vincent Alfieri. Several of his illustrations were display screens were from the beta version of 5.0, and some of his statements that were true of the beta version were fixed by the time the program shipped (4.2 macros cannot be converted to 5.0 when in fact this was not true when shipped). Graphics is not handled very extensively. The WordPerfect Support Group decided not to recommend the book at this time, although they might recommend a revised future edition. Books recommended but not reviewed were: WordPerfect Series 5: The Complete Reference by Karen Acerson and Advanced WP: Series 5 by Eric Alderman.

"Office Automation News" was submitted by Sandy Franklin, Office Automation Specialist.

Latest Version of IBM KERMIT Available

The new release (Version 2.3) of KERMIT for the IBM/PC and compatibles is available at the Computing Center. This release of KERMIT provides better VT-100 emulation than the previous releases have. In addition, it provides Tektronix 4010 Graphic Terminal emulation. If you are interested in running SAS/GRAPH and/or DISSPLA, you may want to acquire this version of KERMIT.
Trojan Horses and Viruses Could Affect You

By Claudia Lynch, Benchmarks Editor (AS0@UNIVM1)

There has been a lot of talk in both popular and computer industry publications recently about trojan horses and viruses. The June/July 1988 issue of *Benchmarks* even contained two articles, "Beware of Trojan Horses and Viruses" and "Preventive Programming," concerning this topic. People may still tend to feel like "this couldn't happen to me," however.

The purpose of this article is to point out that UNT is not an island, and that bad things can happen here also. In August, for example, someone uploaded a file into the IBM UTILITIES file transfer area of the UNT BBS called ERRORISTARC (9K). It turned out to be a trojan horse and was removed from the BBS. It is unknown, however, how many people were affected by this file before it was discovered. It is wise, therefore, to be extremely careful when acquiring public domain software. You should use some type of utility to protect your disk before running any new program, particularly if you get it off of a bulletin board. Many of these utilities are publically available, and some are on the VAX BBS.

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**Micro-Tips**

This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the BENCHMARKS editor for possible inclusion in a future issue.

**Hard Disk Backups**

All hard disks should be backed up periodically. Backups prevent the loss of files if hard disk problems occur or files are accidentally deleted. The first major decision is to choose how often backups should be done. The most important fact to remember is that any files on the hard disk that have been changed or added since the last backup will be lost if something goes wrong with the hard disk. Therefore, backups should be done whenever enough files have changed that it would be very time consuming to reenter the information.

The next decision is the media to which the backups should be written on. The most common two media are floppy disks and tape. Tape drives are expensive ($300 or more + tapes), but they provide a convenient means of doing backups. Floppy disk backups, on the other hand, can be done with your existing floppy drives. To calculate the number of floppy disks you would need for a backup, just divide the amount of disk space your hard disk files occupy by the capacity of one floppy disk. Also, keep a couple of extra floppies around just in case.

The last decision that needs to be made is what backup software should be used. On an IBM PC or compatible using floppies, several software packages are available including BACKUP, FASTBACK, PCBACKUP, and PC FULLBACK. BACKUP comes with DOS and therefore does not cost extra. BACKUP has serious drawbacks, however. It is very slow, requires formatted disks, and a backup made by BACKUP can only be restored by the same version of DOS that was originally used to create it. Consult the DOS manual for more information on BACKUP.

FASTBACK, PCBACKUP (part of the PC Tools Deluxe package), and PC FULLBACK are all commercial programs that cost from $40 to $100 and solve the problems of DOS BACKUP. The power and functionality of these three programs are roughly equivalent.

*Submitted by Billy Barron, VAX System Manager (BILLY@UNTBAX)*
The NT BBS Policies and Procedures

Editor's Note: A portion of this "policy statement" was inadvertently omitted from the end of the previous issue of Benchmarks. We have reprinted it again, this time in its entirety.

The NT BBS is designed to provide the following "key services" for the NT community:

- User support for academic and administrative use of NT and personal computing systems:
  - NT mainframe systems
  - Microcomputers (including IBM and compatibles, Apple Macintosh, TI Professional, Commodore Amiga)
  - Local area (NT LAN, Ethernet, Novell) and wide area (Bitnet, THENET) networking
- Forum for public discussion of issues involving students, faculty, staff, and alumni in the NT community - such issues may involve:
  - (Pedagogy) - teaching strategies; instructional technologies; distribution of syllabi; instructor posted class notes
  - (Research) - discussion of published research, questions on research design and statistical analysis; ideas for further research;
  - (Computing) - ideas regarding potential applications of computers in academic or other environments
  - (Campus Life) - announcements, university employment notices, discussion of events and issues involving campus life at the University of North Texas (e.g. meetings, speeches, conferences, concerts)
- Distribution of useful public domain and shareware software for several popular microcomputers (there is presently a download section for PD games, but this distribution is not one of the "goals" of the board and is simply provided for your enjoyment)

Policies

(General)

- Real first and last names must be used. Suspiciously fictitious names are subject to confirmation and removal of sign-on privilege.
- Use of initials for your first or last name is discouraged. If you use initials for signing on, you will be asked to establish a new account using your real first and last names, and the "initial" account will be disabled.

