

# Rutherford Appleton Laboratory

# FORUM

## COMPUTER NEWSLETTER

### 6. COMPUTER STATISTICS

#### IBM SYSTEMS 23/3/82 - 18/4/82

Weekly availability is uptime/168.

SYSTEM AVAILABILITY - % of 672 hrs available

MVT - 84.6%, CMS - 88.6%, ELECTRIC - 80.9%

MVT THROUGHPUT

Average jobs/week 10133

Average CPU hrs/week 173

TERMINAL SYSTEM USERS

CMS	ELECTRIC
Registered users 720	1243
Active users 268	474

SERVICE LEVELS

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

MVT Batch	Core size	P12	P10	P8
	0 - 210k	3.8	7.6	3.3
	212k - 350k	-	6.8	2.5
	352k - 560k	-	2.3	2.3

TERMINAL SYSTEMS

Response to trivial command during peak period:

CMS	Week 1	Week 2	Week 3	Week 4
% < 1 sec	96.9	97.4	93.3	96.2
% < 3 secs	99.9	99.9	99.9	99.8

ELECTRIC

% < 2 secs	87.7	89.3	93.3	94.2
% < 5 secs	95.3	96.0	97.3	98.2

USAGE

MVT and ELECTRIC totals are split, 2 weeks in last financial year and 2 weeks in current financial year. CMS totals are also split in the same way, the first column being the total for 26 weeks of last financial year and the second column the total for 2 weeks in the current financial year.

Board

MVT	ELECTRIC	CMS
195hrs	AUS	AUS
81/2 82/3	81/2 82/3	81/2 82/3

ASR	585	16	732	14	218	21
Engineering	901	17	429	4	173	5
Nuclear Physics	7704	199	6019	77	1357	63
Science	1393	26	1939	20	358	11
Central Funding	304	13	1100	17	5254	167 *
NERC	198	4	410	4	226	7
External	165	2	628	3	126	6
TOTAL	11250	277	11257	139	7712	280

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

### ICF SYSTEMS

#### AU USAGE BY BOARD - period 8204

Board	Prime	GEC	DEC-10	TOTAL
ASR	16	15	3	35
Engineering	967	298	575	1841
Nuclear Physics	25	20	0	45
Science	62	58	98	219
Central Funding	585	103	163	851
System Overheads	1108	24	142	1275
External	37	18	12	68
TOTAL	2800	536	993	4334

### 7. DIARY

2 June 1982 - DECSys-10 Users Committee meeting  
James Clerk Maxwell Building  
King's Buildings  
Edinburgh  
at 10.30 am

8 July 1982 - Central Computer Representatives  
in RAL Lecture Theatre

### AIR-CONDITIONING SHUTDOWN

The next shutdown of all computer systems (except network equipment) scheduled during 1982 for the maintenance of air-conditioning plant is:

0800 hrs Friday 10 Sept till late Monday 13 Sept

### IBM PREVENTATIVE MAINTENANCE DATES

Routine Preventative Maintenance will take place on the following days from 1800 - 2200 hours. Login messages on the ELECTRIC and CMS services will be issued prior to each maintenance session as a reminder.

17 Jun 22 Jul 19 Aug  
16 Sept 21 Oct 18 Nov 16 Dec

### 8. DOCUMENTATION STAFF CHANGE

On 1 April 1982 Mrs June Scholes officially relinquished her post as Documentation Officer at Atlas Centre. June has moved to another job within Computing Division and her place has been taken by Mrs Muriel Herbert. In future all enquiries about Documentation should be addressed to Mrs Herbert on Ext 272.

### 9. STOP PRESS

At the May Council Meeting final approval was received for the purchase of the 3081D. It is hoped that delivery will be in early July. Fuller details will be given in the next issue of FORUM.

F R A Hopgood - Division Head

### Newsletter of the SERC Central Computing Facility

No. 23 May 1982

#### 1. COMPUTING DIVISION MANPOWER

Each year the Computing Division is allocated manpower to operate the projects in the Division. The year April 1981 to March 1982 was significantly better in matching manpower with projects than the previous year.

