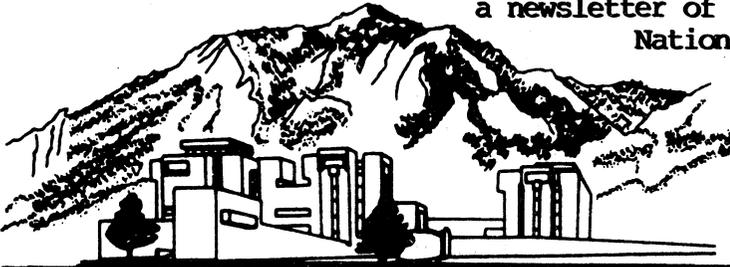
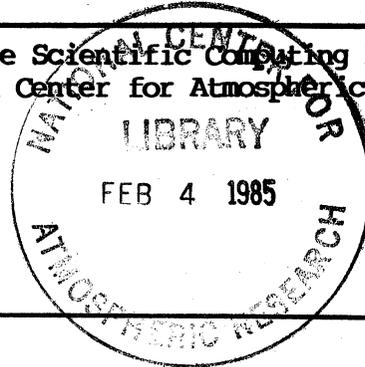


The Record



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



contents

Features

Site Visits Planned.....	5
New Personal Computer Column.....	5
New Cray Research, Inc. Site Representative.....	6

Software

Release 1.13 Will Be The Default CRAY-1 Operating System.....	6
CRAYLIB Undergoes Extensive Update.....	9
New PLITCONV Routine Available.....	10
Interpolation Package BIVAR to be Updated.....	11

For The Record

ZOT - The March Mass Store Purge will occur on March 2, 1985.....	13
New Hours for Mass Storage Librarian.....	13
Meeting of the SCD Advisory Panel Scheduled.....	13
Documentation Update.....	14
Suggestion Notebook.....	14
Summary of Daily Bulletin Items.....	15
Computer Resources Allocated in December 1984.....	19
Summary of NCAR Computer Use for December 1984.....	20

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
	Marie Working	1250	31F
RJE Password Assignment	Rosemary Mitchell	1235	5
Visitor Information	Kathy Lucero	1231	6A
OPERATIONAL INFORMATION			
Computer Operations	Oper. Supervisor	1200	29
Graphics Operations	Andy Robertson	1241/42	31E
1/2" Tape Librarian	Sue Long	1245	24F
TBM Tape Librarian	Mary Trembour	1232	5
Software Distribution/Output Mailing	Sue Long	1245	24F

CONSULTING OFFICE

Information on the Consulting Office schedule for this month may be found on page 3. For your convenience, this schedule has been placed on a separate page for easy removal. The schedule will change each month and will be included in The Record.

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. Robert Nicol, Editor; Ann Cowley, Head, Information Services; Astrik Deirmendjian, Trouble/Design Reports; Ken Walton, Summary of NCAR Computer Use; Mary Bartels, Computer Resources Allocated.

CONSULTING OFFICE SCHEDULE FOR FEBRUARY 1985

Consulting Office hours are 08:30-12:30 and 13:00-17:00 daily, Monday through Friday. The Consulting Office is closed every Wednesday from 13:30-14:30 for staff meetings. Consultants may be reached by calling (303) 497-1278. Messages may also be sent to the CONSULT1 virtual machine on the IBM 4341 computers.

Consultants for February are: Dan Anderson, Ken Hansen, Barb Horner, Ann Cowley, Harsh Anand Passi, Michael Pernice, and Erich Thanhardt.

Schedule for the week of:					
	Jan. 28	Feb. 4	Feb. 11	Feb. 18	Feb. 25
Mon AM		A Cowley	A Cowley		A Cowley
Mon PM		E Thanhardt	B Horner		D Anderson
Tue AM		K Hansen	D Anderson	K Hansen	E Thanhardt
Tue PM		H Passi	M Pernice	H Passi	H Passi
Wed AM		E Thanhardt	K Hansen	B Horner	E Thanhardt
Wed PM		D Anderson	D Anderson	D Anderson	D Anderson
Thu AM		K Hansen	B Horner	B Horner	E Thanhardt
Thu PM		H Passi	H Passi	H Passi	H Passi
Fri AM	E Thanhardt	E Thanhardt	K Hansen	K Hansen	
Fri PM	K Hansen	B Horner	B Horner	D Anderson	

Site Visits Planned

The User Services Section is planning the annual SCD Site Visit Program for 1985. The purpose of the program is to assist the remote user community by sending a SCD representative to sites to work directly with users, answering any questions that they might have, discussing any recent changes to the computing environment, and presenting both near and long term future plans of SCD which may have impact on the users. The site visit also provides an opportunity for SCD staff to become familiar with computing from a remote user's perspective. In 1984, twenty six sites were visited.