If your name is a duplicate of another BBS user (John Smith), use your first name and middle initial, separated by an "_" (John_A Smith). If there is another John A. Smith on the board, you might include the first two letters of your middle name or use a different middle initial.

(Neither the first nor the last name may be longer than 14 characters.)

- Questions regarding the use of the BBS may be directed to other users or to SYSOP.
- In general, the BBS is to be considered "complete." However, if you have suggestions for improvements to the system, you are welcome to leave them in the BBS SUGGESTIONS area. Suggestions will be considered, as time permits, according to the following guidelines:
- Suggestions that involve significant improvements for relatively small programming investments will be considered first.
- Suggestions that involve larger amounts of programming time may be implemented in the long term, if they are considered important for efficient and effective use of the board and if they conform to the next criterion.
- Suggestions must enhance the board's ability to provide the previously stated key services. If this criteria is not met, then the suggestion will probably not be implemented.

(Software distribution)

- Presently, all users may upload and download software with no restriction. This is subject to change if we determine that this activity dominates telephone access lines.
- Software should be uploaded in the standard compression formats for various machines. Particular compression schemes to be used are:
  - IBM and compatible PCs - Phil Katz's ARC (PKARC & PKXARC)
  - Macintosh - Raymond Lau's StuffIt
  - Amiga - ARC
While amusing items are ALWAYS welcome, we do not consider jokes based on insults and deprecation amusing. Also, while we do not consider ourselves prudes, we will erase files containing materials which could be potentially offensive. Please do not waste our time by making us erase stupid files that don't contribute to the purpose of the board.

We do not have the time or the inclination to test every program that is uploaded for "viruses" or "trojan horse" programs or "pirated" software. Therefore, you download these files at your own risk and are responsible to test your files after downloading and before uploading if you are unsure. There are utilities such as CHK4BOMB and FLUSHOT in the IBM UTILITY area to test for "trojan" and "virus" programs. If we are notified that a particular program is dangerous or illegal, we will remove it immediately from the file transfer area, and determine who uploaded it.

Please do not knowingly upload a dangerous or illegal program to the file transfer area.

(Discussion areas)

- Discussions are organized into several different topical areas. All users are welcome to read and enter messages in any and all topic areas.
- Users are encouraged to post messages to the public.

From time to time, it may be appropriate to send private messages, but NT students, faculty, and staff are reminded that more powerful and efficient electronic mail facilities are available on the Vax and the IBM mainframe systems.

Remember that extensive amounts of private messages on the board will adversely affect BBS mail response time unnecessarily.
- Users are encouraged to keep the content of messages relevant to the topic.

If the content of your message does not conform to any of the specified topic areas, use the PUBLIC INFO area for public messages, and the MAIL area for private ones.

If you have a suggestion for the inclusion of another topic area, submit the suggestion in the BBS SUGGESTIONS area, and it will be considered for the level of interest it would generate and its usefulness in contributing to the key service goals stated earlier.

The fundamental objective of the board is to provide for an electronic medium for the communication of ideas and issues relevant to the pursuit of educational goals at the University of North Texas. While we encourage free exchange of information and ideas on the BBS, all messages (public and private) are subject to being monitored. Messages posted and software uploaded deemed inappropriate to this overall objective are subject to deletion.

Please exercise courtesy and thoughtfulness in your use of this board, so that it will be considered a useful and enjoyable service for the campus community.

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**VMS TUTORIALS**

**The PRT Command**

by Stephen L. De Rudder, VAX Operator (DERUDDER@NTSUVAEB)

The PRT command, not surprisingly, is used to print files. PRT will ask for more information when needed. It takes the form:

PRT [Printer [File]]

Some examples of the PRT command are:

PRT
(You will be prompted for all needed information).

PRT 3
(You will not be prompted for the printer destination).

PRT L PROG*.PAS
(You will not be prompted for the printer or file).

