Rutherford Appleton Laboratory

FORUM
COMPUTER NEWSLETTER

Newsletter of the SERC Central Computing Facility

No. 30 December 1982

NEW YEAR GREETINGS

I would like to take this opportunity to send New Year Greetings to all FORUM readers. The 1982 year has been a busy one on site with the removal of both 360/195s, the installation of the 3081 and a complete reorganisation of the machine room. On the interactive side, another PRIME system has been installed and over 100 PERQ systems are now available to SERC users. We expect the Atlas 10 to arrive on 11 May 1983 which will complete the first phase of the mainframe replacement. The 1983 year will be as busy as 1982 but with the emphasis more on software development. We have a large programme of work in developing the facilities required around MVS before a service can be introduced. On the PERQ the aim will be to move all users to UNIX.

Inevitably this will cause disturbances for users but we will try to minimise these wherever possible. Happy New Year!

F R A Hopgood - Head of Computing Division

1. CENTRAL COMPUTING REPRESENTATIVES MEETING NOTES
22 NOVEMBER 1982

OPERATIONS

Since the last meeting quite a lot of changes have taken place. Both 360/195s have been removed and the 3081D has been installed. The 3081D was up and running in 17 hours and the detailed plan which you were given was speeded up slightly. This was so that the machine could become the front-end on August 15 with its subsequent improvement of response time on ELECTRIC and CMS. We have moved through a number of reconfigurations since then and are now in a stable position, at least until the Atlas 10 arrives.

The machines are currently configured as follows: the 3081D has VM as its native operating system and runs numerous virtual machines on top of this. These include two 4 MByte virtual machines running MVT (FEM CEM), plus all the other service machines such as VNET, DKNCP, etc. An MVS development machine also runs in the 3081D. The 3032 computer runs a 6 MByte MVT native system (BEM) which is fed from HASP in the FEM machine.

At the time of writing there have been only two 3081 faults: in one a processor was lost for a few days after acceptance and the other is unexplained.

The main sources of operational problems have been with the magnetic tape drives and the new Memorex discs with fixed heads. IBM have worked hard on the tape drives to overcome the effects of engineering changes and results of the moves. The Memorex problem will be solved by replacing the fixed head HDA's with standard ones.

The full details of the changes made during the air conditioning maintenance have already been described in FORUM 29.3.

The Atlas 10 will be installed with minimal disruption to the service and will become fully operational in September. ICL and ourselves will have equal shares of cpu time. It is intended that the full schedule will be published in advance so that users will know when the next new machine will be available for use.

Banner Pages and Distribution Codes

The most noticeable change that users see when a workstation is converted from HASP to VNET is the style of the banner page. There are in fact two styles of banner page.

The one for MVT job output displays the job name in large letters. It also has the word JOB in a box to the left of these letters. Output from CMS displays the CMS username in large letters and the word USERID in the box. In both cases there are other details displayed less prominently on the banner page. Among these is an item marked as the Distribution Code. For CMS output this is copied from the user directory unless modified by use of the SPOOL or CHANGE commands. For MVT output this is currently a repeat of the job name.

It is intended to change the format of the VNET banner page. As well as the job name or the CMS identifier, the Distribution Code will also be printed in large letters. The Distribution Code associated with MVT output will be copied from the first eight characters of the Programmer Name field. Users are requested to make note of this change and to provide an appropriate distribution code (recognisable at the place of printing) in this field from now on. It is also intended to display prominently the source of the output in such a way that output originating from other systems eg CERN and DESY may be readily identified. The central computer operations staff will distribute output from VNET (and also via the VM printers) according to recognised Distribution Codes.

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11. DIARY

IBM PREVENTATIVE MAINTENANCE DATES

Routine Maintenance on the 3032 IBM computer is currently undertaken once a month on Thursdays between 18.00 and 22.00 hours. The probable dates for the remainder of 1982 and 1983 are undecided, but adequate notice will be given.

