

My DCS file

SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

D I S T R I B U T E D C O M P U T I N G N O T E 5 3 0

PANEL PAPERS
Academic Coordinator's Progress Report
October-December 1981

issued by
Dr D A Duce

16th December 1981

DISTRIBUTION: F R A Hopgood
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20th January 1982

Academic Coordinator's Progress Report
October-December 1981

1. MANCHESTER DATAFLOW MACHINE

The prototype Manchester Dataflow System hardware successfully executed the first program on 6th October 1981. An announcement of the event is attached to this paper.

The Coordinators visited Drs Gurd and Watson in November and witnessed programs being run with 1, 2 or 3 processors and observed a near linear speed-up. Subsequently more processors have been commissioned and evaluation work is proceeding apace. The investigators hope to have completed the evaluation by July 1982.

2. CAMBRIDGE RING

The Logica Cambridge Ring equipment was accepted at the end of November and installation is now in hand.

A request to borrow two DMA Unibus access logics has been received from Prof Randell and is attached. The Panel is invited to consider this request which could be satisfied.

3. PERQ

Professor Coulouris has now received one PERQ computer from the DCS equipment pool and a second is soon to be delivered. Delivery of a PERQ to Mrs Brown at the University of Kent is also imminent.

Many requests to borrow PERQ computers have been received from DCS investigators. Consideration of these is the subject of a separate agenda item.

4. VISITS

The Coordinators visited a number of DCS projects in November and December. Further visits are planned.

5. WORKSHOPS

Dr Kowalski, Imperial College, is organising a Workshop on Logic Programming and Logic Machines in February 1982. The DCS Dataflow community will be participating in this event.

6. YORK PSS SOFTWARE

During November the software developed under an EMR agreement with the University of York to link Unix systems to PSS/SRCnet was successfully installed at RAL. Installations at other sites are in hand.

7. COORDINATORS DIARY

- 22nd October - Dr Edmonds, Leicester Polytechnic
- 28th October - Cambridge Ring Standards Meeting RAL
- 2/3 November - Computing and Communications Sub Committee
- 10th November - Mr Cunningham/Dr Sloman, Imperial College
- 11th November - Prof Coulouris, Dr Bornat, Mr Page, QMC
- 12th November - Prof Grimsdale, Sussex
- 13th November - Dr Bennett, Keele
- 16th November - Dr Gurd, Dr Watson, Manchester
- 17th November - Mr Powell, Dr Dagless, UMIST
- 18th November - Mr Milner, Dr Plotkin, Edinburgh
- 19th November - Dr Lauer, Newcastle
- 20th November - Dr Mitriani, Prof Randell, Newcastle
- 25th November - Unix Network User Group, UCL
- 27th November - Dicoll Electronics
- 1st December - Prof Paker et al PCL discussion of Cambridge Ring
- 15th December - Oxford Research Machines
- 16th December - Professor Alabau visitor from Spain
- 17th December - Dr Bustard, Belfast
- 18th December - Dr Sleep, UEA

PROFESSOR OF COMPUTER SCIENCE
T. KILBURN, C.B.E., M.A., Ph.D.,
D.Sc., F.I.E.E., F.B.C.S., F.R.S.
ICL PROFESSOR OF COMPUTER ENGINEERING
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PROFESSOR OF COMPUTING SCIENCE
F. H. SUMNER, Ph.D., F.B.C.S.
PROFESSOR OF COMPUTER PROGRAMMING
D. MORRIS, Ph.D.



DEPARTMENT OF COMPUTER SCIENCE
THE UNIVERSITY
MANCHESTER
M13 9PL

Telephone: 061-273 7121

26th November 1981

Rob Witty and David Duce,
DCS Programme,
SERC Rutherford Appleton Laboratory.

Dear Rob and David,

We are particularly pleased to announce the first program runs on the prototype Manchester Dataflow System hardware. The code for the first run was generated by the Mad compiler from the following high-level program:

```
PROGRAM DOUBLEFACTORIAL(INARG : INTEGER) : INTEGER;  
(* Yields the factorial of its argument using a  
doubly-recursive divide-and-conquer algorithm *)  
FUNCTION DOUBFAC(A, B : INTEGER) : INTEGER;  
  IF A = B  
  THEN  A  
  ELSE  
    DECLARE AVG : INTEGER;  
    LET AVG := (A + B) DIV 2;  
    RETURN DOUBFAC(A, AVG) * DOUBFAC(AVG + 1, B);  
DOUBFAC(1, INARG)  
END.
```

The program was cross-compiled on the ICF Prime 750 at UMIST and the object code was transferred to the Dataflow Host LS111 via the recently installed FTP Link. The program was successfully executed by a single processing element (PE) configuration at 10.30 a.m. on the 6th October, 1981. Subsequent runs have been achieved on multiprocessor configurations of 2, 3 and 4 PEs on the 9th, 13th and 17th of November, respectively.

Yours sincerely,

pp The Manchester Dataflow Research Group

Dave Bowen
Arthur Catto
John Glauert
John Gurd
Chris Kirkham
Jose da Silva
Ian Watson
and many other assistants

THE UNIVERSITY OF NEWCASTLE UPON TYNE

COMPUTING LABORATORY

Director:

Professor of Computing
and Data Processing:

H. WHITFIELD, B.Sc., A.R.C.S. D.I.C.



Professor of Computing Science:

B. RANDELL, B.Sc., A.R.C.S.

Telephone Newcastle (0632) 329233

N.U.M.A.C.

Executive Director:

Miss E. D. BARRACLOUGH, M.Sc.

Ref: 9/6/6(f)

8th December, 1981

Dear David,

This is just a note following our recent conversation to request upgrading of our ring interfaces to DMA devices. As you will know from the plans we discussed for our remote procedure call protocol on Unix and the performance data we have obtained so far on the existing ring hardware, such DMA devices would have a very considerable impact on the practicality of the ring for closely coupled Unix systems. Ideally we would like such interfaces for all five of the SERC-supplied 11s on our ring (two 11/45s and three 11/23s). However as a minimum we would certainly like two DMA devices as soon as possible for the performance trials we wish to carry out.

On a separate issue, I note that Western Electric are now advertising the Programmer's Work Bench as being generally available. Is it DCS policy to obtain PWB and distribute it as part of a Unix V-7 update? I certainly hope it is, since I am sure that we and many others could make good use of the system.

With best wishes,

Yours sincerely,

Brian Randell

Dr. D.A. Duce,
Distributed Computing Systems Programme,
Rutherford & Appleton Laboratories,
Chilton,
Didcot,
Oxon. OX11 0QX.

BR/EMS: