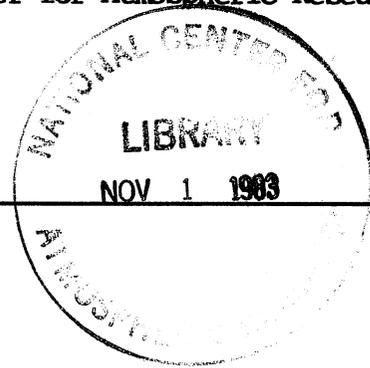


The Record



a newsletter of the Scientific Computing Division,
National Center for Atmospheric Research



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SERVICES DIRECTORY
(303) 497-1000 - FTS prefix 320

		ext.	room
NEW USER INFORMATION			
Computing Resource Applications	Cicely Ridley	1211	119
	John Adams	1213	118
Project & User Number Assignment	Rosemary Mitchell	1235	5
Document & Manual Distribution	Sal Farfan	1292	17g
REMOTE USER INFORMATION			
Data Communications (RJE)	Don Morris	1282	11d
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RJE Password Assignment	Rosemary Mitchell	1235	5
Visitor Information	Kathy Lucero	1231	6a
OPERATIONAL INFORMATION			
Operational Procedures	Oper. Supervisor	1200	29
1/2" Tape Librarian	Sue Long	1245	24f
TEM Tape Librarian	Mary Trembour	1232	5
Software Distribution/Output Mailing	Sue Long	1245	24f

CONSULTING OFFICE

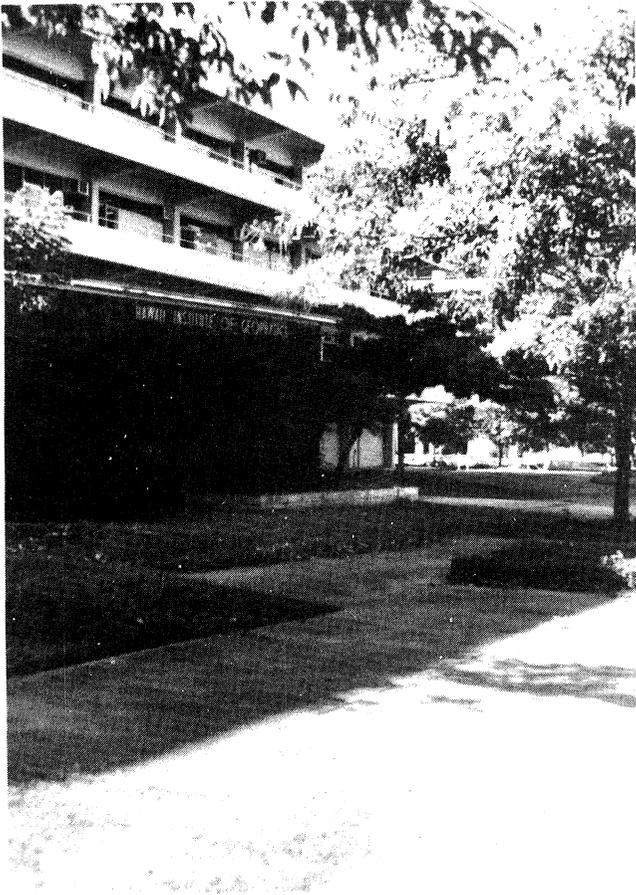
The Consulting Office is closed every Wednesday from 13:30-14:30 for staff meetings. If extension 1278 is busy, a message may be left on extension 1279. Messages may also be sent to the CONSULT1 virtual machine on either the IBM 4341 (IO) or the IBM 4341 (IA).

	08:30-12:30	13:00-17:00
MONDAY	Ann Cowley	Harsh Anand Passi
TUESDAY	Erich Thanhardt or Barb Horner	Dan Anderson or Harsh Anand Passi
WEDNESDAY	Erich Thanhardt	Dave Kennison or Ken Hansen
THURSDAY	Barb Horner	Dan Anderson
FRIDAY	Ken Hansen	Dave Kennison

SCHEDULE OF MACHINE UNAVAILABILITY

All machines may be down from 07:00 until 08:30 daily for Systems Checkout. In addition, some machines will be down for Preventive Maintenance as follows: CRAY,CA, 06:00-08:00 (T Th); CRAY,C1, 06:00-08:00 (M W); TBM, 06:00-07:00 (daily); MODCOMP, 08:00-12:00 (1st Monday of month).

The Record is published monthly by the Scientific Computing Division of the National Center for Atmospheric Research. NCAR is operated by the University Corporation for Atmospheric Research and is sponsored by the National Science Foundation. Reference to a company or product name does not imply approval or recommendation of the product to the exclusion of others. David Maxey, Editor; Ann Cowley, Head, User Interfaces; Astrik Deir-mendjian, Trouble/Design Reports; Sylvia Darmour, Summary of NCAR Computer Use; Mary Bartels, Computer Resources Allocated.



Left--the Hawaii Institute of Geophysics at the University of Hawaii in Honolulu; right--the Mona Loa Observatory of NCAR's High Altitude Observatory division, located on the island of Hawaii.

