

Newsletter of the SERC Central Computing Facility

No. 27 September 1982

1. INTERNAL TELEPHONE SYSTEM AT RAL

The new Laboratory telephone system, a GEC-SL1, became live between 0900 - 0915 hours on Saturday 4 September 1982. By the time you read this Computing Division staff will have had 2 weeks experience of the new system and be adept at handling all the many facilities now available to them.

Please note that all extension numbers now have 4 digits. The old 3-digit numbers have become 4-digit by the prefix of '5'.

The following table gives an up-to-date list of useful extensions in Computing Division, available on Abingdon (0235) 21900.

OPERATIONS GROUP	
Shift Leader	5280 or Abingdon 834486
Head of Operations	5515 D G House
Head of Resource Management	5408 M R Jane
and Communications	6105 B G Loach
Grant Assessment	6623 P C Thompson
Operations Management	5659 P Blanshard
Telecommunications	5660 C Balderson
Telecommunications	6331 G A Lambert
ICF Resource Management	6188 R T Platon
ICF Resource Management	
Central Computing	
IBM Resource Management	6553 S H Ward
IBM Resource Management	5242 K G Dancy
Mag Tape Library	5333
External Post Room	5429
Telecomms	6389
Starlink Operations	6490
ICF Operations	5345
FR80	5239

USER INTERFACE GROUP

Head of UIG	6219 R E Thomas
Editor, FORUM	6609 J Brown
Prime Support	6293 M F King
GEC Support	6252 J J C Hutchinson
Program Advisory Office	6111
Documentation	5272 M A Herbert

ATLAS CENTRE ADMINISTRATION

Receptionist	6296
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2. ACCESS TO SERCNET

'Dial-up' access to SERC facilities can be expensive due to the high charges for long distance calls. There are now a number of alternative methods which are cheaper and more reliable.

1. If there is an SERC mini computer or workstation in the area connected to the SERC network then it will have terminals which may be used for accessing any other SERC computer on the network. In addition many of these computers have 'dial-up' facilities. The manager of the computer (or RAL) should be contacted for details.

From a GEC 4000 computer, on being invited to log in, the command is:

!Imnemonic

where the mnemonic is the name of the remote service, for example, RLGB.

From a Prime use:

LOGIN -ON mnemonic

Unfortunately the method of making a connection depends on the type of computer. Details are available in 'The Hitchhiker's Guide to SERCNET' which is obtainable from User Interface Group. The site manager will be able to give help in making calls.

2. SERCNET is connected to the public packet switched service now known as Switchstream One. The service may be used for dial-up connections to SERC computers. Authorisation is needed to use this service and this may be obtained by contacting Roy Platon at Rutherford Appleton Laboratory (0235 21900 6188). There is a guide to using this service which is also available from Roy Platon.

3. ACCESSING ARPANET FROM SERCNET

Until now ARPANET has been accessed via the IBM computer at RAL with the command '++DEST A'. This gave a connection to a PDP/09 at University College London which acted as a terminal concentrator. Extensive developments at UCL have produced a much improved system allowing access to the ever growing number of ARPA hosts in the USA.

The recommended method of access to ARPANET is now

8. COMPUTER STATISTICS

IBM SYSTEMS 12/7/82 - 8/8/82

Weekly availability is uptime/168.

SYSTEM AVAILABILITY - % of 672 hrs available

MVT - 89.5%, CMS - 96.7%, ELECTRIC - 84.5%.

MVT THROUGHPUT

Average jobs/week 11022

Average CPU hrs/week 170

TERMINAL SYSTEM USERS

CMS ELECTRIC

Registered users 828 1236

Active users 372 458

SERVICE LEVELS

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

MVT Batch Core size P12 P10 P8

0 - 210K 7.9 21.3 5.0

212K - 350K - 7.0 2.6

352K - 560K - 5.9 2.7

TERMINAL SYSTEMS

Response to trivial command during peak period:

CMS Week 1 Week 2 Week 3 Week 4

% < 1 sec 91.0 93.4 93.9 94.5

% < 3 secs 99.8 99.8 99.8 99.8

ELECTRIC

% < 2 secs 74.9 85.3 83.7 86.2

% < 5 secs 86.3 93.4 92.7 94.3

USAGE

Cumulative totals are for current financial year - 18 weeks to date.

Board MVT ELECTRIC CMS

195hrs AUS AUS

ASR 161 178 181

Engineering 292 121 187

Nuclear Physics 2201 1067 1037

Science 315 274 257

Central Funding 94 218 2385 *

NERC 60 37 102

External 52 58 112

Overheads - - 81

TOTAL 3175 1953 4342

* 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 - periods 8204-8208

Board	Prime	GEC	DEC-10	TOTAL
ASR	109	103	27	239
Engineering	4852	1739	3013	9605
Nuclear Physics	88	106	0	195
Science	281	312	475	1069
Central Funding	3164	675	570	4409
System Overheads	5799	145	956	6900
External	179	151	91	423
TOTAL	14472	3231	5132	22840

9. DIARY

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.