PRT can print files on several different printers located on campus. The printers and locations are:

Printer | Location
--- | ---
Laser | ISB
Remote 3 | ISB
VAXcluster | GAB 5th floor lab
Remote 1 | BA
(Laser Printer)

You will be asked to specify a parameter indicating the printer destination. If you are using Waterlo/Script, you should enter S or W as the printer destination. This allows for the special formatting necessary for such output. Wildcard file specification is also permitted for all printers. The asterisk (*) means any number of characters can be
replaced by the asterisk. The percent sign ("%") means any single character must replace the percent sign.

If you select the laser printer, you will be asked to specify a printing environment. Some of the most commonly used printing environments and their characteristics are listed here. A complete list can be examined from the system help by typing HELP PRT LASER_FONTS. When you are prompted for the printing environment you may type a question mark (?) for the list of print trains also.

<table>
<thead>
<tr>
<th>Name</th>
<th>CPI</th>
<th>CPL</th>
<th>LPP</th>
<th>Rot</th>
<th>Comments</th>
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<td>132</td>
<td>66</td>
<td>0</td>
<td>Standard</td>
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<td>80</td>
<td>62</td>
<td>90</td>
<td></td>
</tr>
<tr>
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<td>12</td>
<td>90</td>
<td>66</td>
<td>0</td>
<td>Elite</td>
</tr>
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<td>0</td>
<td>Large</td>
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<td>90</td>
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</tr>
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<td>132</td>
<td>66</td>
<td>0</td>
<td></td>
</tr>
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<td>90</td>
<td>66</td>
<td>90</td>
<td>Elite</td>
</tr>
<tr>
<td>TN01</td>
<td>10</td>
<td>77</td>
<td>66</td>
<td>90</td>
<td>Counter</td>
</tr>
</tbody>
</table>

CPI = chars per inch; CPL = chars per line; LPP = lines per page; Rot = rotation in degrees

The translation of some of the fonts had to be corrected, because the wrong characters would be printed when sent to the laser printer. The blank character [ ] are translated to angled (<?>) brackets on some fonts. The pipe character (|) is sometimes translated into a single vertical line. All other characters are translated normally.

PRT will not let you print any executable files (files with an extension of .EXE). INDEXED files also will not print. Check the FILE ORGANIZATION when you type DIRECTORY/FULL to see if a file is INDEXED. You should avoid printing any non-text files such as object files.

You will be asked for a "filing name" when you send to any printer except the VAXcluster printer. The "filing name," usually your last name, tells the output operators the alphabetical box in which to file your printout.

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The SHOW Command

By Billy Barron, VAX System Manager (BILLY@UNIVAX) and Lucia Young, Lead VAX Operator (LUCIA@UNIVAX)

SHOW is one of the most useful VMS commands. It lets you view information about your environment. To change characteristics of the environment, the SET command should be used. For more information about SET, type HELP SET from the DCL $ prompt or see the article "The SET Command" in the June/July 1988 Benchmarks.

This article will discuss some of the more popular uses of SHOW. For more information on the SHOW command, type HELP SHOW from the DCL $ prompt.

SHOW BROADCAST

The SHOW BROADCAST command is used to see what classes of messages that are enabled and disabled for broadcast to your terminal. In the example below, the user can receive a message of any type except PHONE. If another user tries to PHONE this user, he will get a message saying that this user's phone is unplugged.

```
$ SHOW BROADCAST
Broadcasts are currently disabled for:
PHONE
```

SHOW DEFAULT

SHOW DEFAULT reveals the current default directory. The result will be of the form:

```
$number$drive_name$directory
```

The number is for internal use within the VMS operating system. The drive_name is the disk drive you are currently on and the directory is the directory path to your current directory. In the example below, SDUA0 is the drive_name and BILLY.TXT is the directory.

```
$ SHOW DEFAULT
$1SDUA0:BILLY.TXT
```

SHOW LOGICAL

SHOW LOGICAL displays the equivalent string of all logical names. Logicals can be defined with the DEFINE or ASSIGN command. For more information on defining logicals, type HELP DEFINE or HELP ASSIGN at the DCL $ prompt. Following is an example of the use of DEFINE and SHOW LOGICAL.

```
$ DEFINE INFIL INFILE "DAT.ADAT"
$ SHOW LOGICAL INFIL "INFIL" = "DAT.ADAT"
```

SHOW PROCESS

SHOW PROCESS can give you all kinds of useful information about your current process. The command SHOW PROCESS/ALL will show you all the information about your process, including your process privileges, dynamic memory area, quotas, and accounting information.