AIR-CONDITIONING SHUTDOWNS IN 1983

The date of the next shutdown of all computer systems (except network equipment) for the maintenance of air-conditioning plant has not yet been fixed. Users will be informed of the date in the usual way.

SYSTEM DEVELOPMENT

System development is currently scheduled on Wednesday mornings from 08.30 to 10.30 and Thursday evenings from 17.30 to 19.30. It should be noted that these times are under consideration and may be changed.

FORTHCOMING EVENT - SERC Computing Summer School

An intensive two-week residential Summer School will be held at The Cosener's House, Abingdon, from 11 - 22 April 1983, on the theme "Good Practices in the Production and Testing of Software". It is restricted to SERC staff, SO/HSO, who have a science degree or equivalent and who spend more than half their time computing. Application forms will be available through the Establishment later this year, but if you are interested please contact R E Thomas, Computing Division, Rutherford Appleton Laboratory and you will receive a form direct. Places are limited to 20.

CHRISTMAS ARRANGEMENTS

The IBM system will be shutdown from 12.00 hours on Friday 24 December until 08.00 hours on Wednesday 29 December. There will be no New Year interruption to the service.

The ICF machines and Packet Switch Exchanges will remain powered up and in service. Should any failure occur between 12.00 hours on 24 December and 08.00 hours on 29 December no remedial action will be taken.

SYSTEM AVAILABILITY - % of 672 hrs available

Weekly availability is uptime/168.

MVT - 95.1%, CMS - 97.7%, ELECTRIC - 91.0%.

MVT THROUGHPUT

Average jobs/week	10769
Average CPU hrs/week	168

TERMINAL SYSTEM USERS

	CMS	ELECTRIC
Registered users	935	1215
Active users	434	399

SERVICE LEVELS

Percentage of prime shift short jobs not turned round inside guideline:

MVT Batch

Core size	P12	P10	P8
0 - 210k	6.2	20.9	6.2
212k - 350k	6.2	12.2	5.0
352k - 560k	7.2	7.2	0.7

USAGE

Cumulative totals are for current financial year - 34 weeks to date.

Board	MVT 195hrs	ELECTRIC AUS	CMS AUS
ASR	262	273	428
Engineering	475	193	421
Nuclear Physics	4447	1589	2132
Science	605	450	678
Central Funding	157	313	5047 *
NERC	91	63	226
External	79	78	203
Overheads	-	-	669
TOTAL	6116	2959	9804

TERMINAL SYSTEMS

Tabular presentation is replaced by the graphical presentation shown on the previous page.

AU USAGE BY BOARD - periods 8204-8212

ICF SYSTEMS

Board	Prime	GEC	DEC-10	TOTAL
ASR	140	172	37	350
Engineering	8807	3025	5678	17601
Nuclear Physics	146	139	0	285
Science	476	538	701	1715
Central Funding	5688	1196	1109	7994
System Overheads	9728	260	1819	11809
External	335	209	137	681
TOTAL	25320	5539	9571	40435

* These entries include some usage due to "service" functions which are strictly an overhead and should be accounted separately.

Note that output routed to LOCAL is printed directly by HASP. Such output is not affected by the above. There are no proposals for HASP output as HASP has a limited lifetime.

7-Track Tapes - a reminder

The tape drives for 7-track tapes are due for withdrawal from service on 1 April 1983.

USDSK2

Jobs attempting to use USDSK2 now fail and will be flushed from the system.

Card Output

The use of cards in computing has become outdated and we would like to stop their production at RAL by removing the card punch. The current usage is very low and the removal of this facility will save on maintenance charges. Any users whom this will adversely affect are asked to make known their views, in writing, to Ann Cox of Operations Group (ext 6553).

System Development

System Development is currently scheduled on Wednesday mornings from 08.30 to 10.30 and Thursday evenings from 17.30 to 19.30. However, it should be noted that this, too, is under consideration for changes. It should be noted that though the MVT system is down in these periods, VM (ie CMS) is usually working as normal and there is no restriction on its use. If new software is being installed, users may be asked to re-access their system mini-disks. Failure to do this can lead to totally unpredictable results. It should be done as follows:

ACCESS 29D R/R * * R2
ACCESS 29E G

If the S-Disk or Y-Disk is changed for any reason, the whole system may be IPLd, or all users may be asked to IPL CMS by doing their individual machines by doing 'IPL CMS'.

