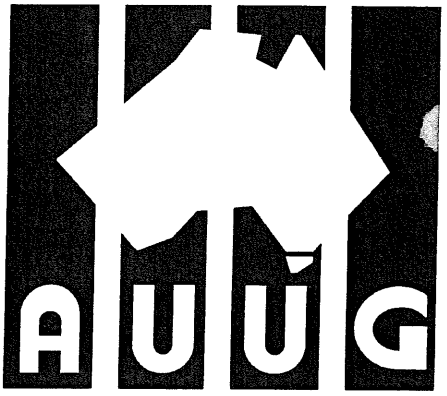
ISSN 1035-7521



Australian UNIX systems User Group Newsletter

AUUGN

Volume 13, Number 5

October 1992

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The AUUG Incorporated Newsletter

Volume 13 Number 5

October 1992

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AUUGN is the journal of AUUG Incorporated, an organisation with the aim of promoting knowledge and understanding of Open Systems including but not restricted to the UNIX* system, networking, graphics, user interfaces and programming and development environments, and related standards.

* UNIX is a registered trademark of UNIX System Laboratories, Incorporated

AUUG General Information

Memberships and Subscriptions

Membership, Change of Address, and Subscription forms can be found at the end of this issue.

Membership and General Correspondence

All correspondence for the AUUG should be addressed to:-

The AUUG Secretary,
P.O. Box 366,
Kensington, N.S.W. 2033.
AUSTRALIA

Phone: (02) 361 5994
Fax: (02) 332 4066
Email: auug@munnari.oz.au

AUUG Business Manager

Liz Fraumann,
P.O. Box 366,
Kensington, N.S.W. 2033.
AUSTRALIA

Phone: (02) 953 3542
Fax: (02) 953 3542
Email: eaf@softway.sw.oz.au

AUUG Executive

President

Phil McCrea
phil@softway.oz.au
Softway Pty. Ltd.
79 Myrtle Street
Chippendale NSW 2008

Vice-President

Glenn Huxtable
glenn@cs.uwa.oz.au
University of Western Australia
Computer Science Department
Nedlands WA 6009

Secretary

Peter Wishart
pjw@lobo.canberra.edu.au
EASAMS Australia
Level 6
60 Marcus Clark St.
Canberra ACT 2600

Treasurer

Frank Crawford
frank@atom.ansto.gov.au
Australian Supercomputing Technology
Private Mail Bag 1
Menai NSW 2234

Committee Members

Rolf Jester
rolf.jester@sno.mts.dec.com
Digital Equipment Corporation
P O Box 384
Concord West NSW 2138

Chris Maltby
chris@softway.sw.oz.au
Softway Pty. Ltd.
79 Myrtle Street
Chippendale NSW 2008

John O'Brien
john@wsa.oz.au
Whitesmiths Australia P/L
#5 Woods Centre
ANSTO Business & Tech. Park
Lucas Heights NSW 2234

Michael Paddon
mwp@iconix.oz.au
Iconix Pty Ltd
851 Dandenong Rd
East Malvern VIC 3145

Greg Rose
ggr@acci.com.au
ACCI
723 Swanston St
Carlton VIC 3053

Advertising

Advertisements for the AUUG are welcome. They must be submitted on an A4 page. No partial page advertisements will be accepted. Advertising rates are $300 for the first A4 page, $250 for a second page, and $750 for the back cover. There is a 20% discount for bulk ordering (ie, when you pay for three issues or more in advance). Contact the editor for details.

Mailing Lists

For the purchase of the AUUGN mailing list, please contact the AUUG secretariat, phone (02) 361 5994, fax (02) 332 4066.

Back Issues

Various back issues of the AUUGN are available. For availability and prices please contact the AUUG secretariat or write to:

AUUG Inc.
Back Issues Department
PO Box 366
Kensington, NSW, 2033
AUSTRALIA

Conference Proceedings

A limited number of the Conference Proceedings for AUUG'92 are still available, at $50 each. Contact the AUUG secretariat.

Acknowledgement

This Newsletter was produced with the kind assistance of and on equipment provided by the Australian Nuclear Science and Technology Organisation.

Disclaimer

Opinions expressed by authors and reviewers are not necessarily those of AUUG Incorporated, its Newsletter or its editorial committee.

AUUG Institutional Members as at 07/10/1992

A.J. Mills & Sons Pty Ltd
A.N.U.
AAII
Adept Business Systems Pty Ltd
Adept Software
Alcatel Australia
Allaw Technologies
Amdahl Pacific Services
Andersen Consulting
ANI Manufacturing Group
ANSTO
Anti-Cancer Council of Victoria
ANZ Banking Group/I.T. Development
Apscore International Pty Ltd
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Attorney-General's Dept
Ausonics Pty Ltd
Auspex Systems Australia
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Australian Defence Industries Ltd
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Australian Taxation Office
Australian Technology Resources (A.C.T.)
Australian Wool Corporation
Automold Plastics Pty Ltd
AWA Defence Industries
B & D Australia
Bain & Company
Ballarat Base Hospital
BHP CPD Research & Technology Centre
BHP Information Technology
BHP Minerals
BHP Petroleum
BHP Research - Melbourne Laboratories
BICC Communications
Bond University
Burdett, Buckeridge & Young Ltd.
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Dept of Industrial Relations, Employment, Training & Further Education
Dept of Planning & Housing
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Dept. of Defence
Dept. of I.T.R.
Dept. of the Premier and Cabinet
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Dept. of Transport
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DEVETIR
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Fremantle Port Authority
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GCS Pty Ltd
GEC Alsthom Australia
Geelong and District Water Board
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GIO Australia
Golden Circle Australia
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Great Barrier Reef Marine Park Authority
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Haltek Pty Ltd
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Hermes Precisa Australia Pty. Ltd.
Highland Logic Pty Ltd
Honeywell Ltd
I.B.A.
IBM Australia Ltd
Iconix Pty Ltd

AUUG Institutional Members as at 07/10/1992

Information Technology Consultants
Insession Pty Ltd
Insurance & Superannuation Commission
Internode Systems Pty Ltd
Ipec Management Services
IPS Radio & Space Services
James Cook University of North Queensland
KPMG Solutions
Labtam Australia Pty Ltd
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Macquarie University
Mayne Nickless Courier Systems
McDonnell Douglas Information Systems Pty Ltd
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Mincom Pty Ltd
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Mitsui Computer Limited
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NEC Australia Pty Ltd
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NSW Agriculture
Nucleus Business Systems
Office of the Director of Public Prosecutions
Olivetti Australia Pty Ltd
Open Software Associates Ltd
OPSM
Oracle Systems Australia Pty Ltd
Ozware Developments Pty Ltd
Parliament House
Paxus
Philips PTS
Port of Melbourne Authority
Powerhouse Museum
Prentice Hall Australia
Prospect Electricity
pTizan Computer Services Pty Ltd
Public Works Department
Pulse Club Computers Pty Ltd
Pyramid Technology
Queensland Department of Mines
Queensland University of Technology
Redland Shire Council
Release4
Rinbina Pty Ltd
RMIT
Royal Melbourne Institute of Technology
SBC Dominguez Barry
Scitec Communication Systems
Sculptor 4GL+SQL
SEQEB Control Centre
Shire of Eltham
Siemens Nixdorf Information Systems Pty Ltd
Software Developments
Softway Pty Ltd
South Australian Lands Dept.
St Vincent's Private Hospital
Stallion Technologies Pty Ltd
Standards Australia
State Bank of NSW
State Revenue Office
Steelmark Eagle & Globe
Sugar Research Institute
Swinburne Institute of Technology
Sydney Ports Authority
System Builder Development Pty Ltd
Systems Union Pty Ltd
TAB of Queensland
Tasmania Bank
Tattersall Sweep Consultation
Technical Software Services
Telecom Australia
Telecom Australia Corporate Customer
Telecom Network Engineering Computer Support Services
Telecom Payphone Services
Telectronics Pty Ltd
The Far North Qld Electricity Board
The Fulcrum Consulting Group
The Preston Group
The Roads and Traffic Authority
The Southport School
The University of Western Australia
TNT Australia Information Technology
Tower Computing Services
Tower Technology Pty Ltd
Tradelink Plumbing Supplies Centres
Triad Software Pty Ltd
Turbosoft Pty Ltd
TUSC Computer Systems
UCCQ
Unidata Australia
University of Adelaide
University of Melbourne
University of New South Wales
University of Queensland
University of South Australia
University of Sydney
University of Tasmania
University of Technology
UNIX System Laboratories
Vibro Acoustic Sciences Ltd.
Vicomp
Victoria University of Technology
VME Systems Pty Ltd
Wacher Pty Ltd
Walter & Eliza Hall Institute
Wang Australia Pty. Ltd.
Water Board
Westfield Limited
Workstations Plus
Wyse Technology Pty. Ltd.

AUUG President's Report

What a relief it is!

It is certainly a relief to those of us in the UNIX industry to see OSF and USL finally agreeing to cooperate in the production of technology, both at the operating system level and at the 'middleware' level.

At the operating systems level, both parties have agreed to support each other's Application Programming Interface (API), which were not that dissimilar in the first place. OSF/1 will be SVID3 compliant, and SVR4 will be AES compliant. This is a great step forward – now that the interface is agreed to by all, it doesn't matter what 'flavour' the operating system is. It will be possible (in theory) for a user to swap one operating system environment for another without the need to modify application code.

Both groups have agreed to support common middleware protocols, with USL in particular agreeing to support and licence DCE for SVR4, through an arrangement with Siemens Nixdorf.

USL has also brought some harmony to the GUI debate by providing support for both Motif and Open Look in SVR4.2.

This unity has occurred for two reasons: Firstly USL's new President, Roel Pieper, is a colleague of Dave Tory, the OSF president, and this has fostered the closer relationship. Secondly, the cooperation is also unity in the face of adversity: Microsoft's NT is looming on the horizon, and in order to have any hope of competing with NT, the UNIX industry must be united.

The impact of SVR4.2

USL's relationship with Novell is interesting, and the new company, Univel, in which both organizations have a stake, is gearing up to tackle Microsoft head on. Both Microsoft and Univel are competing for the client/server market, which requires integration of the computer operating system and the network operating system (NOS).

Novell has the lion's share of the PC lan market with Netware, and are using this market share to get into the computer operating system arena.

Microsoft has the lion's share of the PC operating systems market, and, recognizing DOS's limitations, are trying to move their existing DOS licensees to NT, thereby maintaining their grip on the PC operating system market.

Those of us who are into UNIX, either because we like it technically, or because we derive commercial benefit from it, of course are biassed in favour of Univel's Unixware. (This author certainly is at least). To this extent we wish Univel all the best.

Open Government

The Federal Government is open in more ways than is generally understood. The major Federal Government computing users, who form the Information Exchange Steering Committee (IESC), have formed a Subcommittee, called (not surprisingly) the Open Systems Sub-committee, or OSSC for short.

Until fairly recently, the concept of an Open System in Canberra was a system which could communicate with a mainframe. Such interoperability was formalized with the release of GOSIP, much to the chagrin of the proprietary networking players. However the OSSC is doing a great job at fostering the cause of Open Systems in the Federal arena, and have specified that an open system must provide scalability and portability as well as interoperability. This of course is the message that has been preached by UI and OSF all along, and effectively specifies UNIX in lights.

AUUG must expand its focus to become involved with organizations who are grappling with the concept of moving to open systems. After all, AUUG members understand open systems, as most of us have been using UNIX for years.

AUUG has started to become involved with the OSSC. I will report on developments in this area in future reports.

Phil McCrea

AUUG
Minutes of the 1992 Annual General Meeting
Latrobe Theatre, World Congress Centre, Melbourne
Thursday 10th September 1992

Officer Bearers Present: Phil McCrea (President), Glenn Huxtable (Vice-President), Peter Wishart (Secretary), Frank Crawford (Treasurer).

Apologies: Michael Paddon

Eighty five (85) AUUG members signed the AGM attendance record as being present at the meeting.

Meeting opened at 5:42pm.

1. Minutes of Last Meeting

The President (Phil McCrea) advised that the minutes had been published in AUUGN Vol 12 No. 4/5 Oct 1991.

Motion: That the minutes of the 1991 AGM as published in AUUGN Vol 12 No. 4/5 be taken as read and accepted. Moved: Scott Merrilees/Peter Murray CARRIED

2. Returning Officers Report

John O'Brien, outgoing returning officer presented a report. 104 ballots were received this year compared to only 70 last year. A larger number of people stood for committee positions than in previous years.

The results of the election were:
President: Phil McCrea
Vice-President: Glenn Huxtable
Secretary: Peter Wishart
Treasurer: Frank Crawford
Committee Members: Chris Maltby, Michael Paddon, Rolf Jester, John O'Brien, Greg Rose
Returning Officer: Michael Tuke
Assistant Returning Officer: vacant

Once again there was no assistant returning officer since all candidates for that position had been elected to other positions and so were ineligible. The committee will appoint someone to the position as per the constitutional provisions.

Motion: That the returning officers report be accepted. Moved: Peter Chubb/ Bill Murray. CARRIED

3. Presidents Report

Phil McCrea reported that he had only recently been appointed to the office of president at the last election and so his report would focus on his aims for AUUG. His aims were to increase membership and services to members, including discounts for members and other ancillary services. The AUUG was currently working towards forming chapters.

He felt that the AUUG should look at co-operating more closely with other industry societies such as the Australian Computer Society.

He reported that AUUG was working to improve the look and quality of the newsletter AUUGN. A competition was being held to design a new cover. He thanked Jagoda Crawford for her efforts as editor or AUUGN. The meeting recorded its thanks to Jagoda Crawford for her efforts as AUUGN

editor.

In recognition of outstanding contributions to AUUG over the years several commemorative plaques were presented. John Lions for his lifetime efforts for AUUG since the organisation had been founded. Greg Rose for his significant contribution as President for 3 years. Pat Duffy for her significant contribution as President for the past 2 years.

4. Secretary's Report

Peter Wishart, the incoming Secretary reported that AUUG membership continues to grow steadily. At 1/9/92 there were:

468 individual members (23% increase from 1991),

245 institutional members (8% increase from 1991),

1 life member,

10 student members,

24 AUUGN subscriptions.

Since mid July AUUG had around 65 new members, including 17 who joined at the conference. This showed that the conference continued to attract new members to the association.

All AUUG members should now have membership cards to gain access to membership benefits (e.g. discounts with publishers). About half the members have been sent their membership cards (all those whose subscription fees fall due Jan 1). The other half (whose fees fall due July 1) of the membership should receive cards by the end of September.

A new member benefit had just been negotiated with connect.com, a new company providing a commercial network service based around AARNet. AUUG members would receive a 10% discount on all connect.com fees. Full details would be in the next AUUGN. This was in addition to the existing arrangement with MHS providing a 20% discount for the TMX service.

The chapter policy is in the final stages of being developed. The drafts of the policy and rules for operation of chapters have been posted to aus.auug and will be published in AUUGN for comment by members. The next few months should see the formalisation of chapters, with funding arrangements in place. With the introduction of chapters, member activities in local regions should be greatly increased.

Sydney, Perth Melbourne and Canberra currently have active groups. Brisbane has recently started local activities. Interest has been expressed from members in Adelaide, Hobart and Darwin. The management committee is working towards having a chapter in all areas where there are interested AUUG members.

Planning for the summer conference series for 1993 is underway. It is planned to have summer conferences in all major regional areas. The 1993 conferences will once again provide local members with excellent technical conference in their local region. Watch out for details of your local summer conference.

AUUG conducted a membership survey during the middle of year. The results of this survey will be published in the next AUUGN.

Motion: That the Secretary's report be accepted. Moved: David Burren/Chris Maltby. CARRIED.

5. Treasurers Report

The Treasurer (Frank Crawford) reported that membership still makes up the bulk of our income. He presented financial reports as attached and said that full details would be published in the next AUUGN.

He reported that $79,000 had been spent last year on publicity and promotion. This included AUUG's arrangement with Symmetry Design to act as our public relations agent. Symmetry Design had advised

that they were no longer wished to maintain this arrangement.

Motion: That the Treasurer's report be accepted. Moved: Lawrie Brown/ Bill Murray. CARRIED.

6. Conduct of the 1992 Election

The outgoing returning officer (John O'Brien) explained the process that has been used for elections in AUUG. Occasionally there is slippage in the deadlines due to circumstances beyond the control of the returning officer. While the call for nominations was late this year the overall election process was not late.

The incoming returning officer (Michael Tuke) outlined the changes he proposed to make. He said that he would fully document the procedures he proposed and publish them in the first edition of AUUGN in 1993.

About 25% of the votes cast came from institutional members in this years election. There was discussion about institutional member votes being determined by people who were also individual members of AUUG. There was discussion about how to get more members to return ballots. There were more votes cast this year than in previous years. This was probably due to the greater number of candidates this year. It was noted that although only 100 members voted, over 250 had returned membership survey forms.

There was discussion about whether there should be an opportunity for members to cast votes for positions even where there was only one candidate.

7. Chapter Development

Peter Wishart presented the committee's current proposal on chapter rules and policy. The full text of the rules and policy had recently been posted to aus.auug for comment and would be published in the next edition of AUUGN to elicit member comment.

There was discussion about the proposal. It was noted that the figure for 40% on membership fees on chapter activities seemed too low. Peter Wishart said that this figure represented a initial level of funding and would probably increase when AUUG had more experience with chapters.

Peter Wishart reported that once the policy and rules had been published in AUUGN and member comment had been received the committee would formalise the policy and rules and commence setting up chapters and the distribution of chapter funds.

8. Other Business

The meeting recorded its thanks to AUUG Business Manager Liz Fraumann for her efforts in organising AUUG92.

Peter Karr said he felt that AUUG needed to widen its membership. He noted that a magazine that he published, Open Systems Review, had a readship of tens of thousands, yet AUUG only had 800 members. He felt that AUUG should target those people for AUUG membership.

9. Next Meeting

The next meeting will be held in conjunction with AUUG93 at Darling Harbour in Sydney in September 1993. The exact date and time will be advised to members.

Motion: That the meeting be closed. Moved: Peter Chubb/Bill Murray. CARRIED

The meeting closed at 6:55pm.

A.U.U.G. INCORPORATED

PROFIT & LOSS STATEMENT

FOR THE PERIOD 1ST JUNE 1991 TO 31ST MAY 1992

INCOME	1992	1991
Membership	102552.00	40511.05
Usenix Proceedings		
- Baltimore		398.00
Advertising	2300.00	5757.00
Subscriptions	2205.00	1250.50
Mailing List	2216.38	3203.00
Interest Received	12374.11	7657.85
Other Income	589.00	
Summer 92		
- Melbourne	3655.00	
- Sydney	2190.00	
- Adelaide	1819.00	
- Perth	4085.00	
Security Video	93.00	
Other Books		175.00
Mugs		35.00
Tutorial Notes		105.00
Uniforum Rebate	2665.98	599.94
Summer 91		
- Melbourne		3884.20
- Perth		2585.00
AARNET Subscriptions	12745.00	8858.00
	149489.47	75019.54

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LESS EXPENSES	1992	1991
Bank Charges		
- Credit Card	793.86	535.63
- Government	865.00	31.20
- General	661.15	252.92
	2320.01	819.75
Management Committee/Meeting Expenses		
- Air fares	4390.00	4306.00
- Accommodation/Meals	487.55	1497.35
- Parking	50.00	26.00
- Taxis	385.75	175.36
- Postage	17.90	64.76
- Fuel	71.19	175.97
- Business Cards		490.80
	5402.39	6736.24
Membership		
- Refunds	234.00	
- Printing		274.00
- Secretarial Fees		722.00
- Leaflets		150.00
	234.00	1146.00
Uniforum Delegation		
- Air fares		2549.90
AARNET Expenses	16000.00	
A.U.U.G. 90		
- Air fare	708.00	
A.U.U.G. 92		
- Air fare	476.00	
A.U.U.G.N.		
- Postage/Freight	2983.60	94.03
- Printing	28347.97	12191.61
- Laser Toner		220.00
- Labels		57.87
	31331.57	12563.51

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	1992	1991
Summer 92		
Perth - Seminar/Function Costs	3075.78	
- Air fare	1596.00	
- Advertising	431.79	
- Postage	89.67	
- Printing/Stationery	57.67	
	5250.91	
Sydney		
- Seminar Costs	2575.50	
- Printing	215.70	
- Photocopying	30.00	
	2821.20	
Melbourne		
- Printing/Advertising	1000.00	
Adelaide		
- Taxi	54.20	
- Air fare	478.00	
- Accommodation	201.15	
- Seminar Costs	302.35	
- Hire of Equipment	200.00	
	1235.70	
Summer 91		
Melbourne		
- Postage		615.00
- Function	2250.00	192.74
- Labels		49.98
Video Costs	36.00	835.00
Workshop Expenses		294.00
Perth - Seminar Costs		560.00
- Function Room		1848.00
	2286.00	4394.72
Secretarit		
- Retainer	2400.00	
- Other	12762.55	
	$15162.55	

	1992	1991
Mailing List		
- Photocopying/Printing	2658.04	2362.91
- Labels	.	162.80
	2658.04	2525.71
Symmetry		
- Retainer	27000.00	
- Promotion & Publicity	19805.20	5000.00
	46805.20	5000.00
Office		
- Advertising	792.50	
- Auditors Remuneration	1950.00	1896.00
- Freight/Postage	2137.44	495.37
- Mailing	360.00	
- Printing/Stationery		855.95
- Trademark Registrations		100.00
- 89 & 90 Election Costs		1332.55
- Telephone	1770.33	125.68
- Secretary Fees	6084.59	800.00
- Business Cards		330.61
- Registration Fees (Corporate Affairs)		27.50
- Taxis		54.50
- General Expenses	169.90	
- Travel Expenses	3825.54	
- Air fare	310.00	.
	17400.30	6018.16
TOTAL OPERATING COSTS	**151091.87**	**41753.99**
General A/C Net Profit (Loss)	(1602.40)	33265.55
A.U.U.G. 91 Net Profit (Loss)	13826.64	34303.44
NET PROFIT	**$12224.24**	**$67568.99**

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A.U.U.G. INCORPORATED

PROFIT & LOSS STATEMENT

FOR THE PERIOD 1ST JUNE 1991 TO 31ST MAY 1992

	1992	1991
Conference A.U.U.G. 1991		
Income	22901.64	34991.58
Less Expenses		
Advertising/Promotion	9075.00	
Photocopying & Printing		134.40
Travel & Accommodation		550.00
Telephone	.	3.74
	9075.00	688.14
NET PROFIT (LOSS)	**$13826.64**	**$34303.44**

A.U.U.G. INCORPORATED

BALANCE SHEET

AS AT 31ST MAY 1992

	NOTE	1992	1991
ASSETS			
CURRENT ASSETS			
Cash		4046.46	121047.51
Receivables	(3)	10581.32	5350.00
Investments	(2)(4)	155038.36	35497.00
		169666.14	161894.51
NON CURRENT ASSETS			
Intangibles		988.10	988.10
TOTAL ASSETS		**$170654.24**	**$162882.61**
LIABILITIES & CAPITAL			
CURRENT LIABILITIES			
Trade Creditors			4452.61
ASSOCIATION FUNDS			
Accumulated Profits		170654.24	158430.00
TOTAL LIABILITIES & CAPITAL		**$170654.24**	**162882.61**

A.U.U.G. INCORPORATED

NOTES TO AND FORMING PART OF THE ACCOUNTS

FOR THE YEAR ENDED 31ST MAY 1992

1. **ACCOUNTING POLICIES**

The accounts are prepared in accordance with the historical cost convention. The Accounting policies adopted are consistent with those of the previous year.

2. **INVESTMENTS**

Investments are shown at Market Value, Capital Gains tax is not taken into account in determining the investments unless a definite decision to sell has been taken and the related Capital Gains Tax can be reliably estimated.

Dividends and other distributions from investments are taken to income on receivable basis.

3. CURRENT RECEIVABLES	1992	1991
Withholding Tax	3701.32	
Prepayment		
Membership	2340.00	1300.00
Newsletter	4540.00	4050.00
	$10581.32	$5350.00

4. CURRENT INVESTMENTS		1992	1991
Quoted Investment			
Chase AMP			6000.00
C.B.A.	- Term Deposit	32673.87	29497.00
	- Cash Management	122364.49	———
		$155038.36	$35497.00

5. TRADE CREDITORS	$4452.61

AUDITORS REPORT TO THE MEMBERS OF

AUSTRALIAN OPEN SYSTEMS USERS GROUP INC.

In our opinion -

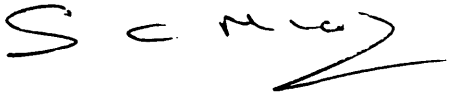
1. The accounts which have been prepared under the historical cost convention are properly drawn up in accordance with provisions of the Companies (Victoria) Code, and so as to give a true and fair view of:-

   (a) the state of affairs of the organisation as at 31st March 1992 and of the results of the organisation for the year ended on that date, and

   (b) the other matters required by Section 269 of that Code to be dealt with in the accounts.

2. The accounting records and other records and the registers required by that Code to be kept by the organisation have been properly kept in accordance with the provisions of that Code.

NICOL & NICOL
C.P.A.



STUART C. NICOL
PARTNER

Dated at Melbourne this day of September 1992

/etc/cron/TIMES †

9 September 1992 **DAY I**

SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY

Welcome to AUUG '92!

This conference promises to be one of the best in AUUG's history. Featuring speakers from around the globel.

AUUG President, Phil McCrea, stated, " I know you will find both the conference and the exhibitoin stimulating in many respects. This is an opportunity to find out what is happening in both the technical world of UNIX, and the commercial world of Open Systems".

CONFERENCE HIGHLIGHTS

Over 400 delegates have registered for AUUG '92! This proves Melbourne can register more than Sydney... despite the semi-perminant state of recession. (Special Reporters input here, one from Sydney and one from Melbourne, arguing.)

On a serious note, (hum) we have had a few speaker changes.

Session C1-3 is now to be presented by John Szwec of TNT.

Thursday, Session P3 will be presented by Robert Peake of GA Pacific, same topic as program listing for C1-3.

Thursday, Session P4 will be presented by Rolf Jester of Digital Equipment Aust.

EVENTS

Exhibition hours are from 10:00am - 6:00pm

BOF (Birds of a Feather Meeting) in Bellarine 1 between 5:30 and 6:00 Wednesday. Topic is UNIX System V R4.2 Destiny. Roel Pieper will lead discussion.

Cocktail Reception, located in the Bellarine 6 from 6:00pm - 7:30 **THIS IS A TIME CHANGE**

FaceSaver - located on lower level of exhibition hall - Hours- 10:00 am- 10:20am, 12:00pm - 2:00pm, 3:30pm - 4:00pm, and 5:30pm - 6:00pm.

* * *

Tutorials presented on Tuesday, 8 Sept. were fantastically well attended. Chris Schoettle's UNIX System V.4 internals course exceeded even his expectations when over 100 attendees packed the room.

If you have any questions or need assistance please see the staff at the registration desk.

Production with compliments of Platform Technologies and FrameMaker ™

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AUUG membership may be obtained during the conference and exhibition at the AUUG stand on the lower level of the exhibition hall.

We would like to take this opportunity to thank all those involved in the organisation of this year's conference, with special acknowledgement going to the Program Committee: Peter Karr, Ian Hoyle, Robert Elz and Liz Fraumann.

We also thank Platform Technologies for sponsoring the /etc/cron/Times with Framemaker™ and Digital Equipment Aust. for the reproduction.

***

WIZARD'S CORNER

Duff's Device:
How does this do... whatever it is that it does...

```
switch(n & 07)
{
    while ((n -= 8) > 0)
    {
    case 8: *p++ = *q++;
    case 7: *p++ = *q++;
    case 6: *p++ = *q++;
    case 5: *p++ = *q++;
    case 4: *p++ = *q++;
    case 3: *p++ = *q++;
    case 2: *p++ = *q++;
    case 1: *p++ = *q++;
    }
}
```

EXHIBITION HIGHLIGHTS

Toren Communications Pty. Ltd. fosters AUUG '92 communications network. 11 vendors are cabled using a combination of coaxial, twisted pair, and fiber optic cable across 2 floors. The heart of the network is a Fibronics FDDI ring comprised of an FX8210 FDDI bridge router and an FX8610 matrix switch. Providing a worldwide external link is a cisco AGS+ connected via ISDN to AARNet.

Controlling the network is the Fibronics InterView network management system. InterView is providing SNMP management of all exhibition devices and coordinating security.

Vendors connected to the conference network include: SAS Institute, WANG, DEC, IT ConnXions, PRIME, SiliconGraphics, Apple, IBM, Advanced User Systems, FaceSaver, and Toren. For a complete AUUG '92 interoperability demonstration stop by one of these booths.

***

Labtam Computers has provided several terminals for the purpose of conference delegates to stay "connected". Located on the lower level of the exhibition hall, delegates may create their own accounts by first logging in as "register" and entering an account name and password as prompted.

***

REMINDER... You can WIN a 486 PC with Solaris...

Simply complete the questionaire located on page 45 of the Visitor Catalogue .

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AUUG 92 CONFERENCE & EXHIBITION
Maintaining Control in an Open World

/etc/cron/TIMES †

10 September 1992 **DAY 2**

SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY

RECORD ATTENDANCE AT AUUG 1992

Over 500 delegates have so far registered for AUUG 92, the largest number of delegates at any AUUG conference.

The keynote speech was delivered by Roel Pieper, President and CEO of UNIX System Laboratories. He talked about rightsizing, and the need for users to work with distributed systems.

Rightsizing is where upsizing meets downsizing, he said. Later in the day, he convened a BOF that was given an exclusive Australian preview of UNIX SVR4.2 (DESTINY).

SPEAKER CHANGES

There are some changes to the speaker agenda. Session P3, at 10:00am, is now being presented by Robert Peake of GA Pacific, not Geoff Deacon from the RTA.

Session P4 is now being presented by Rolf Jester, of Digital Equipment Corporation, replacing Suzanne LaForge Afshar.

On Friday, the keynote address will be delivered by Paul Cutt, Vice President of Engineering, Xtensory Inc. He is replacing Dr. Jonathan Waldern, from W Industries.

There is also a change in running order for Friday Sessions T3-1 and T3-3 will be swapped. Andrew McRae will speak at 3:30pm, Greg Rose will talk about *fmake* after lunch.

EVENTS

Gala dinner

The AUUG Gala dinner is being held tonight, in the Bellarine 6 and 7 rooms. Expect a few laughs from the one and only Campbell McComas, who for once is not in disguise.
Cocktails are being served from 7:00pm and delegates will be sent to bed at midnight.

Birds of a Feather

An EMACS BOF meeting will be held in Bellarine 6 from 12:00pm - 1:00pm. Peter Chubb will lead the discussion.
Two network overload case studies will be presented from 1:00pm-2:00pm by Dr. Bruce Nelson, of Auspex. Check with registration for the venue.

FaceSaver

Face the camera and be immortalised in an FTP file. Digital is sponsoring a delegate shoot in the downstairs exhibition area. Your face will be captured from a video source and printed into a directory. It will also be loaded to public FTP networks.
Shooting times are 10:00am-10:20/am, 12:00pm-2:00pm, 3:30pm-4:00pm and 5:30pm-6:00pm.