SHOW QUOTA

The SHOW QUOTA command allows you to see how much disk space you are currently using and how much you still have available. The space is listed in blocks, where each block is 512 bytes. For example:

```
$ SHOW QUOTA
User [300CT94,AC02] has 445 blocks used, 555 available, of 1000 authorized and permitted over-draft of 500 blocks on $1SDUA2
```

SHOW SYMBOL

SHOW SYMBOL displays the current value of one or more symbols. Symbols can be defined with assignment statements. For example:

```
$ DIR := "directory\size=\all/\date"
$ SHOW SYMBOL DIR
DIR = "directory\size=\all/\date"
```

SHOW SYMBOL * will display all the defined symbols and their current value (* is the wild card character).
SHOW SYSTEM
SHOW SYSTEM displays the information about the status of each process in the system. It also shows the current node that you are on, the version of the VMS operating system that is running, and the uptime of the system.

SHOW TERMINAL
The SHOW TERMINAL command allows a user to look at terminal characteristics. This is especially useful when trying to find what type of terminal the VAX thinks you have. One thing to note is that the INPUT and OUTPUT speeds will always say 9600 baud. This is to due to the way the Sytek LAN works.

SHOW TIME
SHOW TIME displays the current date and time. To see more information about the current date and time, type TIME at the DCL $ prompt.

SHOW USERS
SHOW USERS displays a list of interactive users on the system. The list consists of the username, process name, process identification code (PID), and the terminal name. You can get a list of specific users by typing SHOW USERS xxx, where xxx are some characters you would like to match. For example, SHOW USERS AND would display a list of all the usernames that begin with AND. To display a list of interactive users on the VAX Cluster, type WHO at the DCL $ prompt.

Using VAX Kermit
By James Shoffit, Vax Operator (JAMES@UNIVAX)
VAX Kermit is a very powerful utility. It is used for uploading and downloading files to microcomputers running terminal emulation programs that support the Kermit protocol.

To get into VAX Kermit, just type KERMIT at the DCL prompt (usually a $).

$ KERMIT VMS
Kermit-32 version 3.3.111
Default terminal for transfers is _VTA981:
Kermit-32 >

Now, the Kermit-32 is your prompt. From here you can issue Kermit commands. The most important are probably SEND and RECEIVE.

The SEND command will allow you to send a file(s) from the VAX to your computer. After you type the SEND command, VAX Kermit waits the number of seconds specified by the SET DELAY command, then begins transmitting your file. This gives you time to set up your communications package for downloading. (In ProComm 2.4.2, you would use the <PgDn> key and then select the Kermit Protocol).

The command format is: SEND filename, where filename is the name of the file on the VAX.

The RECEIVE command allows you to send files from your computer to the VAX. When you type RECEIVE, VAX Kermit begins waiting for you to upload a file. Note that you do not have to specify a filename; if none is given, then it will take the filename that is used by your microcomputer.

The command format is: RECEIVE or RECEIVE filename, where filename is what the uploaded file should be named.

Server Mode
If you plan to transfer more than one file, then you might want to use SERVER mode on VAX Kermit. The SERVER command will cause VAX Kermit to enter server mode. Now, your computer terminal emulator can issue server commands to send and receive multiple files without having to give SEND or RECEIVE commands to VAX Kermit. Several communications packages are capable of sending commands to the VAX Kermit Server (In Procomm, use the <Alt> <K> to pop up the Kermit Server command).

The most important commands to be sent to the VAX Kermit Server are GET, SEND, and FINISH.

GET will get a file or files from the VAX, and download them to your microcomputer. For example, if you specified a filename of * . PAS then, it would download all your Pascal files from the VAX onto your computer. It will even keep the same filenames as they had on the VAX.

SEND transfers a file or files to the VAX from your computer. You can again specify wildcard filenames to transfer groups of files.

FINISH simply tells the VAX Kermit Server that you are finished with server mode. You cannot type commands to the VAX while you are in server mode, so you must always do a FINISH after each session where you use the SERVER command.

The SET Commands
The DELAY parameter is the number of seconds to wait before sending data after a SEND command is given. This is used when VAX Kermit is sending a file to allow the user time to escape back to the computer communications package and start the download process. For example: SET DELAY number-of-seconds, where number of seconds is the (decimal) number of second to wait before sending data.