In 1980/81, the Division started the year below complement and had great difficulty in recruiting, mainly due to the uncompetitive salaries being offered. By mid year, we were in the middle of an extensive recruitment campaign when a complete embargo on recruitment in SERC was announced in order that SERC could balance its budget. Consequently, by the end of 1981 the Division was more than 20 people under complement.

In the early part of 1981/2, we were very active in recruitment and effectively managed to get up to our complement by the end of the first half of the year. Unfortunately, the manpower unavailable in the first half of the year effectively lost us 10 man-years of effort over the complete year.

A breakdown of manpower to projects over the year was:

Central Computing	95 (99)
Interactive Systems (ICF)	22 (27)
NERC 1108 Support	8
STARLINK	8
Distributed Computing Systems	8
Grants and Awards	7
Joint Network Team	5
Robotics	3
Miscellaneous	7
	163 (172)

The figures in brackets indicate the differences between allocations and manpower actually used.

The two projects which suffered the most due to lack of manpower were ICF (mainly in the systems side) and Central Computing (mainly in the operations side). Otherwise, there was quite a good match between allocations and manpower usage.

The smaller projects are now a significant activity of the Division, using just over 20% of the manpower. In the coming year, there is no increase in the manpower allocated to the batch and interactive facilities. On the other hand, the manpower allocated to the smaller projects will rise to 30% of the total Divisional strength.

F R A Hopgood - Division Head

#### 2. NETWORK MAIL FROM DEC10

a) The network mail command POST may be used to send messages directly from the terminal to another user on any other host which is also connected to SERCnet and which supports network mail facilities (DEC10, PRIME, GEC). The network MAIL is inserted into the local post system. Used without parameters the command will prompt for the username and host mnemonic which must be supplied in a form similar to the following example. The uparrow Z stands for <control>+Z code.

```
POST NTBE34 @ RLBP
Enter message, end with uparrow Z
Message text here
Uparrow Z
OK, I have told FTP to send it.
EXIT
```

b) The POST command will also search a user's SWITCH.INI file for synonyms. This allows frequent correspondents to be referred to by more meaningful names. An entry in the file might look as follows:

```
POST/BILLSW = EXUM01 @ UMPA
POST/BILLSW etc
```

c) The POST command uses FTP.LOG to inform the sender of the fate of each request.

d) The HELP system provides a reminder of the command syntax.

Jed Brown - User Interface Group

#### 3. TAPE LIBRARY AND TDMS NEWS

R3 Tape Library - Due to the expansion of the tape library and constraints on storage space in R27 we are in the process of moving tapes which have not been used since 1978 to a store in R3. This store will be accessed only on the first Thursday in each month.

TDMS Design - Users who submit jobs for tapes which are not in the Local Library may notice that the job status fluctuates between HELD - WAITING TAPES and NOT HELD. This is caused by the design of TDMS whereby all jobs which are HELD - WAITING TAPES get

released when the librarian does a TDMS update. Those jobs which have not had their tapes moved into the Local Library by the update only get held again when they reach a sufficiently high point in the job queue to be processed by SETUP.

The QVOL Exec - The CMS Exec 'QVOL' can be used to determine the current location, home library, account and id of a given tape. To use, type:

QVOL tapenumber

Where the Home Library is shown as TAPF, MAIN or ARCH the tape will be moved to the Local Library at the next update should a job be marked HELD - WAITING TAPES.

Tapes in the R3 store will be shown as having a Home of R3R3 and will be moved only on the first Thursday in each month.