AUUG MEETINGS

Local Chapter Mtg - 1:00-2:00 in Howqua 1
AGM Meeting - 5:30 - 6:30 in LaTrobe

AUUG 1992 T-SHIRT

Have you got your FREE AUUG 1992 T-shirt? Present your voucher to AUUG booth staff in the lower exhibition area, name your size and grab the goodies while they last. Be warned - there are more delegates than T-shirts, so get in early.

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Keith Bostic, from Berkely, took the first plenary session, talking about the Free Software Movement, something that AT&T may not entirely agree with!

Corrine Moore talked to over 300 delegates about the K-Mart implementation of open systems, which spans 2,500 sites.

Of the afternoon sessions, Bruce Nelson received a great reception for his entertaining talk on functional multiprocessor architectures.

Today, it is Bill Coleman's turn to impress AUUG, with his history of open systems.

THANKS TO APPLE

Late on Tuesday Afternoon... In the hustle and bustle of the set up for AUUG, the organisers realised that, while they had everything ready to publish a conference newsletter every day, they didn't have a logo to put on it.

In desperation, the colour logo was scanned in on a Macintosh and saved in FreeHand, a Macintosh EPS program. The disk was then taken to the Apple stand, where Stephen McDonnell, network guru and nice guy, was asked to convert the file into something that could be used on the Sun publishing system.

Saving the file to a TIFF format seemed the easiest solution, this was done, and using a Macintosh utility, a DOS disk was formatted and the file was converted to DOS TIFF. But standards being what they are, the Sun couldn't recognise the file.

After much to-ing and fro-ing between Apple and Platform (FrameMaker), it was found that the original graphic file could be imported into FrameMaker on the Macintosh, saved in a MIF (Maker Interchange Format) file, put on a DOS disk and opened in FrameMaker on the Sun. Much to everyone's pleasure, this Open Systems stuff REALLY WORKS!

PRIZES GALORE

There are heaps of prizes on offer at the AUUG exhibition. Make sure you get your entries in.

Top of the prize tree is a seven day trip to Great Keppel Island, courtesy Australian Airlines and Australian Resorts. You must get the entry form stamped by nine members of Unix International (those companies with a globe over their stands). Entries must be left in the drum on the Pyramid Technology stand by 10:00am Friday.

APSF is giving away a handy Sharp Organizer. Deposit your business card on the stand to be in the draw.

Hewlett-Packard has a HP 95LX palmtop computer up for grabs. Again, drop your business card in the container.

Welkin Software is giving away two bottles of bubbly every day. Drop off your business card and there is a draw twice a day.

Prentice Hall has $150 worth of business books to give away. To enter, drop off a business card. The stand is near the entrance.

Finally, Executive Decision Systems is giving away free popcorn. Yum, yum.

WIZARD'S CORNER

See if you can decode this little riddle over a coffee. Yes, it is computer related, and yes, it might be a little bit blue.

D: Jung qb lbh trg jura lbh zretr VOZ naq INAT?

N: VOZ.

AUUG 1992 Maintaining Control in an Open World

/etc/cron/TIMES †

11 September 1992 **DAY 3**

SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY SHOW DAILY

CAMPBELL MCCOMAS FAKES AUUGASM

Speaking at last night's gala dinner, well known media personality Campbell McComas bought the house down with his first public AUUGASM(s) (AUUG Animated Stimulating Multiple Sensations).

McComas is no stranger to simulating reality, but this was his most challenging project to date. "It was a virtually real experience," he told /etc/cron/TIMES.

At one point, both Ian Hoyle and Robert Elz joined McComas on stage for a multiple AUUGASMS. "It was a stimulating experience" said an exhausted Hoyle afterwards.

AUUGASMs were developed by the AUUG Special Member Committee, a group of hardened individuals who will come at anything in the cause of a good party.

The guests at the dinner responded to McComas' AUUGASM magnificently, standing up to applaud, shouting in high pitched voices and starting a balloon battle before being packed off to bed by the convention organisers.

SPEAKER CHANGES

The keynote address will be delivered by Paul Cutt, Vice President of Engineering, Xtensory Inc.

Delegates are reminded of the change in running order for Sessions T3-1 and T3-3. They have been swapped. Andrew McRae will speak at 3:30pm, Greg Rose will talk about *fmake* after lunch

EVENTS

Exhibition hours are from 10:00am - 6:00pm.

Birds of a Feather

A Sun User Group BOF meeting will be held in the Bellarine 2 from 12:00pm - 1:00pm.

FaceSaver

This is your last chance to face the camera and be immortalised in an FTP file. Digital is sponsoring a delegate shoot in the downstairs exhibition area. Your face will be captured from a video source and printed into a directory. It will also be loaded to public FTP networks.

Shooting times are 10:00am-10:20am, 12:00pm-2:00pm, 3:30pm-4:00pm and 5:30pm-6:00pm.

Magic shows

Magician and Neil Diamond lookalike Phil Cass will be presenting his magic shows at 12:00am, 1:15pm and 3:30pm. They are well worth catching, even if you don't like Amdahl!

DOWN UNDER

Don't forget to check out the down under display, next to the lunch room. The exhibitors include Australian Pick Software Foundation, AUUG, Cadre, Com Tech, Computer Magazine Publications, Cyberscience, Pacific Computer Weekly, Pro Active Services and WJ Moncreiff.
The terminal room, better known as Wizard's Corner, and featuring Labtam terminals, is also on this level.

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Paul S. Cutt, Vice President of Engineering, Xtensory Inc, is giving today's keynote address - Business Applications for Virtual Reality. This is Cutt's only public presentation on his current trip to Australia.

Based in Scotts Valley, California, Cutt is an expert in real world virtual reality. He is a virtual reality veteran, which in VR terms means over two years experience in the field.

He believes that VR brings a new way of interacting with data, not just a collection of media stunts. So, when you get a feeling about your data, you can literally get a feeling - on your fingertips.

Delegates can experience Xtensory's inclusive virtual reality at stand 221. This may be a welcome return to reality after last night's extravaganza.

WIZARD'S CORNER

Q: What is the difference between a wizard and a guru?

A: Wizards know all the incantations, while gurus know the truth.

Q: Are you a wizard or a guru?

PRIZES AND WINNERS TOO

This is a final reminder to get your entries and business cards into the many prize draws at AUUG 1992.

Top of the prize tree is a seven day trip to Great Keppel Island, courtesy Australian Airlines and Australian Resorts. You must get the entry form stamped by nine members of Unix International (those companies with a globe over their stands). Entries must be left in the drum on the Pyramid Technology stand by 10:00am today.

Touchstone Software Solutions is going one better, with a free holiday to Penang (Malaysia). To enter you must be a mainframe user. Fill in the entry form at the Sequent stand.

Silicon Graphics is giving away an Iris Indigo. Fill in the form on the Silicon Graphics stand and leave it in the box to be in the draw.

A questionnaire in the visitor catalogue gives you the chance to win a PC running Solaris, or Progress software. Questionnaires must be returned by 15th September, 1992.

APSF is giving away a handy Sharp Organizer. Deposit your business card on the stand to be in the draw. Hewlett-Packard has a HP 95LX palmtop computer up for grabs. Again, drop your business card in the container.

Welkin Software is giving away another two bottles of bubbly today. Drop off your business card for the morning and afternoon draws.

On a winning note, Prentice Hall's $150 book packages have been won by Nancy Olson, of Computron Technologies, and Kevin Pereira, of TUSC Computer Systems. Please collect your prizes!

THANKS TO ACCI

The organisers would like to express their appreciation to ACCI for copying Day 2 of the /etc/cron/ TIMES.
Thanks also to Kester Cranswick of Point Partners for his editorial assistance in compiling the /etc/ cron/TIMES and the staff at Platform Technologies.

Production with compliments of Platform Technologies and FrameMaker ™

Who was who at AUUG 92 †

A light hearted look at who was who at AUUG 92.
Any offence given is unintended (whoops, who said that).

Jaap Akkerhaus: I have never ever met any other Dutchman with such an appetite for beer (esp. when we introduced him to coopers..)

Ian Hoyle: Don't give up your day job for dancing (I enjoyed the pasta though).

Michael Paddon: Did a great job convincing a SGI salesman to buy us several rounds of drinks, especially considering what time it was.

Greg Bond: I wish I could type as well as Greg tinkles the ivories - you have missed your calling.

Greg Rose: Never give that boy a *big* laser to play with.

Bruce Nelson: It's great to meet a yank who knows and enjoys good wine, and can then get up next day and talk as well as he did.

Liz Fraumann: You can relax now, it's all over (until the rush for AUUG 93 starts next week).

John O'Brien: Never talk to John about collecting garbage. Or voting.

John Lions: Gave a talk that raised more questions than it answered, which everybody in the audience then tried to answer.

Keith Bostic: I told keith he is starting to sound like Richard Stallman when he talks about free s/w. We agreed that we didn't know whether it was a good or bad thing.

Bill Coleman: The best speaker I have never heard. I just wish that I could have been there so that I could have wished to be somewhere else.

Glenn Huxtable: How can you sound rational at 2 AM with a balloon tied to your back?

Roel Pieper: The pied piper of USL. Now who are the rats again?

Craig Bishop: Data, data and more bl***y data. Bu***r the data, as long as the cats win.

Phil McCrea: How come I can never spell your name right?

Michael Podhorodecki: Next time, let's skip trying to design a multi-screened X terminal on the back of a serviette.

Peter Chubb: I'd know that beard anywhere. Why do kernel hackers have beards?

Tim Roper: What time zone are you in today, Tim?

Robert Elz: Touch my balloon, and you're .history

Peter Wishart: Turning over new leafs, trying to make chapters... If it all comes together we could write a book about it. (I *know* Sydney's a problem, but there are only so many hours in the day).

Faceless/nameless MD of Pyramid: You expect us to keep *quiet*?? Whose dinner is this anyway? And where are the wine glasses?

† Taken from the newsgroup aus.auug

Corrine Moore: A K-Mart operator is a single unit of calibrated user.

Peter Elford: Network Management from a Network Manager.

Ken Day: Laconic cop manages not to tell us how they catch the hackers, but tells us to tell him when we find one. Answers to questions were all the more amusing for what they didn't tell us.

Scott Merrilees: Fallen out of any planes lately? Getting DZ on the way down?

Chris Maltby: Don't mention those synch NFS writes again, or I'll emacs you...

Paul Mullenmeister: Ibuild, Ubuild, ve all vill build...

Jonathan Waldern: How to give a virtual presentation with a virtual speaker. Unfortunately the audience was real.

If I have missed anybody, then there's always next year.

Andrew McRae (andrew@megadata.mega.oz.au)

Impressions of AUUG '92

Tuesday evening

After flying in on the midnight horror and spending a hard day shopping, I was completely exhausted and hoped to put off conferencing until Wednesday. However at around 9pm I was abducted to a Lygon Street restaurant by a noisy rabble who turned out to be speakers and committee members. (Why did I expect them to be more dignified? They'd already been drinking for two hours.)

Thus began the most important and possibly the most enjoyable part of the conference - meeting people. This was my first AUUG winter conference, so almost everyone was new. There seemed to be two sorts of people: those who said "Oh, yes, I've seen your postings on the net", which was really nice; and those who said "I'll bet you get a lot of jokes about your name", which made me glad I'm not called Linda Lovelace. At the Tuesday night dinner there was also one who said "You're the Perl girl", which is true up to a point.

Wednesday morning

I managed to get up in time for the first talk - Roel Pieper from USL on "The Solution for 'Rightsizing' Corporate Computing". (Later, I met Roel but didn't recognise him! I guess people look different up close.) It was interesting to hear about USL's goals for the future and hopes for a single standard Unix. I managed to restrain myself from asking whether AT&T are attempting to use the lawsuit as a standardisation tool.

The second talk was a stroke of genius, although I suspect it wasn't quite what the programme committee expected. Keith Bostic from Berkeley expounded his opinions on free software - where "free" means "it comes with the source code", not "it doesn't cost anything". I'm not sure about his terminology, but I agree with his contention that software vendors will benefit by supplying source with their products. Sophisticated users will be able to customise the product to better fit their needs, and will probably fix bugs for the vendor, while unsophisticated users will not suffer any adverse effects from having the source code. Keith received the loudest and longest applause I've ever heard at a computing talk, then stood his ground and answered several "but what if..." questions. I don't know that all the vendors in the audience were convinced, but a lot of the users sounded like they were.

Once the audience had settled down again, Corinne Moore from Unisys told us about K-Mart's Self Supporting System (S3). K-Mart in the USA have about 2500 stores, each with Unix systems connected to a central site by satellite. Employees at the stores are generally computer-illiterate, so systems administration is done remotely from the central site. Thus if a problem occurs, the central administrators may get up to 2500 calls for help. So administration has been made more proactive with S3 - custom-developed software that runs on the remote systems to log changes and potential problems and report them to the central administrators. Its most interesting feature is that it has a rule base to help it interpret the information it gathers, so it can suggest what may happen or what action should be taken.

Lunch break: the conference luncheons were very nice but - I thought - overpriced. The fancy salad buffet wasn't really worth $25, although it was beautifully presented and the waitresses' and waiters' service was good.

Exhibition highlights

But lunch breaks aren't really for eating - they're for looking round the exhibition. By the end of the conference I'd managed to visit most of the stands that interested me, and some that didn't. Here are a few of the highlights as I remember them.

At the Auspex stand I was given a yoyo for asking "How much does it cost?" (even though the answer put Auspex's rather impressive NFS server out of my employer's budget). The yoyo doesn't work very well, by the way - it has a metal shaft on which the string doesn't grip properly.

At the Sun stand I was disappointed that there was no SPARCstation 10 to leer at. However, I was pleased to be able to examine a system running Solaris. They also showed me a couple of graphically-impressive software packages that I'm not convinced I or my users need.

The Comperex stand had no brochures on the Epoch "infinite storage server" - another one that interests me but that we can't afford. However, they were able to give me quite a good demo of Epoch's software. I should probably be glad they didn't give me one of those Epoch badges with three flashing red LEDs. (I didn't ask for one. I was later told you had to trade popcorn for them - but I have no idea whether that was true.) They did offer me an icecream, however.

The Silicon Graphics stand was popular with the flight-simulator game players, but I'm more the Tetris type.

Amdahl didn't seem to have any systems on show, but they did have a magician. I never saw his show, but I did meet him in the bar. He didn't know much about open systems - but then, who does?

At the Face Saver stand I surrendered my soul to the camera, which was difficult to do what with three ratbags - you know who you are - dancing about offering helpful advice such as "look up more" and "don't pose".

Near the Face Saver was the "terminal room" - not really a room, more a bunch of carrels with Labtam X-terminals. For some reason there were a couple of empty carrels. There was usually a queue - I'd like to see more terminals next year. Nevertheless I managed keep up with most of my mail.

The coffee station near the AUUG stand was the place to go for coffee and conversation - being downstairs it was less congested than the upstairs stations. I thought that having the exhibition on two levels disadvantaged those downstairs, especially with the down-escalator so well-hidden. I don't know whether this can be avoided at future Melbourne exhibitions. I hope the downstairs exhibitors paid less for their space.

Afternoon talks

In the afternoons I spent most of my time in the technical stream. I also attended a few combined-stream talks. The three streams are a good idea, allowing smaller, friendlier groups and more intensive material. I enjoyed the technical talks - some were more nuts-and-bolts than others, but all were definitely technical and there was a good range of topics. It seemed the technical stream was more popular than the organisers expected: after the first day the room had to be made bigger. (Good thing the walls in that place are movable.)

Rather than describing all the talks I heard, I'm going to mention a few that have particularly stuck in my memory.

Wednesday afternoon highlights

After lunch on Wednesday I heard Bruce Nelson's rapid-fire talk on the "Functional Multiprocessor Architecture" of Auspex's NFS server. Bruce had given the talk before in a much longer time-slot, and I found his fast pace hard to follow. But as far as I recall, the essential idea of the Functional Multiprocessor Architecture is that the system has several CPUs, each doing a particular task. For example, NFS requests are handled by a specialised CPU, rather than taking up time on the one running the kernel. The CPUs communicate over a special-purpose bus. This architecture, we were told (and it seems reasonable to expect), makes the server extremely fast.

Peter Elford's talk on SNMP (in the combined stream) was interesting and entertaining, although not what I expected. He described how at AARnet they have used SNMP to monitor the status and load of the various links that make up the AARnet. It seemed they had written their own tools rather than using a commercial network management product. I thought the talk presented more information about the loads on the various AARnet links than about how to use SNMP to help manage a network.

Wednesday evening

The cocktail party was well-attended and I met many interesting people (and some boring ones, of course:-). Afterwards I had dinner with about 12 delegates at another Lygon Street restaurant. The restaurant staff and other diners were perhaps a little jolted by the sight and sound of 12 noisy computer people, but they handled it OK. We had two American delegates with us and spent most of the evening discussing American and Australian politics rather than open systems (but what's the difference?:-)

Thursday

The first speaker on Thursday was Bill Coleman of SunSoft, on "The Open Systems Revolution". He gave quite a good history of what he termed the "waves of computing" since 1960, namely the mainframe, mini, PC and network waves, and described the present situation as he (SunSoft?) sees it, with the network wave not yet at its peak. However, I thought he spoilt the final, "future", part of his talk by turning it into a sales pitch for Sun's Solaris software environment. He claimed that we would end up with three "players" in the operating systems area - Microsoft Windows NT, "Apple/IBM" (including OS/2, AIX and the Mac operating system all in one corner of his triangular diagram), and Solaris. Make of this what you will.

Bill Coleman's talk introduced me to some new buzzwords - "legacy" systems, which I think meant mainframe operating systems, and "nitched", which I didn't understand at all. Applications on minis and PCs, we were told, are "nitched". Email me if you understood this:-)

Speaking of buzzwords, "rightsizing" was bandied about in more than one talk at the conference. This has to be the silliest piece of hype in years. I think it means "the right sized system for you is the one we sell".

After the coffee break I attempted to listen to Robert Peake on "Information Service Vision", but left after 15 minutes or so having decided the talk was not for me because I couldn't understand it. Seriously! I almost wondered if I'd walked into the wrong room. Maybe there was something in the coffee, but I just couldn't make out what the speaker was going on about so I decided to wander round the exhibition instead. (The virtual reality demonstration seemed much more tangible.) Presumably there are people who understood every word and could write a reasonable review of the talk, but it just seemed to be out of my field. I don't know if it had anything to do with open systems or Unix, although I think it had something to do with making money from computers.

I came back in the afternoon to the "combined" stream (that needs a better name, doesn't it?). Ken Day conducted an entertaining and enlightening question-and-answer session on the Australian Federal Police's role in trying to catch computer criminals. He exhorted us to tighten our security and to report

break-ins. The Federal Police have jurisdiction in a surprisingly large number of situations. Their resources are limited - with a team of only seven working on computer crime - so they can only investigate the more serious cases, but if people report break-ins it will help them find patterns of criminal activity.

For me, the other highlight of Thursday was Indulis Bernsteins' talk (in the technical stream) on the AIX Logical Volume Manager, something I wish more Unix systems had. The Logical Volume Manager lets you spread a filesystem (logical volume) across multiple disk partitions (physical volumes) or parts thereof. It also lets you increase the size of a filesystem "on the fly", without shutting the system down and repartitioning. As well as this you can do disk mirroring by having duplicate and triplicate logical volumes. It has been adopted by OSF. Count yourself lucky if it finds its way into *your* machine room.

Thursday evening - The Gala Dinner

The AUUG Dinner deserves a section all its own.

It began with pre-dinner drinks, basically a duplicate of the previous evening's cocktail party except that I talked to different people (I think - by this stage I was really starting to lose track of whom I'd met).

Then it was on to the dinner proper, in a room lavishly and garishly decorated with helium balloons and a lighted sign announcing that Pyramid Technology had sponsored the dinner. I don't really remember what we ate, except that it was very nice. Some of the more gluttonous members thought the portions were too small.

Some members also displayed a gluttony for balloons which I'm told is traditional at AUUG dinners. Normally-respectable members chased one another around the room in a way which goes to show they don't get enough time away from their terminals. I don't think anyone was hurt, although Glenn still hasn't got the wine out of his cream jumper.

The comic speaker, Campbell McComas, was cleverly amusing and had clearly done his research on Unix and open systems. His "open systems" character would have made a good keynote speaker:-).

For the rest of the evening we were "entertained" by a rather generic band whose name I forget. Not everyone wanted to dance (a good thing considering the distribution of sexes!) and for those trying to talk the music was too loud.

Nevertheless I think everyone had a good time, some in more ways than others, and when midnight came the convention centre staff had a hard time getting people to leave.

Friday

I didn't see any of the Friday morning talks. I didn't get up in time for the first one, and I'd been silly enough to volunteer to work on the AUUG stand between 10 and 12. This was a very slack job indeed. In the two hours I answered one question about AUUG and one about the location of the up-escalator. I also drank coffee and chatted to various people who dropped by, so it was quite a pleasant way to spend the morning after the dinner. Unfortunately it seems I missed some good talks.

Friday afternoon's technical talks ended the conference on a high note. Greg Rose's talk on `fmake`, a tool developed while Greg was at IBM's TJ Watson Research Center, was for me probably the most interesting talk of the conference . Greg described the Farm, a cluster of about 50 IBM RS6000s being used by the scientists at the research centre. When Farm users log on they are assigned to a machine by the system and do not necessarily know which machine they are using. The software environment therefore has to look the same on all the systems. Software and documentation change is managed by having a source tree whose structure mimics that of the tree of installed objects (where an object may be directory, a program, a manual page, or even the password file). `fmake` is a "meta-make" tool that

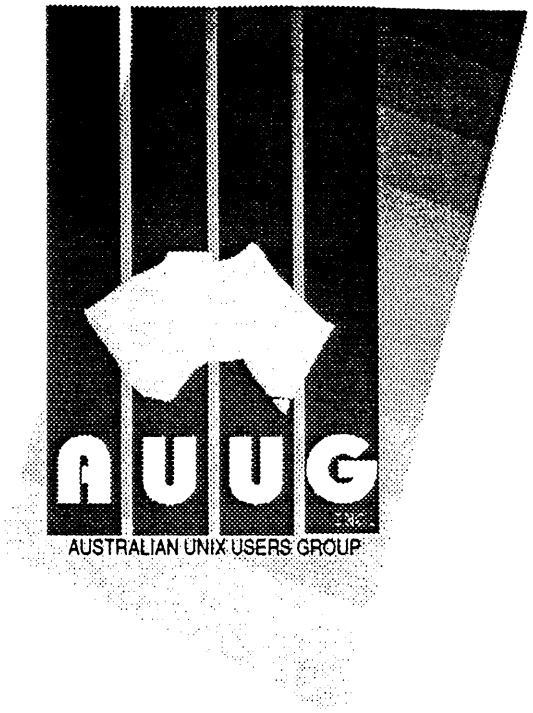
when applied to (part of) the source tree, installs all the objects represented there by running `make` with appropriate Makefiles. Most objects do not need specialised Makefiles, but can use a standard one with parameters "plugged in" by `fmake`.

The other highlight of Friday afternoon was the last technical talk of all, Keith Bostic again, this time on the log-structured filesystem (LFS) he and Berkeley graduate student Margo Seltzer are developing for 4.4BSD. This was definitely a work-in-progress talk - not everything works yet! In a log-structured filesystem, new and changed blocks, including meta-data (inode) blocks, are always written at the end of a sequential "log" of disk blocks. The idea is to minimise disk head movement. LFS is significantly faster than the existing Berkeley Fast File System. The problem, however, is garbage collection. Unless you have an infinite disk:-), blocks that are out-of-date - that have been replaced by newer ones further along in the log - must be reused. With LFS this is done by a "cleaner" process that runs in user space. Getting all this to work with Unix, and its assumptions about what the filesystem is doing, is not easy, and Keith described various problems that are still to be solved.

So that was AUUG'92, and I thoroughly enjoyed it. I returned to Perth rather tired but happy. Thanks to my employer for sending me to the conference. Their money was well-spent.

Janet Jackson <janet@cs.uwa.edu.au>

1992 Membership Survey



AUUG Inc., through input from the members, continues to improve as an organisation. Following is the results of a study of the members, their demographics and areas of expressed interest.

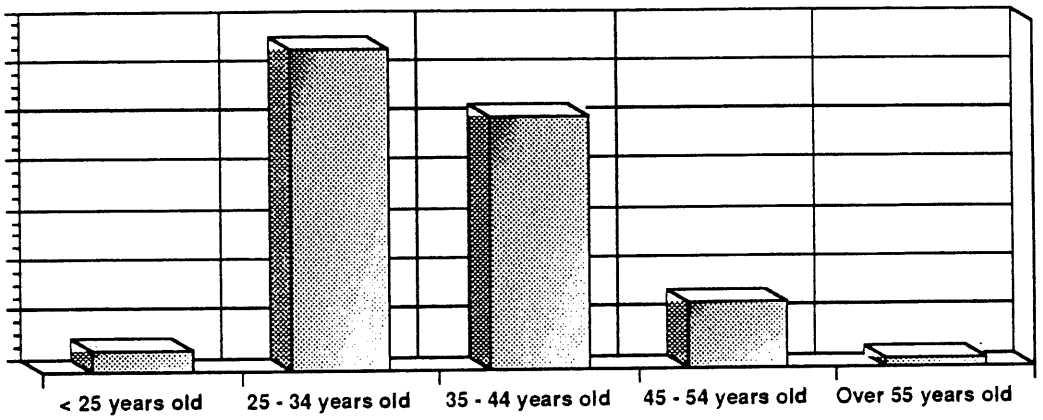
A total of 269 respondents are reflected in the graphs and commentary which follows. We look forward to the next survey and an even greater response from the members.

Results have been tabulated and compiled by Liz Fraumann, AUUG Inc. Business Mgr. Detailed information is available upon written request and a self addressed/post paid envelope.

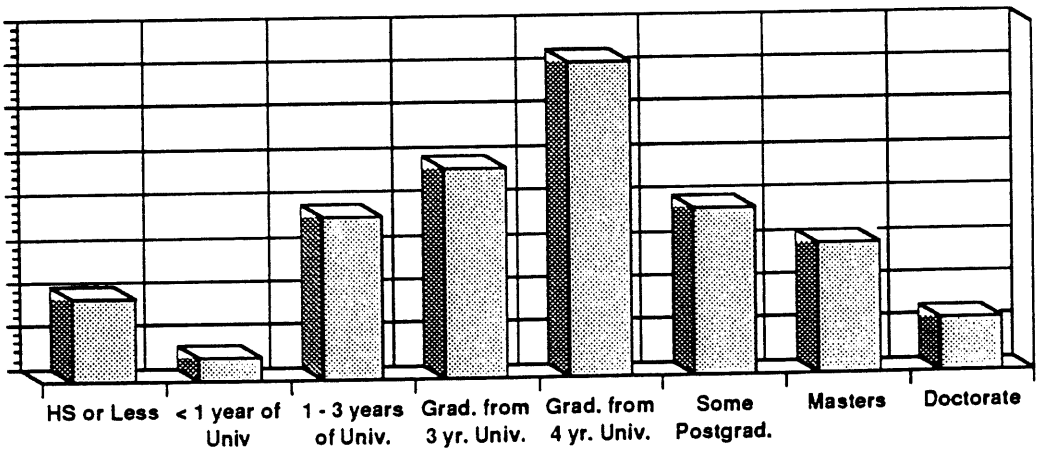
Demographics

"To know me, is to understand me..."