The SET FILE TYPE command will set the file type that Kermit is receiving or sending. A file type of ASCII (the default when you start VAX Kermit) should be used to receive text files which are to be used as text files on the VAX (Like source code for programs). The file type BINARY should be used for binary files, such as MSDOS.COM or .EXE files, which need to be kept in a format that allows the file to be returned without any changes. The file type FIXED is useful for uploading MSDOS.ARC files so they can be manipulated on the VAX using the ARC utility. Also note that the SET
FILE TYPE commands must be done before entering server mode. The command takes the form SET FILE TYPE type, where type is one of ASCII, BINARY, or FIXED. There is also a SHOW command which allows you to show various parameter settings. Its format is: SHOW keyword, where keyword can be a variety of parameters. To see all the parameters type SHOW ALL.

Getting out
To get out of VAX Kermit, you may type EXIT, QUIT, or just hit ^Z (Control-Z).

As with many VAX programs, extensive on-line help is available by typing the HELP command. If you have trouble getting Kermit to work properly, first verify that your communications package is set to 8 bit data, No parity, and 1 Stop bit. If you still experience difficulties, contact the Help Desk at phone number 365-4050.

The ARC and ZOO Utilities

By Stephen L. De Rudder, VAX Operator (DERUDDER@UNTVA)

ARC and ZOO are file compression utilities. They will take a file and make it smaller by squeezing it or crunching it (a file that takes 10 blocks may only take 6 blocks after compression). Compressed files take less disk space (which the cluster is running low on) and allows you more room for other files. ARC and ZOO are not compatible. This means you can’t use one to compress a file and use the other to decompress the file. ZOO is a little better at compressing than ARC, but ARC has the advantage of being compatible with the ARC utility on PCs. The good features of each are described below.

- ARC is compatible with ARC on the PCs. You can compress a file on the VAX and download it to the PC then decompress it on the PC (it will work for uploading also). This will speed up up/down loading on the VAX.
- ZOO will compress all files including executable files. ARC will only compress text files. (ARC will compress EXE files, but they will not translate back to EXE files correctly.)
- ZOO will compress any size files. ARC can only compress files that are below 700 blocks (the actual number of blocks depends on the compression method).
- ZOO will compress the files smaller than ARC will. This is most notable on the large files.
- ZOO compresses files faster than ARC will compress them. Again this is most notable on the large files.

To use one or both of these utilities, put the line of your choice (or both) in your LOGIN.COM file.

$ ARC := = "$Sys$Utility:Arc"
$ ZOO := = "$Sys$Utility:Zoo"

The utilities compress files and store them in another file (with an extension of .ARC or .ZOO). More than one file may be compressed and stored in the same archive file. Wild carding may be used on the file or files to be compressed or decompressed.

The format of the ZOO command is as follows (the ARC command has the same setup, but doesn’t have all the options of the ZOO command):

ZOO {acDelLPTuUvx} [acDelMNoOpPquz1:/] archive file

{a...x} - are the commands for ZOO
[a...z] - are options after the command for ZOO
archive - is the name of the file where all the compressed files are stored
file - Name of specific file to added or to be decompressed.

Note: There is no space between the command and the option(s).

ARC and ZOO have help information that can be printed on the screen and easily read. The basic commands for each are the same. Enter ZOO or ARC H to get detailed help on the utility of your choice. Note: Only ZOO should be used for EXE files.

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### VAX CLUSTER USAGE STATISTICS

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Number of Runs</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LOGINOUT</td>
<td>User login</td>
<td>71822</td>
<td>18.1</td>
</tr>
<tr>
<td>2. SET</td>
<td>VMS Utility</td>
<td>52692</td>
<td>13.3</td>
</tr>
<tr>
<td>3. DIRECTORY</td>
<td>VMS Utility</td>
<td>49909</td>
<td>12.6</td>
</tr>
<tr>
<td>4. DELETE</td>
<td>VMS Utility</td>
<td>33086</td>
<td>8.3</td>
</tr>
<tr>
<td>5. TYPE</td>
<td>VMS Utility</td>
<td>23962</td>
<td>6.0</td>
</tr>
<tr>
<td>6. SHOW</td>
<td>VMS Utility</td>
<td>17400</td>
<td>4.4</td>
</tr>
<tr>
<td>7. NETSERVER</td>
<td>DECnet Server</td>
<td>12409</td>
<td>3.1</td>
</tr>
<tr>
<td>8. SEND</td>
<td>BITNET Message Utility</td>
<td>11915</td>
<td>3.0</td>
</tr>
<tr>
<td>9. EDT</td>
<td>Editor</td>
<td>11751</td>
<td>3.0</td>
</tr>
<tr>
<td>10. User Programs</td>
<td>Compiled Programs</td>
<td>10361</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Total: 396742
August Top Ten Programs: CPU Time Used