P C Thompson - Operations Group

#### 4. 3D COMPUTER GRAPHICS SYMPOSIUM

A Symposium on 3D Computer Graphics will be held in the Lecture Theatre, Building R22 at the Rutherford Appleton Laboratory on 29 June 1982, starting at 11.00 (coffee from 10.30) and closing at about 16.45. The programme is as follows:

- Overview of 3D Graphics - A C Kilgour (Glasgow)
- An Interactive Version of the - Dr H Kuhlmann PADL Geometric Modelling Package (Darmstadt)
- 3D Geometric Modelling - Prof A R Forrest (East Anglia)
- 3D Scenic Modelling - Prof R G-rimsdale (Sussex)
- 3D Graphics and Data Analysis - Dr J Bettels (CERN)
- 3D Graphics Applications at the - T Hewitt Manchester Graphics Unit (Manchester)

There will be no meeting fee neither will any expenses be paid. Attendance will be by TICKET ONLY. The number of tickets is limited to 200 and these will be allocated in order of receipt of requests which should be addressed to either Dr D A Duce or Miss G P Jones at:

Computing Division  
Rutherford Appleton Laboratory  
Chilton  
OXON OX11 0QX (Telex 83159)

to arrive no later than 22 June. Early application is advised.

#### 5. IBM USER REPRESENTATIVE MEETING

Owing to shortage of space in FORUM 22 not all the meeting notes from the Representative's meeting on 17 March 1982 could be published. The notes which were omitted are now presented here.

#### FORTRAN

FORTRAN H(extended Plus) Compiler

Release 2.3.4 of the H Ext+ compiler was installed on Wednesday 11 November 1981 on MVT and CMS. This version fixes the problems mentioned at the previous Reps meeting. One minor problem was discovered in this release and subsequently fixed on 17/11/81.

Users are reminded that they should make use of this compiler for all their production work but they should check the validity of any results of a pre-production run very carefully with the output produced from another compiler (such as Fortran G1) before going into production. Any suspect compiler problems should always be reported to PAO.

VS FORTRAN (Fortran 77)

The VS Fortran compiler has been installed under CMS as a discontinuous shared segment. This means it can be run in a user's own machine (see HELP FORVS for details). The version currently installed contains three optimisation levels (default is OPT(3)) which correspond to those provided with the Fortran H Ext+ compiler. Several problems were discovered both by CERN and RAL in an earlier release of this compiler but most have now been fixed by IBM in the current release. One major problem is that arguments of type CHARACTER (explicitly or implicitly defined) when compiled at LAMCWL(77) in a calling routine, contain a hidden argument (the string length) which will cause difficulties if the called routine has been compiled at LAMCWL(66) or by the G1 or HX+ compilers. IBM have produced an expedient solution via a compiler option and are studying a long term solution suggested by the SHARE user group. All users of this compiler should see NEWS FORTRAN for more details of this topic.

A new library is required for this compiler and it is called VFORTLIB.TXTLIB in CMS and SYSL.VFORTLIB in MVT. The compiler itself is not available under MVT but MVT users may compile under CMS and send the TEXT files to MVT for linking and execution. Setting SYSLIB=SYSL.VFORTLIB in a suitable procedure like FHL or FHG will use the correct library.

CERN have expressed interest in a Fortran 77 Compiler produced by SIEMENS of West Germany. This compiler is claimed to be more resilient and contains all optimisation levels. It is also claimed to contain features like bit handling which are not available in the IBM VS Fortran compiler. However, the manufacturers do not state whether it will run under CMS so we are awaiting further information from them before deciding on whether to obtain this compiler plus library on a trial basis.

Fortran Interactive Debug

The IBM Fortran Interactive Debug package is currently under trial on CMS. This program allows the user to control dynamically the execution of their program so making debugging much easier and faster. Users interested in trying this package should see HELP FIDBUG on the UDISK for more details. Please report your findings to PAO so we can decide whether to keep this package permanently.

Use of MVT Produced FORTRAN Load Modules in CMS

Load Modules on MVT can be executed under CMS (see HELP OSRUN) but only if they do not contain any reference to the RAL Fortran reentrant library. The library SYSL.VFORTLIB (set SYSLIB=SYSL.VFORTLIB on a standard procedure) contains a standard IBM Fortran runtime library and must be used for all load modules that are going to be used under CMS or are being exported to another installation. Any existing load modules must be relinked using this library and including a REPLACE deck immediately prior to the INCLUDE statements in the Link Edit step. A suitable REPLACE deck is available in CMS from the PAO.