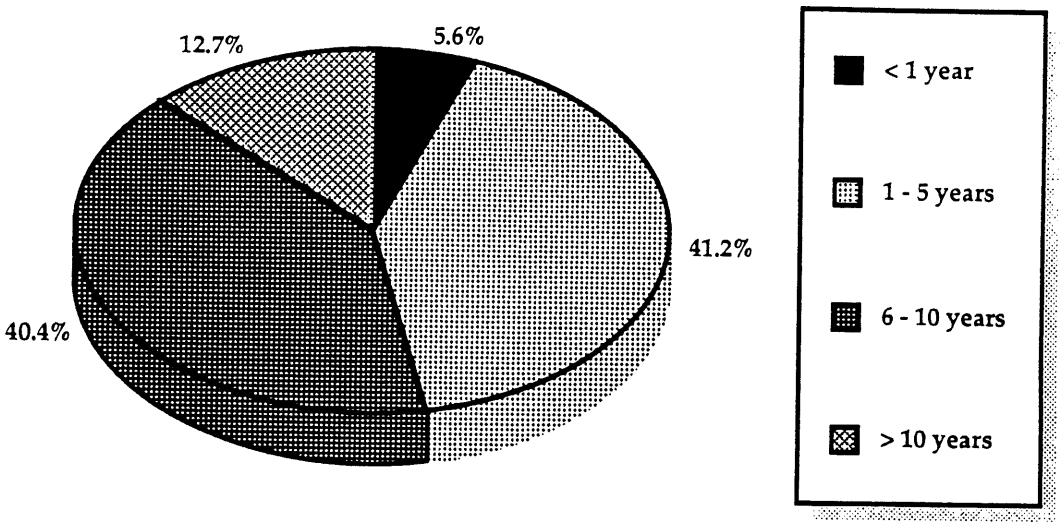
AUUG Age Groups



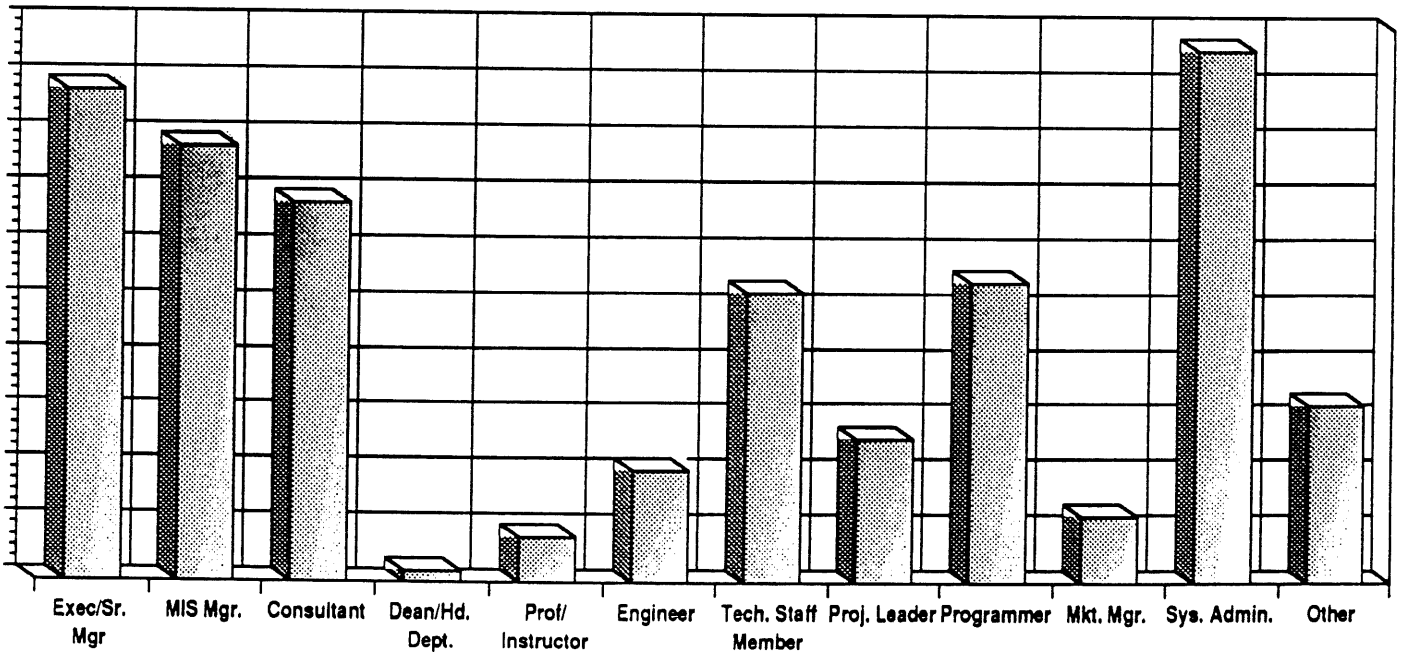
Education Level of AUUG Members



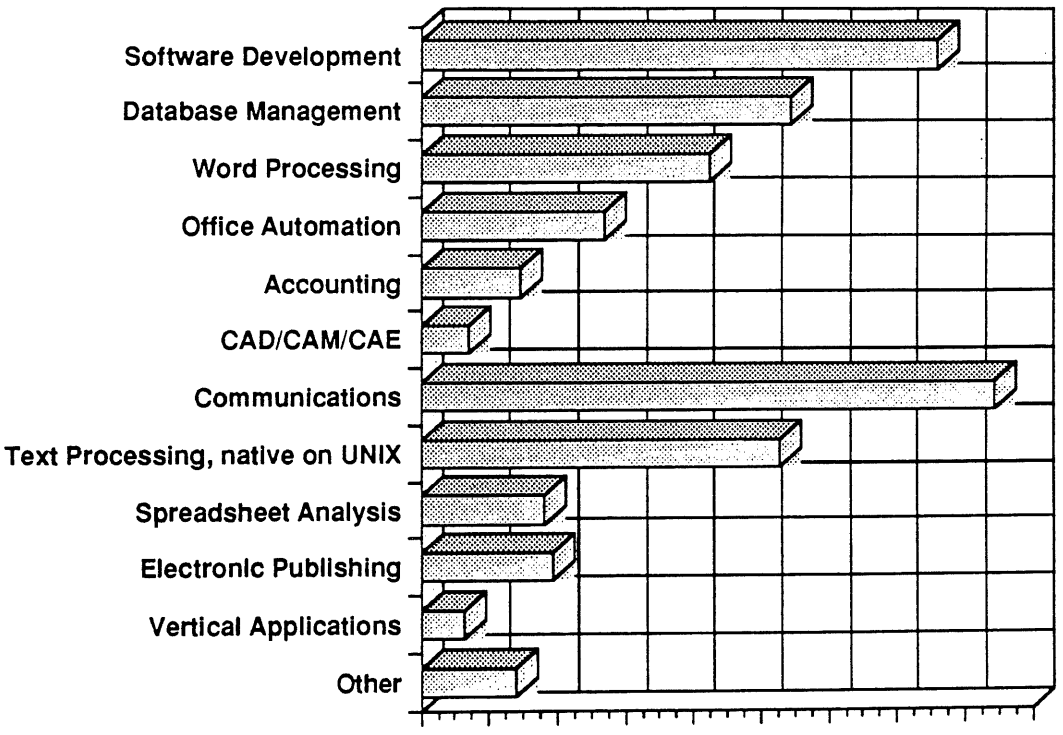
Years of Experience with UNIX®



Primary Job Function



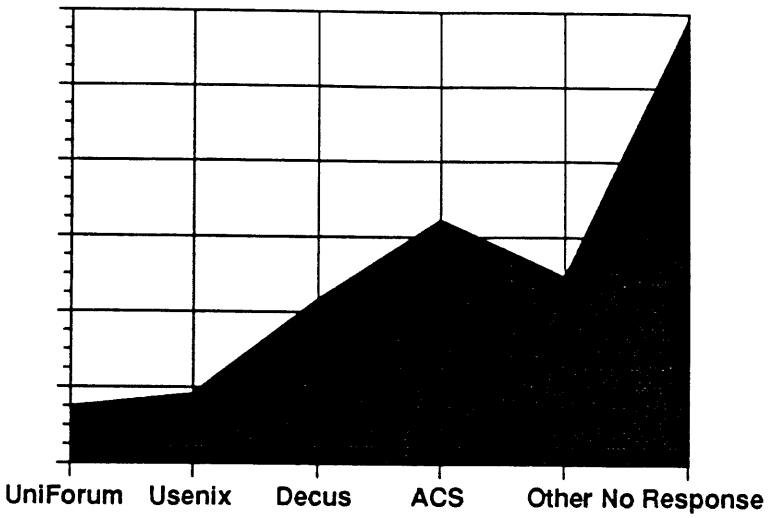
UNIX® Applications Personally Used



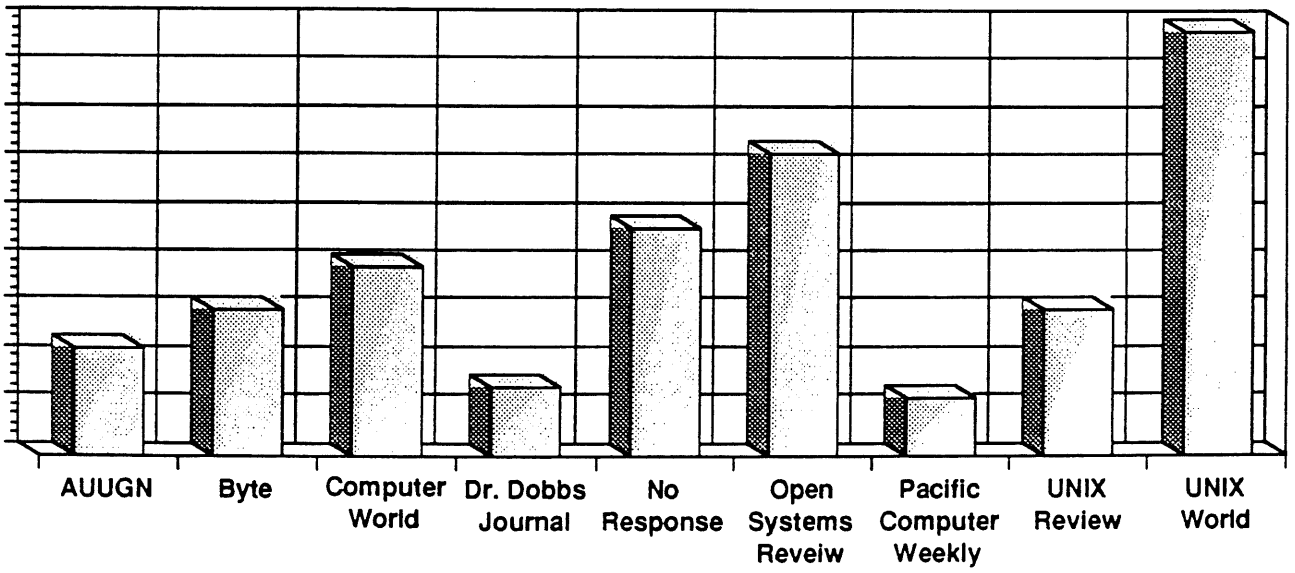
How, and the vehicles by which AUUG member choose to communicate with others is of great interest to the organisation.

Clearly depicted on the graphs to the right, AUUG's association with ACS and the targeting of the UNIX World publication are of greatest interest to the respondents.

Affiliated Association Participants

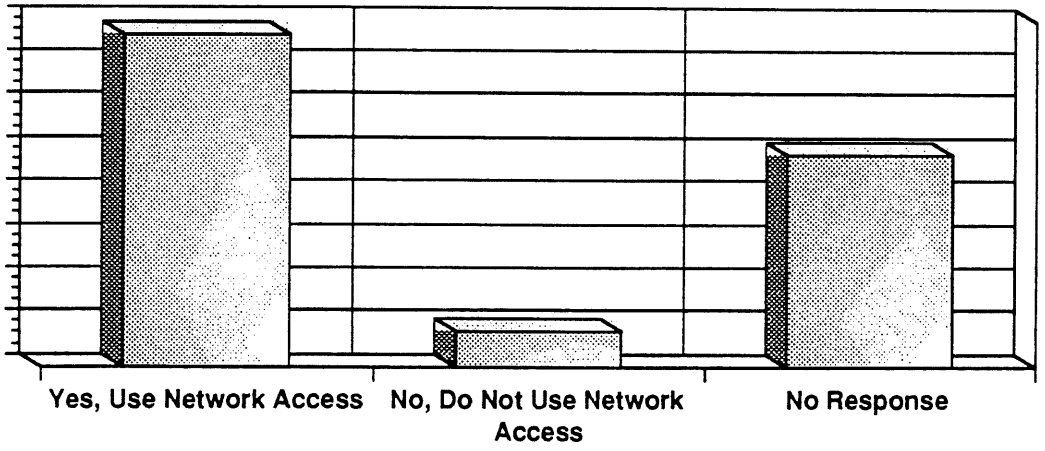


Most Informative Publications

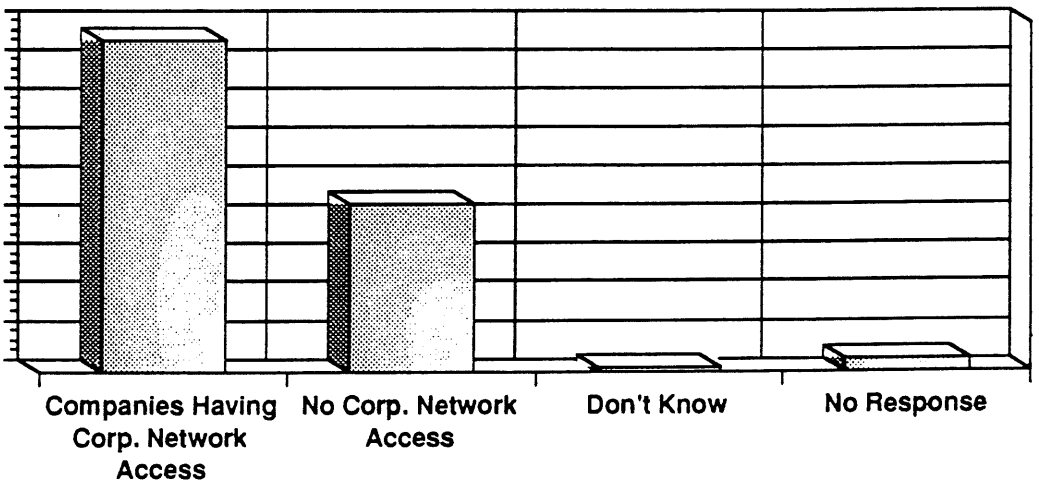


e-mail... viewed by many in AUUG, as the primary method by which to contact its members, has been indicated as a viable option. With continued access discounts to members as a benefit this method of communication should only increase.

Respondents Use of Network Access

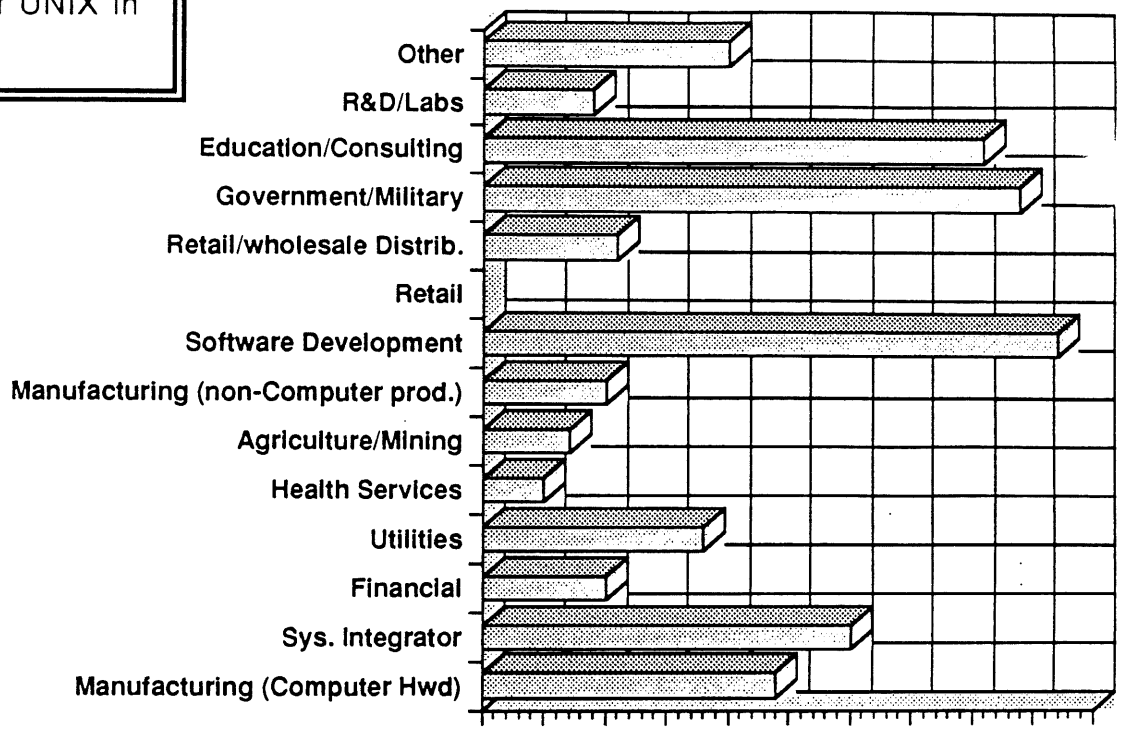


Corporate Access to Network

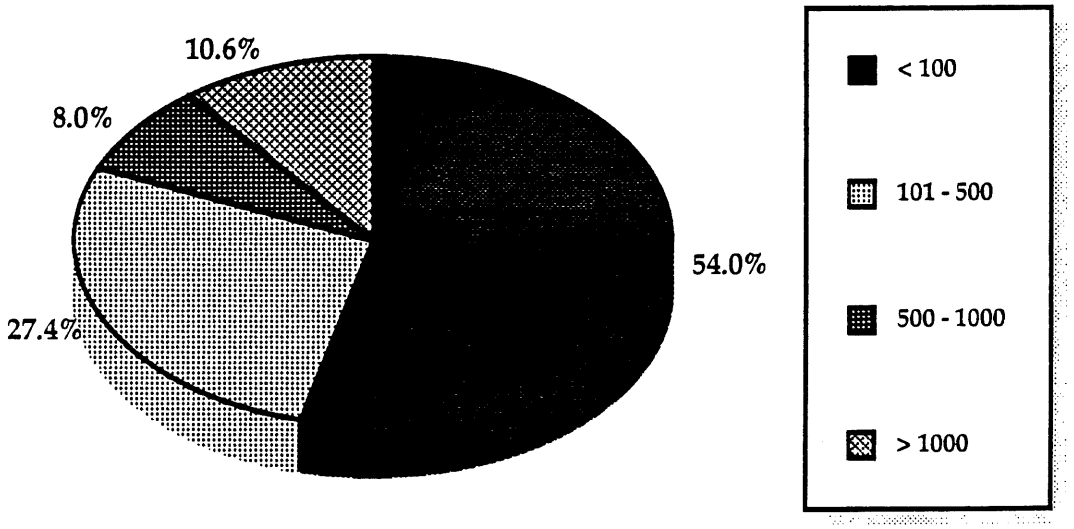


Institutional members, as well as the "employers" add a more detailed dimension to the demographics of the AUUG member and the shape of UNIX in Australia

Primary Business Activity

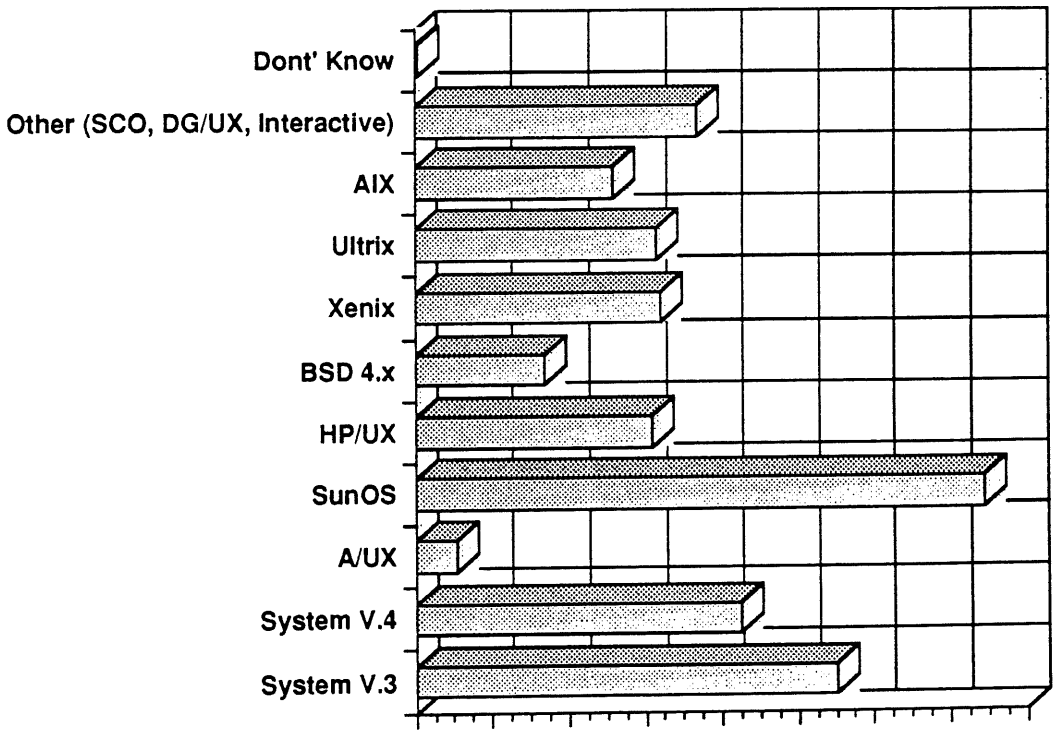


Number of Employees at Location



While UNIX as a whole continues to emerge as a standard in industry, the specific variants continue to explore and search for niches.

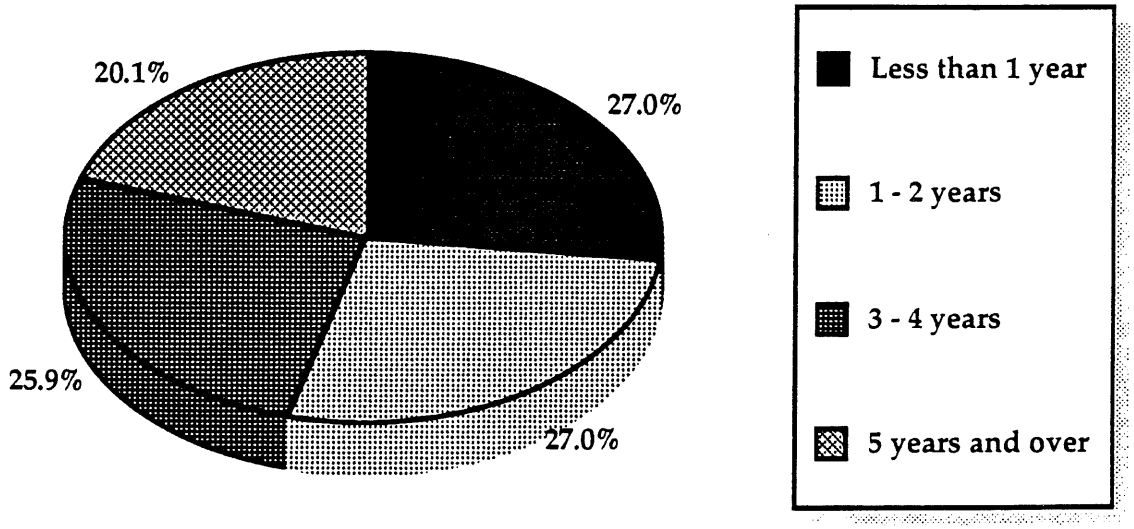
Versions of UNIX® Companies Use



AUUG... its duration, its role, its value, and suggestions

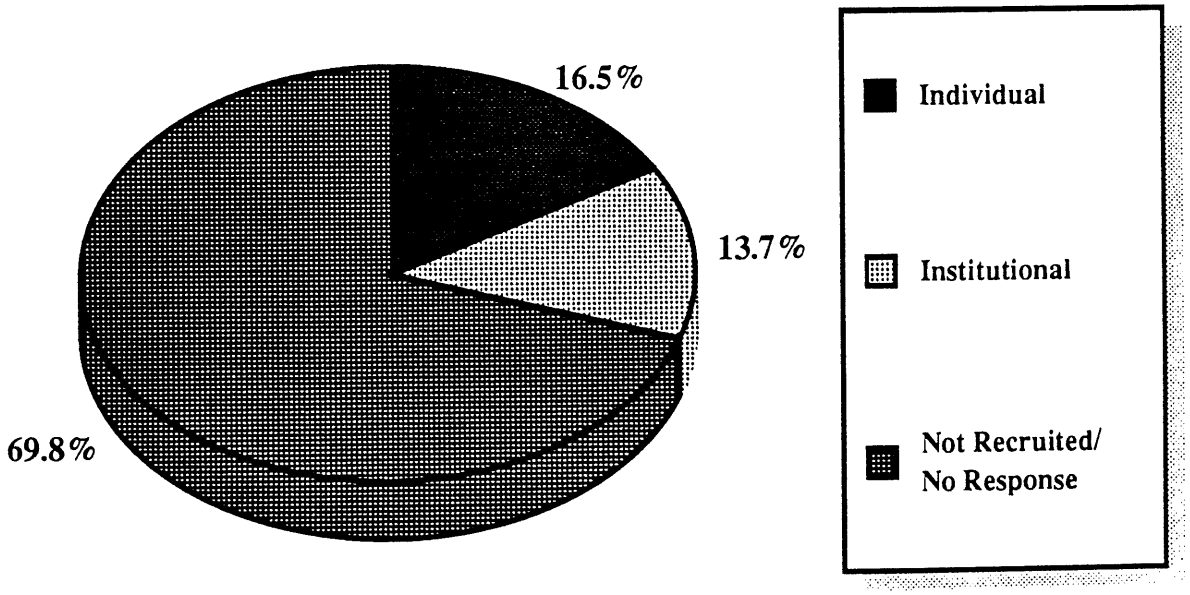
Bearing out the history of UNIX and its current growth in industry, AUUG membership indicates a steady growth over the past 10 years. As indicated on page... the graph of primary job function indicated a clear growth in commercialism of the UNIX market place with the interest of MIS Managers, Senior Managers, and Executives. Hence, a continued growth in organisations like AUUG where it is perceived information, contacts, and education will and do take place.

Length with AUUG



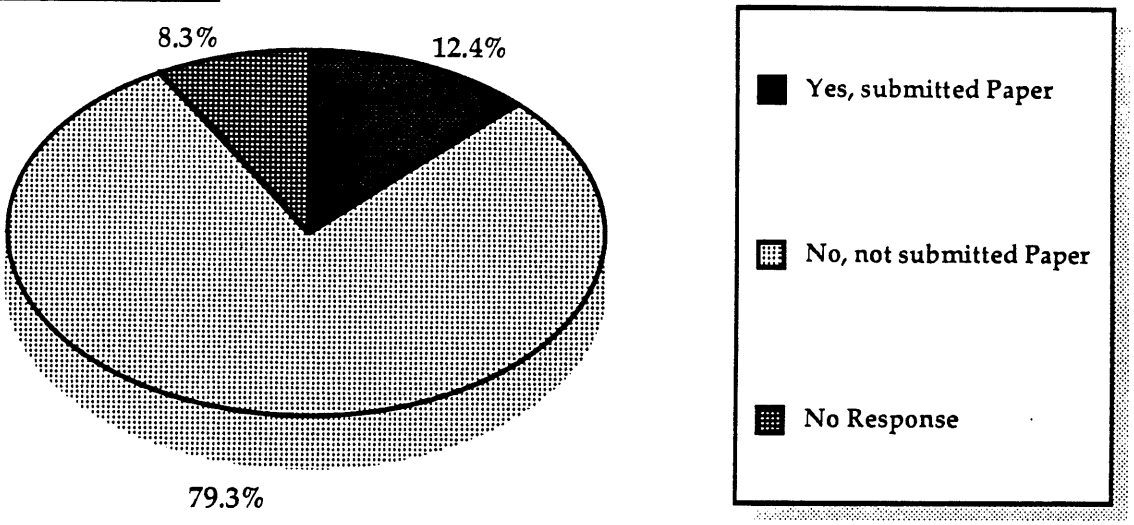
An interesting note, while one of the most effective methods of "advertising" is "word of mouth" and solicitation of peers, the statistics depicted in the graph below clearly indicate a grass roots recruitment campaign is in order.

Current Members Recruiting New Members



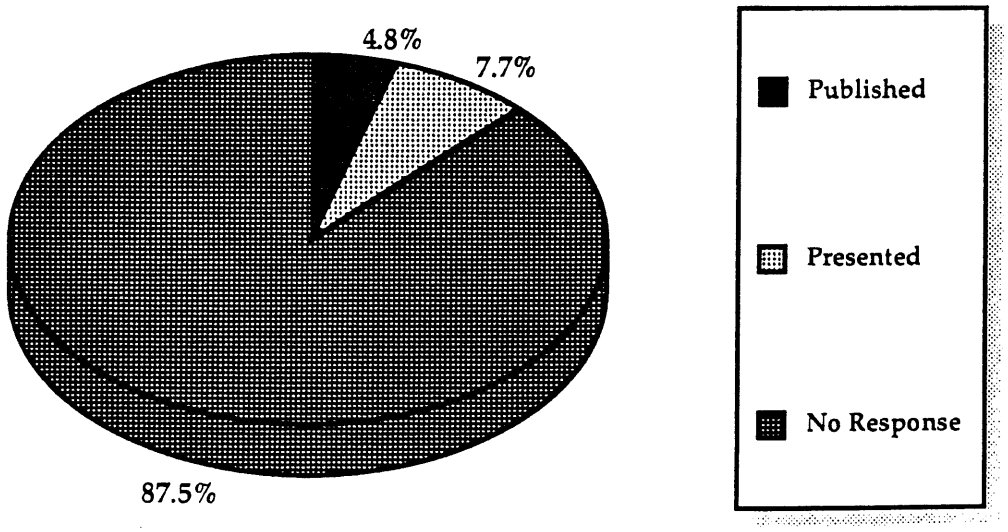
The graphs below suggest members would benefit from *Work Shops* associated with the Summer Conferences to gain skill in writing and presenting papers. Potentially a stream for "Work-in-Progress" reports as well.

Respondents Submitting Paper for Presentation or Publication



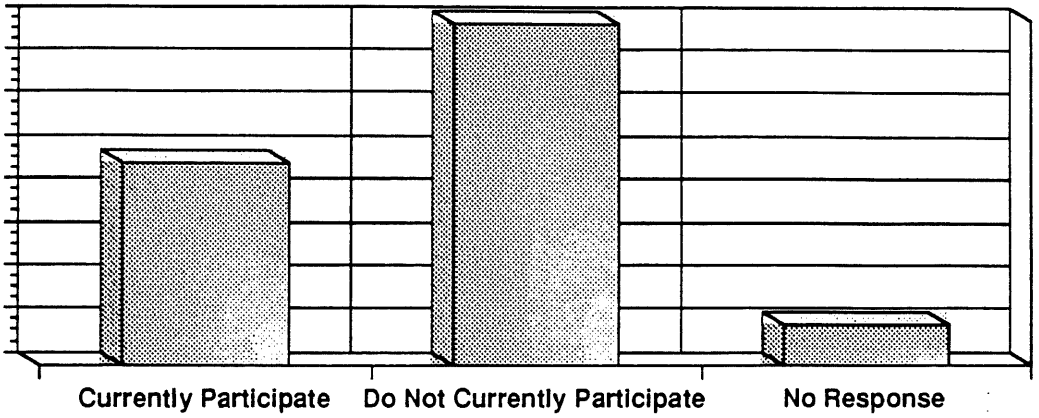
Predominant reason sited for not submitting was time and knowledge/skill level. Incentives to submit most sited were, time, corporate publicity, and money.

Results of Submittal

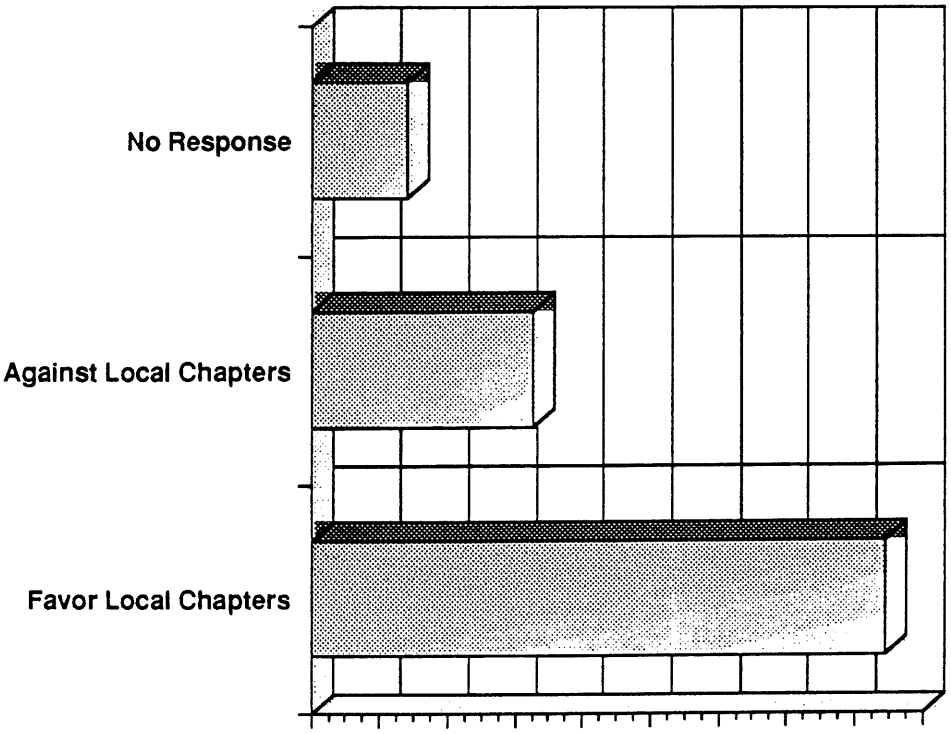


The graphs below clearly show the desire for more frequent meetings and opportunities for contact. It is believed with the establishment of Local Chapters the level participation in the Summer Conferences would also increase. Lack of participation, in part is due to lack of information at large as to the timing, venue, etc. of the Summer Conferences.