The computing environment is and for the past year has been relatively stable and unchanged. Several major changes are expected in late 1985 and in 1986. Changes include a new Advanced Vector Computer (AVC) and an additional front end computer, acquisition and implementation of new mass storage hardware, and developments in high bandwidth communications. Specific details on each of these changes is not currently available but developments will be published in The Record as they become available.

In February, a letter will be sent to each site from the Computing Division asking if the site is interested in a site visit this year. Those sites which express interest in a visit will be contacted to work out details of a visit.

by Richard Sato

New Personal Computer Column

Personal Computing is increasingly becoming the preferred way of accomplishing many tasks that were heretofore done only on larger computers (at some expense and oftentimes inconvenience) or perhaps not done at all. The world of personal computers is a vast and congested one. To help address issues in Personal Computing vis-a-vis the NCAR computing environment for the benefit of NCAR users who wish to use their personal computers in conjunction with their work at SCD, a new PC interest group has been established.

As a first step in the effort, The Record will offer a special section devoted to topics of interest in Personal Computing. The literature on PCs is vast, and the attempt will be made to focus on those issues which specifically affect users of NCAR's mainframes, such as data communications and graphics. Contributions will not be restricted to SCD staff. Anyone with items of interest may contact Erich Thanhardt at (303) 497-1281 or send mail to ERICH on the IBM 4341. All contributions will be reviewed and those accepted will appear with due acknowledgements to the contributor.

Staffing for the PC interest group is limited, so the aim of the group is to encourage the collection and dissemination of information derived from the experiences and expertise of our entire user base. We are setting up an NCAR PC Users Group, the function of which will be to act as a funnel for information regarding the use of PCs. Hopefully, this service will provide a forum for all our interested users. Contributions will be welcomed from those users who have solved problems in interfacing their equipment to NCAR machines or have special experience and expertise in areas which they feel might be of general interest and use to other NCAR users. If you have information of this

type, please contact the Users Group and share that information with us. We can then disseminate that information to our user base at large.

Because mail can be cumbersome and long distance phone calls can be costly, users wishing to contribute or to ask questions are welcome to send names and phone numbers of contacts, and we will return the calls. Alternatively, mail can be sent to ERICH on the IBM 4341, or users may call (303)-497-1281.

by Erich Thanhardt

New Cray Research, Inc. Site Representative

We wish to welcome Jim McInerney to NCAR. Jim has been hired by Cray Research, Inc. (CRI), as a site-analyst for CRAY software. Jim is joining Tom Engel, also of CRI, in providing on-site support of the CRAY computer systems. He will be assisting NCAR CRAY users, the Consulting Staff, and the System Software Staff in resolving software problems and making optimal use of CRAY software and hardware.

Jim was a research meteorologist for the Bureau of Reclamation's HIPLEX project in Miles City, MT between 1977 and 1982. He worked closely with the members of NCAR's Convective Storms Division and Field Observing Facility during the CCOPE project of 1981.

by Tom Engel

Release 1.13 Will Be The Default CRAY-1 Operating System

Later this month the default operating system and compilers on the CRAY-1 computers will be changed to Release 1.13. After this time the "old calling sequence" will no longer be supported. This also means that the 1.09, 1.10 and 1.11 FORTRAN compilers and libraries will no longer be available. CFT 1.13 (and possibly CFT 1.14) will be the only FORTRAN compilers available. Because of this, it is strongly suggested that users run their code with the 1.13 compiler by using the CFT113 procedure.

Under Release 1.13, the default operating system and default compiler and libraries have the same version number. CFT 1.12 has been skipped.

Some of the options available with the new release are described below.

Reentrant code is now permitted. The CFT control statement option ALLOC=STACK causes CFT to generate code that makes use of a run-time stack for local variables. The default is ALLOC=STATIC and code similar to CFT 1.11 code is generated (non-reentrant). ALLOC=STACK will run more slowly than when compiled with ALLOC=STATIC (approximately 5% slower). Multitasking jobs require reentrant code.

