

Newsletter of the SERC Central Computing Facility

No. 15 September 1981

5. COMPUTER STATISTICS
IBM SYSTEMS 13/7/81 - 9/8/81

Weekly availability is based on uptime/168. MVT availability is based on 40% contributions from each 195 and 20% from the 3032.

SYSTEM AVAILABILITY

MVT - 93.8%, CMS - 93.7%, ELECTRIC 93.0%.

MVT THROUGHPUT

Average jobs/week 14350
Average CPU hrs/week 227

TERMINAL SYSTEM USERS

CMS ELECTRIC
Registered users 494 1267
Active users 186 615

SERVICE LEVELS

Percentage of prime shift short jobs not turned round inside guideline:
MVT Batch Core size P12 P10 P8
0 - 210K 4.7 11.2 3.9
212K - 350K - 12.9 3.4
352K - 560K - 4.2 5.5

TERMINAL SYSTEMS

Response to trivial command during peak period:
CMS Week 1 Week 2 Week 3 Week 4
% <1 sec 99 100 100 100
% <3 secs 100 100 100 100
ELECTRIC
% <2 secs 59 48 80 71
% <5 secs 80 70 91 86

USAGE FOR CURRENT FINANCIAL YEAR - 19 weeks to date

Board	MVT 195hrs	ELECTRIC AUS	CMS AUS
ASR	282	348	32
Engineering	341	174	10
Nuclear Physics	2721	2726	817
Science	624	920	388
Central Funding	76	457	2362 *
NERC	71	204	125
External	75	322	23
TOTAL	4190	5151	3757

* This entry includes usage due to "service" machines which are strictly on overhead function and will be accounted separately.

Statistics for the ICF systems are not yet available. The next issue of FORUM will contain statistics for the two periods 8108, 8109.

6. NETWORK HELP

The information in the paragraph under this heading on page 3 of FORUM 14 was slightly misleading and a clarification is now offered.
There is a process called STATUS which is accessible over the network. It contains information on many machines linked to the network. On receiving a call from the user the STATUS process requests an option. There are several options available but the most useful may be:

- STATE gives the state of all machines polled by the STATUS process (up, down etc)
- STATE site mnemonic gives details of an individual site
- HELP NETWORK gives details of computers and facilities on the SERC network
- HELP MUMS gives information on all GEC sites
- INFO gives general information about forthcoming events which will affect the Network. This is not updated by an automatic process but by operations staff

To access the STATUS machine login as follows:

- from SERC DEChetwork
SET HOST GRETNA
CALL STAT2
- from Prime (attached to SERC network)
LOGIN -ON STATUS
- from Networked Workstations
114.333
- from GEC MUMS
!!STATUS
- on RAL site PACX services 70,71,72 go to Primes
PACX service 67 goes to GEC

7. CMS COURSES

Courses to assist users in converting to CMS (Conversational Monitor System) are held regularly at the Rutherford and Appleton Laboratories and occasionally (where demand warrants it) at external sites. These courses are of one days duration. They should enable a user to gain an insight into the Virtual Machine concept and make use of CMS for editing and running of jobs etc.
Any existing ELECTRIC user who has access to CMS (see FORUM 12.3) and who would like to attend such a course should contact Dave Parker of User Interface Group (ELECTRIC id=AT or Tel. ext 6456).

1. THE CMS EDITOR, XEDIT

Since the VM System Product (VM/SP) was installed earlier in the year, XEDIT has been the standard editor for use with CMS at RAL. The Waterloo editor developed by the Perkin-Elmer Corporation is not supported and XEDIT should be used in preference.

Some advantages of XEDIT are:-

- a PROFILE XEDIT file, similar to PROFILE EXEC is executed at the start of every editing session if it exists and can be used to set various editor options. There is a standard XEDIT profile on the R-disk which will be invoked by default if you do not have your own.
- a macro facility which utilises the EXEC2 language allows you to write your own editor sub-commands.
- much improved character manipulation, including the concept of a current column pointer analogous to the current line pointer, allows easier manipulation of character strings.
- XEDIT can operate on files in packed format and this allows savings in disk space.
- update files can be produced and extended automatically from XEDIT. This only partially solves the stored edit problem but is a big improvement compared with the Waterloo editor.

