

SCIENCE AND ENGINEERING RESEARCH COUNCIL  
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

DISTRIBUTED INTERACTIVE COMPUTING NOTE 814

Visit Report - ICL/URC Distributed Unix Workshop  
Newcastle University, 21-22 February 1983

Issued by  
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## 1. Introduction:

I attended a workshop entitled 'Distributed UNIX' at Newcastle University on 21 and 22 of February. The meeting was organised by Chris Haynes from ICL Bracknell. The other people present were all from ICL or members of the Newcastle Connection team. Despite the general nature of the title, the workshop was concerned solely with discussing the Newcastle Connection.

## 2. Talks:

Monday was devoted to an overview of the Newcastle Connection. Several members of the Connection team spoke - Brian Randell gave the introduction, Lindsay Marshall spoke in a little more detail until lunchtime. Progress was slow as some members of the ICL delegation had to ask questions about the way in which UNIX operated. After lunch, Jay Black gave a talk on Internetworking Unix United. Apparently there are two levels of abstraction - level one is a distributed process, which consists of multiple processes on different machines with only one process active at a time. The second level of abstraction is software. He said you may or may not need a gateway process. Dave Brownbridge defined names, routes and addresses. These two talks were academic exercises - they gave no real insight into Unix United.

Dick Snow and Harry Whitfield gave talks on what Newcastle would like to use the Connection for in the way of linking non-UNIX machines. Harry's lecture was on what Newcastle and Durham thought their options were when their Computer Board mainframe comes up for replacement in a few years time. Rob Witty has a paper on this. Nothing new was said.

When discussing the Connection, Newcastle presented an exuberant, glib account which glossed over many of the difficulties. They seemed very opinionated, and I saw no point in needling them unnecessarily - it seemed better to talk to ICL over coffee! A point that I made to ICL

was that Newcastle want to get the Connection up and working, and want it to work over a variety of UNIX and UNIX-like machines with different kernels. This makes having the Connection outside the kernel a good idea from their angle, and they rightly defend it as a good decision. However, ICL will have only the kernels on their own machines to contend with, so it might make more sense for them to do an implementation in the kernel, rather than an implementation per language outside. See also \*.

Just before lunch on Tuesday, Brian gave a quick talk on what he hoped to achieve from the workshop. The attitude he presented was that ICL were being very slow off the mark, that they had been told of the Connection almost a year ago, that there was considerable (and faster) reaction from other foreign firms, that they would need something along the lines of the Connection and that ICL were being favoured because they were British.

ICL had a closed meeting to discuss their reply. They asked further detailed questions about the Connection (some of which appeared to relate to machines a lot smaller than the PERQ) but did not commit themselves to anything other than assuring Brian that they would be contacting him.

### 3. WAN Networking

I took advantage of ICL's closed meeting to discuss WAN networking with some of the Newcastle people. Everyone there is very dissatisfied with Keith Ruttle's X.25 software, which does not satisfy their requirement for a port-to-port datagram service. Fabio Panzieri gave me a draft copy of their requirements, which I have passed on to Keith Fermor.

We fell to talking about this because I was having a good whine about the high-level software Keith Ruttle provides - particularly a ton of super-user software and a PAD that cannot be used to poll a uucp site unless you're actually sitting at the terminal yourself (ie. not much use at two o'clock in the morning). Newcastle seem relatively happy with the high-level software, although they do not seem to use it heavily, and very displeased with the low-level material.

I spoke also to Roy Campbell, who visited RAL last year, about accessing some bulletin boards in the States via his machines in Illinois. He seemed amenable.

### 4. What I learnt:

Who the attendees were

Five trivial details about the Connection internals

Newcastle have put the user id and group id of a remote procedure caller into the device driver. Lindsay claimed that this is not part of the kernel\*. As a result, the caller cannot forge his identity unless

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\* He's wrong, it is. You might expect a site to have to configure device drivers though.

there is alternative access to the ring. Consequently, the gross security holes in the Connection have disappeared.

UNIVERSITY OF NEWCASTLE/ICL WORKSHOP ON DISTRIBUTED

COMPUTER SYSTEMS. 20TH-22ND FEBRUARY, 1983

Note that this timetable is only a rough guide as the intention is to keep the Workshop as flexible as possible.

Sunday 20th February

8.00pm INFORMAL SESSION AT THE AVON AND NORTHUMBRIA HOTEL

Monday 21st February

All sessions are in room 922 of the Claremont Tower

9.00am	INTRODUCTION	Prof. B. Randell
9.30	STRUCTURING OF DISTRIBUTED SYSTEMS	Prof. B. Randell
11.00	COFFEE	
11.15	IMPLEMENTING A DISTRIBUTED SYSTEM - UNIX UNITED	Dr. L.F. Marshall
12.30	LUNCH	
2.00	NETWORKING ISSUES	Dr. J.P. Black/ Mr. F. Panzieri
3.00	COFFEE	
3.15	NAMING ISSUES IN DISTRIBUTED SYSTEMS	Mr. D. Brownbridge
4.30	DISCUSSION	

7.30 for 8.00 DINNER - NORTHUMBRIA HOTEL CONFERENCE ROOM

Tuesday 22nd February

9.00am	THE NIMROD PROJECT AND ITS IMPLICATIONS	Prof. H. Whitfield/ Dr. C.R. Snow
10.00	GENERAL DISCUSSION	ICL/NCSIE
11.00	COFFEE	
11.15	GENERAL DISCUSSION	
12.30	LUNCH	
2.00	ICL PRIVATE MEETING	ICL
3.00	COFFEE	
3.30	ICL RESPONSE AND WINDING UP	ICL/NCSIE

UNIVERSITY OF NEWCASTLE/ICL WORKSHOP

on

DISTRIBUTED COMPUTER SYSTEMS

20th - 22nd February, 1983

PARTICIPANTS

ICL

Martin Carter	Dalkeith
Tony Drahota	London
Ray Ellington	Bracknell
Nigel Greenaway	Reading
Chris Haines	Bracknell
Peter Hall	Chairman, University Research Council
Myer Morron	Bracknell
Greg Powell	Reading
Ian Robertson	Bracknell
Richard Stonehouse	Dalkeith
Colin Taylor	Bracknell
Peter Westmacott	Kidsgrove
Malcolm Wiles	Reading
Keith Winter	Bracknell
Dave Woodcock	Dalkeith
Sam Woodgate	Reading
Keith Woods	Manchester

NEWCASTLE

Tom Anderson  
Jay Black  
Dave Brownbridge  
Roy Campbell  
Lindsay Marshall  
Fabio Panzieri  
Brian Randell  
Dick Snow  
Harry Whitfield  
J. Dobson (MARI)

SERC

Geoff Smith