Constant-stride DO Loops are recognized. CFT now looks at loops with a constant stride and finds more loops that are safe to vectorize. This may improve execution-time performance.

Gather, load, and store operations no longer inhibit vectorization. This feature provides a speed improvement for such codes.

CFT generates more efficient code for some special cases of intrinsics. Vector versions of MASK, SHIFT, and other intrinsics are available. This feature is automatic and provides speed improvement. The LOC function is now done inline; therefore the system version of the LOC function is no longer called from CFT. An external by the name of LOC must be explicitly declared external by using the EXTERNAL statement. A new \$UTLIB routine, POPPAR, has been written to implement the POPPAR intrinsic on CRAY-1/A computer systems assumed to be lacking the necessary hardware instruction. These intrinsic functions generate vector population count or vector population count parity instructions which might be ignored on CRAY-1/A computer systems. Cross-compiling between CRAY computer systems with and without the Vector Population Count functional unit is not recommended if the program contains any vectorizing reference to POPCNT or POPPAR.

CFT now prints warning messages for jumps into inactive DO loops indicating that such jumps are illegal.

CDIR\$ ALIGN directs CFT to align the next DO loop, label, or entry point on an instruction buffer boundary.

The CFT control statement option OPT=BTREG causes CFT to allocate local scalar variables to T registers instead of memory. This feature allows a speed improvement. Dummy arguments and arrays and variables named in SAVE, DATA, COMMON, or NAMELIST statements are allocated to memory. OPT=BTREG must be specified to take advantage of this feature if ALLOC=STATIC. OPT=BTREG is the default if ALLOC=STACK. Subprograms which depend on local variables retaining their value across calls (nonstandard) will require SAVE statements to force the specific variables to memory when ALLOC=STACK is specified. This feature provides a possible execution-time performance improvement.

The CFT control statement option OFF=U causes CFT to treat all INTEGER*2 variables as INTEGER. ON=U, the default, treats INTEGER*2 variables as 24-bit integers.

Use of the CFT control statement option OPT=NOINVAR keeps CFT from removing invariant code from IF blocks within loops. By default, CFT acts similarly to the previous CFT version (CFT 1.11): invariant code is removed from IF loops. Users must specify the appropriate control statement option to use this feature.

Single-line DO loops performing specialized functions such as first-order linear recurrences are automatically recognized. When CFT recognizes an operation that can be performed more efficiently by a \$SCILIB routine than by inline code, CFT references the appropriate \$SCILIB routine. The new routines FOLR2, FOLRP, and FOLR2P have been added to \$SCILIB. The control statement options SAFEDOREP, FULLDOREP and NODOREP, and compiler directive options RESUMEDOREP and NODOREP enable or disable this feature. One-line DO Loops which are replaced by calls to \$SCILIB routines MAY produce changes in numerical results. This feature provides a possible execution-time performance improvement.

The new instruction scheduler enables CFT to generate significantly more efficient code that catches chain slot times reliably, takes functional unit and memory busy times into account, resolves register path conflicts, schedules scalar instructions better, and bottom loads scalars. Bottom loading is on by default; the user can disable bottom loading by control statement or compiler directive option. Compiler directives SCHED and NOSCHED are removed (the instruction scheduler can no longer be disabled.) Compiler ON/OFF option M is removed. This feature provides a possible execution-time performance improvement.

A cross-compile option is available. Use the CPU control statement parameter to direct CFT to generate code for another CRAY machine. By default, CFT generates code for the machine on which it is currently executing. This feature allows program code to be developed and checked on a machine other than the one on which the code is expected to run. For example, a CRAY-1 site could develop multi-tasking code prior to installing a CRAY X-MP system.

Multi-tasking jobs require reentrant code, which is supported only by CFT 1.13 and later versions of CFT.

The compiler diagnostics are improved. CFT 1.13 produces more informative messages for vector dependencies in DO Loops. The message indicates the type of dependency which is inhibiting vectorization.

Data conversion features have been added. Several features have been added to enhance the conversion of foreign data on the CRAY-1 machines. Conversion options are specified on the ACCESS control statement. Among the new features are conversion routines for certain DC blocking, formatting and conversion options, as well as automatic conversion with BUFFER IN/OUT.