SYSTEM SOFTWARE

ELECTRIC Rundown

The plan for the rundown of ELECTRIC outlined at the July meeting and printed in FORUM 28.3 has now been approved by the CCC. A significant decrease in the use of ELECTRIC has already been observed. On a typical day there are no more than around 10 logged in users at any one time. The Computing Division is anxious to identify reasons why remaining users have not transferred to CMS or to interactive facilities on a MUM. Some reasons which have already been suggested are:

a) Completing a project which will not be worked on beyond 1983.

b) No access to CMS.

c) No or insufficient CMS allocation.

d) Untrained to use CMS: an Introductory Course for beginners and conversions from ELECTRIC, and an Advanced Course for potential experts).

e) Work depends on complicated Edit files (the new XPLANT facility has been provided to overcome this).

f) The Mail facilities provided under CMS are inadequate (See details about Release 2 of CMS).

g) There is no facility yet in CMS to view Graphics Files created by MVT jobs.

h) Some utilities have not been provided under OSUTIL.

Work is already in hand to cover most of these points (which have been stated here as reasons quoted by users). The Division would like to know of any other problem areas and specific details under (b), (c) and (h). Please give the details to PAO (ELECTRIC identifier is US, MAIL files are preferred).

CERN Link

The OBEY and EXEC files for transfers to/from CERN in JB=B2B have been changed to use the NIE link.

GKS Implementation Plan

Since the last meeting RAL Graphics Section has begun work on the implementation of GKS(7.2), the ISO Draft International Standard for computer graphics. The project has had its complement increased by collaboration with the ICL graphics team. The project aims to produce a complete GKS implementation that is transportable and which utilises any features and intelligence available in graphics devices.

The project expects to make GKS(7.2) available on all SERC computers for which RAL Graphics Section supply and maintain the graphics software. The schedule is for PERQ and VAX versions to be available first (early 1983), IBM versions - online and batch - later in 1983, and finally GEC and Prime versions around the end of 1983.

Graphics Commands on CMS

Users may not be aware that, apart from being a prerequisite for production of any graphics, the GRAPHICS command has many facilities for querying and changing graphics stream definitions. Details are in its HELP file and the graphics manual. Other graphics commands may be found by typing 'HELP GRAPHICS COMMANDS' at the terminal. Alternatively, the command 'HELP GRAPHICS MENU' will direct you to any part of the graphics system on CMS.

Life Expectancy of Graphics Files in CMS

The common graphics filestore is managed by a virtual machine that deletes all files that are more than a week old, each Sunday night. Life expectancy is therefore 7-13 days.

HASP

Job Class Boundaries

The extra memory made available for the MVT systems by the installation of the IBM 3081 has prompted a revision of the job class structure. The new classes and the corresponding memory requirements are tabulated below.

Region Size	Job Class	
	Non-setup	Setup
Less than 210K	A(1)	B(2)
210K - 560K	C(3)	D(4)
560K - 1.5M	E(5)	F(6)
1.5M - 3M	G(7)	G(7)
3M - 5M	H(8)	H(8)

The letters shown are the job classes for short jobs, those for long jobs(ie greater than 5 minutes). Turnround guidelines will be issued for the new classes when enough experience has been gained. These changes took effect from 3 November 1982.

/*NEEDS cards

On the MVT system at RAL there are various restrictions on the use of certain programs. One of these constraints is that the PL/1 optimising compiler is licensed only for the 3081. Another is that batch jobs requiring ELECTRIC or MAST should use the FEM machine. In addition, certain catalogued procedures invoking programs using large amounts of storage will abend if run on the FEM machine in a job class that has a lower region associated with it. To avoid these problems, which occur only if a /*NEEDS card is omitted, the catalogue procedure names in each job are compared with a table accessed by the internal reader and an initiator allocated which can cope with that job's requirements. All supported procedures are in this list and the /*NEEDS card should NOT be used in these cases. So if you are running ELECTRIC, ELSEND or the PL/1 optimising compiler, don't bother with /*NEEDS card - it can seriously affect the turnaround of jobs on the system and is not needed.