16 Sept 21 Oct 18 Nov 16 Dec

AIR-CONDITIONING SHUTDOWN

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

0800 hrs on Friday 22 Oct till late Monday 25 Oct

Please note that this time may be extended by 1 or 2 days to accommodate the removal of both the IBM 360/195s as already announced in FORUM 25.

10. INDEX

List of articles in FORUM 20 and 21

- 20.1 Apologies
- 20.2 Central Computer Replacement
- 20.3 Use of AUs in CMS
- 20.4 Workstations and Telecommunications
- 20.5 Maximum MVT region size
- 20.6 Trial MVS system
- 20.7 VM Spool
- 20.8 Extract from minutes of CCSUM - 6/1/82
- 20.9 Telephone Numbers
- 20.10 Index
- 20.11 Computer Statistics
- 20.12 Diary
- Supplement to FORUM 20 -
- 21.1 Supported packages on the Central System
- 21.1 MVT to MVS - the user's view
- 21.2 Extract from minutes of CCSUM - 3/2/82
- 21.3 Graphical Kernel System (GKS)
- 21.4 File Transfer Facility on SERCNET
- 21.5 Index
- 21.6 Computer Statistics
- 21.7 Diary

via a gateway machine known as ZUXA. Thus the service is accessed by making a network call to ZUXA. From a GEC 4000 machine this would be 11ZUXA, from a Prime LOGIN-ON ZUXA and from a DEC gateway (eg GRETNA) CALL ZUXA. Details of network access from these and other machines can be found in 'The Hitchhiker's Guide to SERCNET'. After contacting ZUXA the same user id and password may be used to log in as was used with the '++DEST A' facility.

All registered ARPANET users will have had a newsletter advising them of the changes soon to be made in the user id selection. These changes are to take advantage of the electronic mail facilities both on ARPA and on some SERC machines, allowing better names to be used for sending and receiving mail.

Further details and information on the use of the UCL gateway may be obtained from Margaret Pragmeill at UCL (01 387 7050 ext 811).

PLEASE NOTE: There have been instances of people mis-using the ARPANET facilities. Severe steps will be taken against anyone who is thought to be mis-using, or allowing others to mis-use, the service.

4. MAG MARK 9 LIBRARY

20 routines are being withdrawn from the MAG FORTRAN Library at Mark 9. These withdrawals have been announced in the Mark 8 Library Manual, in particular in the document FORTRAN MK8 NEWS. Details are given below, together with brief comments on the reasons for withdrawal and on the choice of a replacement routine. Any users who are currently using a routine which will be withdrawn, should consider modifying their programs NOW, to use a replacement routine instead. Replacement routines are already in the library at Mark 8, and the relevant Chapter Introduction should be consulted. Users who feel that they would be seriously inconvenienced by the withdrawal of a routine, may apply to the Program Advisory Office for a copy of the routine, but should note that MAG does not recommend this course of action and does not accept any responsibility for the withdrawn routine or offer any support for it.

Withdrawn routine	New routine	Comments
C05AAF	C05ADF	Improved algorithms, more reliable and robust routine.
C05ABF	C05ACF	(Other new C05 routines such as C05AGF, -AJF, -AXF or -AZF, provide additional new facilities
C06AAF	C06BAF	The new routines are not restricted to sequences whose lengths are powers of 2, and are in any case more efficient on most machines.

DO1ACF	DO1BDF	DO1AJF
Improved algorithms. Both new routines are derived from 'QUADPACK'. 6 other 'QUADPACK' routines were included at Mark 8 and offer more specialized		

facilities for 1-dimensional integration.

DO2ADF DO2HAF Improved algorithm and re-designed software.

DO2AFD DO2TGF Improved software, designed in conjunction with the easy-to-use driver routines DO2JAF and -JBF which handle a single equation or a linear system respectively.

E01ADF E01BAF E02BBF E01BAF uses a more satisfactory form of cubic spline, and, in conjunction with E02BBF, is more efficient when the data is to be interpolated at several points.

F01BHF F02WAF More efficient algorithm and more flexible routine. Amount of computation and amount of storage required may be reduced in many applications. The new routine F02WBF now handles the case m<n.

F01BJF F01BMF Better performance on paged machines.

F01BKF F02WDF The new routine uses the singular value decomposition for a more reliable determination of rank, in those cases where the QR-factorization has not established that the matrix is of full rank.

F01BMF F01LBF Better performance on paged machines.

F02BMF F01BMF + F02BFF The replacement routines have shown to be more efficient.

F04AUF F04JGF These are companion routines to F01BKF and F02WDF (see above).

F04AVF F04LDF Better performance on paged machines.

F01ACF G04AEF The new routine offers more facilities and is designed to be consistent with other new G04 routines introduced at Mark 9.

H01AEF H01BAF H01AEF was sometimes unreliable, or H01ADF The new routine H01BAF is robust and stable. H01ADF may be faster.