A new heap manager provides a common mechanism for managing space between the end of user code and the I/O tables. The run time stack manager uses the heap manager, which can be called directly from user code. LDR and SEGLDR have new parameters to allow user selection of initial heap size and expansion increments. A user code which expands blank common (with the library routine MEMORY) can be converted to use the heap manager. But calls to MEMORY and the heap management routines cannot be intermixed.

READMS/WRITMS enhancements have been added. The READMS/WRITMS package has been enhanced to provide an asynchronous option (much like BUFFER I/O). Parallel routines (READDR/WRITDR) have also been added to implement "direct to disk" random I/O (without going through a secondary I/O buffer).

UPDATE has been enhanced to allow several new directives. A COPYU statement has been added to copy unblocked datasets.

SEGLDR now supports alignment of program modules on instruction buffer boundaries.

ACCESS has an "immediate return" option which returns control to the user if the dataset being accessed is currently busy (ie. accessed uniquely by another user).

Parameters MSG and ERR have been added to the ACCESS, ADJUST, ACQUIRE, DELETE, MODIFY, PERMIT and SAVE statements which suppress, respectively, normal and error termination messages.

by Ann Cowley

CRAYLIB Undergoes Extensive Update

The documentation for all FORTRAN routines in the CRAYLIB library has been extensively revised. Corrections were made and machine-dependent references (for example, "CDC 7600") were removed. Additionally, references to the CAL routine Q8QST4 have been replaced by a standard FORTRAN 77 equivalent. This change, which should be transparent to users, will expedite converting the software for the anticipated Advanced Vector Computer (AVC).

Due to these revisions, the source code for all routines contained in CRAYLIB will need to be updated, as well as the binary versions of the select CRAYLIB routines which reside on the \$NCARLB library. These updates will begin on February 26, 1985. Please watch the Daily Bulletin for announcements regarding the status of the update.

Users who access the binary version of a CRAYLIB routine that resides on the \$NCARLB library will not be affected. Users who access the source code for a routine will not be affected if they do not modify the source code (with EDITOR, for example). However, since substantial changes have been made to the documentation, most of the line numbers will not be the same in the updated version of a given routine. Thus users who access the source and modify that source will need to make changes to their modification decks.

The old versions of CRAYLIB routines will be maintained on PSTORE for a period of three weeks after the update. The PCOPY command must be used to access these versions; the GETSRC command will not work in this case. All old files will be stored in the /TB/CRAYLIB/OLD directory. File names are identical to the routine name, and a file type is required (the file type will usually be FOR). Refer to the PSTORE documentation for further details.

The following example demonstrates how to retrieve the old version of the CONREC routine and put it in a local dataset named TMP:

```
PCOPY(FROM=/TB/CRAYLIB/OLD/CONREC.FOR TO=TMP)
```

by Stu Henderson

New PLTCONV Routine Available

PLTCONV is a multipurpose routine for modifying the record length of Cray COS-blocked datasets. The code in the routine was written by Tom Engel, Cray Analyst-in Charge at NCAR. PLTCONV will copy the first file of any fixed-length record dataset to a second dataset containing fixed-length records (of the same or different length). For example, \$PLT datasets may be converted from 1440 byte records to 80 byte records to facilitate transmission of these datasets via RSCS to remote sites. PLTCONV may be called as follows:

```
PLTCONV [,I=x [,O=y [,IRL=n [,ORL=m]]]] .
```

where I = the input dataset name.
 (default \$PLT)
 O = the output dataset name.
 (default \$PLTC)
 IRL = the record length in bytes of the input dataset.
 (default 1440)
 ORL = the record length in bytes of the output dataset.
 (default 80)

PLTCONV assumes that there is one file on the input dataset and thus only copies one file to the output dataset. Both the input and output datasets are rewound before and after processing.

PLTCONV will abort under a variety of conditions, including when:

- an illegal dataset name is specified.
- IRL and/or ORL are not an even multiple of the number of bytes per word; ie: $\text{MOD}([\text{IRL}][\text{ORL}],8) \text{ .NE. } 8$.
- the number of words in an input record is neither a divisor nor a multiple of the number of words in an output record.
- the specified input and output datasets are the same.
- the record length specified for the input dataset is not that existing on the dataset.
- the first file on the input dataset is empty.
- memory can not be expanded sufficiently to allow for buffer space used in the copy.