Current Participation in Summer Conferences



Response to Establishment of Local Chapters

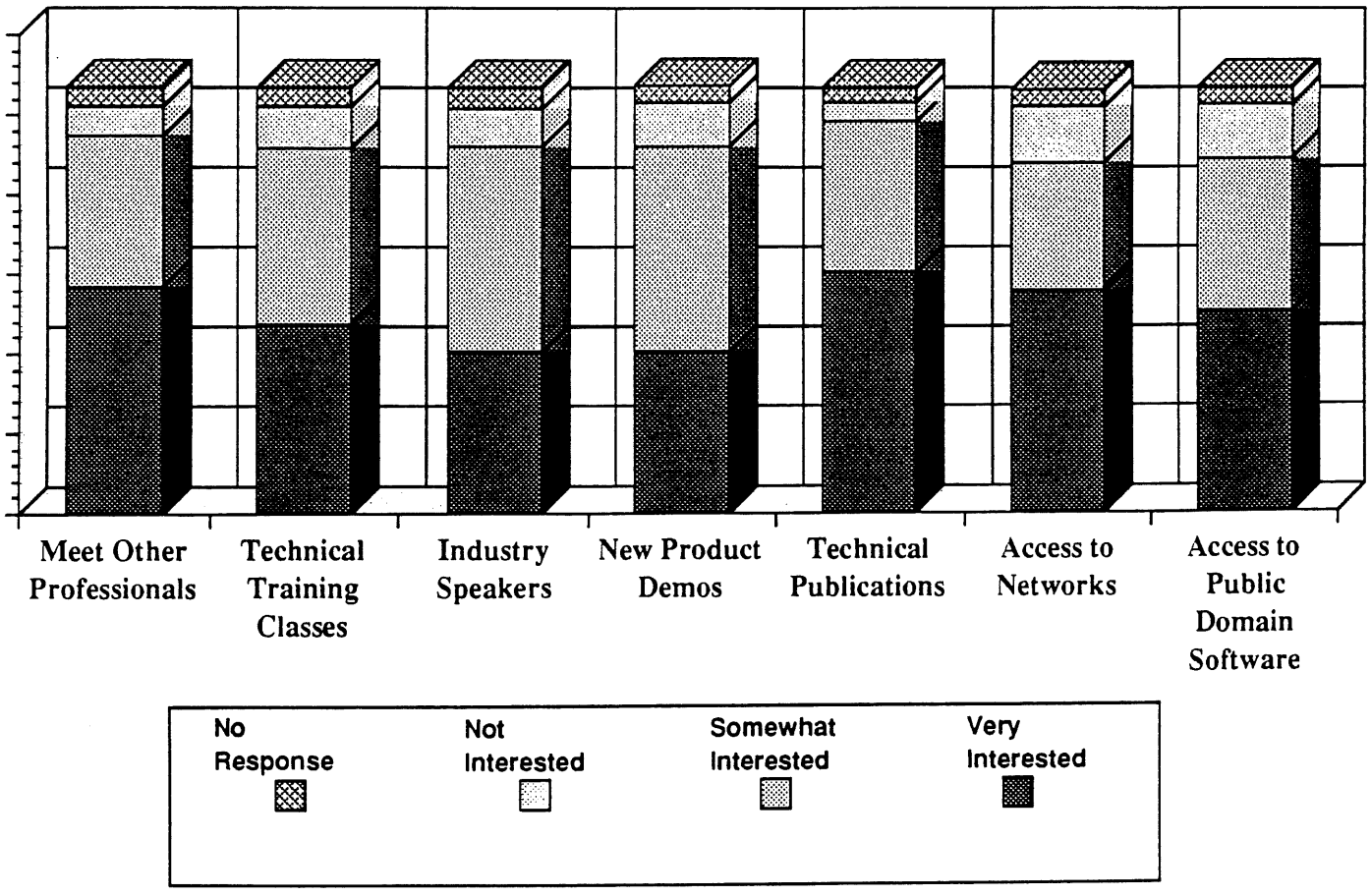


Greatest asset sited is increased activities and contact with peers.

Greatest fear sited is interstate rivalries and "We already have WAUG".

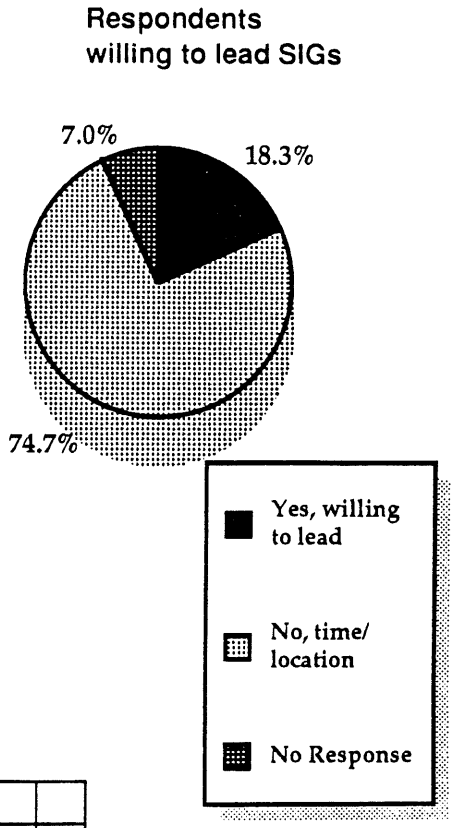
As indicated below, AUUG members who responded to the survey, have clearly indicated to the driving forces of the organisation that Technical Publications (*AUUGN*), Access to Networks, and Meeting Other Professionals are the areas of greatest interest. A specific suggestion was to divide *AUUGN* into two publications, a monthly newsletter with notification of activities in regions and local areas and a bi-monthly technical publication with detailed papers and market updates.

AUUG Activities of Interest

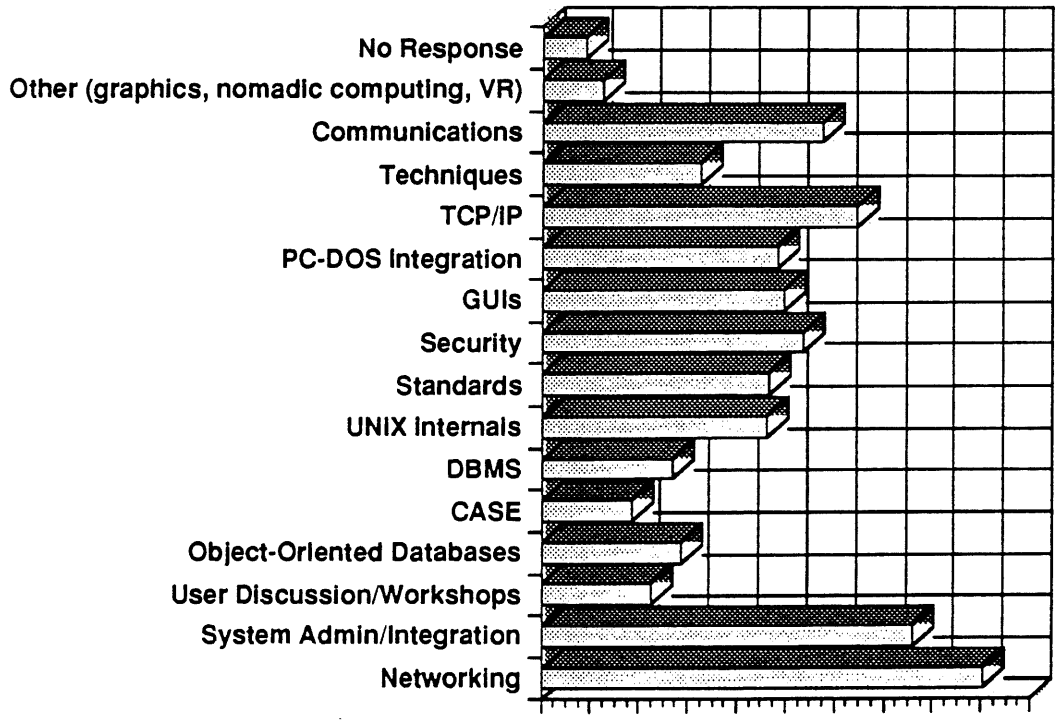


New to AUUG, Special Interest Groups, (SIGs) which could be sub-groups of the Local Chapters have been indicated as a keen interest by the members. Networking, Systems Administration, TCP/IP, and Communications leading the desired groups.

Like all new ideas, the SIGs will need to be communicated to all members with venue stated well in advance.

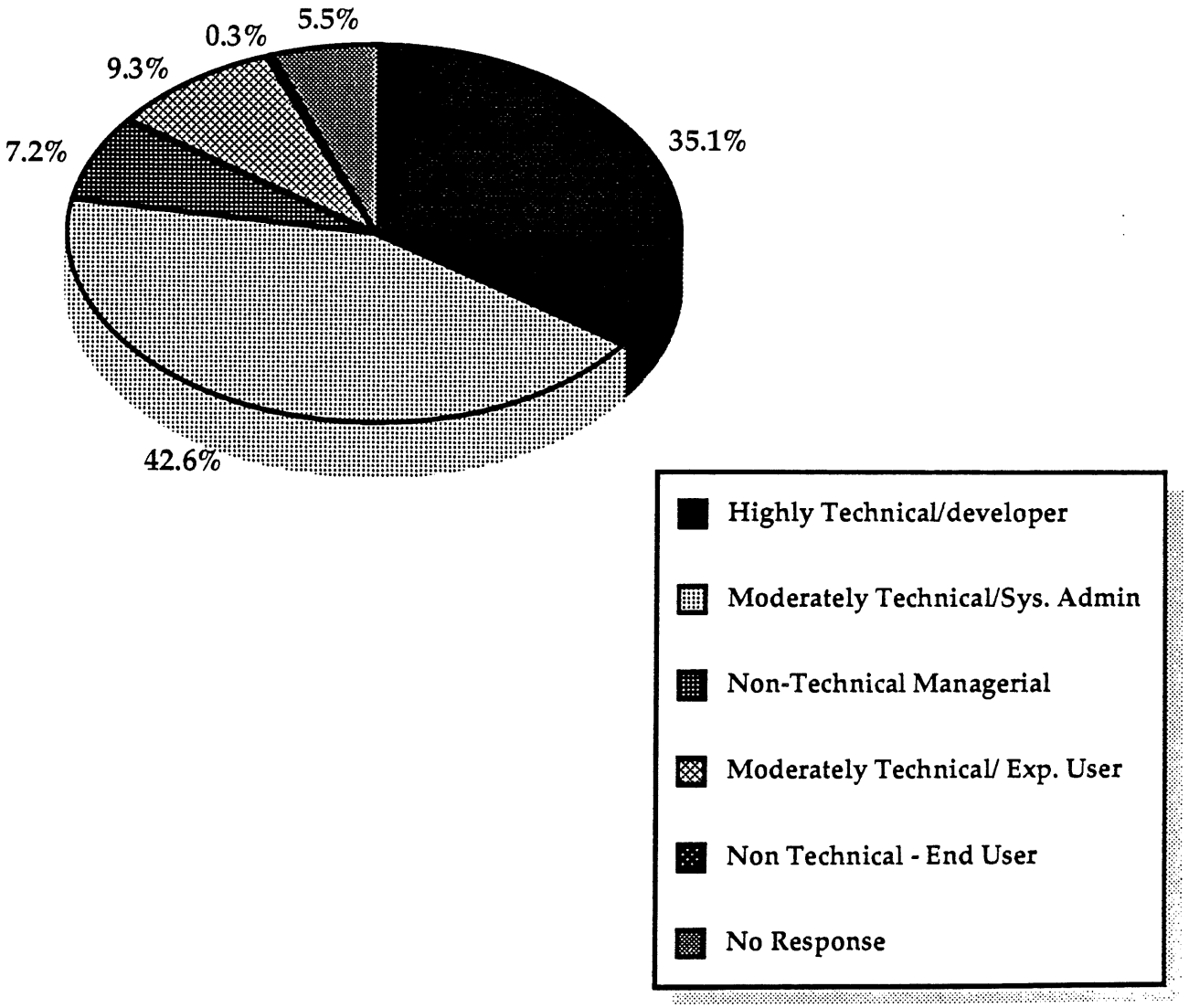


Special Interest Groups of Interest



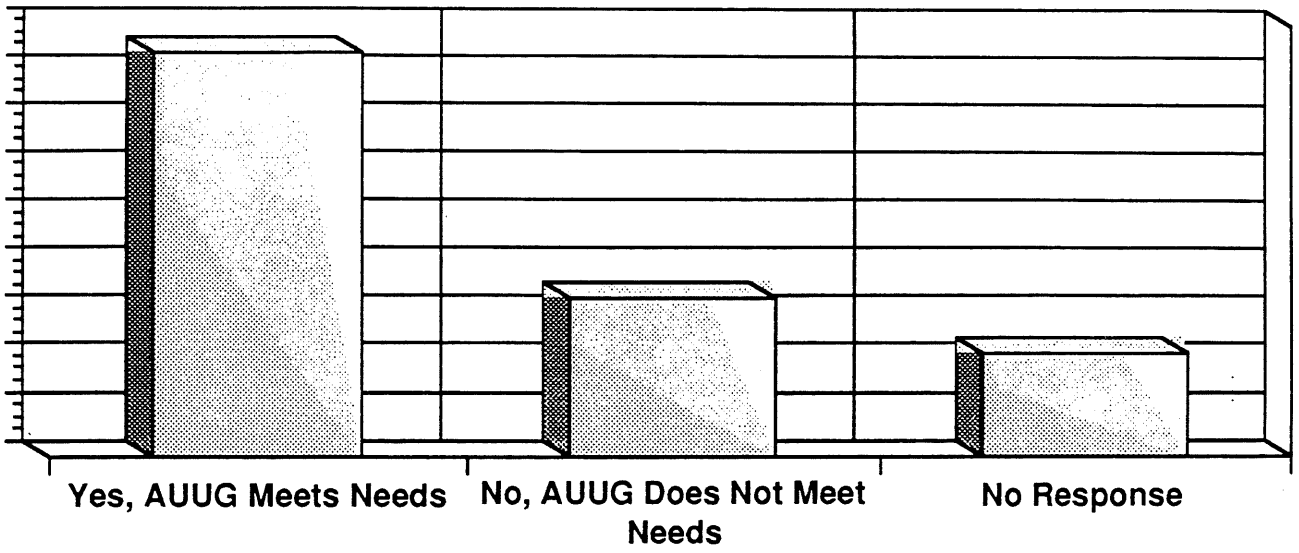
As indicated below, technical content is desired for all SIGs.

Desired Technical Level of SIGs



When asked the "Bottom Line" question, AUUG members who responded overwhelmingly said, "YES".

Does AUUG Meet Your Needs?



Reasons stated most often for meeting needs:

- *Good articles in AUUGN*
- *Information is relative*
- *Keeps me up to date*

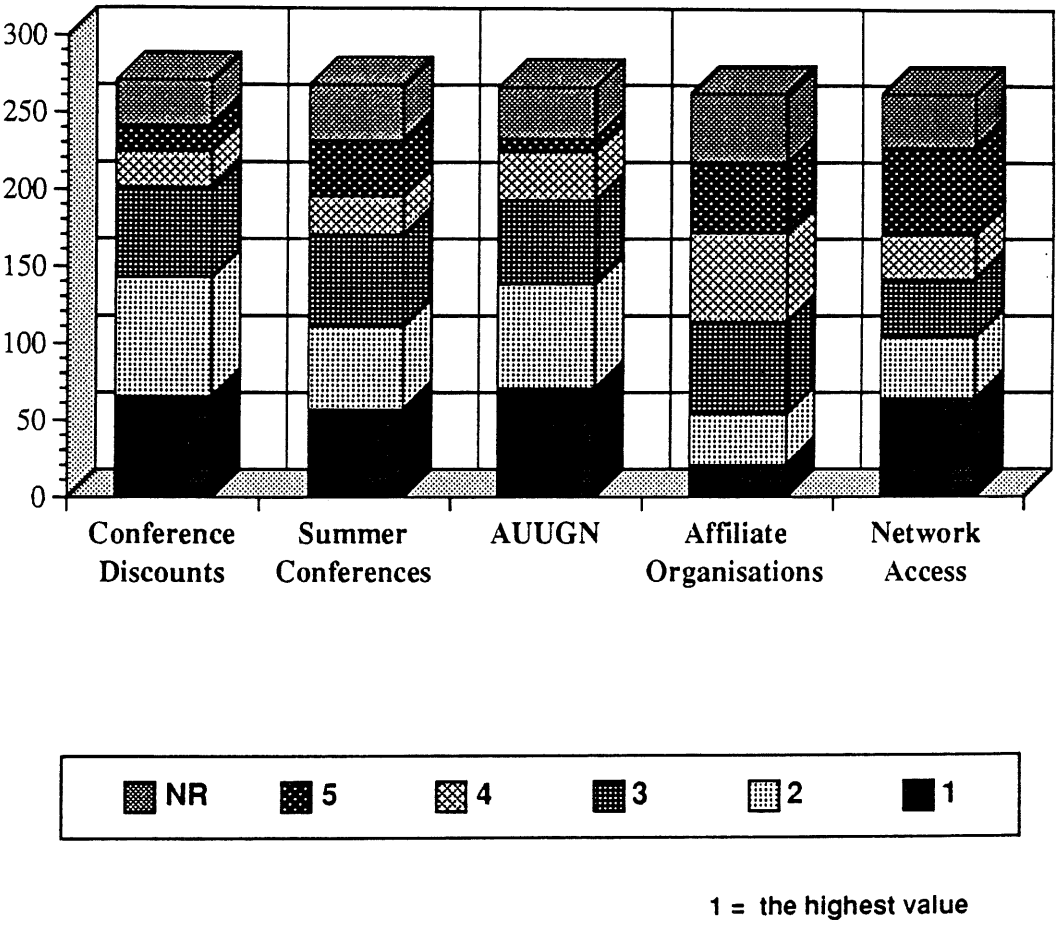
Reasons stated most often for not *meeting needs:*

- *Need closer contact*
- *Need to address business issues*
- *Product information needs to be made available*
- *Need more interaction between members, especially of similar interests.*

Reason most sited for NO Response *was new member and still accessing the full impact and participation in the organisation.*

Continuing to bear out the results of the entire survey, AUUG members clearly value *AUUGN*, Network Access and Conference Discounts the most, and offer suggestions for improvements.

Perceived Value of Participation in AUUG



1 = the highest value

To continue to improve value suggestions such as:

- ***Improve AUUGN***
- ***AUUG Network Access***
- ***Improve contact for new members***
- ***Concentrate on Winter Conference***

Sited most often, the following suggestions, several of which have been or are being implemented. show the interest in continued success of the organisation by it's members.

Suggestions for AUUG	*
Book Discounts	*
Rotate venue for Winter Conference	*
Increase UNIX Market Information	*
Introduction Booklet for New Members	*
Provide Local Server Machines	*
More Real World Articles in AUUGN	*

FOR IMMEDIATE RELEASE

AUUG Inc. and X/Open ANNOUNCE
PUBLICATION DISCOUNT TO AUUG MEMBERS

Sydney, NSW, 6 October 1992 -- AUUG Inc. and X/Open-Australia today announced AUUG members will now have access to X/Open documentation at a 12.5% discount. In a continuing array of benefits, President of AUUG Inc., Phil McCrea said, "We are pleased to offer our members access, at a discount, to such pertinent information as X/Open offers."

X/Open is a worldwide, independent open systems organisation dedicated to developing an open, multi-vendor Common Applications Environment (CAE) based on defacto and international standards. Specification of the Common Applications Environment is achieved through close cooperation between users, vendors and standards organisations worldwide. X/Open acts as a catalyst, identifying the user requirements through its Xtra Process (a very rigorous global survey, analysis and conference of working groups), identifying the technical components and solutions to meet these needs and working to define a set of specifications. Open systems can be built to conform with these specifications. The user is given the necessary assurance that the resulting product meets the requirements through a rigorous series of validation tests, leading to the award of an X/Open Brand. Products that carry the X/Open Brand form X/Open compliant systems which the user can acquire and use with confidence. XPG4 is synonymous with the process which now brings X/Open compliant systems to the marketplace.

Tony Blackmore of X/Open - Australia recapped, "There are now more than 60 X/Open publications ranging from the new XPG4 documents and firm specifications for many XPG components, through to migration guides and previews of future directions." New documents to be published this month include X/Open's Distributed Computing Services Framework, XDCS, a comprehensive blueprint for complete system environment that will allow open systems to better address the critical needs of enterprise-wide heterogeneous distributed computing.

more - more - more

AUUG members may obtain a full publications list and order publications by sending a fax or mail addressed to:

X/Open
P.O. Box 475
Ringwood, VIC 3134

Tel: 03 879-7412
Fax: 03 879-7570

Orders will be shipped directly from X/Open (UK) and are usually within customers' hands within seven days. To order, AUUG members will need to cite publication number and title. Prices listed will not indicate the AUUG discount, so members are asked to indicate this amount and site their AUUG membership number (on your membership card) and adjust total accordingly. All orders must be placed in writing and sent via mail or fax.

For further details contact:

Liz Fraumann
AUUG Business Mgr.
eaf@swift.sw.oz.au
02 953-3542 Tel.
02 953-3542 Fax

Tony Blackmore
X/Open - Australia

03 879-7412 Tel.
03 879-7570 Fax

Open System Publications

As a service to members, AUUG will source Open System Publications from around the world. This includes various proceeding and other publications from such organisations as

AUUG, UniForum, USENIX, EurOpen, Sinix, *etc.*

For example:

EurOpen Proceedings		USENIX Proceedings	
Dublin	Autumn'83	C++ Conference	Apr'91
Munich	Spring'90	UNIX and Supercomputers Workshop	Sept'88
Trosmo	Spring'90	Graphics Workshop IV	Oct'87

AUUG will provide these publications at cost (including freight), but with no handling charge. Delivery times will depend on method of freight which is at the discretion of AUUG and will be based on both freight times and cost.

To take advantage of this offer send, in writing, to the AUUG Secretariat, a list of the publications, making sure that you specify the organisation, an indication of the priority and the delivery address as well as the billing address (if different).

AUUG Inc.
Open System Publication Order
PO Box 366
Kensington, NSW, 2033
AUSTRALIA
Fax: (02) 332 4066

Following is a list of prices† provided by UniForum.

PUBLICATION ORDERS	Price		Postage/Handling		
	Member	Non-Member	Domestic	Canada	Overseas
CommUNIXations back issues*	$3.95	$5.00	$3	$5	$5
UniForum Monthly back issues*	3.95	5.00	3	5	5
UniNews Newsletter subscription	30.00	60.00	8	11	30
1992 UniForum Products Directory	45.00	95.00	7	15	55
1992 UniForum Proceedings	20.00	25.00	4	5	11
Your Guide to POSIX	5.00	10.00	3	4	9
POSIX Explored: System Interface	5.00	10.00	3	4	9
Network Substrata	5.00	10.00	2	3	6
Network Applications	5.00	10.00	2	3	6
The UniForum Guide To Graphical User Interfaces	4.95	9.95	2	3	6
Electronic Mail De-Mystified	5.00	10.00	3	4	9
The UniForum Guide To Distributed Computing(*)	4.95	9.95	2	3	6

† Prices in US dollars
(*) please specify issues

Host Name: _____

ACSnet Survey

1.1 Introduction

ACSnet is a computer network linking many UNIX hosts in Australia. It provides connections over various media and is linked to AARNet, Internet, USENET, CSnet and many other overseas networks. Until the formation of AARNet it was the only such network available in Australia, and is still the only network of its type available to commercial sites within Australia. The software used for these connections is usually either SUN III or SUN IV (or MHSnet). For the purposes of this survey other software such as UUCP or SLIP is also relevant.

At the AUUG Annual General Meeting held in Melbourne on September 27th, 1990, the members requested that the AUUG Executive investigate ways of making connection to ACSnet easier, especially for sites currently without connections. This survey is aimed at clearly defining what is available and what is needed.

Replies are invited both from sites requiring connections and sites that are willing to accept connections from new sites. Any other site that has relevant information is also welcome to reply (*e.g.* a site looking at reducing its *distance* from the *backbone*).

Please send replies to:

Mail: Attn: Network Survey
AUUG Inc
P.O. Box 366
Kensington N.S.W. 2033

FAX: (02) 332 4066
E-Mail: auug@atom.lhrl.oz

Technical enquiries to:

Michael Paddon (mwp@iconix.oz.au) (03) 571 4244
or
Frank Crawford (frank@atom.lhrl.oz) (02) 717 9404

Thank you

=====

1.2 Contact Details

Name: _____
Address: _____
_____
_____
Phone: _____
Fax: _____
E-Mail: _____

1.3 Site Details

Host Name: _____
Hardware Type: _____
Operating System Version: _____
Location: _____
_____
_____

New Connections

If you require a network connection please complete the following section.

Please circle your choice (circle more than one if appropriate).

A1. Do you currently have networking software? Yes No

A2. If **no**, do you require assistance in selecting a package? Yes No

A3. Are you willing to pay for networking software? Yes No
If **yes**, approximately how much? _____

A4. Do you require assistance in setting up your network software? Yes No

A5. Type of software: SUNIII MHSnet UUCP
TCP/IP SLIP
Other (Please specify): _____

A6. Type of connection: Direct Modem/Dialin Modem/Dialout
X.25/Dialin X.25/Dialout
Other (Please specify): _____

A7. If **modem**, connection type: V21 (300 baud) V23 (1200/75) V22 (1200)
V22bis (2400) V32 (9600) Trailblazer
Other (Please specify): _____

A8. Estimated traffic volume (in KB/day): (not counting netnews) < 1 1-10 10-100
> 100: estimated volume: _____

A9. Do you require a news feed? Yes No
Limited (Please specify): _____

A10. Any time restrictions on connection? Please specify: _____

A11. If the connection requires STD charges (or equivalent) is this acceptable? Yes No

A12. Are you willing to pay for a connection (other than Telecom charges)? Yes No
If **yes**, approximately how much (please also specify units, *e.g. $X/MB* or flat fee)? _____

A13. Once connected, are you willing to provide additional connections? Yes No

A14. Additional Comments:

Host Name: _____

Existing Sites

If you are willing to accept a new network connection please complete the following section.

Please circle your choice (circle more than one if appropriate).

B1. Type of software:
SUNIII MHSnet UUCP
TCP/IP SLIP
Other (Please specify): _____

B2. Type of connection:
Direct Modem/Dialin Modem/Dialout
X.25/Dialin X.25/Dialout
Other (Please specify): _____

B3. If **modem**, connection type:
V21 (300 baud) V23 (1200/75) V22 (1200)
V22bis (2400) V32 (9600) Trailblazer
Other (Please specify): _____

B4. Maximum traffic volume (in KB/day): (not counting netnews)
< 1 1-10 10-100
> 100: acceptable volume: _____

B5. Will you supply a news feed?
Yes No
Limited (Please specify): _____

B6. Any time restrictions on connection?
Please specify: _____

B7. If the connection requires STD charges (or equivalent) is this acceptable?
Yes No

B8. Do you charge for connection?
If **yes**, approximately how much (please also specify units, *e.g. $X/MB* or flat fee)?
Yes No
_____

B9. Any other restrictions (*e.g.* educational connections only).?

B10. Additional Comments:

AUUG Chapter Rules and Policy

Request for Comments

1. Introduction

The AUUG Management Committee is formulating policy and rules for the operation of chapters. There are two documents which have been drafted by the committee and which are being made available for member comment. The two documents are:

(1) Chapter General Rules - this is a statement of the rules that apply to the operation of chapters. It covers the obligations of chapters and the rules of operation.

(2) Chapter Policy - this is a statement of the current Management Committee policy on chapters. It outlines the basic principles that the committee will apply to forming and running chapters and shows the funding arrangements that apply to chapters.

The rules apply to chapters seeking regular funding to support member actitivies. Special chapters not requiring regular funding are still possible and will be negotiated by the management committee on a case by case basis (see section 4.13 of the Chapter Policy document).

2. Comments from Members

The Management Committee is seeking comments from AUUG members on the proposed rules and policy. Any comments can be sent to the AUUG Secretary via any of the following mechanisms

written comments to the AUUG Secretariat (P.O. Box 366, Kensington NSW 2033, FAX: (02) 332 4066)

e-mail to auug@munnari.oz.au

posted to the electronic news group aus.auug

direct to the Secretary (Peter Wishart), Email: pjw@lobo.canberra.edu.au, Phone: (06) 261 2894 or FAX: (06) 261 3806

All comments recieved by any of these means by the end of October 1992 will be considered by the Management Committee before final decisions are made.

3. The Process

The AUUG Constituion empowers the Management Committee to determine the "general rules for organisation, operation, obligations and privileges of chapters". The committee is now seeking comments from members on proposed rules and policy. Once comments have been received the committee will formally constitute the rules via a motion at a committee meeting.

The committee will then facilitate the creation of chapters in local regions through chapter committees. These chapter committees will then be given funding and administrative support to allow the start-up of chapter actitivies.

The success of chapters in the regions depends on the willingness of local volunteers to organise chapter activities. If you would like to be involved in the organisation of a chapter in your region please contact either Glenn Huxtable (AUUG Vice-president) or Peter Wishart (AUUG Secretary). The contact details in the front section of AUUGN.

Peter Wishart
AUUG Secretary

Chapter Policy

1. Introduction

1.1 This paper describes the current management committee policy on the operation of chapters.

2. Structure of AUUG Chapters

2.1 Chapters will be regionally based. The Management Committee will facilitate the creation of chapters in all major regions.

2.2 The aim of chapters is to provide better services direct to the membership and to foster communication between members. AUUG has the potential to provide local technical peer groups where members can share information and experiences.

2.3 To do this it is intended to provide support for chapters to undertake activities for the benefit of members in their region. Events like:

(a) regional summer conference
(b) regular technical seminars and meetings
(c) organising local seminars for visiting national speakers
(d) local newsletters
(e) technical libraries
(f) access to electronic networks (AARNet, USENET ...)

2.4 It is expected that chapters will, as a minimum, provide for quarterly technical meetings of members.

2.5 Not all activties will be appropriate to all chapters, so decisions about what actitivies are appropriate for a particular chapter will be left to the members of that chapter.

2.6 The main thrust of chapters will be regional, however the Management Committee will always consider proposals for actitivies conducted outside regional chapters. For example, the organisers of a technical conference or meeting may not wish to work through a local chapter. In these cases the Management Committee can make resources available directly to the group of members who are running that actitivy.

2.7 As with any volunteer organisation, AUUG relies heavily on members willing to donate their time and expertise. While the Management Committee can provide some level of support, chapters will only be successful if there are local members willing to actively participate.

3. Rationale

3.1 The chapter general rules have been formulated using the following objectives:

(1) let chapters work within the existing Constitution.

(a) allow a chapter committee to have as many members as it wants. This is a way of getting people involved in Chapter operations. But also allow a chapter committee to be as small as 2 people (Chairman and Secretary/Treasurer, the minimum required by the Constitution).