Overseas Sites Now Able to Use SCD's Computers Interactively

This month, The Record features three of our Hawaiian sites to announce the interactive use of SCD computing resources at locations where this type of service has previously been unavailable.

Although there are no UNINET access numbers outside the continental United States, UNINET has arrangements with several other packet switching networks around the world, one of which provides service to Hawaii. This agreement enables the user wishing to connect to SCD via UNINET to access our computers through the local packet switching network. This method is also currently being used to connect NCAR with sites in France, Scotland, and the United Kingdom. If you are interested in finding out which locations around the world offer such service, please contact Don Morris (ext. 1282).

The Hawaii Institute of Geophysics at the University of Hawaii, located in Honolulu, is one site that has recently been able to interactively connect to SCD computers. Another is the Cloud Physics Observatory of the University of Hawaii which is located in Hilo. The third site to have this new capability is the Mona Loa Observatory of NCAR's High Altitude Observatory (HAO) division, located at 11,400 feet high atop the island of Hawaii.

Previously, all three sites were dependent on long-distance telephone dial lines to connect to NCAR's computers. Now, with interactive capability, they may connect to the IBM 4341 via UNINET, and have similar capabilities to those of users who reside in the continental United States.

While procedures are not yet as smooth and error-free as we would like, SCD anticipates that overseas users will soon have the ease of access and expedient service that users receive in the continental U.S.

by Dave Maxey

New Charging Algorithms

SCD is currently implementing new charging algorithms for the CRAY-1 and IBM 4341 computers. These algorithms will compute units called "General Accounting Units" (GAUs). The three-month period beginning October 1, 1983 through December 31, 1983 will be used to test and phase-in the new algorithms. During the test period, the CRAY Charging Units (CCU) will continue to be the official charge unit. The GAU will become the official unit for all SCD services beginning January 1, 1984.

The three-month test period provides to individual CRAY-1 users the opportunity to compare GAU charges with CCU charges for all CRAY-1 jobs run. The trailer sheet printed at the end of a CRAY-1 job will show the job charges in both GAUs and CCUs. These charges, however, will not include charges for any spawned jobs that access half-inch tapes, the TEM and the internal network. Charges for the latter activities will be reflected in a daily report that summarizes, by project, all charges for jobs that ended on the previous day. This report will be posted in the computer room input/output area, and IBM 4341 users may access it via terminal by using the PRJDAILY EXEC. Instructions for using this command may be found by typing HELP PRJDAILY. As a frame of reference for determining the effect of the new CRAY-1 algorithm on your individual projects, you should assume that a CCU is equal to two GAUs.

Since there is currently no charge for IBM 4341 usage, the test period provides users of this system the opportunity to estimate future charges based on indicated GAU charges accumulated during this period. IBM 4341 GAU charges will be displayed on a users terminal when the user either disconnects or logs off. The session charges displayed after a disconnect command will not include: (1) any printed page charges, (2) charges for temporary disk space if used and not released prior to disconnecting and, (3) charges for tape connect time if a tape is used and the drive is not detached prior to disconnecting. The session charges displayed after a logoff command will not include any

printed page charges. Printed page charges may be determined from the trailer sheet of a printout. As with the CRAY-1, a daily report summarizes project charges for all activities ended on the previous day. You may access this report using the PRJDAILY EXEC. Users may also find out what project is being charged by using the QUSER EXEC and may change this project by using the CHARGE EXEC. Type HELP "execname" for instructions about these EXECs. A similar facility is being developed for MODCOMP users and will be announced in both the Daily Bulletin and the next issue of The Record.

Beginning January 1, 1984, all CCU allocations remaining in the accounts of non-NCAR users will be converted to GAUs using the formula:

$$\text{CRAY GAUs} = \text{CCUs} * (\text{CRAY GAUTOT}/\text{CCUTOT})$$

where:

CCUs = CCUs remaining in account as of December 31, 1983;
 CRAY GAUTOT = Total CRAY-1 GAUs generated by all projects during the test period.
 CCUTOT = Total CCUs generated by all projects during the test period.

It is recognized that this average conversion rate may not be appropriate for all users since the way in which resources are used varies widely from project to project. We suggest that those who find that their projects use substantially more GAUs than implied by the conversion rate, preserve output listings to demonstrate this fact. An extension request submitted shortly before resources run out and accompanied by appropriate listings will be handled promptly. We urge that you delay asking for adjustments for as long as possible so that requests are spread over a period of time enabling us to handle them expeditiously.

A charging algorithm for the DICOMED is also being developed and will be discussed in the next issue of The Record.

Initially, charges for use of the DICOMED and IBM 4341 will not be deducted from users' allocations although billable projects will be invoiced for these charges.