Note:

The RSCS user will have to write a simple "pre-processor" for his/her metacode translator (or change the translator to accept 80 (or N) byte records) to convert the transferred file back to 1440 bytes/record.

by Tom Engel

Interpolation Package BIVAR to be Updated

On Wednesday, February 6, the Software and Libraries Group will update the BIVAR file in CRAY-1 source library ULIB and in CRAY-1 object library \$NCARLB to include a revised algorithm and new documentation. As usual, the documentation may be obtained by use of the GETDOC utility and the source code may be obtained by use of the GETSRC utility through a job submitted to the CRAY-1 computers. To obtain the documentation for BIVAR, use the following job control statement:

```
GETDOC,LIB=ULIB,DOC=BIVAR.
```

This will put about seven pages of the package and user entry documentation into local dataset \$OUT. The following job control statement will put the package source code in local dataset SRC:

```
GETSRC,LIB=ULIB,FILE=BIVAR,L=SRC.
```

Users should note that results produced by the new version of BIVAR may differ substantially from results produced by the old version. Note also that this change to BIVAR does not affect the CONRAN, CONRAQ, or CONRAS contouring routines, which use the algorithm in the old BIVAR package to generate a smooth surface from irregularly-spaced data for contouring purposes.

BIVAR is a software package which may be used to perform bivariate interpolation and smooth surface fitting when the data are irregularly distributed. The package was developed by Dr. Hiroshi Akima and is based on a method of fitting a quintic polynomial in two variables to a triangle, the vertices of which are projections of the data points in the x-y plane. The polynomials are fitted to each triangular cell by requiring them to pass through the data points at the vertices of each cell, by specifying values for the partial derivatives of the polynomial to second order at the vertices of each cell, and by specifying values for the derivatives of the polynomials in the directions normal to the edges of each cell. Because the estimates for these partial derivatives are based on the data point values at several closest points, changes in data values will only affect the interpolating surface locally. See Reference [1] for a description of the procedures used to determine the triangulation of the data point projections, fit the polynomial on each triangular cell, and estimate the values for the partial derivatives.

The local property of the method guarantees that small changes in the data values will result in small changes in the interpolating surface. However, the method for estimating the partial derivatives in the present package tends to weight these estimates by the distance between data points. This results in the undesirable property that the interpolating surface does not depend continuously on the distribution of the data points. One consequence is that increasing the number of data points does not always produce better interpolated values. (Of course "better interpolated values" is meaningful only when there is a priori knowledge of the surface being interpolated.) In Reference [2] Dr. Akima develops a method for dealing with this problem, and the new version of BIVAR incorporates these changes. Numerical evidence developed by the author of this article indicates that the new version of BIVAR outperforms the old version in several respects; for further information contact Michael

Pernice at (303) 497-1238.

Package Changes

The two user entry points in BIVAR, IDBVIP and IDSFFT, have not been changed. Due to the different method of estimating the partial derivatives described in Reference [2], users should expect to see different interpolated values. The only changes have been made to lower-level routines and to named COMMON blocks which the package uses for internal communication. These changes are outlined in the following paragraphs for users who may be modifying BIVAR source code.

The named COMMON blocks

COMMON /IDCM/ NCP

COMMON /IDLC/ NIT

appeared in the old package, while the named COMMON blocks

COMMON /IDLC/ ITIPV, DMYL(13)

COMMON /ITPV/ ITPV, DMY(27)

are used by the new package.

The lower-level routine IDLCLDP, which was included in the old package to select a user-determined number of closest points to be used in estimating the partial derivatives, is not included in the new package. The BLOCK DATA subroutine IDBLCK, which set the number of closest points to 4 in the old package and which the user could modify to change the number of closest points selected by IDLCLDP, is also not included in the new package. There was no explicit method of determining how many points to use and there is evidence (see Reference [2], table 2) that suggests that the additional computing overhead required by the use of more than 4 closest points does not appreciably improve the estimates of the partial derivatives.

There are two lower-level routines, IDPDRV and IDPTIP, whose entry points are different in the new package. IDPDRV estimates the partial derivatives at the vertices of each triangular cell. The argument which passed the value of the number of closest points used in this estimation was removed from its argument list. IDPTIP determines the interpolated value at a point. Information that is contained in the named common block ITPV is used by IDPTIP and the corresponding arguments were removed from its argument list.