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>CPU Time</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. User programs</td>
<td>Compiled Programs</td>
<td>45 04:44:09.59</td>
<td>84.1</td>
</tr>
<tr>
<td>2. ACC</td>
<td>VMS Accounting Utility</td>
<td>1 19:25:59.41</td>
<td>3.4</td>
</tr>
<tr>
<td>3. PASCAL</td>
<td>PASCAL compiler</td>
<td>0 16:06:44.51</td>
<td>1.2</td>
</tr>
<tr>
<td>4. EDT</td>
<td>Editor</td>
<td>0 14:05:52.52</td>
<td>1.1</td>
</tr>
<tr>
<td>5. BACKUP</td>
<td>VMS Utility</td>
<td>0 13:12:11.13</td>
<td>1.0</td>
</tr>
<tr>
<td>6. LOGINOUT</td>
<td>User login</td>
<td>0 08:46:10.92</td>
<td>0.7</td>
</tr>
<tr>
<td>7. MAXCLAS</td>
<td>ERDAS Utility</td>
<td>0 08:40:45.28</td>
<td>0.7</td>
</tr>
<tr>
<td>8. TDP</td>
<td>PACS + Billing Utility</td>
<td>0 06:16:46.56</td>
<td>0.5</td>
</tr>
<tr>
<td>9. BBS</td>
<td>Bulletin Board Utility</td>
<td>0 06:16:46.56</td>
<td>0.5</td>
</tr>
<tr>
<td>10. MAIL</td>
<td>VMS Utility</td>
<td>0 05:12:44.35</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Total: 53 18:04:42.10

ADMINISTRATIVE INFORMATION SYSTEMS

Staffing Changes in Administrative Information Systems

Sean Wldmer, who was the Voice Response Analyst for a brief period of time, left the Computing Center in July to take a job in the Dallas/Fort Worth Metroplex. Nancy Fisher, who was a Programmer/Analyst on the General Systems Team, is now heading the Voice Response Team.

Doug Heruska, Documentation Specialist since January of 1987, resigned in September to accept a Computer Based Training position in Addison. The Documentation Specialist position is unfilled at this time.

A number of new people have joined the ranks of Administrative Information Systems. They are:

- Fiscal Team - Dan Strange.
- General Student Services Data Systems Team - Deirdree Hayes.
- Office Automation - Pok Seon Kwong (part-time).
- Payroll/Personnel Data Systems Team - Shawn Brown, Rong Wang.
- Student Records - Patrick Chang, Linda Wallace

We are glad to have all these fine people working here in the Computing Center.

General Systems Team Reorganized

The General Systems Team has recently been divided into two teams, the Student Services Data Systems Team (SSVCDSTM) and the General Data Systems Team (GENDSTM). George William remains the leader of the General Data Systems team, which will continue to support the alumni/advancement system, the facilities inventory and utilization reporting system, and other systems it has supported in the past with the exception of the financial aid management system.

Masjid Grooms, a programmer/analyst on the original General Systems Team, is the team leader of the new Student Services Data Systems Team. Other members of the team are Virginia Haynes and Deirdree Hayes. The SSVCDSTM team supports the student services division of the University. The primary system initially supported by this team is the Financial Aid Management System (FAMS).
# Mainframe Performance Statistics

## NAS/8083 Dual Processor Performance Statistics for August

<table>
<thead>
<tr>
<th>CPU</th>
<th>SYSTEM</th>
<th>Scheduled Operating Hours</th>
<th>Planned Maintenance Hours</th>
<th>Planned Production Hours</th>
<th>Unplanned Maintenance Hours</th>
<th>Production Hours Achieved</th>
<th>System Uptime</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAD</td>
<td>VM/SP3</td>
<td>744</td>
<td>6.49</td>
<td>737.51</td>
<td>0.20</td>
<td>737.31</td>
<td>99.9%</td>
</tr>
<tr>
<td>ACAD</td>
<td>MUSIC/SP</td>
<td>744</td>
<td>39.40</td>
<td>704.60</td>
<td>1.30</td>
<td>703.30</td>
<td>99.8%</td>
</tr>
<tr>
<td>ACAD</td>
<td>MVS/JES2</td>
<td>744</td>
<td>7.36</td>
<td>736.64</td>
<td>0.64</td>
<td>736.00</td>
<td>99.9%</td>
</tr>
<tr>
<td>ACAD</td>
<td>COMPLETA</td>
<td>744</td>
<td>7.74</td>
<td>736.26</td>
<td>3.12</td>
<td>733.14</td>
<td>99.6%</td>
</tr>
<tr>
<td>ADMN</td>
<td>MVS/JES2</td>
<td>744</td>
<td>7.36</td>
<td>736.64</td>
<td>4.21</td>
<td>732.03</td>
<td>99.9%</td>
</tr>
<tr>
<td>ADMN</td>
<td>COMPLETA</td>
<td>336</td>
<td>0.00</td>
<td>336.00</td>
<td>0.00</td>
<td>336.00</td>
<td>100.0%</td>
</tr>
<tr>
<td>ADMN</td>
<td>ADABASA</td>
<td>744</td>
<td>29.84</td>
<td>714.16</td>
<td>19.86</td>
<td>694.30</td>
<td>97.2%</td>
</tr>
</tbody>
</table>