The algorithm for the CRAY-1 is shown below:

$$\text{CRAY GAUs} = P(J + (T_{\text{CP}} + W_1 T_{\text{I}} + W_2 T_{\text{C}}) (1 + W_3 M)) + W_4 A_{\text{TB}} + W_5 A_{\text{TP}} + W_6 A_{\text{H}} + W_7 M_{\text{H}}$$

P = Priority weight (foreground = 1, background = 1/3)

J = Job charge = .00165 (not charged on jobs spawned to access network; charged on all other jobs including jobs spawned to access the TBM and half-inch tapes)

T_{CP} = CPU hours

T_{I} = IOWAIT hours

$$T_C = \text{Disk hours} \\ = .0000162 \times \text{IO requests} + .0005 \times \text{megawords moved}$$

M = Average memory used in megawords (always 0 for jobs spawned to access half-inch tapes, the TBM and the network)

A_{TB} = TBM activity in megawords

A_{TP} = half-inch tape activity in megawords

A = Number of TBM accesses

M_H = Number of half-inch tape mounts

$$\begin{array}{ll} W_1 = .5 & W_5 = .0003 \\ W_2 = .1316 & W_6 = .0004 \\ W_3 = .20 & W_7 = .0009 \\ W_4 = .0023 & \end{array}$$

Notes:

1. All jobs spawned to access half-inch tape, the TBM and the network are always considered to have foreground priority.
2. 1 megaword = 64 megabits.

The algorithm for the IBM 4341 is shown below:

$$\begin{aligned} 4341 \text{ GAU} = & W_1 ((T_{CP} + T_{DK} + W_2 A_{TP}) (1 + W_3 M) + .01 W_3 T_{DC} M) \\ & + W_4 T_{CN} + W_5 T_{TP} + W_6 T_{TD} + W_7 P + W_8 M_H \end{aligned}$$

T_{CP} = CPU hours

$$T_{DK} = \text{Disk hours} = (8.4 \times 10^{-6} \times \text{IO Requests}) \\ + (7.1 \times 10^{-4} \times \text{Megawords Moved})$$

A_{TP} = half-inch tape activity in megawords

M = Average memory use in megawords (always 1/2 the maximum memory allowed by user's directory entry)

T_{DC} = Disconnect time in hours (hours in disconnect status; not clocked during log off)

T_{CN} = Connect time in hours

T_{TP} = Tape connect time in hours

T_{TD} = Temporary disk usage in megaword-hours

P = Number of pages printed

M_H = Number of tape mounts

W_1 = .167

W_5 = .005

W_2 = .006

W_6 = .0002

W_3 = .20

W_7 = .00003

W_4 = .006

W_8 = .0009

Notes:

1. There are no background rates on the IBM 4341.
2. 1 megaword = 32 megabits.

by Pete Peterson

Change in Future TBM Purge Effective February 1984

The October 1983 issue of The Record included an article which discussed some of the ways you could improve the interaction between SCD's mass storage device, the AMPEX Terabit Memory System (TBM), and your computer job.

The response to this article has been most gratifying; Operations wishes to thank you for your interest and efforts to cooperate. SCD looks forward to working hand-in-hand with you to get the most out of the system, both in terms of data movement and data storage.

As part of the SCD's contribution to the joint effort to keep the TBM system functioning as efficiently as possible, we are introducing an experimental change in the VSN purge procedure, beginning February 4, 1984.

The new VSN purge policy, simply stated, is as follows: on the first Saturday of each month, rather than quarterly, a purge of all VSNS not accessed during the previous three months will take place.

The current quarterly purge of VSNS allows an actual period of up to almost six months to elapse before an unaccessed VSN is purged. The new system will allow a maximum of nearly four months to elapse without access before a VSN is removed from the TBM, thereby reducing the overload of unaccessed VSNS on the TBM by two months.

UNDER THE NEW MONTHLY SYSTEM, USERS WILL NOT NEED TO UPDATE VSNS EVERY MONTH. A quarterly update will save all needed VSNS because the monthly purge will be based upon a three month non-access period as before.

The UPKEEP utility will help users to keep track of their VSN. The use of the ARCHIVE facility is recommended for those VSNS which you may wish to save for long periods without accessing or changing. Please report your VSNS that fit into this category to the mass store librarian (Mary Trembour, ext. 1232).

by Bob Niffenegger

Users Encouraged to Make Suggestions to SCD

Users are reminded that suggestions may be sent to SCD through the Consulting Office. The Suggestion Notebook is maintained in the Consulting Office library for in-house users. IBM 4341 users may send their suggestions to CONSULT1 from either IBM 4341 machine (please use the TO command and make the title SUGGESTION). MODCOMP users may call the Consulting Office and the consultant on duty will enter your suggestion into the Suggestion Notebook. The YOUR TURN page at the end of each issue of The Record may also be used for suggestions. Any questions or suggestions made through these channels will receive a response.