(b) allow members to chose which chapter they wish to belong to. If they don't want to belong to any chapters then their money gets used generically to support member actitivies.

3.2 Management Committee is the body charged in the Constitution with managing AUUG's affairs. This includes oversight of the financial affairs of AUUG and ensuring that actitives and undertakings enterred into in AUUG Inc.'s name are consistent with aims and objectives of AUUG and the current policies of the Management Committee. So it is necessary for the Management Committee to be kept informed about the actitivies of Chapters.

3.3 Chapters are not formal bodies in their own right. They enjoy the protection of AUUG's constitution through the Management Committee. Chapters can only enter into contracts and commitments with the consent of the Management Committee. Any such contract and commitments are enterred into on behalf of the Management Committee and the Management Committee remains responsible.

3.4 The general rules provide a mechanism for the Management Committee to ensure that it is kept informed about the actitivies of chapters so that it can meet its obligations as mandated by the Constitution. The Management Committee may, from time to time, change the general rules.

4. Commitments from the AUUG Management Committee

4.1 The Management Committee will set aside a proportion of the annual subscription fees for Chapter activities:

(a) Twenty (20) percent of each members annual subscription fees will be available to be used as a direct chapter contribution. Such money can be delegated to a chapter nominated by each member, for use by the chapter as defined in the general chapter rules and subject to other policies as determined from time to time by the Management Committee.

(b) In addition, at least twenty (20) percent of each annual subscription fee will be used by the Management Committee to foster Chapter activities. Such money will be used in support of Chapter activities in a manner determined by the Management Committee.

4.2 Institutional members may have one (1) individual participate in chapter activtities as a full chapter members (i.e. with full voting rights), AND for no fee, two (2) nominated individuals eligible to participate in chapter activities, AND other individuals upon payment of a fee equal to forty (40) percent of an individual membership fee for each individual. The fee will be treated as the chapter components of an individuals fee and will be used in the manner described in this policy. Only the first individual nominated by an Institutional member will be eligible to vote in chapter elections or nominate for chapter committees. (See chapter general rules)

4.3 If an AUUG member indicates their preference to join a chapter then the Management Committee will make the direct chapter contribution available to the indicated chapter.

4.4 If a member does not indicate their preference for a chapter then the direct chapter contribution will be used to support Chapter activities in a manner determined by the Management Committee.

4.5 The Management Committee recognises the special needs of members who reside outside the cities which host the national winter conference (Sydney and Melbourne). These members do not have the same opportunity to attend AUUG's premier event as other members. The Management Committee will use its discretionary Chapter funds (20% as above) and other AUUG funds to provide greater financial support for chapters outside Sydney and Melbourne.

4.6 The Management Committee will coordinate national speakers on subjects of interest who will be available to speak at chapter meetings.

4.7 The Secretary will provide to each chapter a complete list of chapter members.

4.8 The Management Committee will convene an annual meeting of all Chapters. This meeting will be called the Chapter Council Meeting. The Chapter Council will make recommendations to the Management Committee regarding the running of chapters and the use of chapter funds.

4.9 This Meeting will be an opportunity

(a) for Chapters to provide input into the operation of AUUG. for Chapters to meet and exchange information.

(b) for the Management Committee to review the operation of the Chapters.

4.10 The Management Committee will refund reasonable costs associated with the attendance at the Meeting of one delegate from each chapter.

4.11 All resolutions of the Council will be put to the Management Committee.

4.12 Access will be provided to AUUG resources (like the Secretariat) as required but will require prior approval from the Management Committee.

4.13 There may be groups of members who wish to organise chapters which do not directly fit the model proposed by this policy. For example, chapters which organise limited or specialised activities, do not necessarily have chapter membership, or do not wish to receive regular funding from AUUG but who still wish to enjoy the protection and support of the AUUG Management Committee. Such chapters may be formed with the agreement of the Management Committee and under such conditions as determined by the Management Committee on a case by case basis. It is expected that some, but probably not all, of the chapter general rules would apply to such chapters. Funds would be made available upon application and at the discretion of the Management Committee.

General Rules for Chapters

Chapter Rules from the Constitution

The AUUG Constitution has rules on the formation and running of chapters. Those rules are:

30(1) Ten or more members of the AUUG may petition the Management Committee to form a chapter of the AUUG.

(2) General rules for organisation, operation, obligations and privileges of chapters shall be resolved by the Management Committee or the membership as a whole from time to time.

(3) Each chapter shall appoint a chapter committee consisting of at least a Chapter Chairman and a Secretary/Treasurer.

(4) The chapter committee may convene meetings consistent with the aims of the AUUG, but may not enter into any financial commitments on behalf of or in the name of AUUG except with the written approval of the Management Committee.

The following general rules shall apply to chapters.

General Rules

1. Definitions

1.1 "Constitution" refers to the Constitution of AUUG Inc.

1.2 "Management Committee", "President", "Vice-president", "Secretary" and "Treasurer" are as defined in the Consitution.

1.3 "AUUG member" refers to a member of AUUG Inc. as defined in the Constitution.

2. Chapter Membership

2.1 Each AUUG member may be a member of one (1) chapter. They shall indicate their preference on their membership application/renewal form or by writing to the Secretary. Any member who does this shall be deemed to be a chapter member of that chapter.

2.2 Each AUUG institutional member may also nominate up to two (2) individuals to participate in chapter activities by advising the Secretary in writing of the names of the individuals and the chapter in which they wish to participate. These individuals shall not have voting rights and shall not be eligible to hold positions on the Chapter Committee.

2.3 Each AUUG institutional member may also nominate other individuals to participate in chapter activities, on payment of a fee to be determined by the management committee, and by advising the Secretary in writing of the names of the individuals and the chapter in which they wish to participate. These individuals shall not have voting rights and shall not be eligible to hold positions on the Chapter Committee.

2.4 A member shall cease to be a member of a chapter if they indicate to the Secretary in writing that they do not wish to be a member of that chapter.

3. Chapter Committee

3.1 The Chapter Committee (as defined in the Consitution and here-after referred to as the Committee) shall be responsible to the Management Committee for the operation of the Chapter.

3.2 Each chapter member shall be eligible to be elected to the Committee.

3.3 The Committee shall be comprised entirely of AUUG members.

3.4 The election of the Committee shall be held at the Chapter AGM.

3.5 If there is a vacany on the Committee, a meeting of the Committee may appoint a chapter member to the Committee until the next annual election.

3.6 The Chapter Chairman shall notify the Management Committee in writing of the names and positions of all members of the Committee within one month of their election or appointment.

3.7 A quorum for a Committee meeting shall be a simple majority of the current members of the Committee.

3.8 At meetings of the Committee the Chapter Chairman shall be the Chair for the meeting, or in their absence, a member of the Committee elected by the meeting.

3.9 Resolutions of the Committee shall be decided by a simple majority of those voting and present. The Chair shall have a casting vote in the event of a tie.

4. General Meetings

4.1 A quorum for a Chapter General Meeting shall be ten (10) chapter members.

4.2 The Chapter Committee shall implement any resolutions passed at a Chapter General Meeting.

4.3 Each chapter member shall be entitled to a single vote at a Chapter General Meeting.

4.4 At Chapter General Meetings the Chapter Chairman shall be the Chair for the meeting, or in their absence, a chapter member elected by the meeting.

4.5 Resolutions shall be decided at a Chapter General Meeting by a simple majority of those voting and present. In the event of a tie the Chair shall cast a deciding vote.

4.6 The Chapter shall conduct at least one Chapter General Meeting per year (referred to as the Chapter AGM).

4.7 Other Chapter General Meetings shall be held at the discretion of the Committee or on petition from ten (10) chapter members.

4.8 At the Chapter AGM

(a) the Chapter Chairman shall report to the members on the activities of the previous year.

(b) the Secretary/Treasurer shall report to the members on the financial activities of the previous year.

(c) the members shall elect a Chapter Committee.

5. Funds

5.1 The signatories for Chapter financial accounts shall be at least the Chapter Chairman and the Secretary/Treasurer.

5.2 All cheques, drafts amd other orders for payment of money out of the funds of AUUG, if less than a limit established by the Management Committee, may be signed by one signatory. For other amounts, each instrument shall be signed by at least two signatories.

5.3 The Chapter Secretary/Treasurer shall keep correct accounts and books and records showing the financial affairs of the chapter.

5.4 Chapter funds shall be operated according to the rules in the Constitution and as directed by the Management Committee.

6. Obligations

6.1 At least one month before the AGM, the Management Committee shall be provided with:

(a) a written report by the Chapter Chairman on the activities of the chapter during the previous year.

(b) a written report by the Secretary/Treasurer on the financial affairs of the chapter during the previous year.

6.2 At the end of each AUUG financial year (as defined by the Constitution), the Chapter Secretary/Treasurer shall provide the Treasurer with a complete written report on the financial affairs of the chapter for the financial year.

6.3 The Chapter Committee shall not charge AUUG members for access to Chapter facilities and activites without the written permission of the Management Committee.

6.4 The Chapter Commmittee shall ensure that AUUG funds are used in the interests of AUUG members and as directed by the Management Committee.

6.5 The Chapter Committee shall ensure that the actitives of the chapter are consistent with the aims and objectives of AUUG and the directions of the Management Committee.

7. Chapter Council

7.1 Each Chapter Committee shall nominate a single delegate to attend the Chapter Council Meeting (here-after referred to as the Meeting).

7.2 The Chapter Committee shall advise the Secretary of the name of the delegate at least twenty four (24) hours before the Meeting.

7.3 Each delegate shall be deemed to be a member of the Chapter Council (here-after referred to as the Council).

7.4 The President (or in their absence the Vice-President) and one member of the Management Committee nominated by the Management Committee shall be deemed to be members of the Council.

7.5 The quorum for the Meeting shall be a simple majority of Council members.

7.6 The President (or in their absence the Vice-President, or in the absence of both, a Council member nominated by the Council) shall be the Chair of the Council.

7.7 The Council shall meet at least once a year. One such meeting shall be held in conjunction with the AUUG AGM.

7.8 Each member of the Council shall have a single vote on resolutions put to the Council. All Council resolutions shall be decided by a simple majority of members present and voting. The Chair shall have a casting vote in the event of a tie.

7.9 The Chair shall notify the Management Committee in writing of all resolutions passed by the Council.

8. Dissolution

8.1 The Management Committee may, at its discretion, dissolve a chapter if the chapter has

(a) less than 10 members,
OR

(b) in the opinion of the Management Committee, engaged in actitives contrary to the Constitution, or these rules or Management Committee directions.

8.2 When a chapter has been dissolved, all funds and posessions of the chapter shall be handed over to the Treasurer immediately.

1993 AUUG Summer Regional Conference Series.

Did you miss the AUUG'92 Winter Conference in Melbourne?

Well, don't miss the 1993 AUUG Regional Summer Conference, in a town near you.

AUUG Inc is pleased to announce the 1993 Regional Summer Conference Series, to be held in all capital cities during February to April of 1993. The Regional Conferences will provide, in each city, a forum in which experienced users, systems administrators and Unix and Open Systems professionals can meet to share new ideas and experiences.

The AUUG Summer conference series has been a growing success over the past three years, and have been held in most state and territory capital cities.

A feature this year will be invited guest speakers drawn from other regional conference programmes, to bring in a wider range of ideas and experience.

At the time of printing, conference dates have not been confirmed, but they will be announced in the *aus.auug* newsgroup and in the next issue of AUUGN.

We are planning conferences for Perth, Adelaide, Hobart, Melbourne, Canberra, Sydney, Brisbane and Darwin.

Call for Speakers.

We need speakers for conferences in all capital cities. They will receive free registration to their conference.

As a speaker, you may be invited to speak at interstate conferences, in which case AUUG will pay for your accommodation and travel.

You may also be invited to repeat your presentation at the AUUG'93 Winter Conference at Darling Harbour, with AUUG paying for your registration, airfare and accommodation.

Please submit an abstract of your presentation by the 6th of November. You may submit it to the Summer Conference Coordinator (see below) or send it directly to your local conference organiser, once they have been announced.

You are also encouraged to prepare a paper for inclusion in conference proceedings and for publication in AUUGN.

If you are thinking about submitting an abstract, or for further information, please contact:

Glenn Huxtable
AUUG Summer Conference Coordinator
Department of Computer Science
The University of Western Australia
Nedlands, W.A. 6009
ph 09 380 2878
fax 09 380 1089
email glenn@cs.uwa.edu.au

or

The AUUG Secretariat
P.O. Box 366
Kensington N.S.W 2003

SESSPOOLE

SESSPOOLE is the South Eastern Suburbs Society for Programmers Or Other Local Enthusiasts. That's the South Eastern Suburbs of Melbourne, by the way.

SESSPOOLE is a group of programmers and friends who meet every six weeks or so for the purpose of discussing UNIX and open systems, drinking wines and ales (or fruit juices if alcohol is not their thing), and generally relaxing and socialising over dinner.

Anyone who subscribes to the aims of SESSPOOLE is welcome to attend SESSPOOLE meetings, even if they don't live or work in South Eastern Suburbs. The aims of SESSPOOLE are:

> To promote knowledge and understanding of Open System; and to promote knowledge and understanding of Open Bottles.

SESSPOOLE is also the first Chapter of the AUUG to be formed, and its members were involved in the staging of the AUUG Summer '90, '91 and '92 Melbourne Meetings.

SESSPOOLE meetings are held in the Bistro of the Oakleigh Hotel, 1555 Dandenong Road, Oakleigh, starting at 6:30pm. Dates for the next few meetings are:

Wednesday, 11 November 1992
Thursday, 17 December 1992
Tuesday, 2 February 1993
Wednesday, 17 March 1993
Thursday, 29 April 1993
Tuesday, 8 June 1993
Wednesday, 21 July 1993

Hope we'll see you there!

To find out more about SESSPOOLE and SESSPOOLE activities, contact either **Stephen Prince** (ph. (03) 608-0911, e-mail: *sp@clcs.com.au*) or **John Carey** (ph. (03) 587-1444, e-mail: *john@labtam.oz.au*), or look for announcements in the newsgroup **aus.auug**.

The WAUG Column

Our **August** meeting was sponsored by Scitec Communications Systems. Presumably for that reason, the food was even better than usual. The talk, on **"Data Communications"**, was given by John Daly of Scitec. He discussed various options for data communications, with an emphasis on the different types of link - particularly those provided by Telecom - and on the various black boxes available, such as modems, routers and multiplexors. He showed several examples of network and communications setups, including a voice/data link between Perth and Antwerp that Scitec has set up for one of its customers.

The topic for the **September** meeting was **"Free and Low Cost Unixes"**. We had four speakers, each of whom spoke for about 15 minutes on the free or low cost PC Unix of their choice. Kyle Hargraves talked about Coherent, Phil Sutherland about 386BSD, Toivo Pedaste about Linux, and I spoke about BSD/386. The meeting was well-attended, the audience seemed to enjoy the talks, and we speakers enjoyed ourselves too. There was more laughter than at any other WAUG meeting I've attended.

(My voice survived the ordeal - 12 hours earlier I could hardly speak because of a cold that I believe I picked up at AUUG'92. One of the hazards of conferencing - and Melbourne's weather - I guess.)

Coherent is the oldest of the four systems. It is a small Unix-like operating system, sold by the Mark Williams Company for US$100. There are separate 286 and 386/486 versions. Coherent is discussed in the newsgroup comp.os.coherent.

Linux is a Unix implementation being developed by Linus Benedict Torvalds, a 22-year-old computer science student at Helsinki, and a whole bunch of people across the world who get together in the newsgroup comp.os.linux. Linux is available free on the net, and naturally comes with full source code. I got the impression from Toivo's talk that it's still rather shaky but is developing rapidly. The next release was planned for "this weekend", so it should be out by the time you read this.

BSD/386 and **386BSD** are full Unix implementations that have been developed from the Berkeley NET2 release, a partial system which contained no AT&T code. Like the NET2 release, 386BSD is available for free. BSD/386 is sold by Berkeley Software Design International (BSDI) for US$995. (BSDI is Rob Kolstad, Jeff Polk and a handful of others.) Both systems come with full source code. Both run on any 386- or 486-based PC. Both have the X Window System. Both have networking support, although the free system's TCP/IP implementation is still being developed.

Both systems are quite new. **BSD/386** is currently in beta release (I'm a beta tester); the production release is still some way off, pending various bug fixes. I think it'll be a pretty robust system when they do release it. I'm using the beta system for home-based applications with few problems. BSDI's user support is excellent. So is the discussion in the beta testers mailing list.

At the moment **386BSD**, the free system, is - according to our speaker - a system for the intrepid hacker rather than the average user. However I expect this situation will change because there are reportedly several thousand intrepid hackers working on it. They talk about it in the newsgroup comp.unix.bsd.

AT&T's unfortunate lawsuit against BSDI and the University of California may affect the fate of BSD/386 and 386BSD, but its outcome is impossible to predict.

After the talks we intended to have a session of "questions to the panel", but the only thing people seemed to want to know was "Don't you people have anything better to do on the weekend?".

All the systems need rather more memory and disk than the average DOS system. To run any of them I would recommend at least 4Mb RAM and 100Mb disk.

In hindsight, I think it would have been good to have had someone to tell us about Minix too.

If you'd like to speak at WAUG or have an idea for a speaker, please contact our Meeting Organiser, Mark Baker, at baker@telecomwa.oz.au or on (09) 420 6813.

If you're interested in joining WAUG (the Western Australian Unix systems Group) or contributing to our newsletter YAUN (Yet Another Unix Newsletter), our address is PO Box 877, WEST PERTH WA 6005.

Janet Jackson <janet@cs.uwa.edu.au>

Canberra Chapter of AUUG Inc.

4th Annual Canberra Conference and Workshops

Call For Presentations and Workshops

AUUG in Canberra is holding its 4th annual conference and workshops on Tuesday and Wednesday the 16/17th February 1993. As well as a selection of international and national speakers, we are looking for presentations from local individuals and organisations in any area of UNIX or Open Systems. Presenters for half or full day workshops on any subject are also welcome (workshop presenters receive a modest stipend).

The 1992 conference and workshops were attended by over 100 people from throughout the Canberra region. We look forward to seeing you at the 1993 conference and workshops.

For further details contact:

Presentations:	Peter Wishart ph (06) 2612894 fax (06) 2613806 email: pjw@lobo.canberra.edu.au
Workshops:	David Baldwin Ph (06) 2495026 fax (06) 2493992 email: David.Baldwin@anu.edu.au
Sponsorships/Advertising:	Elizabeth Keith Ph (06) 2434818 fax (06) 2434848

Canberra Chapter of AUUG Inc.

Annual General Meeting

8:00pm Tuesday 10th November 1992

(venue to be advised)

The Canberra Chapter of AUUG Inc. will have its Annual General Meeting on Tuesday the 10th of October 1992. We are looking for more enthusiastic volunteers to join our committee. We are also looking at adopting a constitution and formalising our relationship with AUUG (national body). Nominations are called for President, Secretary, Treasurer, and general committee positions. The returning officer for the nominations is John Barlow. You can nominate at any time by written submission, signed by the nominated candidate, and all nominees are encouraged to write a few words about themselves for publication on the day of the ballot (the AGM). Nominations will be accepted on the night. The ballot will be a simple show-of-hands. More details will be mailed out in October.

If you have any enquiries on the positions, nomination, or proxy-votes please contact John Barlow ph: (06) 2492930 (BH), (06) 2821925 (AH), (06) 2490747 (fax).

Review of Canberra Chapter Events: Dialup service.

The Canberra Chapter of AUUG Inc is currently setting up a dialup UNIX box to provide email and news services to Members. Currently the system is undergoing change (ironing out the bugs, identifying problems). The idea is to provide email and news via a dialup service, with some restriction on hours of connect time per week, to AUUG members in the Canberra region. Conditions of use are still being finalised, as is the choice of software that we will attempt to support.

Current status of the system is:

Hardware: 386DX - 25MHz, 4MB RAM, 300 MB ESDI disk, 150 MB cartridge tape, 6 serial ports, 1 9600/2400 baud modem (on loan, and one on order).

Software: SCO Unix, ELM mailer, MH mailer, NN news handler.

The hardware and software have been arranged via Allaw Plus, Genitech, ComTech and Adept Software.

We are connected by UUCP to the Adept Software UNIX system, which is connected via MHSnet to the Australian Defence Force Academy Computer Centre dialup service. The machine has an MX record for email delivery via CC ADFA, and is called canb.auug.org.au.

Current status includes mostly working news and email (just a few concerns on the mail return-address). We have been experimenting with downloading news/email to a local users PC via different programs and different news/mail readers (FSUUCP, UUPC, PC ELM, Easymail, SNews). The system looks very promising, and we are encouraging members to try it out.

Important Dates:

10th November	Annual General Meeting
16/17th February '93	Summer Conference and Workshops

Mr John Barlow,
Secretary, Canberra Chapter of AUUG Inc.
ANU, Parallel Computing Research Facility, (06) 2492930 (work) (06) 2490747 (fax)
John.Barlow@anu.edu.au (email).

Book Reviews

LEARNING GNU EMACS

by Debra Cameron and Bill Rosenblatt
O'Reilly & Associates, Inc.,
Sebastopol CA USA
ISBN 0-937175-84-6

Reviewed by
Michael Nielsen
<miken@runx.oz.au>

GNU Emacs has the reputation of being dauntingly difficult to learn, crushingly complex to use and beastly boring to read about. "Learning GNU Emacs" by Cameron and Rosenblatt, in one single stroke, demolishes these myths and in the process makes GNU Emacs an editor that ordinary people, like you and me, can actually sit down and not only use, but enjoy. How did they do it?

To begin with, they've limited the scope of their book; they've actually written it to be a primer in GNU Emacs and not a comprehensive reference - a long-awaited improvement in Emacs treatises. This is not to say, however, that their coverage is lightweight. Not only does this book teach you the very basics of using GNU Emacs, it equips you to begin, if you so desire, a deeper exploration of this megalithic monster; showing you how to use on-line resources to zero in on those particular features that you need to complete your editing task.

You needn't read this book sequentially; use it as a reference manual if you're an Emacs novice or use Emacs infrequently. If you're a rank beginner wanting to come up to speed quickly, an end-to-end run through this book, particularly if you practice, will enable you to use Emacs confidently and effectively in very short order.

Teaching Emacs requires an organised approach, and Cameron and Rosenblatt don't disappoint. The book is broken into thirteen chapters and eight appendices, the last of which is a handy quick reference that ingeniously includes cross-references back to the text. Each chapter adds another layer of function to your Emacs knowledge; a layer that you can put to work immediately. In fact, chapters One through Six may contain all you ever need to know about Emacs. They take you through the bulk of basic editing tasks from cursor movement right up to some fairly nifty tricks and techniques.

Chapter Seven is reserved for people who use text formatters on UNIX (like nroff, TeX and scribe), while Chapters Eight and Nine get into the nitty-gritty of writing macros and otherwise customising Emacs. Don't be scared off; these chapters are the ones that tell you how to make Emacs really work for you.

Chapter Ten is an overview of some Emacs "major modes" (purpose-built editing environments) that programmers might find useful. It's a must-read if you're going to be using Emacs to write programs in Fortran, C or Lisp.

Chapter Eleven is a good primer on Emacs Lisp programming. The authors have wisely limited the coverage of Lisp in this chapter, but give enough of both basic Lisp concepts and Emacs functions and variables to allow you do write programs to do quite sophisticated tasks. Furthermore, they tell you where to look for more information should you really want to get stuck into it. Unless you're undertaking a major project in Emacs Lisp, I doubt you'll need much more than you can find in this chapter.

Chapter Twelve is a brief treatment of Emacs under X-Windows, and covers the differences between using character Emacs and X-Emacs, as well as giving a how-to on creating mouse commands and pop-up menus; Chapter Thirteen introduces the on-line help facility of Emacs - read it early.

The appendices cover a variety of interesting-but-not-essential topics such as how to report bugs, where to get Emacs if you don't already have it, and some free-software propaganda.

One thing that frequently annoys me about computer primers is the condescending tone and sarcastic style that some authors use. Sometimes I'm unsure whether to take what they say seriously. Cameron and Rosenblatt, mercifully avoid this style. Their prose is friendly, clear and unambiguous, making "Learning GNU Emacs" an enjoyable read. In fact, I'd have to

say that "Learning GNU Emacs" is undoubtedly the best Emacs-intro's that I've seen, and a must-read for people who have wanted to learn Emacs but were afraid to tackle it alone.

THE BENCHMARK HANDBOOK FOR DATABASE AND TRANSACTION PROCESSING SYSTEMS

Edited by Jim Gray
Morgan Kaufmann,
ISBN: 1-55860-159-7

Reviewed by
Reviewed by Mark White
National Centre for Studies in Travel and Tourism
<markw@cltr.uq.oz.au>

Since the beginnings of the information age and the Information Technology industry, a dominating issue has been the accurate comparison of different systems. Users often require quantitative measurements of a proposed system's performance before investing; computer vendors usually include in their advertising material the results of some performance metric. Claims of this type have spawned "benchmarking wars", where system vendors progressively and competitively benchmark their respective products with the purpose of outdoing the performance of opposing vendor's products.

This book is a collection of performance and price/performance metrics for database and transaction processing systems. Introduced by the editor, the book first defines the purpose and reasoning behind benchmarking, specifically in the transaction processing domain, and then overviews various benchmarks that have been developed for specific purposes.

The second chapter is devoted to the history, purpose and activities of the Transaction Processing Performance Council (TPC). Included are discussions of the "original" Debit/Credit test, which evolved into TPC-A and TPC-B in November, 1989. The complete specification documents for each of these two benchmarks are included as an appendix to this chapter.

The following chapters (3 to 7) each describe a specific benchmark, detailing the design, logic, rationale, and intended application area. Each is written by an authority (usually the designer) of the benchmark. Included in this volume are:

The Wisconsin Benchmark
AS3AP
The Set Query Benchmark
An Engineering Database Benchmark
The Neal Nelson Database Benchmark

The subject of chapter 8 is "Doing Your Own Benchmark". Written by an experienced benchmark auditor, it examines a range of justifications for benchmarking, and outlines possible pitfalls and problem areas that may be encountered during the process. Finally, an appendix describes a commercially available distribution of all of the benchmark software described in the book.

As each chapter is written by a different author, the reader is able to progress through the benchmarks according to their particular domains of interest. Although quite technical, each chapter manages to avoid any overuse of academic jargon that may otherwise swamp the casual reader.

I would recommend this book to anyone interested in measuring the relative performance of database systems, both as an educational tool and a complete source of reference material.

AUUG Book Club

Book Reviews

AUUG Inc and Prentice Hall Australia have formed the AUUG Book Club to give AUUG members a chance to obtain Prentice Hall books at a significant discount.

To obtain copies of the books reviewed here, fill in the order form that appears at the end of the book reviews. Don't forget to deduct 20% from the listed retail prices.

Review copies of these books were kindly provided by Prentice Hall.

If you would like to review books for further offers from the AUUG Book Club, please contact the AUUGN Book Review Editor (see page 5).

PRENTICE HALLS'S ILLUSTRATED DICTIONARY OF COMPUTING

by Jonar C. Nader
Prentice Hall
ISBN 0-13-719998-8
RRP $29.95

Reviewed by
Jagoda Crawford
Australian Nuclear Science and Technology Organisation
<jc@atom.ansto.gov.au>

As the title suggests, this book is a dictionary of computing terms, which has been compiled with the assistance of a number of people and companies from around the world. Australia was one of the countries contributing, and, actually had the largest number of people being acknowledged. The author is involved in the computer industry, he lectures at tertiary institutions in the faculties of Management and Business Studies, is a public speaker, management consultant, and journalist, and works with Compaq Computer in the capacity of Communications Program Manager.

Dictionaries are difficult to review as one does not normally read them from cover to cover, so I decided to take some of the articles published in this issue of AUUGN and look up selected terms. A whole column was devoted to 'UNIX', 3/4 of a column to 'open architecture'. ACSnet and AARnet did not appear, whereas ARPAnet did (but not Internet!).

Besides giving the current usage and meaning of terms it also gives historical perspective where applicable. For example for UNIX the following appeared

'The uniprogrammed version of Multics. The name was coined by Brian Kernighan, a colleague of Kenneth Thompson and Dennis Ritchie (two of the original group of scientists who met in the mid-1960s at the Massachusetts Institute of Technology to build the new operating system which they called 'Multics'). UNIX was developed in 1971 at AT&T Bell Laboratories as a simple multitasking, multiuser operating system mostly written in C. ....'

Real-life examples are used where they can better explain the term. For example:

'Operating System - A set of computer programs (first introduced in the 1960s) that are specifically used by the computer so that it can manage its own resources. .... The operating system is usually loaded (booted) each time the computer is switched on. .... Operating systems can be likened to an orchestra conductor because they control the entire resources of the computer system. ....'

Illustrations have been used where applicable but are not common and don't detract from the text. They are mostly of historical significance or when a picture of an item better conveys the information.

Besides the dictionary there is also a chapter on the correct usage of computer terminology. Such things as abbreviations, acronyms, numbers and word breaks are discussed in this section. This section will prove to be very useful for those technical people writing the occasional reports.

I feel that the book is well suited to those entering a new field in computing, whereas, those with experience in that field could well find terms not covered. As with any dictionary, it is not intended to cover a field in depth but rather serve as a starting point, and as such is well worth having.

Now that I've added it to my book shelf I find I have to stop and think as to which dictionary I need to pick up when I am looking up a term.

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Australian Systems Administrators' Guild

On June 9th, USENIX launched SAGE, the Systems Administrators' Guild. SAGE is devoted to the advancement of systems administration as a profession. At the AUUG Management Committee meeting of 12th October, it was resolved to establish a similar group in Australia, as a special chapter of AUUG. It is envisaged that there will be close ties between the Australian SAGE and its US counterpart.

AUUG wishes to hear from members who are willing to help establish the Australian group. It is hoped that this group will report back with a proposal for formation by the next management committee, to be held in December.

If you wish to assist in the formation of an Australian SAGE, contact either:

	Greg Rose	Frank Crawford
E-Mail:	ggr@acci.com.au	frank@atom.ansto.gov.au
Phone:	(018) 174 842	(02) 717 9404
FAX:	(03) 282 2501	(02) 717 9429

or via the AUUG Secretariat.

On following pages information regarding USENIX SAGE is reprinted, giving the aims and charter of SAGE, as an indication of what AUUG is trying to establish.

SAGE Mission Statement and Charter

The Systems Administrators' Guild (SAGE) was founded with the following proposed charter, drafted by the original SAGE committee during the months prior to the public announcement by USENIX. This charter will be reviewed and modified by the incoming board as they deem it necessary.

The purpose of the Systems Administrators' Guild (SAGE) will be to advance the status of systems administration as a profession. SAGE will do so by recruiting talented individuals to the profession, by developing guidelines for the education of members of the profession, by establishing standards of professional excellence and providing recognition for those who attain them, and by promoting work that advances the state of the art and propagates knowledge of good practice in the profession.

SAGE will seek to meet these objectives by offering its members the following services:

1. Conferences

SAGE will sponsor technical conferences and workshops.