For unsupported procedures (those in SYS3.PROCLIB), the problem is avoided by specifying the REGION on the EXEC line of the JCL, e.g.

//STEP1 EXEC TDMSSORT,REGION=250K,etc...

Users should contact PAO if they have reason to use /*NEEDS cards. This may be because one machine has a longer wait time or because it uses considerably more accountable resources on a particular machine. /*NEEDS will not be carried over into MVS but further use of it may be necessary when the ICL Atlas 10 machine arrives next year.

Occasional Problems concerning Slow Submission of Jobs.

It has been noticed that on a few occasions periods of several minutes have passed between jobs being submitted and their appearance on the HASP input spool. So far there has been insufficient evidence to enable any conclusion on the possible reason. If users experience such problems please provide details to the PAO.

VM AND CMS

VM/SP Release 2

VM/SP release 2 has been received and the CMS part of it will be installed in early January subject to satisfactory testing before then. The following is a very brief summary of new commands and other changes. Note that no existing command will be removed without good reason and the support situation on these is not expected to change.

CMDCALL - used in an EXEC-2 file to allow certain CMS commands (ERASE, LISTFILE, RENAME and STATE) to display the message 'FILE NOT FOUND'.

EXECIO - reads lines from disk or virtual reader into the program stack; writes lines from the program stack into a CMS file, virtual punch or virtual printer; causes execution of a CP command and recovery of subsequent output. In other words, it performs the functions currently provided by FINDSTAK, FILESTCK and CPEX, which are not supported by IBM.

FILELIST - provides for ASCII and full-screen terminals the CMS file listing functions currently provided by the unsupported, full-screen only module FLIST.

GLOBALV - allows global variables to be defined which can be shared by several EXEC files. These variables can be retained for the current IPL, from LOGON to LOGOFF, or permanently across sessions. Provides facilities similar to the RAL enhanced at RAL, it may still be DSET, QSET and USET commands.

IDENTIFY - used to display or stack the userid, date, time, day, etc and replaces the unsupported modules USERID.

PEEK - used to display a file which is in the virtual reader. Once in 'PEEK' mode, XEDIT subcommands can be used. Replaces the unsupported module BROWSE, although since BROWSE has been extensively used at RAL, this is enhanced.

RDR - provides information about the characteristics of the first file in the virtual reader. Replaces the unsupported module XRDR.

RDRLIST - provides facilities similar to FILELIST, but for the files in the virtual reader.

NAMEFIND - used to display or stack information from a names file which must have filetype 'NAMES'. A names file is a collection of entries with each entry identified by a 'nickname', and containing a series of tags and values. A special names file has the filetype 'userid NAMES' and contains entries for other users and groups of users containing information such as userid, name, address, telephone numbers, etc.

NAMES - used to make it easier to create, change and delete entries in the 'userid NAMES' file.

NOTE - used to create a 'note' or mail file to be sent to other users. NOTE references

CMS Commands

The following is a very brief summary of the main changes to CMS since the last User Rep's Meeting. Further details can be found in the NEWS files and the HELP system. The main changes since the last CCRM were the introduction of the FREEDA storage system, the supported PASCAL/VS compiler, and OSUTIL, which is the replacement for the ELECTRIC jobfile system.

a) CMS version 1.14 has been installed.

b) CMSELEC - corrections were made to allow stacking of input commands and typing with LINENUM=NO works correctly.

c) CMSELEC - the HELP system recognises abbreviations and synonyms.

d) RLINK - a stack option was provided and the ability to access a disk as an extension of an already accessed disk.

e) GRAPHICS EXEC - access to the FR80 has been provided.