Use of CMS for Compilation and MVT for Production

FORTRAN compilations can be done in CMS (CMSBATCH or a user machine) and the resultant TEXT files sent to MVT and linked into a ULIB Member. If the program is required to be executed in MVT. This method is preferable to compiling under MVT for CMS users. A job containing TEXT files and JCL can be sent to MVT from CMS via the SUBMIT command.

#### DISKS

Demountable Work Disks

The withdrawal of the disk USDSK2 is imminent.

Transfer to 3350s

The majority of disks on the system are now of the 3350 type. This means that the disk space for the short lived datasets is increased from 400 Mbytes using FREEDISK (USDSK1) and ATLAS (RHEL08) to over 900 Mbytes, including the new FREED3 (FREED03). In addition, three other changes related to the 3350's have been made:

- a) The use of UNIT=WORK30 is no longer recognised and should be replaced by UNIT=WORK.
- b) UNIT=DASD is now preferred to UNIT=DISK30. The use of this means that no further changes will be needed to procedures and jobs when other disks are converted to 3350's.
- c) UNIT=TEMP14 cannot now be used and should be replaced by UNIT=WORK.

Naming Conventions on 'FREE' Diskspace

The following system has been adopted. Its purpose is to remove the problem of identifying which of the volumes for short-lived datasets to choose.

- All new datasets will soon have to be catalogued. This is so that OLD datasets will need no reference through a VOL parameter.

- The creation of new datasets should specify VOL=REF=FREE.

- The dataset name prefix 'USER' will be illegal from 1st August 1982, and will not be accepted by MVS. (Its withdrawal from general use will occur later).

- Dataset names must have the prefix corresponding to the month name, eg 'MAR.DATASET'. Datasets with invalid names will be removed.

- Datasets will be deleted if unused for 15 days.

- Datasets will be deleted at the end of the second month after creation, e.g. 'MAR.DATASET' is deleted at the end of April.

- Unopened datasets will be deleted.

- The maximum permitted size of a dataset is 200 tracks.

Datestamping of Disk Datasets

The method of recording date of last use of datasets in a disk Volume Table of Contents (VTOC) is to be modified to bring MVT into line with MVS. About 8 utility programs which make use of the internal structure of the VTOC have been identified and will be amended accordingly. The method of using these will be unaltered as far as the users are concerned, but if there is any user who makes use of the present form who might be affected by this, he should write to P J Hemmings of the User Interface Group.

LRECL Subparameters suitable for CMS

There is a discrepancy between the maximum logical record lengths allowed by MVT and CMS. The maximum for CMS is 32760, and MVT allows for up to 32768. Certain model DCB's have LRECL-X which gives this maximum value. Since we are unable to re-define the meaning of LRECL-X, those model DCB's mentioned in section D11 of CIAR, eg TRACK30, will be redefined to use LRECL=32760. Existing datasets will not be modified.

New dataset Naming Conventions

Groups wishing to establish catalogue node names should contact the PAO. It is intended to make dataset cataloguing compulsory on public disks, and such datasets will follow the new naming convention, eg 'GROUP.ID.DATASET.NAME'. Datasets not following this convention will not be recognised by the cataloguing system and thus will be deleted in the usual way by the housekeeping programs.

#### TAPES

We now have extra tape storage space in R3 and will be utilising this as archive space within the next month. Tapes unused since the start of TDMS in 1978 will be moved to R3. Transfer between R3 and ATLAS will take place monthly. The operations staff would like to hear from anybody still using 7-track magnetic tapes, since their discontinuation is desired.

#### WORKSTATIONS AND TELECOMMUNICATIONS

Workstation statistics are not published at the moment, for a number of reasons. For example, HASP regards all unit record activity as being related to real devices, including applications developed to use the spool facility in transmitting data. Examples include FR80 spooling and 'file transfer' activities such as Back-to-Back links. The statistics as a whole therefore have insufficient meaning to have much value.

When changes to the basic data format were made which would have required program modifications, it was felt that effort would be better spent in setting up statistics systems for VNET. However, it is not yet possible to say when workstation statistics can be produced again.