2. Publications and Distributions

SAGE will publish a technical journal and a newsletter. It will also make existing freely distributable systems administration tools available to its members, and commission the development of new tools.

3. Education

SAGE will develop curriculum recommendations for educational programs in systems administration. It will also develop recommendations and accreditation for internship/residency training programs for systems administrators.

4. Certification

SAGE will develop a process for the certification of professional systems administrators by examination, and will maintain a registry of certified professional systems administrators.

5. Job Descriptions

SAGE will develop model job descriptions for various classes of professional systems administrators.

6. Awards

SAGE will recognize outstanding achievement in professional systems administration through awards like the ACM Turing and Grace Murray Hopper Awards.

7. Public Relations

SAGE will speak for the concerns of its members to the media. It will make public statements on issues related to systems administration.

8. Local Groups

SAGE will promote the creation of local groups of professional systems administrators, like Bay-LISA.

SAGE Governing Board and Elections

In order to ensure a smooth transition from the design committee to the first elected governing board, USENIX has approved the appointments of the members of the committee as the interim governing board of SAGE. The members of this board are:

Shoshana Abrass, *Pacific Data Imaging*
Tina Darmohray, *Lawrence Livermore National Labs*, Secretary
Arnold de Leon, *Synopsys*
Laura de Leon, *Hewlett Packard*
John F. Detke, *Octel*, Treasurer
Paul Evans, *Maspar*
Bryan McDonald, *SRI International*, Publications Coordinator
Paul M. Moriarty, *Cisco Systems*
Arch Mott, *Protocol Engines*
Bjorn Satdeva, */sys/admin*
Steve Simmons, *Inland Sea*
Pat Wilson, *Dartmouth College*
Elizabeth Zwicky, *SRI International*, President

This board will serve until the first fully elected board takes office in January, 1993, with their first meeting being held at the Winter USENIX conference in San Diego, California. Current estimates indicate that the new board will have 4 meetings a year, three at LISA and USENIX technical conferences, and a spring meeting. At this time the board members are responsible for travel and lodging expenses for the meeting. This board will be tasked with further defining the charter and mission statements of the guild, setting the 1994 budget, and monitoring, coordinating, and approving all the working groups efforts. Members of the board should expect to be spending significant time every week in the pursuit of these goals during the first year serving the board, after which time requirements should begin to ease a little. Since the board will be geographically diverse and working on so many issues, electronic mail will probably serve as a major conduit of information. This is a major time and financial commitment for at least the first year.

SAGE is accepting nominations for new members of the governing board until October 22 at noon, PST. Anyone interested in running for the SAGE board should send their name and telephone number and a brief statement to the nominating committee at the following email address: *<sage-nominations@usenix.org>*. You can also send U.S. Mail to the SAGE Nominating Committee care of the USENIX Association. The nominating committee will gather the candidates' names and contact each of them before the election takes place.

At the USENIX LISA conference in October there will be a candidates' forum to enable prospective board members to introduce themselves and talk about the issues. Prospective board members unable to make it to the LISA conference will be able to submit a position paper to this forum.

Report on First SAGE Meeting

by Paul Evans
MasPar Computer Corporation

SAGE held an organizational meeting at the Marriot Rivercenter Hotel in San Antonio, Texas on June 13, 1992. The meeting followed the USENIX summer technical conference, at which USENIX launched SAGE as its first Special Technical Group (STG). Forty-three participants attended the meeting. Rob Kolstad represented the USENIX board of directors for this meeting; other past and current USENIX board members were also present: Evi Nemeth, Tom Christian-sen, Eric Allman, and Ed Gould. Tom Christiansen will be the long-term USENIX Board liaison to SAGE after this event.

Steve Simmons started the meeting and introduced Bjorn Satdeva, who briefly discussed the origins of SAGE, and the name – the 'e' that was left off the creat(2) system call has reappeared as the 'e' at the end of SAGE. Rob Kolstad discussed the relationship between SAGE and USENIX, emphasizing the enthusiastic support of the USENIX board for the Special Technical Groups (STGs) in general and SAGE in particular. The members of the interim SAGE governing board who were present were introduced: Shoshana Abrass, John Detke, Paul Evans, Paul Moriarty, Bjorn Satdeva, Steve Simmons, Pat Wilson, and Elizabeth Zwicky. Paul Evans read the proposed SAGE charter.

After the reading of the charter, there was brief discussion of awards which resulted in an informal decision to give "Robbies" to outstanding systems administrators, in honor of Rob Kolstad. The awards working group is currently looking into securing a supply of chubby statuettes with tutus. On a more serious note, Peg Schafer of BBN raised the concern that the proposed charter did not sufficiently take the needs of part-time systems administrators into account. It was decided to create a working group to look at issues affecting part-time administrators, and Peg volunteered to be its coordinator.

Dave Coleman of IBM asked who the intended audience for SAGE was. He felt that since PC, Mac, and bulletin board administrators outnumbered UNIX and workstation administrators by an order of magnitude, they might overwhelm SAGE. No consensus emerged on how serious this problem was likely to be, so the issue was deferred to the working group concerned with administrators of non-UNIX systems. Dave suggested that the committee should consider not only what to do about this issue, but also whether or not to do anything at all.

Although the original intention had been to cover organizational issues quickly and move on to the formation of the working groups, the remainder of the meeting was dominated by discussion about the structure of the SAGE board. Steve Simmons presented the initial proposal for a nine-member board, which included a president-elect, president and past president, each serving two-year terms; and six directors, each serving three-year terms.

Steve proposed adopting an Australian balloting scheme under which candidates are ranked by preference. This would allow SAGE to avoid what is perceived as a major problem with USENIX elections, that unsuccessful candidates for the officer positions fall off the board altogether. However, most of the participants believed that this would be too complicated and confusing for voters.

Pat Parseghian of AT&T was concerned that paying travel costs for a nine-member board would be prohibitively expensive, but it was pointed out that SAGE has a volunteer board, and board members will be paying their own travel expenses. She was also concerned that there wasn't enough to do to justify a nine person board, especially considering that USENIX only has eight on its board.

Many of those present expressed concern about the proposed presidential succession scheme, under which one person would in turn serve two years as president-elect, president, and past president, for a total of six years. Several alternative arrangements were proposed, and after much discussion, Steve conducted a series of straw polls, with the following results:

1. The SAGE board will have seven members.
2. The SAGE board will choose its own officers from among the board members after each election (elections take place every year).
3. Board members will serve two year terms.
4. Board members are limited to four consecutive terms.

5. In the first election, three board members will be chosen for two-year terms and three for one-year terms. In deference to the strong desire of the USENIX board for continuity, it was agreed that Elizabeth Zwicky, the interim president, would automatically get the remaining one-year term on the first elected board. In subsequent elections, alternately three and four members will be chosen for two-year terms.
6. The SAGE board will determine the number and duties of its officers, within the limits of the USENIX guidelines for STGs.
7. The first election will be held after the LISA VI conference in October, on a schedule to be determined by the USENIX Association staff.
8. Nominations for the SAGE board will close at 12:00 Noon (PDT) on Thursday, October 22, to enable the candidates to present themselves at a candidates' forum at the LISA conference. Candidates who are not able to attend the LISA conference can submit position papers to be read at the forum.

With the conclusion of the organizational discussion, attention turned to the formation of the working groups. Some coordinators had already been designated for the working groups corresponding to the eight original charter items (conferences and workshops, publications, education, certification, job descriptions, awards, public relations and local groups). However, during the week in San Antonio, other issues emerged. Steve accepted volunteers to coordinate the working groups corresponding to these new issues (ethics, policies, vendors, standards, non-UNIX and part-time administrators). The names and email addresses of the coordinators were displayed, and names for the mailing lists were chosen. [See below for the complete list of working groups, coordinators, and mailing lists.] With this, the meeting concluded.

SAGE Working Groups

SAGE was founded to meet the needs of people who administer and manage computing systems. As the organization grows, we want to have a clear vision of just what those needs are and how they should be addressed. In that light, working groups were formed at the June SAGE meeting.

Each group is chartered to discuss a topic of interest and determine if it is a viable candidate for action on the part of SAGE. The working groups can recommend against pursuing a topic further. If you have strong feelings in either direction, you are encouraged to join a group and present your opinion. If determined to be viable, the working group will draft a proposal for the SAGE board which outlines possible methods of addressing the issue at hand.

Below is the list of working groups current as of June 25. Listed are the name of the group, the leader, the email address that the working group will be using, and then a paragraph describing some of the topics and goals the group will attempt to address. If you are interested in joining one or more of these groups, send email to <*listserv@usenix.org*> with a body message of "help" and you will be sent further information to subscribe to the various lists.

1. Conferences and Workshops – Steve Simmons
sage-conf@usenix.org

The conferences and workshops group will focus on public activities of both academic and practical use for systems administration, including involvement in the USENIX LISA conference.

2. Publications – Bryan McDonald
sage-pubs@usenix.org

The publications group is chartered to put together a series of proposals related to the various publications that SAGE wants established. In the immediate future the pubs group will be asked to assist in the publication of the first issues of newsletter segments within this newsletter. Long term goals include proposals concerning an independent newsletter, a technical journal, software tool collections, and any other ideas the committee can collect.

3. Electronic Information Distribution – Mark Verber
sage-online@usenix.org

The electronic information distribution working group will identify existing information sources that would be of use to SAGE members, new types of information that should be gathered, produced, and make proposals for the effective distribution of this information. Existing sources should include reprints of papers/articles and mailing-list/USENET news archives. New infor-

mation sources might include specially written technical/positional papers and custom databases such as vendor neutral lists of bugs. Distribution methods will include WAIS or other information servers, anonymous ftp/uucp, and CD-ROM.

4. Education –Pat Wilson – *sage-edu@usenix.org*

The education working group's initial goal is to outline possible plans for institutional and continuing education of the community through the development of model curricula, the identification and promotion of useful tutorial programs, and the construction of guides for self-study.

5. Certification – Paul Moriarty
sage-certify@usenix.org

The purpose of the certification working group is to address the issues surrounding certification and discuss the various approaches that might be taken. The working group will present the model along with their recommendations to the board of directors.

6. Job Descriptions – Tina Darmohray
sage-jobs@usenix.org

The job description group will evaluate SAGE's role in assisting system administrators with defining job descriptions. If it is determined that this is an area that SAGE should pursue, the focus of the group will be to create multiple system administration job description suites that can be used as templates for those who are writing position descriptions for hiring purposes at their own site.

7. Awards – John Detke – *sage-robbies@usenix.org*

The awards working group will focus how SAGE can best go about recognizing outstanding system administrators, and their achievements. Initial suggestions include a "Best of LISA" award and an annual outstanding sysadmin award.

8. Public Relations – Paul Evans
sage-pr@usenix.org

As a professional society, SAGE has the opportunity to speak out to many factions of industry and/or government on issues that affect us and our profession. This committee will examine the issues, set guidelines for SAGE's involvement in this area, and (if appropriate) determine a plan or focus for the guild to evaluate and pursue (or not pursue). This group will also serve to direct any future public relations issues that may arise.

9. Local Groups – Bjorn Satdeva
sage-locals@usenix.org

This group will have the task of exploring how the creation of new local groups can be made easier, how SAGE and USENIX can assist in their formation, and how SAGE can support existing local groups.

10. Ethics – Ed Gould
sage-ethics@usenix.org

This group is charged with determining SAGE's role in developing a set of guidelines or codes of ethics for the system administrator. We see these guidelines or codes as having at least two purposes, namely, guiding one's self in the performance of system administration tasks, and informing one's employer and co-workers of the proper bounds of system administration.

11. Policies – Lee Damon
sage-policies@usenix.org

The focus of the policies working group is the consideration of one or several documents for system/network administrators to use as guidelines or boilerplates in setting up their site's policies and procedures. We will also be working with the education and ethics working groups to help systems administrators understand just what policies are, and why they can be important.

12. Vendors – Terry Bartlett
sage-vendors@usenix.org

The vendor working group will evaluate SAGE's role in establishing a consensus on the types of tools we'd like vendors to provide for system and network administration. The group may also act as a vendor lobbying organization to convince the various manufacturers to "do the right thing" when it comes to system administration.

13. Standards – Janet Frazer
sage-stds@usenix.org

The standards working group will evaluate the potential for SAGE to monitor and affect the various standards bodies that are currently or will be in the future setting standards for system administration.

14. Non-UNIX – John Detke
sage-outreach@usenix.org

The non-UNIX outreach working group will focus on how SAGE can remain pertinent to people who manage computing systems and networks, addressing the issues that cross operating and network system boundaries.

15. Part-Time Admins – Peg Schafer
sage-pt@usenix.org

The part-time working group is concerned that the proposed SAGE charter did not mention the large number of people who do system adminis-

Part-Time Admins (cont.)

tration less than 100% of the time (e.g., there are chemists who fulfill system administration roles some portion of each working day; yet, they view themselves as chemists, not system administrators). We will consider how SAGE could address the needs of such individuals and propose changes to the proposed SAGE charter which address this "dual-role" reality.

16. Security – Laura de Leon & Arnold de Leon
sage-security@usenix.org

Security is a growing concern for system administrators. This group will examine ways of helping system administrators assess their need for security and security policies. We will seek ways to educate system administrators on security issues. We will consider soliciting or developing sample policies and tools in this arena.

SAGE Book Reviews

by Steve Simmons
<scs@lokkur.dexter.mi.us>

What the world needs is a good book on the hardware side of ethernets – installing, expanding, maintaining, and debugging. Unfortunately there is no such beast. This review will discuss two publications which cover the physical side of ethernet.

***Keeping The Link* by Martin Nemzow. McGraw-Hill, 1988, ISBN 0-07-046302. 366 pages. Hardcover.**

This book covers the physical end of various flavors of ethernets. It contains a great deal of good material, as well as some non-technical material which can safely be ignored. It has some deficiencies, but is quite useful in spite of them.

It is excellent at covering the purely physical and technical topics. Its most valuable feature is the detailed treatment on the physical handling of an ethernet. It includes step by step instructions with photographs and drawings on a number of topics, including: how to make taps; how to debug physical and electrical problems using TDRs and various other test equipment; (the section on TDRs includes photographs showing the traces from various sorts of ethernet hardware in both proper and defective operation); and drawings and pictures of various common cables and other connection hardware.

From this book, I was able to correctly install a thick ethernet transceiver, having never seen the tools before.

In addition to the excellent instructions, it is rich with diagrams, charts, and tables of physical constants. They're often worth as much as the text. It also contains a number of sample forms and recommendations for managing the physical cable plant. These should all be of great use to any working administrator.

Unfortunately, it has a number of problems. Nemzow is a firm believer in broadband ethernet and gives it equal play with thicknet, Cheapernet, and thin ethernet. He discusses fiber, but at a much lower level of detail; 10baseT is almost completely ignored.Given that the book was written in 1988, these last two points are somewhat forgivable, but the lack of data on 10baseT lengths is particularly frustrating.

Nemzow spends a great deal of time talking about the usefulness of networks. This material is not needed, appropriate, or accurate. Fortunately it's easy to skip over.

In summary, this is easily the best of what I've seen on the hardware-side of ethernet management. It is not a great book, but nonetheless is a valuable addition to your library. A second edition with updates could be a major seller.

***Telecommunication Wiring* by Clyde N. Herrick and C. Lee McKim. Prentice-Hall, 1992, ISBN 0-13-151531-4. 253 pages. Hardcover.**

I ordered this on the basis of a flier from Prentice-Hall which touted it for the physical end of computer network management. The back cover reiterates this claim. Unfortunately, the contents do not live up to the claims.

This book has major flaws for anyone using it as a guide for computer network installation. It repeatedly mentions using coaxial wiring for cable TV, mentions that ethernet runs over coaxial cable, but never mentions that the two require different sorts of cable.

Similar problems can be found with the telephony wiring sections. No mention is made that one might want to wire telephony systems somewhat differently from 10baseT or RS-232.

In short, this is a most disappointing book for the computer network management and I do not recommend it.

What follows is the letter which resulted in the formation of AUUG, followed by the announcement of the first meeting and some notes on that meeting.

THE UNIVERSITY OF NEW SOUTH WALES

P.O. BOX 1 • KENSINGTON • N.S.W. • AUSTRALIA • 2033
TELEPHONE 663 0351
EXTN. 2805
PLEASE QUOTE

Department of Computer Science

18 June 1976

The Department of Computer Science
at the University of New South Wales
is interested in forming a

{ South Pacific / Australian / Down Under } * UNIX Users group

and proposes to hold an initial meeting at UNSW on Friday, August 27, 1976 of all interested persons.

The purpose of the group will be to exchange news and information about UNIX and enhancements thereto, to cooperate in the procurement of software from overseas users, to cooperate in the production of manuals, etc.

If you are interested please contact the undersigned as soon as possible.

J. Lions

* delete as applicable

UNIX USERS MEETING

A meeting will be held on Friday, August 27th, at the University of New South Wales of persons interested in the use and application of UNIX.

UNIX is an operating system for PDP.11 computers from Bell Telephone Laboratories. It is an extremely effective system and incorporates a great number of advanced features which make it easy to use and maintain.

The meeting will discuss recent experiences of local users, and also means of cooperation for obtaining and disseminating UNIX based software. If enough interest is shown, it is proposed to form a local UNIX Users Group.

The agenda for this meeting is expected to include short presentations on

Shared data segments
The UNSW local and remote batch system
A comparison of UNIX and RSTS

and other topics of general interest.

The meeting is planned to convene in Room G3, School of Electrical Engineering, University of New South Wales at 10 a.m., Friday, August 27th; to adjourn at 12.30 p.m. for a buffet luncheon (cost $4 per head) at International House; and to close by 3.30 p.m.

Persons interested in attending should complete and return the form below. Reservations for the luncheon should be paid in advance and reach the undersigned no later than 5 p.m. Monday August 23rd. (Cheques should be crossed and made payable to Dr. J. Lions.)

SUMMARY OF MEETING

* [illegible] to be spokesman.

* Next meeting to be held on third Friday in February.

  at UNSW or AAEC

* Letter To Phil Gross re: UNIX meeting

* Morning:

  aims of group
  agreed that existence of group was more necessary in view of lack of conventional support.

  discussion: RSTS v. UNIX. from Newcastle

  → a strongly BASIC oriented user community was not enchanted .....

  → UNSW modifications and developments PASCAL "S"

  → Harvard "Shell" Peter Ivanov.

  After

UNIX in the 21st Century

John Lions

University of New South Wales, Kensington NSW 2033

ABSTRACT

Long-term developments in the UNIX system will be influenced by technological changes in computer architecture and in communications. Several possibilities are speculated on.

1. Introduction

It is roughly 23 years since UNIX was born. What will happen to it in the next 23 years? Will UNIX exist 23 years from now? If so, how will UNIX change between now and then?

In racing parlance, UNIX is a horse that has come from nowhere to become the front-runner in the Open System Stakes. In spite of a sturdy sire (Multics), for its first ten years UNIX was a rank outsider, an apparent footnote to history, a trademark, admired in universities and some small enterprises, but not highly regarded in the world at large. By 1989, at the age of twenty, UNIX had become front-runner in the Operating System Stakes. Will the 1999 Open System Stakes be the last race that ever needs to be run?

Anyone who would answer 'yes' to that question would be brave indeed. The computer field is developing even more rapidly than ever, and much will happen in the next 23 years. In the year 2015, A.T. & T. will undoubtedly still exist and will still be interested in making a buck using its most valuable trademark.

Does UNIX have to change to survive? The answer is 'yes', because part of UNIX's survival strategy is that, having achieved fame and fortune as the world's first deservedly portable operating system, it should remain the software system of choice for companies that want primarily to build (the latest and most advanced) hardware. UNIX's evolution will be closely linked to developments in computing hardware.

UNIX's evolution will also be closely linked to developments in communications. It is perhaps no accident that A.T. & T. was a telephone company, not a computer company, when UNIX was born. During the last 23 years, the telephone network has been transformed and enlarged into a powerful communications network. Soon the amount of data that will be slopping about the world's networks will be incredible by the standards of just a few years ago. Much of it will be the equivalent of Marie Antoinette's cake: entertainment for the masses, but much of it will be a treasure trove for those who can tap into it, and absorb it.

2. Computing Hardware

Microprocessor technology has now reached the stage where the fastest and newest CPUs can be fabricated on a single chip. The 32 bit processor is giving way to the 64 bit processor. Soon it will be possible to fabricate many different processors on a single chip, and to surround them by arrays 64 Mbit memory chips. The power will be awesome. Will we need all that power, and if so, what for?

Computer architecture is about to enter an interesting phase: I predict that one important area that is about to change, and hence is ripe for innovation, is the way information is represented digitally. The encoding of numbers in binary form was not always as 'obvious' or as 'natural' as

it seems today. Few people seem to recall that 'bit' is a contraction of 'binary digit'.

- ASCII was a 1960's reaction to the ad hoc development of alphabetic character sets such as IBM's BCD. Today 95 graphic characters are not early enough. Japanese uses 10,000 characters or so. Sixteen bit characters are a serious possibility ... but is anyone seriously considering a 16 bit byte? If the byte size is to change, what should it change to? I see two serious possibilities: one bit, or 64 bits.
- One bit bytes would allow the whole of memory to be addressable as bit strings. However most useful data would have to be stored as aggregations of bits. Extended precision arithmetic would presumably be easy. On the other hand, CPU performance might suffer.
- The 64 bit byte has several attractions: it is large enough that most useful data items can be stored within a single byte: integers, addresses, instructions, characters, floating-point numbers. Only the last might be considered doubtful: some numeric applications seem to need extended precision beyond 64 bits. Most integers can be stored comfortably within 32 bits. 64 bits instructions have room for say 48 bit virtual addresses which seems to be enough for a few years (even 23 years?). Storing character data might seem to be the most doubtful of the possibilities. Moving beyond the ASCII character set now seems to be climbing onto some agendas. Seven bits are too few, but has anyone proposed an attractive alternative to the typewriter keyboard yet? Until they do, even 150 distinct graphic characters may be too many! Character data beyond 16 bits might be 'padded' by font and size parameters ...
- Compressing files before storing or transmission has many attractions. One early scheme was Huffman coding in which eight bit bytes are mapped into variable length bit strings. Later work suggested that other methods (Lempel-Ziv, or arithmetic coding) could be more effective. Even more recent work suggests that Huffman coding applied to (say) 16 bit bytes can be just as effective, or even better than these.
- Conventional communications can serve existing applications, e.g. finance and accounting, or telephony, very well, but some applications such as video transmissions are difficult to compress into a reasonable bandwidth. HDTV signals are of course even harder. This challenge can be met by new and revised methods for the encoding of information in digital form.
- Access to data in distant locations will certainly be possible, but can the data be trusted? Encryption schemes exist and many companies already use them, but there are known and suspected methods of attacking the standard encryption methods. If the CIA knows something about DES that we don't, other coding techniques are needed. How does one prevent accidental disclosure of information? Just using eleven bit characters that do not mesh with the ASCII character set would be a start. Compressing the data is also useful way of hiding it from the casual observer.
- PCM is an encoding method for telephony signals: 8 bit samples, 8000 times per second. A.T. & T. can now do much better than the 64,000 bps channels that it initially proposed for trunk telephony; it wouldn't make the same mistake again today (selling 64,000 bps as a single voice channel when it could be selling 16,000 bps or less).

3. Communications

The advent of high band-width communication channels on a global scale will allow computers to draw data rapidly from widely separated sources. Once the Telcos solve the problem of

marketing their newly expanded resources in an orderly manner, the location of the primary sources for many varied and useful data files may become immaterial.

However the provision of secondary sources that provide copies of the primary sources will be an important problem. Many of the problems in managing multiple secondary copies have been tackled already by the designers of hardware cache memories. Tackling the problem in software via networks that can be unreliable at times, and incur delays, is different.

The UNIX file abstraction has two aspects: a *content* that is an ordered string of bytes, and a set of *names*. In UNIX, files usually have one name, but additional names can be generated using the *link* system call. Files with no names (resulting from the use of *unlink*) may exist fleetingly but need not concern us here.

Fifteen years ago, if a file was created by copying another file, then one or other of the files was intended to be changed very soon (else why not use *link*). Hence there was no use in recording the source with the copy. Today the situation can be different: the copy may have been made using network resources, that were expensive in time, and so, once these resources have been spent we would like to keep the copy near-at-hand, at least for a while. Later we may decide that the local copy is superfluous. At that time we decide to re-use the space but to keep the name. This second case is familiar as it establishes a *symbolic link*, i.e. an entry in a local directory that points to another file. But what of the situation before that? Then we had both a local file and the name of a distant one ...

Suppose that before resuming the space occupied by our local copy we decide to confirm that (a) the original file still exists; and if so, that (b) it has not been changed in the meantime. If 'yes', we resume the space, but remember the name and the date. If 'no', we retain the space and change the status of the file from *copy* to *original*. Do we record where the file came from originally? (We may one day discover that there are many copies around.) Should all files have a pedigree? Can access to the pedigree be restricted more than access to the file itself? If the pedigree is itself a string of bytes, how will this string be associated with the string that represents the content? ... the previous content?

Suppose we keep the file, but choose to change its representation, e.g. by compressing it. What is its status now? Suppose we decide also to encrypt the file. What is its status then?

Many files have been copied many times (just think of your favourite editor). It is inconceivable that all copies of such programs will disappear before the end of the millenium. Suppose such programs were declared to be *itinerant* and could wander freely through the network. If you currently don't have one, but need one, wait for the next copy to wander by, or else broadcast a request to your neighbours, who in turn may borrow from their neighbours, etc.

4. Conclusion

I hope I have been able to suggest ways in which operating systems in general, UNIX in particular, may evolve in the future. Current developments are leading, so I believe, to a world where plain old ASCII files and communications will no longer be the norm. If a green, ASCII-free UNIX is the way of the future, will we still recognise it in 2015?

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Security Implications of /proc under System V Release 4

Frank Crawford

Australian Supercomputing Technology, Private Mail Bag 1, Menai 2234
(frank@atom.ansto.gov.au)

1. Overview of /proc.

One of the new features introduced in UNIX System V Release 4 (*SVR4*) is the virtual file system */proc*, whose role is to act as an interface to all running processes[1]. As a virtual file system it supports such operations as *open*, *close*, *read*, *write* and *ioctl*. The effects of *read* is to return data from a running process' image, while *write* allows modification of this image, *i.e.* you can read/modify the text or data segments of a program in the same fashion as a normal file. For obvious reason, it is not possible to create or delete files from this file system, rather this is done through the *fork* and *exit* system calls.

To the user, the file system appears to consist of a single directory, containing one file for each process, whose name is the process ID (in decimal and usually zero filled to five characters). The ownership of the file is the process' real user ID and the group is the process' primary group ID. The permission on the file is read/write for the owner and no access for anyone else (*i.e.* 0600). All other relevant details are much as you would expect[2], as can be see in Figure 1.

```
total 36944
dr-xr-xr-x   2 root     root        8032 Oct 17 22:33 .
drwxr-xr-x  68 root     root        1200 Oct 14 08:14 ..
-rw-------   1 root     root           0 Oct 17 22:33 00000
-rw-------   1 root     root      143360 Oct 17 22:33 00001
...
-rw-------   1 root     other    1101824 Oct 17 22:33 16691
-rw-------   1 root     other     860160 Oct 17 22:33 16698
-rw-------   1 root     root      360448 Oct 17 22:33 17086
-rw-------   1 root     root      847872 Oct 17 22:33 22033
-rw-------   1 frank    ccops     360448 Oct 17 22:33 22035
-rw-------   1 frank    ccops     147456 Oct 17 22:33 22070
```

Figure 1. Output from `ls -la /proc`.

2. Major Uses of /proc.

One of the original reasons for the implementation of */proc* was as an interface for program debugging, and this is one of its main uses. Aside from the ability to read and write a process' image there are a number of *ioctl* operations specifically to start, stop and trace processes.

A different but related use for */proc* is to obtain information about processes. This type of information is of the same form as that displayed by *ps*, and in fact, this is the method that *ps* uses. Further, this is the preferred method of accessing process information, as kernel rearrangements in SVR4 changed many of the structures from tables to linked lists. So, although reads on */dev/kmem* are still possible, it is much more difficult to extract information through this device[3]. The two major differences between this use and that for debugging is that only read access is required, as no modifications of the image are made, and the information is obtained through *ioctl*'s rather than direct reads on the image.

---

1. It was originally introduced in Research UNIX Edition 8, and then reimplemented for SVR4.
2. Actually some aren't, *e.g.* you could imagine doing something useful with the modification or access time instead of reporting the current time, as it seems to.
3. I've seen code that uses *mmap* to make this access much easier, *e.g. svr4mon*.

3. Some Implications of the Current Implementation.

One other crucial difference between these two uses of */proc* is that for debugging, generally only one process is opened and this is by the owner, where as for status reports, a number (possibly all) process images are opened, including those owned by others. Coupled with the fact that debugging generally requires read and write permission while status reports only require read permission this leads to very different requirements for permissions and access.

One reason for implementing a virtual file system is to allow a standard interface to features. It also allows file system semantics and permissions to be applied to non-file objects. As was stated before the permission on images in */proc* are read/write for the owner and no access for anyone else, which is suitable for debugging, but for status reporting programs these permissions pose some security problems. For a process such as *ps* to be usable by any user, it must be able to override the normal permission checking, and so must be run with an effective ID of *root* (*i.e.* as a *setuid root* program).

Programs which run with an effective ID of *root* are common causes of security problems on any UNIX system. Ignoring problems of malicious users and unexpected program error[4], in normal use such code has to perform explicit checks that are normally performed by the kernel. Although such problems may not be serious for a program such as *ps*, other interactive programs such as *top*[5], which allows modification of certain process parameters like priority, are a much more serious concern.

4. A Simple Solution.

This problem is not new to *ps*, the same type of security problem existed in early versions of UNIX, where it was related to the permissions on the device */dev/kmem*. A simple solution is to be found in BSD derived systems, where permissions were changed so that the device was made group readable, and all programs needing access had their effective group set to that of */dev/kmem* (*i.e.* they were *setgid* programs)[6].

A similar technique can be employed for */proc*, although, unfortunately, it cannot be implemented at a local level, as it requires a kernel change. In the case of */proc*, there is also the requirement that normal file system semantics be retained. A solution that conforms to these requirements would be to change the */proc* virtual file system interface and related programs so they appear as follows:

i. The permission of all *files* in */proc* include group read permission (*i.e.* 0640).

ii. Force all the *files* to belong to the same group, which will no longer be related to a process' group. In terms of a normal file system, this would mean that the parent directory of */proc* would appear to have the *setgid* bit set, which forces all files created in that directory to be given the group of the parent directory.

iii. Change the permission of all programs that report the status of processes to have an effective group the same as that set for *files* in */proc*.

This solution has a number of advantages, over and above simple security. It does not cause any problems with normal permission calculations for such system calls as *setpriority* and *kill*. Also, as it would only be possible to open images *read-only*, it would insulate them from programming errors. The cost is only the loss of group information in *stat* calls on */proc*, which is generally ignored anyway, and can be found through an *ioctl* once the image is opened.