f) NEWS EXEC - VPRINT option has been provided, and the date may be given in 'English' format - ie, DDMONYY.

g) LISTFILE - extensions were made to the use of '*' in the filename and filetype.

h) UDISK - a filetype of XPLANT is allowed. Help files can be added to standard menus.

i) FREEDA - subcommand abbreviations are supported. A HELP menu has been provided. BROWSE, PRINT, TYPE, XEDIT and VPRINT subcommands have been added. An extended 'LISTFILE' syntax for the PUT subcommand may be used. There is support for multiple DISK DUMPed reader files.

j) QSETUP - new command to query the status of tapes required by SETUP jobs.

k) OSUTIL - the CMS equivalent of the Electric 'jobfiles'. The command syntax is similar and the same control functions and parameters have been provided where possible, but OSUTIL has several additional facilities, such as the ability to prompt the user for unset parameters. All of the more heavily used utilities are available with OSUTIL and others will be provided on request.

l) HRESE - can now be used to reroute VNET spool files.

m) ARCHIVE - the system for archiving CMS files has been installed. Files are archived initially to a minidisk owned by the ARCHIVE virtual machine. This is dumped to tape when it becomes full. Operations such as restore which require access to the dataset will take place twice a day at 10.00 and 15.00. However, files which are still on disk are restored immediately.

n) QARCHIVE - a new command to query the status of the ARCHIVE machine.

o) SYMBUG - see section 5.5 for details of the Fortran Interactive Debug program from Computer Associates.

the 'userid NAMES' file so that notes can be sent to individual users or groups of users identified by nicknames. Further details can be found in the NEWS files and the HELP system. The main changes since the last CCRM were the introduction of the FREEDA storage system, the supported PASCAL/VS compiler, and OSUTIL, which is the replacement for the ELECTRIC jobfile system.

SENDFILE - used to send files or notes to other users. It can reference the 'userid NAMES' file and therefore provides the means of sending mail (or notes) to other users or groups of users. Can be used more generally for sending any files and probably replaces the RAL SENDFILE command. Headings specifying the sender and recipients are generated automatically on each note.

RECEIVE - used to read onto disk one of the files or notes that is in the virtual reader. An option allows the file to be stored as a note with field 'fn NOTEBOOK', where 'fn' can be given or searched for in the senders entry in 'userid NAMES'. If neither exists, the file is appended to a file which by default has the fileid 'ALL NOTEBOOK'. RECEIVE handles most of the format of files which appear in the virtual reader, calling READCARD or DISK LOAD as appropriate and therefore should be used as a general way of reading files to disk.

TELL - used to send a message to other users. Can reference the 'userid NAMES' file and therefore can identify the recipient or group of recipients by a nickname.

DEFAULTS - used to set up default options for the commands FILELIST, NOTE, SENDFILE, RDRLIST, PEEK and RECEIVE. These defaults are overriden by any options given with the commands themselves. DEFAULTS makes use of the GLOBALV command which allows it to maintain a permanent list of default options in a file 'LASTING GLOBALV A'.

Other changes are:

- Removal of 8-byte tokenisation restriction on FILEDEF, LISTDS and ASSEMBLE commands. This means that full O.S. data set names can be given (including the decimal point, eg

```
FILEDEF 9 DSN 'NOV.OSN.MY.DATASET'
LISTDS NOV.OSN.MY.DATASET B
```

- New STACK option with CMS QUERY allows stacking of results.

- New CMS QUERY parameter to retain CMS release number and service level.

- Direct access to EXEC-2 variables by programs called from the EXEC-2 file.

- OLDDATE option on DISK LOAD to return original date and time.

- HEADER option on PRINT command to generate header page containing only the fileid of the file being printed.

- New EXEC-2 predefined variable CMDSTRING which is initialised to the untranslated command string from the command line.