References

- [1] Akima, Hiroshi, 1978: A Method of Bivariate Interpolation and Smooth Surface Fitting for Values Given at Irregularly Distributed Data Points, ACM-TOMS, Vol. 4, No. 2, pp. 148-159, June 1978.
- [2] Akima, Hiroshi, 1984: On Estimating Partial Derivatives for Bivariate Interpolation of Scattered Data, Rocky Mtn. J. Math., Vol. 14, No. 1, pp. 41-52, Winter 1984.

by Michael Pernice

ZOT - The March Mass Store Purge will occur on March 2, 1985

The March purge of datasets (VSNs) from the TBM will take place on March 2, 1985, and will affect VSNs not accessed since December 1, 1984. The subsequent purge of datasets will occur on April 6, 1985, and will affect VSNs not accessed since January 1, 1985.

New Hours for Mass Storage Librarian

SCD would like to advise all computer users that beginning March 1, 1984, the Mass Storage Librarian, Mary Trembour, will be available for help and consultation on a half-time basis. Her schedule until further notice will be from 8:00 a.m. until 12:00 noon MST, Monday - Friday. Users are encouraged to contact her during these hours at (303) 497-1232, or to send mail to MARYT on the IBM 4341 computers at any time. Messages will also be taken by the SCD telephone secretary when Ms. Trembour is not available. As in the past, requests for help and information will be dealt with as soon as possible after receipt.

The /D Option of the TBMVSN Utility Has Been Enhanced

Use of the /D option following user/project numbers in the utility TBMVSN has in the past given the VSN listings according to the date of last access: for example, date last read, written, or updated. Starting immediately, the /D option will become a much more useful VSN maintenance tool, as it will give the date of the last read or write only. A VSN will be flagged with a "+" to indicate a read on the given date. A "-" flag will show that the VSN was written on the given date, and has never been read. This information should help the user recognize needed VSNs and unneeded VSNs and expedite deletion of the latter.

The other TBMVSN listing options have not been changed.

by Mary Trembour

Meeting of the SCD Advisory Panel Scheduled

Requests from outside users for a total of more than five hours on the CRAY-1 computers must be considered by the Advisory Panel for the Scientific Computing Division. The Panel will meet April 25-26, 1985. University users should submit large requests to John Adams or Cicely Ridley of the Scientific Computing Division by February 15, 1985. Nine to ten weeks are needed for the preliminary review of requests and for the preparation, printing, and distribution of Panel materials.

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.

SCD Documents

SCD documents are available from Sal Farfan; contact him at (303) 497-1292 or via electronic mail by typing "TO SAL" on the IBM 4341 computers.

The revised edition of the MANAGING DATASETS AND PROGRAMS AT NCAR: The Mass Storage Subsystem (NCAR/TN-218+IA) is now available.

Consulting Office Documentation:

GETDOC, GETSRC: Locally Developed Commands - December, 1984

PLTCONV - January 1985

Cray Research Documents

A new document on the CRAY-1 procedure UPDATE, which now specifies a default value of COS 1.13, is available from Cray Research, Inc. at the following address:

Allan H. Torres	Telephone:
Account Representative	(303) 499-3055
Cray Research, Inc.	
Suite F	
Boulder, CO 80303	

Suggestion Notebook

Users are encouraged to enter items in the suggestion notebook either by sending mail to CONSULT1, using the Your Turn page of The Record, or writing in the notebook in the Consulting Office. The suggestions and responses will be published in The Record.

Suggestion: 1/14/85

A user suggests that there be a KILL command which would allow users to kill their own jobs. This suggestion came up as a result of his not being able to get the attention of the operators by sending a message to OPl.

Response: 1/17/85

There is no way to implement a KILL command at this time. When interactive access is available on the CRAY-1 machines this will be considered.

A single message to OPl might be lost before being read, due to activity in the machine room. The user could either call by phone (303) 497-1200 or issue a dummy mount which will be repeated until cancelled:

MOUNT DUMMY 000 **PLEASE CANCEL XXXX**

Suggestion: 1/15/85

Five minutes is not enough warning that the IBM 4341 will be IPLed. Sending a message to OPl does not seem to get through on these occasions.

Response: 1/17/85

We will change the timing to 10 minutes unless it is a major emergency. Also, either phone (303)-497-1200 or issue dummy mount as described above.

Suggestion: 1/15/85

Why do I have to specify the read password for a job submitted to the CRAY from my B disk when using CAJOB, while submitting from a read protected A disk does not require a password? This does not seem to make sense.