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4. *i.e.* crackers and bugs.
5. *top* is a program written by William LeFabvre available on many BSD derived systems and ported to SVR4 by the author of this report.
6. Although */dev/kmem* isn't used as much in SVR4, the permission are still set for this.

Factors Affecting The Performance Of A Real-Time System

By

Moses Joseph[1], Ph.D. & Gurjot Singh[2]
Lynx Real-Time Systems Inc.
16780 Lark Avenue
Los Gatos, CA 95030 USA

A real-time computer system in generic terms is one that can respond to asynchronous external events within a predictable period of time. It should have adequate processing capabilities to handle both the real-time tasks as well as the non-real time tasks while meeting the processing and timing requirements of the time-critical tasks. In addition, it must have high I/O bandwidth to meet the data handling capabilities of real-time applications.

An example of a real-time system is shown in Figure 1.

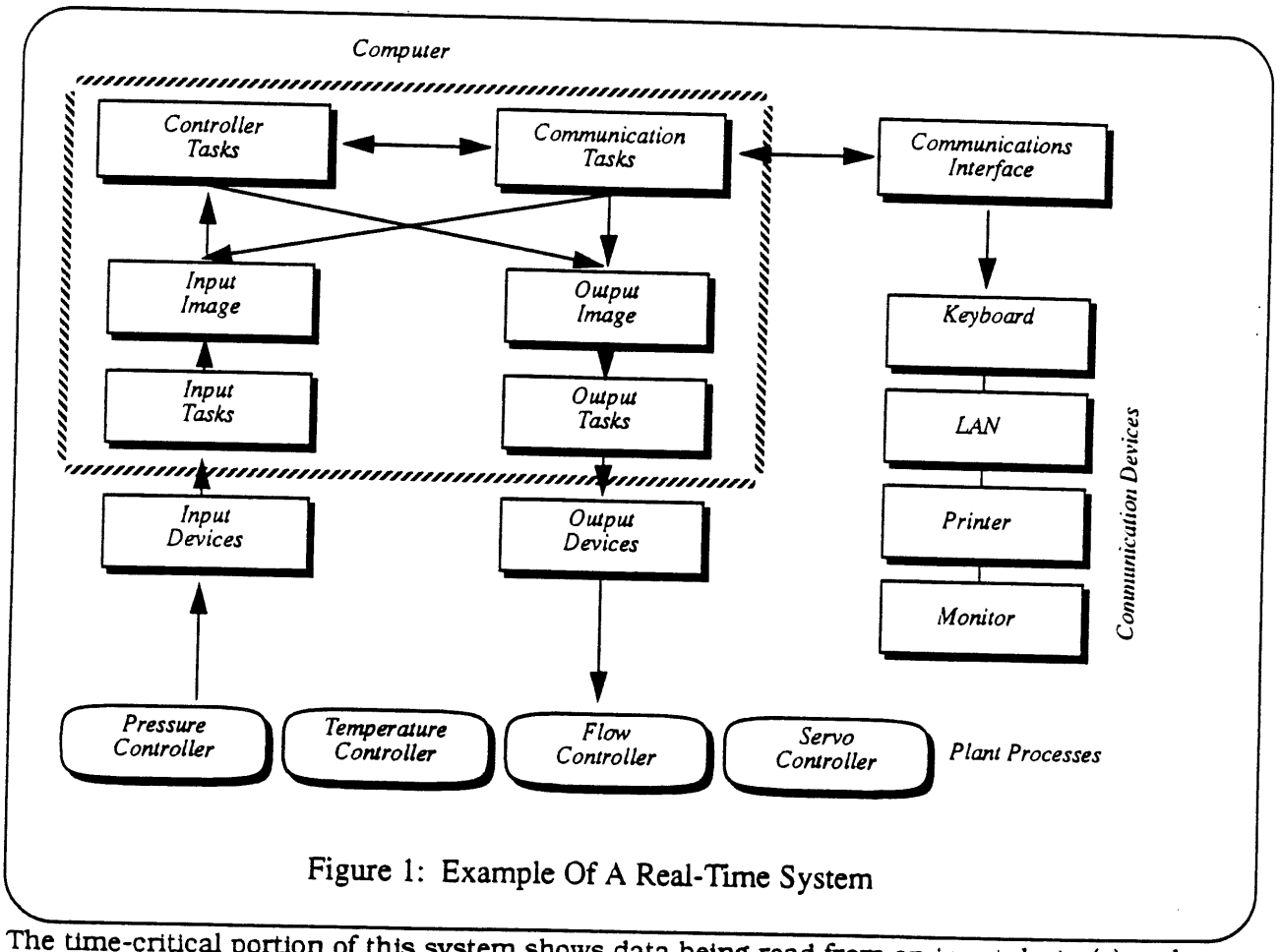


Figure 1: Example Of A Real-Time System

The time-critical portion of this system shows data being read from an input device(s) and stored in the input image by the input tasks. The communication tasks and controller tasks synthesize this information based on pre-determined algorithms and produce the output image.

1. Moses Joseph is Vice President, Marketing
2. Gurjot Singh is Director, Product Marketing

The input and output images shown in the figure are shared memory areas in the computer. The output tasks use the output image data to perform the necessary control of the device(s). The arrows represent the flow of data.

The non real-time tasks include responding to all the communication devices that interface with the computer, e.g. keyboard, printer, monitor, hard disk, LAN etc. and other house-keeping chores of the operating system.

In the above example, "the real-time loop" or the critical path is Input Devices -> Input Tasks -> Input Image -> Controller Tasks -> Output Image -> Output Tasks -> Output Devices. In a real-time application, it may be necessary to provide the signal(s) to the output device(s) periodically every 5 milliseconds. This means that our system must be able to complete the "real-time loop" in less than 5 milliseconds every time in spite of interrupts from devices in the non-critical path.

This paper will focus on the requirements for such a real-time computer system. We will also see how LynxOS, a high performance real-time operating system, provides an architecture and implementation that is optimal for use in real-time applications.

Components Of A Real-Time System

Let us begin by defining the terms used to measure real-time performance. Unfortunately, there is no established standard in the real-time industry for these. Most real-time vendors only specify interrupt response times and context switch times. As we shall see, these are not adequate to guarantee that the real-time requirements for a system are met. We will define and explain these and other parameters that can affect this performance.

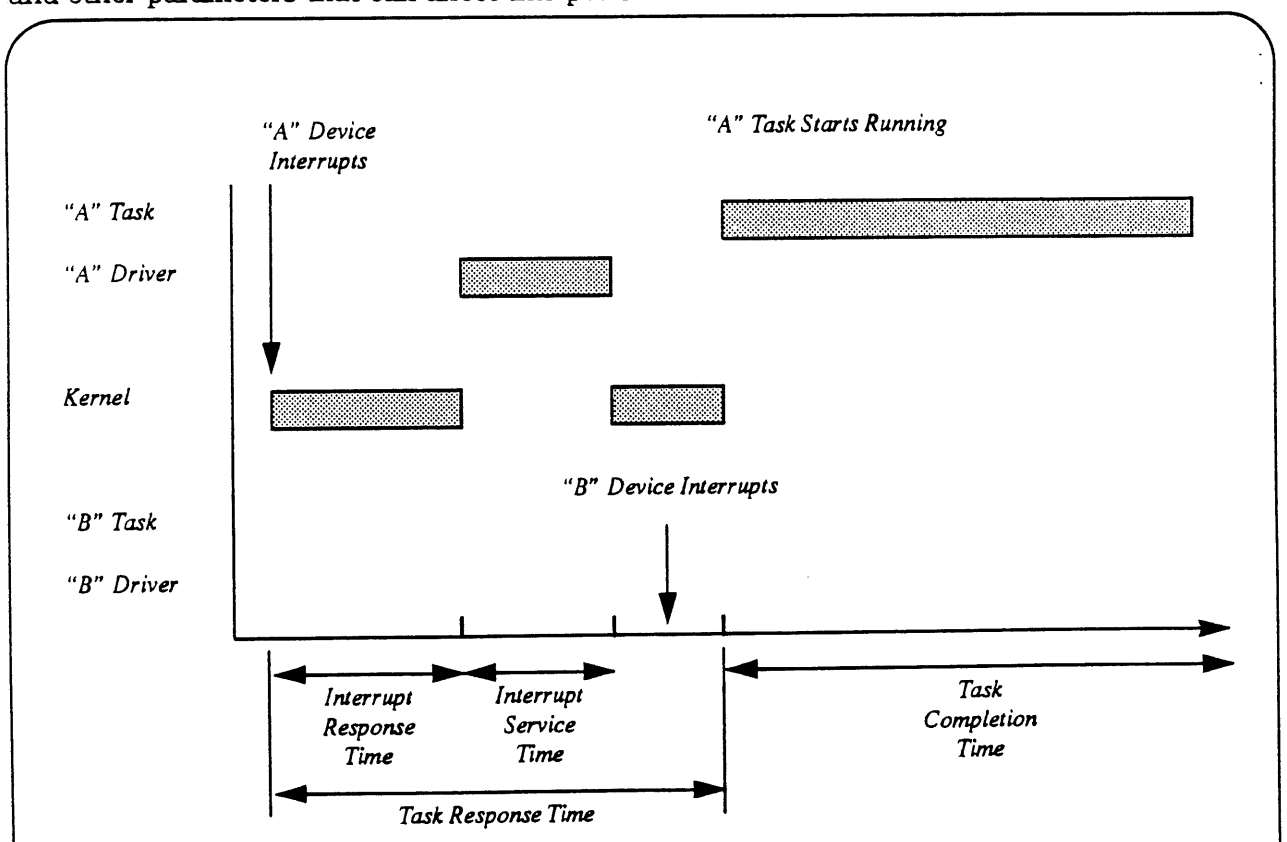


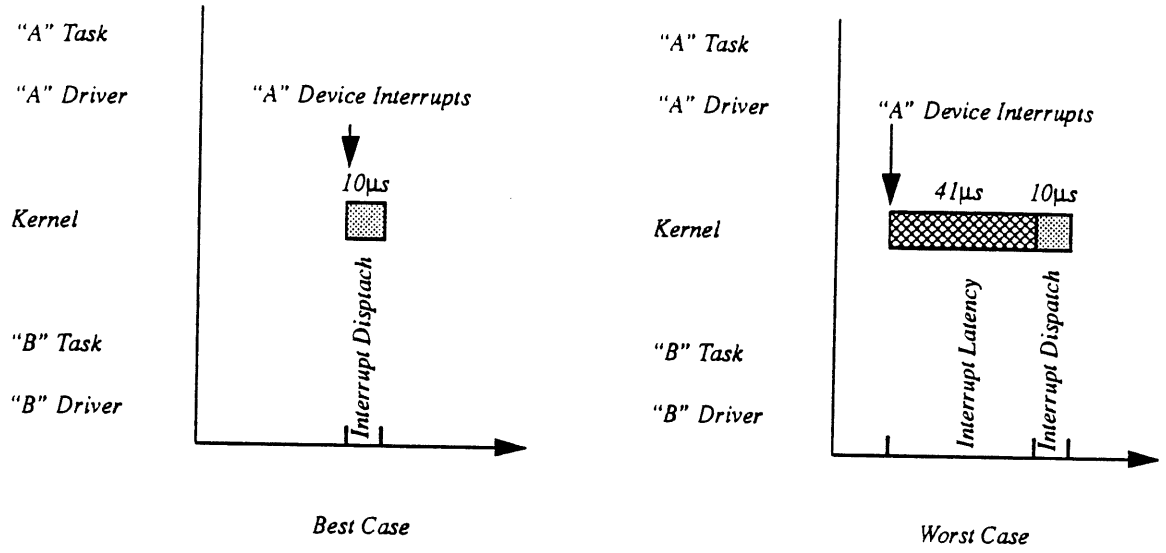
Figure 2: General Components Of Real-Time Performance

The general components of a real-time system are shown in Figure 2. We will examine each one of these individually and see how they relate back to our example shown in Figure 1. We will also examine the individual sections in greater detail and study their components.

Interrupt Response Time

This is the length of time it takes for the kernel to become aware of an interrupt and dispatch it to the appropriate driver. This would be as follows:

Time elapsed between the occurrence of the interrupt from the input device to the instant when the interrupt handler for the device driver of the input task was invoked (see Figure 3)



Benchmarks performed on a 386/AT at 33MHz with 2-wait state memory, 64K cache, running LynxOS version 2.0

Figure 3: Components Of Interrupt Response Time

Interrupt Dispatch Time

The amount of time from the instant the kernel was aware of the interrupt to the time that the device driver's interrupt handler is invoked. For LynxOS this time is 10 µseconds (see Figure 3)

Interrupt Latency Time[1] (see page 6 for footnote)

There are situations when interrupts need to be disabled within the operating system. During this period, the interrupt from a device will not be acknowledged by the CPU. The longest such period is defined as the interrupt latency time. For LynxOS this is 41 µseconds (see Figure 3).

In the worst case, the interrupt dispatch time is the sum of the Interrupt Dispatch time and the Interrupt Latency time. i.e. in our example, the driver is guaranteed to be invoked within 51 µseconds.

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Interrupt Handling - Background

A real-time system is only as fast as its slowest device driver and most real-time systems are heavily I/O bound. Paradoxically, this is an area that has received little attention and is the weakest link in most real-time systems.

On most systems, all interrupt processing is performed in the interrupt service routines. This can be very debilitating for time-critical tasks.

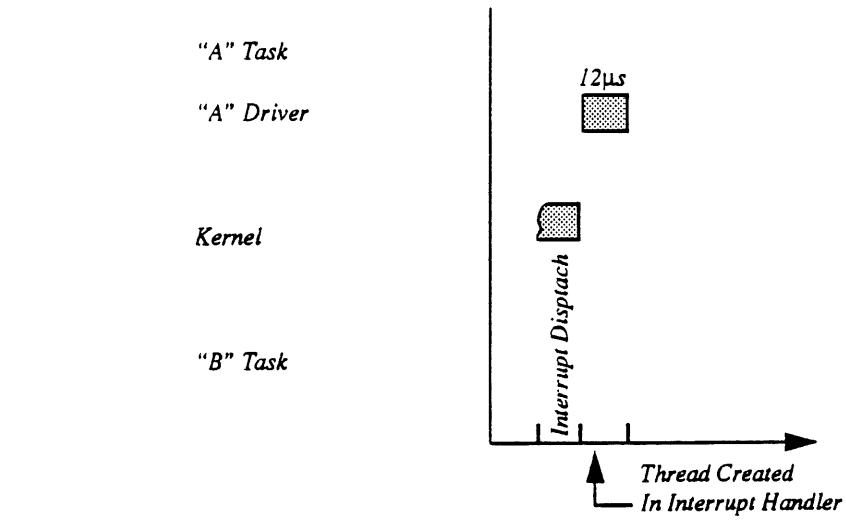
Let us take our example in Figure 1. While the time-critical task (Input Task) is running, let us assume we get interrupts from the LAN card and the keyboard. If we allow these interrupts to be processed to completion, as most operating systems do, we cannot accurately predict the worst case response for the Input Task. In the extreme case, we may violate the "real-time loop" requirements of 5 milliseconds if the LAN card interrupts several times in a row.

LynxOS circumvents this problem by off-loading the bulk of the usually non-preemptable interrupt handling to be dispatched to a preemptable kernel thread. A LynxOS interrupt service routine therefore only needs to enable scheduling of this kernel thread before returning. This reduces the interrupt service routine from several milliseconds to just a few µseconds. In LynxOS, this typically takes 12 µseconds.

LynxOS also allows the user to disable further interrupts from the device for which a kernel thread has been scheduled. We will see in this paper how this unique approach for interrupt handling (patent pending) allows us to create a completely predictable system.

Interrupt Service Time

For our discussion, we will define the driver response time to be the length of time spent in the interrupt service routine. As described above, for LynxOS, this is a mere 12 µseconds (see Figure 4).



Benchmarks performed on a 386/AT at 33MHz with 2-wait state memory, 64K cache, running LynxOS version 2.0

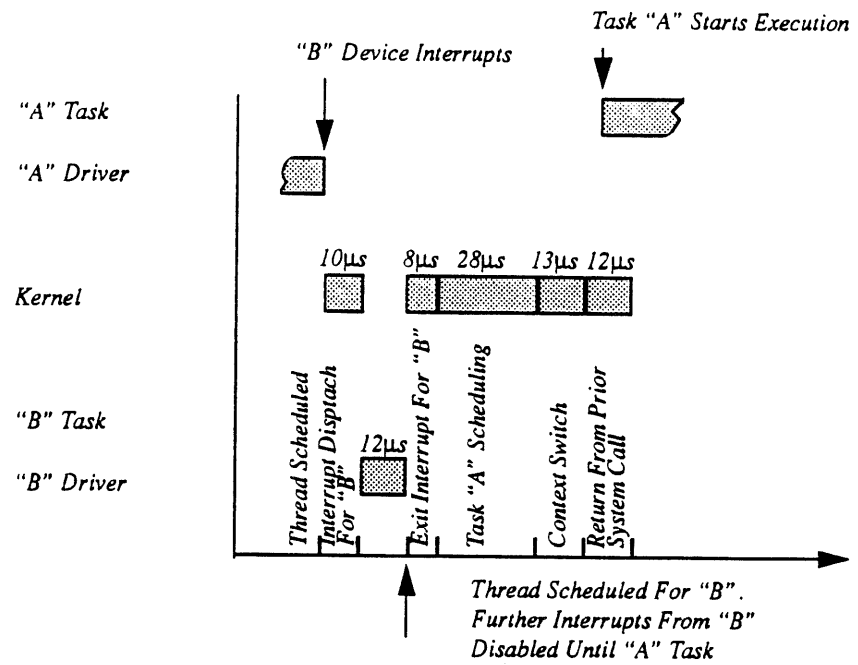
Figure 4: Components Of Interrupt Service Routine

For our example shown in Figure 1, the Input Task interrupt handler will dispatch a kernel thread for doing the bulk of its work. This work may consist of transferring the data into the image area and waking up the controller task.

Purists may argue that it is more efficient to make the kernel thread code a part of the interrupt handler for devices serving the highest priority task. That is indeed true and can be done. The kernel thread implementation is necessary for other lower priority tasks as we shall see in the next section.

Task Response Time

In the simplest case, the task response time (see Figure 5) is the sum of the following:



Benchmarks performed on a 386/AT at 33MHz with 2-wait state memory, 64K cache, running LynxOS version 2.0

Figure 5: Post-Interrupt Components Of Task ResponseTime

Scheduling The Task

This is the time taken for the scheduler to slate to run the highest priority task that runnable. This takes 28 µseconds for LynxOS.

Context Switch Time

When a new task is run, the "context" of the old task needs to be saved and the "context" of the new task needs to be loaded. The time taken to do this is 13 µseconds under LynxOS.

Return From The Prior System Call

Before the current interrupt occurred the high priority task may have blocked on a system call (usually a read or a write). To return from this call takes less than 12 µseconds for all LynxOS drivers.

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Interrupt Response Time - discussed earlier.

Interrupt Service Time - discussed earlier.

In reality, there are a few other factors that affect the Task Response Time - critical region, servicing other interrupts and priority inversion. We will discuss the first two here.

Critical Region [1]

The LynxOS kernel was designed to be fully preemptive without adding long blocking regions. Data structures used in the kernel which are implicitly shared, that is, shared without the application programmer being aware of it, are protected by temporarily disabling preemption during access (a priority ceiling protocol - Inder M. Singh and Mitchell Bunnell; 1990). To ensure that preemption is disabled for a very short period of time, LynxOS data structures were built for very fast, deterministic access. LynxOS has a worst case preemption disable time of 75 µseconds.

Since the preemption disable time is higher than the interrupt latency time, Lynx Real-Time Systems publishes its worst-case task response times using the preemption disabled numbers.

All preemptable operating systems have critical regions where preemption is disabled. When a high priority task tries to preempt a low priority task it is possible that the lower priority task just entered the largest critical region. The high priority task has no option but to wait. Therefore it is very important that this delay be known and accounted for in the design of a deterministic operating system.

Servicing Other Interrupts

As mentioned in the section on interrupt handling, we explained how LynxOS dispatches a kernel thread to do the bulk of the work for each interrupt. We also explained that after this thread was dispatched, further interrupts from this device could be disabled.

The time for each interrupting device is calculated as follows:

Interrupt dispatch time (10 µseconds) + schedule thread (12 µseconds) + exiting interrupt routine (8 µseconds) = 30 µseconds.

In our example of Figure 1, if we got interrupts from the LAN device and from the keyboard while processing the data for the Input Task, it would only add 30 (10 + 12 + 8) µseconds for each interrupting device.

If there were "n" interrupting devices, the total delay due to these would be "n * 30" µseconds.

Contrast this other real-time operating systems where for each interrupting device, the additional overhead is:

(total # of interrupts from a device) * (longest time for servicing each interrupt) µseconds.

If we add the total time for all the interrupts, the real-time response would be unpredictable.

This is an issue that has been downplayed and ignored by every vendor other than Lynx. Most other real-time operating system vendors expect the user to explicitly disable the appropriate interrupts at each level for these devices to ensure real-time response for the critical tasks.

---

1. There are two levels in the LynxOS kernel. In Level 1, interrupts are enabled but preemption is disabled. Here the critical region (preemption disabled) number should be used for the worst case calculation. In Level 2, both preemption and interrupts are disabled. In this situation the interrupt latency time should be used for the worst case calculation.

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Lynx's solution is simple, elegant and efficient.

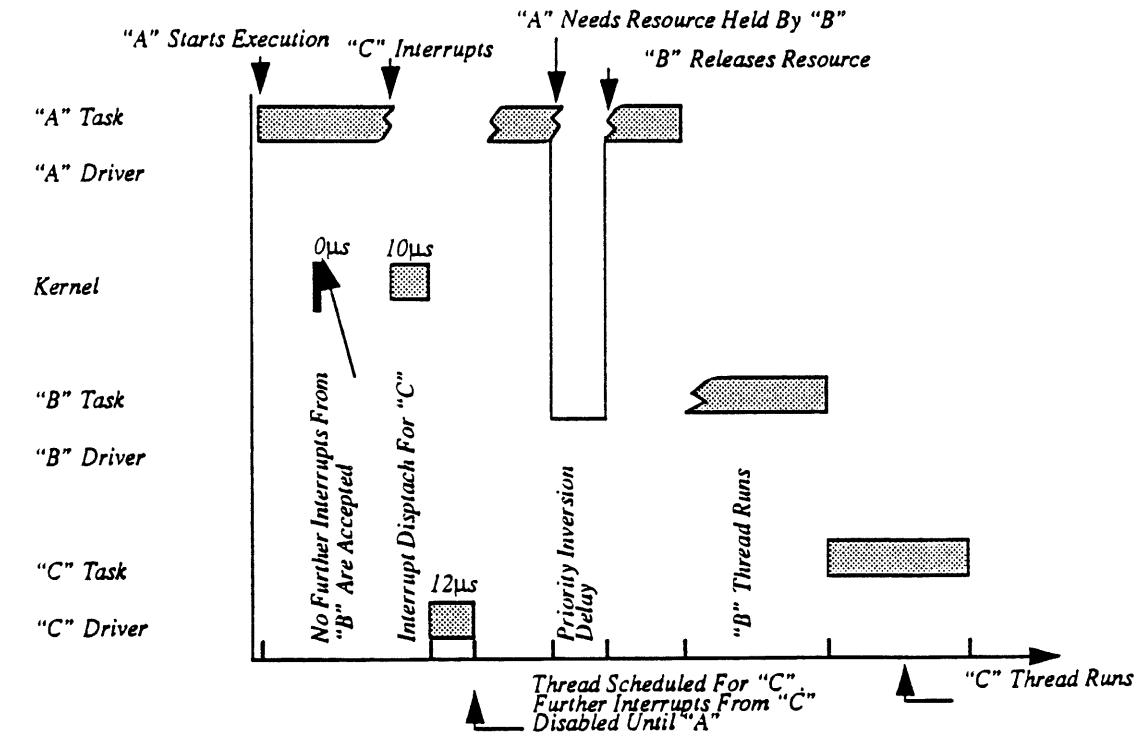
Lets see how we can predict the absolute worst case time for our example: Assuming that the kernel was in the critical region at the time that the Input Task interrupted and that the LAN card and the keyboard are the only 2 devices that can interrupt, the worst case before the Input Task's thread can start execution would be:

- Dispatch interrupt for Input Task (10 µseconds) +
- Schedule Thread for Input Task's Interrupt Handler (12 µseconds) +
- Schedule Input Task (28 µseconds) +
- Context switch and return from prior system call (13+12 µseconds) +
- Critical region time (75 µseconds) +
- LAN and keyboard interrupt dispatching and thread scheduling (2 * 30)
- This would give a worst case time of 210 µseconds for the Input Task to start executing.

Task Completion Time

Task completion time consists of the following three elements:

Task Execution Time:
This is the raw CPU time required to complete the task after it is scheduled. This is mostly dependant on the design of the user application.



chmarks performed on a 386/AT at 33MHz with 2-wait state memory, 64K cache, running LynxOS version 2.0

Figure 6: Components Of Task Completion Time

Interrupt Execution Time

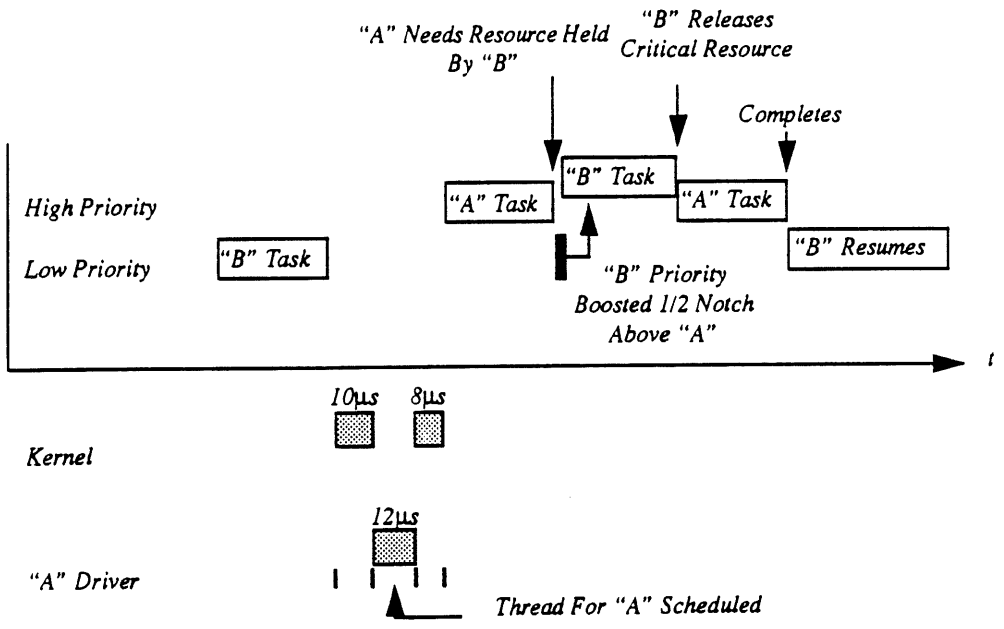
Once the task has responded to the interrupt it is often assumed that it is going to run to completion. This is a misconception. In reality a high priority task can be repeatedly blocked by interrupts for low priority tasks. Under LynxOS, this blocking can be limited to one interrupt per interrupting device. In the section "Task Response Time: Servicing Other Interrupts" it was explained that "n" devices in a system could be disabled after "n" interrupts. If this happens, there would be no interruptible devices to block any time from the executing task. If "n-m" tasks interrupted during the task response time period, only "m" devices could interrupt during task execution time.

Priority Inversion

It is possible for a resource that is required by a high priority task to be held by a low priority task, thus blocking the execution of the high priority task. This phenomenon is called "Priority Inversion". Priority inversion can affect the Task Completion Time adversely. The systems designer needs to be aware of the effect of "priority inversion" and should minimize the number of priority inversion situations.

LynxOS offers a mechanism to minimize the impact of priority by temporarily raising the priority of the task holding the resource to a priority that is 1/2 a notch higher than the high priority task waiting on the resource.

This is illustrated in Figure 7. A low priority task "B" is running when a high priority task "A" gets scheduled and starts to run. It needs a resource which is held by a lower priority task "B". LynxOS allows you to temporarily boost the priority of task "B" to a priority 1/2 a notch higher than that of task "A". Task "B" now runs till it frees up the resource required by task "A". At this point task "A" resumes execution until it completes. Finally task "B" resumes and runs to completion. This minimizes the impact of "priority inversion" on the Task Completion Time.



Benchmarks performed on a 386/AT at 33MHz with 2-wait state memory, 64K cache, running LynxOS version 2.0

Figure 7: Priority Inversion Problem Solved By LynxOS

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The actual impact of this "priority inversion" can be calculated by examining the application code of Task "B".

Contrast this with a system shown in Figure 8 which does not support "priority inheritance". In this case "priority inversion" occurs when task "A" is blocked due to a resource held by Task "D". Tasks "B" and "C" run to completion before Task "D" is rescheduled. Eventually task "D" runs and frees the resource need by Task "A". Finally task "A" runs to completion. Notice that in this implementation the actual impact of "priority inversion" would be much worse than the one discussed in the previous paragraphs.

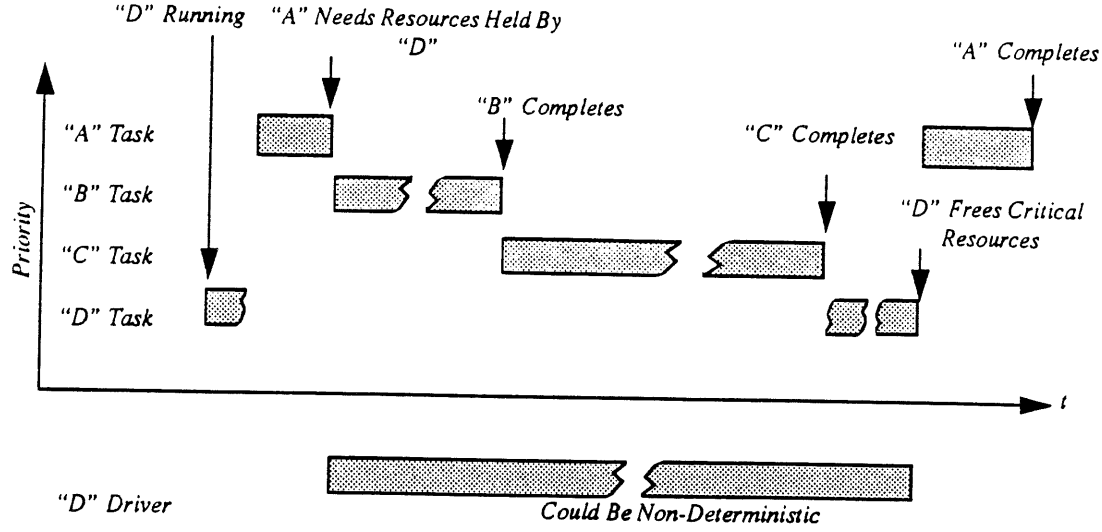

Figure 8: Impact Of The Priority Inversion Problem On Other Real-Time Systems

In our example shown in Figure 1, the Task Completion Phase begins when the kernel thread for the Input Task starts executing and ends when the Output Task sends the control signal to the Output Device.