TRANFILE on CMS

The TRANFILE EXEC on the U-Disk has been modified to use the NJE link. Three new options CMSFCEW, CMSFCEE and CMSFCED have been introduced to fetch files from CERN to the user's CMS virtual reader. These options can only fetch files with a line length of 80 characters or less. Files with longer lines should be transferred as before using the RALFCxx options. For more information and list of valid parameters for these options type TRANFILE option ? in CMS. Also see 'NEWS TRANFILE' in CMS.

Any lineprinter output produced by the jobs launched by TRANFILE (the default is no printout) will be routed, by default, to the user's virtual reader. This default may be overwritten by the ROUTE parameter but the job run at CERN should only be routed to a CMS machine.

In addition, the options to transfer files from CMS to CERN and from CERN to OS disk at RAL no longer launch a first job in the FEM MVT system. Type TRANFILE option ? for a list of parameters for a given option.

FORTRAN

The Fortran H Extended Plus compiler was replaced by release 2.3.0 of the Fortran H Extended Compiler on CMS and MVT at System Development on Wednesday 1 December. The two changes that users see is that the maximum optimisation level is 2 (default) not 3 and that the IL option is no longer available. No change to user programs is required, though JCL may need to be changed in some cases. If the IL option is used, it will be flagged as unknown -- on MVT the step will terminate with a return code of 4 after normal compilation; on CMS the invalid option will return a code of 24 and compilation will not occur. If OPT(3) is requested, the optimisation level will be downgraded to OPT(2) i.e. NOOPT (compilation will occur on both MVT and CMS. As the Fortran library will remain unchanged, existing programs in object or load module form will not need re-compiling. The H Extended Plus compiler will remain available via a STEPLIB statement until 1/2/83 Immediately after the procedure call insert:

```
//C.STEPLIB DD DSN=SYS2.FORTLIB,DISP=SHR
```

Compilation time at OPT(2) will be significantly reduced from the previous OPT(3), though execution time performance may be very slightly degraded.

Fortran VS (Release 2.0)

Release 2.0 of the VS Fortran Compiler, and its library, will be installed during the next two months on CMS. This release contains language extensions for Hollerith and Hexadecimal in DATA statements as well as bit handling functions. Several bugs that have occurred in the existing release are fixed in this release. The VS Fortran compiler will probably require a minimum REGION size of 800K for compilation.

Fortran Compiler and Library Bugs.

The bugs in the HX and VS compilers mentioned at the last Representatives Meeting have all been fixed in test versions of the compilers. The fixes will be incorporated into the production versions when the new compiler releases are installed.

Several other bugs have been discovered in the VS Fortran compiler and these are being gradually fixed in the test version for subsequent incorporation into the production version. See NEWS FORTRAN (CMS) for details of problem areas in VS Fortran.

One new bug has been discovered in the H Ext+ compiler, whereby a control variable in an implied DO loop is not set correctly at optimisation levels 2 and 3. This bug will be fixed in the new H Extended Compiler.

Two bugs have been discovered in the Fortran Mod II Library. One of the bugs occurs only in CMS and results in the exponentiation function producing slightly less accurate results than under MVT. This problem will be fixed on 1/12/82. The other bug occurs when an ENDFILE statement is used under circumstances. This is still under investigation. However it does not occur with the VS Fortran library.

DRIN/DROUT (DRIO Package)

A CMS emulation of the MVT DRIO package (for fast direct access I/O via Fortran calls) will be provided in due course.

SYMBUG

SYMBUG-F is an interactive debugging facility for Fortran provided as a rapid debugging aid for use with Fortran programs. To use the SYMBUG system for a Fortran program, it must first of all be compiled using the compiler option SYMBUG on the FORTG1, FORTH1 or FORTVS command. In addition to the ordinary TEXT file, several symbol table files are produced. These have a CMS filetype of SYMBUGF and there is one for each program segment. To invoke the SYMBUG system, use the command SYMBUG instead of LOAD and follow it by SYMBUG subcommands.

For further information on this useful facility, do 'HELP CMS SYMBUG', or look through the file '$$HELP $$MEMF Y' for full details of all subcommands.