Response: 1/17/85

Only one value can be used as a default value for any given parameter on the network. In this case the parameter is the LKRP parameter. The default value for the parameter is the read password of the user's login disk, ie, the disk usually seen as the 191/A disk.

One solution to the problem is to make the xxx/B disk read password the same as the 191/A read password.

Summary of Daily Bulletin Items

CRAY-1 COMPUTERS

January 3, 1985

CRAY-1 SOFTWARE UPDATE: On Wednesday, January 9, the Software and Libraries Group will change the GBYTE and GBYTES entry points on \$NCARLB to a faster version written by Jay Chalmers. Preliminary tests indicate that the new GBYTES is 3 to 10 times faster than the old one, depending on the application. The change will be transparent to users of the binary library \$NCARLB, but the source code residing on file BYTES of library CRAYLIB will change. Please direct questions to Richard Valent at (303) 497-1302.

January 10, 1985

CRAY-1 SOFTWARE: UPDATE Version 1.13 is the default currently available on the CRAY-1 computers.

January 11, 1985

CRAY-1 COMPUTERS: 800 BPI tape capability is again available on the CRAY-1 computers.

January 16, 1985

CRAY-1 SOFTWARE: The tridiagonal solver CYCRDLL on \$NCARLB and CRAY-LIB is a CAL utility which no longer executes on the CRAY-1. To remedy this, the Software and Libraries Group has changed the \$NCARLB version to the FORTRAN version CYCRDLLF, whose source resides on CRAYLIB. This change is transparent to \$NCARLB users in all aspects except speed: it is 39% slower. Users of CYCRDLL source on CRAYLIB should switch to the CYCRDLLF source on CRAYLIB.

IBM 4341 COMPUTERS

December 31, 1984

IBM 4341 COMPUTERS: Only one printer is available for printing output from the IBM 4341 machines. Turnaround on hardcopy output may be slower when the printer is busy. Please be patient until another printer can be brought on-line.

January 8, 1985

IBM 4341 COMPUTERS: The operating system was modified today. Users should not be affected.

January 9, 1985

IBM 4341 SOFTWARE: An EXEC called CHGPROJ is now available which allows users to change their default project number. For additional information type "HELP CHGPROJ".

TBM

December 21, 1984

TBMCONV USERS: A new control statement parameter, NA, has been added to TBMCONV. This parameter prevents TBMCONV from aborting if it is unsuccessful in converting the desired files from CDC 7600 format to CRAY-1 format. If NA is not specified, the job is terminated if fatal errors are encountered. NA may be used as follows:

```
TBMCONV,I=idn,FN=(fn1:fn2:....:fn8),MODE=i,O=odn,DIR=ddn,NRLS,NA.  
TBMCONV,I=idn,FS=(fsl:fs2:....:fs8),MODE=i,O=odn,DIR=ddn,NRLS,NA.
```

Users should note that parentheses are now required when specifying more than one file name or file sequence number in a given invocation of TBMCONV. Any problems or questions should be directed to the Consulting Office at (303) 497-1278.

January 17, 1985

TBM VSN USERS: The /D option of the TBMVSN utility has been enhanced. In the past, use of the /D option following user/project numbers in the utility TBMVSN has given the VSN listings according to the date of last access: for example, date last read, written, or updated. The /D option now gives the date of the last read or write only. A VSN will be flagged with a "+" to indicate a read on the given date. A "-" flag will show that the VSN was written on the given date, and has never been read. The other TBMVSN listing options have not been changed.

DICOMED PROCESSORS

December 20, 1984

FILM USERS: The following list shows approximate film pull times for weekends. These times will be adhered to as closely as possible, but due to workload, staffing situations and hardware/software problems, these times can only be used as a guide. Film pull times for Saturday and Sunday are: 06:00, 11:00, 13:00, 15:00, 20:00, 2300.

January 18, 1985

DICOMED PROCESSORS TO BE MOVED

At 07:00 on Thursday, January 24, the project to move the DICOMED processors to the new film room will commence. Expect no DICOMED output for a minimum of 2 days. No DICOMED jobs will be queued during this time. It is anticipated that the system will be in a testing mode for a period of at least five days, starting Saturday, January 26. The system will be up and down during this test period. NO FILM will be shot on Thursday and Friday, January 24 and 25.