System Uptime = (Production Hours Achieved) / (Planned Production Hours)
Production Hours Achieved = (Planned Production) - (Unplanned Maintenance)
Scheduled Operating Hours = (Planned Maintenance) +
(Music/Production)
MUSIC/SP Planned Maintenance Hours include 19.27 hours for system backup and 12.97 hours for VM/SP3 system backup.
ADABASA'S Planned Maintenance Hours include 22.31 hours for system backup.
The ACAD CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime. The ADMN CPU achieved 99.4% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the key causes appearing in the table below.

### ACAD CPU:
**CPU, Tape, and Disk Subsystems (NAS)**
1. Preventive Maintenance on ACAD CPU.
   5.93 HOURS
2. Microcode upgrade on ACAD CPU.
   2.19 HOURS
   **TOTAL**: 8.12 HOURS

**Miscellaneous**
1. MUSIC/SP system failures.
   1.39 HOURS
2. COMPLETA system maintenance..
   2.32 HOURS
   **TOTAL**: 3.71 HOURS
   **GRAND TOTAL FOR ACAD**: 11.83 HOURS

### ADMN CPU:
**CPU, Tape, and Disk Subsystems (NAS)**
1. Preventive Maintenance on ADMN CPU.
   7.53 HOURS
2. IOP processor failures..
   4.95 HOURS
   **TOTAL**: 12.48 HOURS

**Miscellaneous**
1. ADABASA DASD file maintenance..
   13.60 HOURS
2. ADABASA system tuning/improvements..
   1.31 HOURS
   **TOTAL**: 14.91 HOURS
   **GRAND TOTAL FOR ADMN**: 27.39 HOURS
DISK BACKUP SCHEDULES

OS/MVS Backup Schedule
OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4:630 a.m. and Sunday from Midnight to 3 a.m. A backup of all the operating systems on the NAS CPU and their contents is done once every two weeks at some low activity period over a weekend.

MUSIC/SP Backup Hours
A message will be sent to all users signed on to MUSIC/SP approximately 10 minutes before backups are begun. It will be in the form **MUSIC SHUT DOWN AT xxxx AM SCHEDULED BACKUP**. To find out the backup hours while signed on to MUSIC/SP, enter HELP HOURS.

The following backup schedule is currently in effect:
- Tuesday 3 a.m. (for about 3 hours)
- Weekly backup
- Wednesday - Saturday 4 a.m. (for about 2 hours) Daily backup
- Saturday Midnight (for about 2 hours)
- Daily backup

**PHOENIX Backup Hours**
PHOENIX is backed up weekly on Sunday night. The backup begins at midnight and lasts for approximately 30 minutes.

**VAX Backup Schedule**
Incremental backups of the VAXcluster are performed Monday through Thursday at 3 a.m. Users do not have to log-off, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday beginning at 8 a.m. These generally will take all day to complete. Again, users do not have to log-off, but any files that are open will not be backed up.

A "Stand Alone" backup of the system disk is done once a month. This procedure makes a copy of the system disk that can be used to restore its contents if the disk is completely destroyed. The system will be shutdown for this. Watch the system log-on message for specific times and dates.

**NOTE:** Requests for restoration of files should be made via MAIL to the username OPERATOR. Your file can only be restored if it existed before the last backup was done.