Currently, the User Services section of SCD is reviewing needed utilities and IBM EXECs. If you have some suggestions for utilities that would ease your life as a user, please let us know through any of the above means.

by Barb Horner

UNINET's Old Network to be Phased Out

As has been mentioned in previous articles in The Record, UNINET has been operating two parallel networks for nearly one year. Although either one can be used to access SCD computing, the newer one (based on the CCITT standard X.25) is strongly recommended for reasons of speed and flexibility. Furthermore, UNINET will gradually phase out the older network, so its level of service may tend to deteriorate, and finally cease to exist. Those who are still accessing the old network need only dial a different telephone number and follow a slightly revised access procedure to begin using the newer network. More specifically, old network users respond to the initial prompt (L?) with only a carriage return, <CR>, and then respond to the service prompt (SERVICE :) with the sequence .NCR<CR>. (No mechanism is available on the old network to select the proper IBM 4341 at the service prompt.)

Users of the newer service must respond to the initial prompt (l?) with <CR>.<CR>, and then may respond to the service prompt (service :) with the sequence NCR;O<CR> or NCR;A<CR> depending on whether one wishes to select the IBM 4341 system designated IO or IA. The new network is preset to function with terminals in full-duplex (host echo) mode rather than half-duplex (local echo) mode.

Phone numbers for the new network (and for new locations from which UNINET may be accessed) may be obtained by calling Don Morris (ext. 1282) or Marie Working (ext. 1250). A new document, the UNINET User Guide, is available from Sal Farfan (ext. 1292). This includes a current list of UNINET phone numbers and detailed instructions on the use of the network, including modification of features such as character echo, flow control (Xon/Xoff), and fill or padding characters.

by Dave Fulker

Erratum: TBM Bit Volume Incorrect

In last month's issue of The Record, the article describing the overload on the TBM erroneously reported the number of bits moved in August 1983 to be 3.14×10^6 . The correct figure should have been 3.14×10^{12} . While this is still a very large number, and constitutes too heavy a burden for the TBM to efficiently handle, we regret the error.

Summary of Available On-Line Documentation

There is a considerable amount of on-line documentation available on NCAR's computers; however, many users are not aware of how to find it. This article is intended to serve two purposes:

- 1) To provide a complete listing of on-line sources of documentation.
- 2) To outline access methods and idiosyncrasies for the various sources.

There are two major utilities for obtaining documentation, GETDOC on the CRAY-1 computers, and the HELP facility on the IBM 4341 computers. Their description will constitute the bulk of this article. A brief description of a few other utilities is included as the final section of the article.

GETDOC

The GETDOC facility can be used to obtain documentation on entry point routines in the software maintained by the Software and Libraries Group of SCD. GETDOC can obtain general documentation for all of the libraries available on the CRAY-1 machines, though not all routines within these libraries have documentation available through GETDOC. For locating a specific routine for a specific application, use the on-line software catalog facility available through HELP ISORE on the IBM 4341, or see the SOFTWARE CATALOG entry under GETDOC.

The general form of the GETDOC command on the CRAY-1 is:

```
GETDOC,LIB=lib_name,DOC=routine,L=listing,NR.
```

For a more complete description see the June, 1982 edition of The Record (Volume 3, Number 6).

The following table describes all the documentation available through GETDOC and how to access it.

<u>Library or Program</u>	<u>Access (LIB=)</u>	<u>Comments</u>
AMOSLIB	AMOSLIB	
CRAYLIB	CRAYLIB	
ECMFFT	DOCLIB	Use DOC=DOCLIB,LIB=ECMFFT, for general information about this library.
EISPACK	EISPACK	
FITPACK	FITPACK	
FUNPACK	FUNPACK	
IMSL	IMSL IMSLIB	This gets documentation on the most current version of the IMSL software (Version 9).
ITPACK	ITPACK	No on-line documentation for specific routines. Use DOC=ITPACK for a general description.
LINPACK	LINPACK	
MINPACK	MINPACK	
NAG	NAG	Summary of routine names available, use DOC=SUMMARY.
NAG9	NAG9	Newer version of NAG software, contains some new routines and some deletions. This will be the default version of the NAG library as of November 23, 1983. Summary of routine names available, use DOC=SUMMARY.
NCARLB	CRAYLIB ULIB XLIB EISPACK	NCARLB is an object library made from portions of source libraries ULIB, XLIB and CRAYLIB. Documentation should be obtained from whichever of these libraries the program is located on.
PORT	DOCLIB	Use LIB=DOCLIB,DOC=PORT for general information on the PORT library. No on-line documentation for specific routines.
SCILIB	SCILIB \$SCILIB	Multiple documentation files requested will be concatenated into one file.
SLATEC	SLATEC	Summary of routine names available, use DOC=SUMMARY.
STATLIB	DOCLIB	Use LIB=DOCLIB,DOC=STATLIB for general information on this library. No on-line documentation for specific routines.