O.S.   DISKS

Cataloguing of User Data Sets.

It is an objective that all user data sets on public disks be catalogued. The chief implication of this is that a data set will not necessarily be on a single volume. In order to be of a catalogue a data set its name has to be of a standard appropriate form. For short lived data sets the standard form is MON.IDetc where MON is the first three letters of the month of creation. ID is identifying definitions recognised are user identifiers. The 'etc' is the remainder of the dataset name conforming to the rules of JCL. Note that the form beginning USER.MON is no longer recognised and steps will be taken in due course to treat such names as illegal.

Long lived data set names must be catalogued under a recognised catalogue primary node. A primary node is the first component of a compound data set name. A list of such primary nodes is kept in the file '$$HELP PAO. It is important that a primary node is

established before attempting to catalogue datasets using that primary node. Failure to do this leads to problems and JCL errors of the type 'DATA SET NOT FOUND'. Primary nodes under MVT are associated with groups or experiments. Groups or collaborations who have not registered a primary node are urged to do so as soon as possible. We are keen to discontinue the use of USER as a general primary node. Note that single component data set names are unsuitable for cataloguing. The system does not prevent it happening but such entries are erased during housekeeping without reference to the user.

It is intended that under MVS primary nodes associated with MVS identifiers be used but also allow the use of corporate group nodes by setting up group identifiers.

SMALL ITEMS

Rare Bug in Link Step - The catalogued procedures associated with the common programming languages feature compile steps, link steps and go steps. The link step makes use of the standard IBM Linkage Editor running under the control of a front-end program. It is this front-end program which initiates the actions necessary to clean up user libraries and for associated tasks.

Under normal circumstances this appears to the user exactly the same as if the linkage editor was used directly. However, there is a rare set of circumstances, seen by the PAO about 3 times in 10 years, which leads to an error that shows up during execution. The observed failures have involved abend 0C4 at the beginning of execution. It would appear only when the stored program has a particular size and has always been cured by increasing the SIZE parameter used by the linkage editor.

The problem does not occur when the linkage editor is used directly, as will be the case with MVS.

CMS Courses - User Interface Group run courses occasionally on "Introduction to CMS" and "CMS - More Advanced Topics". Any person interested in either of these courses should contact Dave Parker or John Watson of UIG.

Accounts - The charge factors for the 3081 and 3032 with respect to the 195s will be reviewed in time for the next financial year.

Any users whose programs run more slowly on 3081 than on the 360/195 should contact Dr M R Jane, ext 5408. Every effort will be made to compensate users for any problems resulting from this.

ACRONYMS IN FORUM

Following a request from some of our readers here is a list of acronyms and jargon used in issues of FORUM since April 1981.

ACSL   A Control Simulation Language
ANSI   American National Standards Institute
ARPANET A computer network connecting a number of American Computer Centres with a few places outside the USA.
ASCII   Previous name for ANSI