The above features are standard but a very useful additional feature provided at RAL is XHELP. This is an XEDIT macro which gives a very brief description of the syntax and use of all XEDIT sub-commands and macros. It is intended as a supplement to the standard XEDIT help facility. It is invoked by typing

XHELP name
or XHELP SET/QUERY name

where 'name' is the sub-command or SET/QUERY option for which help is required.

XHELP understands abbreviations and synonyms and will tell you what a synonym stands for as well as giving the help information.

If XHELP cannot find the 'name' it replies with a list of all the sub-commands and macros which have

the same first two letters as 'name'. It then tries for 'SET name' and if still unsuccessful gives a list of all SET options with the same first two letters.

The following example gives an indication of the sort of information given by XHELP:-

```
.xh al
AL is a synonym for ALTER
Alter char1 char2 <target1>[n1*!<pl1>>>
- change a single character to another (char or
hex) on one or more lines for one or more
occurrences (starting with the pth occurrence
(default 1))
```

In the above syntax the options in angle brackets can be omitted and their defaults are always given as the last item in the group, that is, all ones in this case.

2. QUESTIONS RAISED AT CCR MEETING

Q1. What is the capacity of the computer to be attached to the central filestore? Bottlenecks must be avoided.

Q4. Will the bottleneck be in the m/c controlling the central filestore?

A1/4. The MASSOR system we are looking at consists of data storage attached to (generally) a pair of loosely coupled IBM compatible processors running MS. Any size computer can be used. The smallest systems generally used are 4341 power machines. 3031 power and 3032 power machines are available. The hyperchannel can handle up to 3 Mbytes/sec on a data path and you can have multiple data paths. You can connect several channels to the same hyperchannel data paths. Therefore if you spend enough money there should be sufficient capacity both in data paths and in computer power to cope with a very large data store. (A R Mayhock)

Q2. What element of security will there be in the central filestore?

A2. A filestore will not be introduced unless we are convinced that the data stored in it is adequately protected. (A R Mayhock)

Q3. Users of enhanced workstations would like to stress the importance of connection through X25. A3. It is certainly our intention to connect X25 to the filestore. (A R Mayhock)

List of articles in FORUM 10,11,12,13,14

- 10.1 Introduction
- 10.2 Central Computing Hardware
- 10.3 Central Computing Software
- 10.4 VNET
- 10.5 ELECTRIC/CMS Status
- 10.6 Turnaround Guidelines
- 10.7 Meetings and courses
- 11.1 Meeting notes of CCR meeting, Jan 81
- 11.2 Questions raised at CCR meeting
- 11.3 Attendance at CCR meeting
- 11.4 Report of the CRMP
- 11.5 The Mark 8 Fortran Library
- 11.6 Central Computer Scheduled Downtime
- 11.7 INDEX of articles in FORUM 6, 7, 8, 9
- 12.1 Introduction
- 12.2 Graphics under VM/CMS
- 12.3 Introduction of CMS service
- 12.4 Use of subroutine arguments in Fortran programs
- 12.5 Allocation and control of ELECTRIC
- 12.6 VLSI Conference
- 12.7 SIGE report
- 12.8 Guidelines for quality of service CMS and ELECTRIC
- 12.9 Date of CCR meeting, 13/7/81
- 13.1 The 'SERC-NERC' networks
- 13.2 GENSTAT newsletter
- 13.3 CAD 82
- 13.4 Compeda's DRAGON
- 13.5 Jiffy bags
- 13.6 Upgraded sites meeting, 4/6/81
- 13.7 CMS-UDISK, Users command list
- 13.8 Hitch hiker's Guide to SRCNET
- 13.9 Interactive computer graphics course, Sept 81
- 13.10 IBM computer usage
- 14.1 Meeting notes of CCR meeting, 13/7/81
- 14.3 Computer statistics

4. CORRECTION TO RAL COMPUTER NEWSLETTER 9/81

There was an omission in the CMS section 1.2 of the newsletter. This section should read as follows:

The CMS command AUS, which is available now, gives allocation details.