SYSLIB	SYSLIB \$SYSLIB	Multiple documentation files requested will be concatenated into one file.
TESTLIB	TESTLIB	
ULIB	ULIB	
VMCON	VMCON	Use DOC=VMCON.
XLIB	XLIB	
CONCORDANCE	CONCORD	Use DOC=CONCORD for general usage information. Use DOC=CNCRDY for information on the output codes given by CONCORDANCE.
SOFTWARE TOOLS	TOOLS	Use DOC=CRAYUSE for information on using software tools on the CRAY-1. Use DOC='toolname' for information on a specific tool.
SOFTWARE CATALOG	DOCLIB	Use DOC=LIBHELP for general information on using this version of the on-line software catalog. Use DOC=CATEGORS (or CATEGORIES) for a listing of software categories. Use DOC='category number' for a listing of specific routines available within that category.
PORTABLE SOFTWARE	PORTLIB	Portable software library, not to be confused with the library PORT. Software is also available from other libraries.
MISCELLANEOUS	DOCLIB SOURCE PORTLIB	There are various routines documented in these libraries that are not documented elsewhere, among these IFTRAN, REDUCE, and the metacode file editors. To obtain listings of the deck-names in these libraries, ACQUIRE the program library from the TBM (DOCLPL, SRCLPL, PRTLPL), then use the UPDATE command: UPDATE,P=lib,I=0,N=0,S=0,C=0,F,ID.

The IBM 4341 HELP Facility

A considerable amount of information is available from the HELP facility on the IBM 4341. Through this facility, users have access to information about the use of all types of IBM commands (CMS, CP, XEDIT, EXEC2, SIPO, DEBUG, EDIT and EXEC), information on software on the various library disks (SYSLIB, SUPLIB, CONS, GRAPH, TOOLS, and EXLIB), as well as explanations of network error codes, IBM error messages, and CRAY-1 and IBM 4341 local trouble reports. There is also an on-line software catalog feature, available by typing HELP ISORE (Inventory of Software Resources), which describes software available from all the libraries on the CRAY-1. Brief descriptions of all routines available within specific categories of routine types are provided, as well as additional information such as methods of access, level of support,

and the location of further documentation.

The following table describes all the information available through the IBM 4341 HELP facility.

<u>Information</u>	<u>Access</u> (HELP ...)	<u>Comments</u>
IBM Commands	*	The general form here is where environment can be any of the following: XEDIT, CMS, CP, EXEC2 EXEC, SIPO, DEBUG, or EDIT. The command argument can be omitted, in which case you get a menu of all commands in that environment. Environment can be omitted, in which case it defaults to the environment you are presently working in. (Example: typing HELP SET will bring up different information if you are in XEDIT than you would get by entering the same command within CMS.)
Library software	NCARLIBS	HELP NCARLIBS brings up a menu of libraries followed by a short description of each, from which the user can choose a specific library and then specific routines.
	library name	HELP 'libraryname' will bring up a menu of all documented utilities within that library, from which the user can choose specific routines for further information. Documented libraries are SYSLIB, SUPLIB, CONS, GRAPH, TOOLS, and EXLIB.
	exec name	HELP 'execname' will bring up information on using that specific EXEC, provided that you are linked to the library disk that contains that EXEC.
	module name	HELP 'modulename' will bring up information on using that specific module, provided that you are linked to the library disk that contains that module.
Network Error Codes	error code	Typing HELP n, where n is some positive number, will provide an explanation of possible sources of error if that number was returned as an error code by an NCAR Local Network processor. The negative sign on an error code is used to indicate the mainframe on which the error occurred. There are a few 'generic' error code forms which are not at all obvious, these are: 2XX10, 2XX18, 2XX19, 2XX20, 2NN16, 2XX41, 2NN42, 2NN43, 2XX44, 2XX45, 2XX46, 2XX47, and 2XX48. 'XX' and 'NN' are actually digits in your error code, but the code must be typed as shown for HELP to find it.

IBM Error
Messages

*

In some cases, the IBM 4341 provides error codes of the form XXXXXXNNNX, where the X's are alphabetic and the N's are numeric. Those that begin with DMS or DMK are documented by IBM, and a fuller explanation of the error may be had by typing HELP XXXNNNX, using the first three characters followed by the last four characters of the error code. (Example: When the help facility cannot find requested information, the error message begins with the code DMSHLP254E. Typing HELP DMS254E provides further information on that error code.)

Software
Catalog

ISORE

Provides the user with a two choice menu, from which he can enter a menu of software categories or a menu of available libraries. From these menus, the user can continue deeper to descriptions of all available routines within a specific category, or can get information on specific libraries such as description of contents, method of access, available documentation and level of support. Note that you can use keywords to search for categories. A hard-copy version of the catalog is also available upon request.

CATEGORY

Provides the user with a menu of software categories, from which the user can choose a specific category and get a description of all available software in that given category. Note that documentation for an individual routine can be obtained using GETDOC.

LIBRARY

Provides the user with a menu of libraries available on the CRAY-1, from which a user can select specific libraries for information on library contents, method of access, available documentation, and level of support.

library
name

Typing HELP 'libraryname' brings up information as outlined above on that specific library. Currently documented libraries are AMOSLIB, CRAYLIB, EISPACK, FITPACK, FUNPACK, IMSL, ITPACK, LINPACK, MINPACK, NAG, NCARLB, PORT, SCILIB, SLATEC, STATLIB, SYSLIB, TESTLIB, ULIB, and XLIB.

category
number

Typing HELP 'categorynumber' brings up a description of that category as well as a list of all available routines within that category. Category numbers can be obtained by typing HELP CATEGORY.