The routine DO2AGF will NOT after all be withdrawn at Mark 9 although its withdrawal has been announced. It allows the user to specify an interior matching point. This facility is not provided by the proposed replacement routine DO2HBF but can occasionally be very convenient. However, in other circumstances users are strongly recommended to use DO2HBF.

The Mark 9 library includes 17 new routines in the chapters C05, E01, G13 and X02. Details of these are provided in the MAG Mark 9 manual.

Please note that the routine C05NAF is scheduled for withdrawal at Mark 10.

C P Wood - User Interface Group

5. VAX-POP WITH PROLOG

There is now a version of the Sussex University POP11 system for VAX computers. POP11 was previously available for PDP11/UNIX systems. The VAX/VMS implementation is much enlarged and includes PROLOG as a subsystem. There is also a powerful built in user-extendable screen editor and TEACH and HELP facilities based on the editor. Since the system is mostly written in POP11 it is potentially very transportable. A Z800/UNIX version has just been installed and conversion to VAX/UNIX should be straightforward. POP11 is now in regular use both for teaching absolute beginners and for advanced research, including image processing and speech processing. (Conversion of DEC-10 POP2 programs has proved simple.) There have been several sales to commercial or industrial organisations. Cost to Universities is £300 (including updates for one year). Other prices can be obtained on application. Enquiries should be addressed to:

Dr A Stoman
Cognitive Studies Programme
School of Social Sciences
University of Sussex
BRINGTON BN1 9QN

6. PASCAL/VS

Release 2.1 of the IBM PASCAL/VS compiler and library have been installed in CMS. The command for invoking the compiler is PASCALVS. See HELP PASCALVS for details of using this command. Note that a virtual machine size greater than 512K is required to use this compiler for even a small program (less than 1M is required though). The resultant TEXT file from using the PASCALVS command can be made into a MODULE by using the command PASCMOD. HELP PASCMOD will give details of this command. The TXTLIB required, supplied via the PASCMOD EXEC, for loading a Pascal program is called PASCALVS TXTLIB. A TXTLIB called PASDEBUB is also required if the Pascal symbolic debugger is invoked.

This Pascal compiler should be used in preference to the Pascal compiler currently residing on the U-DISK as it is a fully manufacturer supported compiler designed to run in CMS. The version of the Pascal compiler residing on the U-DISK will be removed in due course. Note however that the IBM version of Pascal is different from the U-DISK version so users should read the relevant documentation before making use of this compiler (see below for details of manuals available).

Pascal/VS is a compiler for a superset of the Pascal language, operating in VM/CMS. Originally designed by Niklaus Wirth as a high level language to teach computer programming, Pascal has emerged as a user language with the ability to produce reliable code in an efficient and natural manner. The compiler adheres to the currently proposed ISO standard and includes many important extensions. The language extensions include separate compilation, dynamic character strings and extended I/O capabilities. The implementation features include fast compilation, optimisation and a symbolic terminal oriented debugger that allows the

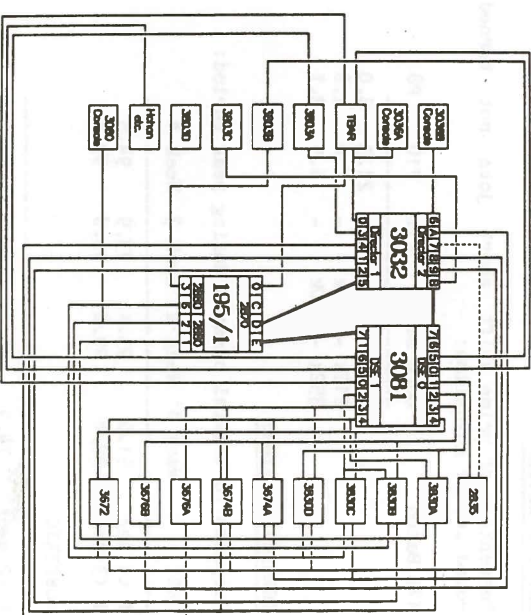
user to debug a program quickly and efficiently.

Rutherford users must be prepared to invest their own effort in learning and using Pascal because we do not have resources to provide User Support assistance for this compiler beyond referring to the reference manuals. The relevant manuals, which can be obtained from the RAL Documentation Officer by phoning 0235 21900 5272, are:

Pascal/VS Language Reference Manual (SH20-6168)
Pascal/VS Programmer's Guide (SH20-6162)

D F Parker - User Interface Group

7. IBM SYSTEMS CHANNEL CONFIGURATION



In the above diagram the controllers are connected as follows:

24 x 3330 or equivalent disk drives to controllers 3830B, 3830D and 3672.

44 x 3350 or equivalent disk drives to controllers 3830A, 3830C, 3674A, 3674B, 3676A and 3676B.

2 x 2305 fixed head drums to controller 2835.

16 x 3420 tape drives to controllers 3803A, 3803B, 3803C and 3803D.

Various terminal and workstation controllers and unit record devices connected to TBAR.

T Lobley - Systems Group