- AUS usage of AUS during the current session since the last time boundary
- AUS RATION monthly allocation, AUS left and grant-end date (Grant holders only)
- AUS CF current charge factor
- AUS ALL current usage, charge factor and monthly allocation

worth. Therefore our physical storage space can be reduced. Will every user examine his/her tape holding and return to the Magnetic Tape Librarian any tapes no longer required. Please be hard on yourself! (D G House)

Q32. Why did you run the benchmark on a single processor 3081? The IBM 3081 on which trial runs have been made had only recently been installed. These runs had no formal status. (J Brown)

Q33. Did you say a manufacturer only offered 20 minutes for a benchmark run? Why not 12 hours?

A33. At least one manufacturer has indicated that a "representative" benchmark such as we are supplying should be run at least 3 times consecutively to overcome end effects when measuring throughput. It would not be reasonable to ask manufacturers to run a very long benchmark (say 12 hours) in this way. A total CPU time of 20 - 60 minutes will probably be sufficiently long to test throughput. (J Brown)

Q34. Your largest program in testbatch is 400k. What is the impact of running larger jobs on a virtual machine?

A34. We have made changes to some of the benchmark programs to increase their size up to 1 Mbyte. It should be noted that less than 3% of jobs use more than 500k. (J Brown)

Q36. Will old-fashioned workstations be able to connect to VNET?

A36. Yes. All systems which operate a standard HASP multi-leaving communications protocol will be able to communicate with VNET with no change to their system. Operators will need to issue different commands sometimes to achieve similar results but this is a matter of training and documentation which will be supplied at the time of conversion. (C Balderson)

Q37. Will there be access to ELECTRIC from a VNET workstation?

A37. Initially this will only be possible for networked workstations where the terminals are handled as discrete logical calls, independent of the HASP connection. In the near future it will be possible to support ELECTRIC calls from the additional consoles on the VNET workstations which are not networked. Workstations which are not networked will therefore not be put on VNET until this is possible. (C Balderson)

Q38. Can the Network be made to recognise names like CMS?

A38. Yes, this is possible but we are reluctant to do so. While ELECTRIC has remained an unique service name, it is likely that CMS will not be. We prefer to use a network name for a service based on the host machine. The 'official' name for access to RAL's CMS service is RLIDI indicating Rutherford Lab 'IBM' 'B' machine Interactive communication, when access is via the VNET 'machine'. Access via DKNCP in the VMT front end is on service RLIAIC. (C Balderson)

Q39. Will there be access to CMS from CERN?

A39. There is access to CMS from CERN on !!RLIAIC. (C Balderson)

backup purposes - specific volume information for catalogued disk datasets is not required with this utility. (D F Parker)

Q16. What is the default priority during the short job experiment?

A16. Short jobs are submitted by default at priority 6. Long jobs are submitted by default at priority 4. This will continue to apply during the experimental change of definition. (P J Hemmings)

Q17. Will the catalogue be a distributed catalogue? A17. Yes. Most of the 3350s accessed by the VMT system will contain a portion of the catalogue. (P J Hemmings)

Q18. When will the new rules for FREDDISK etc come into operation? A18. No date is available yet. Further details will be announced later. (P J Hemmings)

Q19. Is it possible to see the registration details in CMS?

A19. The command DIRM REV will cause the Directory Maintenance machine to send a copy of the directory entry for the userid who submitted the command to that userid's virtual reader. The user will be prompted for the current logon password to authorise the action. Details of commands that the user can send to DIRMAINT can be found with the command DIRM ?. (D F Parker)

Q20. Does the Fortran H Ext+ Compiler have the same problems with VMT and CMS?