Software Tools	TOOLS	Brings up a description of the Software Tools concept, followed by a menu allowing the user to choose further documentation on using the Tools on the CRAY-1 or IBM 4341, or documentation on using a specific Tool.
	CMSUSE	Provides information about using the Software Tools facility on the IBM 4341.
	CRAYUSE	Provides information about using the Software Tools facility on the CRAY-1.
	tool name	Provides documentation on using a specific tool on either the CRAY-1 or IBM 4341.
Trouble Reports	CRAYTRS	Provides a menu of locally detected bugs on the CRAY-1, from which the user can select specific trouble reports to read through.
	4341TRS	Provides a menu of locally detected bugs on the IBM 4341, from which the user can select specific trouble reports to read through.
	trouble report number	Provides information on a specific locally detected bug on the IBM 4341 or CRAY-1. Trouble report numbers can be obtained from the two previously described menus.
Current Documentation	DOCAVAIL	Typing HELP DOCAVAIL brings up a listing of currently available hard copy documentation, along with the publication date of the most recent version. Also included are names of contact people for obtaining copies of the current documentation.
All menus of HELP documentation	HELPALL	Typing HELPALL (not HELP ALL, not HELP HELPALL) brings up a menu of all the menus currently available to the HELP facility. From here you can access (almost) all of the information described above.

Other Sources of On-line Documentation

TUTORIALS

There are on-line tutorials which provide an introduction to various aspects of interactive computing on the IBM 4341 computers, among these XEDIT, submitting jobs to the CRAY-1 machines, available documentation, and using the PACX. They are primarily intended for newer users of NCAR's facilities, but do contain useful information which may not be easily found in manuals. Access to these tools is obtained by typing the command TUTORME on the IBM 4341.

WHOIS

WHOIS is a facility available on the IBM 4341 which you can use to find out specific information about SCD users. WHOIS pattern matches on the string given as an argument, and brings up all lines from its data base which contain the specified string. (Example: all users in HAO can be obtained by executing `'WHOIS HAO'`, all users in a certain area, say New Mexico area code 505, by `'WHOIS (505)'`, etc.) WHOIS provides the following information about each user: user id, real name, user number, phone number, distribution code, division, and on which IBM 4341 (if any) the user has a virtual machine.

by Mike Ernst

New Version of RDRX on the IBM 4341

On September 27, 1983, an improved version of RDRX was installed on the IBM 4341. Users will notice the following differences:

1. Files to be BROWSEd, PRINTed, etc., will be read to the temporary disk non-destructively (instead of being read destructively and then immediately written back out again). The new scheme is twice as fast. Many thanks to Lou Jones for the information that this could be done.
2. Files will retain their original origin, date, time, and spool ID after being BROWSEd, PRINTed, etc. XEDITed reader files must be re-written; therefore, their parameters will change. Note that, if you currently depend on BROWSEing a reader file to protect it from being purged on the following Sunday, you will now have to XEDIT it instead.
3. If RDRX is not provided a temporary disk to use, but gets it for itself, it will do so much faster than in the old version.
4. The command "RENAME < fn <ft> >" has been added to allow one to just rename a file in the reader.
5. The command "SCAN < <fn> <ft> >" has been added to allow one to rename a reader file, if desired, and then scan it using RDRSCAN.
6. One may now add the string (NODEST) to a READ command to request a non-destructive read; a copy of the file is left in the reader. PF15 is defined to be a READ (NODEST); PF05 remains just a READ.
7. The command RDRX, when executed from the RDRX command line, will now update the display, even when you're using PREAMBLE=OFF. A bug which prevented this from working properly has now been fixed.
8. Previously, if you BROWSEd a file with a particular name and then BROWSEd a second file with the same name, RDRX would ask you if you wished to clobber the existing file. If you answered "YES", it would go ahead and do it, but its records pertaining to the first file would get messed up.

The new version of RDRX will not allow this situation to arise; it will insist that you rename the second file.

9. The commands "PLT < FN < FT > > < (M) >", "PLD < FN < FT > >", and "PRD < FN < FT > >" may now be entered to use the preview graphics EXEC PLT, to send a plot file to the DICOMED, and to send a print file to the DICOMED, respectively. The temporary disk to be used by PLT ("M") may be specified on the command line, if desired. Both PLD and PRD give you a chance to enter additional parameters (CAMERA=FILM, for example).

Issue HELP RDRX to see the complete HELP file. If you have questions, contact Dave Kennison (ext. 1228) or the Consulting Office (ext. 1278).

by Dave Kennison

Zot - The Next Purge of VSNs

The next purge of VSNs from the TBM will take place on January 7, 1984, and will affect VSNs not accessed since October 2, 1983.

Users must access needed VSNs during the current quarter, to prevent them from being purged. VSNs on Dedicated and Archival reels and PLIB (P04xxx or P05xxx) and PSTORE (@Dxxxx and @xxxx) volumes are not purged.