ASR   Astronomy Space and Radio
AU   Allocation Unit
BEM   Back End Machine, one of the two batch MVT systems ('CEM is the other').
CAD   Computer Aided Design
CALIB   Control Algorithms LIBrary
CCC   Central Computing Committee
CCF   Central Computing Facility
CCRM   Central Computing Representatives Meeting, attended by representatives of users of the MVT and CMS systems.
CCSUM   Central Computer Site Users Meeting, monthly meeting between computing Division and users of the central complex.
CEM   Name given to the third MVT system running on the central complex.
CIGAR   Computer Introductory Guide And Reference, introduction to the MVT batch system.
CMS   Conversational Monitor System, terminal system on the central complex.
CP   Control Program, CMS runs on top of this.
CPL   Command Processing Language, usually refers to Prime.
CRWP   Computer Review Working Party, who produced a report giving a 5-year plan for central computing.
DAP   Distributed Array Processor, connected to the computer at Queen Mary College, London.
DKNCP   Network Control Program, previous version of VNNCP.
EPSS   Experimental Packet-Switched Service, replaced by PSS.
FCC   Facility Committee for Computing, the committee which preceded CCC.
FEM   Front End Machine, the MVT system which runs ELECTRIC and controls the scheduling of batch machines.
FTP   File Transfer Protocol.
GENSTAT General Statistics
GKS   Graphical Kernel System, the new proposed graphics standard package.
HDLC   High-level Data Link Control, one of the network low-level protocols.
IBM   International Business Machines.
ICL   International Computers Limited
ICF   Interactive Computing Facility, controls the Prime and GEC network, the DEC-10s and the SIGs.
IPL   Initial Program Loading
ISO   International Standards Organisation
I/O   Input/Output
IUCC   Inter-Universities Committee on Computing
JCL   Job Control Language
LAN   Local Area Network
MIPS   Millions of Instructions Per Second
MUM   Multi User Miniprocomputer, usually applied to a Prime or GEC computer.
MVS   Multiple Virtual Storage, the proposed replacement for MVT.
MVT   Multiprogramming with a Variable number of Tasks, the batch operating system on the central complex.
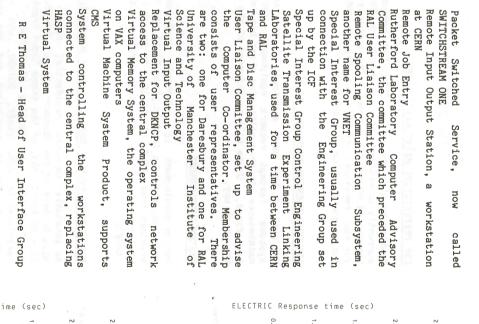NAG   Numerical Algorithms Group, provides libraries of subroutines.
NCP   Network Control Program
NERC   National Environmental Research Council
NETSTAT Network Status Machine
OS   Operating System
PACX   Private Automatic Computer Exchange, used on site at RAL to connect terminals to computers.
PAD   Packet Assembler Disassembler, used to multiplex terminals into a network.
PAO   Program Advisory Office
PSE   Packet Switch Exchange, controls the network.

PSS   Packet Switched Service, now called SWITCHSTREAM ONE
RIOS   Remote Input Output Station, a workstation at CERN
RJE   Remote Job Entry
RLCAC   Rutherford Laboratory Computer Advisory Committee, the committee which preceded the RAL User Liaison Committee
RSCS   Remote Spooling Communication Subsystem, another name for VNET
SIG   Special Interest Group, usually used in connection with the Engineering Group set up by the ICF
SIGCE   Special Interest Group Control Engineering
STELLA Satellite Transmission Experiment Linking Laboratories, used for a time between CERN and RAL
TDMS   Tape and Disc Management System
ULC   User Liaison Committee, set up to advise the Computer Co-ordinator. Membership consists of user representatives. There are two: one for Daresbury and one for RAL.
UMIST   University of Manchester Institute of Science and Technology
VIO   Virtual Input Output
VNNCP   Replacement for DKNCP, controls network access to the central complex
VMS   Virtual Memory System, the operating system on VAX computers
VM/SP   Virtual Machine System Product, supports CMS controlling the workstations
VNET   System controlling the workstations connected to the central complex, replacing HASP
VS   Virtual System

R E Thomas - Head of User Interface Group

10. COMPUTER STATISTICS

IBM SYSTEMS 1/11/82 - 28/11/82

The following graphical presentation of performance statistics are now a regular feature. It is current practice to ignore missing data (weekends and shutdowns). This is displayed as usage when none actually took place (eg at the end of October). A solution to this problem is being developed.

ELECTRIC User Activity
Trend plots 1982   ELECTRIC User Activity
Average / Maximum
Date (month): October November December January

ELECTRIC Response time (sec)
Trend plots 1982   ELECTRIC User Response times
Average
Date (month): October November December January

Trivial response time (sec)
Trend plots 1982   CMS User Response times
Average / Maximum
Date (month): October November December January

Number of logged users
Trend plots 1982   CMS User Activity
Average / Maximum
Date (month): October November December January