ACADemc (NAS) Program Hit Parade

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Number of Runs</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGM = *.DD</td>
<td>Compiled Program</td>
<td>6443</td>
<td>15.8</td>
</tr>
<tr>
<td>IEWL</td>
<td>Linkage Editor</td>
<td>6203</td>
<td>15.2</td>
</tr>
<tr>
<td>IKFCBL00</td>
<td>VS COBOL Compiler</td>
<td>5292</td>
<td>9.2</td>
</tr>
<tr>
<td>SASLPA</td>
<td>SAS</td>
<td>3748</td>
<td>12.2</td>
</tr>
<tr>
<td>IEBGENER</td>
<td>IBM Utility</td>
<td>2972</td>
<td>7.3</td>
</tr>
<tr>
<td>IEBFTPCH</td>
<td>IBM List Utility</td>
<td>2242</td>
<td>5.5</td>
</tr>
<tr>
<td>IDCAMS</td>
<td>VSAM Utility</td>
<td>2178</td>
<td>5.4</td>
</tr>
<tr>
<td>SCRIPT</td>
<td>Waterloo/SCRIPT</td>
<td>1856</td>
<td>4.6</td>
</tr>
<tr>
<td>SPSSX</td>
<td>SPSSX</td>
<td>1473</td>
<td>3.6</td>
</tr>
<tr>
<td>IEV90</td>
<td>Assembler H</td>
<td>1322</td>
<td>3.2</td>
</tr>
</tbody>
</table>

August Top Ten Programs: Frequency Of Runs
### August Top Ten Programs: CPU Seconds Used

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>CPU Seconds</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SASLPA</td>
<td>SAS</td>
<td>52034</td>
<td>47.0</td>
</tr>
<tr>
<td>2. PGM = *.DD</td>
<td>Compiled Program</td>
<td>15729</td>
<td>14.2</td>
</tr>
<tr>
<td>3. FATS</td>
<td>Tape Verification Program</td>
<td>11466</td>
<td>10.4</td>
</tr>
<tr>
<td>4. SCRIPT</td>
<td>Waterloo/SCRIPT</td>
<td>7064</td>
<td>6.4</td>
</tr>
<tr>
<td>5. SPSSX</td>
<td>SPSSX</td>
<td>6780</td>
<td>6.1</td>
</tr>
<tr>
<td>6. IKFCBL00</td>
<td>VS COBOL Compiler</td>
<td>4904</td>
<td>4.4</td>
</tr>
<tr>
<td>7. ISTINM01</td>
<td>VTAM Utility</td>
<td>1270</td>
<td>1.1</td>
</tr>
<tr>
<td>8. PTPCH</td>
<td>Dataset Lister</td>
<td>941</td>
<td>0.8</td>
</tr>
<tr>
<td>9. IEV90</td>
<td>Assembler H</td>
<td>903</td>
<td>0.8</td>
</tr>
<tr>
<td>10. IEWL</td>
<td>Linkage Editor</td>
<td>757</td>
<td>0.7</td>
</tr>
</tbody>
</table>

The programs listed in this section were used the most frequently on the NAS CPU during the month of August, 1988.

**Please Note** that ACAD is the official designation of the part of the NAS/8083 CPU that is dedicated to faculty and student use. The portion of the computer reserved for University administrative purposes is termed ADMN.

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**UNIVERSITY OF NORTH TEXAS COMPUTING CENTER**

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Claudia Lynch, *Benchmarks* Editor  
Philip Baczewski, *Benchmarks* Associate Editor
Computing Center Short Course Registration Form

Please complete this form and return it AS SOON AS POSSIBLE if you wish to attend any of the short courses listed below. You may also register over the phone by calling 565-2324.

NAME: __________________________ PHONE: __________________________

DEPT: __________________________ CLASSIFICATION: __________________________

I wish to attend:

● Introduction to MUSIC/SP, Part I (ISB 110):
  _ Monday, October 24: 6-8 p.m.
  _ Tuesday, October 25: 10 a.m.-Noon
  _ Wednesday, October 26: 9-11 a.m.

● Introduction to MUSIC/SP, Part II (ISB 110):
  _ Monday, October 31: 3-5 p.m.

● Introduction to SAS (ISB 110):
  _ Thursday, October 27: 1-3 p.m.

● Introduction to SPSS-X (ISB 110):
  _ Friday, October 28: 9-11 a.m.

● File Handling With SAS, SPSSX & BMDP (ISB 123):
  _ Tuesday, November 1: 9-11 a.m.

● Introduction to VAX/VMS, Part I (ISB 110):
  _ Wednesday, October 26: 3-5 p.m.

● Introduction to VAX/VMS Part II (ISB 110):
  _ Tuesday, November 1: 3-5 p.m.

● Introduction to BitNet (ISB 123):
  _ Wednesday, November 2: 10 a.m.-Noon

● Introduction to PROCOMM
  _ Thursday, November 3: 2-3 p.m.

● Introduction to PCWS :
  _ Thursday, November 3: 3-4 p.m.

I would like to see more classes offered: _____ on weekends: _____ at night.

The classes I am interested in are: ____________________________________________
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