The UPKEEP utility for TBM volume maintenance can be very helpful to users who wish to update valuable volumes, and to delete unneeded volumes. A full explanation of UPKEEP may be found on pages 8-10 of the January 1, 1983 issue of The Record (Volume 4, Number 1). Handouts are also available in the Consulting Office library.

by Mary Trembour.

Documentation Update

The purpose of this column is to announce revisions, updates and new documents of interest to the user of SCD's computers. Included at various times will be documents issued by SCD, by NCAR but outside SCD, by IBM, and by Cray Research, Inc. Directions for obtaining the documents are included.

Please note that manuals ordered from SCD will take approximately two weeks to reach you.

NCAR Documents

NCAR documents are available from Roane Simkin, NCAR Publications Office, (303) 497-1171.

Users' Guide to NCAR CCM0B, by Richard K. Sato, Linda M. Bath, David L. Williamson, and Gloria S. Williamson; NCAR Technical Note No. 211, July 1983.

Documentation of NCAR CCM0B Program Modules, by David L. Williamson, Linda M. Bath, Richard K. Sato, Thomas A. Mayer, and Michael L. Kuhn; NCAR Technical Note No. 216, August 1983.

Users' Guide for the NCAR CCM Modular Processor, by Richard J. Wolski and Michael A. Dias; NCAR Technical Note No. 216, August 1983.

by Linda Besen

Summary of Daily Bulletin Items

Below is a summary of some items which have appeared in the Daily Bulletin (the NEWS file for remote entry users). These items concerned systems changes, operations procedures, and other news of general interest. They may still be of interest to users and are listed below by topic and date.

CRAY-1:

September 20, 1983

PSTORE: Release 03 of Version 01 (V01.03) of PSTORE was installed this morning on the CRAY,C1 and CRAY,CA. This release incorporates the following changes:

1. The PSTORE size limit has been decreased about 11.3 Mbytes (M = 1,000,000) to 122.88 Mbytes. This is equal to 1000 TBM blocks, the maximum that may be descended to the TBM.
2. The user will receive a warning diagnostic message whenever a file is copied to, or deleted from, a PSTORE which is within 90% of the storage limit.
3. The PCOPY command will issue a fatal diagnostic message whenever an attempt is made to exceed the storage limit; none of the file will have been copied to PSTORE.
4. The first time the PCOPY or PDEL commands update a user's PSTORE in a job on one CRAY-1 machine, they automatically submit a job to the other CRAY-1, deleting the user's PSTORE datasets on that system's disks. Therefore, if the user then submits a job to the other CRAY-1, a PCOPY command will not find the user's PSTORE datasets on disk, and the updated version will be staged in from the TBM. User's must still not attempt to simultaneously update their PSTORE from more than one job running on either the same or different CRAY-1.
5. For files created after the release of V01.03, PDIR will display the file size (in bytes). For files created before the release of V01.03, PDIR will display the file size as '---'.

6. Since only the PSTORE directory volume (@Dnnnn) is required, PDIR no longer stages the PSTORE data volume (@0nnnn).
7. Both PSTORE volumes are now RELEASED at each command termination, unless PSTORE was previously updated in the same job.

Change 02 of Edition 01 (E01.02) of the PSTORE document "PSTORE - A Permanent File Storage System" is available in the Consulting Office or from Sal Farfan (ext. 346). This change documents the PSTORE modifications made in V01.03 as described above.

September 21, 1983

SCHEDULED CRAY SOFTWARE CHANGES FOR MONDAY, SEPT. 26: The following CRAY software changes are scheduled:

1. SYSTEM CHARGING LOOP-HOLE TO BE PLUGGED: A system error will be fixed whereby certain calls to the system clocking routine were not being charged to the user's job. These clocking calls will now be charged to users' jobs. Most users will not be affected. THERE IS ONE EXCEPTION. Users of FLOW TRACE may see great increases in CCU expenditures since this routine performs an inordinate number of clocking calls. USERS ARE ADVISED NOT TO USE "ON=F" ON THEIR CFT CARDS UNLESS THEY WANT FLOW TRACE INVOKED.
2. TAPE SOFTWARE TO KILL JOBS USING "LRECL=": The tape software on CRAY,CA will abort jobs which have DISPOSE or ACQUIRE statements for tape staging that utilize "LRECL=" in the text field. This feature has not been implemented.

September 28, 1983

The CRAY scrub routine has been modified so that the disk residence time of "PSTORE" datasets will be increased relative to size. "PSTORE" datasets which are a few tracks in length should enjoy greatly improved residence time, but those which are 100 tracks or larger will receive no special considerations. (One track contains 9216 CRAY words.)

October 10, 1983

CRAY-1: The Monday morning system changes for the CRAY-1 machines are as follows:

1. Another background queue has been added. This is being done to provide a queue for long running background jobs. This queue is for background jobs with a time limit of 12,000 seconds or more. USERS WILL NOT HAVE TO MAKE ANY CHANGES TO RUN OUT OF THIS QUEUE. This queue will be noted "BKGL". The background queue for jobs with time limits less than 12,000 seconds will be noted "BKG".
2. The Job Queue Manager has been changed to reflect the addition of the "BKGL" queue.
3. The tape driver on the CRAY,CA has code changes to speed up the processing of 6250 tapes which have large records.