PACX

December 31, 1984

PACX CLASS IA USERS: A problem with the IBM 4341 IA machine has been occurring such that the prompt "class IA start" appears but nothing else happens. Since records of PACX connections do not indicate if a connection fails after the "class IA start" message, a method has been established to flag these events for analysis. If you experience the symptoms described above, disconnect from the PACX and reconnect requesting class "IAFAIL". This class will make a detectable entry in our records. After the "class IAFAIL start" message appears, reconnect and request class IA. Occurrences of this problem may also be reported to Steve Storm at 497-1251.

SOFTWARE

January 2, 1985

NEW PLTCONV SOFTWARE: PLTCONV is a multipurpose routine for modifying the record length of Cray COS-blocked datasets. It will convert \$PLT datasets from 1440 byte records to 80 byte records to facilitate transmission of these datasets via RSCS to remote sites. PLTCONV may be called as follows:

```
PLTCONV [,I=x [,O=y [,IRL=n [,ORL=m]]]] .
```

where I = the input dataset name.
 (default \$PLT)
 O = the output dataset name.
 (default \$PLTC)
 IRL = the record length in bytes of the input dataset.
 (default 1440)
 ORL = the record length in bytes of the output dataset.
 (default 80)

More information is available from the Consulting Office at (303) 497-1278.

January 9, 1985

IMSL & STARPAC USERS: As of Wednesday, January 9, the updated versions of the IMSL and STARPAC libraries have been installed as the default libraries. Details on these updated versions can be found in the December, 1984 issue of The Record. Any problems or questions should be directed to the Consulting Office at (303) 497-1278.

January 11, 1985

PASCAL USERS: Use the CFT113 Procedure in your JCL prior to invoking the PASCAL compiler. This will provide you with the appropriate libraries for PASCAL.

COMPUTER RESOURCES ALLOCATED IN DECEMBER 1984

SCIENTIST	PROJECT TITLE	GAU	
		Request	Alloc.
Julian McCreary, Jr. Nova University	Studies of tropical wind-driven ocean circulation	10.0	10.0
Stephen Drake/ Thomas Ayres LASP Univ. of Colo.	Modelling cool stars' outer atmospheres	2.0	2.0

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

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

Summary of NCAR Computer Use for December 1984

CRAY,CA COMPUTER				
	DEC		FISCAL YTD	
	Total	Day Avg.	Total	Day Avg.
Clock Hours in the Month	744.00	24.000	2208.00	24.000
less Scheduled PM	12.27	0.396	51.72	0.562
less Hardware Downtime	20.17	0.651	33.56	0.365
less Software Downtime	2.50	0.081	5.73	0.062
less Environmental Downtime	11.52	0.372	13.50	0.147
less Operations Use	0.83	0.027	1.58	0.017
less Other Causes	0.13	0.004	4.11	0.045
Clock Hours Up	696.58	22.470	2097.80	22.802
less Systems Checkout	0.00	0.000	2.15	0.023
Clock Hours Avail. to Users	696.58	22.470	2095.65	22.779
less Idle Time	0.46	0.015	6.26	0.068
Clock Hours in Use	696.12	22.455	2089.39	22.711
% Available Hours Used	99.93 %		99.70 %	

CRAY,C1 COMPUTER				
	DEC		FISCAL YTD	
	Total	Day Avg.	Total	Day Avg.
Clock Hours in the Month	744.00	24.000	2208.00	24.000
less Scheduled PM	15.72	0.507	52.47	0.570
less Hardware Downtime	24.48	0.790	34.21	0.372
less Software Downtime	2.07	0.067	4.72	0.051
less Environmental Downtime	4.17	0.135	5.89	0.064
less Operations Use	0.32	0.010	1.30	0.014
less Other Causes	0.00	0.000	3.13	0.034
Clock Hours Up	697.24	22.492	2106.28	22.894
less Systems Checkout	0.00	0.000	1.90	0.021
Clock Hours Avail. to Users	697.24	22.492	2104.38	22.874
less Idle Time	2.95	0.095	14.71	0.160
Clock Hours in Use	694.29	22.396	2089.67	22.714
% Available Hours Used	99.58 %		99.30 %	



Non-Profit Organization
U.S. POSTAGE PAID
Boulder/Colorado
Permit No. 558

The Record

Issued by the
National Center for Atmospheric Research
Scientific Computing Division
P.O. Box 3000
Boulder, Colorado 80307

PRINTED MATTER

SUMMERS, BARBARA
Mesa Lab
NCAR
Boulder, CO (MAIL ROOM)