Summary

In order to assure that your system truly has deterministic performance you have to know all the variables outlined in this article. Not the best guess, not the average times and certainly not the best times. You need to know the worst case numbers for ALL the variables. This alone enables you to truly ensure, by analytical methods, that your system is deterministic.

Researchers from PepsiCo ("The Pepsi Challenge - Benchmarking Real-Time Operating Systems, Barnett et. al., 1992) recently bemoaned that their application performance had no correlation to benchmarks that they received. This is a very common problem stated by many users and one that is seriously undermining the credibility of commercial real-time vendors. Proprietary vendors have existed in the real-time field for decades and in fact till recently have been the only solutions available to that market. In order to outdo each other their specmanships have included giving best case numbers for only a few of the variables that can affect real-time performance.

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The onus currently is on the user to ensure that the system he is paying for has deterministic performance. The variables that are listed in this paper are defined by Lynx Real-Time Systems. Other vendors may not define the same variable the same way or worse may have the same definition for an entirely different variable. For example, vendors who sell proprietary executives define the "Task Response Time" as the time taken for the first line of device driver code to execute. If LynxOS is being compared to benchmarks from these vendors it's "Interrupt Response Times" should be used. Lynx's worst case task response time is explained in this paper and it involves all the factors that can interfere with the user level code from executing. This includes interrupt latencies, interrupt response times, blocking times, task switch times and return from prior system calls - a far more elaborate treatise.

Whichever way the variables are defined, the user should make the effort to truly probe and determine if the true worst case numbers for ALL variables are known. Even if one of the variables are unknown you cannot build a deterministic real-time system. The authors hope that the breakdown of the variables in this paper will go a long way in helping users validate whether the system they are investigating is capable of deterministic behavior or not.

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Lynx Real-Time Systems, Inc.

AUUG
MANAGEMENT COMMITTEE
MINUTES OF MEETING 13 July 1992

Held at ACMS, Paddington

Present: Frank Crawford, Glenn Huxtable, Rolf Jester, Phil McCrea, Michael Paddon, Greg Rose, John O'Brien, Peter Wishart and Liz Fraumann

Meeting commenced at 10:10am

Ellen Gubbins of Symmetry gave a Public Relations report; Wael Foda of ACMS gave an Exhibition report; Peter Karr gave a Conference Issues report.

1. APOLOGIES

Apologies were received from Chris Maltby

2. RETURNING OFFICER REPORT

John O'Brien gave the official report on the election.
109 ballots were returned
New officers/committee standing as follows:

* President - Phil McCrea
* Vice President - Glenn Huxtable
* Secretary - Peter Wishart
* Treasurer - Frank Crawford

— Rolf Jester

— Chris Maltby

— John O'Brien

— Michael Paddon

— Greg Rose

R.O. - Michael Tuke

Asst. R.O. - is vacant

2.1 President's Welcome Phil thanked the R.O for efforts on the election and officially welcomed the new committee and thanked the outgoing committee for their efforts and contributions.

3. MINUTES OF LAST MEETING (18 May 1992)

Moved (FC/RJ) that the corrected minutes were accepted. Carried.

4. HAND OVER REPORTS

4.1 President and Vice President Not present to hand over report

4.2 Secretary
Rolf Jester, Secretary 91-92 handed over official records to Peter Wishart, Secretary 92-93. Rolf welcomed Peter to his position and offered his assistance anytime.

4.3 Public Officer
John O'Brien raised the issue that this position, currently held by Robert Elz, should be held by a current committee member per the articles of incorporation, even though Robert has volunteered to remain. PM suggested JO pursue information and provide a recommendation to the committee.

ACTION: JO

4.4 Treasurer
Frank Crawford, reelected to this position, gave a background report to the incoming committee. He indicated most of the monetary flow is through the AUUG Secretariat. Last months ending report indicated a "good cash balance".

Frank indicated we are in need of new officer's signature authorisation at the bank. Due to the geographic diversity, FC requested a fifth signature to be local and on file. It was determined the following signatures will have authorisation: Phil McCrea, Glenn Huxtable, Peter Wishart, Frank Crawford, and John O'Brien.

5. BUSINESS CARRIED OVER

5.1 Tax Exempt Status
FC said he is still waiting for a response on this issue from the tax department. He stated we are due for an audit, which should be done soon. If we do not get an answer before that we should pursue a solicitor for an answer and also recommendations on any constitutional changes that may be required. The initial question was lodged last September but we still haven't received an answer.

Glenn Huxtable asked if we are a non-profit organisation. John O'Brien stated a letter should have been sent by solicitors stating non-profit and specifically tax exempt status. Phil McCrea suggested contacting ACS/DECUS regarding their status. It will be pursued.

ACTION: PM

5.2 Inventory
Liz Fraumann reported the current assets are primarily in the AUUG booth which is currently stored at Symmetry. Regarding the computers which Chris Maltby spoke of, it seems they were/are on loan from vendors and still can not be accounted for. PM suggested CM pick up responsibility for locating them and return them to the vendors who loaned them.

ACTION: CM

5.2 Feedback on Summer Conferences

GH reported most states were able to report a small profit and seemed to be successful. GH feels this is closely tied to the establishment of local chapters and will be a key factor. This year $30k had been budgeted for summer conferences and $10k for chapters. It was suggested this be combined for a total of $40k for chapters. The schedules for summer conferences was discussed and recommended to take place in February - March. (6 months after the winter conference).

6. PRESIDENT'S REPORT

PM reiterated his reason for standing for election. He had watched the commentary on aus.auug, technical vs. commercial perception. Traditionally AUUG had been a technical forum, however, UNIX is now prevalent in the MIS departments and he can not see a USENIX/UniForum split working in Australia. John Goddard has developed the User Alliance for Open Systems which had a different focus to AUUG.

PM feels it is important for AUUG to stand up and make people realise AUUG is the "Technical world of UNIX and the commercial world of Open Systems".

Discussion ensued as to the role an operating system plays and how much AUUG should or should not divert it's attention to this aspect.

7. TREASURER'S REPORT

FC reported we are one month into this financial year. We have $145,201.00 in the bank. Checks which are outstanding amount to approximately $2k and FC gave out check request forms for those in need of reimbursement of expenses incurred.

PM asked about last year's budget and where we stood. FC reported that over the year the balance was $16k. (last budget report was as of 31 May).

It was moved and seconded that special thanks would be given to Pat Duffy for her contributions. FC/PW, passed.

It was also moved and seconded that special acknowledgement of life time members will be made at the AGM in September. RJ/FC, passed

8. PUBLIC RELATIONS REPORT

Ellen Gubbins of Symmetry reported:

8.1 A detailed PR plan which LF and EG put together was presented. Regular diary releases to journals regarding the conference and exhibition are in place. Feature articles in GO, Communications Engineer, MIS, and potentially OSR, and Canberra times have been or are being negotiated. LF is also following up with Beyond 2000 for coverage, specifically for Dr. Jon Waldern's keynote on Virtual Reality. It was suggested to also pursue a feature in Government IT News. RJ will get EG the contact information.

ACTION: RJ

8.2 EG discussed the market research program associated with the visitor catalog this year and final negotiations for a pc/laptop computer for competition participants are taking place. LF will

review questions to be used for the research in early August.

8.3 EG presented a list of journalists for invitation to the conference and exhibition. The committee added 3 contacts to this list: Lyn Russt of IDC, Osmond Ivens of MacWorld, and Jeremy Horrey. The invitation will be sent under PM's signature and LF will draft a letter for PM. Journalists will receive free attendance and lunches.

ACTION: LF

8.4 It was suggested to publish conference abstracts on aus.auug. EG will provide an ascii text disk and LF will publish.

ACTION: LF

8.5 It was suggested to consider having a demonstration "booth" for the virtual reality talk with demonstrations... PM was interested but voiced concern that we must remember the nature of the conference. LF will pursue viability.

ACTION: LF

8.6 PM thanked EG for her report.

9. CONFERENCE

9.1 Liz Fraumann reported:
Conference tasks are proceeding on schedule. The initial feedback on the conference is that it looks very worthwhile in attending. It was moved, that seconded and passed GH/MP summer conference selectee's travel and accommodation for AUUG '92 would be paid (M. Wagner, S. Landers, and R. Parish), in addition to 3 invited speakers from overseas. In addition the Program chair's travel and accommodation would be paid for. In addition, it was moved, seconded and passed to provide all program committee free conference admission FC/RJ. It was also agreed travel and accommodation for LF would be covered.

9.2 LF recommended a speaker's gift and the recommendation was so moved, seconded and passed. JO/RJ

9.3 It was reiterated that the Face Saver Program will be sponsored by Digital, however, Rolf stated he could use come assistance. Michael Paddon offered as this is a main thrust of his corporation. MP and RJ will coordinate.

ACTION: MP/RJ

9.4 LF also reported John Young, & Robert Elz are coordinating the network connections and a terminal room for the conference/exhibition. LF also noted MHS has stated they will not be participating at the exhibition but has asked their PR person to provide a brochure which can be distributed to attendees.

9.5 It was also reported there will be at least one hospitality suite during the conference and exhibition. Attendees should watch the marquees at the centre for the latest information.

9.6 The group reviewed the booth duty roster for the committee. A few changes were made and GH, PW, MP, PM, and LF will coordinate a delegate to assist from each region. LF will handle overall coordination. It was agreed in appreciation for these efforts the representatives selected to assist in booth staffing will receive a free lunch for each day of the conference.

ACTION:GH,PW,MP,PM,LF

9.7 Chairs for all sessions were determined and LF will provide biography/photos of speaker's to each chair for which they are responsible. It was suggested to make contact with the speakers prior to the conference.

ACTION: Chairs, LF

9.8 MP suggested "mug" shots of executive committee be posted in the booth. LF will pursue.

ACTION: LF

9.9 Deliverables and collateral for distribution at the AUUG booth were determined. They are as follows:

* T-shirt
* Membership Flyer
* Proceedings
* USENIX materials
* MHS brochure
* AUUGN

CM will handle the design/development and production of the T-shirt

ACTION: CM

9.10 Peter Karr reported: He thanked LF for all her efforts and stated he has been basically a figure head and all efforts have been accomplished by LF. He raised a specific issue on cost over run for production of the conference program. It was determined a letter would be drafted asking for compensation. So moved and seconded by GH/RJ, passed.

9.11 PK reminded the committee that an AUUG report was required for OSR by third week of each month.

9.12 FC reported that there would be a competition to design a new cover for AUUGN. The winner would be announced at AUUG '92. They would be given a one free year of membership.

9.13 PK to contact Senator Button on opening the Conference.

ACTION: PK

10. EXHIBITION

Wael Foda reported:
The exhibition is currently booked out with several companies on a waiting list It is possible to open another floor, but a total of 600 sq. meter needs to be sold. It will be decided whether to pursue this as the exhibition draws near.

10.1 It was reiterated that there is a $25.00 luncheon fee this year.

10.2 Next year an exhibition fee/may be charged for those not attending the conference.

10.3 The delegate satchel will contain:

* Proceedings
* SAS Flyer
* Vouchers for lunches
* Portfolios

10.4 The economics of the split between ACMS and AUUG was touched on again and PM, RJ, CM will discuss further.

11. MEMBERSHIP

The committee reviewed/commented and edited the new membership flyer distributed by RJ and LF. Edits were noted. In addition PM suggested in the category of Education, training discounts. Softway is committed to provide a discount and PM will assist in locating other for LF to pursue. It was moved, seconded and passed to proceed with flyer with amended corrections. LF will work with RJ and PW for final proofing prior to production. GH/PW.

11.1 It was noted benefits for Institutional membership should include:

* Name in AUUGN
* MX records
* Change of representatives based on need or staff changes.

11.2 LF recommended a general information literature document piece for AUUG be produced. RJ and LF will work on this. Hopes are to have for distribution at AUUG '92 but time may not allow.

12. OTHER BUSINESS

12.1 ACSnet Survey - FC stated he is having a hard time keeping up with the associated work load. Issues - 1) Do we wish to continue? 2) Who is willing to pick up the responsibility? It was determined to continue and MP will be responsible.

12.2 GR raised 3 issues - 1)We need to be careful of timing for official statements to ensure positions are in place before making statements. 2) Edits made, specifically to titles for conference insertion must be cleared with author 3) Committee needs to be more responsive to

e-mail requests for information and answers. PW took overall responsibility for responding to queries and where appropriate will work with LF.

12.3 LF recommended the change of officers take place at or after the winter conference. Perspective was that it could provide better continuity for the activities. The constitution will be checked for this and appropriate actions investigated.

12.4 It was too late to get AGM notification put into AUUGN. PW will organise for AGM agenda, date and venue to be posted to members.

ACTION: PW

13. LOCAL CHAPTERS

GH reported:
The Chapter sub-committee, Ross Hand, John Barlow, Scott Merrilees, and GH, was slow in providing information. PW had posted a proposal on aus.auug which GH feels is 80% "there". It was recommended a decision be made at the AGM. The view that the winter conference should support AUUG like it "used to" was made. 25% of membership fees should go directly to chapters and 15% discretionary to fund chapters.

13.1 It was discussed that the chapters will need to be provided with a minimum criteria to meet AUUG's expectations. Suggestions included:

* Regular meetings (minimal of quarterly)
* Committee consisting of at least officers (Chairperson and Sec./Treasurer)
* Committee must be elected
* Fiduciary responsibility for AUUG funding

13.2 Questions of Institutional Members and how they fit into chapters were discussed.

13.3 PM suggested weighting outlying chapter area funding due to the difficulties in attending the national conference.

13.4 It was recommended that an overriding clause for Exec. Committee be in place for chapters not complying with overall mission of AUUG.

13.5 Comments on PW's proposal:

* no affiliates
* chapters based on regions
* see lawyer on chapter liability issues
* regular informal reports to management committee.

13.6 Usage of AUUG name, specifically speaking to press was discussed. It was also made clear that there will need to be an accounting record to at least the executive committee if not public for the record.

13.7 Liability laws will also need to be checked into.

13.8 GH/PW/FC/LF will pursue a formal recommendation for dissemination at AUUG '92.

14. NEXT MEETING(s)

Tuesday, 8 September - 10:00am @ World Congress Centre

Friday, 9 October - 10:00am @ACMS

Friday, 11 December - 10:00am @ACMS

Meeting adjourned at 5:27pm

Respectfully Submitted,

Elizabeth A. Fraumann

AUUG
Management Committee
Minutes of Meeting 8th September 1992

Location: World Congress Centre, Melbourne

Present: Phil McCrea, Glenn Huxtable, Frank Crawford, Chris Maltby, Greg Rose, John O'Brien, Peter Wishart, Michael Paddon, Rolf Jester, Liz Fraumann (first part only), Michael Tuke (second part only).

The meeting opened at 10am.

It was decided to focus the meeting on AUUG92 issues first, covering other issues if time permits. The meeting needed to finish by 1pm to allow people to get to afternoon tutorials.

1. AUUG92

EF reported that there were still vacant slots for chapter reps on the AUUG booth. The slots Wed 2-4, Thu 4-6 and Fri 2-4 were still vacant. Committee members should seek out people who could fill these slots. Ex-members of the management committee were suggested as candidates.

All session chairs have been sent details of their sessions. Contact should be made with speakers before the session begins. There were gifts for all speakers. Session chairs should see EF about arrangements for gifts.

There were still some last minutes details to resolve with the Face Saver stand. EF, MP and RJ to meet at the stand at 4.30pm to resolve. ACTION: EF, MP, RF.

GR reported that he had an urgent last minute commitment in Sydney and so could not present his paper in the late Friday afternoon session. He would like to arrange a swap. EF suggested this might prove very difficult. If a swap could not be arranged, then we may have to organise a wizards panel session to fill the slot.

Jonathon Waldern from W Industries was asking AUUG to pay for a business class ticket from the UK. Due to some mis-communication the ticket has been purchased at the last minute and was costing a large amount of money. AUUG policy is to pay economy class air fares. It had been agreed that AUUG would pay two thousand pounds towards Mr Walderns costs and W Industries would pay the rest. [Note: Mr Waldern subsequently withdrew from the conference due to other pressing engagements, so no money was committed for this item.]

EF is current negotiating with airlines to get access to cheaper fares for conference speakers in return for publicity. EF will make a recommendation when more information is available. ACTION: EF.

It was suggested that the coffee breaks could be used to draw competition results from the exhibition. CM offered to coordinate. ACTION: CM.

There will be a daily conference newsheet containing items of interest and last minutes changes. It will be handed out at the start of each day.

2. Membership Survey

EF reported that the recent membership survey was showing interesting results. We should try to summarise it and present key details during the Secretary's report at the AGM. We are aiming to publish results of the survey in the next AUUGN. ACTION: EF, PW.

3. AUUGN Cover Competition

We still had no entries for the AUUGN cover competition. It should be mentioned at the conference, put it into the daily newsheet.

4. AGM

It was resolved that PM would present the plaques for meritorious service to AUUG in his president's report. Pat Duffy and John Lions would both be present for the AGM.

MT and JB would conduct the agenda item on conduct of the 1992 elections. JB would speak about the current election process. MT would speak about his plans for future elections.

PW would conduct the item on chapter development. He would develop some overheads summarising the proposal (EF to assist). Copies of the proposal would be made available at the AGM. ACTION: PW/EF.

5. connect.com.au

Hugh Irvine (HI) from connect.com.au Pty. Ltd. joined the meeting. HI explained that connect.com.au was a commercial gateway service. Details had been posted to aus.auug and auugexec. HI explained that connect.com.au was targeting higher end users (e.g. ISDN), for a more commercial style of user.

They wished to offer a 10% discount of all connect.com.au fees to AUUG members in return for AUUG telling members about the service and processing their MX records.

Motion: That AUUG process MX records for connect.com.au and publicise a 10% AUUG member discount to connect.com.au Moved: RJ/FC CARRIED.

This new member benefit should be mentioned in the Secretary's report at the AGM. ACTION: PW.

6. Returning Officer Report

MT would like to be kept informed about activities on the committee. He does not need to attend all committee meetings but would like to get copies of agendas and minutes. ACTION: EF.

MT would like to generate expanded rules for the conduct of elections. He would like to see these formalised in the constitution. After discussion it was agreed that these rules did not need to be in the constitution, they could be rules or by-laws just like the proposed chapter general rules.

It was noted that in the past there had been problems with ballots due to delays in the Secretariat. The call for nominations was late this year but the actual election was not late.

We still need to find an Assistant Returning Officer. This needs to be done before any election work begins. MT to make a recommendation and the committee will arrange for the person to be co-opted to the position. ACTION: MT.

There was discussion about limiting the amount of candidate biography and policy statements. The costs of sending out large amounts of paper for each candidate could get too large. This year, the size of printing had to be reduced in an effort to contain costs. However it was important for members to get information about candidates with the ballot papers. It was agreed that the general principle should be to limit the number of words for each candidate.

Motion: That MT head a sub-committee consisting of GR, PW, JB, CM to determine the rules for the conduct of elections. Moved: JB/GR CARRIED.

The committee agreed that an indication of incumbent status should not be put onto the ballot form. If they wanted to, then candidates could mention their incumbent status in their policy statement. The returning officer should make sure that the ballot papers did not indicate who the incumbent was. ACTION: MT.

7. Relations with AFPU

We had received a letter from the President of the AFPU (the French Unix Users Group). They wish to exchange speakers for national conferences and to develop closer ties. MT had discussions with AFPU while in Paris. The proposed arrangement was to send a speaker from AUUG to the next AFPU conference and vica versa. The host organisation would pay the costs and had the right to accept the speaker or not.

Motion: That the President write to AFPU agreeing to a trial arrangement for 1 year. Michael Tuke will act as the AUUG liason with AFPU. Moved: GR/CM CARRIED. ACTION: PM.

MT will post to aus.auug and AUUGN calling for papers to put forward to AFPU. The management committee will vet applications. ACTION: MT.

8. Presidents Report

PM reported that he had written to the major vendors informing them that AUUG was starting chapters and asking them to keep the chapters in mind when visitors or locals were available for presentations. He had received several positive responses.

9. Chapter Proposal

There was discussion about the current chapter proposal. The following points were noted

The chapter council needs more description. Detail of what the council does. ACTION: PW.

The rules need to refer to the policy. ACTION: PW.

There are legal issues. What is the situation with chapters being covered by incorporation? PW should co-ordinate with MT to get legal advice. ACTION: PW.

The financial reporting obligations need to be clarified. It should specify things like a balance sheet, expenditure, income, etc. ACTION: PW.

10. Summer Conferences

GH had put out a call for organisers. He had some tentative offers but others needed to be confirmed. He hopes to have summer conference organiser notes out by the end of September. A formal call for speakers will be put into AUUGN. ACTION: GH.

11. Publicity

Symmetry Design had written stating that they wished to formally resign the AUUG public relations account from the end of September 1992. They will coordinate a hand over with EF.

PM advised that Softway had been employing a part-time consultant for public relations. He would be happy to recommend her. We may be able to use her on an ad-hoc basis to assist EF. PM will organise for her profile/resume to be made available for consideration. ACTION: PM.

12. 1993 Conference

There was discussion about an informal proposal from Peter Karr to run the 1993 conference. It was agreed that we were, in general, very happy with the way that ACMS ran the conferences but that we should consider other proposals. It was agreed that it was too late to change organisers for the 1993 conference (bookings were already underway), so this would remain with ACMS. However we should review the conference organisation for 1994 and beyond by asking for formal proposals.

It was proposed to ask for formal proposals for 1994 with a submission deadline of Feb 1993. These proposals could cover exhibition, conference, program committee etc. The proposals could come from consortiums (e.g. someone to handle the conference in conjunction with an exhibition organiser).

There was discussion about the need to refocus the exhibition to retain vendor interest. We should also review the Sydney/Melbourne shuffle of the venue. e.g. Is Canberra a possibility for one year?

Possible themes for the 1993 conference: Desktop Computing, Battle for the Desktop. By the next

committee meeting we need to have decided the 1993 theme, program chair etc.

We should ask for ideas for 1993 theme at AUUG92 and the AGM. This could be done via the conference newsletters and the evaluation sheets. ACTION: PM.

13. Other Business

PM advised that we had received another request to participate in a survey. Since we had only recently had a membership survey it was decided not to pursue this until early next year.

The meeting closed at 12:50pm.

AUUG Membership Categories

Once again a reminder for all "members" of AUUG to check that you are, in fact, a member, and that you still will be for the next two months.

There are 4 membership types, plus a newsletter subscription, any of which might be just right for you.

The membership categories are:

Institutional Member
Ordinary Member
Student Member
Honorary Life Member

Institutional memberships are primarily intended for university departments, companies, etc. This is a voting membership (one vote), which receives two copies of the newsletter. Institutional members can also delegate 2 representatives to attend AUUG meetings at members rates. AUUG is also keeping track of the licence status of institutional members. If, at some future date, we are able to offer a software tape distribution service, this would be available only to institutional members, whose relevant licences can be verified.

If your institution is not an institutional member, isn't it about time it became one?

Ordinary memberships are for individuals. This is also a voting membership (one vote), which receives a single copy of the newsletter. A primary difference from Institutional Membership is that the benefits of Ordinary Membership apply to the named member only. That is, only the member can obtain discounts an attendance at AUUG meetings, etc. Sending a representative isn't permitted.

Are you an AUUG member?

Student Memberships are for full time students at recognised academic institutions. This is a non voting membership which receives a single copy of the newsletter. Otherwise the benefits are as for Ordinary Members.

Honorary Life Membership is not a membership you can apply for, you must be elected to it. What's more, you must have been a member for at least 5 years before being elected.

It's also possible to subscribe to the newsletter without being an AUUG member. This saves you nothing financially, that is, the subscription price is greater than the membership dues. However, it might be appropriate for libraries, etc, which simply want copies of AUUGN to help fill their shelves, and have no actual interest in the contents, or the association.

Subscriptions are also available to members who have a need for more copies of AUUGN than their membership provides.

To find out your membership type, examine your membership card or the mailing label of this AUUGN. Both of these contain information about your current membership status. The first letter is your membership type code, M for regular members, S for students, and I for institutions, or R for newsletter subscription. Membership falls due in January or July, as appropriate. You will be invoiced prior to the expiry of your membership.

Check that your membership isn't about to expire and always keep your address up-to-date. Ask your colleagues if they received this issue of AUUGN, tell them that if not, it probably means that their membership has lapsed, or perhaps, they were never a member at all! Feel free to copy the membership forms, give one to everyone that you know.

If you want to join AUUG, or renew your membership, you will find forms in this issue of AUUGN. Send the appropriate form (with remittance) to the address indicated on it, and your membership will (re-)commence.

As a service to members, AUUG has arranged to accept payments via credit card. You can use your Bankcard (within Australia only), or your Visa or Mastercard by simply completing the authorisation on the application form.

AUUG Incorporated
Application for Institutional Membership
AUUG Inc.

To apply for institutional membership of the AUUG, complete this form, and return it with payment in Australian Dollars, or credit card authorisation, to:

AUUG Membership Secretary
PO Box 366
Kensington NSW 2033
Australia

• Foreign applicants please send a bank draft drawn on an Australian bank, or credit card authorisation, and remember to select either surface or air mail.

This form is valid only until 31st May, 1993

..... does hereby apply for

☐ New/Renewal* Institutional Membership of AUUG $325.00

☐ International Surface Mail $ 40.00

☐ International Air Mail $120.00

Total remitted AUD$_____
(cheque, money order, credit card)

* Delete one.

I/We agree that this membership will be subject to the rules and by-laws of the AUUG as in force from time to time, and that this membership will run for 12 consecutive months and becomes renewable on the following January or July, as appropriate.

I/We understand that I/we will receive two copies of the AUUG newsletter, and may send two representatives to AUUG sponsored events at member rates, though I/we will have only one vote in AUUG elections, and other ballots as required.

Date: __/__/__ Signed: _____

Title: _____

☐ Tick this box if you wish your name & address withheld from mailing lists made available to vendors.

For our mailing database - please type or print clearly:

Administrative contact, and formal representative:

Name: ..... Phone: ..... (bh)

Address: .... (ah)

..... Net Address: .....

.....

.....

.....

Write "Unchanged" if details have not altered and this is a renewal.

Please charge $_____ to my/our ☐ Bankcard ☐ Visa ☐ Mastercard.

Account number: _____ _____ _____ _____. Expiry date: __/__.

Name on card: _____ Signed: _____

Office use only: **Please complete the other side.**

Chq: bank _____ *bsb* ____-____ *a/c* _____ *#* _____

Date: __/__/__ *$* *CC type* ___ *V#* _____

Who: _____ *Member#* _____

Please send newsletters to the following addresses:

Name: ..... Phone: ..... (bh)
Address: .... (ah)
..... Net Address: .....
.....
.....
.....

Name: ..... Phone: ..... (bh)
Address: .... (ah)
..... Net Address: .....
.....
.....
.....

Write "unchanged" if this is a renewal, and details are not to be altered.

Please indicate which Unix licences you hold, and include copies of the title and signature pages of each, if these have not been sent previously.

Note: Recent licences usally revoke earlier ones, please indicate only licences which are current, and indicate any which have been revoked since your last membership form was submitted.

Note: Most binary licensees will have a System III or System V (of one variant or another) binary licence, even if the system supplied by your vendor is based upon V7 or 4BSD. There is no such thing as a BSD binary licence, and V7 binary licences were very rare, and expensive.

- ☐ System V.3 source
- ☐ System V.2 source
- ☐ System V source
- ☐ System III source
- ☐ 4.2 or 4.3 BSD source
- ☐ 4.1 BSD source
- ☐ V7 source
- ☐ System V.3 binary
- ☐ System V.2 binary
- ☐ System V binary
- ☐ System III binary
- ☐ Other *(Indicate which)* .....

AUUG Incorporated
Application for Ordinary, or Student, Membership
AUUG Inc.

To apply for membership of the AUUG, complete this form, and return it with payment in Australian Dollars, or credit card authorisation, to:

AUUG Membership Secretary
PO Box 366
Kensington NSW 2033
Australia

- **Please don't send purchase orders — perhaps your purchasing department will consider this form to be an invoice.**
- **Foreign applicants please send a bank draft drawn on an Australian bank, or credit card authorisation, and remember to select either surface or air mail.**

This form is valid only until 31st May, 1993

I, ... do hereby apply for

☐ Renewal/New* Membership of the AUUG	$78.00	
☐ Renewal/New* Student Membership	$45.00	(note certification on other side)
☐ International Surface Mail	$20.00	
☐ International Air Mail	$60.00	(note local zone rate available)

Total remitted AUD$_____
(cheque, money order, credit card)

* Delete one.

I agree that this membership will be subject to the rules and by-laws of the AUUG as in force from time to time, and that this membership will run for 12 consecutive months and becomes renewable on the following January or July, as appropriate.

Date: __/__/__ Signed: _____

☐ Tick this box if you wish your name & address withheld from mailing lists made available to vendors.

For our mailing database - please type or print clearly:

Name: ..... Phone: ..... (bh)

Address: .... (ah)

..... Net Address: .....

.....

.....

.....

Write "Unchanged" if details have not altered and this is a renewal.

Please charge $_____ to my ☐ Bankcard ☐ Visa ☐ Mastercard.

Account number: _____ _____ _____ _____. Expiry date: __/__.

Name on card: _____ Signed: _____

Office use only:

Chq: bank _____ *bsb* ____-____ *a/c* _____ *#* _____

Date: __/__/__ *$* *CC type* ___ *V#* _____

Who: _____ *Member#* _____

Student Member Certification *(to be completed by a member of the academic staff)*

I, ... certify that

..... *(name)*

is a full time student at ..... *(institution)*

and is expected to graduate approximately ___/___/___.

Title: _____ Signature: _____

AUUG Incorporated
Application for Newsletter Subscription
AUUG Inc.

Non members who wish to apply for a subscription to the Australian UNIX systems User Group Newsletter, or members who desire additional subscriptions, should complete this form and return it to:

AUUG Membership Secretary
PO Box 366
Kensington NSW 2033
Australia

- Please don't send purchase orders — perhaps your purchasing department will consider this form to be an invoice.
- Foreign applicants please send a bank draft drawn on an Australian bank, or credit card authorisation, and remember to select either surface or air mail.
- Use multiple copies of this form if copies of AUUGN are to be dispatched to differing addresses.

This form is valid only until 31st May, 1993

Please *enter / renew* my subscription for the Australian UNIX systems User Group Newsletter, as follows:

Name: ..... Phone: ..... (bh)

Address: .... (ah)

..... Net Address: .....

..... *Write "Unchanged" if address has*

..... *not altered and this is a renewal.*

For each copy requested, I enclose:

☐ Subscription to AUUGN	$ 90.00
☐ International Surface Mail	$ 20.00
☐ International Air Mail	$ 60.00

Copies requested (to above address) _____

Total remitted AUD$_____

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AUUG

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AUUG Inc.

If you have changed your mailing address, please complete this form, and return it to:

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Australia

Please allow at least 4 weeks for the change of address to take effect.

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