4. Network and MODCOMP software have been changed to report the new job class.

IBM 4341:

October 7, 1983

Beginning Monday, October 10, to get the CRAY-1 background job status displayed on the IBM 4341, issue STATUS C1 (or CA) BK or STATUS C1 (or CA) BL. The STATUS EXEC searches for any character string.

TBM:

October 13, 1983

UPKEEP: The source code for the UPKEEP utility has been modified to remove the WAIT from the DISPOSE statements to the TBM, and to change the presentation of error messages. Users should experience no changes except in the appearance of their output and in turnaround time. Any problems should be directed to Mike Ernst (ext. 1236) or the Consulting Office.

Summary of NCAR Computer Use for September 1983

CRAY,CA COMPUTER				
	SEPTEMBER		FISCAL YTD	
	Total	Day Avg.	Total	Day Avg.
Clock Hours in the Month	720.00	24.000	2928.00	24.000
less Scheduled PM	12.85	0.428	61.33	0.503
less Hardware Downtime	16.32	0.544	48.70	0.399
less Software Downtime	0.38	0.013	6.48	0.053
less Environmental Downtime	36.77	1.226	41.91	0.344
less Operations Use	0.00	0.000	0.70	0.006
less Other Causes	0.83	0.028	7.32	0.060
Clock Hours Up	652.85	21.762	2761.56	22.636
less Systems Checkout	3.67	0.122	19.38	0.159
Clock Hours Avail. to Users	649.18	21.639	2742.18	22.477
less Idle Time	4.04	0.135	42.23	0.346
Clock Hours in Use	645.14	21.505	2699.95	22.131
% Available Hours Used	99.38 %		98.46 %	

CRAY,C1 COMPUTER				
	SEPTEMBER		FISCAL YTD	
	Total	Day Avg.	Total	Day Avg.
Clock Hours in the Month	720.00	24.000	8760.00	24.000
less Scheduled PM	10.92	0.364	184.54	0.506
less Hardware Downtime	11.45	0.382	66.99	0.184
less Software Downtime	1.33	0.044	30.82	0.084
less Environmental Downtime	39.48	1.316	112.96	0.309
less Operations Use	0.40	0.013	7.53	0.021
less Other Causes	1.52	0.051	33.80	0.093
Clock Hours Up	654.90	21.830	8323.36	22.804
less Systems Checkout	3.07	0.102	45.14	0.124
Clock Hours Avail. to Users	651.83	21.728	8278.22	22.680
less Idle Time	5.57	0.186	76.74	0.210
Clock Hours in Use	646.26	21.542	8201.48	22.470
% Available Hours Used	99.15 %		99.07 %	

Computer Resources Allocated in September 1983

SCIENTIST	PROJECT TITLE	CCU	
		Request	Alloc.
John T. Merrill Univ. of Rhode Island	Long range transport of aerosols	1.0	1.0
Richard Keen Univ. of Colo.	Studies of cyclonic disturbances	2.0	2.0
Oribe Aragao Univ. of Miami	Relationship between El Nino phenomenon and drought in the N.E. of Brazil	5.0	5.0
Kenneth C. Young Univ. of Arizona	Markov chain models of raindrop distributions	2.0	2.0
Aaron Goldman Univ. of Denver	Atmospheric radiance phenomenology studies	5.0	5.0

Note: A request may be supported at a lower level than requested because:

- a. It exceeds the 5-hour limit above which Panel review is required; or
- b. Reviewers consider the amount of time requested to be excessive.

TROUBLE/DESIGN REPORT
October, 1983

CRAY No. 117

TROUBLE: List-directed input does not recognize one or more contiguous blanks as a value separator, when the previous value was a LOGICAL datum specified as 'T' or 'F'.

EXAMPLE:

```

PROGRAM TEST
LOGICAL LOGIC(3)
1 READ(5,*) (LOGIC(I), I=1,3), IA, IB, IC

```

			Input list			Internal representation						
	T	F	T	1	2	3	false	false	false	0	0	0
	T,	T	T	1	2	3	true	false	false	0	0	0
	T,	T/	T	1	2	3	true	true	false	0	0	0
	T,	T,	T	1	2	3	true	true	false	0	0	0
	.T	T,	T/	1	2	3	true	true	true	0	0	0
	.T	.T	.T	1	2	3	true	true	true	1	2	3

...

COMMENTS: When contiguous blanks are used as a value separator following a LOGICAL value that was specified as a 'T' or 'F', the effect is as if a slash (end-of-record designator) had been encountered. That is, the previous value is assigned, and all remaining values in the list are left unchanged. If the previous value was a logical datum, and also the first list item, it also remains unchanged. When contiguous blanks are encountered following a numerical field, or a logical datum that was specified using the '.T' or '.F' convention, they are handled as described in the CFT manual.

TEMPORARY SOLUTION: Use commas to separate list items when using list-directed input of logical data.

ORIGINATOR: Warren Wiscombe.

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