A20. The current problems with the test version of the Fortran H Ext+ compiler apply to both CMS and VMT. The test version is at a later release level than the production version and will replace the production version when these problems have been fixed and a thorough test period has been undertaken. (D F Parker)

Q21. What plans have RAL for enabling someone to read data from floppy disks produced by a micro?

A21. RAL has no plans to provide a floppy disk service by post. Instead it is assumed that the network will take care of all the necessary data transfer. An asynchronous protocol has been designed to allow very small minis (and micros) to transfer data to Prime or GEC Multi-user Minis. From there it is possible to transfer files to the IBM system. Software is available for the following set of machines: DEC PDP11, RT11 and RSK/11M, MOTOROLA M6800 (under FLEX), INTEL 8080 and Z80 (under CP/M) and ALPHA 16. (R E Thomas)

Q22/23. Is it possible to improve the NETSTAT message when the machine is down? Can the network status machine contain messages like 'unusable until 10.30'? Could the ELECTRIC log in information also go in to the status machine?

A22/23. We are currently providing the operators with a terminal connected to PACX and making some small software changes to make it easy for operators to update NETSTAT. We will then ensure that the type of information provided is improved and that a review time is quoted in each message. (P C Thompson)

Q24. Are 1600 bpi tape drives to be phased out?

A24. It is not our intention to phase out 1600 bpi tapes. The reason we encourage the use of 6250 bpi is that that tape will store 4x1600 bpi tapes

Q5. Is there any documentation on XEDIT and EXEC2? A5. Introductory documentation on XEDIT and EXEC2 is provided in the RAL Publication "An Introduction to CMS on the RAL Coupled System", RL-80-008. Further documentation on both programs is provided in the RAL VM/370 User Reference Manual. Both these publications are undergoing revision to bring them into line with the current software in use. Reference Documentation for each product is provided in the appropriate IBM Manual. The distribution policy with regard to RAL and manufacturer produced documentation is set out in CIGAR Part A, Section 4, last updated 1 June 1981 and distributed with FORUM 14. (J Brown)

Q6. Regarding policy of userids on CMS, there is high changeover of personnel in quite a lot of groups. How will you handle this? Can a user change his own id?

A6. It is quite easy for the management to change a user id or to delete a user and put in a new one. A user cannot change his own id. (T G Pett)

Q7. Where did the definition of 'trivial' command come from?

A7. The definition of 'trivial' command as given in the VMAP manual is a command which completes before the Q1 time-slice ends. The actual calculation of response time is more complex because an attempt is made to calculate the response time as perceived by the user. (T G Pett)

Q8. To whom do we give the CMS registration information?

A8. Please give the information to the Program Advisory Office. (P J Hemmings)

Q9. Is it possible to have more than 100 blocks per user on the U-disk?

A9. 100 blocks is considered sufficient as a maximum for each user on the U-disk. The U-disk should only be used for programs which are likely to be of value to a large section of users. It should not be used for file-sharing amongst a group of users. For this it would be better to have a special minidisk belonging to one of the users set aside for this purpose and for each member of the group to link to it. (T G Pett)

Q10. I have on occasion waited some time for a copy command to be completed. This is awkward with automatic logout after 8 mins in a dormant state. A10. We will make sure that people in the copy queue are not logged out. (T G Pett)

Q11. Could there be a copy Q position message when waiting for copy?

Q12. Will there be a facility to allow you to catalogue datasets with COPY TODSN from ELECTRIC? A11/12. The possibility of doing these will be investigated and they will be implemented if only trivial changes to the ELECTRIC program are needed. (T G Pett)

Q14. How do you manage IEHMOVE commands which have to refer to a specific volume?

A14. The IBM utility IEHMOVE should only be used where load modules are to be loaded/unloaded to magnetic tape for export/import to other IBM installations. The Program Advisory Office should be consulted in this case. The utility VSCOPY (Program Library Manual UT/34) should be used to copy load modules to/from tapes that are used for